The Path to Digital Transformation

Where Leaders Stand in 2023

MarketPulse Research conducted for Insight | December 2022
Method and objectives

Survey goals
This survey was conducted to better understand the challenges faced by U.S. enterprises in achieving success with digital transformation initiatives.

We explore the IT and business goals motivating digital transformation initiatives. We uncover specific digital transformation challenges in the areas of data, application modernization, cloud and cybersecurity. Lastly, we examine planned IT investments and those expected to have the most impact on innovation and revenue generation.

<table>
<thead>
<tr>
<th>Total respondents: 400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection method:</td>
</tr>
<tr>
<td>Online questionnaire</td>
</tr>
<tr>
<td>Geography: U.S.</td>
</tr>
<tr>
<td>Field dates:</td>
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<tr>
<td>November 14, 2022 – December 1, 2022</td>
</tr>
<tr>
<td>Number of questions: 30</td>
</tr>
<tr>
<td>(excluding profiling questions)</td>
</tr>
<tr>
<td>Median company size: 6,250 employees</td>
</tr>
<tr>
<td>Senior decision-makers:</td>
</tr>
<tr>
<td>Respondents are senior decision-makers employed in IT, IT security and executive management (director and above titles).</td>
</tr>
</tbody>
</table>
Respondent Profile
Company size by number of employees

S3: Approximately how many people are employed in your entire organization or enterprise? (Please include all plants, divisions, branches, parents and subsidiaries worldwide.) Base: 400
Respondent job titles

S2: Which of the following best describes your title within your organization?

Base: 400

- CIO, CTO: 21%
- CSO, CISO: 8%
- Chief data officer: 6%
- Chief digital officer: 7%
- Executive VP, Senior VP, General manager: 22%
- VP, IT-related function: 8%
- Director, IT-related function: 25%
- Director, non-IT related: 3%
Technology, financial services, manufacturing and healthcare are top industries

Q30: Which of the following best describes your organization’s industry or function?

Base: 400

- **Technology**: 19%
- **Financial services (banking, insurance, brokerage)**: 18%
- **Manufacturing (including automotive, aerospace & defense, construction, engineering, chemical, metals & mining)**: 17%
- **Healthcare (providers & pharmaceuticals)**: 9%
- **Retail, Wholesale & Distribution**: 7%
- **Advertising/Marketing/PR/Media (publishing, broadcast, online)**: 6%
- **Government & Nonprofits (including education)**: 6%
- **Services (legal, consulting, real estate)**: 5%
- **Telecom**: 4%
- **Transportation (airlines, trucking, railroads, shipping, logistics)**: 3%
- **Life sciences**: 3%
- **Utilities/Energy (oil & gas)**: 3%
Highlighted Findings
Highlighted findings

**Overall digital transformation progress**

In this survey we are defining digital transformation as adapting the organization to a “digital-first” approach by leveraging technology such as cloud, IoT, data analytics, mobility and security to innovate or modernize a business function.

Digital transformation is an enterprisewide effort at most enterprises: 36% have achieved business benefits at scale ("optimized"); 33% report process, operational and/or technology changes are embedded enterprisewide ("integrated"); 17% have established roadmaps and are starting to see early-stage benefits ("repeatable"); 11% have fragmented strategies and/or projects at the line-of-business level ("developing"); and 3% are in the information-gathering stage ("ad hoc").

Organizations reporting optimized digital transformation have seen significant benefits. They are nearly three times more likely to resolve cybersecurity breaches within one day (29% vs. 10%) and more than 1.5 times more likely to resolve within a few days (64% vs. 38%); far less likely to be impacted by technical debt (20% indicated no impact vs. 9% of others); and significantly more likely to use AI to drive insights and/or efficiencies (65% vs. 45% of others).
Highlighted findings (continued)

Technical debt

- Technical debt now ranks as the #3 challenge to digital transformation, climbing from the #6 spot in Insight’s 2022 survey. 39% of respondents now cite technical debt as a top three obstacle to progress with innovation, outstripped only by IT skills and knowledge gaps (45%) and budget constraints (42%).

- 86% report their organization has been impacted by technical debt over the past 12 months. The top areas affected are the ability to innovate (43%), meet SLAs (41%) and avoid downtime (37%).

- Technical debt is especially problematic given that 47% of respondents continue to rank technology as the most challenging aspect of digital transformation, followed by business environment uncertainty (42%), people-related concerns such as resource needs and cultural change (38%), process challenges including lack of automation and project delays (38%), and budget limitations (33%).

Digital transformation priorities

- Optimizing data and analytics capabilities (51%) and increasing cloud adoption (49%) are the top IT priorities to enable digital transformation and advance business over the next 12 months. These priorities remain consistent when compared with the results of the 2022 survey. Significantly, integrating data from edge devices into data analysis has risen in importance as an IT priority over the last year.

- Optimizing IT infrastructure through better monitoring and management is the top overall technology initiative over the next 12 months, cited by 50% of respondents.

- IT infrastructure optimization is also considered the most impactful technology initiative driving innovation and revenue generation for the second year in a row, cited by 26% of respondents in both the 2022 and 2023 surveys.
Highlighted findings (continued)

Data-related challenges

• 72% report that data volumes are growing faster than their ability to manage them, despite the fact that they consider data to be crucial to success with digital transformation.

• As a result, 64% rank implementation of a data governance program to improve data management as their top data-related objective this year, with reducing costs and/or improving efficiency through automation weighing in at a distant second (45%).

• Data governance is considered the #1 barrier to achieving business value from data (39%), followed by integrating data repositories across departments or functional areas (35%).

Application modernization challenges

• 87% agree their organization needs to modernize critical applications to ensure the success of their digital transformation journey.

• Operational efficiency is the top driver of application modernization (60%), followed by competition (24%) and compliance (16%).

• The top three focus areas for application modernization are driving competitive advantage and innovation (56%), rationalizing the entire application estate to better understand application benefits (55%) and security-centric application development (52%).

• The #1 modernization challenge is creating a plan for application rationalization (53%), including rehosting, retiring, rearchitecting and replacing legacy applications. Understanding the TCO of the applications across the enterprise (47%), and security and compliance across the application estate (45%) rank second and third, respectively.
Highlighted findings (continued)

Cybersecurity challenges

• 51% report being impacted by a cybersecurity breach over the past 12 months.

• Among those who have experienced a breach, 49% cite a recovery time of one week or more. Just 20% resolved the issue in one day, and 31% in multiple days but less than a week.

• Improving threat detection (49%) and response (48%) are top priorities for improving cybersecurity over the next 12 months.

• 48% cite malware protection among their organization’s top technology-related cybersecurity challenges. Other top technology challenges include network security (33%) and application security/DevOps (31%).

• Low visibility into the threat landscape (35%), outdated governance strategies (34%) and preparing for compliance audits (30%) are the top business-related cybersecurity concerns.

Cloud compute challenges

• 54% of data at respondents’ organizations, on average, now resides in a public or hybrid cloud.

• 91% rely on multiple public cloud providers, but respondents continue to grapple with multicloud strategy.

• 20% plan to repatriate public cloud workloads to an on-premises model over the next 12 months.

• Integration, security and performance management (all at 38%) top the list of public/hybrid cloud deployment challenges. Security is also cited as a top challenge with multicloud strategy (63%).
Highlighted findings (continued)

**Edge workloads**

• 35% of the average organization’s data estate is driven by edge workloads today, with 29% of respondents reporting that at least 50% of data volumes now reside on the edge.
  • 64% expect that volume to increase in the next 12 months.

• As a result, 36% of respondents now cite integrating insights from edge devices into data analysis as a top priority compared to 27% a year ago.

**Artificial intelligence**

• 85% indicate their organization is using artificial intelligence to drive business insights and/or efficiencies.

• However, only 36% have optimized their use of AI organizationwide. 23% have adopted a strategy but have yet to mature processes. 18% have adopted in various departments, 16% are leveraging AI/ML for proof of concepts and 8% are aware but haven’t yet embraced AI/ML.
Survey Results
Technical debt now ranks as the #3 inhibitor to digital transformation, following skills gaps and budget constraints.

### IT infrastructure and operational constraints inhibiting innovation

(select all that apply)

- Gaps in technology skills and knowledge: 45%
- Budget constraints to fund innovation: 42%
- Technical debt (resulting from a reliance on siloed, legacy systems and processes): 39%
- Cultural misalignment/disconnects between IT operations and development teams: 39%
- Inadequate data analysis capabilities for decision-making: 38%
- Infrastructure is not optimized to support digital dexterity: 37%
- Lack of a unified, proactive approach to security and governance: 34%
- None: 11%

Q4: Which of the following IT infrastructure or operational constraints are inhibiting progress with innovation at your organization? (Select all that apply.)
Base: 400
The rise of technical debt from #6 in Insight’s 2022 survey to #3 highlights the cost of taking code shortcuts in IT modernization.

**IT infrastructure and operational constraints inhibiting innovation 2023 vs. 2022**

(Select all that apply)

- Gaps in technology skills and knowledge: 45% (2023), 44% (2022)
- Budget constraints to fund innovation: 37% (2023), 37% (2022)
- Technical debt (resulting from a reliance on siloed, legacy systems and processes): 34% (2023), 37% (2022)
- Cultural misalignment/disconnects between IT operations and development teams: 39% (2023), 37% (2022)
- Inadequate data analysis capabilities for decision-making: 38% (2023), 39% (2022)
- Infrastructure is not optimized to support digital dexterity: 37% (2023), 39% (2022)
- Lack of a unified, proactive approach to security and governance: 34% (2023), 31% (2022)
- None: 6% (2023), 11% (2022)

Q4: Which of the following IT infrastructure or operational constraints are inhibiting progress with innovation at your organization? (Select all that apply.) Base: 400 in 2023; 400 in 2022
86% have been impacted by technical debt over the past 12 months, causing the greatest fallout on the ability to innovate, meet SLAs and avoid downtime.

**Impact of technical debt — Past 12 months**

(Select all that apply)

- **Ability to innovate**: 43%
- **Challenges meeting SLAs**: 41%
- **Outages/downtime**: 37%
- **Missed deadlines**: 32%
- **Decreased productivity**: 32%
- **Decreased customer satisfaction**: 30%
- **Loss of business**: 18%
- **None**: 14%

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**Technical debt** is the measure of the cost of reworking a solution caused by choosing an easy, yet limited, solution.
Digital transformation is an enterprisewide effort at most enterprises, with 36% ranking the effort as **optimized**

**Adoption of a “digital-first” approach**

- **Not at all:** We have no intention of adopting a “digital-first” approach
- **Ad hoc:** Information-gathering stage, no strategy or roadmap in place, isolated pilot projects
- **Developing:** Fragmented strategies, one or more projects at the functional/line-of-business levels
- **Repeatable:** Enterprisewide imperative, established roadmaps, starting to see early-stage benefits
- **Integrated:** Process, operational and/or technology changes are embedded enterprisewide, culture shift
- **Optimized:** Digital business benefits achieved at scale, focus on collaboration, innovation and customer experience

Q1: To what extent has your organization adopted a “digital-first” approach to business processes, operations and customer engagement today?  
Base: 400
Improving operational efficiency is the top business goal of digital transformation

<table>
<thead>
<tr>
<th>Business goals with respect to digital transformation</th>
<th>1 — Most important</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 — Least important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve operational efficiency</td>
<td>28%</td>
<td>26%</td>
<td>18%</td>
<td>16%</td>
<td>12%</td>
</tr>
<tr>
<td>Drive innovation</td>
<td>22%</td>
<td>18%</td>
<td>15%</td>
<td>24%</td>
<td>21%</td>
</tr>
<tr>
<td>Achieve competitive advantage</td>
<td>18%</td>
<td>21%</td>
<td>25%</td>
<td>18%</td>
<td>19%</td>
</tr>
<tr>
<td>Enable resilience to market shifts</td>
<td>17%</td>
<td>17%</td>
<td>23%</td>
<td>21%</td>
<td>22%</td>
</tr>
<tr>
<td>Facilitate new market expansion</td>
<td>15%</td>
<td>20%</td>
<td>19%</td>
<td>21%</td>
<td>26%</td>
</tr>
</tbody>
</table>

Those who indicate their digital transformation status is "optimized" are more likely than others to cite “resilience to market shifts” as their organization’s top priority (22% vs. 14% among others).
Technology is cited as the most challenging aspect of digital transformation, followed closely by an uncertain business environment.

**Most challenging aspects of digital transformation**

- **Technology** (legacy technology, integrations):
  - 1 Most challenging: 26%
  - 2: 21%
  - 3: 18%
  - 4: 20%
  - 5 Least challenging: 15%

- **Business environment uncertainty** (economy, supply chain issues):
  - 1 Most challenging: 21%
  - 2: 21%
  - 3: 23%
  - 4: 20%
  - 5 Least challenging: 15%

- **People** (resource and skill needs, cultural change):
  - 1 Most challenging: 20%
  - 2: 18%
  - 3: 21%
  - 4: 20%
  - 5 Least challenging: 20%

- **Process** (lack of automation, project delays):
  - 1 Most challenging: 18%
  - 2: 20%
  - 3: 18%
  - 4: 22%
  - 5 Least challenging: 21%

- **Cost control/budget**:
  - 1 Most challenging: 14%
  - 2: 19%
  - 3: 20%
  - 4: 18%
  - 5 Least challenging: 28%

Q5: From a high level, what are the most challenging aspects of digital transformation at your organization? (Rank with “1” indicating the most challenging and “5” indicating the least challenging aspect.) Base: 400
Organizational/cultural issues present significant barriers to digital transformation

### Specific challenges in achieving success with digital transformation

*(select 5)*

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity of IT infrastructure</td>
<td>39%</td>
</tr>
<tr>
<td>Organizational issues (e.g., poorly defined roles &amp; responsibilities)</td>
<td>34%</td>
</tr>
<tr>
<td>Integration of legacy systems with new applications</td>
<td>33%</td>
</tr>
<tr>
<td>Data collection/management/analysis</td>
<td>32%</td>
</tr>
<tr>
<td>Too many competing priorities</td>
<td>32%</td>
</tr>
<tr>
<td>API development &amp; deployment</td>
<td>30%</td>
</tr>
<tr>
<td>Business &amp; IT strategy are not well aligned</td>
<td>29%</td>
</tr>
<tr>
<td>Cultural issues (e.g., resistance or lack of buy-in)</td>
<td>28%</td>
</tr>
<tr>
<td>Inability to act on data (e.g., to make business process changes)</td>
<td>27%</td>
</tr>
<tr>
<td>Lack of sufficient budget</td>
<td>27%</td>
</tr>
<tr>
<td>Lack of staff and/or correct skill sets</td>
<td>25%</td>
</tr>
<tr>
<td>Lack of vision or strategy</td>
<td>23%</td>
</tr>
<tr>
<td>None</td>
<td>8%</td>
</tr>
</tbody>
</table>

Q6: Drilling down, what are the specific challenges your organization faces in achieving success with digital transformation initiatives? (Select 5.)

Base: 400
IT prioritizes optimizing data and analytics capabilities and increasing cloud adoption to enable digital transformation

<table>
<thead>
<tr>
<th>Top IT objectives to enable digital transformation — Next 12 months (select 3)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimizing data &amp; analytics capabilities such as AI, machine learning &amp; IoT</td>
<td>51%</td>
</tr>
<tr>
<td>Increasing cloud adoption via multicloud or hybrid models</td>
<td>49%</td>
</tr>
<tr>
<td>Modernizing legacy infrastructure &amp; networking technologies</td>
<td>39%</td>
</tr>
<tr>
<td>Mitigating risk with stronger cybersecurity programs</td>
<td>38%</td>
</tr>
<tr>
<td>Integrating insights from edge devices into data analysis</td>
<td>36%</td>
</tr>
<tr>
<td>Transforming/modernizing legacy applications</td>
<td>35%</td>
</tr>
<tr>
<td>Transforming culture to adopt new development models</td>
<td>31%</td>
</tr>
<tr>
<td>Repatriating cloud workloads to an on-premises model</td>
<td>20%</td>
</tr>
</tbody>
</table>

Q3: What are your organization’s top IT objectives over the next 12 months to enable digital transformation and advance your business? (Select 3.) Base 400
Integrating data from edge devices into data analysis has risen in importance as an IT priority since the 2022 survey.

<table>
<thead>
<tr>
<th>Top IT objectives to enable digital transformation — Next 12 months (select 3)</th>
<th>2023</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimizing data &amp; analytics capabilities such as AI, machine learning &amp; IoT</td>
<td>51%</td>
<td>48%</td>
</tr>
<tr>
<td>Increasing cloud adoption via multicloud or hybrid models</td>
<td>49%</td>
<td>47%</td>
</tr>
<tr>
<td>Modernizing legacy infrastructure &amp; networking technologies</td>
<td>39%</td>
<td>37%</td>
</tr>
<tr>
<td>Mitigating risk with stronger cybersecurity programs</td>
<td>38%</td>
<td>36%</td>
</tr>
<tr>
<td>Integrating insights from edge devices into data analysis</td>
<td>36%</td>
<td>27%</td>
</tr>
<tr>
<td>Transforming/modernizing legacy applications</td>
<td>35%</td>
<td>37%</td>
</tr>
<tr>
<td>Transforming culture to adopt new development models</td>
<td>31%</td>
<td>37%</td>
</tr>
<tr>
<td>Repatriating cloud workloads to an on-premises model</td>
<td>20%</td>
<td>21%</td>
</tr>
</tbody>
</table>

Q3: What are your organization’s top IT objectives over the next 12 months to enable digital transformation and advance your business? (Select 3.)
Base: 400 in 2023; 400 in 2022
IT infrastructure optimization through better monitoring and management is the top overall technology initiative this year

Technology initiatives underway/planned — Next 12 months
(select all that apply)

Optimizing IT infrastructure (through better monitoring & management) — 50%
Leveraging modern networking strategies (e.g., SD-WAN, 5G, Private 5G/CBRS, SASE, etc.) — 41%
Modernizing legacy technology (e.g., shifting or deploying workloads in cloud, hybrid cloud, multicloud models) — 40%
Evaluating optimal/best-fit platforms for infrastructure & applications (e.g., cloud, on-premises, hybrid cloud) — 39%
Improving observability (WAN, DC, cloud, etc.) — 37%
Implementing cloud-native initiatives (application modification, continuous release management, etc.) — 36%
Ensuring the protection of critical infrastructure with modern security approaches — 34%
Increasing use of as-a-service delivery models (e.g., consumption-based pricing for on-premises delivery) — 34%
Redesigning/automating IT processes — 33%
Implementing platform team(s) that define common services & standards across product teams — 33%
Outsourcing select IT management needs to third-party providers — 31%
Engaging third-party experts to create digital transformation roadmap — 29%
None of the above — 1%

Q28a: Which of the following technology initiatives are underway or planned at your organization over the next 12 months? (Select all that apply.)
Base: 400
IT infrastructure optimization is again considered the most impactful initiative driving innovation and revenue generation.

**Technology initiatives expected to have the biggest impact on innovation and revenue generation 2023 vs. 2022**

*(select 3)*

<table>
<thead>
<tr>
<th>Initiative</th>
<th>2023</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimizing IT infrastructure (through better monitoring &amp; management)</td>
<td>26%</td>
<td>26%</td>
</tr>
<tr>
<td>Leveraging modern networking strategies (e.g., SD-WAN, 5G, Private 5G/CBRS, SASE, etc.)</td>
<td>21%</td>
<td>18%</td>
</tr>
<tr>
<td>Modernizing legacy technology (e.g., shifting or deploying workloads in cloud, hybrid cloud, multicloud models)</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>Evaluating optimal/best-fit platforms for infrastructure &amp; applications (e.g., cloud, on-premises, hybrid cloud)</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>Implementing cloud-native initiatives (application modification, continuous release management, etc.)</td>
<td>15%</td>
<td>18%</td>
</tr>
<tr>
<td>Improving observability (WAN, DC, cloud, etc.)</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Implementing platform team(s) that define common services &amp; standards across product teams</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>Increasing use of as-a-service delivery models (e.g., consumption-based pricing for on-premises delivery)</td>
<td>13%</td>
<td>20%</td>
</tr>
<tr>
<td>Redesigning/automating IT processes</td>
<td>12%</td>
<td>14%</td>
</tr>
<tr>
<td>Ensuring the protection of critical infrastructure with modern security approaches</td>
<td>11%</td>
<td>14%</td>
</tr>
<tr>
<td>Outsourcing select IT management needs to third-party providers</td>
<td>10%</td>
<td>16%</td>
</tr>
<tr>
<td>Engaging third-party experts to create digital transformation roadmap</td>
<td>8%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Q28b: Which of the following technology initiatives do you expect to have the biggest impact on your IT organization’s ability to enable innovation and new revenue generation over the next 12 months? (Select the top three.) Base: 400 in 2023; 400 in 2022.
Two-thirds (67%) are investing in new digital solutions/services in response to today’s market environment.

**Planned changes to IT investment strategy in response to market environment**

- Investing in new digital services/solutions in response to market changes: 67%
- Accelerating movement to OpEx (cloud-based) versus CapEx (on-premises) technology solutions: 62%
- Increasing use of third-party services (consultants, MSPs, etc.): 55%
- Delaying some IT investments due to shifts in budget and/or strategy: 45%
- None of the above: 1%

Q27: How is your organization changing its IT investment strategy, if at all, in response to today’s market environment? (Select all that apply.)
Base: 400
84% are using or have definite plans to use third-party providers over the next 12 months to enable digital transformation.

Q29: Will your organization rely on third-party service providers to plan and/or execute digital transformation strategies to help drive business innovation over the next 12 months? Base: 400
92% say data is crucial to digital transformation, but 72% agree data volumes are growing too fast for manageability

**Agreement statements: Data environment**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Neutral</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data is crucial to the success of every digital transformation initiative.</td>
<td>65%</td>
<td>27%</td>
<td>5%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>I trust that my organization's data is managed securely.</td>
<td>61%</td>
<td>30%</td>
<td>5%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>My organization understands the value we can derive from our existing data.</td>
<td>59%</td>
<td>30%</td>
<td>6%</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>My organization's data is accessible to those who need to use it.</td>
<td>52%</td>
<td>33%</td>
<td>9%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>My organization is using AI to drive insights and/or efficiencies.</td>
<td>50%</td>
<td>35%</td>
<td>9%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Data volumes are growing faster than our ability to manage the data.</td>
<td>40%</td>
<td>32%</td>
<td>12%</td>
<td>10%</td>
<td>6%</td>
</tr>
<tr>
<td>Departments are hesitant to break down silos &amp; share data across the enterprise.</td>
<td>30%</td>
<td>32%</td>
<td>14%</td>
<td>16%</td>
<td>8%</td>
</tr>
<tr>
<td>My organization's data is not being utilized to the full extent that it could be.</td>
<td>25%</td>
<td>25%</td>
<td>17%</td>
<td>16%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Q7: Please rate your level of agreement with each of the following statements about your organization’s data.
Base: 400
64% rank implementing a data governance program as their top data-related digital transformation goal, far ahead of other priorities.

Top data-driven digital transformation objectives — Next 12 months
(select 3)

- Improve data management (e.g., security, data quality, accessibility) with implementation of a governance program: 64%
- Reduce costs and/or improve efficiency through automation: 45%
- Improve employee productivity & morale: 40%
- Enhance customer experiences & relationships: 40%
- Leverage data to maintain or drive a competitive advantage: 39%
- Improve customer acquisition & retention: 38%
- Reduce time to market for new products & services: 35%

Q8: What are your organization’s top data-driven digital transformation objectives over the next 12 months? (Select and rank the top three.)
Base: 400
Inadequate data governance is considered the #1 barrier to achieving business value from data

Challenges severely limiting the ability to achieve business value from data
(select 3)

- Data governance (e.g., managing data availability, integrity & security based on internal policies) 39%
- Integrating data repositories across departments or functional areas 35%
- Manual & time-consuming processes to import, clean & prep data 30%
- Lack of resources, skills or buy-in to support your analytics initiatives 29%
- Managing data across cloud & on-premises environments 29%
- Availability of data when we need it to support decision-making processes 27%
- Lack of a data strategy to steer our analytics journey 26%
- Difficulty launching self-service initiatives for business users 26%
- Organizational mindset/culture issues 22%
- No single point of accountability for driving analytics success 19%
As they strive to meet GRC requirements, respondents report challenges with improving business continuity and DR and updating security policies.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving business continuity &amp; disaster recovery</td>
<td>37%</td>
</tr>
<tr>
<td>Updating information security policies</td>
<td>35%</td>
</tr>
<tr>
<td>Conducting risk analysis</td>
<td>33%</td>
</tr>
<tr>
<td>Data backup</td>
<td>32%</td>
</tr>
<tr>
<td>Implementing multi-factor authentication</td>
<td>30%</td>
</tr>
<tr>
<td>Encryption</td>
<td>27%</td>
</tr>
<tr>
<td>User training</td>
<td>26%</td>
</tr>
<tr>
<td>Penetration testing</td>
<td>23%</td>
</tr>
<tr>
<td>Conducting vulnerability scans</td>
<td>22%</td>
</tr>
<tr>
<td>Breach readiness</td>
<td>21%</td>
</tr>
<tr>
<td>None</td>
<td>5%</td>
</tr>
</tbody>
</table>
87% cite a need to modernize critical applications to ensure the success of their digital transformation journey

Q11: Please rate your level of agreement with each of the following statements about your organization's application estate.

Base: 400

- Applications are crucial to the success of every digital transformation initiative.
  - Strongly agree: 59%
  - Somewhat agree: 30%
  - Neutral: 6%
  - Somewhat disagree: 3%
  - Strongly disagree: 1%

- We need to modernize our critical applications.
  - Strongly agree: 52%
  - Somewhat agree: 35%
  - Neutral: 8%
  - Somewhat disagree: 3%
  - Strongly disagree: 2%

- The majority of our application estate are third-party applications that we rely on.
  - Strongly agree: 37%
  - Somewhat agree: 38%
  - Neutral: 14%
  - Somewhat disagree: 8%
  - Strongly disagree: 3%

- We leverage low- and no-code solutions to accelerate application modernization.
  - Strongly agree: 33%
  - Somewhat agree: 35%
  - Neutral: 13%
  - Somewhat disagree: 13%
  - Strongly disagree: 6%

- We are reluctant to modernize applications because the ROI is not clear.
  - Strongly agree: 32%
  - Somewhat agree: 25%
  - Neutral: 8%
  - Somewhat disagree: 16%
  - Strongly disagree: 18%
60% report efficiency is the top objective of application modernization.

Q12: From your perspective, what is the biggest driver of application modernization at your organization? Base: 400

- Operational efficiency: 60%
- Competition: 24%
- Compliance: 16%
- Other: 0%
Top focus areas of application modernization are driving competitive advantage and rationalizing to better understand application benefits

**Primary application modernization focus areas**
(select 5)

- Driving competitive advantage & innovation through the application estate: 56%
- Rationalizing the entire application estate & understanding the benefit of each application: 55%
- Security-centric application development & environments: 52%
- Moving to the cloud for application cost-efficiency *(IaaS)*: 51%
- Moving to the cloud to reduce application development complexity *(PaaS)*: 50%
- Leveraging third-party products & SaaS offerings to retire custom apps: 49%
- Federated & distributed applications *(microservices, hybrid, multicloud)*: 49%
- Instrumenting the application environment for observability: 48%
- IoT applications & intelligent edge applications: 45%
- Automation & hyper-automation: 34%

Q14: What are your organization’s primary application modernization focus areas? (Select and rank the top five.)
Base: 400
The #1 application modernization challenge is creating a plan for application rationalization, followed by TCO and security issues.

Primary application modernization challenges
(select 3)

- Creating a plan for application modernization rationalization (rehost, retire, rearchitect, replace, etc.) - 53%
- Understanding the TCO of the applications across the enterprise - 47%
- Security & compliance across the application estate - 45%
- Resources to execute the application modernization plan - 43%
- Formulating an application modernization approach - 40%
- Inventorying & rationalizing the application estate - 35%
- Too much technology debt - 24%

Q13: What are your organization's primary application modernization challenges? (Select and rank the top three.)
Base: 400
51% experienced a cybersecurity breach in the past 12 months. 49% of those affected required one week or more to recover.

Q24: As far as you are aware, has your organization been impacted by a cybersecurity breach in the last 12 months?
Q25: How long did it take your organization to recover from the most recent cybersecurity breach you experienced? Base: 204
Improving threat detection and response are top priorities for improving cybersecurity over the next 12 months

### Priorities for improving cybersecurity — Next 12 months (select 3)

- Improving detection of emerging threats (*e.g.*, ransomware) - 49%
- Improving threat response/remediation capabilities - 48%
- Improving user security awareness/training - 42%
- Improving customer experiences - 36%
- Enabling secure WFH/remote work - 33%
- Meeting governance & compliance regulations - 33%
- Securing the supply chain - 32%
- Building trust in systems & processes - 29%

Q20: What are your organization’s priorities for improving cybersecurity over the next 12 months? (Select and rank the top three.)

Base: 400
48% cite malware protection among their organization’s top technology-related cybersecurity challenges.

Q21: Which of the following technology areas are most challenging for your organization with respect to cybersecurity? (Select and rank the top three.)

Base: 400
Low visibility into the threat landscape, outdated governance strategies and preparing for compliance audits are businesses’ top cybersecurity concerns

Q22: What are your organization’s primary business challenges with respect to cybersecurity? (Select and rank the top three.)

Base: 400
54% of data at respondents’ organizations, on average, resides in a public or hybrid cloud.

Q16: Approximately, what percent of your organization’s data resides in a public or hybrid cloud today? Base: 400
91% rely on multiple public cloud providers

Q18a: What percent of your organization’s public cloud deployments currently leverage one single cloud provider?
Base: 400
20% plan to repatriate select public workloads to an on-premises model

Q18b: Does your organization plan to leverage more than one cloud provider over the next 12 months?

Base: 400

- **Yes**: 78%
- **No**: 19%
- **Don't know**: 3%

1 in 5 are repatriating cloud workloads to an on-premises model.
Integration, security and performance management top the list of public/hybrid cloud deployment challenges

**Primary challenges with respect to public and/or hybrid cloud deployment**
(select 3)

- Integrating cloud resources with on-premises systems: 38%
- Securing/protecting cloud data & resources: 38%
- Monitoring & managing cloud performance & reliability: 38%
- Migrating core business applications to the public cloud: 30%
- Controlling public cloud costs: 26%
- Lack of in-house cloud development skills/expertise: 26%
- Cost of moving data into & between clouds: 25%
- Dissatisfaction with our primary cloud provider: 21%
- Deciding workload placement: 20%
- Governance/compliance: 19%

Q17: What are your organization’s primary challenges with respect to public and/or hybrid cloud deployment? (Select and rank the top three.)
Base: 400
Security is the #1 challenge with multicloud strategy, surpassing other concerns

<table>
<thead>
<tr>
<th>Primary challenges with multicloud strategy</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud security challenges</td>
<td>63%</td>
</tr>
<tr>
<td>Finding the “best-fit” platform for each workload (based on pricing, performance and/or capabilities)</td>
<td>52%</td>
</tr>
<tr>
<td>Increased complexity</td>
<td>50%</td>
</tr>
<tr>
<td>Training &amp; hiring to manage additional cloud management tools</td>
<td>43%</td>
</tr>
<tr>
<td>Resiliency/disaster recovery</td>
<td>37%</td>
</tr>
<tr>
<td>Wasteful or unpredicted cloud usage</td>
<td>32%</td>
</tr>
<tr>
<td>None</td>
<td>6%</td>
</tr>
</tbody>
</table>

Q19: What are your organization's challenges or concerns with respect to multicloud strategy? (Select all that apply.)
Base: 400
35% of the average organization’s data estate is driven by edge workloads today, and volume is expected to increase.

Q15a: Approximately what percent of your organization’s data estate is being driven by edge workloads today?
Q15b: How do you expect the percent of your organization’s data estate coming from edge workloads to change over the next 12 months? Base: 400
85% are using AI to drive insights and/or efficiencies, and 50% or more struggle with utilization, silos and management

Q7: Please rate your level of agreement with each of the following statements about your organization’s data.
Base: 400

**Agreement statements: Data environment**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Neutral</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data is crucial to the success of every digital transformation initiative.</td>
<td>65%</td>
<td>27%</td>
<td>5%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>I trust that my organization's data is managed securely.</td>
<td>61%</td>
<td>30%</td>
<td>5%</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>My organization understands the value we can derive from our existing data.</td>
<td>59%</td>
<td>30%</td>
<td>6%</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>My organization's data is accessible to those who need to use it.</td>
<td>52%</td>
<td>33%</td>
<td>9%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>My organization is using AI to drive insights and/or efficiencies.</td>
<td>50%</td>
<td>35%</td>
<td>9%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Data volumes are growing faster than our ability to manage the data.</td>
<td>40%</td>
<td>32%</td>
<td>12%</td>
<td>10%</td>
<td>6%</td>
</tr>
<tr>
<td>Departments are hesitant to break down silos &amp; share data across the enterprise.</td>
<td>30%</td>
<td>32%</td>
<td>14%</td>
<td>16%</td>
<td>8%</td>
</tr>
<tr>
<td>My organization’s data is not being utilized to the full extent that it could be.</td>
<td>25%</td>
<td>25%</td>
<td>17%</td>
<td>16%</td>
<td>16%</td>
</tr>
</tbody>
</table>

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36% have optimized their use of AI organizationwide. 23% have adopted a strategy but have not yet matured processes.

Q10: What is the status of your organization's current Machine Learning (ML)/Artificial Intelligence (AI) journey?
Base: 400
Respondents who classify their digital transformation progress as **optimized** have achieved significant benefits

- Resolve cybersecurity breaches within one day (29% vs. 10% of others) or a few days (64% vs. 38% of others).
- Have NOT been impacted by technical debt (20% indicated no impact vs. 9% of others).
- Are more likely to be using AI to drive insights and/or efficiencies (65% vs. 45% of others).
- Have a high percentage of data in the cloud (61% on average vs. 49% at other organizations).
- Have optimized and automated AI/ML through the use of best practices (62% vs. 13% of others).
- Trust that their organization’s data is managed securely (76% vs. 58% of others) and is accessible to those who need to use it (67% vs. 47% of others).
- Are leveraging third parties to help strategize and execute digital transformation initiatives (63% vs. 39% of others).