BI Trend Monitor 2019

The world's largest survey of BI trends

BARC Research Study

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Foreword

Foreword

2018 was the year of GDPR. The General Data Protection Regulation not only became visible to everyone using the internet and suddenly having to agree to lots of data privacy declarations, cookie consents and opt-in modalities. Even more importantly, GDPR affected businesses and how they handle, delete and store data. As organizations were preparing for GDPR to be implemented in 2018, data governance was already a trending topic in last year's edition of the BI Trend Monitor, and it remains among the top trends due to the many remaining open questions regarding the implementation of sustainable data governance, covering topics such as data access, privacy and security but also roles, skills and processes. Although most of the other trends within the IT landscape are not so directly connected to a specific regulation or law, their impact can be equally powerful and decisive for future business success.

The BI Trend Monitor 2019 from BARC focuses on the main drivers within the BI and data management market. Gathering experience from 2,679 participants, we asked users, consultants and vendors to assess the most important BI trends. These trends are compared by industry, regional and company-specific variables and provide insights into the latest developments in the BI market.

With the rising complexity of the business intelligence environment, the identification of trends and market developments is a key factor in effective decision-making. It is increasingly important to use the latest technologies and approaches in order to cope with digitalization and market competition.

Dr. Carsten Bange

Würzburg, Germany. November 2018.

Management Summary

The market for BI and data management is constantly changing. As an industry analyst, we frequently highlight and predict important topics that have an impact on the agendas of organizations and the people within them. For this study we take a unique approach to identifying trends: we asked close to 2,700 users, consultants and vendors for their views on the most important BI trends, delivering an up-to-date perspective on the BI market and revealing a comprehensive picture of regional, company and industry-specific differences. We have condensed the main findings of this study into six result areas.

Result area 1 | Top trending topics

For the second consecutive year, BI practitioners selected data quality and master data management as the most important trend. The significance of relying on high quality data as well as having all important data to hand seems to be consistently high. This trend is backed up by the equally stable significance of data governance, which is ranked in fourth position.

Data discovery and self-service BI, in second and third positions respectively, continue to be very important topics. A newly introduced topic – "establishing a data-driven culture" – came straight in at number five this year, proving itself to be highly significant. Other top trends such as data quality management, data discovery and self-service BI can be considered to be the foundation of a data-driven culture and are therefore tightly interconnected.

IoT analytics, the other new topic in this edition, was ranked down in 20th position. As a relatively new topic in the BI market, it is probably not relevant in the daily work of most BI practitioners yet. At the foot of the table, data labs climbed up from 20th to 17th while cloud BI moved up one place to 18th. Going in the opposite direction, visual design standards fell to 19th place, two positions lower than last year.

Result area 2 | Best-in-class companies

Best-in-class companies* attach greater importance to all BI trends than organizations that see themselves as laggards*. However, for some trends, best-in-class companies and laggards are not far apart in their assessment. This applies especially to IoT analytics, using external/open data and data warehouse modernization. Nevertheless, there are also some wide variations in outlook, for example, with data discovery/visualization and integrated platforms for BI and PM. However, the biggest difference can be seen with the establishment of a data-driven culture. Laggard companies attach much less importance to making their business data-driven. This may be because they are not yet aware of the benefits this approach can bring. Furthermore, creating a data-driven culture means a huge shift, and one which laggard companies are perhaps not able to make at this point due to a lack of resources and know-how.

* Best-in-class companies comprise the top 10 percent in terms of achievement of specific BI-related business benefits (e.g. "Faster reporting, analysis or planning" and "Increased competitive advantage") in this survey. Laggards represent the lowest 10 percent.

Result area 3 | Vendors vs. users

By and large, vendors, consultants and users agree on their assessment of the importance of BI trends. Nevertheless, differences in opinion can be observed regarding cloud BI, mobile BI and establishing a data-driven culture. Vendors and consultants see cloud BI as more important than users do, while vendors attach more importance than users and consultants to mobile BI. In turn, users attach less significance than vendors and consultants to cloud BI and mobile BI.

Conversely, users – especially IT users – and consultants rate the establishment of a data-driven culture slightly higher than vendors. This can be explained by the fact that there is no specific tool that can provide a data-driven culture and therefore this area does not fall directly within the vendors' sphere of influence.

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Result area 4 | Industry comparison

Overall, the manufacturing and utilities industries attach less importance to all BI trends, with very few exceptions. Conversely, the services industry generally shows a tendency to see greater significance in most trends. The telecommunications industry has more mixed views, rating many trends as unimportant while others – like real-time analytics, data governance and visual design standards – are rated relatively highly in comparison to other industries.

The most striking differences can be observed for data governance. While this topic is apparently important to the telecommunications and finance industries, utilities and manufacturing attach a lot less importance to it. Furthermore, data preparation for business users is considered important by the transportation industry and the public sector while it is less important to telecommunications and retail/wholesale companies. All in all, the comparison of trends by industry not only reflects the differing needs of certain sectors but also the varying stages of openness and maturity towards developments within the field of BI.

Result area 5 | Global differences

From a geographical point of view, participants from Asia Pacific consistently rate the listed BI trends as more important than South American, North American and European respondents do. Conversely, European companies generally display less affinity with the trends than other regions. The only exception is master data and data quality management where Europe – together with Asia Pacific – attaches more importance to this topic than the Americas. In the Asia Pacific region, technological developments have accelerated tremendously in the last couple of years. This might explain to some extent why respondents from this region consider BI topics in general to be more important. In order to better understand Europe's more conservative position, let us take a closer look at the regions within Europe (see result area 6).

Result area 6 | Europe

Across European countries, the significance of BI trends is assessed quite differently. While the overall rating is comparably low in comparison to the global perspective, it is striking that Eastern Europe generally attaches greater significance to most BI trends than other regions. Conversely, the German-speaking countries (Germany, Austria and Switzerland; collectively known as DACH) seem to be less sold on most of the topics. The only exception here is visual design standards, on which the DACH region places greater importance than most other regions. Overall however, it is still not rated very highly with an average rating of 5 out of 10.

One of the reasons for Europe's conservatism might be the introduction of GDPR in 2018 (as well as preparations for GDPR in the previous year, when we had similar results for Europe). In particular, trends like cloud BI can be linked to security concerns, which are heightened by potential penalties from the regulatory authorities.

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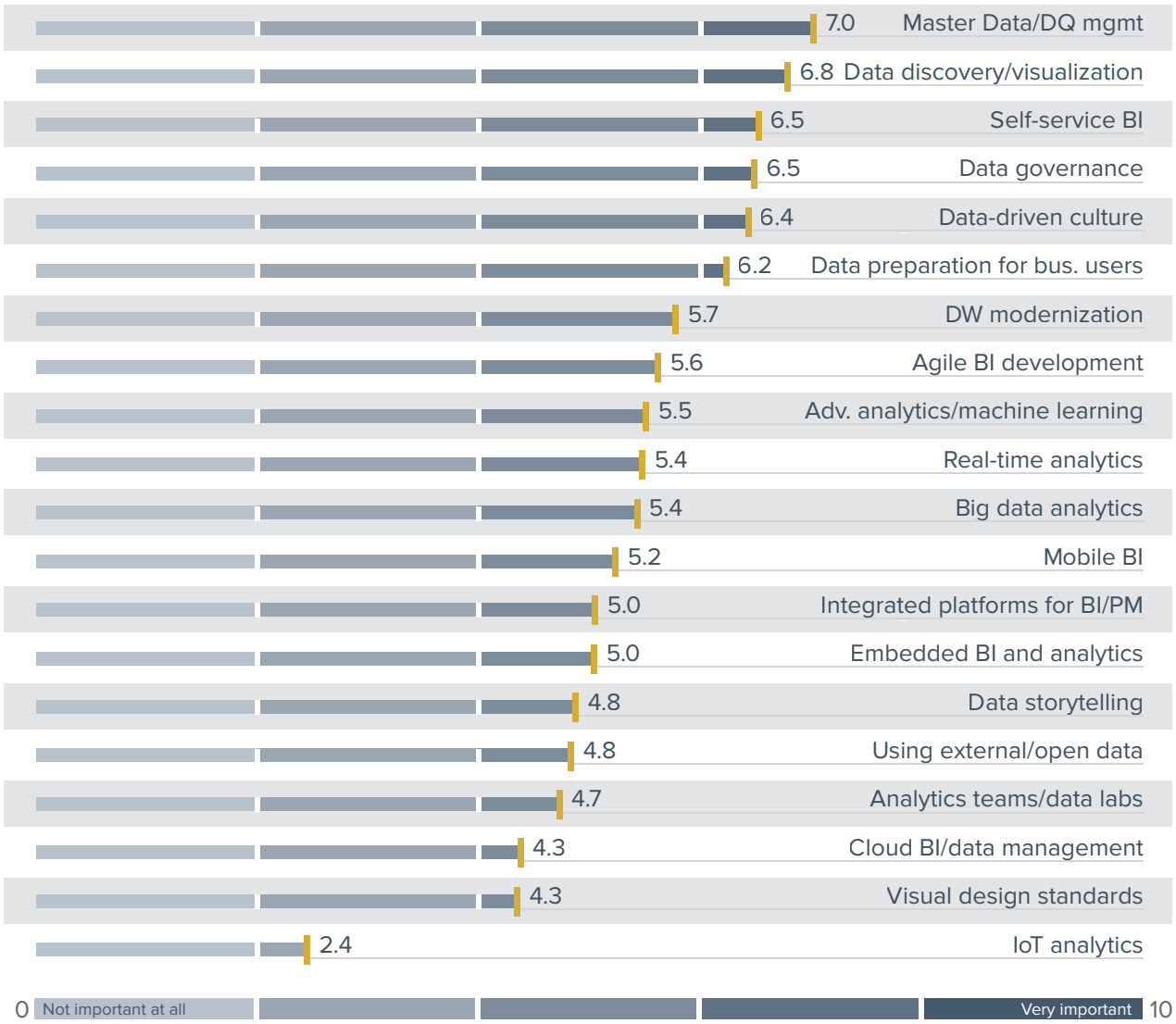
Survey Results

BI Trends Overview

Data quality/master data management, data discovery/visualization and self-service BI are the top trends.

Importance of BI trends from "not important at all" (0) to "very important" (10)



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BARC Viewpoint

We asked users, consultants and software vendors of BI and data management technology to give their personal rating of the importance of twenty trending topics that we presented to them. The three most important trends remained the same as last year with master data and data quality management in first position, data discovery in second and self-service BI in third. While master data and data quality management builds a strong foundation for handling data, the significance attached to data discovery and self-service BI shows that the empowerment of business users is a consistently strong trend. This impression is also backed up by the newly introduced and fifth ranked topic "establishing a data-driven culture", which depends on greater inclusion of various business departments (aside from IT). Data governance, which remains in fourth position is still seen as an important trend. Here, again, GDPR comes into play. Although data governance covers a much wider spectrum than 'just' providing data protection, the rising significance of data governance can also be traced back to an increase in data security awareness.

The lack of interest in IoT analytics, which features in last place in its debut year in BI Trend Monitor, leads to the assumption that businesses are neither prepared nor really focused on implementing this special kind of analytics at the moment. With IoT itself just emerging in importance, it will probably take some time before the potential added value of IoT analytics begins to unfold.

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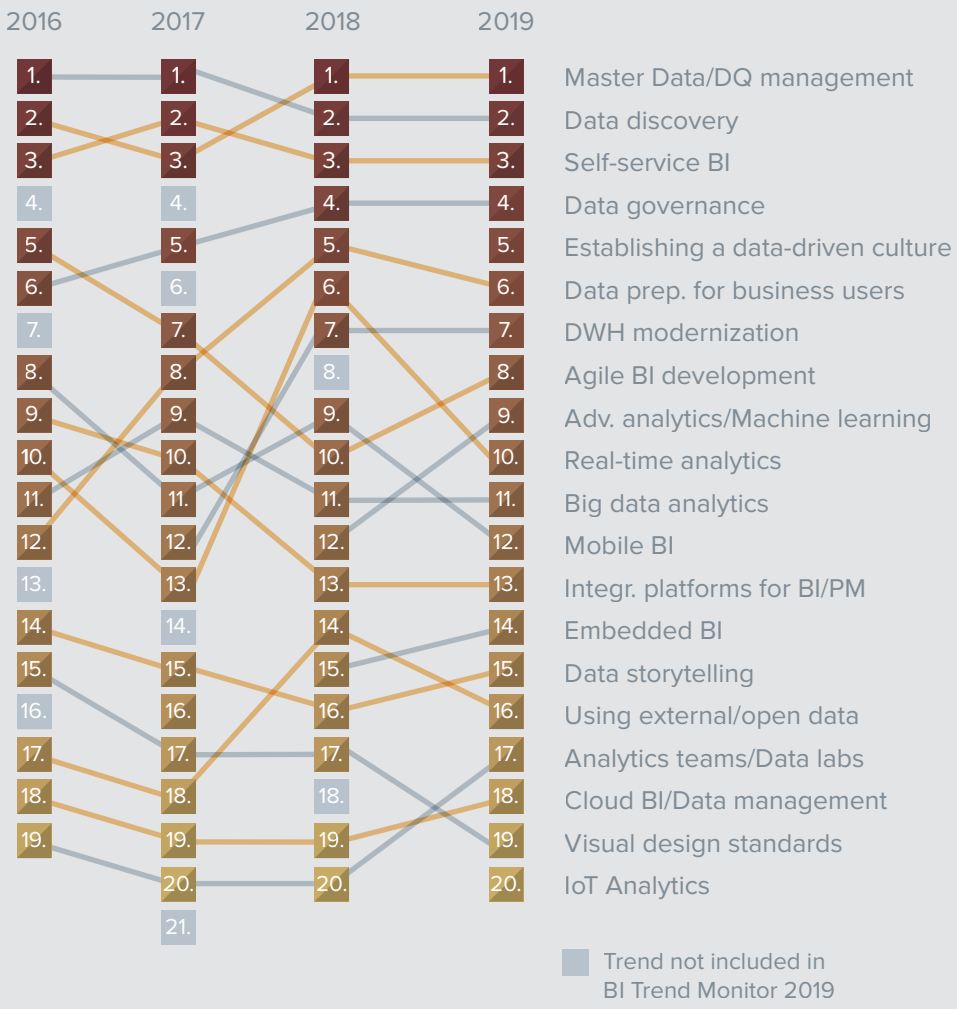
BI Trends Development

Development of rankings of BI trends



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Trends that have clearly increased in importance compared to last year include agile BI development and advanced analytics and analytics teams. While agile BI development is connected to a revolutionized cooperative approach between lines of business and IT, advanced analytics expresses the need for businesses to use data in a more beneficial way. Also, advanced analytics includes machine learning, which is tightly interconnected to many hyped use cases in the sphere of artificial intelligence.

Conversely, topics decreasing in importance include real-time analytics and mobile BI. It seems that the perceived practical benefit of these trends has not become as obvious as expected to most BI practitioners yet. Either their current tools and systems are not able to provide these kinds of application, or priorities have changed and other trends have become more appealing.

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The Trends in Detail

16 | Master Data/Data Quality Management
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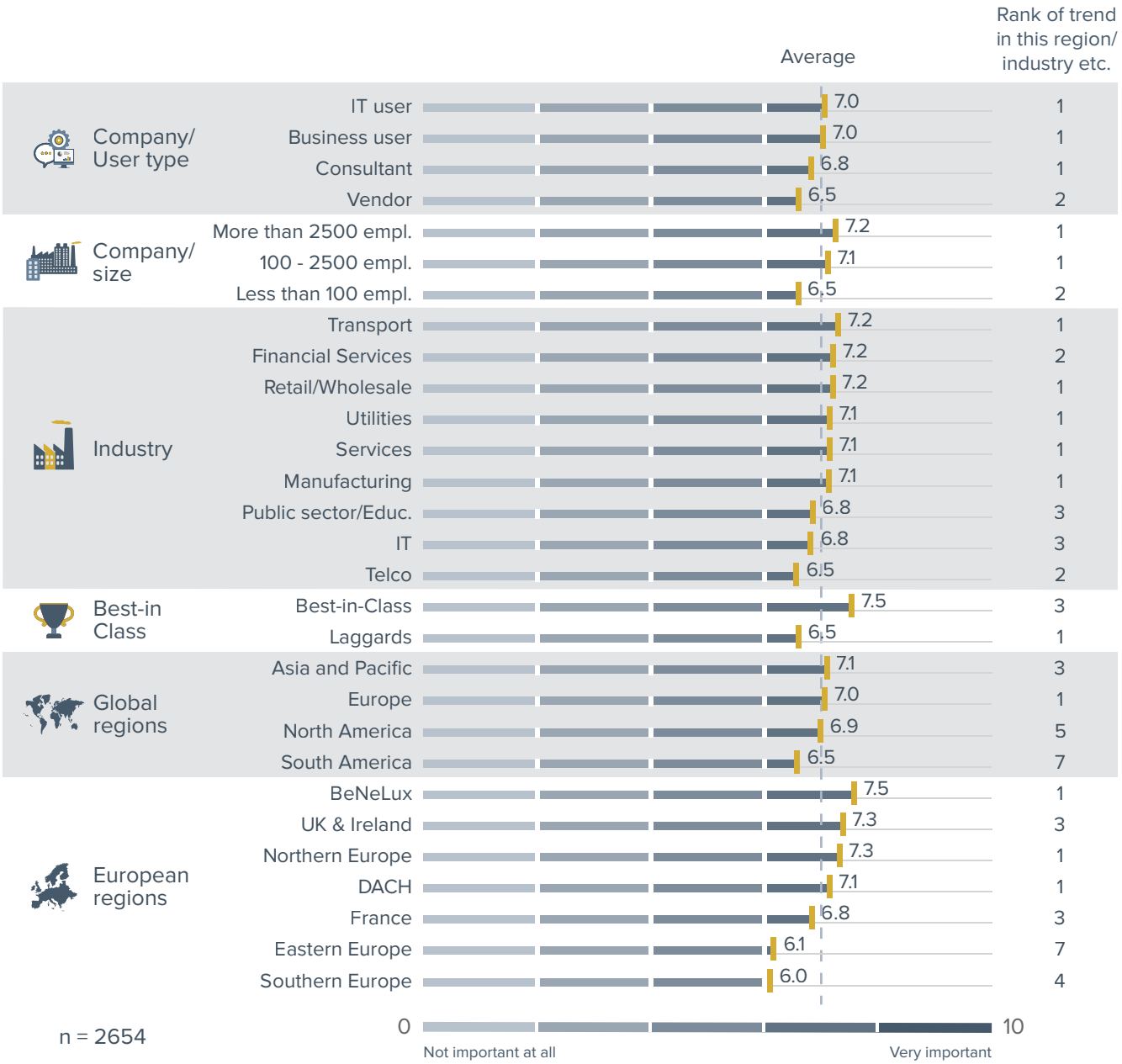
Master Data/Data Quality Management



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The importance of data quality and master data management can be explained very simply: people can only make the right decisions based on correct data. Decision-making processes and operational actions depend on reliable data. Through their aggregation mechanisms, BI reports and analyses can help to reveal data quality issues.

The goal of master data management is to bring together and exchange master data such as customer, supplier or product master data across multiple systems. Aside from a “master” ERP system, many companies also work with other CRM or SCM systems, use web services, or need to merge systems following corporate mergers, or to co-operate as partners effectively.

There are proven concepts for increasing data quality and implementing master data management. One example is the Data Quality Cycle, which many software vendors have implemented in their tools.

In today’s digital age, in which data is increasingly emerging as a factor of production, there is a growing need to use and produce high quality data to make new services and products possible. The critical success factors for sustainable high data quality are defined roles and responsibilities, quality assurance processes and continuous monitoring of the quality of a company’s data.

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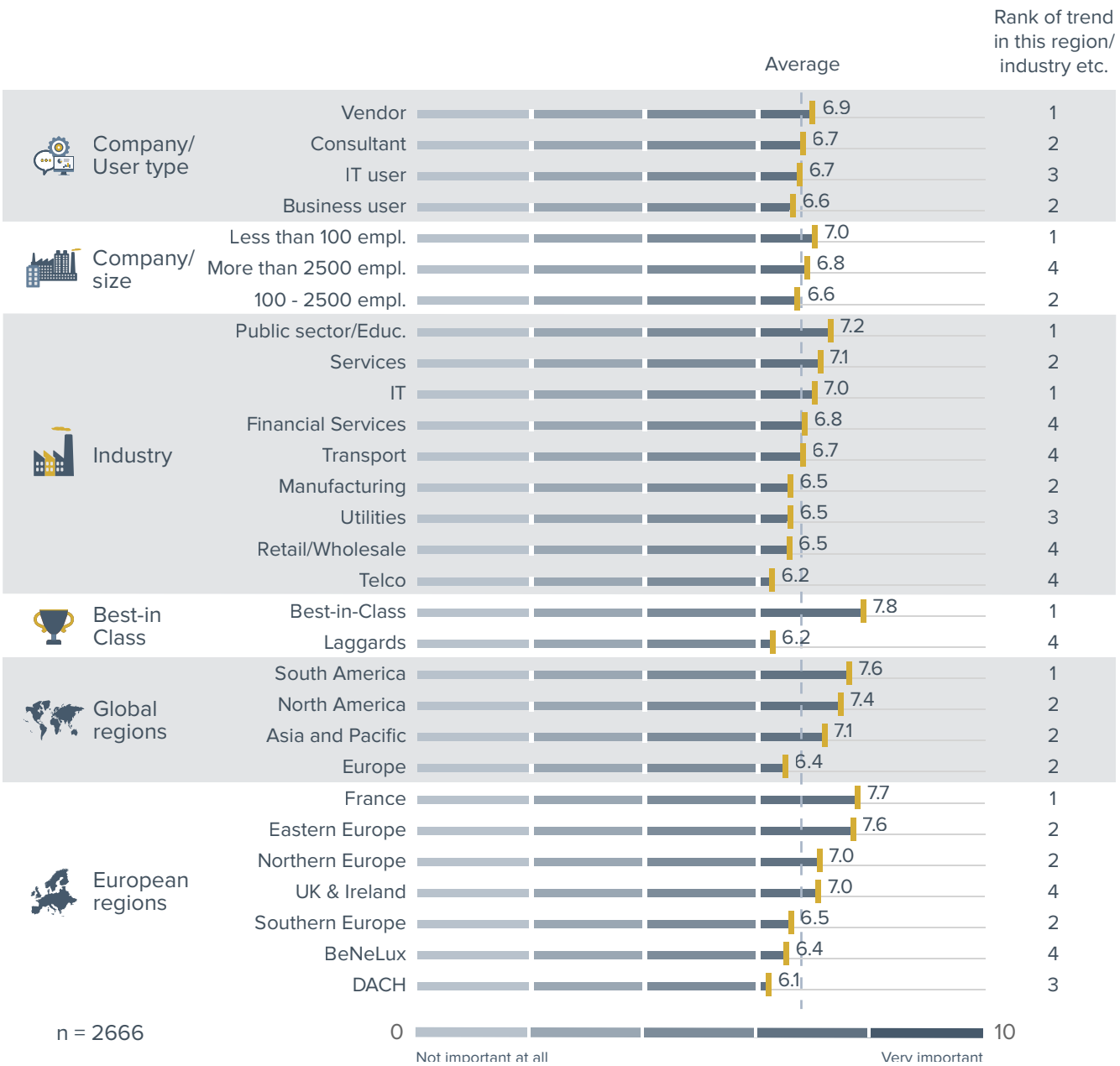
Data Discovery/Visualization

Best-in-class companies are much more aware of the value of data discovery than laggards. DACH companies are the most reserved.



BARC Viewpoint

Data discovery is the business user driven process of discovering patterns and outliers in data. It must cover and integrate at least three functional areas to efficiently and effectively identify patterns and outliers in an iterative approach. Business users must be well equipped with features for connecting diverse sources, cleaning, enriching and shaping data to create data sets for analytics (data preparation). These data sets can be explored by using visual analysis or sifted by guided advanced analytics to find patterns not visible to the human eye in large data sets with a high number of variables.

Data discovery is currently evolving along two axes to increase efficiency and quality. Improving user guidance is at the top of the agenda for most vendors. Machine learning is increasingly being added to data discovery tools to guide business analysts through all steps from preparation over analysis to presentation. Additionally, data discovery is increasingly integrated in BI and analytics suites to bolster data governance through connecting diverse and distributed data preparation and discovery efforts.

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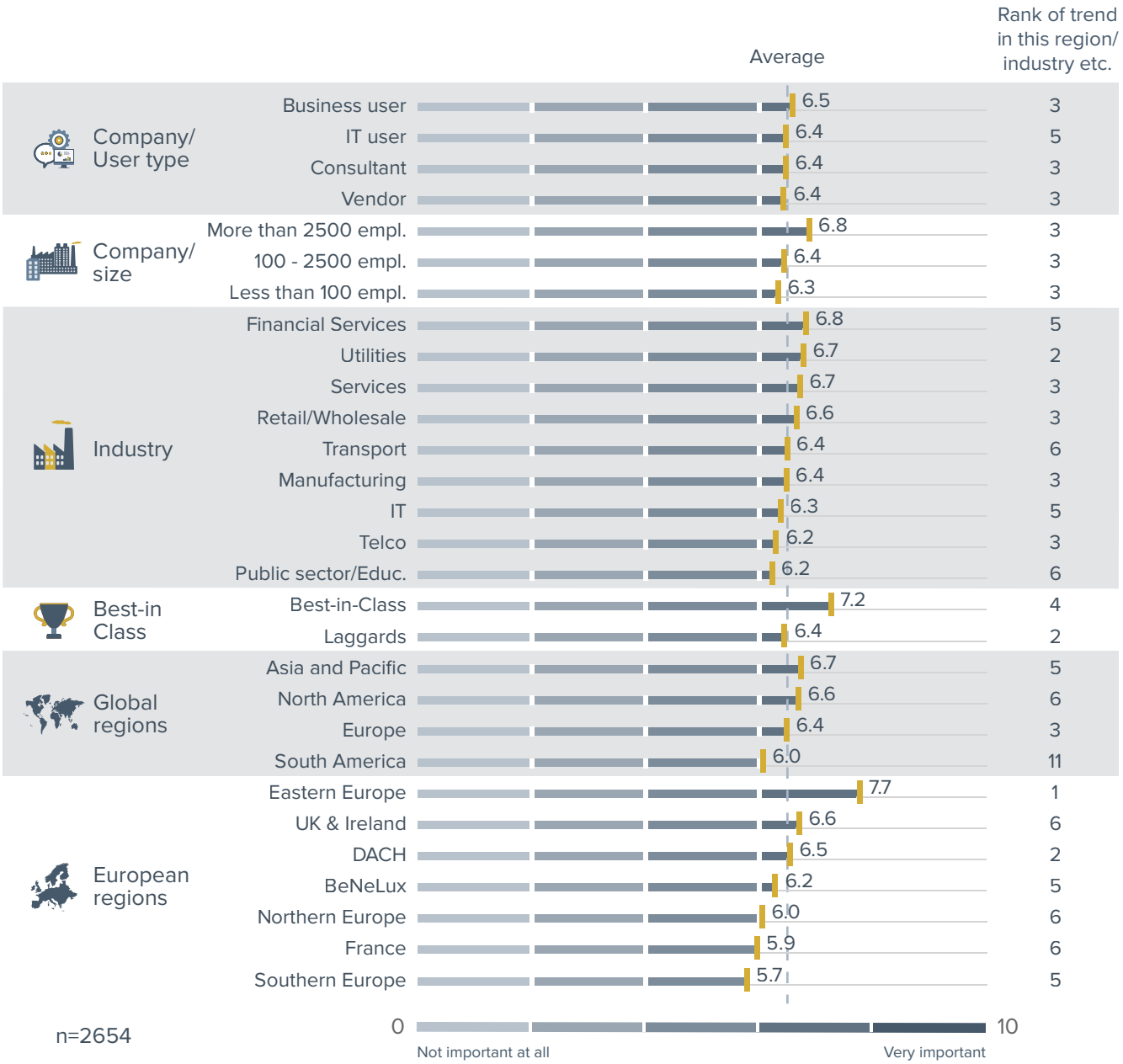
Self-Service BI

Self-service BI is especially relevant in Eastern Europe and across best-in-class companies.



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Self-service BI has been on the wish lists of many organizations for years and remains a high priority according to our survey findings. This continuously high demand underlines the importance of equipping modern analytical landscapes accordingly.

Self-service BI promises quicker and more efficiently prepared analyses and reports by empowering the business users involved to gain insight from data and make better informed decisions. The number of implementations that allow business users to build their own reports and dashboards or even explore data with guided advanced analytics and build data assets (data preparation) is increasing. Not all business users take part in actively creating BI and analytics content. It is important to understand self-service BI as a complement, not a supplement, to serviced or 'silver service' BI.

Connecting and governing the efforts of business users with decentralized content creation is challenging despite advances in technology. Self-service BI elevates agility and speeds up the time to insight, but the quality of results or efficiency must not be sacrificed for agility. It is important to support content reuse and to find the right level of self-service for all types of use cases and users.

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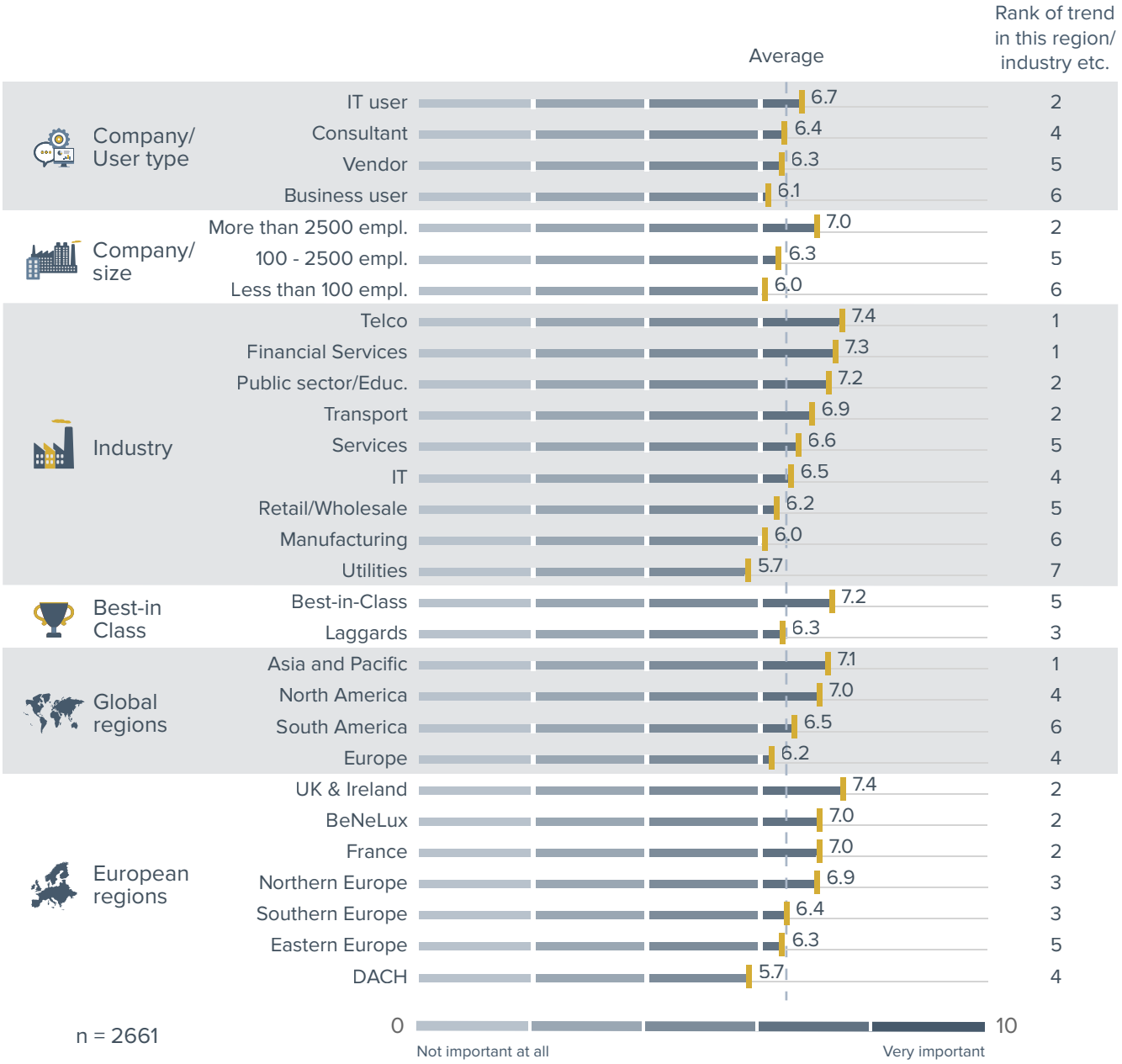
Data Governance

Important for UK & Ireland and telecommunications, but not so much across utilities and the DACH region.



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Unlike BI governance, which centers on preparing and presenting data for business management systems, data governance focuses on the data in all systems that are dealing with data. Because business and technical responsibilities are traditionally covered on a per system level, this overarching view of data needs to be specifically addressed, preferably by a central body within the organization. This ensures broader thinking in terms of knowledge, organization and technology.

Data governance is needed as the steering mechanism for data strategy. A proper data strategy orchestrates how business strategy is translated into data and analytics. Data strategy manages the exploitation of data across all business processes to promote business efficiency and innovation. Data governance is required to implement a data strategy, including policies and frameworks to manage, monitor and protect data capital while taking people, processes and technologies into account. Establishing data governance is a long-term endeavor. Most of all, it requires a clear, conscious management decision on how to work with and use data.

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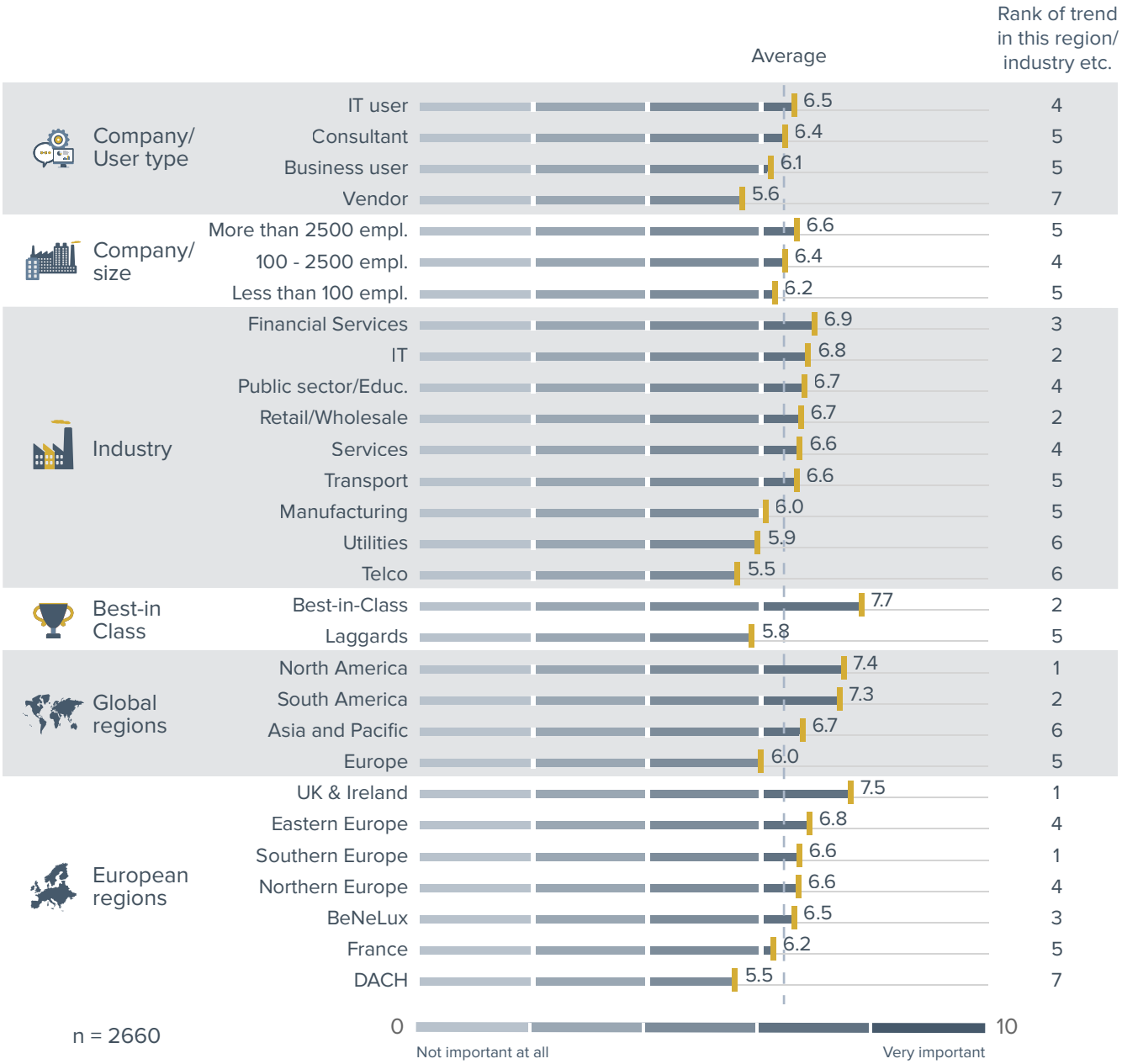
Data-Driven Culture

A big gap between best-in-class companies and laggards as well as the UK & Ireland and the DACH region.



BARC Viewpoint

One of the biggest shifts in today's business world is the transformation from isolated and project/application-oriented data usage to a completely data-driven enterprise. 'Data-driven' in this context means that all decisions within a business and the execution of processes are based on data. That can be simple key figures like revenue or profit, but also results from advanced analytics models. Even qualitative data can be used to support the decision-making process. While companies have always been interested in their numbers, the extent of data use here is exercised on a higher level. The main aim is to replace managers' gut feelings with actual (data derived) facts. Furthermore, a data-driven culture should empower all employees to actively use data and data analysis to enhance their daily work. The goal is to fully utilize a company's potential by making decisions more successful, initiatives more effective and competitive advantage more striking.

However, a data-driven culture should not be interpreted as blindly following numbers. Key focus areas should be to enhance data interpretation skills and critical thinking. This enables businesses not only to base their decisions on reliable data, but also to know when it is better not to do so.

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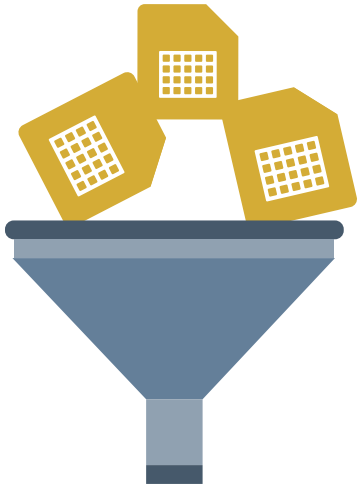
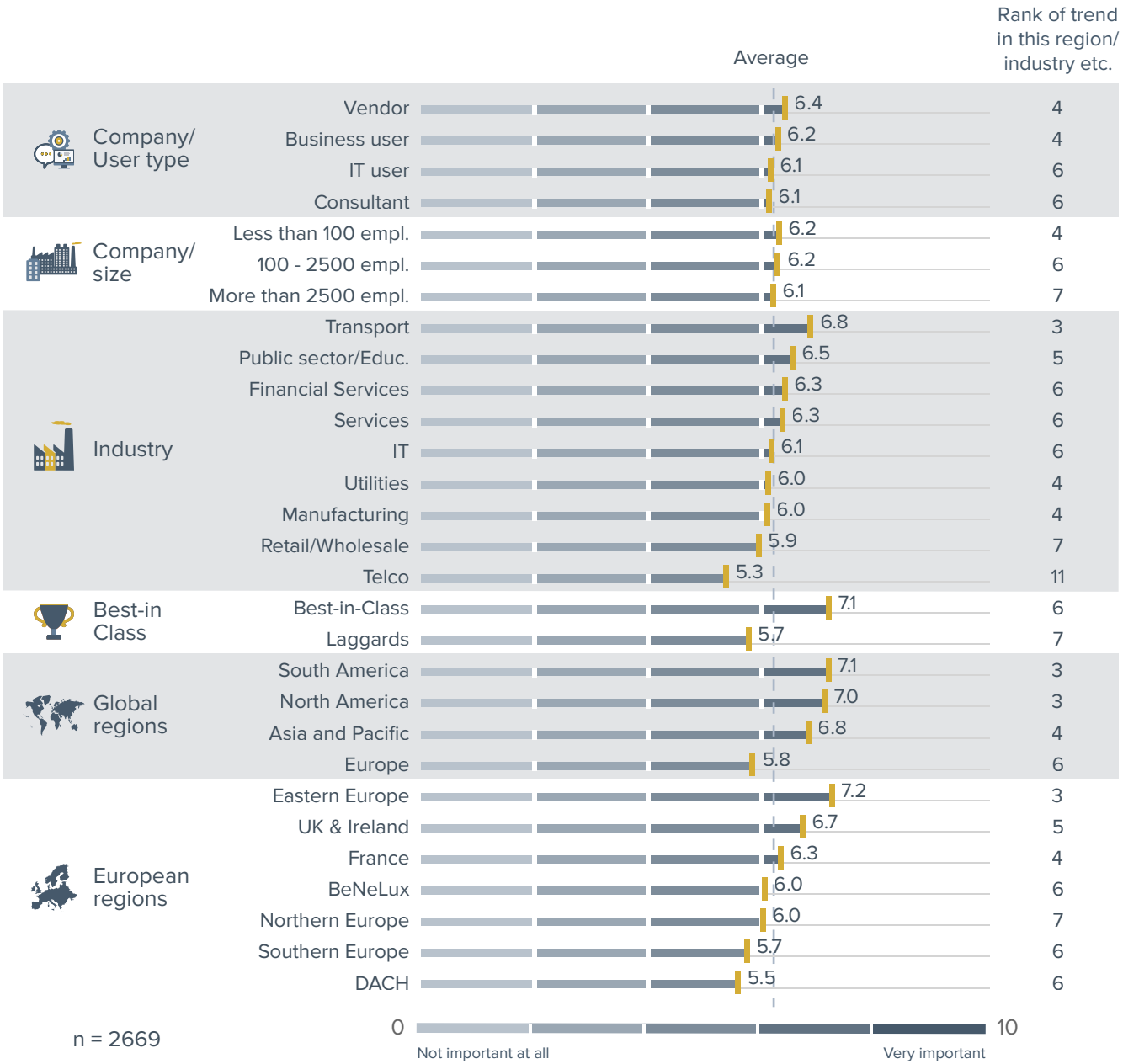
Data Preparation for Business Users





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Data preparation is the process of cleaning, structuring and enriching data for use in data discovery and/or advanced analytics. The goal of data preparation for business users is to provide tools for shaping data to their analytical requirements without having to resort to IT.

Achieving efficient and agile data preparation is of utmost importance in today's economy. It is key to increase the ability to efficiently use enterprise and external data in a distributed manner to optimize business processes or to enable new, innovative business models. The lasting importance of data preparation for business users shows that this data management task is increasingly shifting from IT to business users.

To ensure high efficiency and quality without sacrificing any newly gained agility, it is vital to establish collaboration between development resources in IT and the business users involved. Easy to use and intuitive tools with sophisticated user guidance and immediate results are vital to spread data preparation. Transparency of transformations applied (data lineage) and integration with BI and analytics suites support data governance requirements. Clear guard rails must be defined to ensure the effective and efficient use of data.

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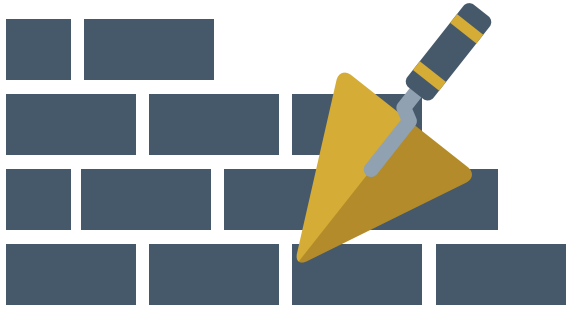
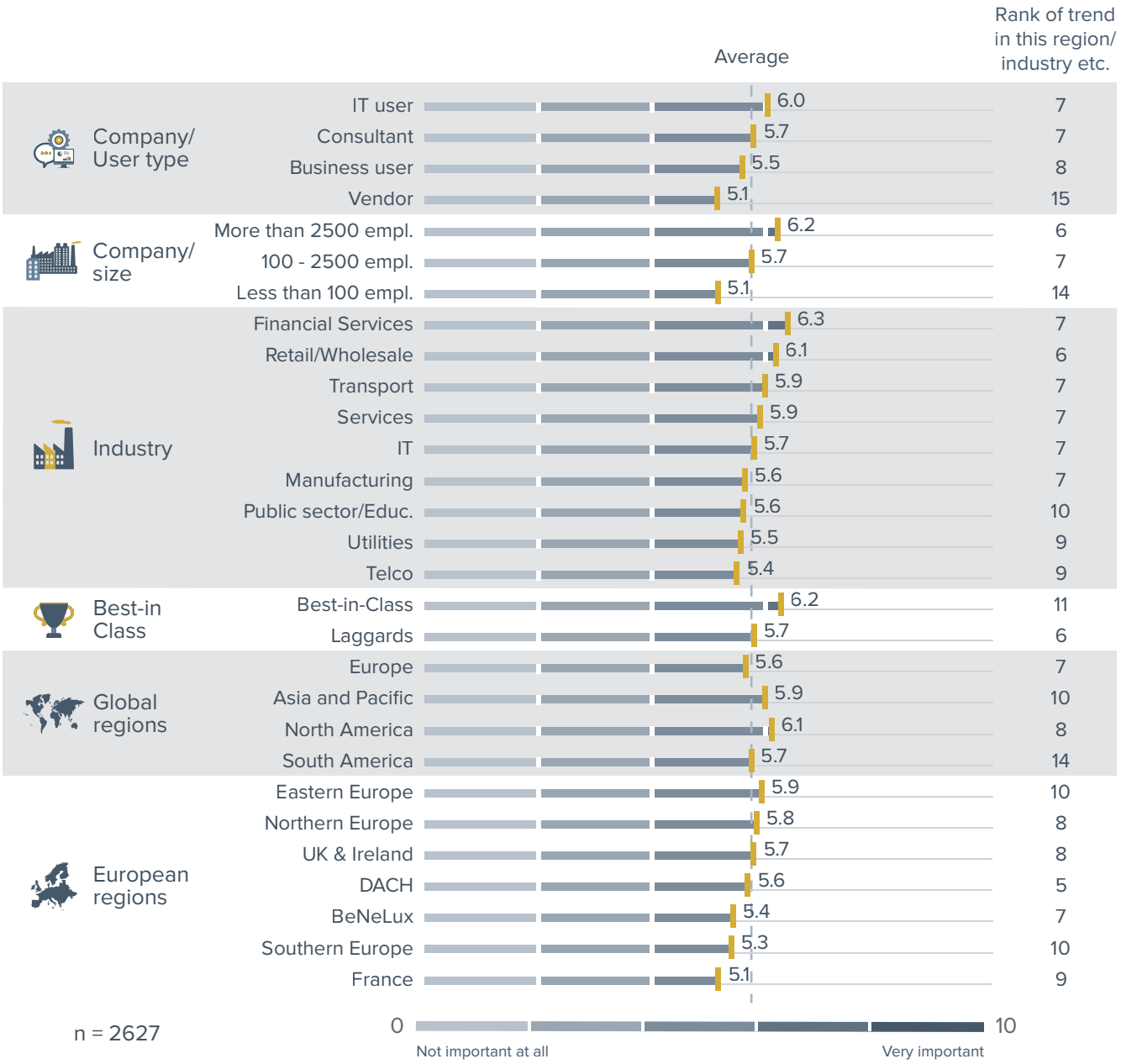
Data Warehouse Modernization





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New analytical challenges, increasing data variety, rising data volumes, faster decision processes, process automation and decreasing hardware costs are all having major effects on how companies store their data. Firstly, older data warehouse landscapes have become too complex to support agile development, or too expensive to have their functionality extended to accommodate modern analytics requirements. Furthermore, the type of implementation for which many data warehouse landscapes were originally designed and optimized does not cover the way analytics is currently moving forward in the direction of exploration and operational processing alongside classical BI requirements.

Now, organizations are beginning to understand the new challenges and the potential of alternative methodologies, architectural approaches and utilizing other technical options like in-memory, cloud storage or data warehouse automation tools. IT must prepare for faster, changing analytical requirements, and they must also compete against new and cheaper implementation options from external service providers. Collaborative approaches are needed to cover the increasing expectations of the business to pull maximum business value from data . It is now time to assess historically grown data warehouses against present requirements and evaluate how updated hardware and technology could make life easier.

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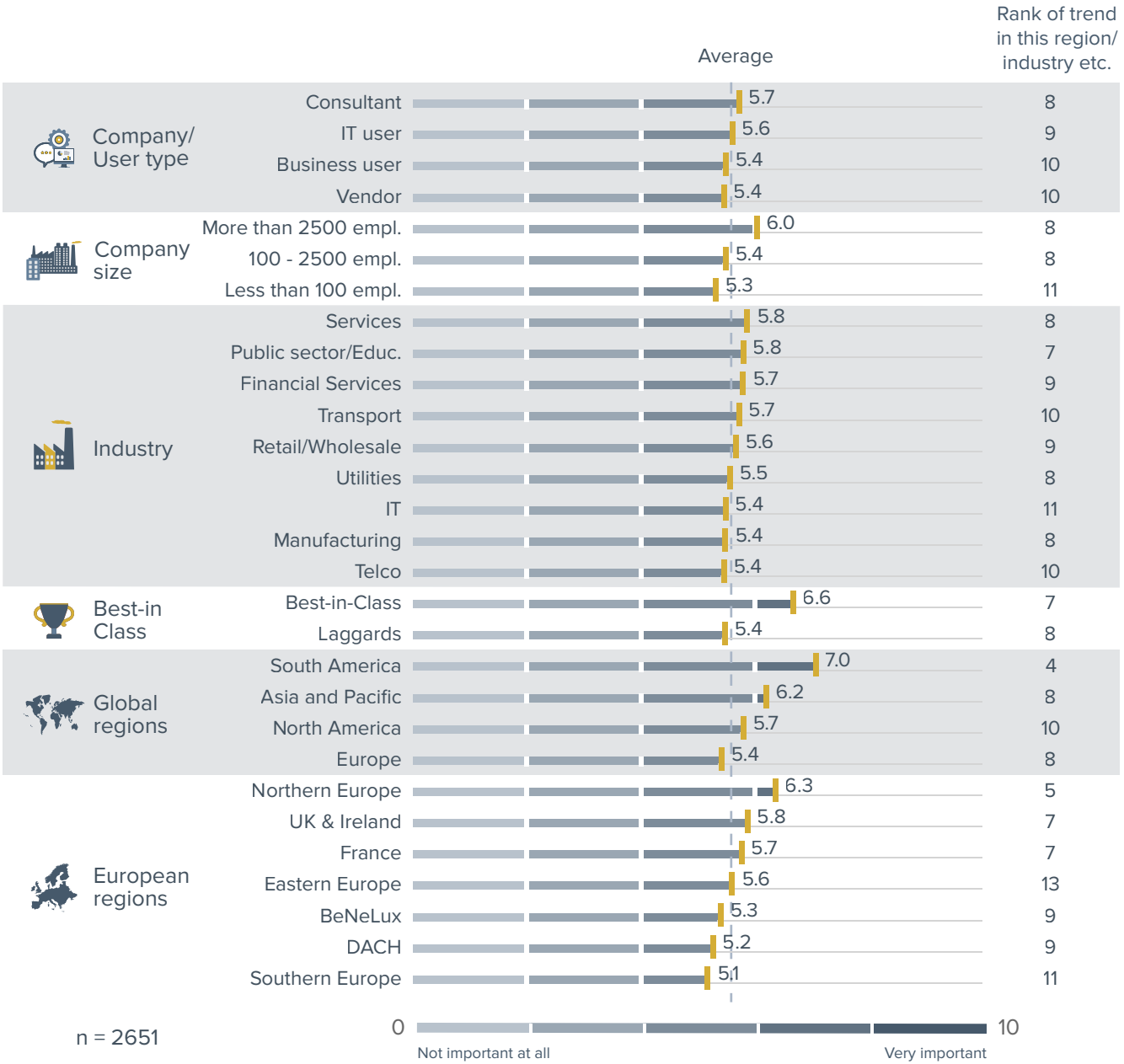
Agile BI Development

Agile BI is prominent in South America, but less important to organizations in Southern Europe and the DACH region.



BARC Viewpoint

The term “agile” has increasingly been adopted in the context of business intelligence in recent years. Originally referring to a software development methodology, the “agile” moniker is now often used as a requirement for the development of new data models, reports, dashboards or visualizations. Arguably, most users requesting “agile BI” have very little understanding of the agile development methodology and use the term as a synonym for “flexible”, indicating a pressing need for faster development cycles.

Agile BI requires organizations to adopt an iterative development approach. Instead of the traditional waterfall method, by which requirements are gathered before the development process starts, close collaboration between business and IT, using rapid prototyping, enables organizations to increase development speed while better responding to business needs. Many companies are not set up organizationally for this approach, however, and some changes in organizational structures may be required. Ideally, the agile BI development approach is also supported by agile project management, by which planning, requirements collection, development, but also functional, regression and usability testing are managed in an iterative manner. An important aspect, and one that is often considered a bottleneck, is the availability of business users to collaborate in the development process.

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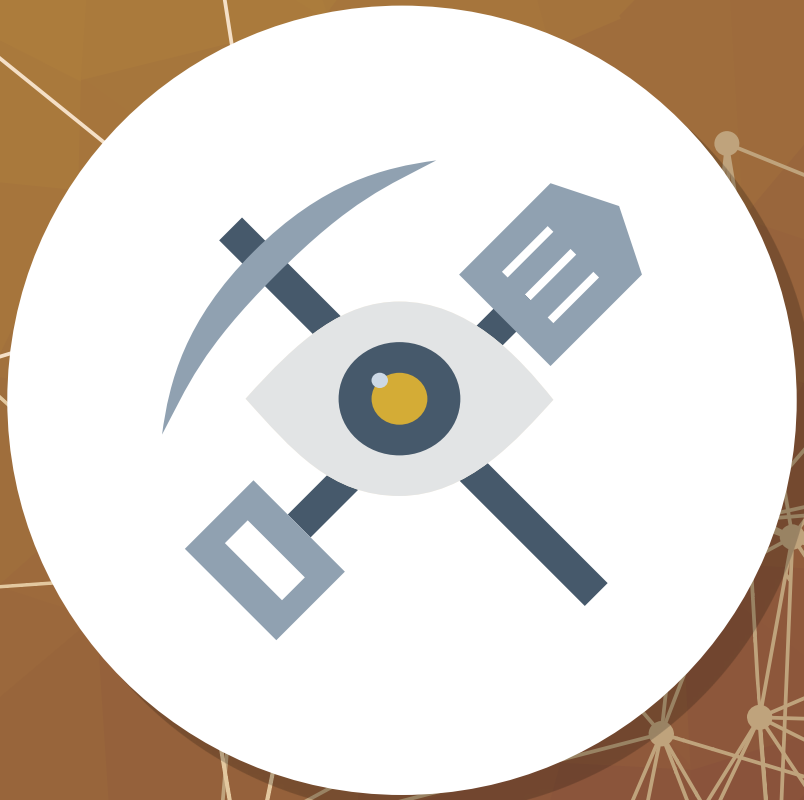
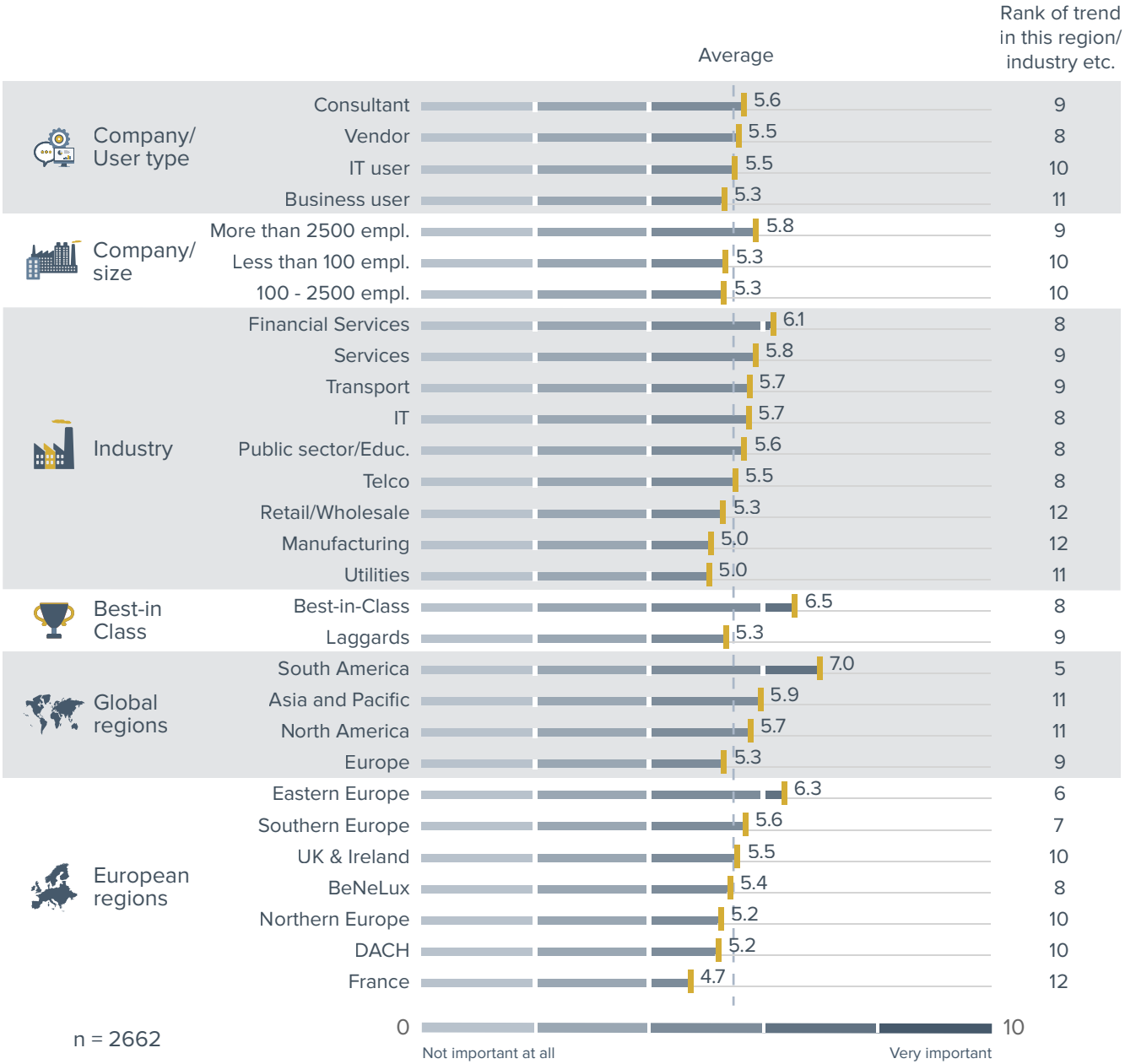
Advanced Analytics/ Machine Learning





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Predictive analytics and data mining are important trends among BI decision-makers for 2019. Advanced analytics goes beyond mathematical calculations such as sums and averages. It uses mathematical and statistical formulas and algorithms in order to generate new information, identify patterns and dependencies, and calculate forecasts.

The number of possible use cases in this area is immense, and ranges from conducting forecasts on income, prices, sales, requirements or customer value to preventing contract cancellations, forecasting machine downtime, monitoring and evaluating social media, and predictive policing.

The expansion of predictive analytics and machine learning also means changes for IT decision-makers and managers. They need to assess which use cases to tackle with advanced analytics, the level of priority advanced analytics should have in the company as a whole, which roles are required (and with which capabilities), and which technology fits best taking account of the IT landscape and intended users.

With the increasing use and maturity of advanced analytics, many companies have now moved past the experimentation phase into more practical, day-to-day use cases. Especially larger companies are investing in resources to conduct predictive analytics and machine learning. The deployment of analytics solutions and operationalization of new findings and insights by creating new products and services brings fresh challenges that need to be addressed in both organizational and technological terms. The operationalization of use cases is one of the major challenges in this context. Vendors that assign the highest importance to the topic are profiting from the increasing knowledge of business users and growing investment in this field.

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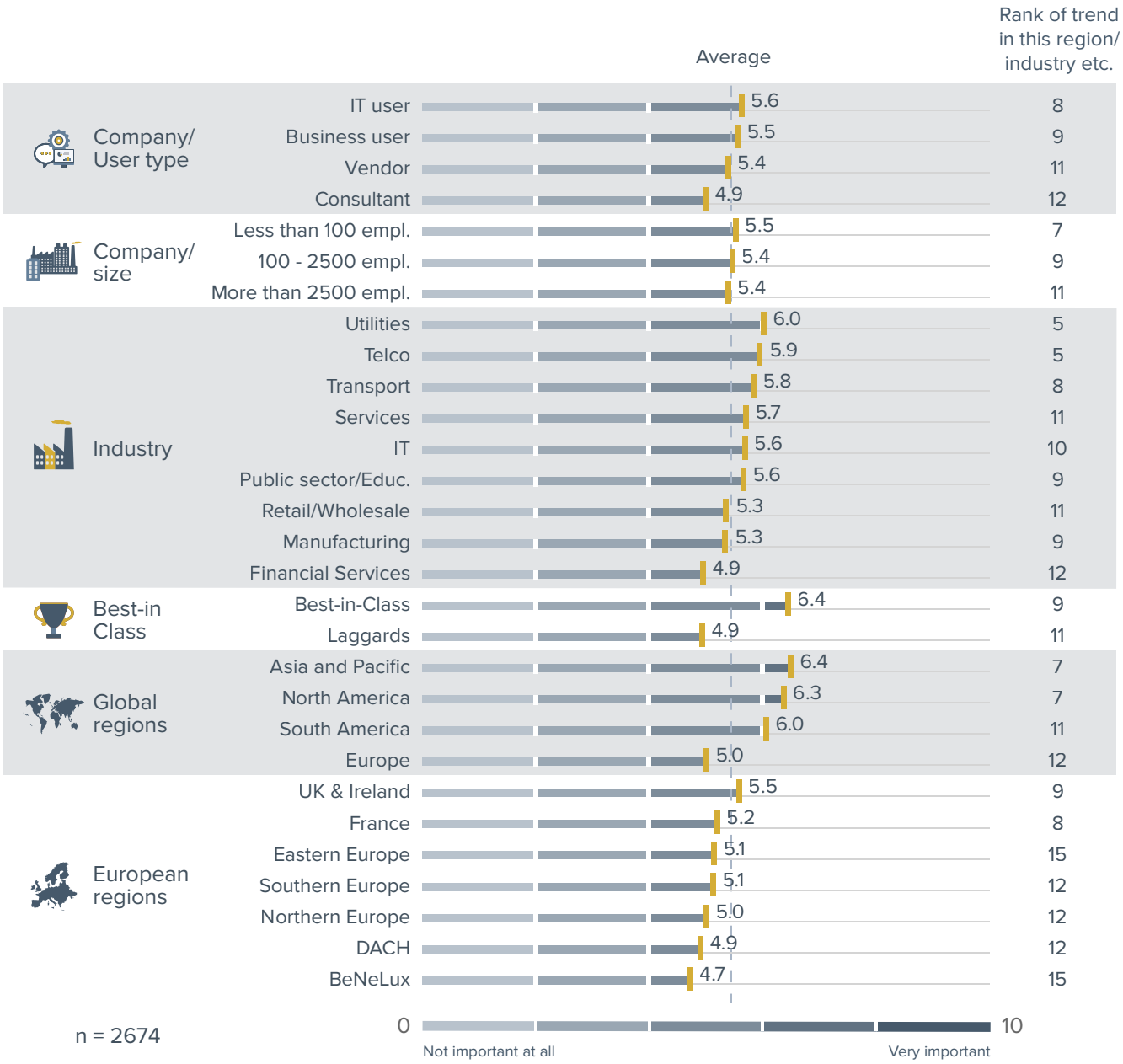
Real-Time Analytics

Real-time analytics is especially popular in the Pacific region and North America, but less popular in BeNeLux countries and financial services.



BARC Viewpoint

Faster reporting and analysis of data, not only in terms of query performance (which is still one of the biggest problems users experience with their BI tools), is a challenge in many companies. There is an increasing need to make data from transactional systems available immediately to support faster and fact-based operational decision-making.

BI with real-time data refers to the near-immediate processing and provision of information about business operations in transactional systems (i.e., streaming). Real-time analytics is about catching events or other new data immediately after their occurrence and processing them for display (e.g., in an operational dashboard) or analysis. Constantly increasing amounts of data, high-performance computing time and pattern recognition of events (complex event processing) are just some of the challenges companies now face when focusing on BI with real-time data.

Like visual BI or predictive analytics, BI with real-time data can complement an organization's existing BI strategy to gain new insights into data with additional, valuable findings. An organization's decision-making culture, available skills and the identification and promotion of appropriate use cases are key aspects to consider when exploring a real-time analytics project. Real-time analytics receives above average importance scores with small and medium sized companies. The utilities and telecommunications sectors assign the highest importance to the topic.

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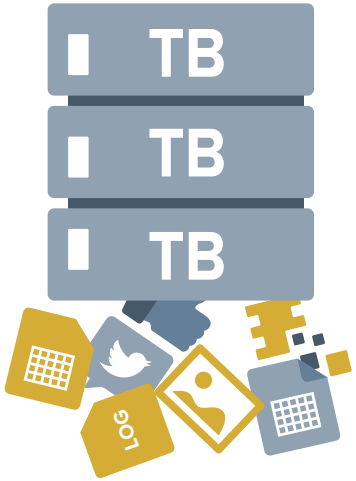
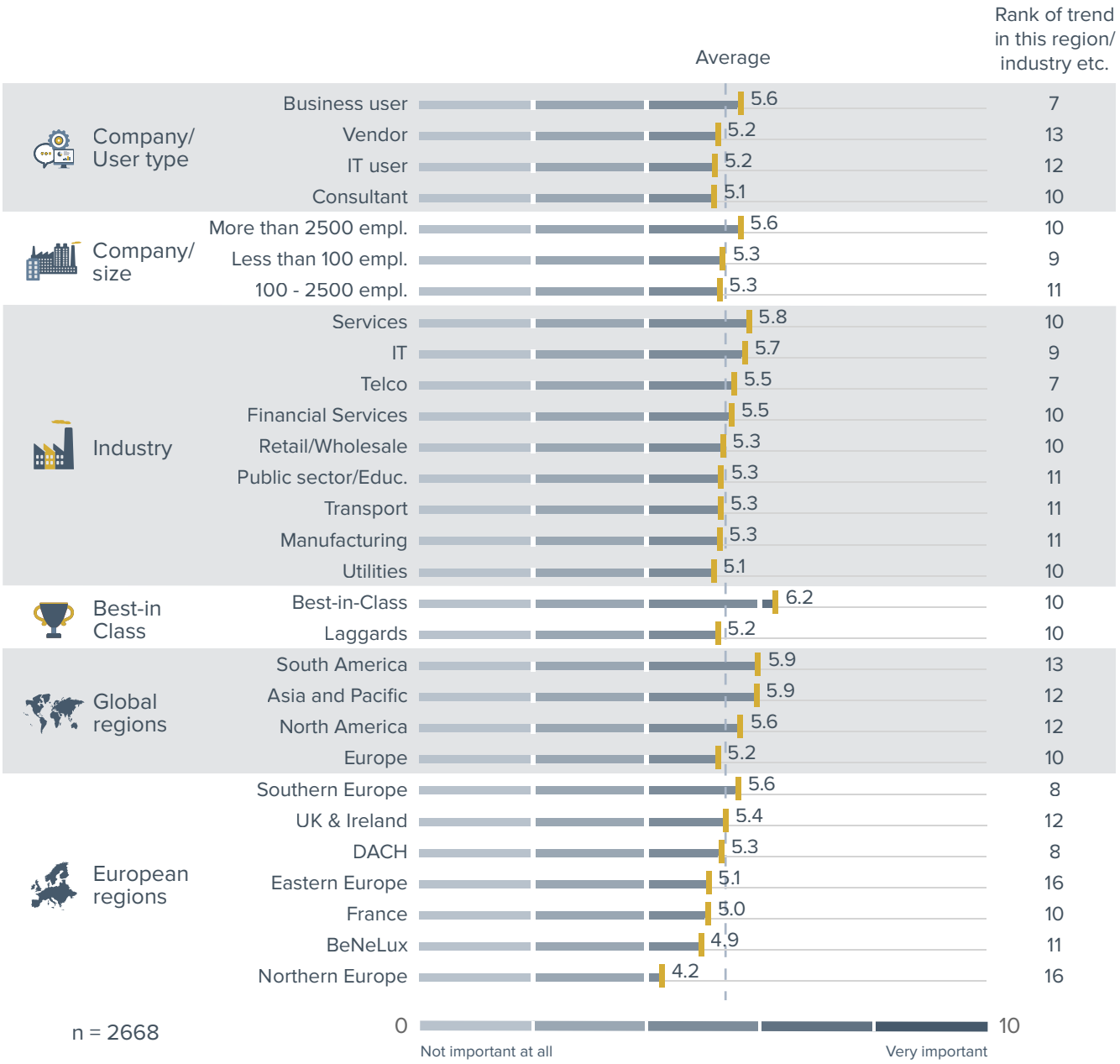
Big Data Analytics



Best-in-class companies place the most value on big data analytics, Northern Europe and the BeNeLux countries much less so.



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While big data has become an omnipresent term in recent years, and the hype surrounding it seems to have already peaked, the value it can generate is yet to be fully explored. Many organizations are still in the process of finding ways to make big data usable and profitable. In this context, big data analytics comes into play by providing the means to analyze data sets from various internal and external sources including sensor, geolocation and click stream data. Almost every device or platform generating data can be used as a vehicle to identify patterns and derive added value through effectively combined information.

Big data analytics is used to support decision-making and process optimization. Therefore, it is applied at both an operational and strategic level. The challenge is no longer how to get hold of data, but how to use the massive amounts of data produced every day effectively in order to develop new products, reduce costs and make better decisions.

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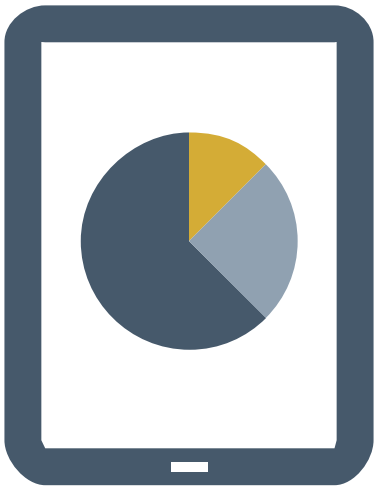
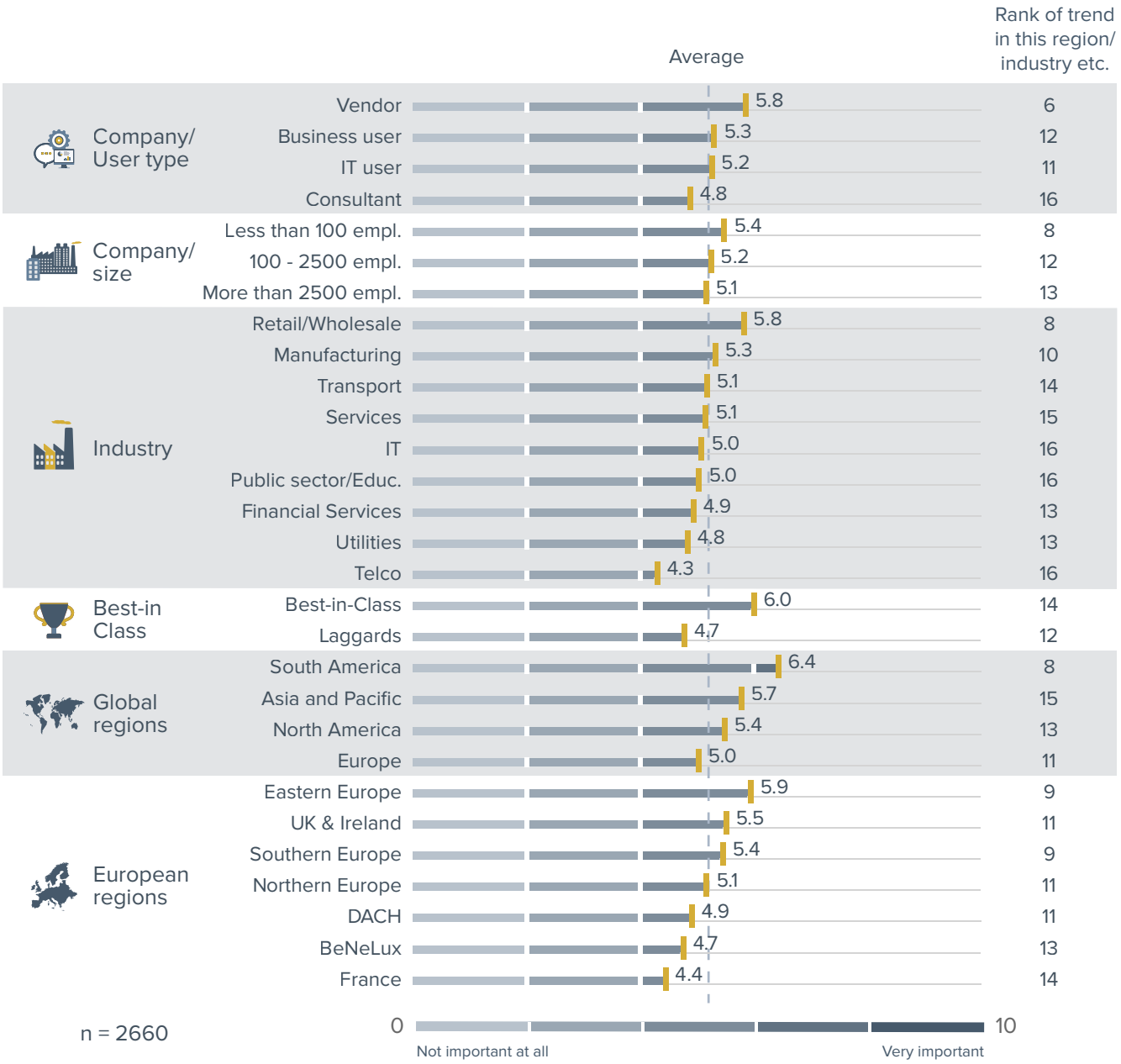
Mobile BI



Very important in South America and Eastern Europe. Less important in France and the telecommunications sector.



BARC Viewpoint

Mobile BI – driven by the success of mobile devices – was considered by many as a big wave in BI and analytics a few years ago. However, over the last few years, we see very slow growth in the use of mobile BI and a level of disillusion in the market. Unfortunately, there are not many mobile BI apps out there that are truly mobile-friendly and easy to use for business users. Therefore, user acceptance of mobile solutions is often rather low. Our survey data shows that market penetration is growing relatively slowly: in 2018, 30 percent of BI users say that mobile BI is in use in their organization (up from 28 percent in 2017, 23 percent in 2016, 21 percent in 2015 and 18 percent in 2014).

In our experience, the most successful mobile deployments are those in which a mobile strategy has already been devised and the needs of mobile workers are carefully addressed with the BI tool. So, for example, simply copying an existing dashboard to a mobile environment is not always a successful approach. There is great potential for mobile BI to support operational processes while simultaneously increasing the penetration of BI within organizations. Therefore it is not surprising to see the retail and manufacturing industries using data on mobile devices more frequently than others.

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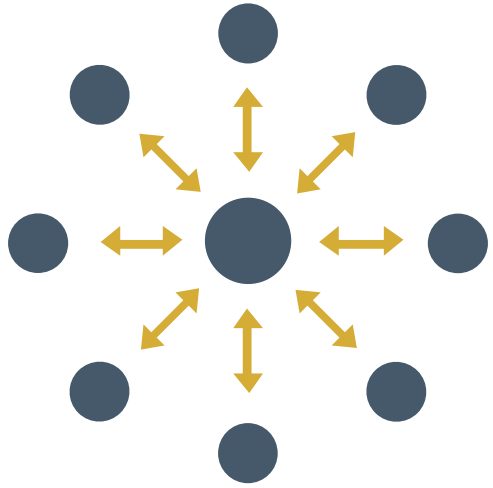
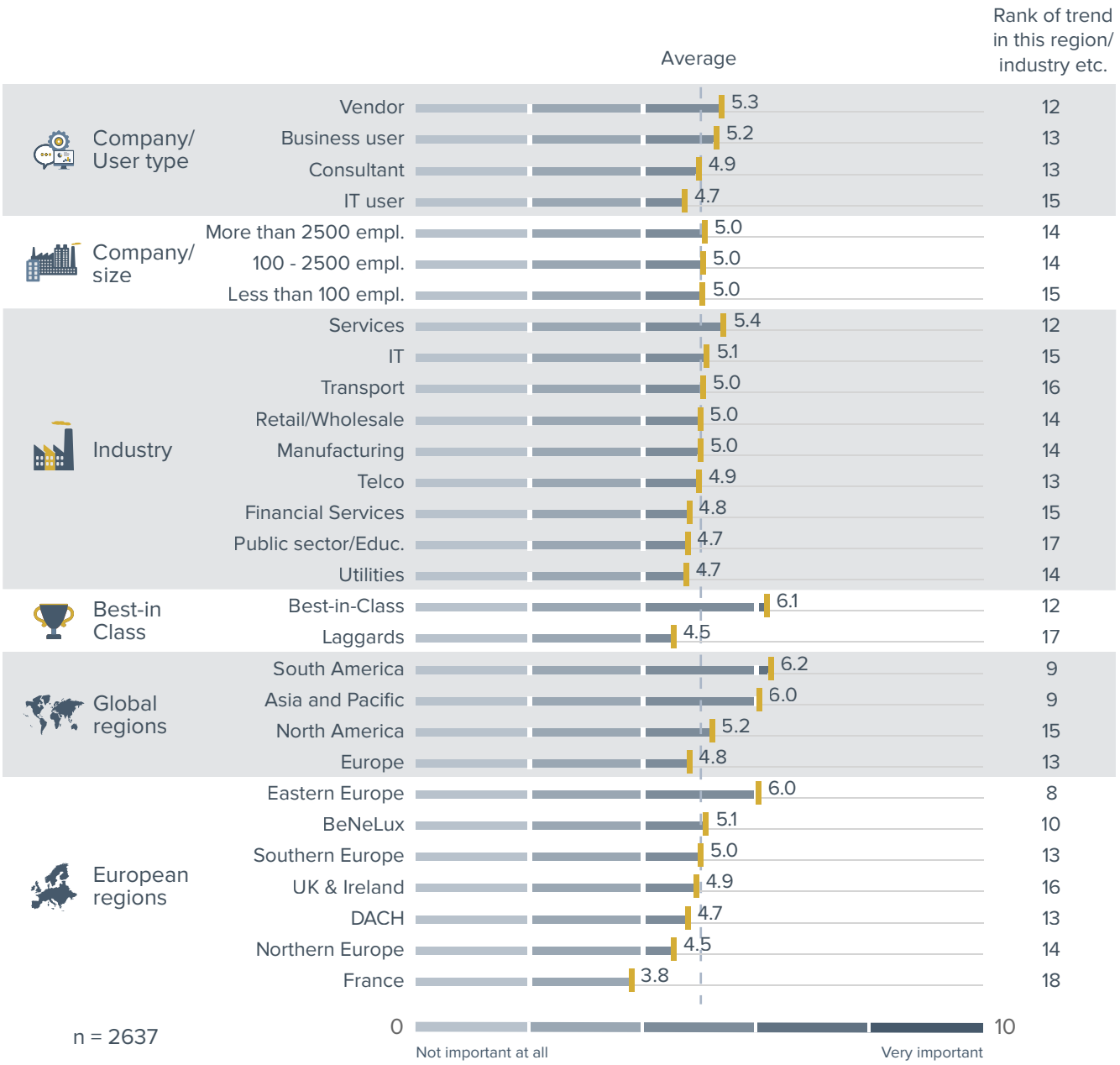
Integrated Platforms for BI and Performance Management (PM)



Integrated platforms for BI/PM are prominent in South America and best-in-class companies, but less important to organizations in France.



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Integrated functionality for BI and performance management (particularly planning) in one common platform has been one of the most stable and relevant trends in the market for years. Many companies and users know that there can be no planning without supporting functionality for reporting (e.g., results reports), analysis (e.g., analyses of planned and actual values) and dashboarding (e.g., monitoring). The seamless integration of planning and BI functionality is essential to support planning processes optimally.

Integrated platforms for BI and performance management are equally relevant for all user types, company sizes and industries. Best-in-class companies in particular have invested heavily in integrating BI and performance management processes and the benefits from this effort have been empirically proven. Supporting BI and performance management on an integrated data platform with an integrated tool is a goal worth investing in.

A decisive factor for sustained success when integrating BI and planning is the support of specialist software solutions. To avoid time-consuming and error-prone data transfer processes between software systems, an integrated database for actuals and plan data represented in a consistent data model forms the solid basis for integrated software solutions. The centrally harmonized master data provides a single, common data basis for BI and planning as well as other additional performance management processes.

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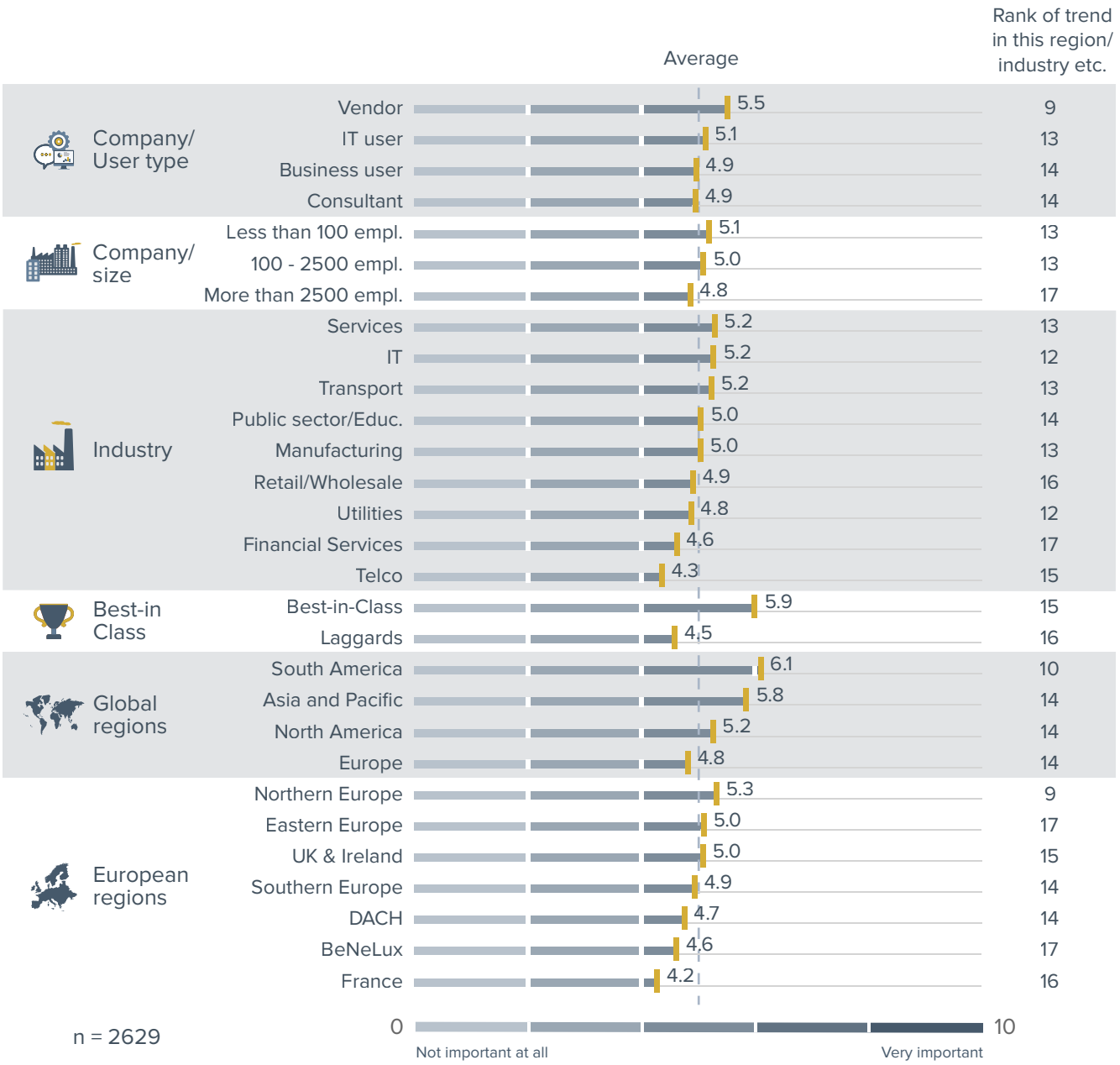
Embedded BI

South America on top of the list for embedded BI. France and telecommunications companies are less sold on the trend.



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Embedding intelligence in operational applications is growing steadily in popularity. From dashboards to prediction and optimization models, users can access complementary functions directly in their specific operational processes and act on the findings – closing the classic management loop from information to action. Embedding BI into operational applications moves BI to the process execution and reduces the need to exclusively use a BI tool to get access to data and reporting and analysis capabilities. In effect, many more people gain access to information and BI capabilities, making BI more pervasive or "democratic". However, this operationalization of BI and analytics presents various challenges. For example, separating the responsibilities of the BI and the application teams, delimiting operational BI from classic BI and data warehouses, or deciding whether to "make or buy" embedded functions. Also, the broad approach of automating decisions through embedded models and rules brings about completely new possibilities and challenges. For example, the change in role of the human being from decision-maker to creator and supervisor of decision-making models.

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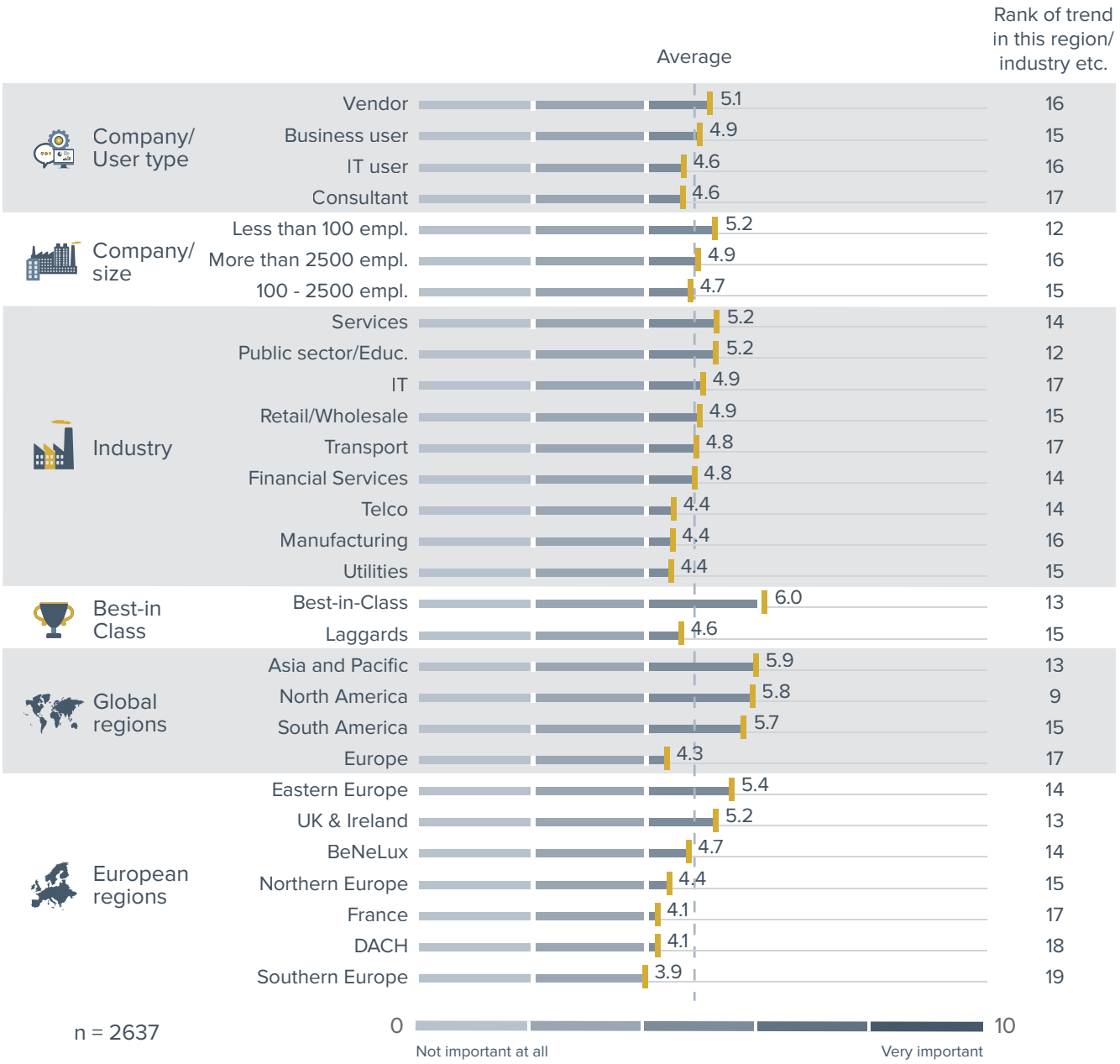
Data Storytelling

Data storytelling is very popular in Asia Pacific. Its relevance is much lower in Europe, especially in Southern Europe.



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Data relies on you to give it a voice, and data storytelling is a way of helping to explain the meaning of analysis results and insights gained. Data stories supplement and build on components of visual analyses, standardized reports and dashboards such as graphs and tables. They are modified, annotated and compiled into a narrative to form the supporting evidence for a well-founded call to action. Neuroscience shows that stories have a greater impact on us than bare numbers, so the communication of insights and messages can no longer solely rely on reports. Engaging and inspiring stories drive action based on solid insight.

BI and analytics tools are the major gateways to corporate information treasures. Interactively presenting information and stories in BI and analytics tools allows for high efficiency and helps to ensure data quality as well as a high level of trust. This enables interaction with data, drilling and analyzing details without switching tools or making manual adjustments. This interactive analytical storytelling enhances the credibility of stories and allows executives to gain further insights that might have been more difficult to glean from static, predefined analyses.

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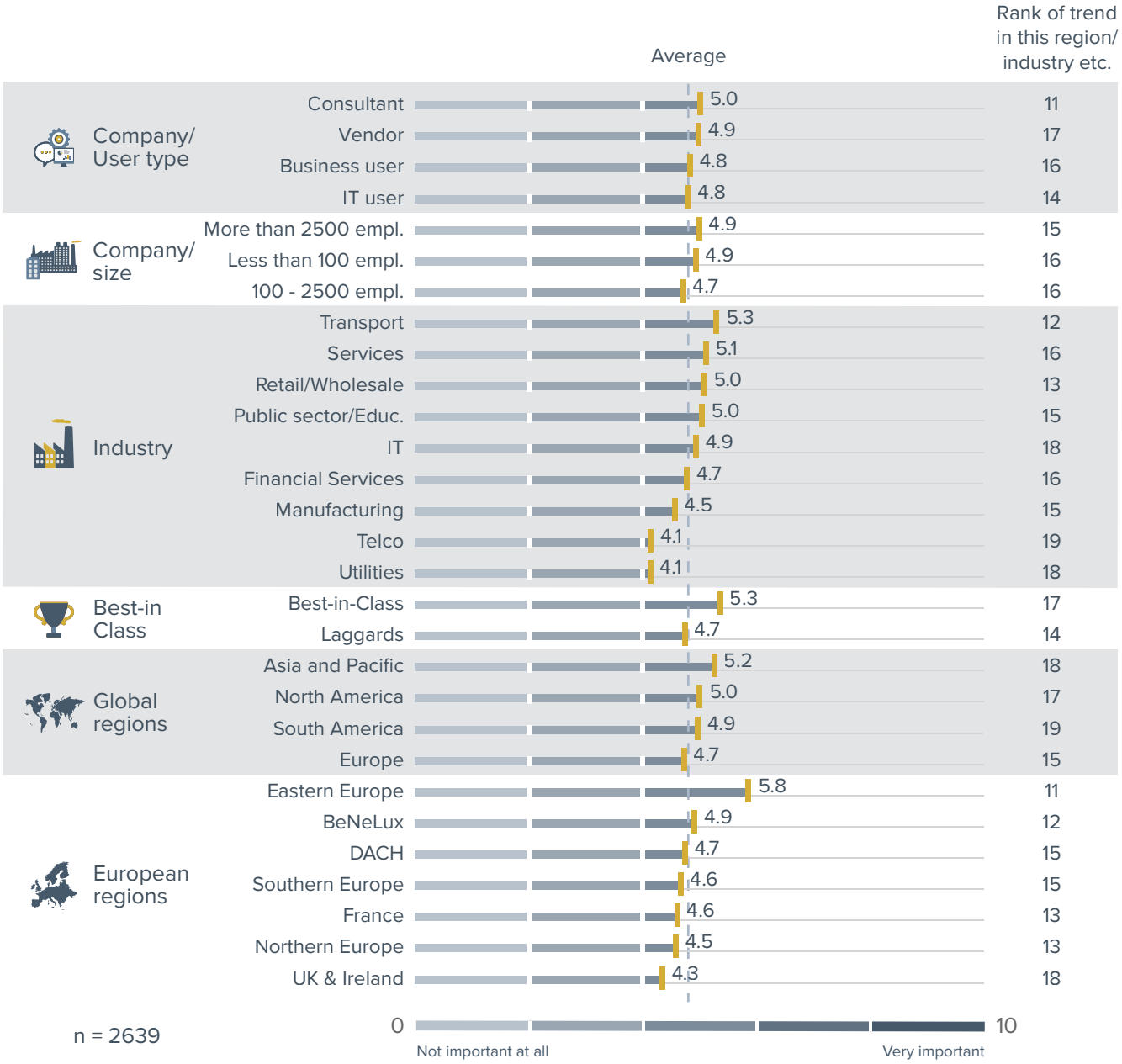
Using External/Open Data

Eastern Europe leads the way. A less important trend in the utilities and telecommunications sectors.



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It is no secret that data is becoming increasingly important to companies. The value of data continues to rise as more ways to analyze it emerge. The use of external data to enrich companies' own data goes far beyond the purchase of address data. Data has established itself as a product and extends analyses with targeted insights from social media, customer, market, meteorological, geographical and demographic data, and even analytical findings. Companies can purchase these and many other types of data for their own analysis from BI generalists, specialist service providers and data trade platforms. Open data is used to build business models around targeted analysis.

The use of external data spans all company sizes but there are industries that rely more heavily on it. The transport and services industries attach the highest importance to external data – economic development statistics for medium-term developments, weather data for short-term developments and spatial data to optimize routing are just a few examples of the resources used. Manufacturing relies little on external data and telecommunications companies actually generate and sell data for use by others.

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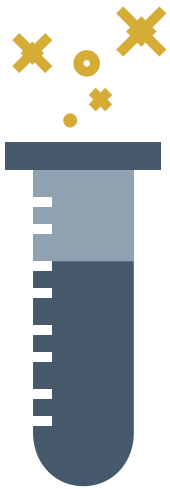
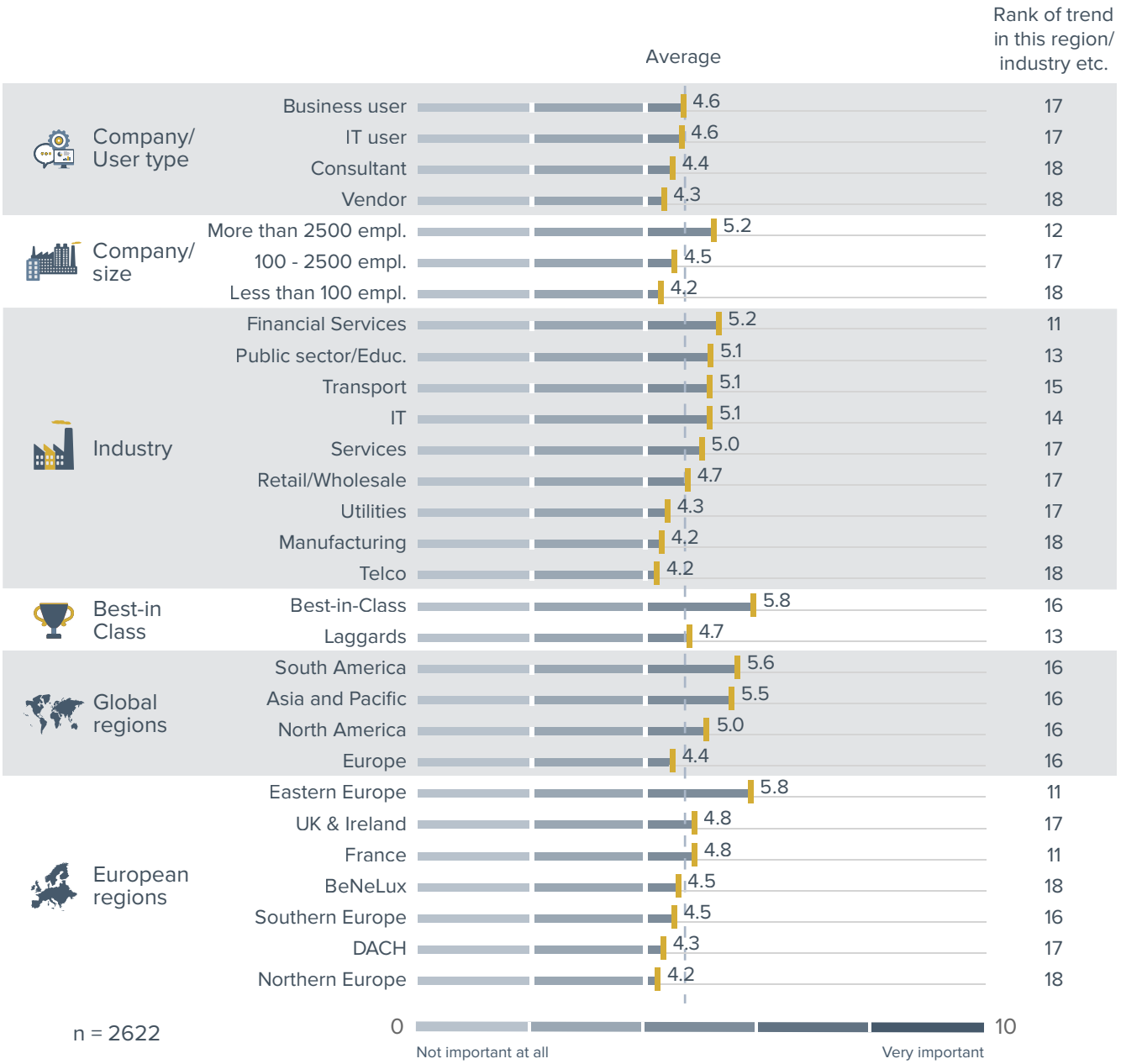
Analytic Teams/Data Labs





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Data science is the generic term for processes that generate knowledge out of data using methods from statistics, machine learning and operations research. Data labs are separate business units, specifically designed to start data science in an organization. They offer a space for design thinking and experimentation, aside from established processes in an organization. Data labs require investments in personnel as well as new technologies to store, process and analyze data.

Against that backdrop, it is not surprising that data science and data labs are of increasing importance for larger companies. The IT and the financial industries are the most likely sectors to adopt data science and data labs. The financial industry, in particular, has a long track record of using data analytics methods. But generally the importance assigned to data labs is much lower compared to the importance assigned to predictive analytics and machine learning. Labs require considerable investment in terms of staff and infrastructure and not many companies choose to set up data labs to start doing data science. As analytics gains in maturity, the deployment and productivity of such solutions become more important – tasks that are not typically related to data labs. This poses new challenges for software solutions providers and requires revised organizational approaches to link data labs, IT departments and business units.

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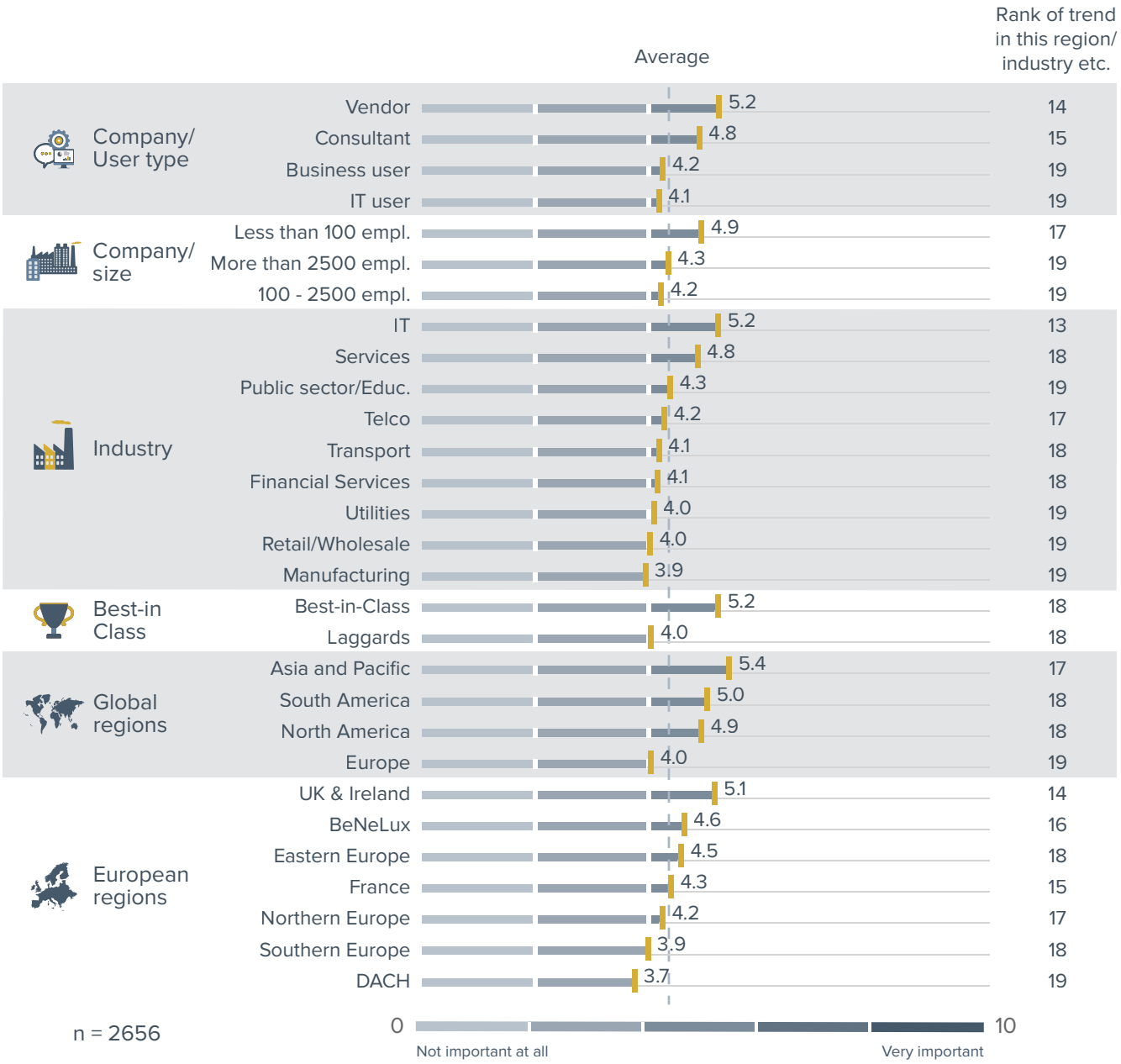
Cloud BI

IT, Asia Pacific and vendors regard cloud BI as very important. The DACH region is some way behind.



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The global trend of running applications in a cloud environment started to branch out into the business intelligence and analytics domain about ten years ago. Start-ups were founded to disrupt the established BI and data management vendors with the software-as-a-service business model, by which organizations manage their data and source their reports and dashboards from a hosted infrastructure. The incumbent vendors – who typically generated their revenues from on-premises implementations – eventually followed suit and now virtually every BI and data management vendor offers a cloud-based solution.

Although cloud BI and data management has very similar functional capabilities to corresponding on-premises products, it is often competitively priced and reduces the burden on local IT departments. The adoption rate for cloud BI and data management deployments is rising, albeit very slowly, but it is not the attractiveness of the platform that deters organizations from moving their BI landscapes into the cloud. Instead, legal, security and privacy concerns, a shortage of best practice advice on how to build hybrid architectures, a lack of trust in the vendors or their viability, and the desire to keep company data under their own control are all contributing factors. However, the overarching issue is that BI leaders prefer to bring the analytics to the data, and not the other way around. As such, organizations with much of their data already in the cloud show a much higher cloud BI affinity than those with all their data on premises.

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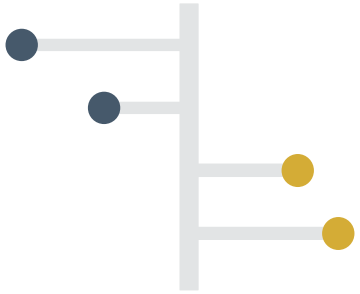
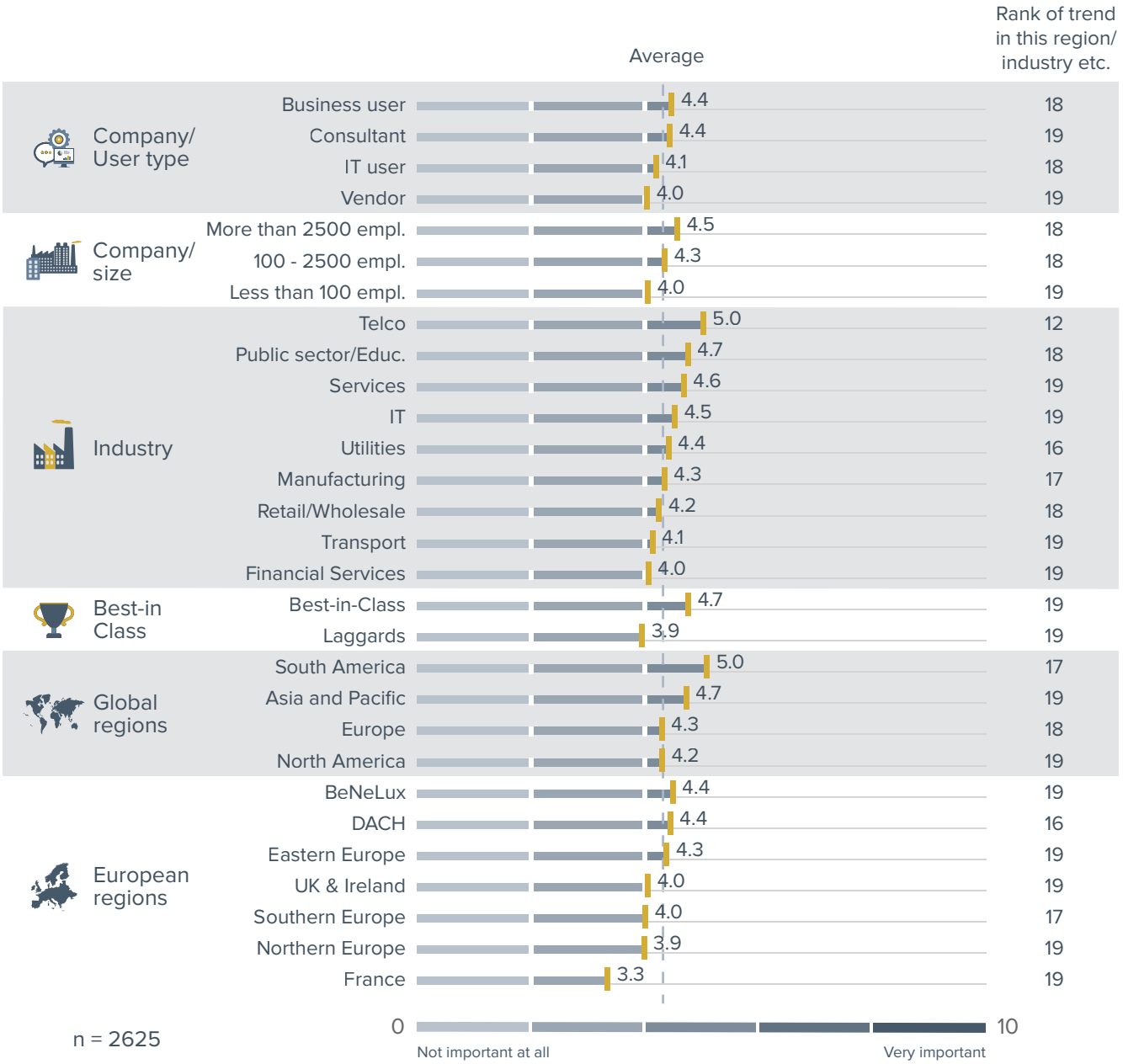
Visual Design Standards



ISO



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"Visual design standards" describes the practice of presenting relevant information in a way that it can be understood in an effective and efficient manner. This involves the deployment of a common 'visual language' (usually called notation guideline) for reports, dashboards and presentations throughout a department or organization with established formatting rules and design standards.

Authorities such as Stephen Few and Edward Tufte in North America, and Prof. Dr. Rolf Hichert in Germany, are among the most influential thought leaders in this area and the rules they have defined often form the basis of corporate visual design standards and vendor development strategies alike.

Due to the growing need to analyze huge amounts of data in order to stay competitive and to provide the results in the most direct fashion, the trend for visual design standards has come to establish itself in the last three years and is gaining in importance, especially in the German-speaking region. In our experience, support for visual design standards is increasingly seen as a KO criterion for BI vendors in software selection processes.

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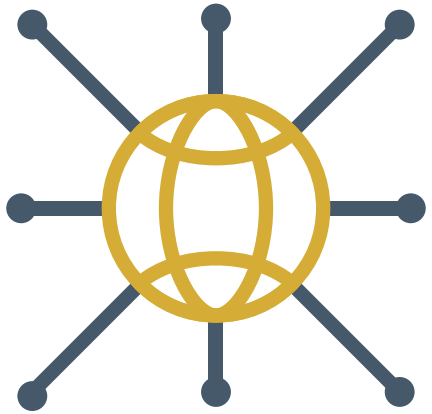
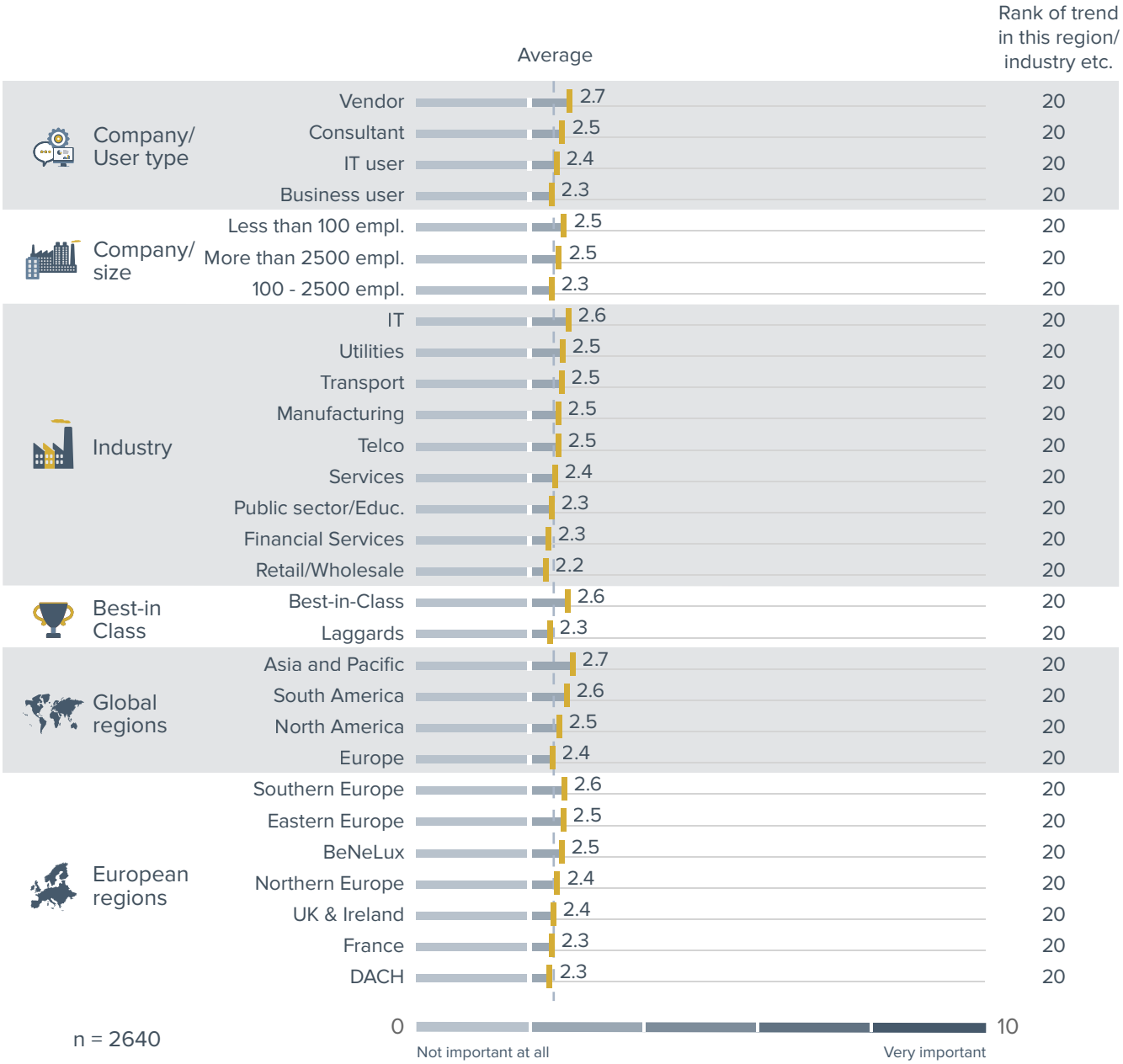
IoT Analytics



IoT Analytics is a minor trend across all categories.



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Internet of Things Analytics (IoT Analytics) is one of the most discussed IT trends at the moment. Companies are asking themselves how they can work with information generated by machines and transform it into valuable outcomes.

Modern IoT concepts and technologies allow companies to monitor all kinds of devices from machines and vehicles to wearables. They enable better management of operational processes through real-time data, as well as future improvements through predictive maintenance or data-driven business models. An increasing number of companies are now offering such services to their customers, thus expanding their service portfolios into new business areas.

The data being generated by sensors and sensor-enabled devices is different to the transactional data at the heart of most organizations. Depending on the use case, IoT data can be less structured and less processed, appear in high data volumes or be generated in real-time. The diversity of IoT data means that a new data architecture, tool set and processes are necessary to process, store and run effective analysis on that data.

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Recommendations

Recommendations

BI and data management have been among the most important IT-related topics in the business world for a long time. The high importance rating of many of the trends covered in this report also supports this observation. And with digitalization as a primary strategic initiative for many companies, analyzing and managing data has become even more vital. After all, data and analytics are at the core of the digitalization of processes and business models. Based on our survey findings, we have six recommendations on how best to embrace the trends described in this study:

#1 Venture into trending topics

The best-in-class companies in this study show that there are substantial benefits to be attained from adopting BI trends. Start with pilot projects that can show the value of new approaches to BI and data. If possible, try piloting use cases that incorporate different departments and processes. Also, addressing several trends at the same time in combined initiatives can be useful, for example, making data discovery and self-service BI and data integration capabilities available while putting a high priority on data quality and master data management in an accompanying data governance effort.

#2 Train your staff

Start training your existing staff while scouring the labor market for technical and analytical expertise. New technologies and applications require specific resources and know-how and the success of digitalization also depends on an openness and culture to embrace new use cases for data and analytics. However, people with the necessary skills and mindsets are hard to find in many organizations. Given all the exciting developments in the various fields of IT, organizations need to invest in the skills required to leverage all the interesting new products and services.

#3 Implement data governance

Organizations seem to be aware that the best looking dashboard is worth nothing if the data shown is flawed. Business intelligence does not make a lot of sense without comprehensive data integration and data quality initiatives, but these have to be backed up with the right level of attention, resources and funding. Organizational backing of data quality by implementing data ownership and stewardship processes is also vital.

#4 Get ready for a data-driven culture

Establishing a data-driven culture requires the encouragement of critical thinking as well as being willing to hand responsibility for data to business users. Organizations must be aware that an in-depth cultural change is time consuming and will probably face resistance. Support from facilitators such as external consultants and internal champions can help in the tasks of setting up a road map and selecting suitable tools to foster data-driven processes.

#5 Review your information architecture

IT organizations should review their existing information architecture to ensure it can support the level of agility required, handle large volumes of poly-structured data (also in real time where needed) and support rapidly growing demand for big data and advanced analytics. It can also be a good idea to create a data lab adjacent to the BI factory to better support explorative approaches to BI with data discovery or predictive analytics.

#6 Understand data analysis requirements

BI leaders need to understand the different data analysis requirements in their organizations and the possibilities and approaches modern tools encompass. Set-based, visual, real-time and predictive analytics are not separate, but rather complementary capabilities that are becoming increasingly important. The decision-making culture of your organization, the available skills, and the identification and promotion of use cases for more data analysis are all key aspects to consider.

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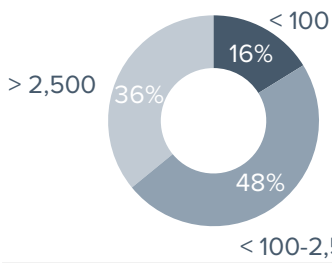
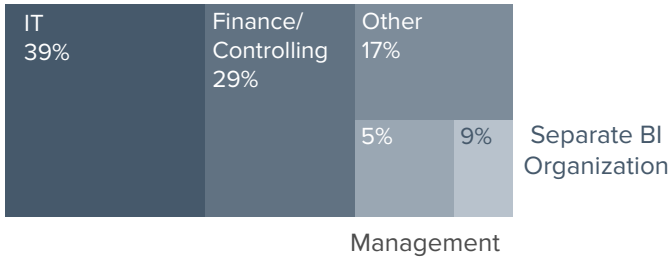
Sample & Methodology

Number of employees

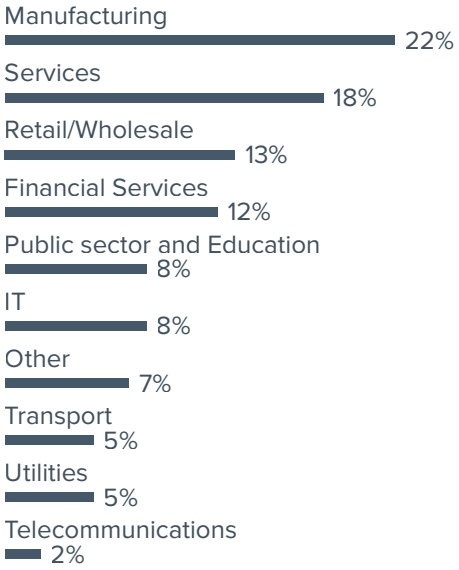


Department

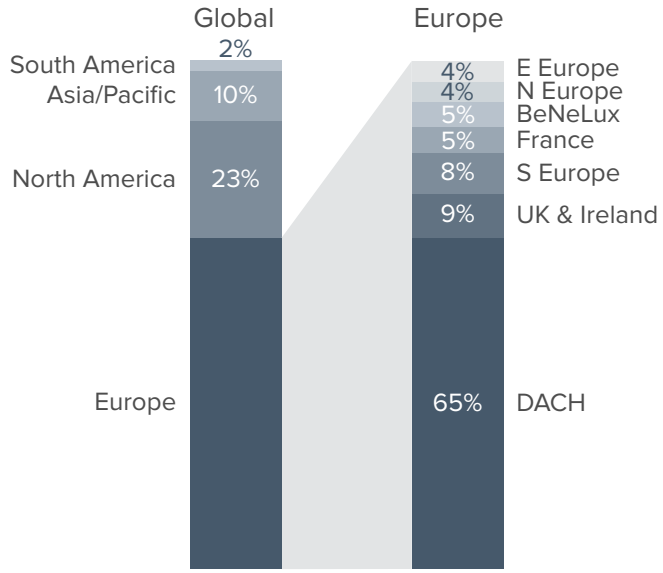


Company type

Industry



Region



Information on the survey

The data used in the BI Trend Monitor 2019 was sourced from an online user survey conducted worldwide in the summer of 2018. BARC promoted this survey on websites, at events and in email newsletters. After data cleansing, a total of 2,679 survey responses remained. Respondents came from a wide range of industries, countries, professional backgrounds, company types and sizes.

Participants were asked to rate each trend on a scale from “very important” (10) to “not important at all” (0). We use a weighted scoring system (from 10 to 0), to derive a composite score for each of the trends based on their level of importance. It is a dimensionless number with an arbitrary value, but as long as the weighting system remains constant it can be used for comparisons between segments of the sample, such as the sample for industries or regions, to name just two.

Best-in-class companies comprise the top 10 percent in terms of achievement of specific BI-related business benefits (e.g. “Faster reporting, analysis or planning” and “Increased competitive advantage”) in this survey. Laggards represent the lowest 10 percent.

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BARC Company Profile

BARC

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BARC is a leading enterprise software industry analyst and consulting firm delivering information to more than 1,000 customers each year. Major companies, government agencies and financial institutions rely on BARC's expertise in software selection, consulting and IT strategy projects.

For over twenty years, BARC has specialized in core research areas including Data Management (DM), Business Intelligence (BI), Customer Relationship Management (CRM) and Enterprise Content Management (ECM).

BARC's expertise is underpinned by a continuous program of market research, analysis and a series of product comparison studies to maintain a detailed and up-to-date understanding of the most important software vendors and products, as well as the latest market trends and developments.

BARC research focuses on helping companies find the right software solutions to align with their business goals. It includes evaluations of the leading vendors and products using methodologies that enable our clients to easily draw comparisons and reach a software selection decision with confidence. BARC also publishes insights into market trends and developments, and dispenses proven best practice advice.

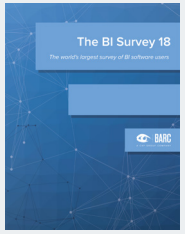
BARC consulting can help you find the most reliable and cost effective products to meet your specific requirements, guaranteeing a fast return on your investment. Neutrality and competency are the two cornerstones of BARC's approach to consulting. BARC also offers technical architecture reviews and coaching and advice on developing a software strategy for your organization, as well as helping software vendors with their product and market strategy.

BARC organizes regular conferences and seminars on Business Intelligence, Enterprise Content Management and Customer Relationship Management software. Vendors and IT decision-makers meet to discuss the latest product updates and market trends, and take advantage of valuable networking opportunities.

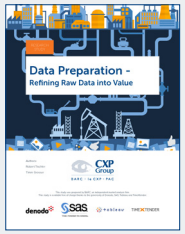
Along with CXP and Pierre Audoin Consultants (PAC), BARC forms part of the CXP Group – the leading European IT research and consulting firm with 140 staff in eight countries including the UK, US, France, Germany, Austria and Switzerland. CXP and PAC complement BARC's expertise in software markets with their extensive knowledge of technology for IT Service Management, HR and ERP.

For further information see: www.cxpgroup.com

Other Surveys



The BI Survey 18 is the world's largest annual survey of BI users. Based on a sample of over 3,000 survey responses, The BI Survey 18 offers an unsurpassed level of user feedback on 36 leading BI solutions. To see the results go to **https://bi-survey.com**



The BARC Survey "Data Preparation - Refining Raw Data into Value" is one of the largest studies focusing on the conditions, benefits and challenges of data preparation. **Download here**.

The Planning Survey 18 is BARC's major annual survey of planning software users. With feedback from over 1,600 respondents, eighteen market-leading planning products are evaluated and compared in detail. Find out more at **https://bi-survey.com**

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Cubeware

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Since 1997, Cubeware has helped businesses of all kinds with integrated solutions for business intelligence and performance management to turn data into information, gain knowledge, and enable that knowledge to make the right decisions at the right time! Throughout the company. Across all departments. For all employees. Purposeful. Inexpensive. Fast. The Cubeware Solutions Platform offers analysis, dashboarding, planning and reporting integrated from a single source. That is its claim. Why should you be satisfied with less? More than 4,000 customers worldwide do not want to do without it.

The basis for your success

With the Cubeware Solutions Platform, you can easily access new sources of data, make your data comprehensive, analyze and visualize your operational business and financial processes, engage thousands of users in your corporate reporting and information processes, and simulate and plan your next steps. So that you can concentrate on the essentials at the end of the day: your business success!

What makes Cubeware's solutions stand out

The hallmarks of Cubeware's solutions are their economic benefits for the user company, their transparency and predictability in the sense of investment reliability and their value-creating contribution to the income statement.

Technologically

Cubeware offers an integrated, intuitively usable software platform to suit your application. It not only encompasses individual aspects of fact-based decision-making processes, but also holistically addresses them. Ranging from data management and data modelling through to analysis, planning and company-wide reporting, the platform provides solutions to the information requirements of modern companies. It integrates all internal and external stakeholders according to their tasks and roles.

Technically

Cubeware and its certified partners form an active ecosystem, which possesses specialist, sector and subject experts from virtually all departments. As a result of this, Cubeware's service portfolio ranges from implementation and training through to project management and support in production operation. The whole of Cubeware's consultancy service takes place at eye-level and provides new thought-provoking impulses for information and decision-making processes.

Commercially

Cubeware offers a flexible and scalable licence and price model that is elastically adaptable to the circumstances of individual companies. This allows companies to act as cost-sensitively as possible at any time – irrespective of organisational structures and business models.

cubeware

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Information Builders

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In our new connected world, data is pervasive. But raw data is only as good as the trusted insights you can derive and action. As such, data and analytics are the cornerstone of the digital evolution.

Information Builders provides solutions for business intelligence (BI), analytics, data integration, and data quality that help organizations convert raw data into actionable insights. The company believes that better data is trusted information, not data discrepancies. Better analytics are actionable insights, not lots of dashboards. Better data and analytics means differentiating your business by empowering more people to make better decisions.

Information Builders powerful, scalable solutions not only help to accelerate business value, but also enable organizations to connect the most people to the most data – from partners to customers and citizens. The company's dedication to customer success is unmatched with thousands of organizations from nearly every sector relying on Information Builders as their trusted partner.

Founded in 1975, Information Builders is headquartered in New York, NY, with offices around the globe. Learn more by visiting informationbuilders.com, following them on Twitter at @ infobldrs, liking them on Facebook, and visiting their LinkedIn page.

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TARGIT

www.targit.com

TARGIT is the software company behind TARGIT Decision Suite, the business intelligence and analytics solution for companies looking for a single platform to accommodate the need for comprehensive business intelligence and analytics across the company. From its humble beginnings more than 20 years ago in Denmark, today TARGIT is one of the world's premier business intelligence and analytics software companies. TARGIT blossomed globally thanks to Decision Suite's seamless integration with Microsoft technologies. They have since expanded their footprint with inventive new enterprise business intelligence and analytics capabilities for all technological platforms, a global community of partners and resellers, and one of the industry's most loyal customer bases.

TARGIT Decision Suite is the one solution for the entire enterprise. TARGIT analyzes, visualizes, and delivers valuable insights from business data. TARGIT pulls data from any source, size, or complexity, making it possible for any employee, in every role, in every industry to analyze it simply and seamlessly.

TARGIT is consistently ranked as one of the industry's leading visual analysis-focused products that organizations are opting to use as their standard BI solution across the enterprise. Of the market's leading 36 products that were analyzed in detail across its peer groups in The BARC BI Survey 18, TARGIT was the top ranked vendor in its peer group for mobile BI against all vendors. This is the fifth year in a row TARGIT ranks number one for mobile BI in the OLAP analysis-focused products peer group. This year, TARGIT also received distinction as a leading vendor in 16 categories including Embedded BI, Recommendation, Location Intelligence, Visual Analysis, Innovation, and Competitiveness. TARGIT has recently emphasized its strengths in strong enterprise capabilities, with investment in enterprise-worthy features such as robust data governance and powerful enterprise reporting. TARGIT customers are consistently the happiest in the BI industry, with 91 percent of surveyed TARGIT users stating they would recommend TARGIT. This is owed to TARGIT's near-perfect rating of the company's ability to understand their organization's needs, and high scores in vendor support.

TARGIT®

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Unit4 prevero

www.unit4.com/cp/prevero

Unit4 Prevero provides Corporate Performance Management (CPM) and Business Intelligence (BI) solutions for planning, budgeting, forecasting, data analysis, dashboarding and reporting. At organisations large, small, and in-between, we help finance teams improve decision-making and control.

Unit4 Prevero solutions cover financial and operational planning, project planning, HR planning, strategy planning, risk planning and financial consolidation. We also support the sector-specific requirements of the energy, manufacturing, retail, and finance and automotive industries.

Unit4 Prevero provides everything you need to transform disparate sources of financial data into actionable business intelligence. An extensive library of template-driven content makes it easy for power-users and end-users to create bespoke analyses, reports, charts, and simulation models for particular sectors or specialist fields with speed and agility. Surface risks and opportunities with predictive analytics. Enhance budgeting with visualisations. Track relevant KPIs quickly on dashboards using live data.

Headquartered in Munich with offices in Europe, Asia and the USA, our extensive network of international partners serves over 4,500 customers worldwide. Customers include Ricola, Villeroy & Boch, Tchibo, NSG Pilkington, ABB, Go Compare, Innogy, Migros, Carglass, Galliford Try, Swiss Life and Thyssen Krupp. In 2016 we became part of Unit4, a global leader in enterprise applications for service organisations.

For more than 20 years we've been driven by one aim: to deliver solutions that provide key insights and help take the finance teams to the next level. Shorter cycles, lower TCO, better decision-making – Unit4 Prevero helps finance work smarter, with more confidence and less risk. You spend more time executing business strategies that improve financial results, less time toiling on routine, manual tasks.

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Yellowfin

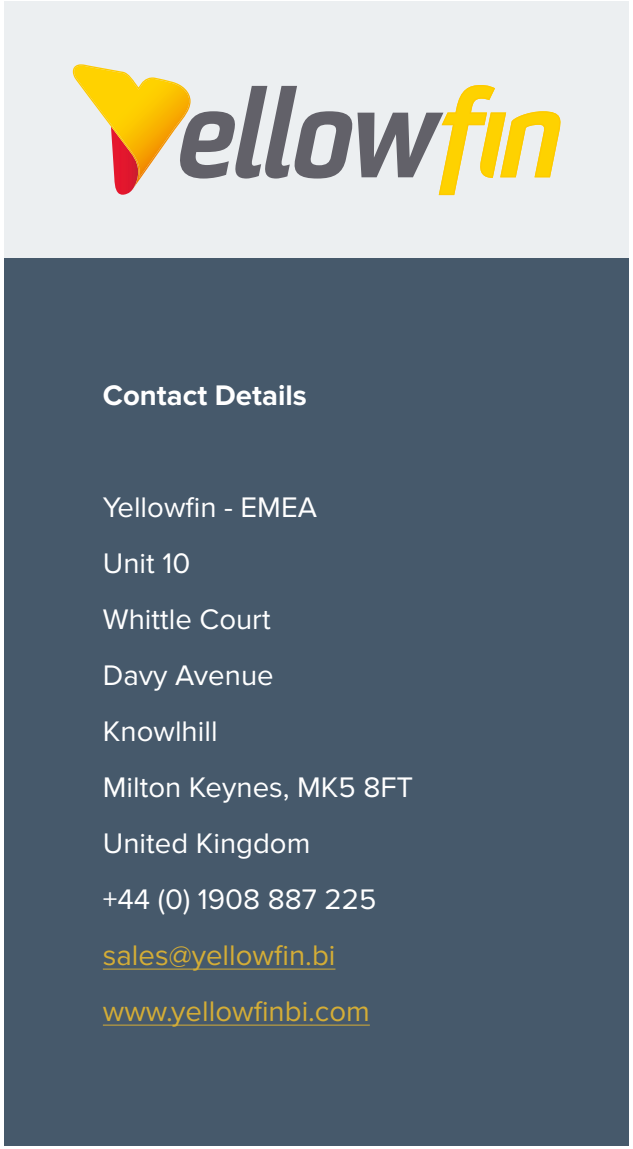
www.yellowfinbi.com

Yellowfin represents a major revolution in BI and analytics. Our end-to-end analytics platform is aimed at solving real enterprise analytics challenges and helping business people understand not only what happened, but why. Founded in 2003 in response to the complexity and costs associated with implementing and using traditional BI tools, Yellowfin is an intuitive, 100 percent web-based reporting and analytics platform.

Yellowfin delivers the complete BI stack – beautiful dashboards, assisted insights, market-leading reporting and collaboration tools, data transformation and data science model integration capabilities, and a truly flexible product for fully integrated, embedded analytics.

Yellowfin is one, integrated platform. Its centralised design, accessed through a web portal, prevents the creation of data silos, provides transparency, and prevents the copying of data to a desktop. Yellowfin's enterprise governance and approval workflows enable you to deploy curated and trustworthy analytics across the enterprise with ease.

More than 25,000 organisations and over three million end users across 75 countries use Yellowfin every day. For more information, please visit www.yellowfinbi.com



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