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Digital transformation maturity of financial institutions operating in Québec

Digital is everywhere

Today, technology is so ubiquitous and affordable that each of us can learn to use it in a very short period of time. This reality makes it possible to create new business models and opportunities in personal life, society, and the labour market.

All industries are affected, including the financial sector, and digital transformations affect organizations as a whole, from customer experience to the business model to workforce management.

Following the example of several regulators around the world that have conducted similar exercises, and based on its strategic priorities, the Autorité des marchés financiers (the AMF) wanted to be proactive with respect to new technologies and industry transformation.

It has therefore enlisted the services of Deloitte, experts in the field, to better understand the digital transformation maturity of the financial services institutions it oversees based on a digital self-assessment.

To this end, the AMF and Deloitte have:

- Built a digital maturity assessment model specific to the Québec market;
- Gathered the perceptions of more than 200 financial institutions operating in Québec;
- Analyzed the results of the institutions' selfassessment;
- Produced this compilation, which presents the main findings, detailed results, and a few suggestions as a guide to help institutions become more digital.

The data aggregated in this report was collected by the AMF, anonymized and shared with Deloitte for analysis. The data was collected in January and February 2020 via a self-assessment tool distributed to all financial institutions operating in Québec.

It should be noted that the data collected represents the perceptions of the respondents. Moreover, the data was collected before the COVID-19 pandemic. Thus, some responses, such as those related to teleworking, may now obtain different results.

About the Autorité des marchés financiers

The AMF's mission is to oversee Québec's financial markets and provide assistance to financial product and service consumers. This supervision of financial institutions includes among others financial services cooperatives, insurers, and trust and savings companies.

About Deloitte

Deloitte is the brand under which tens of thousands of professionals from independent firms around the world collaborate to provide audit, consulting, financial advisory, risk management, and tax services to individual clients.



Self-assessment approach

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A model in five digital perspectives

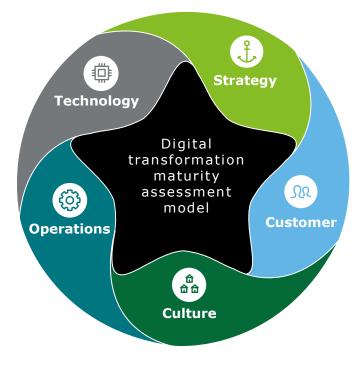
Digital is a set of systems, devices, and processes used to facilitate the execution of institutional activities. The phenomenon of organizational change related to the growth of digital and the Internet is called **digital transformation**. This concept aims to conceptualize the influence of this transformation on institutions.

To determine the digital transformation maturity of financial institutions operating in Québec, the AMF and Deloitte have jointly built an assessment model covering five perspectives related to the use of digital technology:

- **1. Strategy.** Measure of the extent to which the institution aligns its strategy to increase its competitive advantage.
- **2. Customer.** Measure of the experience delivered to individuals or entities receiving services or products.
- **3. Culture.** Measure of an institution's ability to create an environment where all employees contribute to the digital transformation.
- **4. Operations.** Measure of an institution's performance in the day-to-day activities that support the lifecycle of the workflows that underpin the execution of the strategy.
- **5. Technology.** *Measure of an institution's ability to establish, maintain and continuously transform a technological, secure environment.*

The perspectives were used throughout the work and also serve as a structure for the presentation of key findings and detailed results.

Figure 1 - Digital transformation maturity assessment model



An approach by dimension and level of maturity

Each perspective of the model is composed of dimensions – for a total of 39 dimensions – and is measured on a six-level scale representing **respondents' perception** of the institution represented:

- **0. Missing.** At this level, the institution does not take advantage of digital technologies in its organization.
- **1. Initiating.** At this level, the institution leverages traditional technologies to automate existing capabilities. It touches digital without making any changes to its organization.
- **2. Emerging.** At this level, the institution takes advantage of digital technologies to increase its capabilities, but remains largely focused on the same business, operational, and customer models.
- **3. Performing.** At this level, the institution takes advantage of digital technologies to increase its existing capabilities with some improvements to business, operational, and customer models.
- **4. Enhancing.** At this level, the institution leverages digital technologies more synchronized and less siloed with more advanced changes to existing business, operational, and customer models.
- **5. Anticipating.** At this level, the institution evolves its business, operational, and customer models and optimizes them for digital opportunities. These models are profoundly different from previous models.

Figure 2 – Dimensions of the digital transformation maturity assessment model





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Digital transformation among institutions: several opportunities to seize

According to the answers provided by the institutions, the average maturity of the digital transformation is 43%, which is 6% lower than the result of the international financial sector and 10% lower than the result of all sectors combined.

This result represents the first quartile of the *performing* level of the analysis model used, on a scale of six levels: *missing*, *initiating*, *emerging*, *performing*, *improving* and *anticipating*.

At this level, institutions do not radically change their business model, operations or customer experience in relation to digital. They consider and integrate, without disruption, the technological possibilities offered by digital to their existing capabilities.

More than 80% of institutions rated themselves as between the *emerging* and *performing* levels, with very few institutions at the *initiating* and *improving* levels, and none at the *anticipating* level. In other words, no institution is positioning itself as a leader in digital transformation, either

in its own field or in the entire Quebec financial sector. According to the answers provided, two factors are correlated: size and sector of activity.

In fact, single institutions or those that are members of financial groups with more than 1,000 employees obtain an average score of 55%, those with between 250 and 100 employees obtain 45% and those with less than 250 employees obtain 39%. As for the activity sector, life and health insurers and reinsurers obtain an average result of 46%, followed by deposit institutions with 44% and property and casualty insurers and reinsurers with 42%.

Finally, the answers provided present varied results according to the perspective analyzed. In descending order, culture obtained the highest result (58%), followed by strategy (50%), operations (46%), technology (36%) and customer experience (28%). These results show that there is room for improvement, including the adoption of new digital technologies and the development of a customer relationship that better meets customer expectations.

What can institutions do?

- Analyze the effectiveness of the channels used as well as the needs and expectations of their target customers to strengthen the personalization they offer to their customers.
- Challenge their systems and capabilities related to cybersecurity and analyze the possibilities of automating certain processes or innovating in relation to an emerging technology.
- Deploy collaboration and productivity tools by rethinking the workplace for a gradual "post-COVID-19" return.
- Ensure that digital transformation is seen as a strategic issue and not just a technological issue, by structuring and measuring their approaches.
- Facilitate innovation by multiplying opportunities for team collaboration and individual professional development.



Key findings of the self-assessments

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An average maturity that leaves room for opportunities

According to the responses provided, the average score for the industry studied was 43% (2.15 out of 5), the first quartile of the "Performing" level. Compared to the world average*, this level is 6% lower than the result of the international financial industry and 10% lower than the result of all international industries combined. [MITSloan,2018].

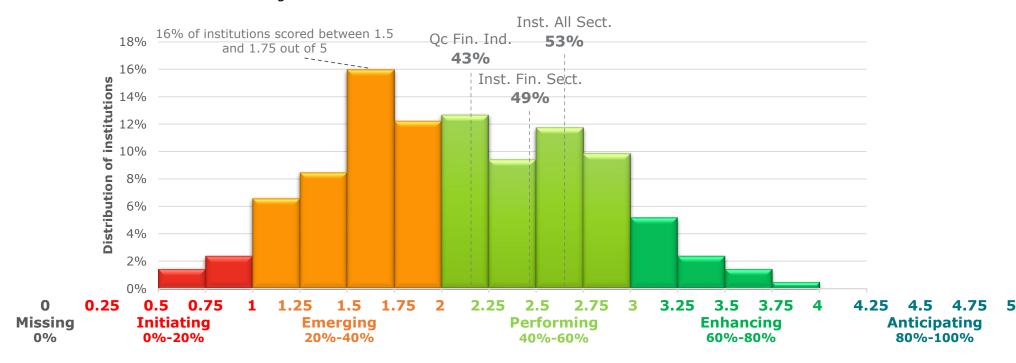
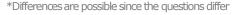


Figure 3 - Results and distribution of the self-assessments

Numerical maturity scale divided into levels

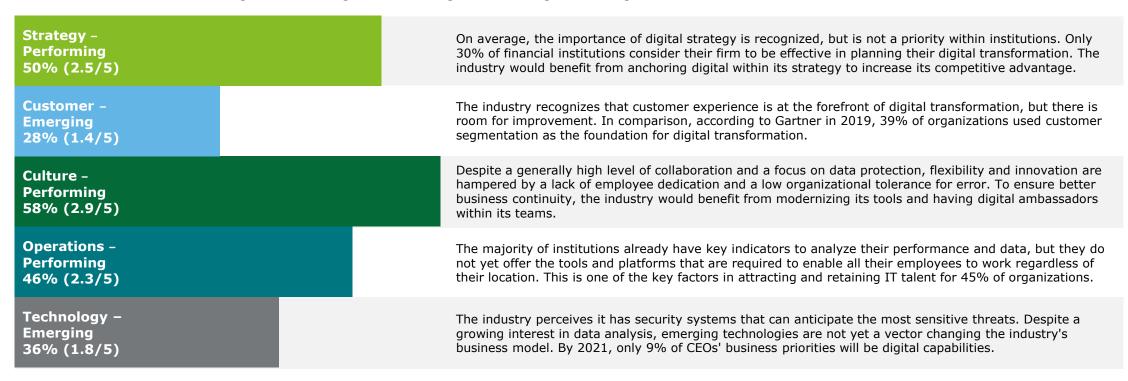




Greater results from inwards perspectives

Generally speaking, the "inwards" perspectives (i.e. culture, strategy, and operations) are perceived as being the most favorable for enabling institutions' digital transformation. Based on the results of the self-assessments, the technology and customer perspectives appear to be less favorable.

Figure 4 - Average results and general findings according to the self-assessments





Correlated maturity with size and sector

The institution's size is strongly correlated to its level of digital maturity, invariably from the activity sector of the industry. These results are also observed in digital maturity studies conducted by the MIT and Deloitte. [MITSloan,2019].

Figure 5 – Maturity by perspective and institution size

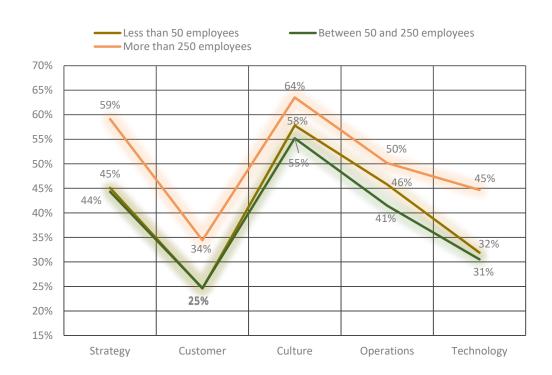
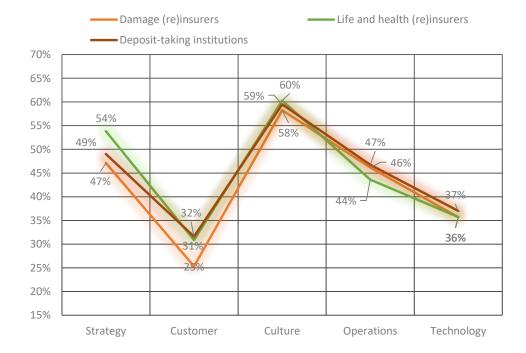


Figure 6 – Maturity by perspective and activity sector





Key findings of the self-assessments Key findings by perspective: strategy, customer, culture, operations, technology

Performing - 50%

Strategy perspective



Self-assessment results

General finding: On average, the importance of digital strategy is recognized, but is not a priority within institutions. Only 30% of financial institutions consider their firm to be effective in planning their digital transformation. The industry would benefit from anchoring digital within its strategy to increase its competitive advantage.

Nearly one third of the industry has yet to develop a digital strategy.

The self-assessment reveals that 28% of institutions still don't have a digital strategy and that two thirds of institutions are aware that their digital strategy can be improved without making it a priority.

Nearly three quarters of the industry does not plan, in the short term, to diversify their product and service lines or invest in their digital branding strategy.

- Institutions would benefit from thinking about the opportunities available to them to expand their digital service offering and potentially rethink some components of their business model by, for example, finding a way to digitize at least one new product or service.
- Although two thirds of the industry analyzes their competition's digital capabilities on an ad hoc basis, without any analytical tools, only 1 out of 7 institutions admit to having a weakness in their digital marketing planning and 1 out of 5 plan to put efforts into improving their digital branding strategy.



External data

- One of the competitive advantages of institutions lies in the alignment of their strategy and the needs of their customers. For example, 48% of BBVA's customers use their phones for all their interactions and 58% of BBVA's sales are digital. Enabling its customers to have a completely digital experience gives it a significant competitive advantage. [MITSloan,2019]
- Only **15% of organizations** have created a Chief Digital Officer role to drive the profound changes in their digital transformation. [Gartner,2018]
- **12% of projects** are concerned by digital transformation [Gartner,2020]
- Only **2 out of 10 companies** are scaling up their digital initiatives [Gartner,2018]

Legend:

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Performing - 50%

Strategy perspective (cont'd)



Self-assessment results

Less than half of the institutions have adjusted their business models to digital. This can be explained by the still low proportion of IT initiatives on digital transformation.

- It is recommended that insurance companies enhance their innovation projects through collaboration between business lines and IT, and partner with their rich ecosystem of fintechs to innovate and respond more quickly to market needs.
- The self-assessment indicates that only **45% of institutions** have adjusted their business models according to digital.



External data



The share of digital transformation initiatives within IT projects is still low, which doesn't contribute to the transition towards being more digital:



Only 26% of CIOs have implemented an end-to-end process to demonstrate the impact of innovation through experimentation. [Deloitte, 2018]



Support functions also have difficulty integrating these types of projects: 9 out of 10 organizations still operate under an annual investment process for agile projects. [Gartner,2020]

Legend:

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Emerging – 28%

Customer perspective



Self-assessment results

General finding: The industry recognizes that the customer experience is at the forefront of digital transformation, but there is room for improvement. In comparison, according to Gartner in 2019, 39% of organizations used customer segmentation as the foundation for digital transformation. [Gartner,2019]

- The industry should equip itself to improve customer loyalty. Institutions would benefit from developing formal key indicators to measure customer's loyalty level and thus influence strategic decisions.
 - 4 out of 5 institutions are under the impression that they have good customer loyalty, but only 2 out of 5 specify that they are well equipped to measure customer loyalty.
- Only half of the industry personalizes its customers' digital experience. Institutions that do not personalize their customers' experience risk losing significant market share.
 - 1 in 5 institutions plan to improve the personalization of their customers' experience in the short term, while 1 in 4 already offer their customers some personalization options.



External data

The use of **loyalty and reward** systems plays a key role in retaining and attracting new customers; it is also a factor in improving the **customer experience** in the insurance industry.



Insurance companies have accelerated the adoption of loyalty platforms from **5% to 20%** in one year. [Gartner,2019]

The figures for this acceleration can be explained by the reluctance of customers to use their data:



By 2023, it is estimated that **only 30% of insurance customers** will have enough confidence in their insurers to use their data to customize products and services. [Gartner,2020]

Personalization of the respondents' digital experience is very low compared to the rest of the industries :



62% of organizations have defined their digital customer journey, content personalization rules and test points on all their digital touch points. [Altimeter,2019]

Legend:

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Emerging – 28%

Customer perspective (cont'd)



Self-assessment results

- The industry could enable its customers to access more of their personal information digitally. Digital and secure access is becoming a requirement in the industry. Refusing to adapt to this reality will impact the level of attractiveness of the institution and thus directly impact its sales and results.
 - 1 institution out of 2 prioritizes the improvement of its digital interfaces and 1 institution out of 2 states that it better interacts with its customers using digital channels than using traditional channels.
 - 1 institution out of 4 doesn't yet offer its customers the possibility to digitally access at least some of their personal information. Only a few institutions allow their customers to access all their information in real time on all digital channels.



External data

Although one third of U.S. retail bank customers are going fully digital, they are, of all customer segments surveyed, the least satisfied. [JDPower,2018]

In addition, many consumers are now open to banking and insurance alternatives offered via web giants such as Amazon, Google and Uber as the digital offerings of traditional financial institutions lack digital maturity. [JDPower,2019]

Consumers are sensitive to a company's transparency regarding collected data:

- Half of European consumers attach great importance to the use of their personal data collected by a company. [Pega,2019]
- Just under **9 out of 10 customers** choose to change service providers when they lose confidence in the company's ability to manage and secure their data. [Gartner,2018]

Legend:

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Performing - 58%

Culture perspective



Self-assessment results

General finding: Despite a generally high level of collaboration and a focus on data protection, flexibility and innovation are hampered by a lack of employee dedication and a low organizational tolerance for error. To ensure better business continuity, the industry would benefit from modernizing its tools and having digital ambassadors within its teams.

- For most institutions, customers' personal data is secured in a centralized location and formal access processes are established. Nevertheless, institutions would benefit from setting up a crisis unit and formal processes for controlling access to customer personal data.
 - Institutions feel that their customers' personal data is sufficiently secure, and nearly half of the institutions have even set up a crisis unit and formal, rigorous processes that allow them to act proactively in the face of threats and control access to data.
- To foster innovation, tolerance towards error must be allowed. Any institution wishing
 to position itself as innovative would benefit from putting in place measures and
 processes that specifically contribute to this objective.
 - Nearly 9 out of 10 institutions feel innovation is being valued in the management's discourse. More than half of them would like to better recognize the contribution of their employees, but have difficulty putting this into practice.



External data

Creating an environment where everyone can contribute to the digital transformation is critical. It is not only a matter of defining a desired new culture, but also of developing the right behaviours to bring about change. [MITSloan, 2019]

- **46% of CIOs** mention that the culture of their company is an obstacle to change. [Deloitte-IIF,2020]
- Companies with a higher percentage of digitized processes get higher revenues, but **75% of them** are hampered by **cultural and organizational issues** that inhibit change and innovation. [Gartner,2018]

Legend:

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Performing - 58%

Culture perspective (cont'd)



Self-assessment results

- Collaboration is important, but we must also continue to develop employees' digital knowledge and skills. Institutions would benefit from building a plan to update digital knowledge and skills and a plan to attract, retain, and guide their staff.
 - The industry's strong capacity to collaborate (self-assessed at 60%) is still a priority, to the detriment of digital knowledge and skills development, considered low by the majority of the industry.



External data

- The impact of a company's digital transformation on its employees is key. Mature organizations excel **5 times more** than immature institutions in **developing the digital skills** of their employees. [Deloitte,2019]
- In comparison, **only 27% of employees are satisfied** with their employer's investment and compensation in the development of their skills and performance. [MITSloan,2020]
- Financial institutions would benefit from developing a training strategy on new technologies. **Approximately 60%** of companies have trained their employees within one year.

 [MITSloan, 2020]

Legend:

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Performing - 46%

Operations perspective



Self-assessment results

General finding: The majority of institutions already have key indicators to analyze their performance and data, but they do not yet offer the tools and platforms that are required to enable all their employees to work regardless of their location. This is one of the key factors in attracting and retaining IT talent for 45% of organizations. [Deloitte,2018].

- To improve the performance of their daily activities, institutions would benefit from being properly equipped by comparing themselves to the industry as a whole to improve the analysis of all the data they collect.
 - According to the self-assessment, more than three quarters of the industry identified improving their ability to analyze transactional and behavioral data as a priority. Only 11% of institutions are able to compare their data with the industry's.
- Process management is immature for the industry as a whole. Institutions would benefit from identifying and mapping all of their key business processes.
 - Only 1 out of 5 institutions evaluate the lifecycle of all their processes. No institution has
 yet fully automated and optimized the lifecycle of all its processes in an iterative and
 real-time manner.

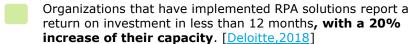


External data



The likelihood of **exceeding business objectives was twice** as high for organizations with a strong data-driven culture and whose decisions are based on data in the last 12 months. [Deloitte,2019]

For example, **robotic process automation** (RPA) has a strong impact on business performance, in terms of **productivity and compliance:**





One of the challenges is to streamline and optimize many various analysis tools:

Only 33% use a single data access and analysis system.

7 out of 10 employees feel uncomfortable accessing and using data through the tools and resources available. [Deloitte,2019]

Legend:

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Performing - 46%

Operations perspective (cont'd)



Self-assessment results

- Collaboration is part of the culture of the industry, but to ensure business continuity, using cloud computing to enable teleworking must be considered to allow employees to collaborate remotely and to be able to carry out all of their activities. Work flexibility becomes an imperative for an institution wishing to become more digitally mature.
 - Although 91% say they collaborate regularly within their institution, a third of the industry has not yet begun its transition to cloud computing.
 - Effective remote collaboration requires the ability to digitally perform all activities related to legal and regulatory requirements, equip and enable employees to work regardless of location.



External data

The value creation depends on the development of operational capacities. Investing in the development of a work environment (physical and virtual) that encourages (or forces) people to collaborate and reduces organizational silos is increasingly a success factor for digital organizations. [MITSloan,2019]



In the COVID-19 situation, this transition to cloud computing has accelerated. **Investments in cloud computing** are expected **to double** in the next 3 years. [Deloitte,2020]

Legend:

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Emerging - 36%

Technology perspective



Self-assessment results

General finding: The industry perceives that it has security systems that can anticipate the most sensitive threats. Despite a growing interest in data analysis, emerging technologies are not yet a vector changing the industry's business model. By 2021, only 9% of CEOs' business priorities will be digital capabilities.

- The majority of the industry has a security infrastructure that anticipates the most sensitive threats and implements limited real-time monitoring and response measures.
 - More than 4 out of 5 institutions already believe that they have a sufficient security infrastructure and that they manage their customers' authentication and identification well.
 - 14% of the industry even consider their security systems to be exemplary, constantly evaluated and upgraded. They anticipate and address all potential threats.
- Big data and Artificial Intelligence (AI) are of concern to the industry while connected objects, RPA and biometrics are still to be explored.
 - Half of the industry is already using Big data and analytics applications and one third is
 using artificial intelligence applications. However, very few institutions have adapted
 their business model to emerging technologies.
 - Nearly a quarter of the institutions are using or have conducted a pilot with these technologies, but a very small percentage of the industry will prioritize the exploration of these emerging technologies. Insurers are currently exploiting the use of connected objects.



External data

In cybersecurity, there are two types of companies: those that have been attacked and those that do not know they have been attacked. [MITSloan,2018] The future lies in the hiring of "ethical hackers" and systemic security programs.

- Only 20% of organizations are ready to adopt new and risky technologies. [Gartner, 2018]
- Generally speaking, **AI and Big data** are considered key technologies for 46% and 30% of insurance company CIOs, respectively. [Gartner,2020]
- The low adoption of the **Internet of Things** technologies is also identified in other industries: **only 12% of companies** have invested in this technology and 24% are currently experimenting with it. [Gartner,2018]

Legend:

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Emerging - 36%

Technology perspective (cont'd)



Self-assessment results

- The Blockchain potential is probably underestimated.
 - Only 3% of the industry currently uses the Blockchain, mainly deposit-taking
 institutions. Representing the lowest self-assessment score of the self-assessment, the
 potential of this emerging technology is probably still underestimated. Only 10% of
 institutions are currently conducting a pilot with technologies related to Blockchain or
 cryptocurrency.
 - Institutions should consider creating partnerships or consortia with their ecosystem to identify practical cases and conduct experiments at lower cost, with rapid learning.



External data

Although Blockchain adoption remains low, financial institutions worldwide are ahead of the self-assessment respondents:



In this industry (Blockchain), the two major case studies are data validation and digital payment. [Deloitte,2019]

Legend:

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Conclusion

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Many opportunities for institutions

Generally speaking, on the basis of the answers provided, participating institutions have several possible perspectives for improvement leveraging digital technologies.

In fact, more than 80% of the institutions evaluated themselves as being between the emerging and performing maturity levels, with an average score of 43%.

This result could indicate a lack of interest in innovation and in the development of new digital capabilities. It also shows a backlog that could prove increasingly difficult to catch up for those institutions whose results are among the lowest.

This was the case for many companies like *Kodak* or *BlockBuster*, whose business models and operations were disrupted by digital technology, and which did not have the right answers in time, leading them to their loss.

Deloitte studies show that the will, leadership, and appropriate investments are the ingredients to increase the potential to be among the digital leaders in the financial sector.

The **customer experience** perspective (with an average score of 28%) is one of the most worryingly lagging results, despite the fact that institutions recognize that it is an essential component of their business success. To accelerate the catch-up on this perspective, Deloitte suggests that institutions explore the following avenues:

- · Analyze the needs and expectations of their target customers;
- Analyze the efficiency of the channels they use and experiment new, digital channels;
- Reinforce the personalization they offer to their customers.

If they fail to provide an enhanced customer experience, many institutions could see their business activities disrupted, particularly with the emergence of financial applications and services offering a digital experience better adapted to the needs and expectations of their customers, as well as with increased competition for financial services from major technology firms such as *Google*, *Square*, *Facebook* and *Amazon*.

The **technology** perspective (with an average score of 36%) shows institutions achieve mixed results. On the one hand, they perceive that they have the necessary IT security systems to anticipate and counter cyber threats, and on the other hand, they indicate a low interest in emerging technologies.

These self-assessments highlight areas for vigilance. The perception that financial institutions are well equipped to deal with the threat could reinforce a false sense of security. In addition, the lack of interest, adoption, and integration of emerging technologies such as Blockchain, biometrics, the Internet of Things, robotics and artificial intelligence could slow the digital transformation of many institutions to the detriment of their competitors. To improve results in this perspective, Deloitte suggests that institutions explore the following avenues:

- · Challenge their systems and capabilities related to cybersecurity;
- Analyze the possibilities of automating certain repetitive or low value-added processes;
- Launch and manage projects related to at least one emerging technology, either in support of an existing process or product, or with a perspective of innovation.

Since the lowest scores are related to Blockchain and biometrics, an institution wishing to differentiate itself from its competitors could take advantage of the situation and invest in the development of capabilities related to these emerging technologies.



Many opportunities for institutions (cont'd)

The **operations** perspective (with an average result of 46%) shows institutions achieve fairly similar results among themselves. In the context of the current pandemic, the most important opportunities are those that support remote and hybrid work, either through collaboration tools or adapted workspaces. To improve the results of this perspective, Deloitte suggests that institutions explore the following avenues:

- · Deploy collaboration and productivity tools to support virtual and hybrid work;
- Rethink the workplace for a "return to the offices" transition and for the "post-COVID-19" period;
- · Rethink the nature of work and job composition to optimize or automate some non-value added tasks.

The **strategy** perspective (with an average result of 50%) shows institutions obtained a result similar to the operations perspective, but with a much more marked distribution of responses. The common denominator is the lack of prioritization given to digital transformation. To improve the results of this perspective, Deloitte suggests that institutions explore the following avenues:

- Ensure that digital transformation is seen as a strategic issue and not just a technological issue;
- · Align digital transformation with the institution's overall strategy;
- Structure the digital transformation approach and monitor its progress.

Finally, **culture** (with an average result of 58%) is the perspective with the highest result. This result is encouraging, since human factors, such as the ability to experience change or adopt new behaviours, are prerequisites for any large-scale transformation. To improve the result of this perspective, Deloitte suggests that institutions explore the following avenues:

- Encourage innovation and reduce behaviours or rules that limit it;
- · Provide more opportunities for collaboration between teams;
- Develop employees' digital skills and competencies.

Why invest now in digital transformation?

A recent Deloitte study found a positive correlation between digital maturity and financial performance. Indeed, the most digitally mature organizations are three times more likely to have higher revenue growth and profitability than their less mature peers [Deloitte,2020].

As the authors of this study point out, in uncertain times, digital transformation becomes not only important, but also contributes to developing the organizational resiliency needed to face the future.

In this period of pandemic and heightened uncertainties related to COVID-19, more than ever financial institutions need to accelerate their transformation and develop the digital capabilities required to respond to a new reality and growing customer expectations regarding digital.



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Luc contributes to the technology risk management framework for the financial industry. Luc has participated in the oversight and assessment of technology risk management among Québec deposit-taking institutions and insurers. He has also contributed to the production of the first guideline on technology risk management.

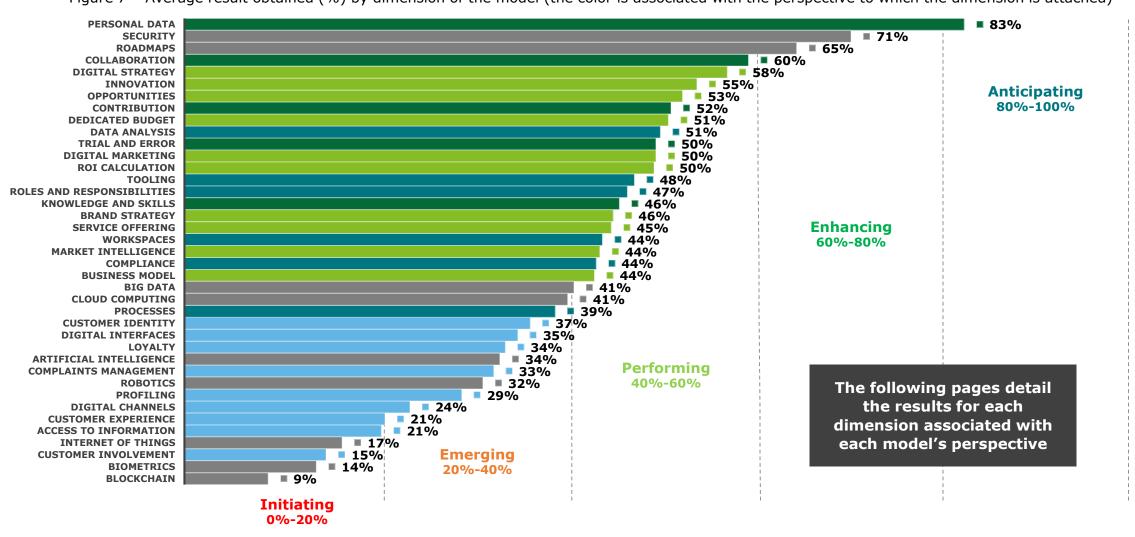


Appendix - Detailed self-assessment results

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Detail of the perceived maturity by model's dimensions

Figure 7 – Average result obtained (%) by dimension of the model (the color is associated with the perspective to which the dimension is attached)



Customer

Strategy

Culture

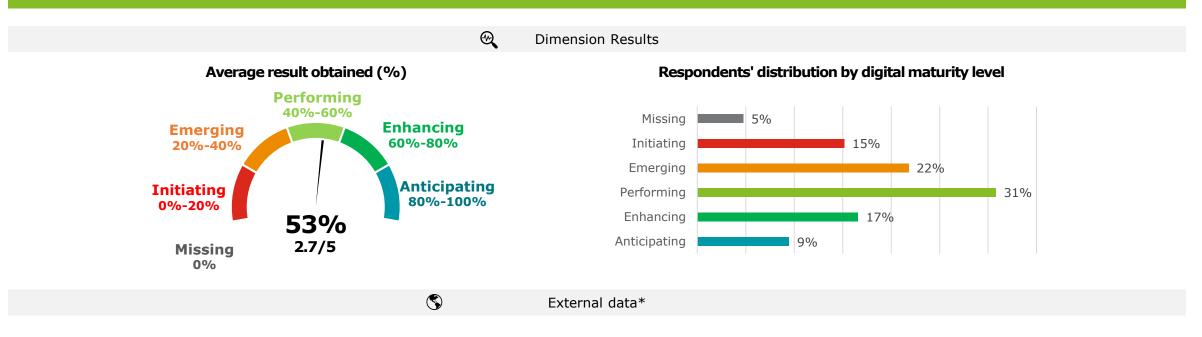
Operations Technology

Deloitte.

Detailed resultsStrategy perspective

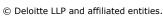
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The institution identifies and assesses its digital growth opportunities



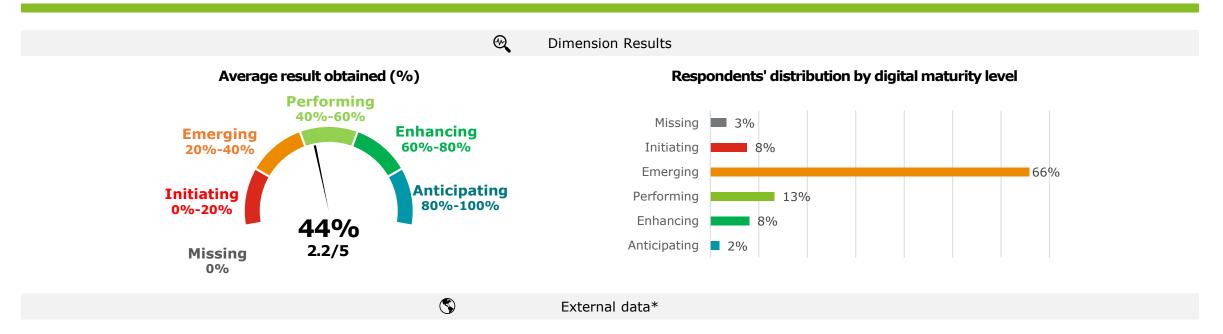
- *Insurtechs* respond more quickly to market opportunities, are more open to testing new technologies and are less risk averse when entering new markets and products. These attributes are more difficult to apply to traditional companies. 67% of technology leaders in the insurance sector love *insurtechs* and *fintechs* for their ability to innovate (n=46). [Gartner,2020]
- 30% of the CEOs' business priorities in 2021 will be technology. Among the subcategories related to technology, the 2 main ones are: **Digital Transformation/Growth** (26% in 2019; 22% in 2020) and Technology (18% in 2019).[Gartner,2020]
- Regarding e-commerce, most insurers are in the vision and initialization phases. Only 18% of the insurance companies' technology managers said that their company is really in a transformation phase. [Gartner,2018]

^{*} External data is intended to provide additional information related to the theme of the dimension under study.





The institution identifies and assesses the competition's digital capabilities



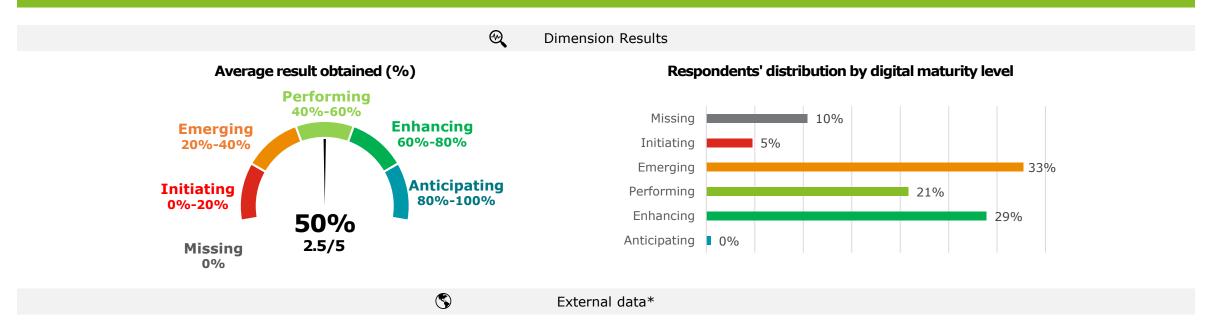
- 48% of reference organizations share in-house research on current technology trends and issues [Deloitte, 2018]

 $[\]ast$ External data is intended to provide additional information related to the theme of the dimension under study.



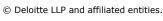


The institution plans its digital marketing activities



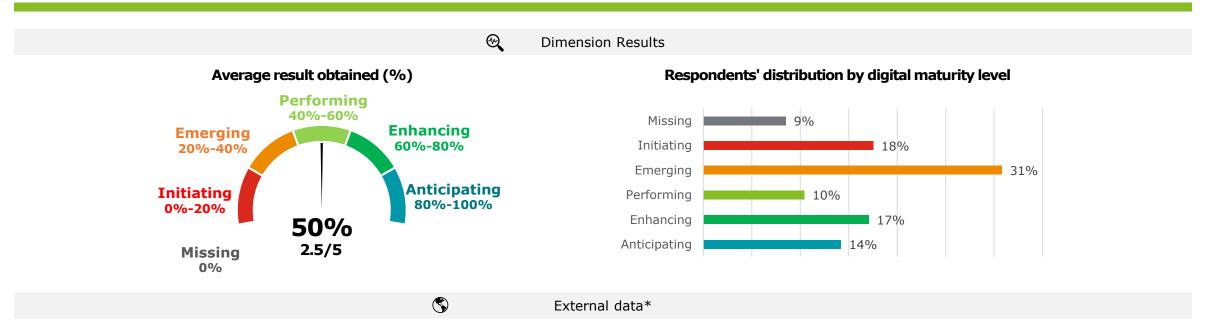
- 54% of digital marketers said their main challenge is scaling innovation across all parts of the business. [Altimeter,2019]
- At the same time, 47% of digital marketers said their main challenge is **to prove the business impact** of digital marketing. To do so, they have **five main indicators** used to measure the success of digital marketing: customer loyalty, direct revenue, brand awareness, leads generated/converted and customer acquisition. [Altimeter, 2019]

^{*} External data is intended to provide additional information related to the theme of the dimension under study.



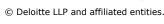


The institution considers the digital transformation's impact with a return on investment (ROI) calculation



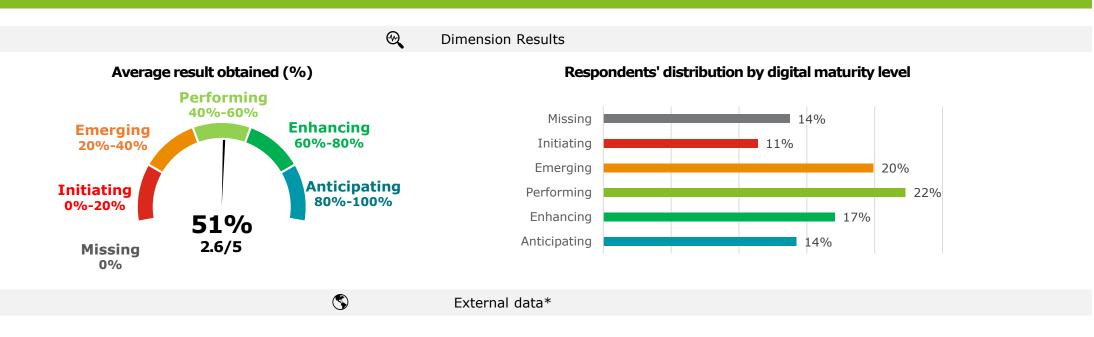
- In financial services, 21% of the IT budget is allocated to innovation projects and 27% to business transformation. [Deloitte, 2018]
- 67% of CTOs measure the impact of technology investments, but only 34% use a financial model. [Deloitte, 2018]
- According to the same study, only 20% of technology managers have access to specialized financial talent to justify investments to their managers. [Deloitte, 2018]
- In 35% of cases, the measurement of the technology return on investment is the responsibility of senior management or the President himself. [Deloitte, 2018]
- Finally, 14% of organizations say they do not measure the impact of technology investments. [Deloitte, 2018]

^{*} External data is intended to provide additional information related to the theme of the dimension under study.





The institution has a dedicated budget for its digital transformation



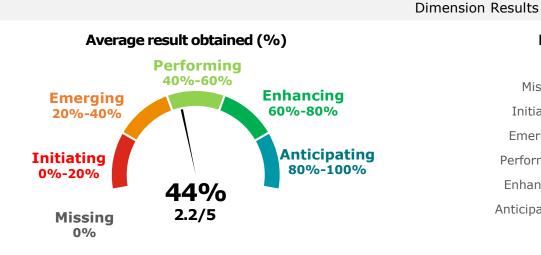
- In 2019, only 12% of IT spending was allocated to **business transformation** (22% for growth, 66% for operations). [Gartner, 2020]
- In 2020, 82% of organizations have increased their investment in digital capabilities. [Gartner, 2020]
- The budget allocation is variable:
 - 63% of organizations use a project-centric model
 - 38% use a product-centric model
- As for the financing of "agile" projects:
 - 89% use the **annual** budget process to finance their projects
 - 11% use a **flexible** budgeting process for agile projects [Gartner,2020]



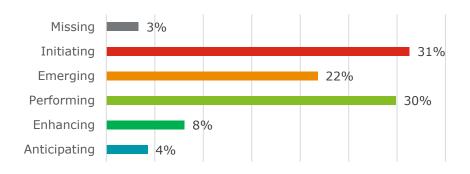
^{*} External data is intended to provide additional information related to the theme of the dimension under study.

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The institution is adjusting its business model to the digital reality



Respondents' distribution by digital maturity level



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External data*

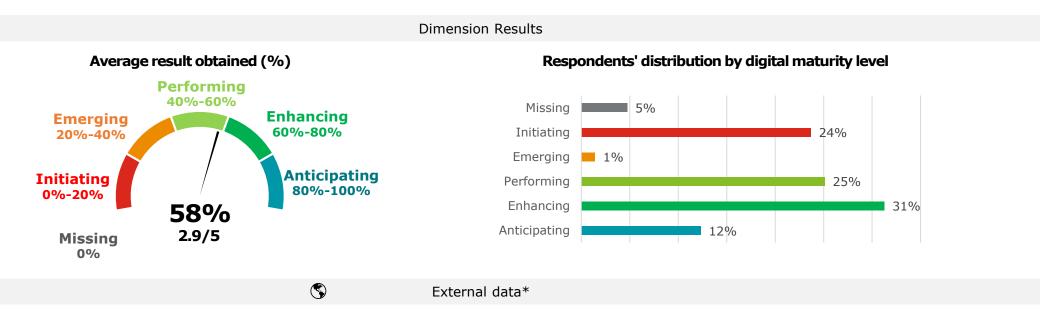
- Among the digital business strategies used in 2020:
 - 41% of companies have participated in a strategic digital partnership
 - 24% created a new digital business
 - 20% worked with an existing incubator
 - 18% acquired a technical/digital business entity
 - 18% took an interest in a technology company
 - 18% created a digital joint venture with another company
 - 16% have created a business incubator
 - 13% created a venture capital fund
 - 12% have joined a digital consortium [Gartner,2020]



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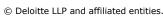
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The institution is developing its digital strategy



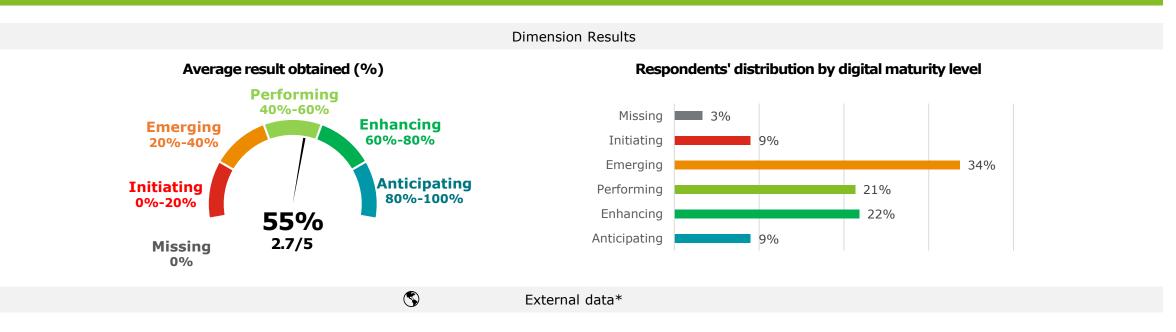
- 15% of large companies have a leading role in the digital field. The more advanced the company is in its digital transformation, the more likely the technology leader is to report directly to the CEO. [Gartner,2018]
- However, it is common for a CEO to raise digital as a strategic business priority, but to view the IT function as an "IT order taker." [Gartner,2020]
- Most CTOs in the insurance industry report having a formal seat on the board (76%), but would like more visibility and influence over corporate strategy and change management [Gartner, 2020]
- 61% of marketing managers report having a significant impact on the strategic decision-making process. However, this percentage drops significantly when it comes to being able to easily obtain peers' support (26%) or having a significant impact on **company management** (26%). [Deloitte,2020]
- Finally, only 20% of digital leaders say they are fully involved in defining the company's direction and objectives as executive decision makers. Most play a **limited role** in developing the company's overall business strategy. [Gartner,2020]

^{*} External data is intended to provide additional information related to the theme of the dimension under study.



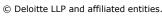


The institution plans and values innovation



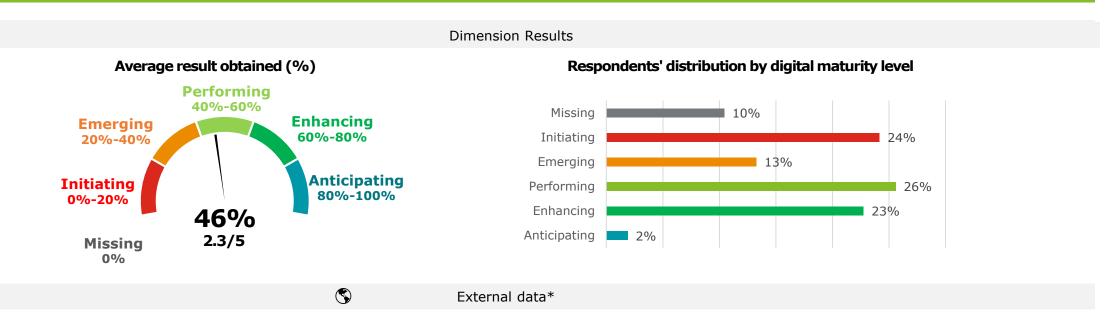
- Companies in the financial sector can accelerate the innovation agenda by appointing a **Chief Digital Officer (CDO) or its equivalent** 70% of companies that are well prepared for digital transformation have done so. [Deloitte,2020]
- Over the next three years, technology leaders plan to invest significantly in AI, IoT and RPA. [Deloitte, 2020]
- However, only 26% have implemented an end-to-end process to demonstrate the impact of technological innovation through experimentation and 50% are in the exploration phase. [Deloitte,2018]
- A lack of innovation around digital transformation can become problematic and often results in a fear of change or a perception of a low return on investment. [Gartner,2018]

^{*} External data is intended to provide additional information related to the theme of the dimension under study.



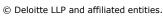


The institution develops and maintains a coherent digital brand strategy



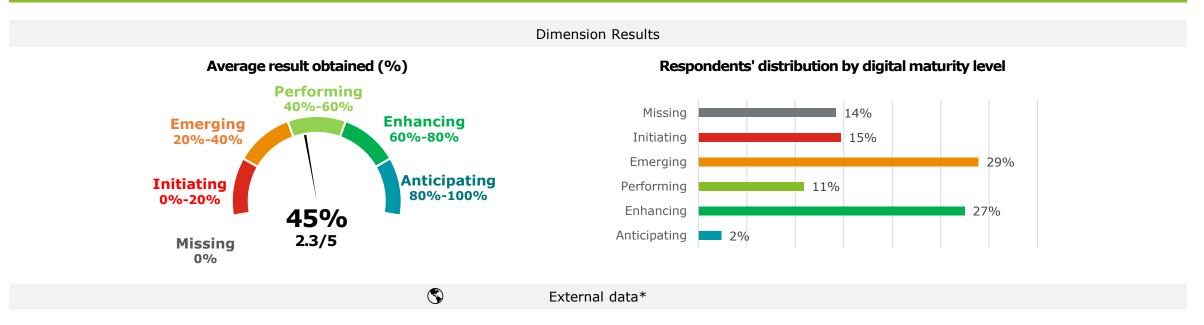
- In a brand strategy study, 37% of respondents stated that the main objective of their digital marketing strategy is to increase the brand's awareness and health. For 26%, it is to increase the number of new leads and for 20%, the focus is to offer a unified and high quality customer experience across all digital channels. [Altimeter, 2019]
- In addition to the challenge of measuring the impact of brand investments, the top three challenges in brand marketing, according to marketing executives, are managing a global brand, maintaining brand relevance, and creating a compelling brand vision. [Gartner,2019]

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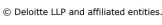


The institution manages its digital service offering



- Among the digital business strategies that CEOs used in 2020, 43% introduced various new digital products. This practice has been among the most used and successful options. [Gartner,2020]
- By 2022, 79% of the organization's work will be done using a product-centric model. The number that was projected for 2020 was 66%. 48% was achieved using a product-centric model in 2018. The first challenge of product-centered service delivery is that the funding model is project-based for 55% of respondents. [Gartner, 2018]

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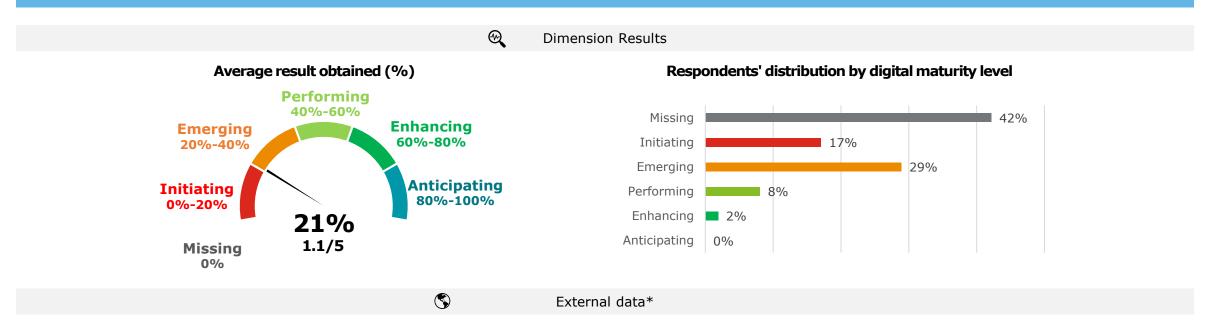




Detailed resultsCustomer perspective

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The institution personalizes the customer's experience



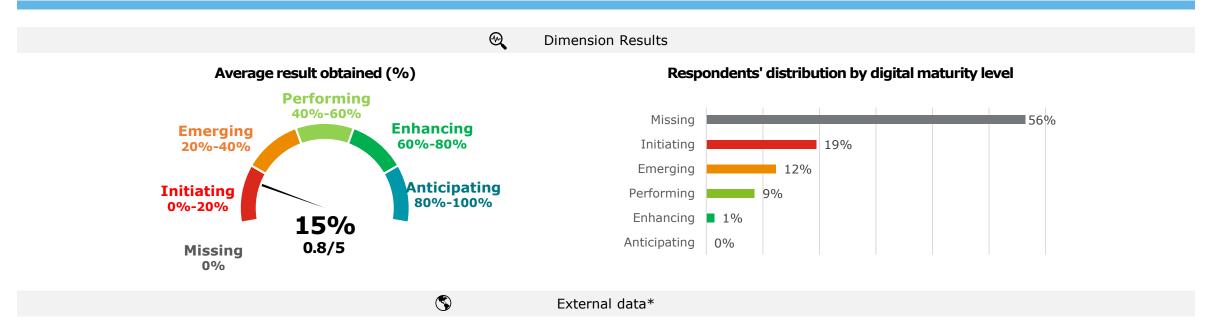
- The top five data sources used to deliver personalized content across digital marketing channels: Website analytics (72%), social media metrics (69%), CRM systems (58%), customer surveys (58%), call centre records (57%). [Altimeter,2019]
- Only 19% of technology departments in the insurance industry indicated that the focus was on the customer. [Gartner,2018]
- In 2018, respondents stated that customer analytics remains the top priority investment to improve the customer experience: 56% of respondents have already invested in this area and 50% plan to increase their investment. 39% of organizations saw customer segmentation as a top priority for customer analytics in 2018. By 2021, more than 40% of all data and analytics projects will focus on some aspect of the customer experience. [Gartner,2019]
- 62% of digital marketers reported that their company had tracked digital customer journey, content personalization rules, and test points across all digital touch points. 32% are in the process of building the digital customer journey and 5% plan to do so in the next 6 months. [Altimeter, 2019]



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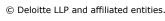
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The institution allows customers to personalize their own digital experience



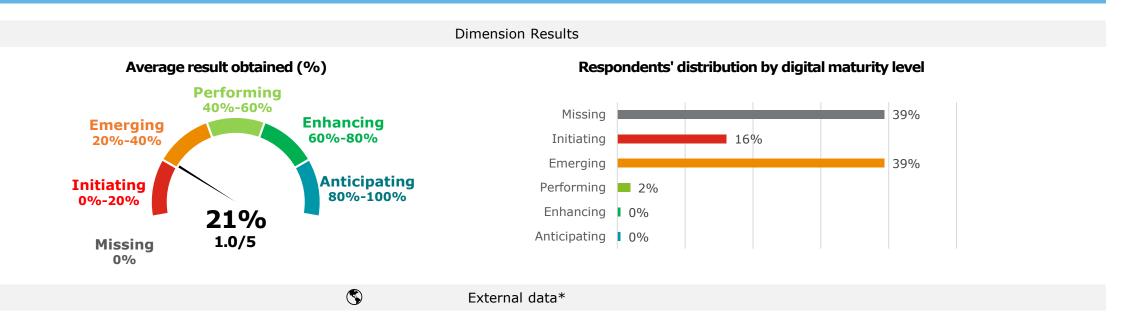
- By 2022, 50% of large organizations will have failed to unify engagement channels, resulting in the continuation of a disjointed, siloed customer experience that lacks context. More than half of major new business systems will incorporate continuous intelligence using real-time contextual data to improve decisions. [Gartner,2019]
- 62% have created a content personalization framework that is currently used across all digital channels. 31% have created this framework, which is only used on one or two channels. 26% of digital marketers in the banking and financial sector indicated that their main goal was to provide an exceptional customer experience. [Altimeter, 2019]
- Just over half (54%) of respondents using custom virtual assistant applications agree that they are willing to exchange personal data to improve service accuracy. As a result, 46% are neutral or do not wish to exchange personal data for service improvement purposes. [Gartner, 2018]

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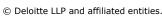


The institution allows its customers to access their personal information



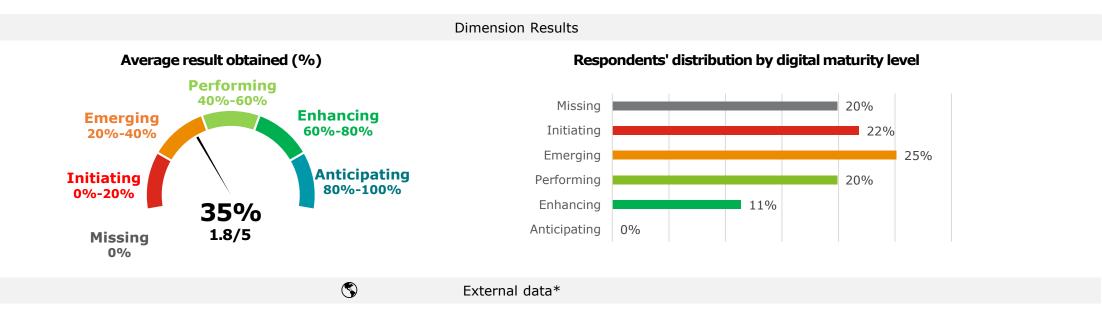
- By 2021, organizations that provide an enriched data catalog to data consumers will achieve three times the return on investment for their data and analytics. (Gartner, 2020)
- For the consumer, the following capacities are the most important: (47%) to be informed of the data held about them and (22%) to allow the deletion of personal data. [Pega,2019]

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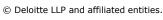


The institution updates and adapts its digital interfaces (ATM counter, Website, voice assistant, etc.)



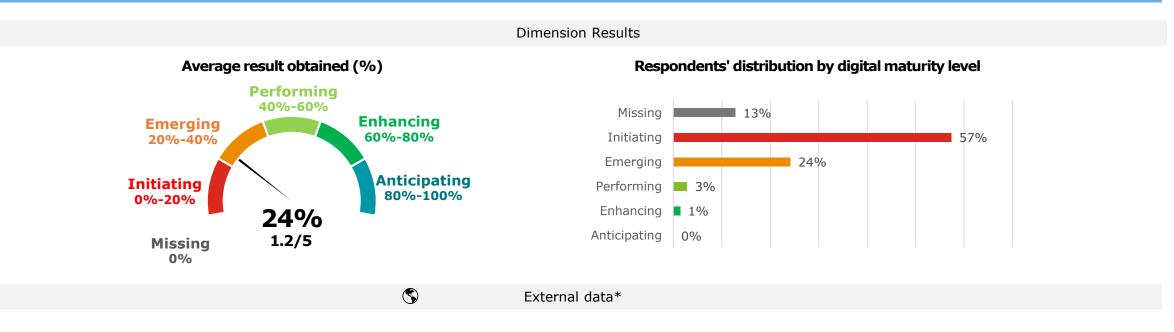
- Other studies and customer surveys indicate that insurers are increasingly focusing on the customer experience, deploying digital strategies and looking for ways to differentiate themselves. For example, these strategies often include the creation of customer-centric user interfaces. [Gartner, 2019]
- Behavioral Analysis: Engage in dialogue with marketing, digital teams, product managers, claims managers, and fraud managers to list the types of behaviours that are appropriate for managing customer intelligence based on a company's digital strategies. Evaluate CRM systems and customer databases to determine how to store behavioral data and how to make any new technical changes needed to support this vision. [Altimeter,2019]

 $[\]ast$ External data is intended to provide additional information related to the theme of the dimension under study.





The institution interacts with its customers on digital channels rather than on traditional channels



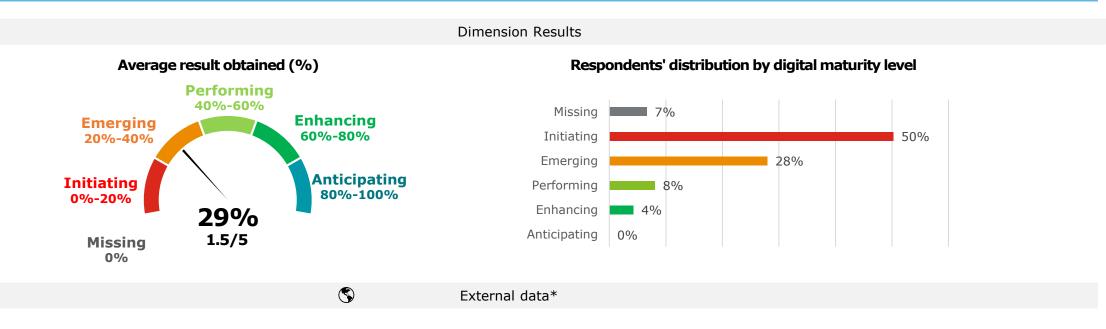
- Insurers will need to be more innovative in terms of channels to reach customers and new product offerings, as well as in terms of customer intelligence, including "Customer 360" (i.e. a single view of the customer) and customer analytics. [Gartner,2019]
- By 2021, at least one third of companies will have deployed a multi-experienced development platform (MXDP) to support the development of mobile, Web, conversation and augmented reality. 36% of participating organizations had already deployed a conversation platform or planned to do so within 12 months. [Gartner, 2019]
- By 2020, virtual agents will participate in the majority of business interactions between people and companies. The ability to offer consumers or their VPAs products tailored to specific personal specifications will increase to the point where traditional purchasing and thus conventional marketing will no longer be viable. [Gartner, 2018]
- 65% identified opportunities for testing and learning at multiple points along the digital customer journey. 29% have identified opportunities for testing and learning but are limited to one or two channels. [Altimeter, 2019]

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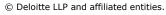


The institution collects customer data



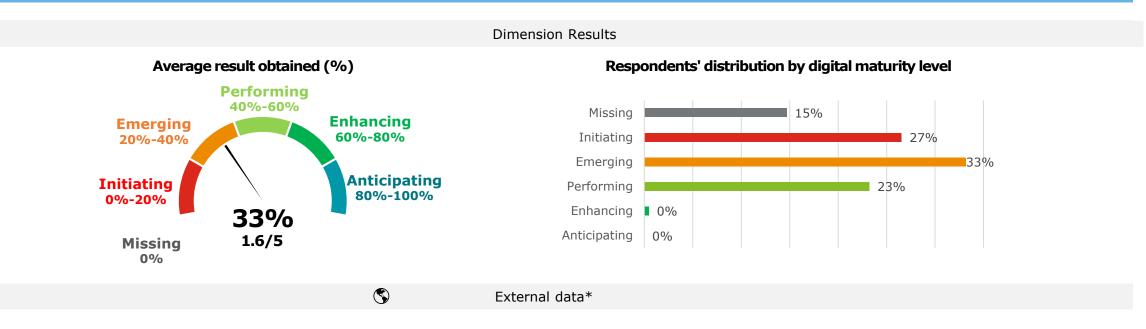
- 85% of companies have an aggregated view of their customer data across at least one channel, and 19% across all channels. [Gartner,2018]
- By 2022, more than 10% of customer engagement centre architectures will include real-time event broadcasting or streaming analytics. [Gartner,2019]

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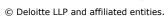
The institution handles its customer complaints



- The goal is to achieve higher levels of automation and capacity for increased claims volumes by deploying clustered claims management modules with comprehensive business process management capabilities. As the relationship between the insurer and insured evolves towards continuous interaction, insurance company technology departments will deploy advanced analytics to actively prevent and resolve claims. By 2023, one third of all property and casualty insurance claims will be handled by insurers without any human intervention.

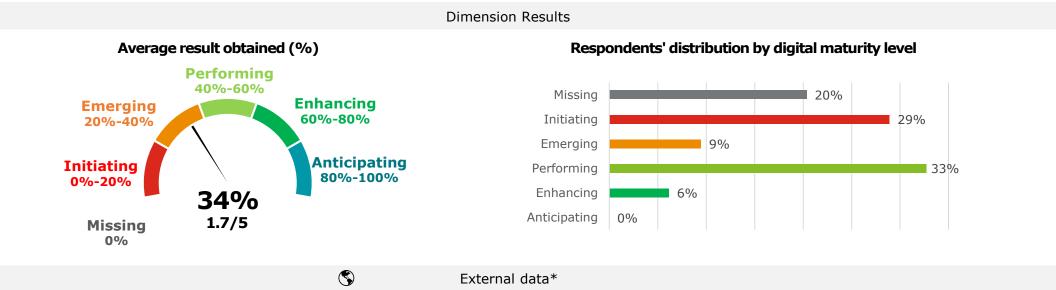
 [Gartner,2019]
- 74% of the surveyed insurance companies offer the ability to access and manage policy and claims information via a mobile application. [JDPOWER,2019]

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The institution retains its customers



- 61% of digital marketers stated that customer loyalty and customer lifetime value (CLV) are their main indicators for measuring digital marketing success. [Altimeter, 2019]
- By 2023, two thirds of large service organizations will equip field technicians with immersive applications to improve efficiency and customer satisfaction, compared to less than 1% in 2019. [Gartner,2019]
- By 2023, more than 80% of loyalty programs will use vendor-based fraud detection tools rather than national systems, compared to less than 10% today. [Gartner,2019]
- So far, the adoption of reward and loyalty programs among individual life insurers has been very low, although interest has increased. Adoption has accelerated, with 5-20% of insurers worldwide using reward and loyalty platforms. [Gartner,2019]

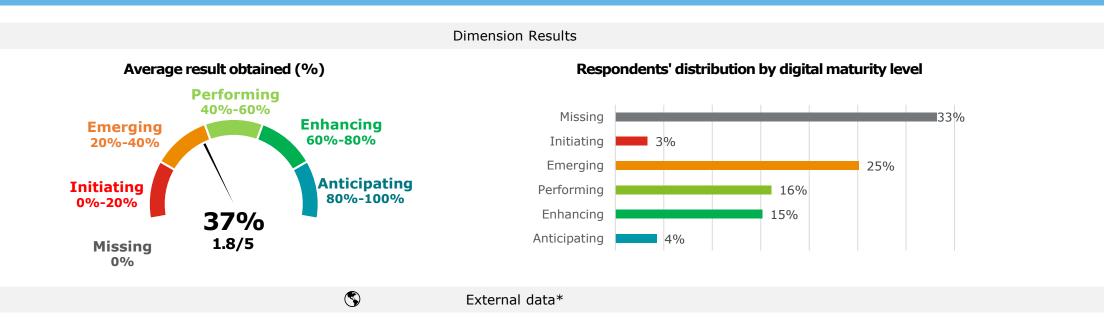


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^{*} External data are intended to provide additional information related to the theme of the dimension under study.

The institution manages the identity of its customers



- In 2018, regarding data confidentiality and privacy, 63% of consumers considered banks to be one of the three most reliable sectors. [Deloitte, 2018]
- In the insurance industry: It is estimated that by 2023, only 30% of consumers will trust their insurer enough to authorize the use of individual data to personalize products and services.

 [Gartner, 2020]
- 82% of European customers say they plan to use their rights under the GDPR. 87% of consumers say they will do business elsewhere if they are not convinced that a company is handling their data responsibly. [Gartner, 2018]

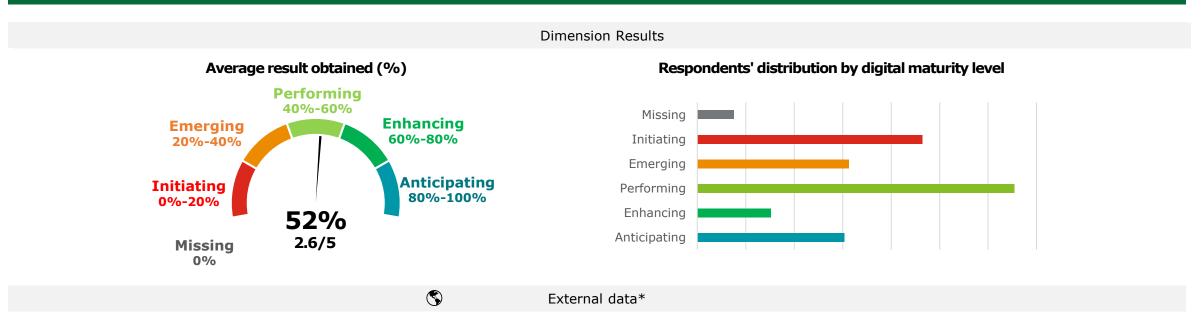


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Detailed resultsCulture perspective

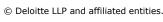
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The institution recognizes and values the impact and contribution of its employees in the digital transformation



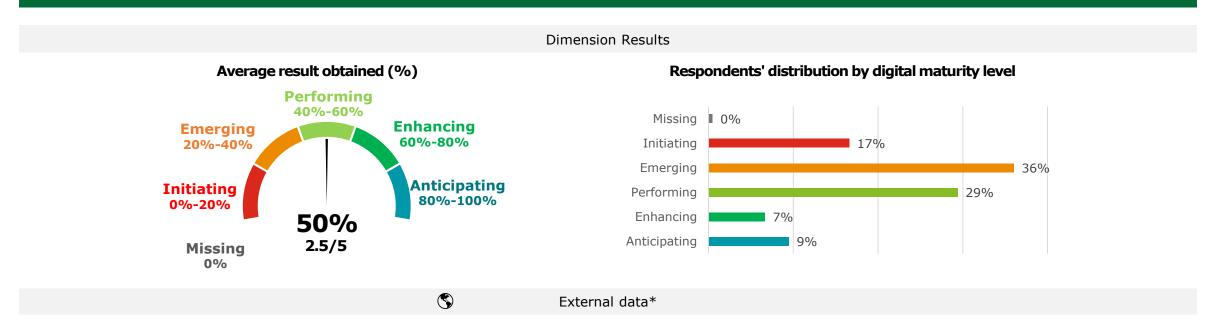
- Digital-related professional development is usually valued and positively perceived. According to a study by MIT and Deloitte (MITSloan, 2020), employees are compensated or rewarded for the acquisition and development of new skills through **monetary benefits** (54%), new roles in the organization (32%), monetary benefits and new roles (12%) and improved worklife balance (2%).
- However, 47% of respondents believe that their organization cares more about the customer experience than the employee experience (29% are neutral and 23% think the opposite).
- In 2020, 49% of CEOs have implemented a digital training and culture change program (the most used and successful digital business strategy options) and 14% have created a public open innovation challenge. [Gartner, 2020]

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The institution promotes a culture that gives room to make mistakes

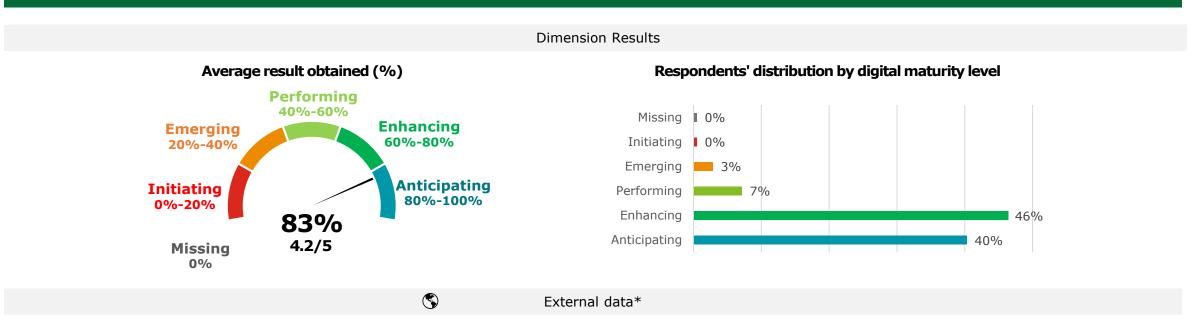


- Trial-and-error generally reinforces a culture that is more open to innovation. This is one of MITSloan's recommendations [MITSloan,2019] for organizations wishing to increase their innovation capacity and digital maturity.
- According to this study, 81% of organizations with high digital maturity mention innovation as one of their strengths. In contrast, only 10% of organizations with low maturity mention innovation as a strength.
- The same study reveals that employees in organizations with high numerical maturity have up to 5 times more latitude to innovate in their work, regardless of their job.



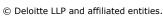
^{*} External data is intended to provide additional information related to the theme of the dimension under study.

The institution prioritizes the management of its customers' personal data



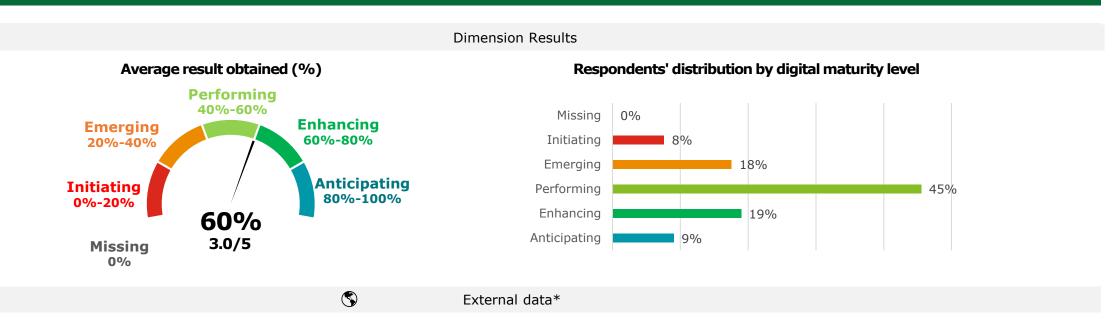
- According to a Deloitte study published in 2018 [Deloitte, 2018], privacy and compliance expertise will be one of the most difficult IT talents to recruit over the next three years. In addition, 52% of digital innovators see cybernetics as a strategic asset; in such a system, the protection of customer information is strategic and particularly important.
- A Gartner survey (<u>Gartner</u>, <u>2019</u>) shows that only 7% of SMBs said that developing a customer privacy program was one of their top priorities when it comes to customer experience. To increase trust in their brand, organizations will need to put privacy at the center of their customer experience strategy.

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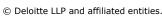


The institution values collaboration and multidisciplinary teams



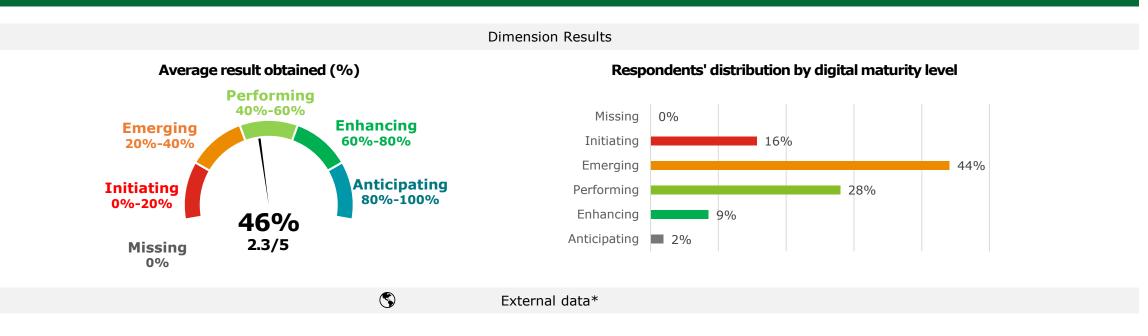
- Multidisciplinary teams are increasingly acting as vectors for innovation and project acceleration. These teams, generally composed of multiple talents, have more autonomy and benefit from more support from their environment.
- According to a study by MIT and Deloitte [MITSloan,2019], 83% of organizations with high numerical maturity use multidisciplinary teams compared to 55% of organizations with lower numerical maturity.
- Moreover, the phenomenon of **multidisciplinary teams seems to be on the rise**. According to the same study, 24% of leaders observe a reorientation, strengthening or improvement in their organization's cross-functional collaboration capacities in the last month, 26% in the last quarter and 33% over the year.

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The institution knows and develops its digital knowledge and skills



- According to a Deloitte study [<u>Deloitte,2019</u>], the first **operational and cultural challenge** that organizations most often face in the digital transformation is **finding, developing and retaining the right talent**. Organizations with high digital maturity are almost 5 times more likely than organizations with low digital maturity to develop the digital skills of their employees.
- However, even though 47% of employees believe that their company invests significantly in their professional development, only 30% say they are satisfied with the investment in improving their digital skills. At the executive level, 60% say they are satisfied with their organization's investment in their development, and 84% say they continue to develop digital skills on their own.
- According to a Deloitte study [Deloitte,2018], technology leaders are emphasizing the growing need to complement the technical expertise of their employees with the soft skills required to collaborate and grow within the organization. The top-3 non-technical skills sought are **creativity** (61%), **leadership and management skills** (60%) and **cognitive flexibility** (52%).
- As for forecasts, this latest study stipulates that 50% of employees have the necessary skills to grow professionally over the **next 2 to 4 years** and 20% for the following year.

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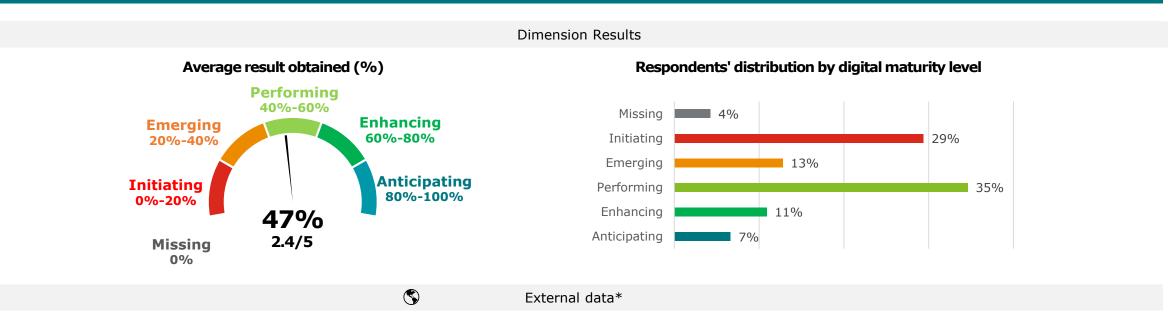




Detailed resultsOperations perspective

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The institution defines and adjusts its digital roles and responsibilities for digital transformation



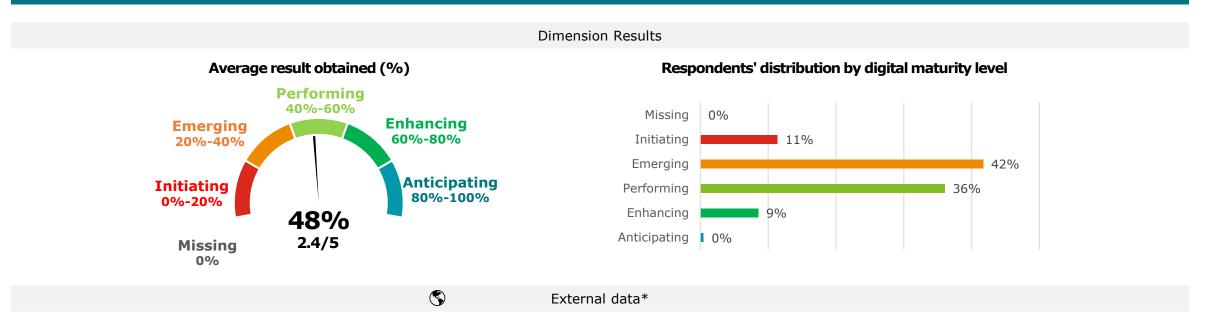
- By 2021, in 75% of large companies, the position of CDO will be considered a critical function comparable to IT, business operations, human resources and finance. [Gartner,2020]
- While CMOs share ownership of the conduct of strategic initiatives, they most often share responsibility with the CEO (45%), the CSO (26%), the COO (20%) and the CIO (20%). [Deloitte, 2020]
- CEOs often hire digital chief operating officers (COOs) to bring the insight, energy and leadership needed to drive profound change. The relationship between IT and business functions is strong (between front and back office) (Operations 77%). They are weaker, however, with Sales (58%) and Marketing (49%). Only 10% of technology departments represent organizations that are at the forefront of the digital arena leaders in aligning digital technologies and business strategies that can serve as models. [Deloitte, 2018]
- 79% state that their organization's strategy does not aim to integrate wellness into work design. More than any other business outcome, wellness is driving improvements in workforce experience: 62% said that workforce experience is most positively influenced by their wellness strategy; 43% said that wellness has a reputation in the marketplace; and 43% said that wellness is the most positively influenced by their organization's strategy. [Deloitte,2020]

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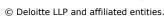


The institution digitally equips its employees (e.g. collaboration, communication tools, Intranet, etc.)



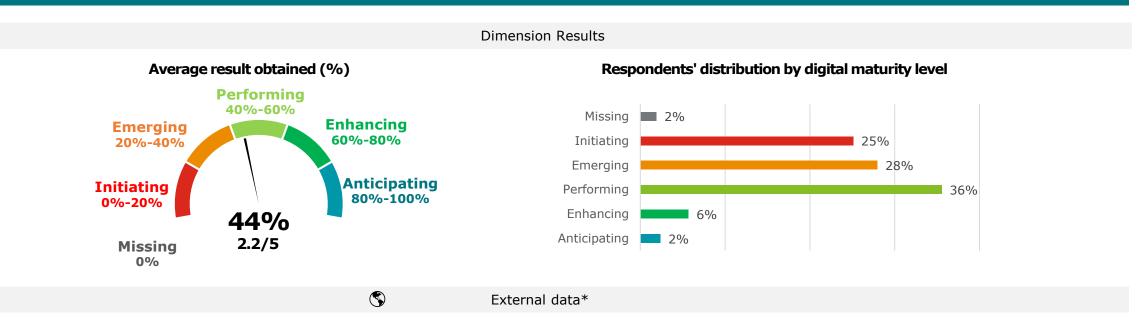
- 40% of employees consider that the tools that monitor their digital actions (on the company's machines and devices) provide useful information and are not simply a matter of monitoring by the company. [MITSloan, 2020]
- Only 42% of CFOs indicated that they and their teams were aware of "smart" technology a set of cognitive tools that could improve the efficiency of the finance organization by automating a set of manual tasks. 45% of CFOs said they had invested in financial and accounting analysis, and 52% said they planned to invest more in the future. [Deloitte, 2018]
- The benefits of a cross-functional organization: A more flexible and responsive organization, able to respond quickly to customer requirements. The organization becomes a breeding ground for innovation. Increased interaction and collaboration between different departments, such as IT and business. [Deloitte, 2019]

^{*} External data is intended to provide additional information related to the theme of the dimension under study.





The institution adapts its workspaces

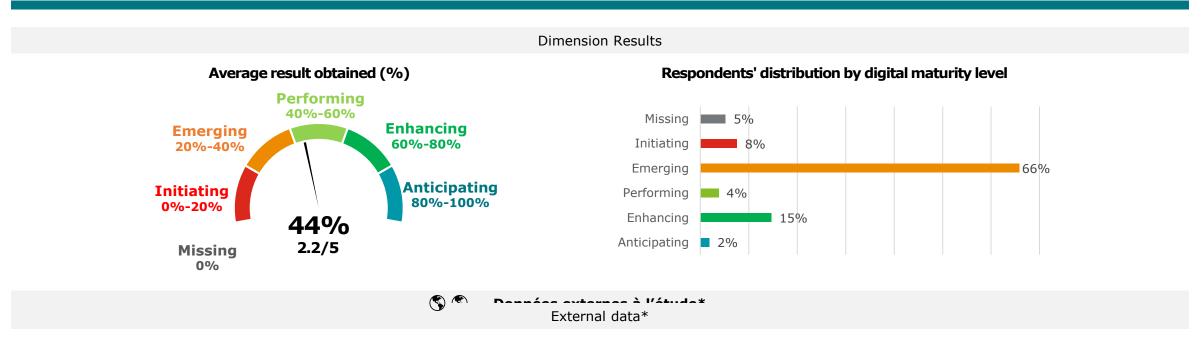


- 49% of digital innovators said that flexible work arrangements, including telecommuting, are aspects that help attract and retain IT talent. [Deloitte,2018]
- Organizations identified a variety of tactics to promote wellness within their organization: 45% give workers more autonomy in their work; 41% use technology to promote connectivity and collaboration; 39% increase the schedule flexibility and/or predictability; 38% increase teleworking opportunities; 33% redesign the physical workspace. [Deloitte,2020]
- According to Deloitte data on flexible work arrangements, retention and engagement are generally improved by 67% and 30% respectively. Absenteeism and costs related to physical and mental health are generally reduced by 60% and 45% respectively.



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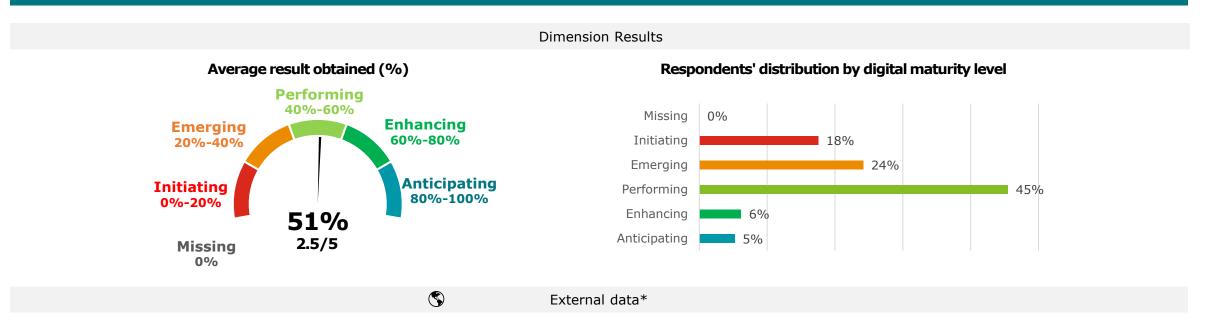
The institution facilitates the management of legal and regulatory requirements



- The *FinTech* and *RegTech* associations have played an important role in some jurisdictions, helping to improve supervisors' skills in new technologies and applications. The European Commission has brought together groups of industry experts to help identify regulatory barriers to financial innovation. The Monetary Authority of Singapore has adopted direct collaboration with the financial sector, including its Veritas framework to promote responsible adoption of AI and data analysis. [Deloitte,2020]

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The institution analyzes its data



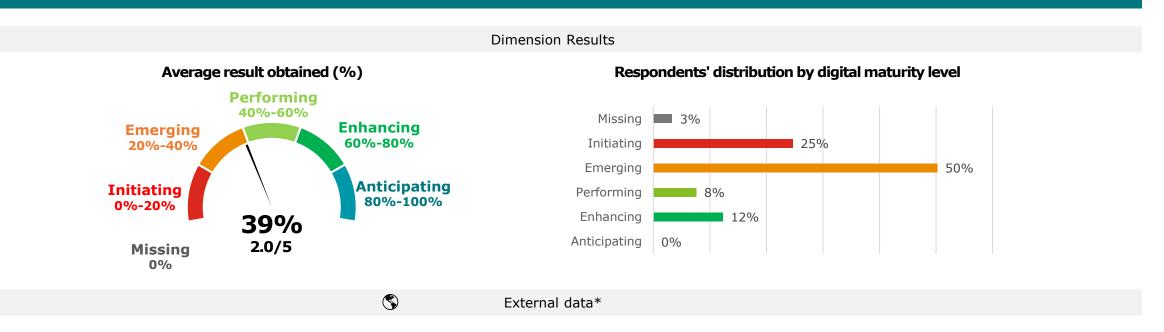
- By 2023, 90% of the world's top 500 companies will have converged analytical governance into broader data and analytics governance initiatives. By 2022, 70% of organizations will rigorously monitor data quality levels through metrics, increasing data quality by 60% to significantly reduce operational risk and costs. [Gartner, 2020]
- 67% of the companies surveyed deploy at least one advanced tool to access and generate business analysis. 67% of companies are uncomfortable accessing or using data from their tools and resources. Organizations that reported the strongest cultural orientation towards data and decision-making are also twice as likely to have reported exceeding their business goals in the last 12 months: 48% of these companies reported exceeding their goals versus only 22% among those with a more diluted analytical culture. [Deloitte,2019]
- The criterion of responsibility for analysis is highly correlated with exceeding company objectives: 70% of companies in which a specific analysis/innovation team is responsible for analysis exceeded their objectives; 57% of companies in which key members of each team/business unit are responsible for analysis exceeded objectives; 82% of companies in which all employees are responsible for data analysis exceeded objectives. Only 33% use a single enterprise-wide master system for data access and analysis. [Deloitte,2019]



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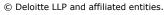
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The institution assesses the life-cycle of its processes



- 42% of IT functions collaborate with marketing and sales to establish shared processes. [Deloitte, 2018]

 $[\]ast$ External data is intended to provide additional information related to the theme of the dimension under study.

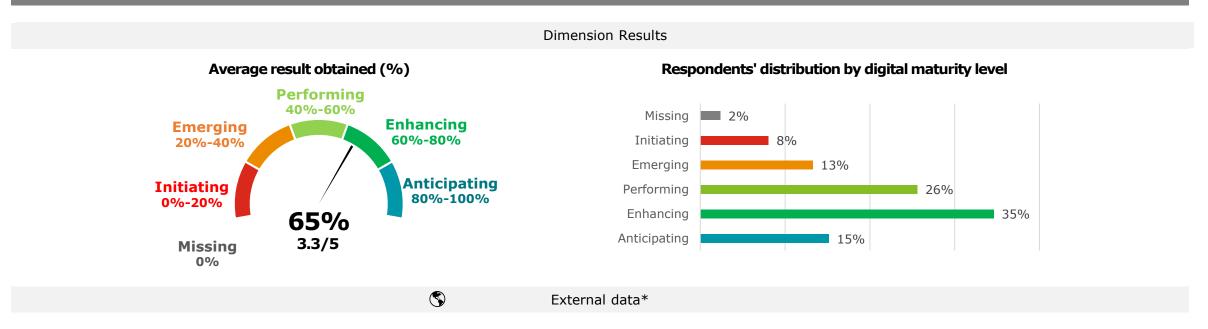




Detailed resultsTechnology perspective

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The institution manages its digital technologies roadmap



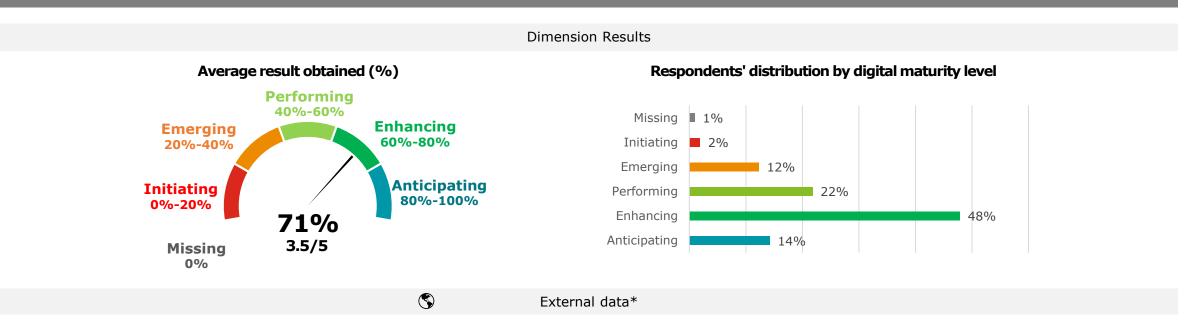
- According to a Gartner study [Gartner,2018], 69% of insurers are able to adopt mature technologies with manageable risk, 18% are willing to adopt relatively new and risky technologies, and 13% adopt only proven technologies.
- Challenges faced by financial institutions and their technology departments: lack of a clear vision on the importance and reasons for the digital transformation, as well as on the impact it will have on the entire company; massive risk factors to meet business expectations and achieve growth objectives. The self-assessed average effectiveness of taking digital considerations into account in the strategy and planning of financial services technology departments is very high (4.6 on a scale of 1 to 7). 75% of financial services technology departments admit that their company falls between inefficiency and average efficiency in terms of overall business strategy and planning (giving an average score of 4.6 on a scale of 1 to 7). Only 30% of technology departments rate their company as effective or very effective in IT strategy and planning. [Gartner,2018]
- Many technology departments recognize that their legacy systems lack the flexibility to innovate and evolve. 64% of the technology departments participating in the survey are currently in the process of deploying the next generation of enterprise management systems and/or modernizing legacy platforms. [Deloitte, 2020]

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The institution has security measures in place to monitor, deal with and prevent digital threats



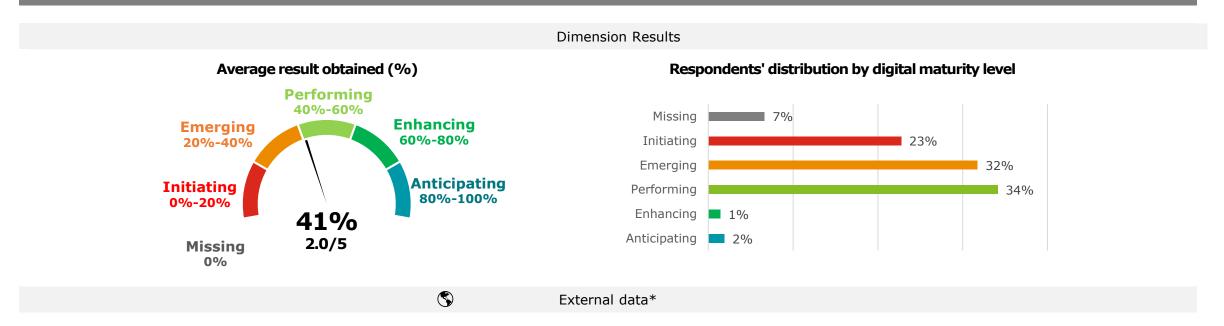
- The biggest challenges to managing application security risks according to Deloitte are the following: Lack of an appropriate organizational structure to enable the integration of security into the application development lifecycle (48%); lack of prioritization/awareness of cyber risks that could impact the solutions developed (28%); lack of tools or solutions to test and analyze software vulnerabilities (24%).
- The most challenging aspects of managing cyber security across the organization are: complexity of data management (16%), better prioritization of cyber risks (15%), rapidly changing information technology (15%), lack of qualified cyber professionals (15%).
- 50% of participating executives use risk quantification tools to monitor and evaluate their cyber security investment decisions. Interaction between today's cyber organizations and individual business units is done through security assessments or audits (29%), security steering committees that work with the company (29%), separate security organizations within each company (24%) and security liaisons within each company (18%). 47% of executives indicated that they perform analysis and modeling at least quarterly. 92% of executives indicated that their companies need to improve their policies to prevent sensitive data from being disclosed. [Deloitte,2019]
- 90% of organizations have experienced sensitive data disclosures in the past year, and 41% have experienced more than five disclosures. [Deloitte,2019]

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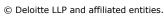


The institution has a roadmap for the use of Cloud computing



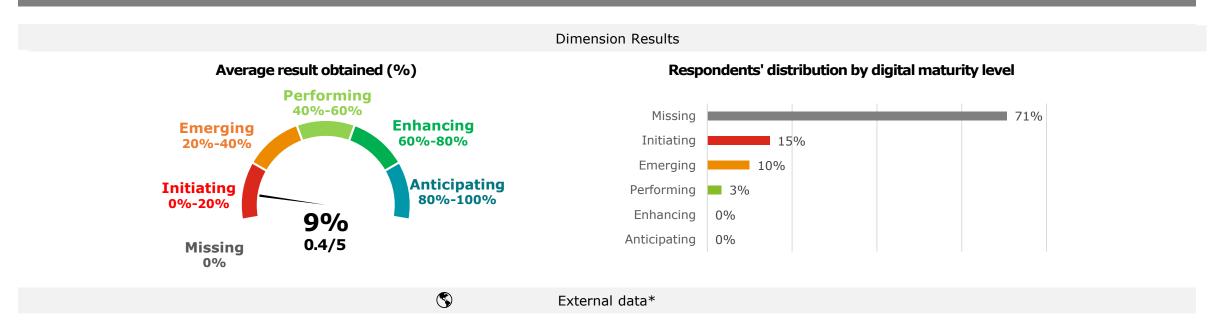
- 90% of organizations use cloud-based services. Investment in cloud computing is expected to double as a percentage of the IT budget over the next three years. [Deloitte, 2020]
- 91% of companies keep their data primarily on cloud platforms. Nearly 9% are planning to migrate to cloud computing. 55% of companies see data modernization as a key element or reason for migration to cloud computing. 84% of U.S. organizations have already begun the transition to data modernization. 34% say these initiatives are fully implemented. 50% are in progress. [Deloitte,2019]
- Financial services companies are the most likely to have undertaken data modernization. 3% of financial institutions have not begun the transition to data modernization. 7% have begun planning for data modernization. 57% are in progress but not completed. And 32% are fully implemented. [Deloitte, 2019]

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The institution uses technologies linked to the Blockchain

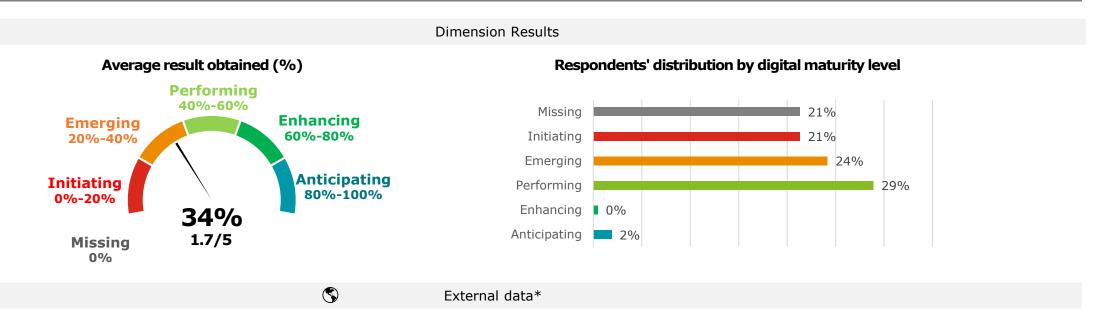


- Blockchain is a key priority for 59% of financial services [<u>Deloitte,2019</u>]. By 2025, 50% of people who own a smart phone but do not have a traditional bank account will use a crypto account accessible by mobile. By 2023, at least one country suffering from hyperinflation will use cybercurrencies instead of its local currency. In the 2019 Gartner survey, 60% of the technology departments surveyed expect to have deployed a Blockchain within the next three years. Among CIOs whose organizations had already deployed or planned to deploy a Blockchain in the next 12 months, the highest percentage was in financial services (18%), likely due to the first-mover advantage. [Gartner,2019]
- By 2025, the public Blockchain will provide a central interoperable foundation for global and decentralized identity services. [Gartner,2019] Other use case examples include: digital payments, data validation, customer knowledge/anti-money laundering, symbolic assets, asset transfer, trade finance, letters of credit, securities protection, and beyond. Gartner Inc. predicts that the commercial value added of the block chain will reach \$176 billion by 2025. [Deloitte,2018]
- For the next 12 months, financial institutions have invested at least US\$5 million in Blockchain initiatives. 26% of financial institutions have already implemented a Blockchain in production. 42% have plans to put the Blockchain into production within a year. 49% belong to at least one consortium on the subject, but only 19% are currently leading a consortium or plan to do so in the next 12 months (-6% compared to other industries). [Deloitte, 2019]



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The institution uses applications related to artificial intelligence (AI)

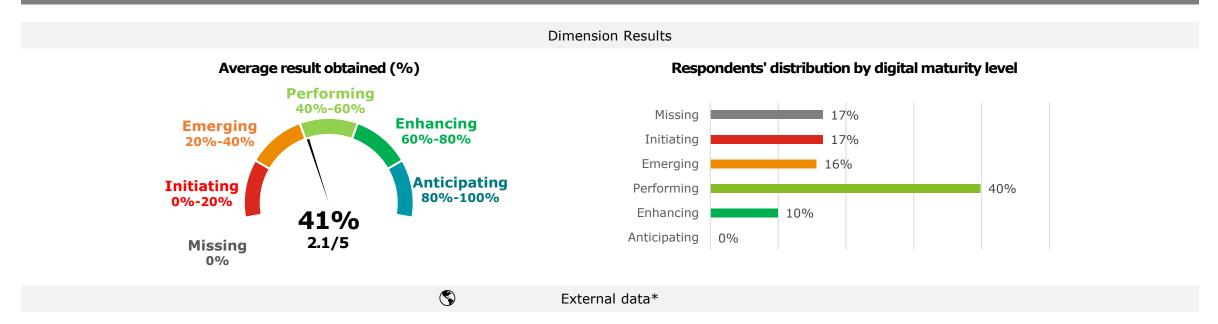


- By 2023, 30% of customer service organizations will provide proactive services to their customers using process orchestration and continuous intelligence based on AI. [Gartner, 2018]
- CIBC's successes on AI: AI strategy and governance, 147 use cases identified and 40 completed in one year. [Deloitte, 2020]
- 60% of technology departments in the financial sectors say their companies lack the capacity to understand AI technologies, strategies and markets. [Gartner,2018]
- AI and data analysis are the two most game-changing technologies among insurance technology departments: AI for 46% of insurance technology departments and data analysis (28%).
 [Gartner,2019]



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The institution uses Big data and analytics



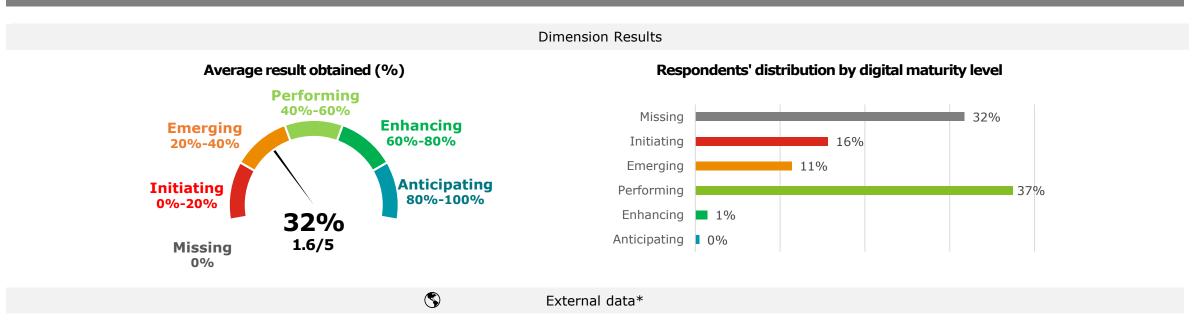
- Only 25% of technology departments in the financial sectors are able to extend or reap the benefits of their digital initiatives. Companies with a higher percentage of digitized processes achieve higher revenues, but 75% of them are hampered by cultural and organizational issues that inhibit change and innovation. [Gartner,2018]
- 37% place their companies in the first two categories of Deloitte's Insight Driven Organization maturity scale, and of these, only 10% are in the highest category. The remaining 63% are aware of the existence of analytics but lack infrastructure, are still working in silos, or are developing ad hoc analytics capabilities across silos. 67% of surveyed companies deploy at least one advanced tool to access and generate business analytics. 67% are uncomfortable accessing or using data from their tools and resources. [Deloitte,2020]
- In addition to digital security, technology departments seem reluctant to plan or deploy a range of disruptive technologies. Most executives do not believe that their company is driven by foresight. Lack of trust in data. 42% of financial services technology departments report that their companies have only basic knowledge and/or are reactive in their maturity to use advanced analytical capabilities. The involvement of financial services technology departments in the use of advanced analytics by their companies is deemed to be quite low, with only 43% very or extremely involved. [Gartner,2018]



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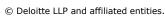
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The institution uses applications related to robotic process automation (RPA)



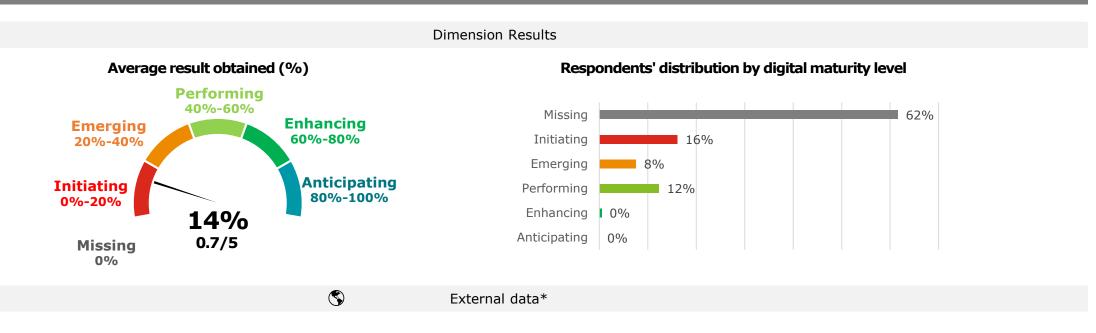
- 53% of organizations reported that they have already started their RPA journey and this figure is expected to increase to 72% in the next two years. 19% of respondents plan to adopt the RPA in the same period. The return on investment was achieved in less than 12 months: 20% of the FTE capacity provided by the robots. ROI met and exceeded expectations: 90% improvement in quality/accuracy, 86% improvement in productivity, 59% cost reduction, 3% of organizations have succeeded in increasing ROI to a level of 50 or more robots. [Deloitte,2018]
- 92% of organizations that have implemented RPA stated that it improved compliance. [Deloitte, 2018]
- Demand for cognitive technologies (RPA, AI, NLP, etc.) is skyrocketing IDC predicts spending will reach US\$77.6 billion by 2022 although their potential benefits are accompanied by important considerations of technological trust and ethics. [Deloitte,2020]
- By 2023, more than 50% of large enterprises will adopt the RPA platform as a service rather than on-premise RPA. [Gartner, 2020]

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The institution uses applications linked to biometrics



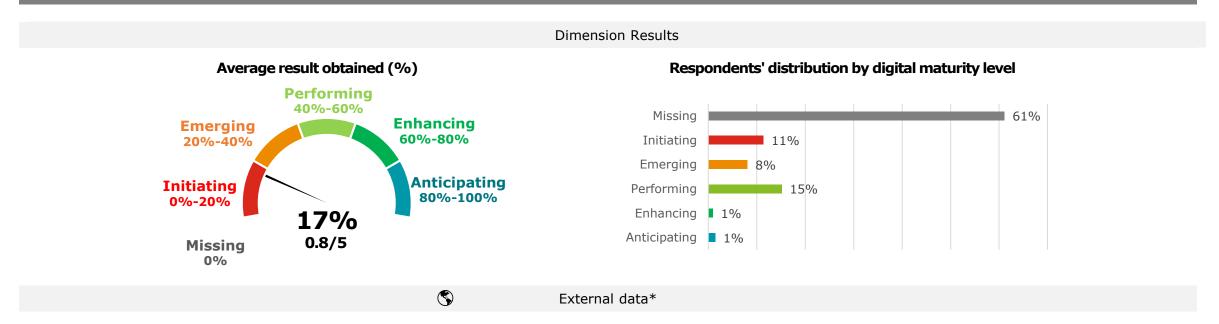
- In Canada, 35% of banking consumers consider their bank to be safe and secure if it offers customer authentication solutions. [Gartner,2018]
- The use of biometric authentication has grown among U.S. consumers, particularly for people who use their smartphones for financial transactions. Companies that use biometric authentication should therefore develop a reliable and fully transparent privacy policy to establish and maintain consumer confidence. The level of customer confidence depends on the perceived "ownership" of the customer's authentication solution. Consumers trust banks that appear to own or manage the biometric authentication solution more than banks that "outsource" this responsibility to a third party such as Apple or Samsung. According to Deloitte's 2018 global cellphone consumer survey, 48% of U.S. smartphone owners use at least one biometric authentication method to unlock, authorize or validate applications or processes. Penetration is even higher among consumers who use their smartphone for financial activities such as online banking (63%) or money transfers (67%). [Deloitte, 2018]

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The institution uses Internet of Things (IoT) applications



- The main obstacles to the Internet of Things: security, regulatory compliance risks/issues such as anti-money laundering and Know Your Customer in the financial services sector. A majority (85%) of companies implementing Internet of Things projects report that they have already implemented or will implement within the next year "digital twins", virtual representations of physical objects that receive, in real time, data captured by their real twins. [Gartner,2019]
- By 2023, 70% of security products deployed by resource-intensive organizations will extend their capabilities beyond converged IT/OT/IoT requirements, aligning with new approaches to cyber physical system security (CPS). [Gartner,2020]. In 2018, the Gartner CIO survey revealed that only 12% of companies had invested in IoT, 24% were in short-term planning and 24% in active experimentation. In 2019, 15% of the world's IPRs increased their investments in IoT. By 2022, only 5% of companies will have implemented IoT projects that will enable them to move business models across the enterprise, compared to less than 1% today. [Gartner,2018]
- By 2023, less than 10% of insurers will be able to monetize their IoT data to generate new revenue streams. [Gartner,2020]

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