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aspentech DATAWORKS

The State of **Industrial Data**

Introduction

Decisions are made on data. In 2023, the amount of data we have is monumental – and that will only continue to grow. So how do you see the forest for the trees and get the insights that you need? Ultimately, there are three cornerstones:

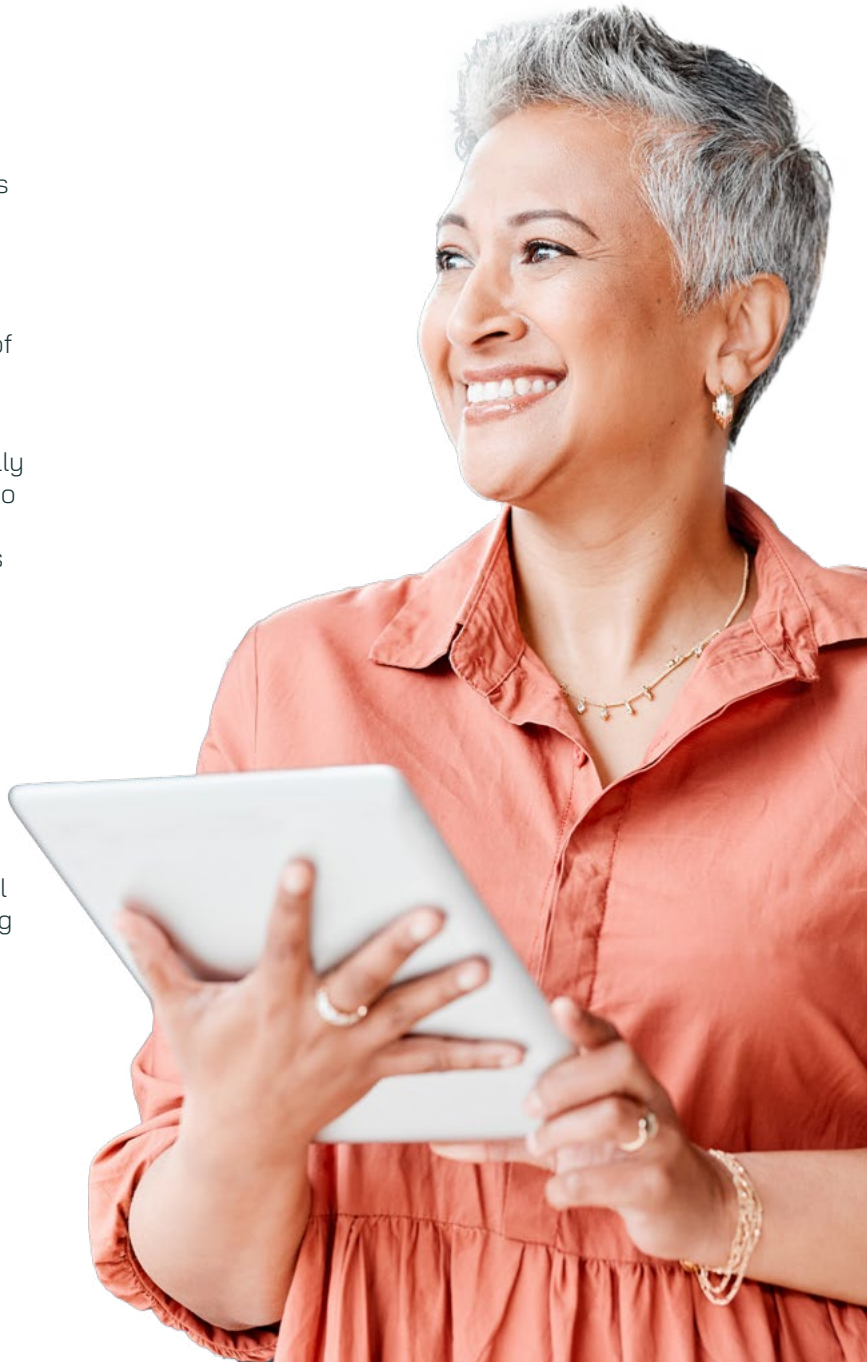
- People
- Processes
- Technology

All three play a part, and as we uncover in this report commissioned by AspenTech DataWorks, a number of organizations are struggling with at least one of these. Many businesses are generating industrial/operational data, but then struggle to interpret it in a way that benefits their business – for many of those it's due to a lack of a fully activated strategy. But there's also the processes and people to consider, and the vast majority of IT and Operations team (OT) decision makers that we surveyed report siloing between their departments, as well as lack of access to relevant data and software.

When there are so many benefits on offer from successfully utilizing industrial/operational data, from reducing costs, to improving product quality, to ESG reporting, organizations can't afford to let a lack of collaboration get in the way. As you'll see in this report, we'll look at data that suggests that:

- implementing company-wide initiatives to improve inter-departmental collaboration,
- investing in software with a reduced learning curve,
- and attracting and retaining talent

are all ways to get the most out of your organization's industrial/operational data. With the current economic climate being challenging and unpredictable, it'll be crucial to grasp any competitive advantage on offer – and utilizing data-driven insights is the first step in doing so.



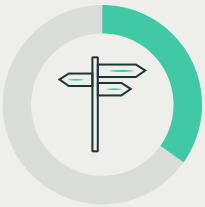
Key Findings

Organizations are reaping benefits from industrial/operational data – including for ESG reporting; however, the siloed approach and skills gap are holding them back.

Industrial/operational data is recognized for its benefit in organizational strategy

Operations (OT) and information technology (IT) respondents are noticing benefits that directly impact their departments, not surprisingly based on each department's responsibilities:

38%
Improved product quality is most commonly reported for those in OT...

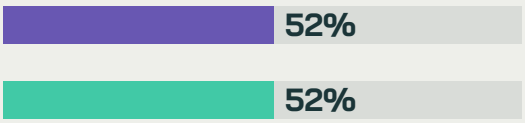


35%
...and data-driven decisions is top for those in IT

Despite high demand for using industrial/operational data for ESG reporting, organizations need to invest in skills and technology to make the most of this information and turn it into insight

Nine in ten organizations (91%) are using their industrial data, for their ESG reporting but at varying degrees

Recognizing the benefits of using this data in this way, coupled with the fact that only **one in four organizations having fully sufficient (24%)** and/or **reliable data (25%)** for **ESG reporting**, has likely influenced the **decision to increase investment** in technology to provide industrial/operational data for ESG reporting. **This is expected to increase by 10% in the next 12 months**, on average.



However, around half of organizations face **additional challenges on data analysis (52%)** and **aggregation of data (52%)** as they lack in-house skills to assimilate industrial/operational data for ESG (Environmental, Social and Governance) reporting

Addressing interdepartmental collaboration as well as skills gaps will enable stronger use of industrial/operational data

98%

The vast majority of IT/OT departments report they are not fully collaborating while utilizing their industrial/operational data

Key hurdles when it comes to fully utilizing insights from their industrial/operational data:

31%
Too few employees with data analytics skills

32%
Inability to share data between departments

26%
Inability to aggregate data due to siloed departments

Instead of bridging the gaps between departments, organizations are focusing on **the gap in analytical skills by hiring new staff permanently (50%)**, and **temporarily (60%)** . This reliance on contractors could mean that **collaboration may continue to be the Achilles heel** for many organizations if attention is not focused on this area.

Industrial/Operational Data Usage and Benefits

There is room for improvement for many as only a minority have a formal, actively executed strategy

With the push for digitalization only continuing to gain momentum post-pandemic, and the amount of data generated growing exponentially, organizations are looking to make the most use of the data they have at their fingertips and turn it into insight. Data has been - and continues to be - a valuable asset for businesses. And in the context of the Industrial Internet of Things (IIoT), it's not a stretch to say that correctly interpreting this data is what keeps us warm at night; after all, what's the point of collecting data on a wind turbine to predict breakdowns if you then can't act on it to prevent them?

When it comes to industrial/operational data specifically, much of it is left unused or is deleted to make room for more incoming data, leaving valuable information disregarded. Missing the opportunity to leverage insights from this data may mean that organizations are, in turn, missing opportunities to streamline their processes, improve their service offerings and scale their businesses.

While having a solid data strategy is at the core of any digitalization effort, only one in four organizations (25%) have a formal industrial/operational data strategy that is actively executed. The benefits of doing so include efficiency, and improved decision making to name a few, and these are clearly known motivators as an additional 61% of surveyed businesses are in either early or advanced stages of rolling out such a strategy. Where does your organization's strategy sit?

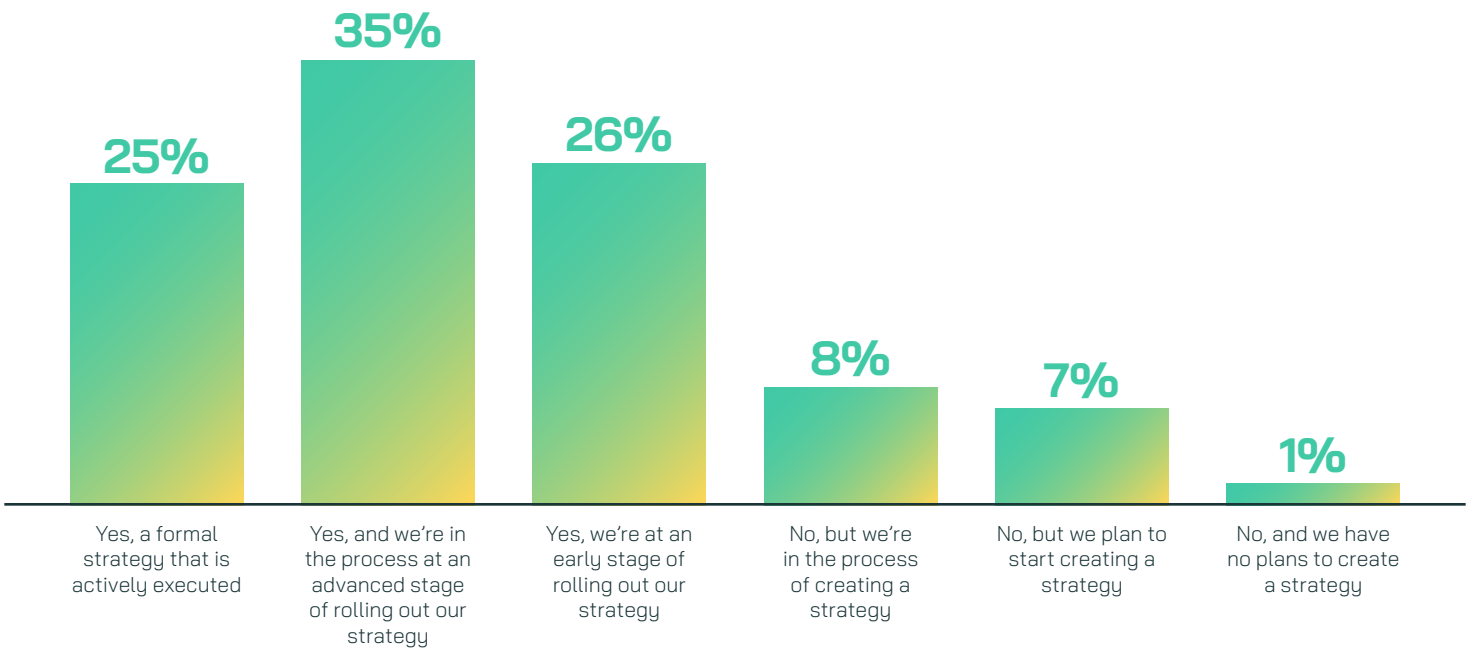


Figure 1 - Does your organization have an industrial operational data strategy? (200). Not showing all answer options

There are a number of differences when looking at the demographics of the organizations that make up the 25% most advanced organizations:

Organization size:

An additional layer to consider when examining those organizations with a formal strategy that is actively executed, is the size of the business. Larger companies, specifically those with more than 5000 employees, are underrepresented with only 19% reporting this level of commitment, as opposed to smaller organizations (3000-4999 employees) at 35%. This isn't particularly surprising when considering that the larger the organization, the more complex the strategic roll out. Though the complexity of implementing such an initiative can be daunting, what remains important is for companies to understand the importance of having a formal strategy in place with the ability to glean critical insights, so that they aren't left behind their competitors.

Have a formal strategy actively executed

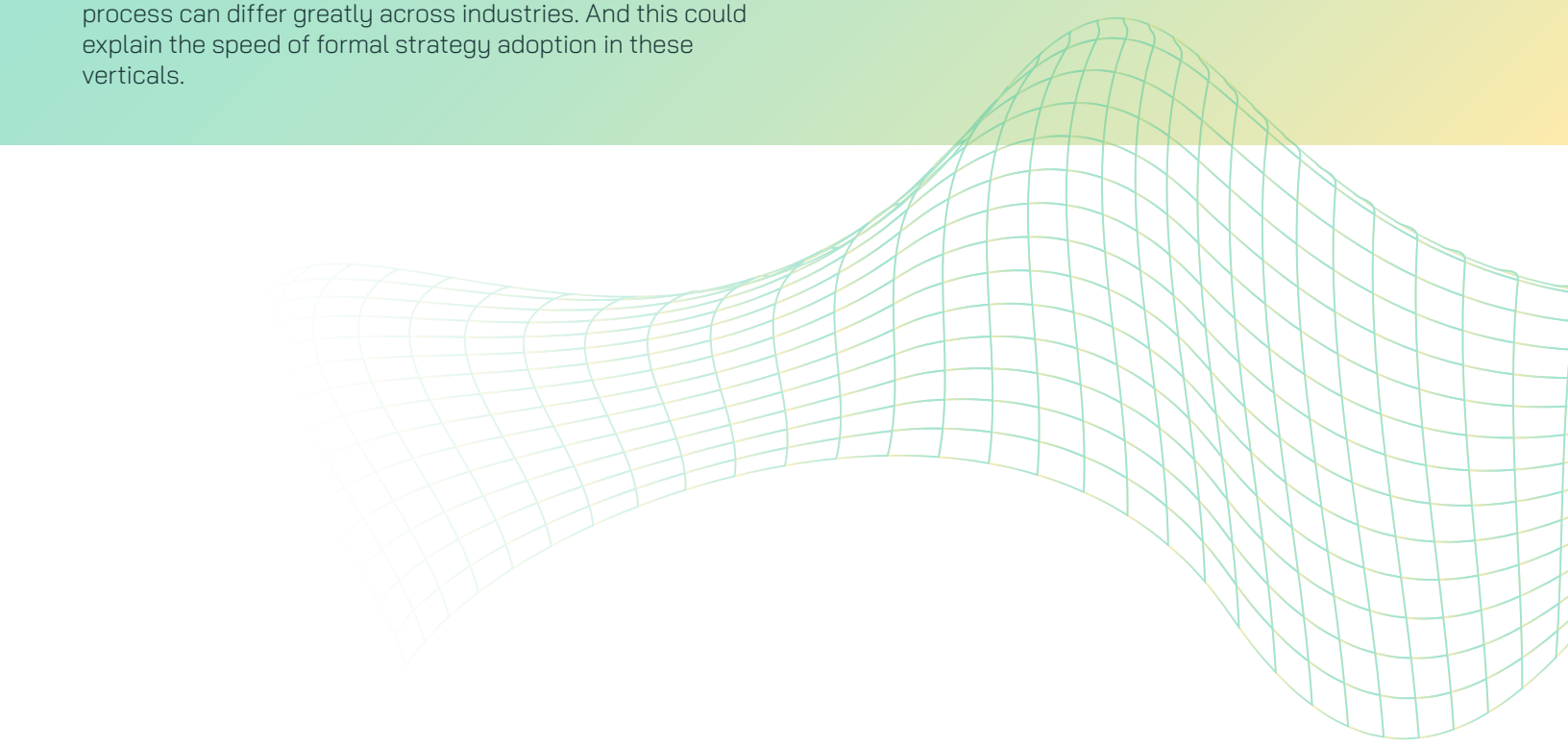
5,000+ employees	**19%**
3,000 - 4,999 employees	**35%**

Industry:

Looking across sectors, the vast majority of organizations within construction and engineering (94%), oil and gas (94%), as well as mining and metals (93%) have executed or are in the process of rolling out an industrial/operational data strategy, versus about three-quarters in chemical (74%) and pharmaceutical (75%). While the benefits of implementing a data strategy can be reaped regardless of industry, quality management and the costs associated with the effects of a mechanical malfunction or change in process can differ greatly across industries. And this could explain the speed of formal strategy adoption in these verticals.

The department's view:

Within organizations, the majority of IT and OT departments (83% and 88%, respectively) are reporting an active strategy or being in the process of working through one. Although this isn't a large gap when it comes to how they define the status of their strategy, there remains a disconnect between the two departments when it comes to how they work through the data to get to insights, which we examine throughout this report.



IT and OT departments have different agendas when it comes to using industrial/ operational data

The overarching opportunities to scale - as well as streamline - by leveraging industrial/operational data present different benefits both across organizations, as well as within them. Overall, the most reported benefit from leveraging this data is an increased speed of innovation (31%), which speaks to the current climate; organizations are being faced with a multitude of externalities such as rising interest rates, an unpredictable economic environment, and geopolitical tensions, among others and innovating is a way to get through it and remain ahead of their competition.

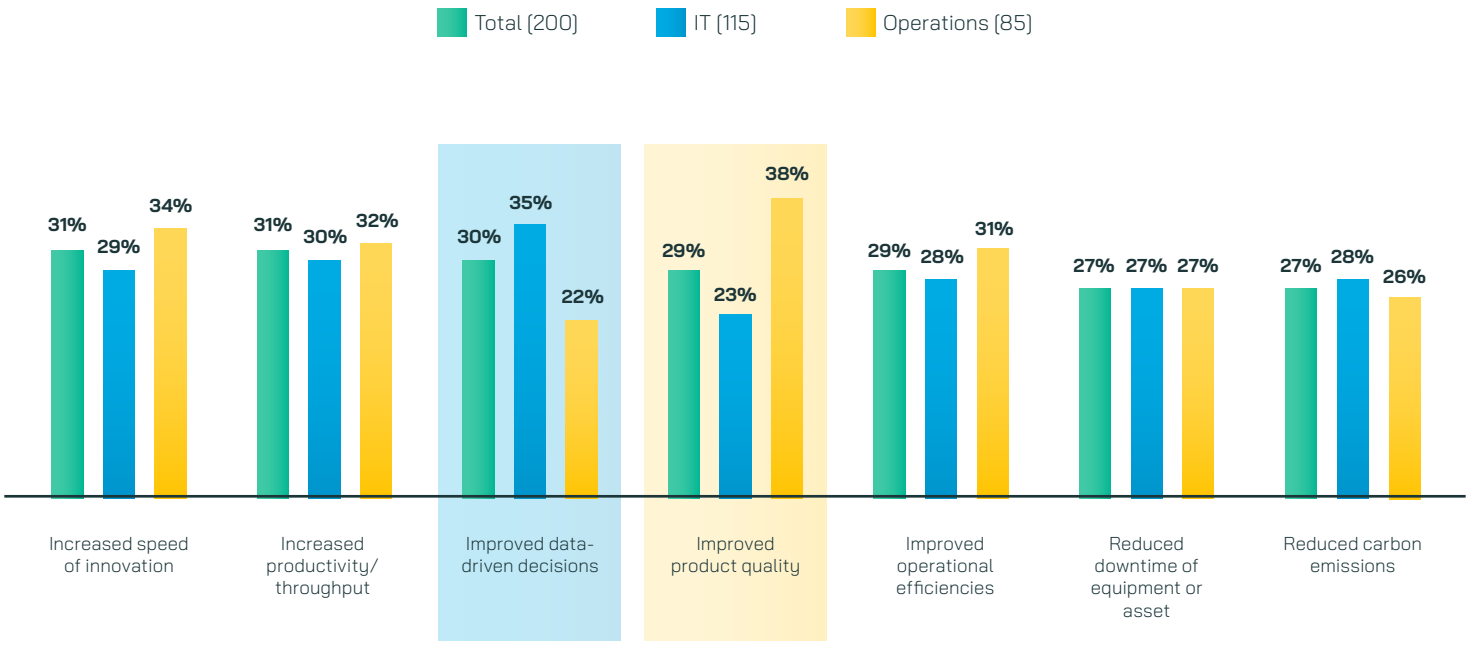


Figure 2 - Has your organization gained any of the following benefits from using industrial/ operational data? Combination of responses ranked first, second and third (Base sizes in chart). Split by department. Not showing all answer options

However, when considering the benefits of industrial/operational data usage, respondents report benefits most aligned with their departments' day-to-day responsibilities This is evident as operations departments within organizations are far more likely to report improved product quality as their top data-related gain (38%). Meanwhile, improving data-driven decisions (35%) is the most reported benefit identified by those in IT departments, which speaks to what they are responsible for. These differences by department show the breadth of uses and opportunities leveraging this data could offer – and the more advanced your strategy, the more likely your business is seeing benefits.

There are learnings to gain from those with an actively executed strategy

Organizations with a formal industrial/operational data strategy in place report a wider breadth of benefits that not only hit at top level strategies but also have an impact internally, whereas for those without a strategy, the benefits reported remain quite low-level and functional.

This shows us that those who are yet to reach a fully executed strategy are not as well placed to take advantage of all the benefits on offer. What it also demonstrates is that your peers who are ahead on terms of this strategy are using it to gain a competitive advantage. In a landscape where times are tough for even the most resilient of businesses, it might be time to prioritize a formal industrial/operational data strategy so as not to let the benefits pass your organization by.

	Formally executed industrial/operational data strategy in place	No industrial/ operational data strategy in place
Reduced carbon emissions	36%	24%
Increased productivity/ throughput	30%	17%
Improved product quality	28%	10%
Improved data-driven decisions	28%	21%
Supply chain optimization	24%	35%
Reduced costs	18%	28%

The recent increased focus on ESG is also proving to be a gamechanger in terms of industrial/operational data usage

It could be argued that all of the above have been drivers of digitalization in general over the past five or so years. However, more recently, ESG (Environmental, Social and Governance) is coming to the fore. Around a quarter of respondents surveyed are reporting reduced carbon emissions (27%) and/or improved ESG reporting and compliance (23%) as benefits their organization is seeing from using industrial/operational data.

In fact, the vast majority of organizations (91%) are using their data at varying degrees for ESG reporting. That number increases for those organizations in pharmaceuticals (98%), mining and metals (97%), construction and engineering (94%) and oil and gas (94%), again highlighting the data's many beneficial applications.

Looking more closely at certain sectors, oil and gas is coming out as a leader – it is both more likely to have a digital organizational strategy in place that is already executed (45%) and is most likely to be using a significant amount of data in ESG reporting (55%), perhaps as a defense to the ongoing calls to limit financing the oil and gas sector as concerns about climate change continue to grow[1].

1 - *https://www.nortonrosefulbright.com/en/knowledge/publications/d4daa555/the-future-of-oil-and-gas-arbitration*

Industrial/operational data used for ESG reporting varies by geography

Upon examining geographies, those based in Europe are more likely to be using a significant amount of industrial/ operational data for ESG reporting than those in North America (44% vs 37%, respectively).

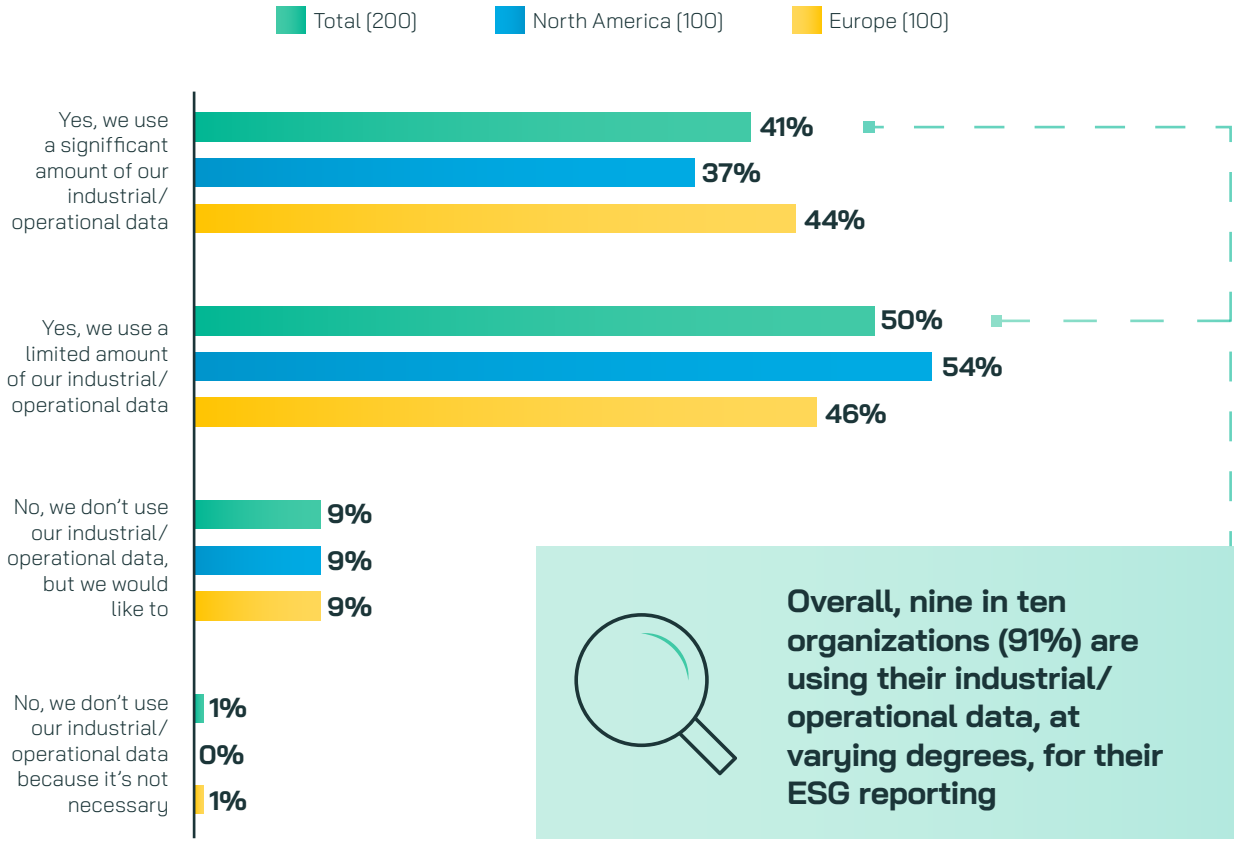


Figure 3 - Is your organization currently leveraging its industrial/ operational data for ESG reporting? (Base sizes in chart). Split by region. Not showing all answer options

This is due to jurisdictions across Europe like those introduced by the Non-Financial Reporting Directive (NFRD)[2]. This will require companies to publish information related to ESG, placing a strong emphasis on environmental factors and requires a more detailed disclosure of metrics such as water used, carbon emissions, employee safety and waste generation, to name a few. While in North America there are also regulations around carbon emissions and employee safety, other ESG metrics receive much less emphasis; this, coupled with the currently divided policy environment regarding ESG[3] in the US makes these cross-regional usage metrics unsurprising.

2 - *https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en*

3 - *https://think.ing.com/articles/esg-climate-us-eu-europe-environmental-social-governance-regulations-laws-ing/#:~:text=In%20March%202022%2C%20the%20US,related%20risks%20for%20relevant%20companies.*

But that gap could become larger as investment in technology for ESG reporting is predicted to increase

Despite differing legislative requirements, about three quarters of organizations in both North America and Europe are planning to increase their investments in technology for ESG reporting over the next year. However, with more respondents from organizations in Europe predicting an increase (72% North America, 79% Europe), the differences in reporting by geography may widen further over the years to come.

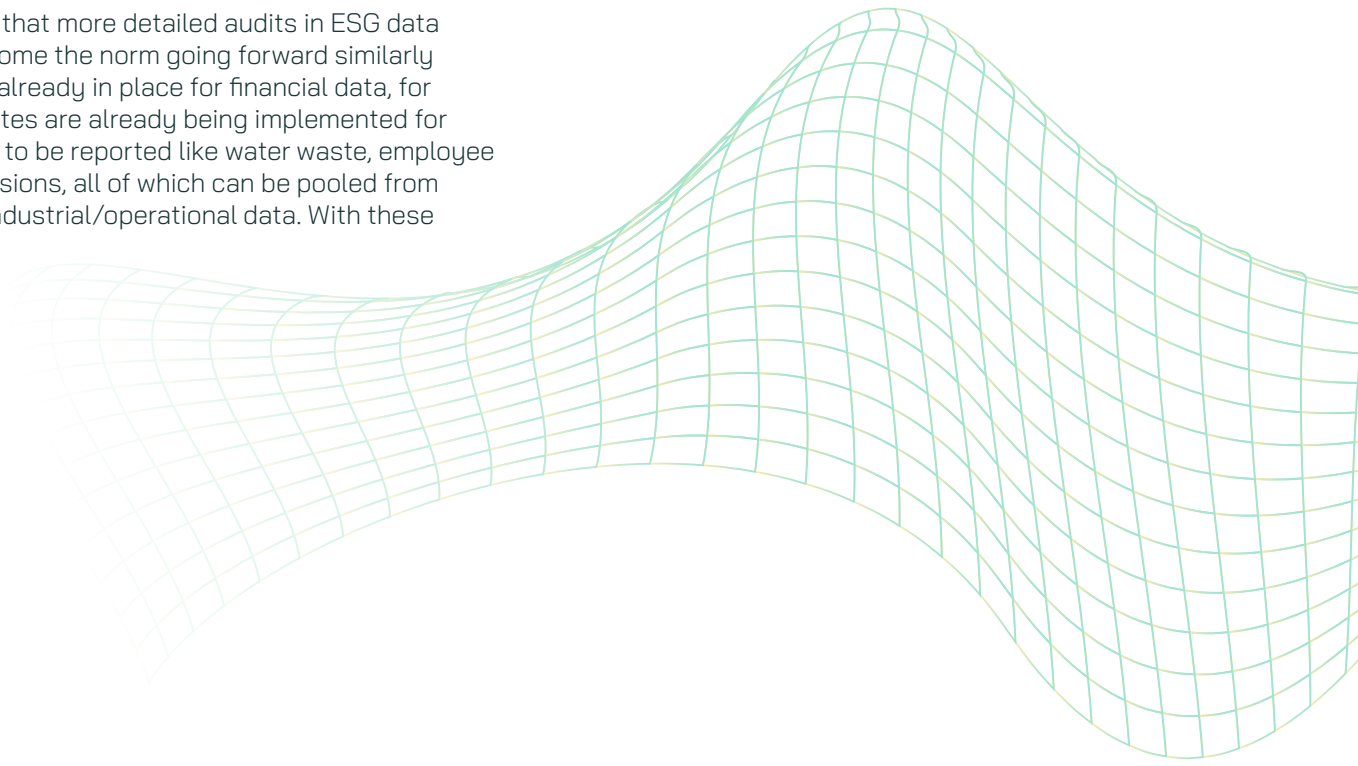
The fact that so many businesses are looking to increase investments in this area shows that this subject is going to continue to be on the agenda for the majority. Perhaps because organizations are realizing the benefits of using industrial/operational data for their ESG reporting? Regardless of the driver, organizational investment into the technology for ESG reporting is expected to increase by 10% in the next 12 months, on average.

ESG reporting is at risk from departmental siloing and a lack of collaboration

Examining departments within organizations, more than half (52%) of OT teams are claiming the use of significant amounts of data for ESG reporting, while the same could be said of about a third (32%) of IT departments. This could be in part due to where responsibilities lie for reporting these metrics within organizations. However, with around half of those surveyed claiming data aggregation (52%) and analysis (52%) as well as its quality (49%) are key pain points relating to the data used for ESG reporting, ensuring the correct people and technologies are in place will be critical going forward.

It is not unlikely that more detailed audits in ESG data are likely to become the norm going forward similarly to that which is already in place for financial data, for example. Mandates are already being implemented for specific metrics to be reported like water waste, employee safety and emissions, all of which can be pooled from organizations' industrial/operational data. With these requirements only likely to increase, ensuring the sufficiency and accuracy of the data for the metrics should be an area of focus, particularly as more than half (55%) of respondents are concerned around whether they have the necessary industrial/operational data for ESG reporting within their organizations.

But a lack of data isn't the only roadblock for organizations when it comes to industrial/operational data; finding, training and retaining skilled data scientists and other personnel is also a challenge.



Workforce Skills and Collaboration Challenges

Where you are now in terms of strategy may determine the challenges you're facing

It is important to bear in mind that the challenges for organizations will be slightly different based on where they are in their journey to adopting a formal strategy for their industrial/operational data.

Reflective of this, for those 25% of organizations that have a formally executed industrial/operational data strategy in place (as seen on page 4), key barriers to drawing insights from this data are lack of clean/ high quality data (38%), too few employees with analytical skills (34%) and a lack of infrastructure/technology (32%). These organizations need fine-tuning to come to grips with how to collaborate across new technology.

Conversely, for those 15% of organizations with no industrial/operational data strategy in place, a lack of relevant analytics tools (45%), lack of ownership (38%) and an inability to share data between different departments or geographies (38%) are being called out as challenges.

For those without a strategy in place taking the first step in that direction may be the most challenging one. However, regardless of an organization's maturity when it comes to having an industrial/operational data strategy in place, underlying themes remain – people, processes and technology need to be working together in order to fully leverage the data.

Recognized benefits could be the tip of the iceberg

It is clear that industrial/operational data is benefiting organizations due to its wide array of applications – and right now, what business wouldn't want improved innovation, reduced costs and better product quality? As we've seen, there are benefits on offer to all sectors, but despite all organizations surveyed in this research are reporting benefits from leveraging this type of data already (100%), the fact remains that only between 27-40%[4] of all industrial/ operational data produced is actually used. This statistic in itself should prompt organizations to undertake an examination of their people, processes and technology to optimize their data strategy, and uncover what is being missed and why. It's clear that the demands of digitalization and ESG reporting won't be slowing down, but at the moment, some organizations' data driven insights aren't even keeping pace.

Organizations are missing out on valuable insight due to poor collaboration between IT and Operations

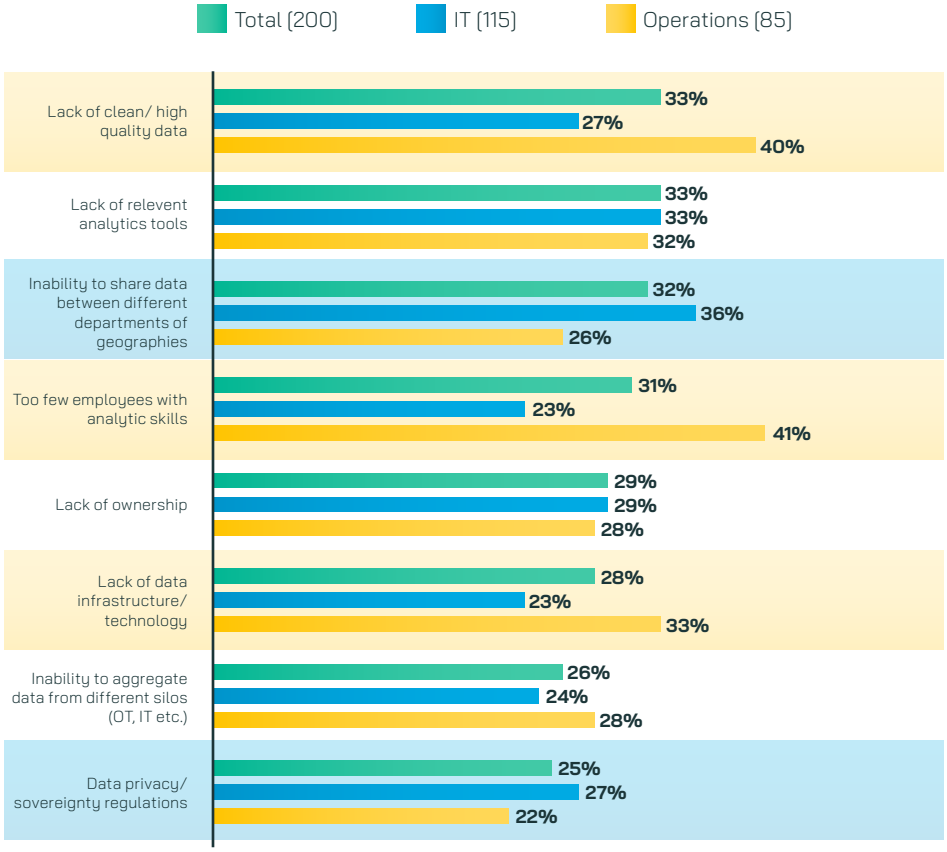


Figure 4 - which of the following are barriers to your organization being able to draw insights from its industrial/ operational data? Combination of responses ranked first, second and third. (Base sizes in chart). Split by department. Not showing all answer options.

4 - https://www.forrester.com/blogs/hadoop-is-datas-darling-for-a-reason/

Underlying themes within the barriers experienced across both departments nod to a lack of collaboration both in the inability to share data but also the lack of infrastructure to do so. Without the ability to share data between IT and OT, collaborating on utilizing the full benefits of industrial/operational data comes to a head, where the vast majority of respondents (98%) report feeling that the departments in their organization are working in silos in some way.

It is reasonable that the feeling of working in complete siloes is slightly higher for Operations (14%) than for IT (10%) as their roles include individuals who are focused much more on the specifics of their site or within their facility/unit, like a process engineer, for example, as opposed to IT who are thinking more organizationally.

Addressing the lack of data infrastructure and technology could have a knock-on effect in remedying the remaining pain points across both departments; however, deciding on what that structure needs to look like is at the heart of it, particularly as IT and OT view their collaboration levels differently. Only 3% of respondents surveyed said that their organizations' IT and OT departments work almost as one function, meaning there is a large disparity not only within firms but also across industries.

But what is preventing successful collaboration?

In addition to communication and collaboration struggles, there are other roadblocks which are contributing to the magnification of these silos. Operations are reporting lack of training on industrial/operational data software (43%) as well as software which is accessible by both departments (30%) as key struggles. While overcoming software related issues can be managed with improved rollouts for strategies and more (or better) training, overcoming cultural issues that are being raised by IT departments will require strategic company-wide interventions, as well as time for it to hopefully take root. The IT department might be the place to start with culture-focused initiatives, as they are reporting company culture resistant to interdepartmental collaboration (35%) and a lack of trust between departments (29%) as their key barriers – which could also explain why OT feel isolated.

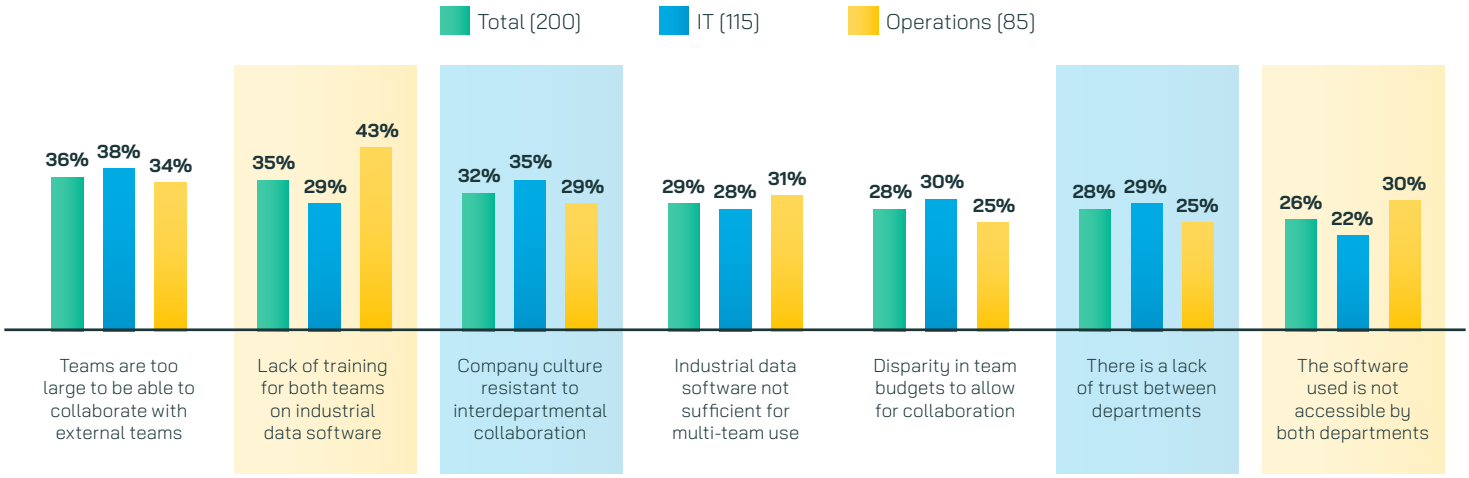


Figure 5 - What barriers, if any, does your organization face with collaboration between IT and OT when it comes to utilizing industrial data? Respondents who selected "They work completely in silos", "Minimal collaboration", "Some collaboration" or "Substantial collaboration" in Q12. (Base sizes in chart). Split by department. Not showing all answer options.

Without interdepartmental collaboration and a company culture that supports it, the feeling of working in silos will continue to grow and may begin to affect work satisfaction and even employee retention. As the famous management consultant Peter Drucker once said, "Culture eats strategy for breakfast ." While the roll-out of a software or training program can be set to a timeline, enabling and sustaining a cultural shift within an organization unfortunately cannot be timestamped in the same way – but it is the more effective path to organizational strength and success.

Bearing in mind that organizations will only continue to be inundated with industrial/operational data and new technologies such as AI and machine learning, supporting a more collaborative interdepartmental environment sounds like it will be well worth the effort. But what might hold that back?

IT and OT want and need different things

The other cultural challenge worth investigating is the exchange of perspectives between departments on divergent topics to foster collaboration – such as roll outs of game changing technologies. Take data lakes for instance - there is a difference in attitudes between IT and OT, where Operations (52%) are considering them more important than IT (35%) in benefiting their organization's operations.

In this instance, it is all about understanding the needs versus skillsets of each department. IT departments have the skills and training to be able to examine data in data lakes and realize that something is missing or needs adjusting, whether that be a disparate format or lack of contextualization. Further, IT knows that much of the data in data lakes is not organized and actually the usability of the data from a data lake is often much lower than the promise suggests.

However, someone in Operations may not have this full picture, may experience frustration with data lakes and may view them as a stagnant, untapped source of data – hence their increased appetite for them (52%) vs IT (35%). Data from data lakes often requires aggregation and contextualization in order for Operations to be able to run their analyses or AI, and yet the skills to do this typically lie within the IT department – not Operations itself. This example again illustrates an arena for interdepartmental collaboration to make full use of data which is available to them.

Further technology investment is expecting to propel the creation of data-driven insights

Despite their struggles with collaboration, IT and Operations are aligned when it comes to the technologies that would benefit their organizations' operations, namely:

- AI or machine learning (53% IT, 51% OT)
- Advanced analytics (50% IT, 52% OT)
- and predictive/prescriptive maintenance (46% IT, 48% OT).

These commonalities could be a springboard for interdepartmental collaboration and a change in culture, particularly as these technologies align with the strategies that organizations are planning to implement to push more data-driven insights, namely investing in skills (43%) and AI (43%).

While some differences exist in priorities between IT and Operations departments, with the increase in technology adoption planned, it's no surprise that both have ranked hiring more staff with business intelligence and data science capabilities (40% IT, 47% OT) as one of their top three priorities over the next two years.

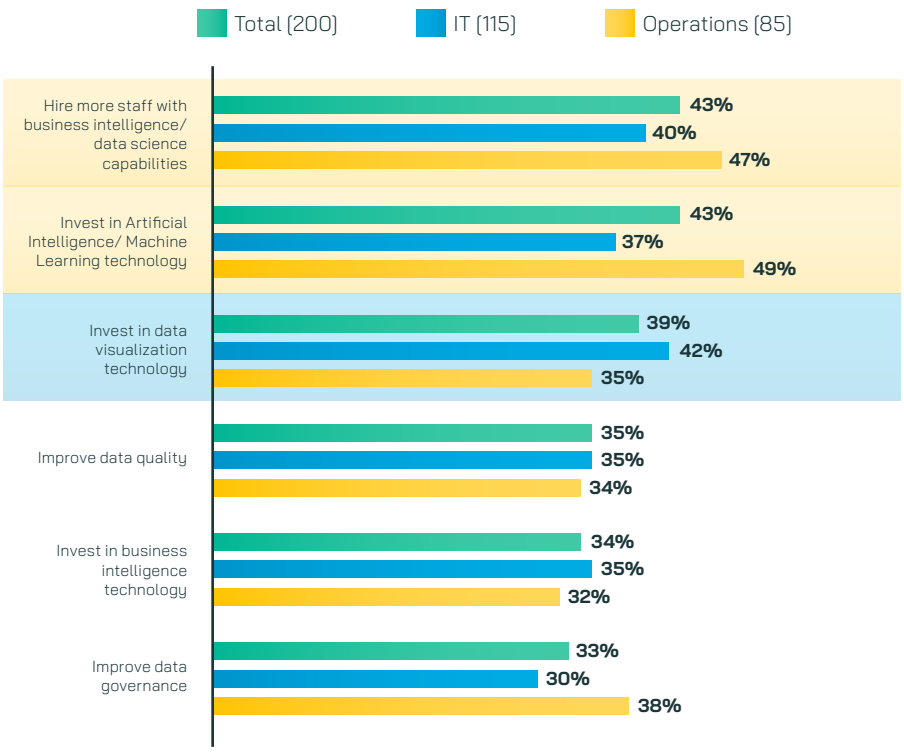


Figure 6 - Which of the following would be a priority for your organization to implement more data-driven insights over the next 2 years? Combination of responses ranked first, second and third (Base sizes in chart). Split by department. Not showing all answer options

Alignment across departments on a staffing-focused priority can be an indication of a skills gap; is this the case here?

Organizations are taking the necessary steps to bridge the analytical skills gap

A little less than half (47%) of those surveyed whose organizations are suffering from having too few employees with analytical skills are planning to retrain and upskill existing employees to address the skills gap. With underlying issues regarding collaboration, investing in retraining and upskilling existing employees could be a way of addressing the skills gap and the culture in one strategic move.

Research shows that the cost of replacing an employee is between 20-200% of their annual salary depending on their seniority and role – this includes the cost of recruiting, onboarding, training, downtime, hiring contractors in the interim, etc. Why not instead put the effort into retraining and retaining that employee instead of having that knowledge walk out the door to a competitor? With data becoming increasingly more complex and vast, the need to ensure the right skills are in house is more important than ever – the demand is outpacing the pool of qualified candidates so upskilling and investing in existing employees is a great tactic to stay ahead of your competitors.

It is therefore reassuring to see that organizations are already thinking about strategies to address data management skills gaps. In fact, around a third of organizations (32%) are increasing investment in formal training to upskill or reskill existing workforces, followed by placing employees on cross-functional teams for exposure to new skills (24%). This exposure can be a great way to gain understanding and empathy of colleagues in other roles, and in turn, build stronger collaboration and a more united company culture.

Additionally, cross-functional learning and upskilling is how to realize the value of an organization's employees when knowledge is shared among peers and the history of the organization is interwoven. This is something you just wouldn't have using contractors. When faced with externalities, a unified function will come together to face it – people and processes working together. But that doesn't mean businesses don't need – or plan to use – temporary staff as well...

The pros and cons of temporary staff

Temporary staff are reported as the most common solution to addressing the analytical skills gap; three in five respondents (60%) from organizations with a skills gap report that their businesses will be hiring new temporary staff with skills relevant to new technologies.

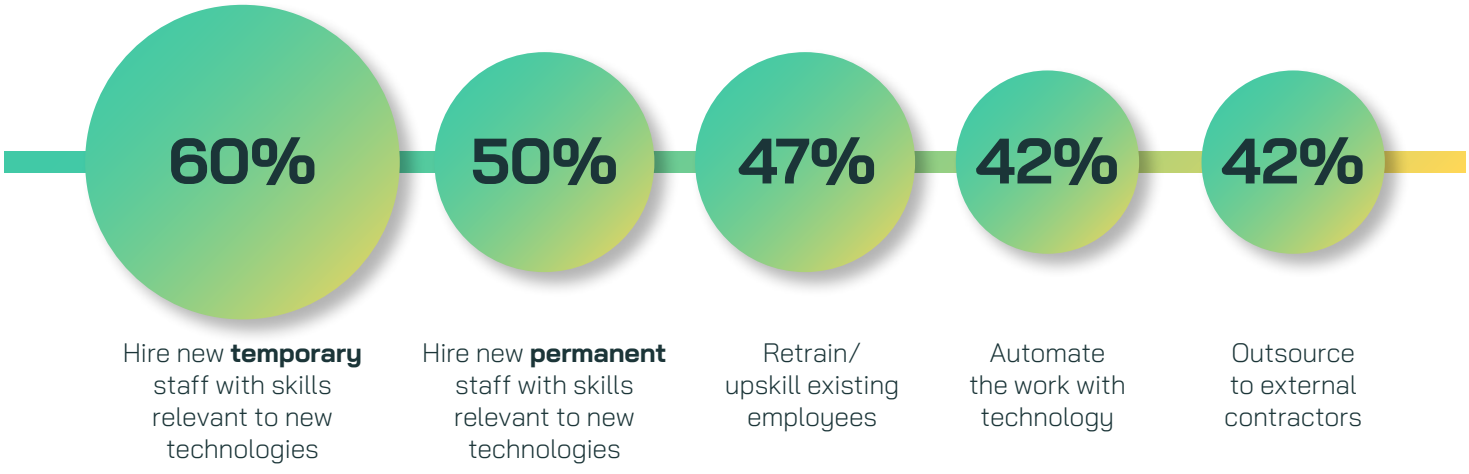


Figure 7 - What actions, if any, is your organization using to address the analytical skills gap? Respondents who selected "Too few employees with analytical skills" in Q7. (62) Not showing all answer options

While the learning curve is steep for understanding the types of data and ways to analyze it, becoming reliant on outsourcing or hiring temporary staff is not a long-term solution, but rather more of a 'quick win'. Of course, hiring temporary staff with relevant skills is a quick fix in being able to fill the skills gap, and there is also the hope that they may upskill existing, permanent staff in the process, who could then continue once temporary contracts end - but this is not guaranteed.

This type of strategy can also avoid the potentially high salary bills from hiring and onboarding permanent staff during a time when budgets are becoming tighter within organizations. But decision makers should consider that with the short-term nature of temporary staff, these individuals may not be conducive to bridging the cultural and collaborative gaps that organizations are facing. They don't need to buy into company culture, collaborate, or work to break down silos as their time is fixed, and they are hired to contribute their skillset to a very specific area.

Our recommendation therefore is that temporary staff should be seen as a way to plug a resource hole and not be expected to help build the interdepartmental relationships or culture needed to address those underlying issues – those strategies should sit with senior, influential and permanent staff.

So with the people and the collaborative strategies in place, there's one final part of the puzzle...

Desired capabilities of technologies used for industrial/operational data insights

While this skills gap may be taking up time on the boardroom agenda, we can't forget about the technology needed alongside the people. Ensuring the tools used have intuitive user interfaces that can help guide the users through the software, as well as features such as contextualized help within the software, informative error messages and feedback messages/suggestions, can all help with the adopting new technologies.

Many organizations already have a clear idea of what they're looking for in technology to enable industrial/ operational data insights, where ease of implementation and integration into an existing digital ecosystem takes priority for both departments (41%).

That figure is higher among those in IT, where nearly half (46%) are prioritizing ease of implementation. For Operations, ensuring scalable solutions (41%), intuitive user experience (40%) and centralized platforms for data aggregation and analysis (38%) are capabilities deemed essential in technology enabling industrial/operational data insights. Which makes sense as they are understaffed and want to hit the ground running generating insight from day one – any technology with a reduced learning curve will have appeal.

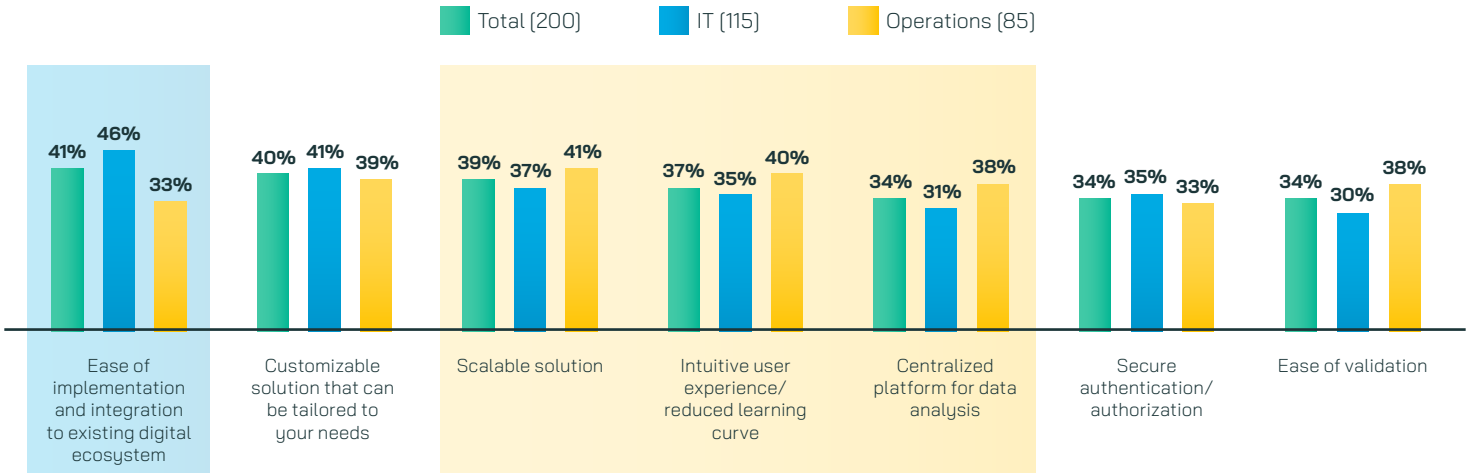


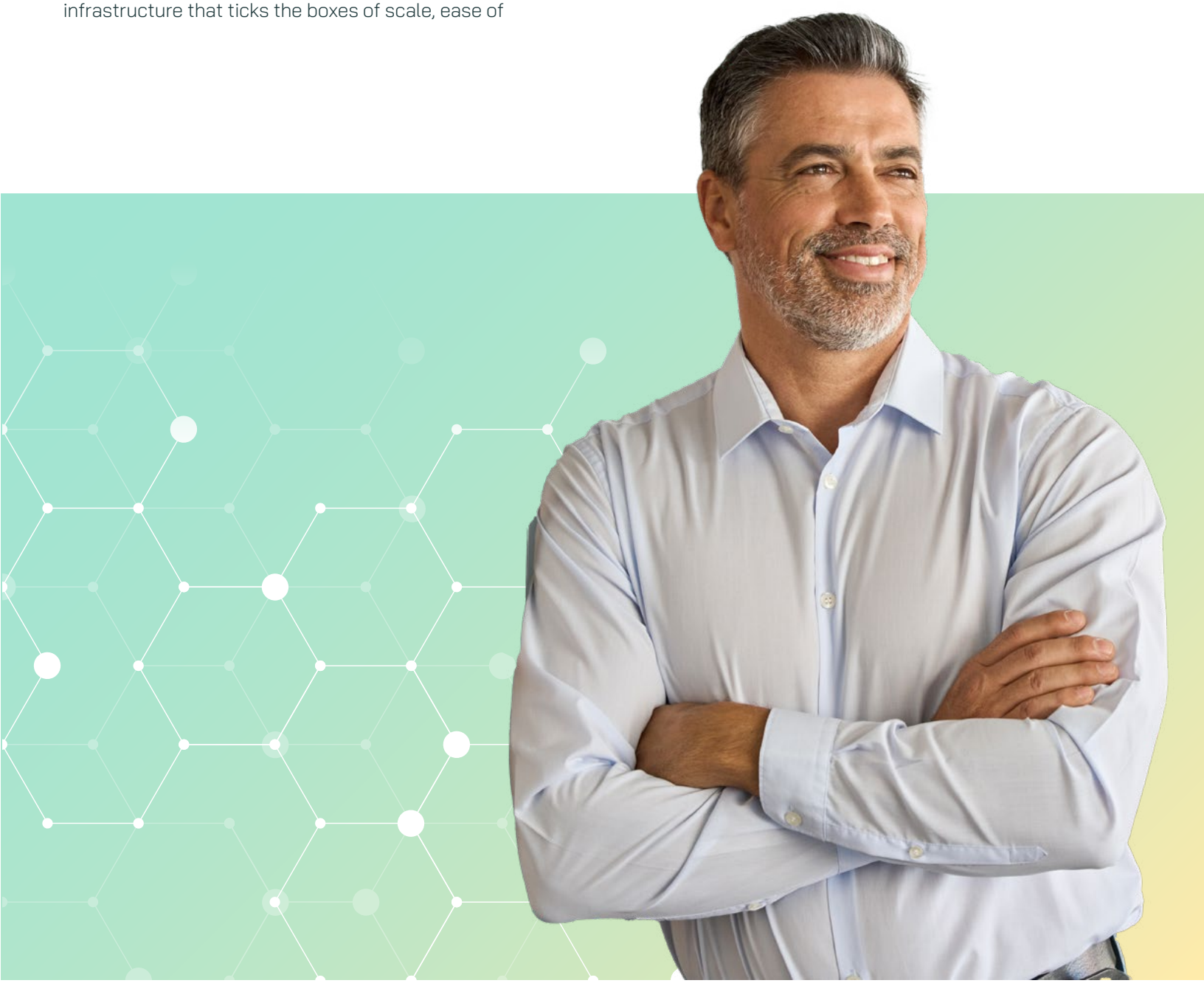
Figure 8 - When investing in a new technology to enable industrial/ operational data insights, what are the top capabilities your organization requires in an ideal solution? Combination of responses ranked first, second and third (Base sizes in chart). Split by department. Not showing all answer options.

IT and OT have distinct roles to play in technology adoption

While IT and OT departments' priorities may seem slightly divergent, they play into that fact that each team is responsible for different parts of the same adoption curve – IT being the more immediate implementation focused and Operations thinking about a longer-term user experience with scalability. Working with data doesn't have to be as difficult as it has been made out to be if the right tools and change management strategies are in place.

The ability of an organization to move forward on a digitalization journey will be down to the proper data infrastructure that ticks the boxes of scale, ease of implementation, intuitive user experiences, etc. all while also supporting the improved collaboration between IT and OT. A successful convergence of these two departments will be the deciding factor of the success of any technology rollout, and the benefits on offer hang in the balance of that success.

Where do you feel your organization sits when it comes to a collaborative infrastructure and culture – do you have what it takes to support it?



Conclusion

The blending together of a physical world of machines, devices and equipment, with a digital world of servers, networks and clouds, will not happen overnight. Nor will the breakdown of silos between IT and Operations departments. But ultimately, business success relies on both.

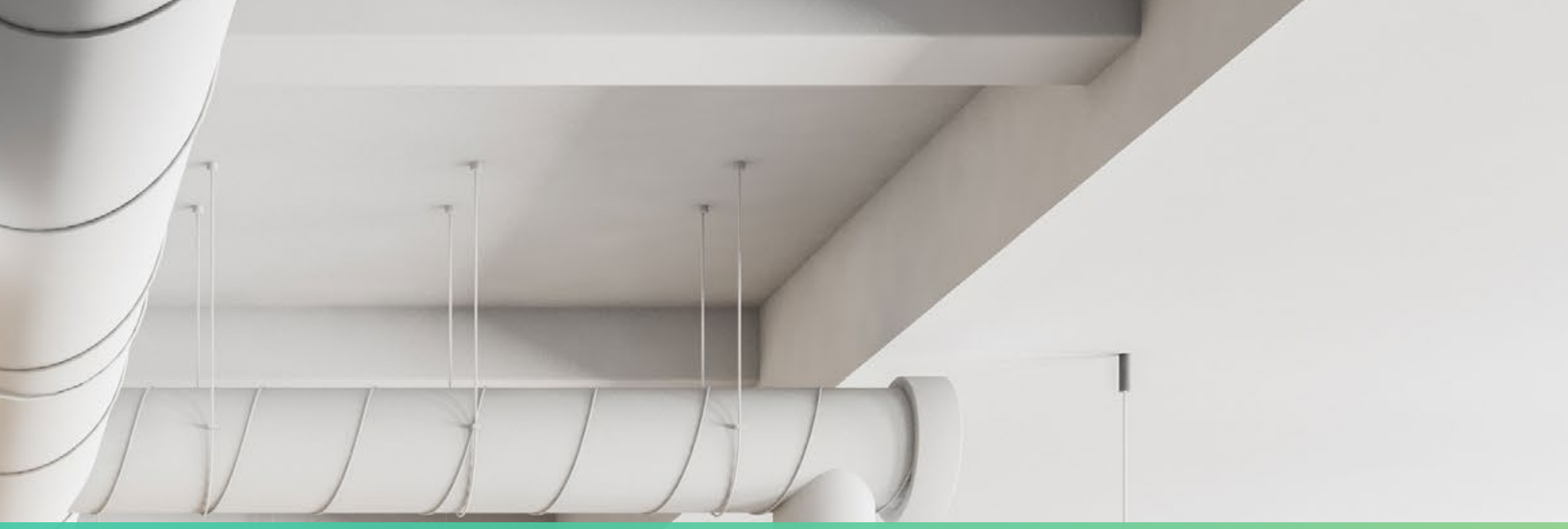
Industrial/operational data collection, processing, and analysis to turn it into insight is the area in which these departments' worlds overlap. And in the world of Industrial Internet of Things (IIoT), it is critical that the development and deployment of technology to leverage industrial/operational data is fit for purpose – when it comes to IIoT there is no room for error or complacency.

The benefits and applications of industrial/operational data are vast, and we mentioned in our introduction the three cornerstones of turning data into insight:

- People
- Processes
- Technology

The linchpin linking all this together and unlocking the potential of this data is an infrastructure that supports a partnership between IT and Operations departments (and all their people, processes and technologies), and an organizational culture of cooperation to back it up.

We invite you to assess these cornerstones within your organization, to investigate your specific challenges, and to consider changes that can help streamline and scale your business and keep up with the competition.



Methodology

Vanson Bourne surveyed 200 senior IT and Operations respondents across North America (US, Canada) and Europe (UK, France, Germany) working in a range of sectors (Energy, oil and gas, Chemicals, Pharmaceuticals, Construction/engineering, Mining and Metals). Research was conducted in Spring 2023.

About Vanson Bourne

Vanson Bourne is an independent specialist in market research for the technology sector. Our reputation for robust and credible research-based analysis is founded upon rigorous research principles and our ability to seek the opinions of senior decision makers across technical and business functions, in all business sectors and all major markets.

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AspenTech DataWorks, a business unit of Aspen Technology, is a global leader in industrial data management from the plant floor to the boardroom. Our mission is to accelerate data-driven value creation in the asset-intensive industries through robust data software offerings. For more information, go to: *www.aspentech.com/dataworks*