

DIGITAL VORTEX 2021

Digital Disruption in a COVID World



GLOBAL CENTER FOR DIGITAL
BUSINESS TRANSFORMATION

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KEY INSIGHTS



The Digital Disruption Hall of Fame

- The five industries at the center of the Digital Vortex – Media & Entertainment, Retail, Telecommunications, Technology Products & Services, and Financial Services – have remained unchanged since 2015.



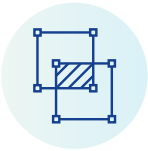
Digital Disruption is Not Slowing Down

- All 14 industries moved closer to the center of the Digital Vortex, where the velocity and magnitude of change was greatest.
- 90% of respondents reported that digital disruption was already present and was exerting a major to transformative impact on their industries.



The Big Movers

- Four industries showed the greatest digital acceleration: Healthcare & Pharmaceuticals, Retail, Education, and Professional Services.



An Acceleration of the Digital Transformation Knowing-Doing Gap

- While more than 90% of respondents believed that digital disruption was a CxO-level concern, 39% reported that their organizations were not responding appropriately.
- While there was a positive performance benefit for organizations that were actively responding to digital disruption, only 36% of respondents claimed to be doing so.
- Respondents who reported having a fragmented digital strategy rose from 53% in 2019 to 61% in 2021.



A Perception Gap Exists between CxOs and Other Management Levels

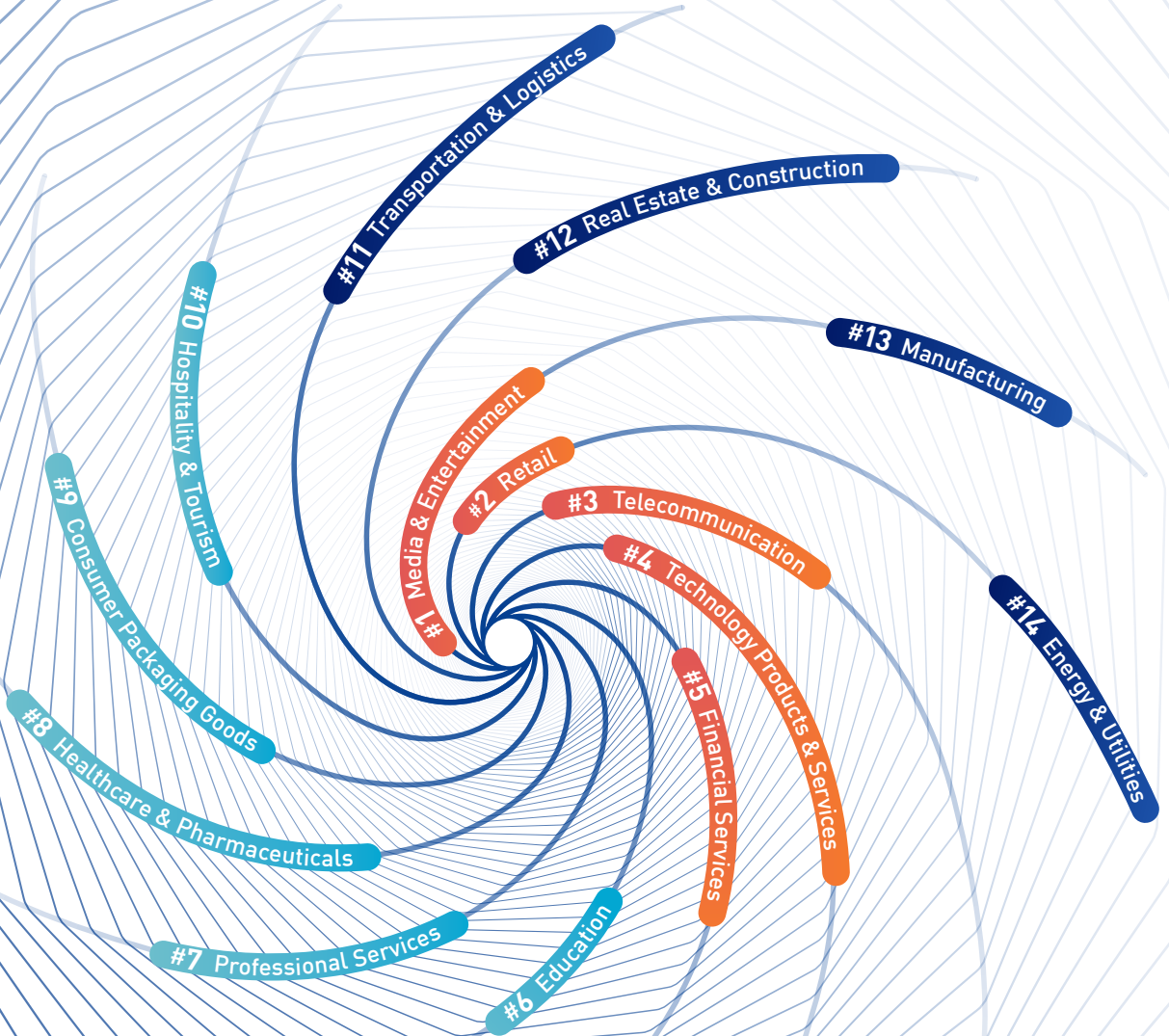
- CxOs were more positive and optimistic about digital strategy than lower level executives. This perception gap widened between 2019 and 2021.



An Optimistic Outlook on the Future

- Respondents from most sectors were more optimistic than they were concerned about their organization's future ability to respond to digital disruption.

2021



KEY INSIGHTS ABOUT THE IMPACT OF COVID-19 ON DIGITAL TRANSFORMATION



The Digital Maturity Advantage

- Pre-COVID digital maturity strongly influenced business performance during the pandemic.



COVID Accelerated Digital Transformation

- Most companies significantly increased their digital transformation efforts during the pandemic, but there was considerable variance in terms of speed and time.



Return on Digital Investment

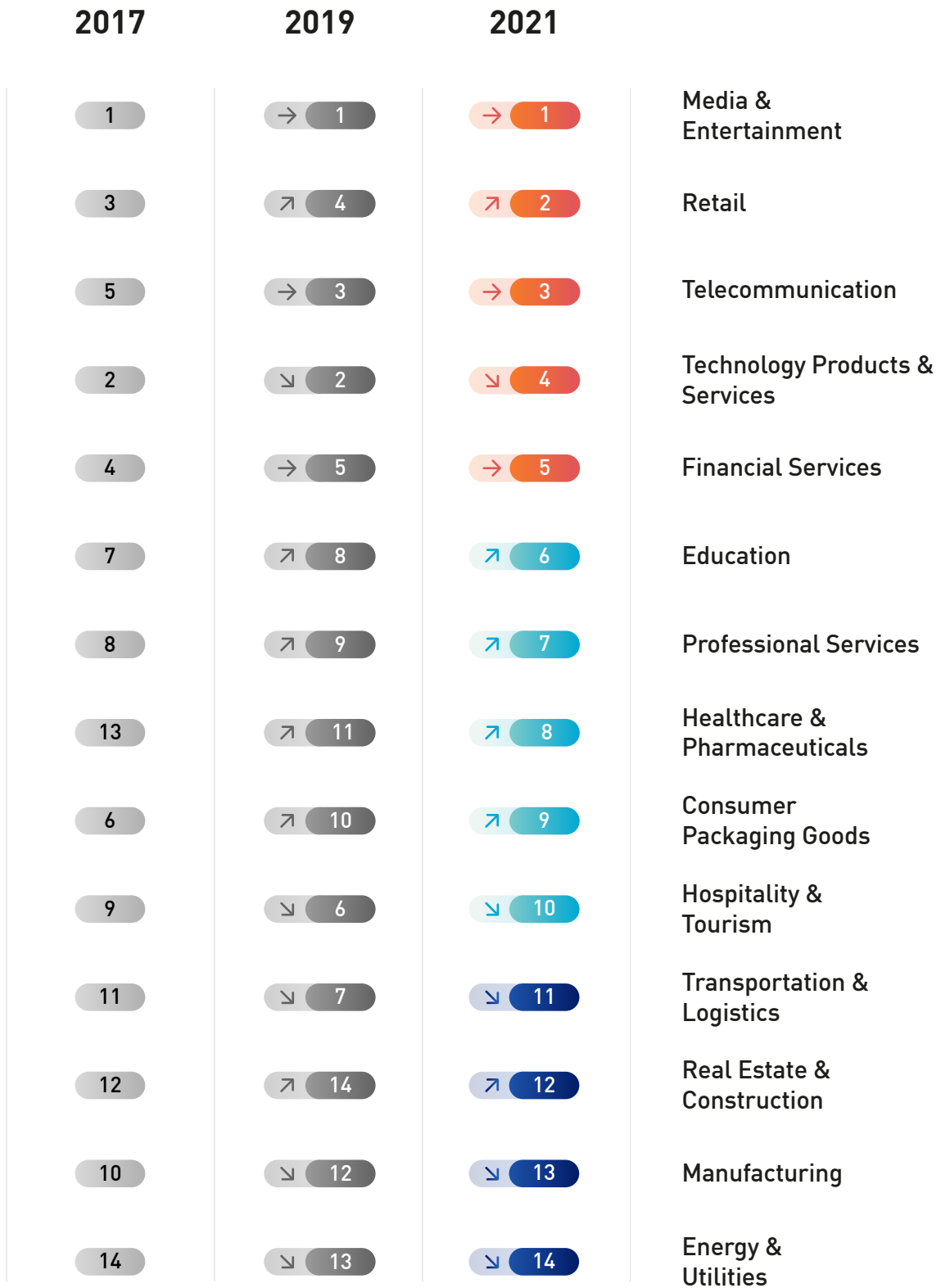
- Investing in digital tools and technologies was positively associated with business performance during the pandemic.

INTRODUCING THE DIGITAL VORTEX 2021

— The Digital Vortex 2021 is the fourth in a series of biennial studies launched in 2015 by the Global Center for Digital Business Transformation (DBT Center) at the IMD Business School. 1,235 business leaders across the globe were surveyed from February 2019 to February 2021 to better understand their attitudes and behaviors towards digital disruption. These opinions are supplemented with venture capital investment data by industry, taken from public sources (see *About the Research* for details).

The Digital Vortex 2021 results are augmented by additional data collected to specifically examine the impact of the COVID-19 pandemic on digital transformation. 825 executives were surveyed at different times from April 2020 to January 2021 to better understand responses to the pandemic, and the impact of digital transformation on digital and financial performance of organizations.

With this combined set of data, we provide a unique snapshot into the state of digital disruption amidst the COVID-19 pandemic.



The study confirms that all 14 industries moved closer to the center of the Vortex between 2019 and 2021; however, some moves were more substantial than others resulting in relative changes of position. The COVID-19 pandemic accelerated many of these shifts.

Media in the Middle

The **MEDIA AND ENTERTAINMENT** sector retained the top spot as the sector most vulnerable to digital disruption. It has held this title since 2017 and continues to experience massive disruption across print and social media, music, TV and movies.

The COVID-19 pandemic undoubtedly sped up the already intense digital disruption occurring within the sector with both positive and negative effects. While movie studios struggled to distribute their content across traditional channels, streaming services enjoyed gains in subscribers. Global revenues for traditional box office receipts dropped below streaming revenues for the first time in early 2020, and are not predicted to catch up even after cinemas reopenⁱ.

Intense threats of disruption led to an increase in innovation across the sector. Some movie studios, for example, experimented with the online release of feature movies. One of the first examples of this trend came shortly after the lockdown in China in early 2020, when studio Huanxi struck a deal to have Bytedance release its New Year feature *Lost in Russia* across Bytedance's portfolio of online platformsⁱⁱ. The success of this move prompted many competitors to follow.

Disney partially compensated for lost revenue from its theme parks by launching a streaming service, Disney+, which proved to be hugely successful with families at home during lockdowns across the worldⁱⁱⁱ.

Relative Acceleration During COVID-19

RETAIL jumped up two spots to second place, largely as a function of the continued rapid growth in ecommerce. COVID-19 accelerated this growth, with record numbers posted all over the world, reaching a third of retail sales in Australia^{iv}, 30% in the U.K.^v, and 20% in the U.S.^{vi}. Furthermore, strong platform effects meant that an increasing slice of the online retail market was captured by large ecommerce players, such as Amazon, Alibaba, and Zalando.

The **EDUCATION** sector moved from eighth to sixth place. Although disruption in the form of technology-mediated learning was already happening within the for-profit education sector, public systems had been much slower to react. The pandemic caused an acceleration in virtual

learning in all parts of the education system across the world, and in particular within mandatory age public education and higher education. Moreover, venture capital funding started flowing into this sector, and by March 2021 there were 20 EdTech unicorns in the world, two thirds of which raised new funding during the pandemic. Those unicorns together are valued in excess of USD 60 billion^{vii}.

HEALTHCARE AND PHARMA jumped three places to eighth spot in the ranking, continuing a steady progression towards the center of the Vortex. While telemedicine and med-tech were already on the rise, COVID also turned the spotlight on this sector, leading to a dramatic rise in technology-mediated solutions for diagnostics and treatment services. Indeed, more than 20% of digital healthcare start-ups in Europe emerged during the first waves of the pandemic^{viii}. Venture capital investment was particularly active in the area of biotech and pharma^{ix}.

Relative Deceleration During the Pandemic

All industries showed an increased vulnerability to digital disruption in our survey, but some sectors moved away from the center in relation to others. This does not mean that they experienced less digital disruption than in previous years, but that the disruption in these sectors was comparatively lower.

TECHNOLOGY PRODUCTS AND SERVICES dropped from second to fourth place in the ranking. In many ways, this industry had already experienced significant disruption. Relatively speaking, other industries were catching up. For example, this sector had dominated venture capital spending between 2015 and 2018 and had accounted for the majority of unicorns worldwide. By 2021, funding was being allocated more evenly across a range of industries.

Furthermore, while the tech sector continued to see its share of disruption, it was also serving as a disruptor to other industries, a trend that was accelerated by COVID. Tech companies made strong moves into financial services, retail, media, education, and transportation during the pandemic.

HOSPITALITY & TOURISM dropped four places to 10th. This may seem surprising given the impact of the pandemic on travel, but it should be noted that the Digital Vortex study measures the impact of *digital* disruption, not disruption in general. There was relatively little venture capital activity in this sector and few unicorns emerged during the period assessed. Tech disruption from startups was also relatively light.

In the context of the pandemic, it remained difficult to replace physical experiences with digital alternatives. An augmented reality experience of an over-water bungalow in the Maldives cannot – yet – compete with a physical visit to the islands.

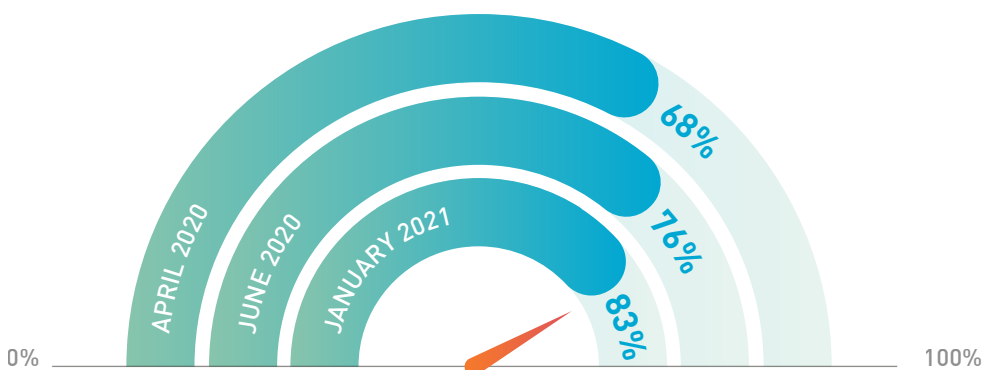
TRANSPORTATION & LOGISTICS also dropped four places, to the 11th spot, even though trends such as autonomous vehicles and electrification of transport were starting to impact the sector. The COVID-19 pandemic had a mixed impact. While the airline industry and public transit struggled, product delivery needs increased, particularly with respect last mile delivery.

THE IMPACT OF COVID-19 ON DIGITAL TRANSFORMATION

It has been assumed that the pandemic accelerated digital transformation, and our results support this assumption. Already by April 2020, two-thirds of respondents noted an acceleration of digital transformation. This percentage increased to more than 83% by January 2021.

SURVEY QUESTION

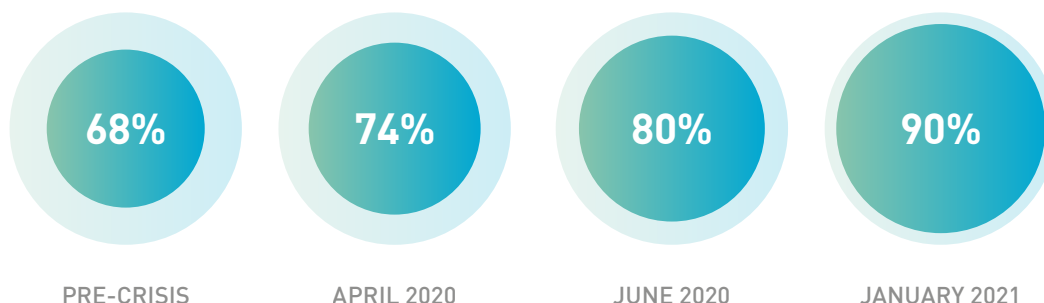
HAS THE PANDEMIC ACCELERATED YOUR DIGITAL TRANSFORMATION?



Top management teams were clearly aware of the need to focus on digital transformation to manage the crisis. Before the crisis 68% of them viewed digital as a top priority. This number rose steadily throughout the crisis so that by January 2021, more than 90% of top management teams considered digital transformation a high priority for their organizations.

SURVEY QUESTION

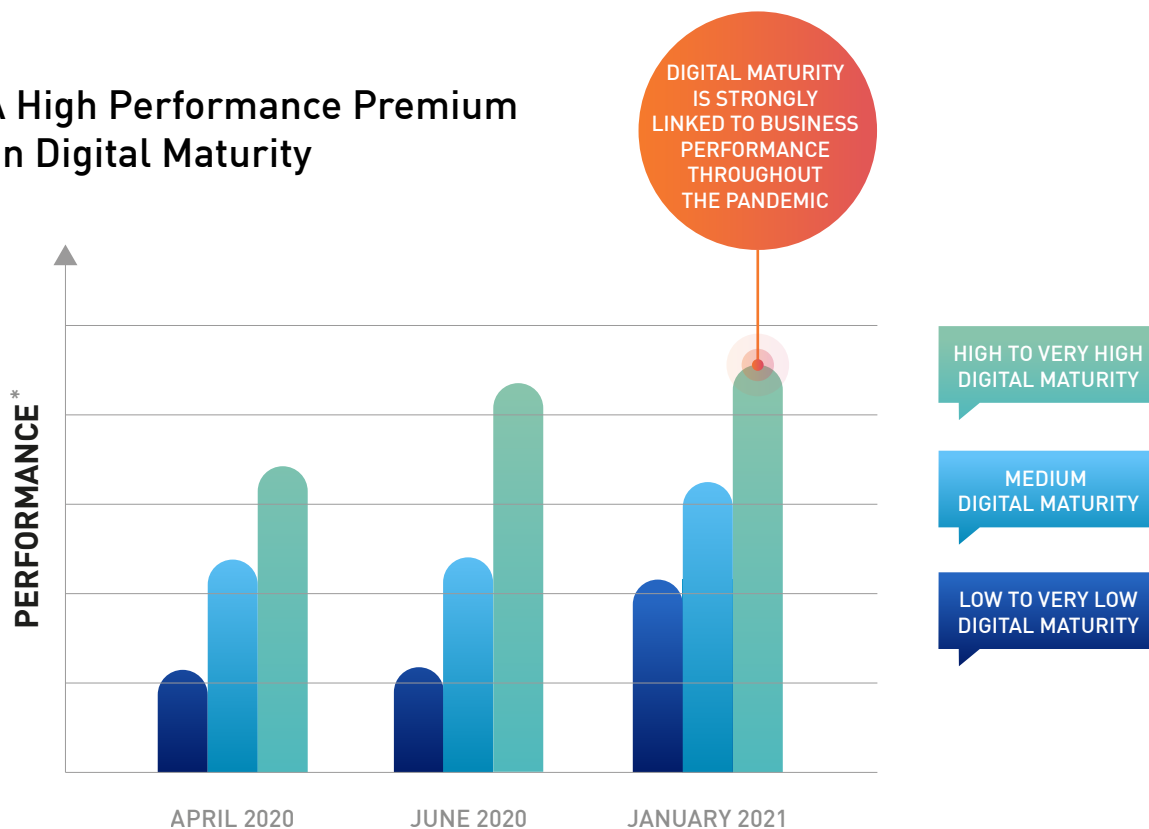
IS DIGITAL TRANSFORMATION SEEN AS A HIGH PRIORITY FOR THE ORGANIZATION'S TOP MANAGEMENT?



There were many instances of barriers falling away, allowing digital transformation to be kick-started by organizations. For example, the shift towards working-from-home convinced many executives of the power of technology to change the way work could be done.

Our analysis revealed three additional insights related to how organizations responded to the pandemic.

A High Performance Premium on Digital Maturity



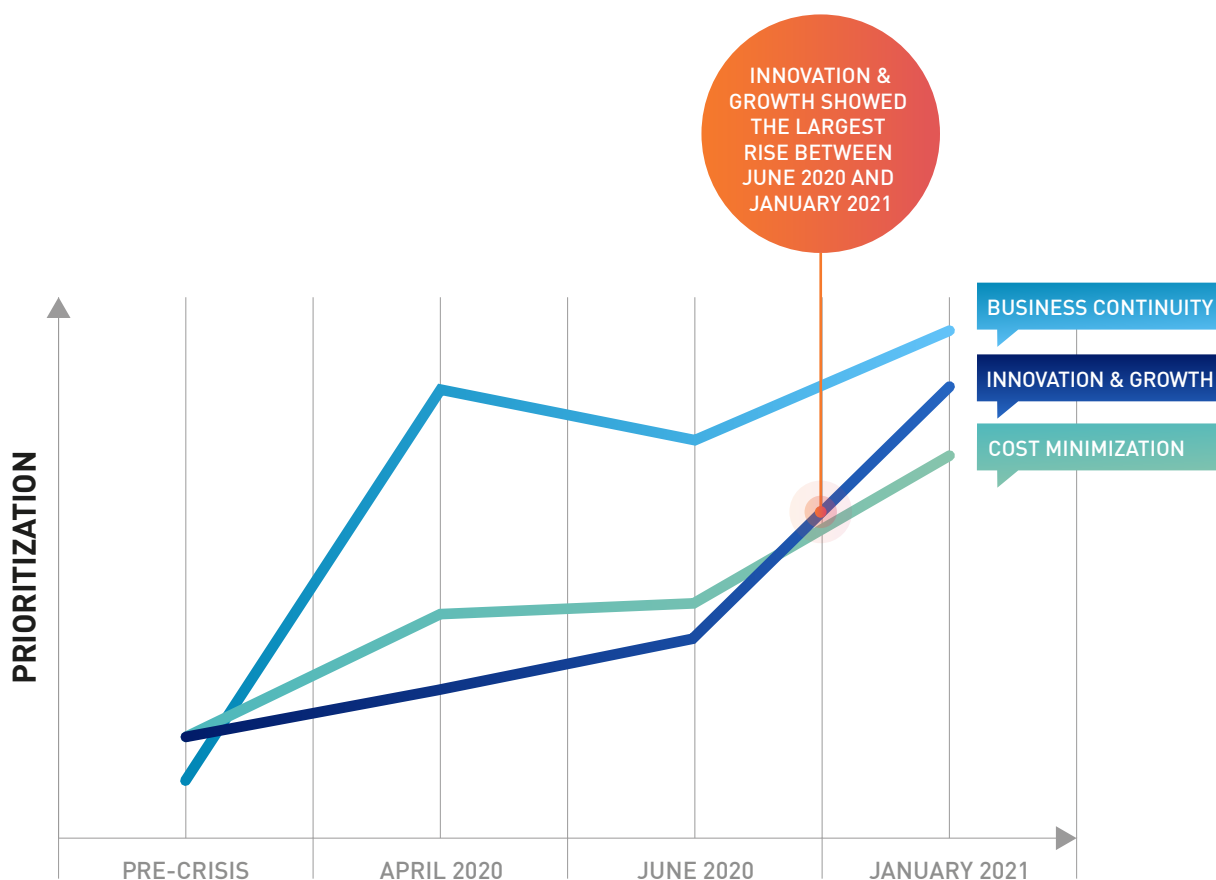
* Performance was measured by combining the company’s ability to respond systemically to the pandemic, its ability to control consequences of the crisis, and its performance against direct competitors

Survey results show that pre-crisis digital maturity strongly influenced in-crisis performance across the board. Organizations with a high or very high level of digital maturity before the pandemic maintained a higher level of performance throughout the crisis. Although organizations with low digital maturity had somewhat caught up by January 2021, they still significantly lagged their more digitally mature competitors.

Survival First, then Cost and Innovation

We asked executives about the specific types of investments they were making as part of their digital responses to the pandemic. We divided those investments into three categories: 1) business continuity, including investments to ensure the survival and viability of the business, 2) cost minimization, or investments in efficiency, productivity, and digitization of analog processes, and 3) innovation and growth, referring to investments in new products, services, and business models to find new sources of revenue and profit.

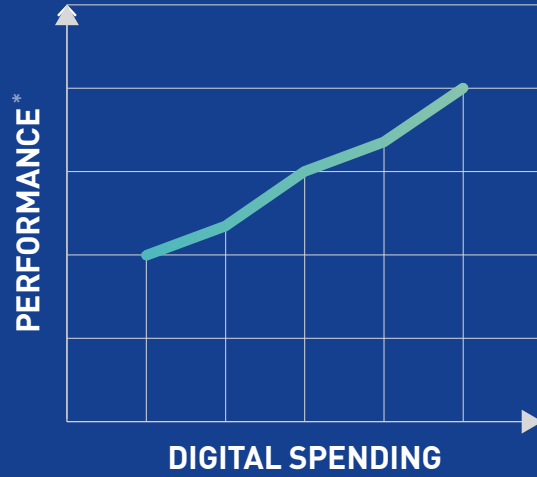
Before the crisis, investments in digital to support business continuity, cost minimization, and innovation and growth were relatively similar. Immediately following the start of the pandemic and subsequent lockdowns and restrictions, the focus on digital moved rapidly to support business continuity, while the other two categories only grew slightly. By January 2021, however, investments in digital tools to support innovation and growth as well as cost minimization had almost caught up with business continuity. All three categories of investment were significantly higher in January 2021 than they were in April 2020.



It is worth noting that the focus on digital to support innovation and growth had the largest rise between June 2020 and January 2021. Digital investments appeared to initially be focused on putting out fires at the onset of the pandemic. As businesses gradually pivoted to the "new normal", innovation and growth became more of a focus for digital.

Spend More, Do Better

When we compared the extent of digital investment with how well organizations were performing compared to their direct competitors, we found a significant positive correlation. Higher spending on digital was linked to better performance. This finding suggests that while pre-crisis digital maturity was an important contributor to performance during the crisis, less digitally mature organizations could catch up by changing their prioritization and increasing spending on digital initiatives along the way.



* Performance was measured by survey question: To what extent do you agree that your organization is outperforming your direct competitors?

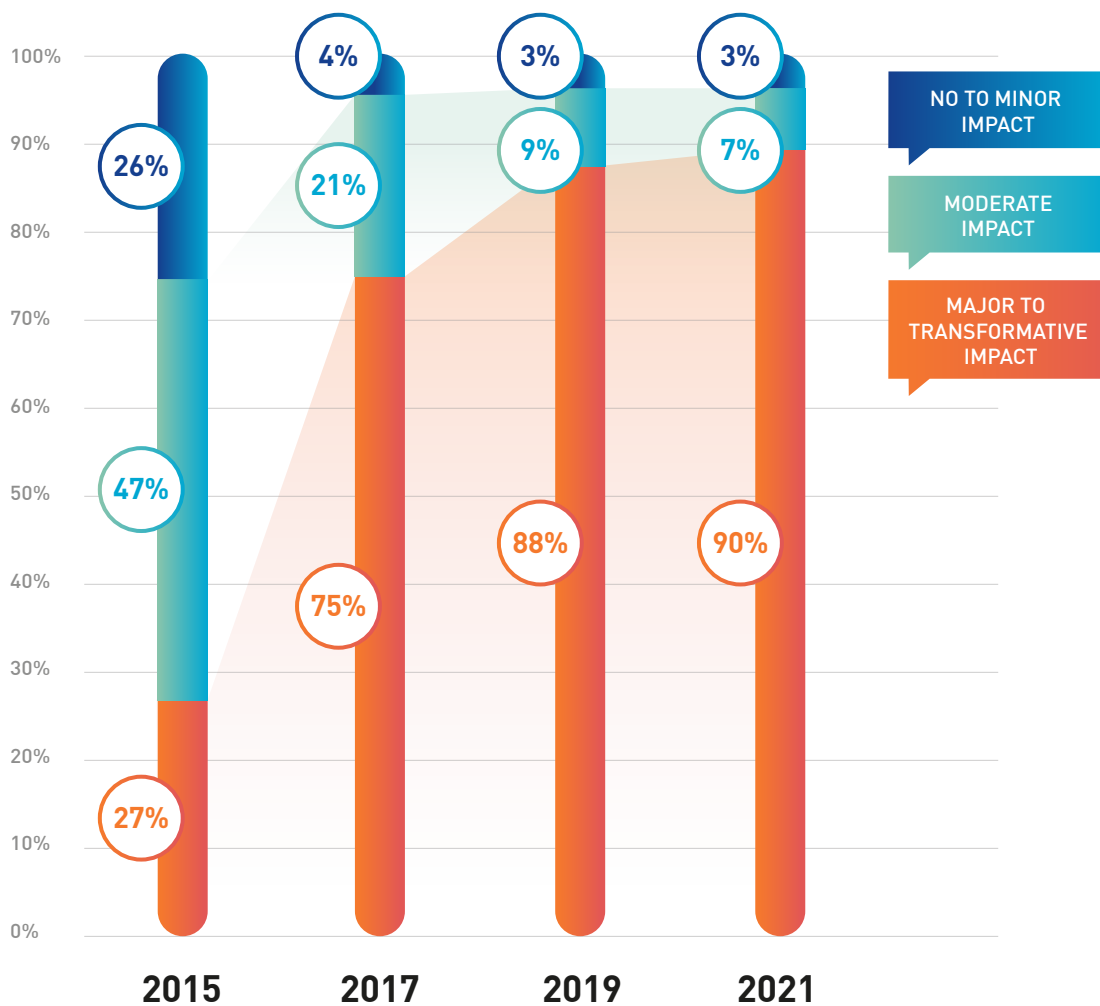
FINAL VERDICT: THERE'S NO HIDING FROM DIGITAL DISRUPTION

Previously, only industries close to the center of the Digital Vortex, such as media companies, banks, telcos, retailers, and tech experienced the transformative impacts of digital disruption, while those on its outer edges were much less impacted. By 2021 this was no longer the case, as we reached a saturation point where major or transformative digital disruption was impacting all sectors, irrespective of size or location.

Nine out of ten respondents believed that digital disruption would have a major or transformative impact on their organizations. This represented a slight rise from 2019, but a major shift from 2015 when 73% of them felt that its impact would be minimal to moderate. Moreover, when asked when they expected the impact to occur, more than 70% of respondents answered that it was already occurring, up from less than 16% in 2015.

SURVEY QUESTION

HOW SIGNIFICANT WILL THE IMPACT OF DIGITAL DISRUPTION BE ON YOUR ORGANIZATION?



THE KNOWING-DOING GAP

However, just because digital disruption made it onto the agendas of most top management teams does not mean that it was being handled appropriately, if at all. The results indicate that there was a large knowing-doing gap with respect to digital transformation.

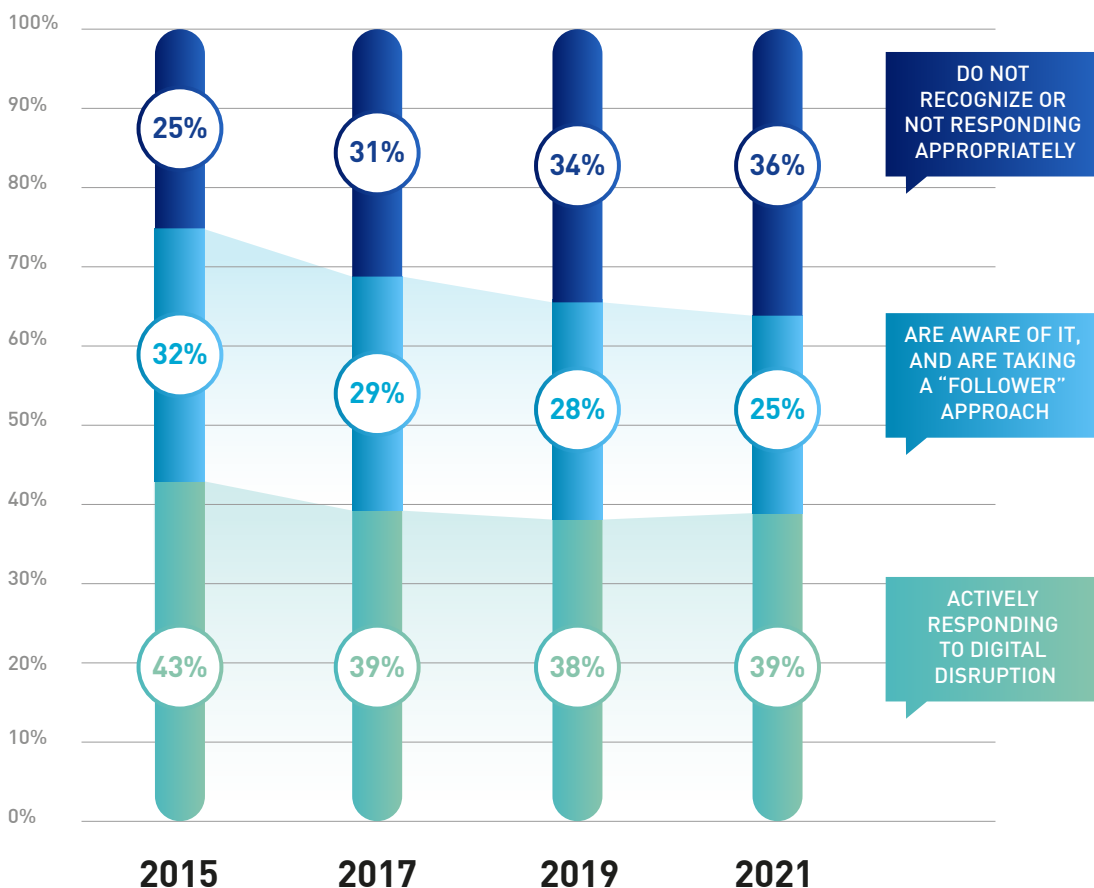
Responses to Digital Disruption are Improving... Barely

In fact, while the percentage of organizations experiencing a major or transformative impact from digital disruption rose from 27% in 2015 to 90% in 2021, the study shows that the percentage of respondents who were satisfied with their organization’s response to that disruption only rose from 25% to 36%. Thus, while the impact of digital disruption has stabilized at a very high level, responses to that disruption have shown few signs of improvement. Indeed, only 36% of organizations were actively and appropriately responding to digital disruption between 2019 and 2021, up slightly from 34% between 2017 and 2019.

Furthermore, 39% of respondents felt that their organization’s responses to digital disruption were inappropriate, only slightly down from 2015, and up from 2019. The data clearly suggests that while digital disruption was top of mind for executive teams, they were struggling to find a way to address it.

SURVEY QUESTION

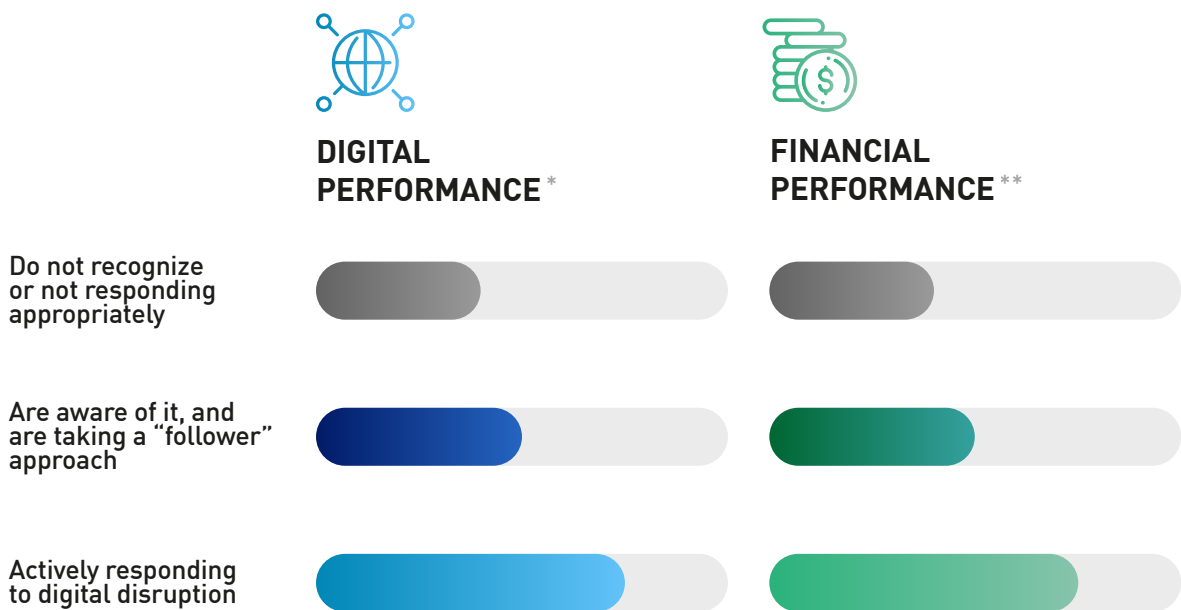
WHAT IS YOUR ORGANIZATION'S ATTITUDE TOWARDS DIGITAL DISRUPTION?



Active Response to Digital Disruption Leads to Better Performance

A deeper dive into the data reveals that organizations actively responding to digital disruption significantly outperformed both those that took a ‘follower’ approach and those that were not responding appropriately. This performance boost existed for both digital performance and financial performance. There was a clear performance drop for organizations that did not respond appropriately or those that took a ‘wait and see’ approach.

These findings also support the earlier conclusion that higher levels of digital maturity positively impacted business performance during the COVID-19 pandemic.



* Digital performance was measured by survey question: Compared to other organizations in your industry, how would you characterize your organization’s response to the challenges of digital disruption? Differences significant at P<0.01

** Financial performance was measured by survey question: Compared to other organizations in your industry, how would you characterize your organization’s financial performance over the past five years? Differences significant at P<0.01

DIGITAL STRATEGIES ARE BECOMING INCREASINGLY FRAGMENTED

Why are organizations struggling to respond to digital disruption? As we have shown in other reports, 87% of digital transformation programs fail to meet objectives^x. There are various reasons why these transformations are so difficult to manage, including lack of skills, unclear objectives, and too much focus on technologies rather than organizational change.

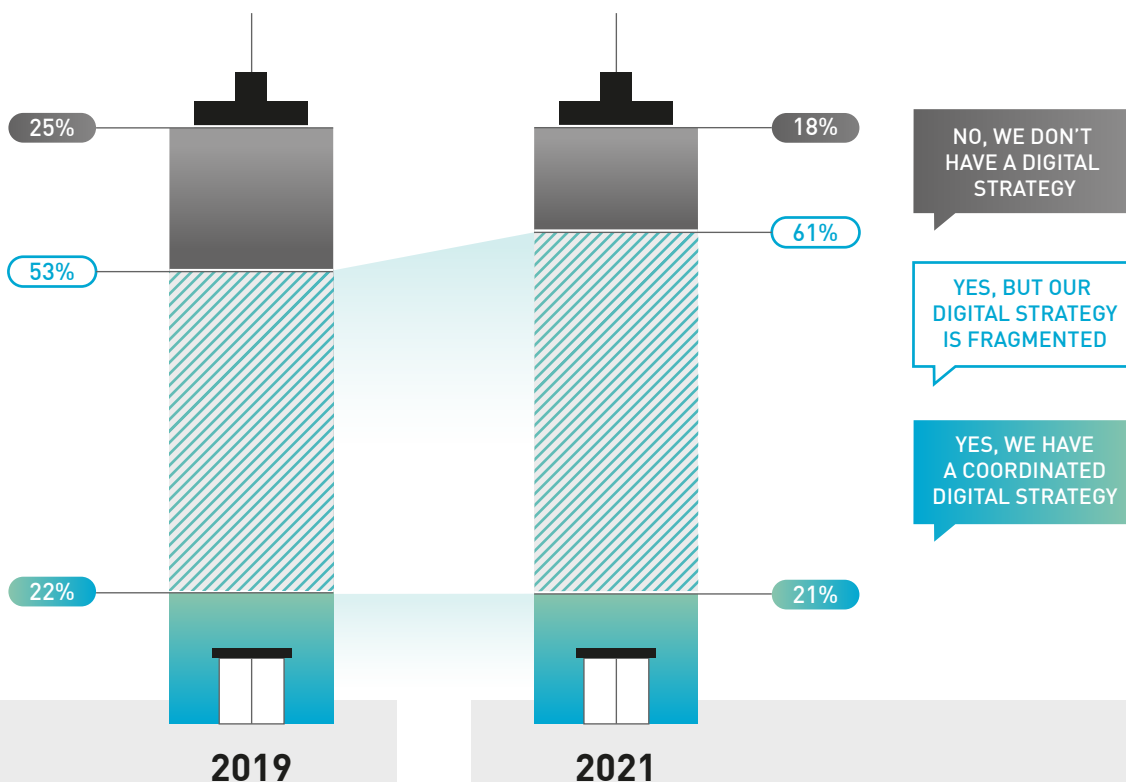
The Digital Vortex 2021 report suggests that there may also be an issue with how these transformations are implemented from a strategic point of view. While the percentage of organizations without a digital strategy dropped from 25% in 2019 to 18% in 2021, those with a digital strategy appeared to struggle with its implementation.

In our survey, we asked respondents to report on whether their organization had a coordinated digital strategy across all areas of operation, or a fragmented digital strategy with little alignment between various areas. A fragmented digital strategy can naturally arise as different parts of an organization - functions, markets, product categories, and so on - launch their own distinct digital initiatives. Each of these initiatives may make sense from an individual point of view, but as a collective, they tend to be misaligned, have a high degree of overlap, and add cost and complexity to the organization's overall response to digital disruption.

Between 2019 and 2021, the percentage of organizations that had a coordinated digital strategy actually fell, while those that reported having a fragmented strategy rose substantially, from 53% of respondents in 2019 to 61% in 2021.

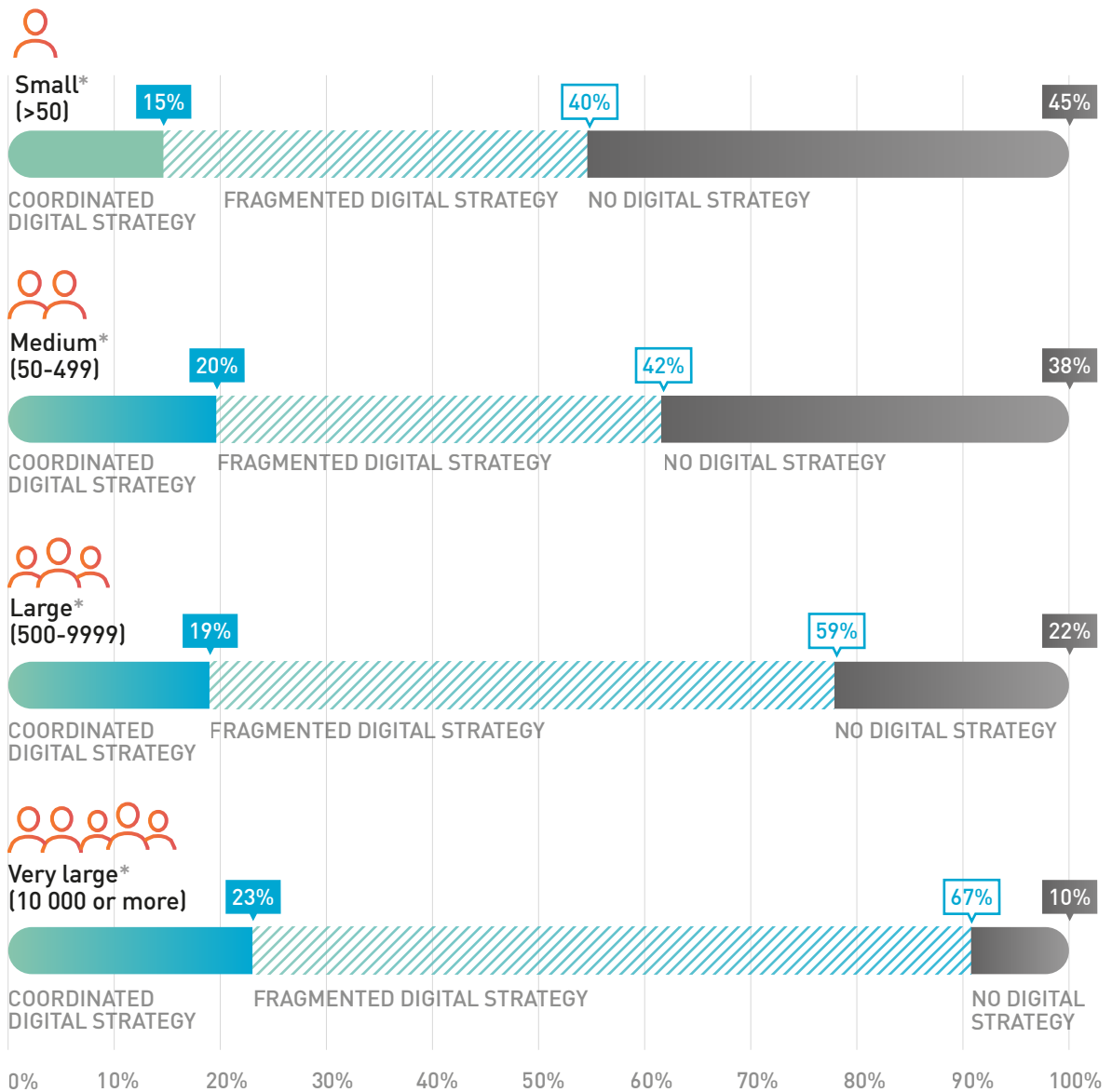
SURVEY QUESTION

DOES YOUR ORGANIZATION HAVE A FORMAL DIGITAL STRATEGY?



The Larger They Are, the More Fragmented They Become

This impression of digital strategy fragmentation was especially acute in large and very large organizations. While very large organizations were more likely to have a digital strategy than small ones, they were also much more likely to suffer from the issue of fragmentation.

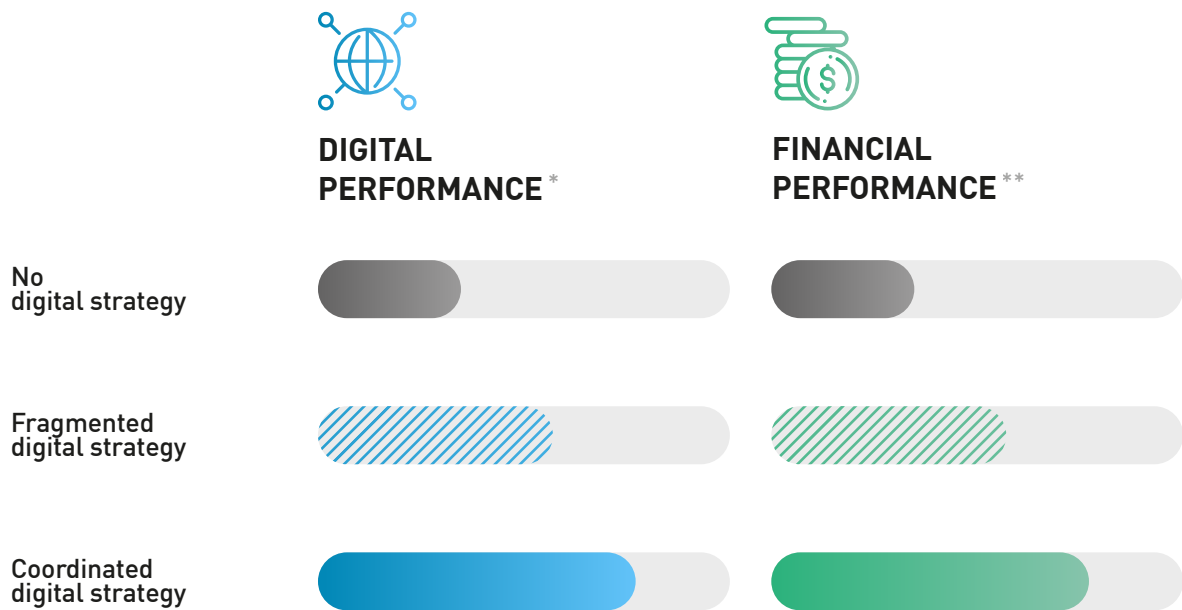


* Company size (number of full time employees)

A More Coordinated Strategy Leads to Better Performance

A common approach to digital transformation is to start in an uncoordinated and haphazard manner, before at some point going through a process of rationalization to enhance the level of digital strategy coordination.

As with the level of response to digital disruption presented earlier, there was a clear performance benefit for those organizations that made this shift successfully and reported having a coordinated digital strategy. They outperformed those with a fragmented strategy both in terms of digital performance and financial performance. The more cohesive the digital strategy, the better the performance. However, it is worth noting that even a fragmented strategy was better than having no digital strategy. Therefore, doing something on digital was generally better than doing nothing at all.



* Digital performance was measured by survey question: Compared to other organizations in your industry, how would you characterize your organization's response to the challenges of digital disruption? Differences significant at P<0.01

** Financial performance was measured by survey question: Compared to other organizations in your industry, how would you characterize your organization's financial performance over the past five years? Differences significant at P<0.01

THE DIGITAL STRATEGY EXECUTIVE BLIND SPOT

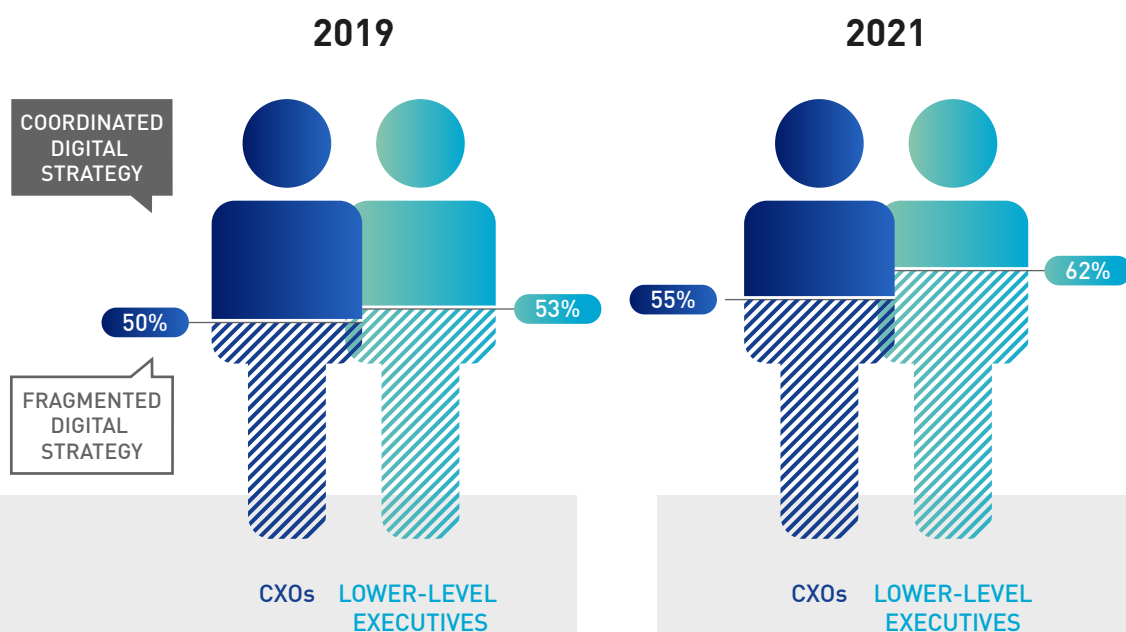
In Digital Vortex 2019, we noted a perception gap between CxOs and other executives around their organizational response to digital disruption. Higher level executives were much more likely to conclude that they were actively responding to digital disruption, while those lower down in the organization were more likely to say that the response was absent, inappropriate, or merely a copy of the competition.

In 2021, we again looked for a perception gap, but this time around digital strategy fragmentation. The results quite clearly show that more senior executives believed that the fragmentation challenge was less acute than lower levels. The percentage of CxOs that felt their organization's digital strategy was fragmented grew from 50% in 2019 to 55% in 2021. By contrast, 54% of lower level executives noted fragmentation in 2019, and this rose to 62% in 2021.

While the awareness of a strategy fragmentation problem grew for both top executives and other levels between 2019 and 2021, the perception gap between CxOs and lower levels widened even further. This result may speak to the possibility that the digital strategy set by executive boards was not filtering down the ranks in a cohesive manner. Qualitative analysis suggested that there was often a lack of agreement on key terms or phrases, such as 'what is digital?' or 'what is the extent of digital transformation?'. Without clear definitions of key concepts around digital disruption and transformation, fragmentation can easily result.

It is worth pointing out that even though the sense of fragmentation was higher at lower levels within an organization, a full 55% of executives at the CxO level now also reported that their digital strategy was fragmented. Clearly, there is a need to pause and reflect on how the digital strategy is being executed. Some activity is better than no activity, but there are obvious financial benefits to ensuring that activity around digital strategy and execution is more coordinated than it has been up to this point.

Perception of digital strategy as fragmented (CxOs vs. lower-level executives)

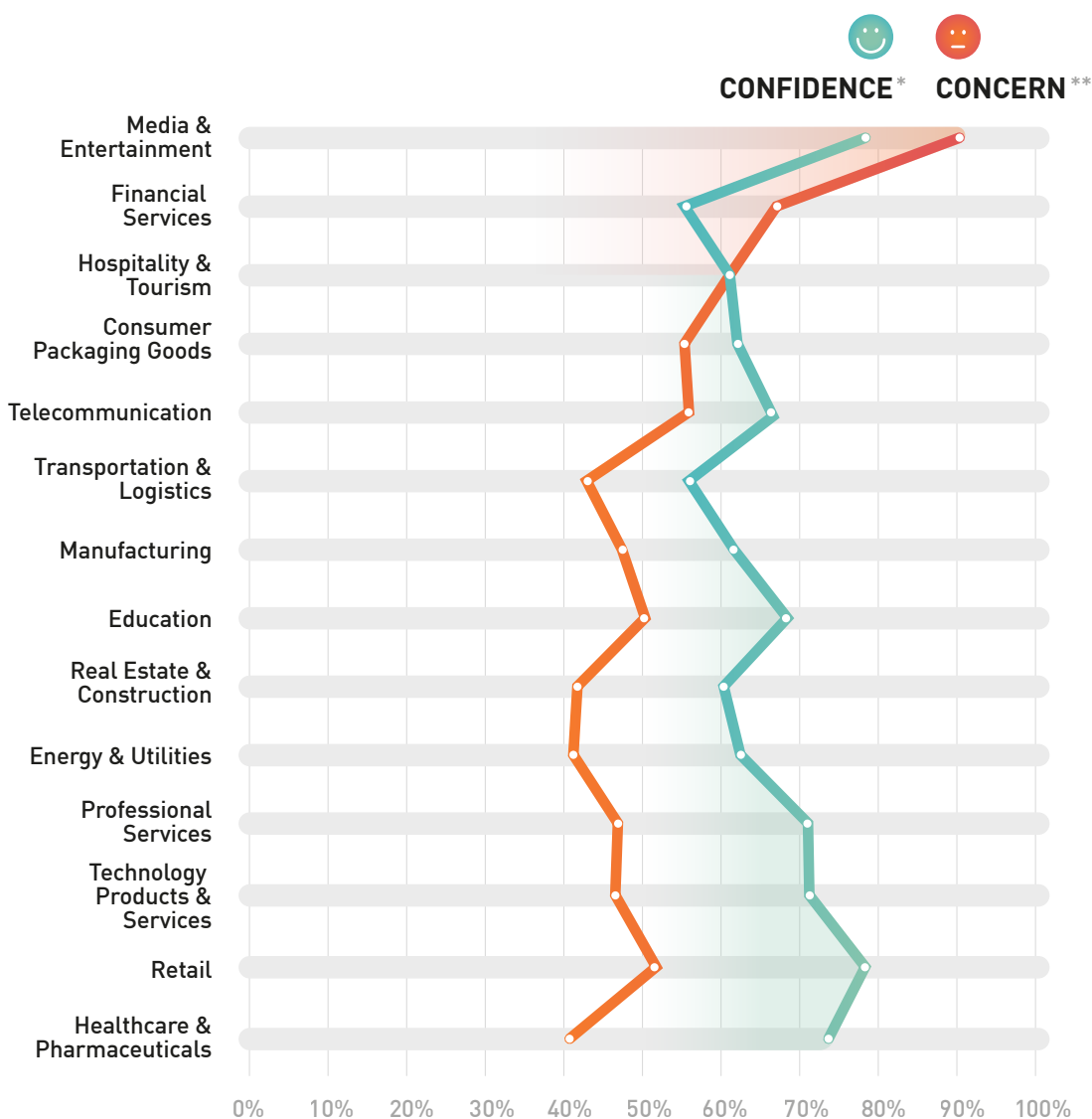


MOST INDUSTRIES ARE OPTIMISTIC DESPITE A CHALLENGING ENVIRONMENT

Given the execution challenges noted earlier, it is perhaps surprising that organizations nevertheless had a positive mindset and were optimistic about their ability to respond to digital disruption.

Concern vs Confidence About Future Digital Competitiveness

When asked how confident they were that they would enjoy the positive effects of digital disruption compared with how concerned they were that they would experience the negative effects, executives from most sectors were *more* confident than they were concerned. The Retail, Technology and Healthcare sectors showed the highest degree of confidence. Healthcare also showed the lowest level of concern of all industries, indicating an optimistic attitude no doubt influenced by the pandemic. Only two industries - Media & Entertainment and Financial Services, both close to the center of the Digital Vortex, were more concerned than confident.

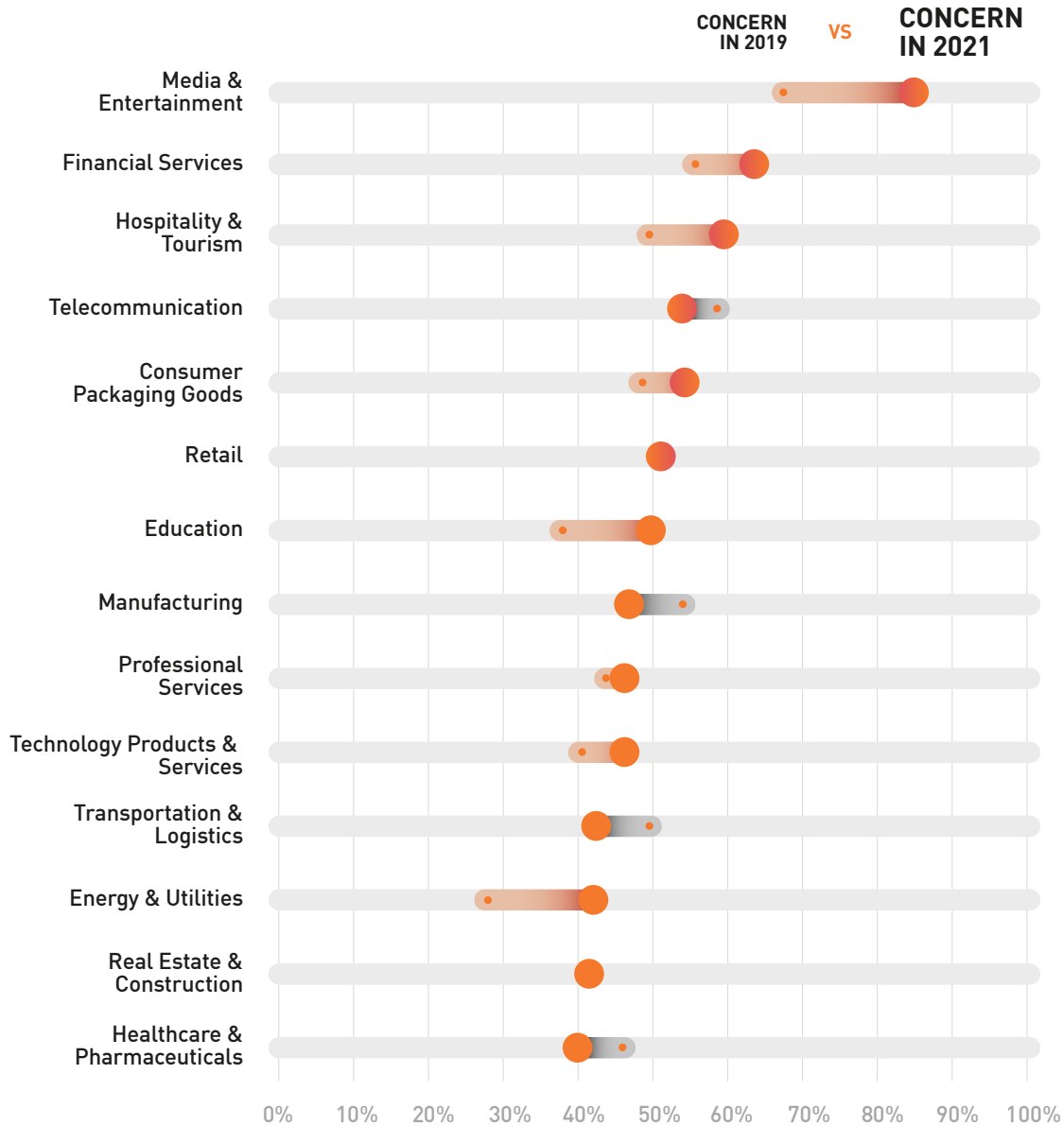


* Percent of executives say that their organizations can leverage at least some positive effects of digital disruption

** Percent of executives that say their organizations would experience at least some negative effect of digital disruption

What Me, Worry?

When we compared levels of concern between 2019 and 2021, we observed that they rose slightly on average across industries. Respondents in Media, Hospitality, Education and Energy became noticeably more concerned in 2021, likely due to the impact of the pandemic on these sectors.



The IDC research group forecasts that spending on digital transformation, as it relates to core infrastructure investment and innovation, is projected to accelerate from 2021 onwards^{xi}. Provided that organizations can successfully address the knowing-doing gap and the fragmentation issues revealed in this report, the combination of projected increased digital spending with an optimistic outlook bodes well for a post-COVID business world.

ABOUT THE RESEARCH

Digital Vortex Methodology

The Digital Vortex ranking is based on a composite of multiple measures assessing the qualitative and quantitative impacts of digital disruption on each sector. The quantitative measures are drawn from industry sources across the globe. The qualitative measures are taken from surveys of executives conducted by IMD's Global Center for Digital Business Transformation. These survey responses were collected at multiple time points, sectors, and geographies.

The measures contributing to the index include:

1. INVESTMENT – Where venture capitalists and others are putting their money
2. TIMING – When, and at what rate, digital disruption is likely to occur
3. MEANS – The strength of barriers to entry for digital disruptors
4. IMPACT – The potential magnitude of disruption

COVID-19 Impact on Digital Transformation Methodology

We collected additional data to specifically examine the impact of COVID-19 on digital transformation. 825 executives were surveyed at different time periods from April 2020 to January 2021 to document the challenges brought on by the pandemic and determine how varying levels of digital maturity impacted organizational responses and results.

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ABOUT IMD

IMD is an independent business school with Swiss roots and global reach. Focused on developing leaders and transforming organizations, IMD designs and delivers interventions that challenge what is and inspire what could be. For the last 9 consecutive years, IMD has been ranked #1 in the world for Open Executive Programs and in the top three overall for Executive Education (Financial Times 2012-2020).

IMD is based in Lausanne, Switzerland and Singapore.

- www.imd.org
- [@IMD_Bschool](https://twitter.com/IMD_Bschool)

ABOUT THE DBT CENTER

The Global Center for Digital Business Transformation (DBT Center) brings together innovation and learning for the digital era. The DBT Center is a global research hub at the forefront of digital business transformation, where executives engage to solve the challenges created by massive market transitions. The DBT Center seeks out diverse viewpoints from a wide range of organizations – startups and incumbents – to bring forward new ideas, best practices, and disruptive thinking. The DBT Center is located on IMD's campus in Lausanne, Switzerland.

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1ST

**WORLDWIDE
OPEN PROGRAMS
9 YEARS IN A ROW**

2012–2020

Financial Times

Real Learning Real Impact

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