# **Information Culture**

Leveraging the power of collective intelligence for better decision making

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# **About this study**

This study on information culture was conducted in February and March 2014 by **BARC Institute**, a leading independent business software market analyst. For more details on demographics and methodology, please refer to the appendix.



Data collection in North America was supported by Enterprise Management Associates.

The authors would like to thank all participants of this and future BARC surveys for their valuable input.



This study is distributed free of charge thanks to sponsorship from SAP. The survey was conducted independently by BARC. SAP had no influence over the BARC panel (the main source of responses to this survey), the data cleansing and data analysis processes or the presentation of the results.

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### **Management summary**

Today's advanced analysis methods and increasing availability of data are putting ever more pressure on established business structures and cultures to change. Decisions based on intuition and experience are increasingly being challenged by decision making driven by data or statistics. However, organizations are still exploring ways to include the collective intelligence of employees in the decision making process.

This BARC study, based on empirical research, explores the topic of information culture from a global perspective, focusing on the status quo as well as on future plans for the development of information cultures in companies. Our survey was completed by **743 people** with both business and IT backgrounds from a wide range of industries **across the world**, making it the largest empirical study to date on the topic of information culture in companies.

Several fundamental aspects of information culture are covered. The key findings can be divided into three areas.

### Status quo and future development of information culture

#### The value of information

- Less than 50% of respondents agree that information is highly valued for decision making or treated as an asset in their organization today, but two-thirds believe it will be in the future.
- Only one-third of companies currently use information to identify new business opportunities and predict future trends and behavior, but most of the remaining two-thirds plan to do so in the future.
- Companies with a collaborative style of decision making treat information much more as an asset than companies with other decision making approaches. They are also more likely to use information to identify new business opportunities, predict future trends and behavior or generate revenue with data.

### Using information or gut feel for decision making

- 58% of respondents say their companies base at least half of their regular business decisions on gut feel or experience rather than on data and information.
- Significantly fewer best-in-class companies than laggards base the majority of their business decisions on gut feel or experience (40% vs. 70%). This



- highlights a link between using information for decision making and being able to achieve a strategic advantage over rivals.
- On average, only 50% of all available information in organizations is actually used for decision making.

### What prevents organizations from basing decisions on information?

- The most commonly cited reason for not using information as the basis for decision making is that the necessary information was not available.
- Quality of data is the second biggest barrier to information-based decision making. This reflects a clear need for greater attention to data quality and more effective data governance. In light of the fact that 62% of companies want to treat information as an asset in the future, it is critical that organizations invest in protecting the quality and value of that asset.

#### Call for action: How to achieve a better information culture

50% of all decisions are based on information, and only half of the available information in organizations is actually used for decision making. In order to unlock the potential of the remaining data, the following needs to be done:

- Address and improve data quality;
- Lower the cost of access to information;
- Improve the way in which information is presented;
- Make information easier to find;
- Increase the speed at which information is made available;
- Raise awareness of business intelligence at senior management levels; and
- Foster a collaborative style of decision making.

# Data: the key requirement for a successful information culture

#### Where does data for decision making come from?

 Overall, the median number of internal data sources used to support decision making is 5, so most companies are dealing with multiple sources. The goal of having only one source, such as an enterprise data warehouse, has been achieved by only 6% of respondents. Integrating external data sources is also quite common: the mean number is 3 external sources.



 Around half of respondents think that the number of data sources they use is increasing. The growth rate for external sources is a bit higher than that for internal data sources.

#### Who governs data?

- The finance department is cited by 60% of respondents as playing a prominent role in data management and governance.
- 41% say that IT departments manage and govern data although only 10% state that the IT department *alone* is responsible for this. We would be concerned if the latter figure were any higher than this.
- Business Intelligence Competency Centers (BICCs) are much more likely to take responsibility in best-in-class companies (52%) compared to average companies (40%) and laggards (28%).

### **Defining and using common KPIs**

- 79% of respondents have a defined, common set of KPIs in their organization but only 36% are using them pervasively across the organization. This is obviously a major issue and an area for improvement.
- Best-in-class companies rely on defined and pervasively used KPIs much more than average and laggard companies.

### Call for action: How to improve data governance

Data for decision making is sourced from an increasing number of internal and external data sources but data governance remains a major issue. To better govern the data and systems involved in decision making, the following should be done:

- Build an agile IT architecture that can integrate an increasing number of data sources required for decision making, as well as external and nontransactional (big data) sources.
- Set up (or strengthen) bodies to drive cross-departmental alignment for data governance and other BI related tasks. BI Competency Centers (BICCs) and BI Centers of Excellence (BI CoEs) can play a key role in improving crossdepartmental alignment for data governance and information culture in general.
- Define and pervasively use KPIs across the organization to achieve a common foundation for decisions, align measures of success and focus data governance on important data.



### Collaboration improves overall performance

#### **Decision culture determines information culture**

- Top down is the dominant style of decision making with 39% of companies employing it, followed by 34% of organizations run by management committees and only 18% making decisions in a democratic or collaborative fashion.
- 69% of respondents think their company would perform better with a greater level of participation and collaboration.
- The more collaborative the decision making approach, the more likely people
  are to classify their company as best-in-class. On the flipside, respondents
  from companies with a predominantly top down culture feel they are lagging
  behind the competition in using data for competitive advantage.

#### How people collaborate

- Direct, personal interactions via in-person meetings (88%) and conference calls/web meetings (68%) are two of the three most popular ways to collaborate. Using IT to collaborate is done primarily by E-Mail (82%) while all other software-based approaches are much less popular.
- With regard to business software, BI tools are used more often for collaboration than Microsoft Sharepoint, dedicated collaboration tools or other software.
- Our sample sees little value in collaboration for reporting. However, more than two-thirds of respondents agree that collaboration adds value where data analysis or planning and forecasting is concerned.

#### Call for action: How to use collaboration to improve performance

- Move from top down to a more democratic style of decision making to increase participation and collaboration.
- Add software-based approaches to traditional methods of collaboration, such as in-person meetings and conference calls.
- Use BI tools to improve collaboration in decision making.
- Increasing collaboration in data analysis and planning processes are key areas for improvement.

### Conclusion

The results of this study clearly show that improving decision making in volatile environments depends on information technology to integrate, store and present data to



decision makers. But even the best data management concepts, tools and applications cannot be effective when the inherent culture of an organization prevents information from being treated as an asset and used as a valued resource. Best-inclass companies place a greater emphasis on basing decisions on data rather than gut feel, on governing their data and on fostering collaborative/democratic decision styles more often than others to achieve an information culture that turns information into a competitive advantage.



# Information culture: status quo

This empirical study focuses on the information cultures in companies. It covers fundamental topics such as how decisions are made in enterprises, the importance of information and collaboration in the decision making process, which styles of decision making are prevalent at the moment, and how best-in-class companies differentiate themselves from the rest.

To identify best-in-class companies we asked respondents how successfully their organization is using data to achieve a strategic advantage over its most serious competitors. Approximately half (45%) indicated that they utilize business data just as well as their competitors. We will refer to this group as "average" companies. 34% stated that their companies use their data better than their competitors. In this study, we will refer to this group as "best-in-class" companies and examine what makes them different to the rest. A further 21% believe that their companies do not utilize their data as well as their rivals. We will refer to this group as the "laggards".

### How is information usage perceived?

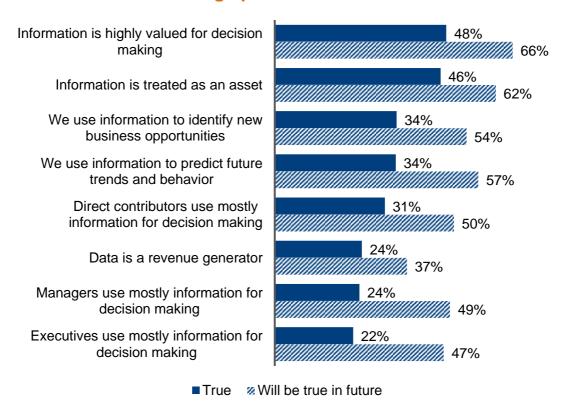


Figure 1: Statements on information culture: True today and true in future (n=728)

In order to assess current information culture, we asked 743 decision makers from business and IT departments in companies around the world how information is used



in their company today and how they perceive it will be used in the future (Figure 1). The key findings were as follows:

- Less than 50% of respondents agree that information is highly valued for decision making or treated as an asset in their company today, but two-thirds believe that this will be true in the future. A key area for improvement is to make information more easily accessible for managers and senior executives. Less than a quarter of decision makers in these positions use mostly information to make decisions.
- Only one in three companies currently use information to identify new business opportunities and predict future trends and behavior, but there is a clear trend for organizations to want to increase their use of information generally.
- The hardest goal seems to be to turn data into a revenue generator. 24% of respondents think their company achieves this today and only 37% think this will be true of their company in the future: the lowest prediction of all the statements in Figure 1. Turning 'internal' data into a service or a product is often a new way for people to think about their companies' data one way to foster creativity in this area can be to participate in "design thinking" workshops.

### Using information or gut feel for decision making

Most respondents accept that decisions should be supported by information. But in reality this is not always the case. This section reveals the extent to which decisions are based on gut feel and examines the reasons why information is not always used to support decision making.

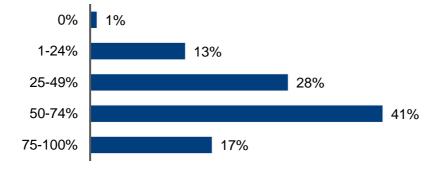


Figure 2: Percentage of regular business decisions that are more based on gut feel or experience than on data/information (n=697)



- 58% of respondents say their companies base at least half of their regular business decisions on gut feel or experience, rather than on data and information.
- On average, respondents believe that 50% of their companies' decisions are based on gut feel. Best-in-class companies base their decisions more on information (60%) while laggards stated that a worryingly high 70% of decisions are based on gut feel. This illustrates a clear link between using information for decision making and being able to achieve a strategic advantage over the competition.



Figure 3: Top reasons for NOT using information for decisions (n=712)

- The most commonly cited reason for not using information as the basis for decision making was that the necessary information was not available. This result is consistent across all company sizes. Large investments in data warehouses and business intelligence systems over the last twenty years have clearly not been sufficient to fill this information gap, and big data might complicate the issue even further.
- Availability of data is by far the biggest problem for line-of-business and cross-functional respondents (53% and 56% respectively) while only 42% of IT respondents recognize this problem. This may also be a driver for the current self-service BI trend with local data integration in the hands of business users.



- Quality of data, cited by 40% of respondents, is the second most common barrier to information-based decision making. This reflects a need for more attention to both data quality and more effective data governance. Given that 62% of companies want to treat information as an asset in the future, it is critical that organizations invest in protecting the quality and value of that asset (see Figure 1).
- 50% of laggards and 39% of best-in-class companies identified data quality as a problem, a wake-up call for all companies to address this issue.
- The number of data sources used for decision making has little bearing on whether data quality is viewed as a reason for not using information. Data quality is always a concern, regardless of how many internal or external data sources a company uses.
- 39% of companies state that gut feel/experience is good enough to make
  decisions with no information. One might have expected gut feel/experience
  to be the most common reason for making decisions without information to
  hand. However, the most popular reasons all point to the suggestion that
  companies prefer to base their decisions on accurate information if it is readily available.
- Nearly a third of respondents claim that it's too expensive to gather the necessary information, an issue that emerging big data technologies might have the potential to unlock.
- There are significant differences between the styles of decision making in an organization and whether it is considered too expensive to access the information necessary to make decisions. In top down cultures, it is seldom regarded as too expensive to get hold of the necessary information. It seems that management teams are either less cost-sensitive when it comes to getting the information they need, or they are more driven by other factors when making decisions without supporting data.
- The usefulness of information presentation is an issue for almost a third
  of respondents overall. The situation is especially bad in laggard companies
  where almost half (47%) regard this as a problem.
- Problems finding the right information, presenting information in a useful way and slow delivery of information are most prevalent in larger organizations.

Overall, **best-in-class** and average companies gave broadly similar responses to this question, but laggards were far more inclined to state that "Quality of data is not



good enough" (50%), "Information is not presented in a way that is useful" (47%) and "Tools for information access are too hard to use" (28%). For laggards, quality and presentation of information are major barriers as well as the speed and ease-of-use of the tools they're using.

Some recommendations to address these issues include:

- Setting up a data quality program that has the necessary resources and management commitment. The program should run permanently (not as a single project) and needs the buy-in of business and IT departments to improve quality together, using business and domain knowledge alongside IT expertise in data flows and transformation and migration of data.
- Simplifying access to information by providing catalogs of available data sources and information or creating semantic layers that present the information objects available for building reports and analyses.
- Presenting information in a useful way. It is important to understand how aggregated information should be presented to users. Consider which types of graphical or tabular presentation are appropriate for the data, decision context and users. Self-service requirements (e.g. to change the presentation) for users and user groups should also be catered for. Information design is also playing an increasingly important role in the presentation of data. Information design refers to a set of standards and rules a company defines to achieve a common way of visualizing information in reports and dashboards throughout the organization.
- Making tools simpler to use can be achieved in several ways:
  - Introducing new tools (or new releases) with cleaner, easy-to-follow user interfaces
  - Supporting mobile devices with their often simplified and more intuitive user experience
  - Deploying the right tools for each user group to meet their expectations, background and decision making context, instead of trying to deploy "one size fits all" tools that might be too lightweight in functionality for some users and too hard to use for others.

### How much information is used?

Companies amass large amounts of data from multiple sources, but how much of it do they actually use to aid decision-making?



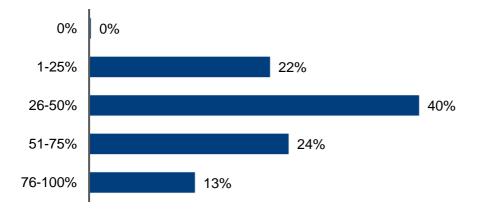


Figure 4: Please estimate what part of all available information in your organization is actually used for decision making? (n=710)

The results (Figure 4) reveal that:

- 62% of respondents use 50% or less of their data for decision making.
- On average, respondents believe that 50% of their organizations' available data is used for decision making.
- The mean value for large companies is only 40% of information used.
- Laggards use an average of just 30% of their data to support decision making, substantially less than their competitors.

Given that only half of decisions are based on information and only half of all available data are being used to support decision-making, companies need to focus on unlocking the potential in the remaining data. To this end, Figure 3 reveals the issues that should be addressed:

- Addressing and improving data quality;
- Lowering the cost of access to information;
- Improving the way that information is presented;
- Making information easier to find; and
- Increasing the speed at which information is made available.



# Data sources and data governance

Using internal and external data is a key element in good decision making. This chapter reveals how many data sources companies are using and how many they plan to use. It also examines how, and by whom, data is governed and looks at KPIs as a central element of harmonizing the metrics for decision making across a company.

### Using internal and external data for decision making

Companies that use more internal and external data sources generally possess a greater range of possibilities for data analysis. However, more data sources may lead to problems with data quality and governance, especially when the sources are external.

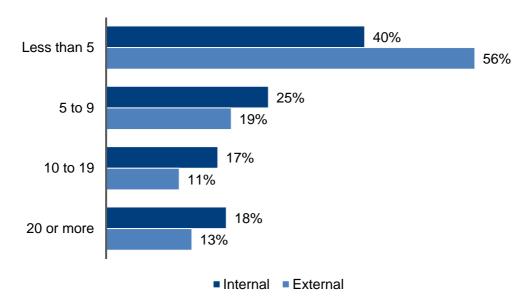


Figure 5: Number of internal and external data sources used for decision making (n=684, 678)

- Overall, the median number of internal data sources used to support decision making is 5, so most companies are dealing with multiple sources. The goal of having only one source, such as an enterprise data warehouse, has been achieved by only 6% of respondents. Integrating external data sources is also quite common: the mean number is 3 external sources.
- 18% of companies are using 20 or more data sources for decision making and our survey results indicate that this number will grow in the future. Good data governance, data quality, as well as accessibility and usability of information become more important as the number of data sources increases.



- Best-in-class, average and laggard companies access similar numbers of data sources to support decision making.
- There's a natural correlation between company size and the number of data sources used, which is stronger for internal data sources than for external.
   The median number of internal data sources doubles from 5 in mid-sized companies to 10 in large organizations.
- Approximately half of all respondents think that the number of data sources they use is increasing (Figure 6). The growth rate for external data sources is a bit higher than for internal sources. With the current hype around big data and the new data sources it brings into play, we might have expected growth to be stronger here.

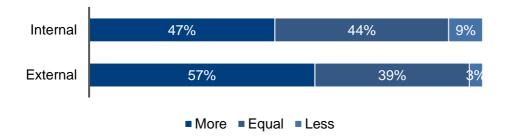


Figure 6: Trend on internal/external data sources (n=718)

## Responsibility for data governance

So far we have seen that 68% of respondents believe that information will be highly valued for decision making in the future, but that deficiencies in the availability of information and data quality are major inhibitors to using information. Since decisions based on information can only be as good as the underlying data, it is crucial that companies implement effective data governance.

Someone has to take charge of data governance. We asked who in the company manages and governs data for decision making.

Several departments are involved in managing and governing data but the finance department is most often responsible (Figure 7), followed by IT and BI Competency Centers (as cross-departmental groups).



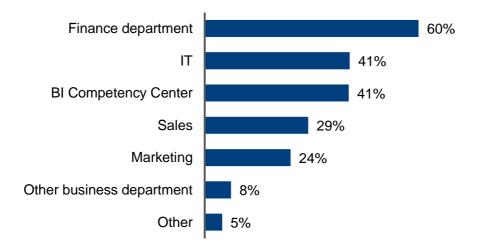


Figure 7: Who manages and governs data for decision making? (n=726)

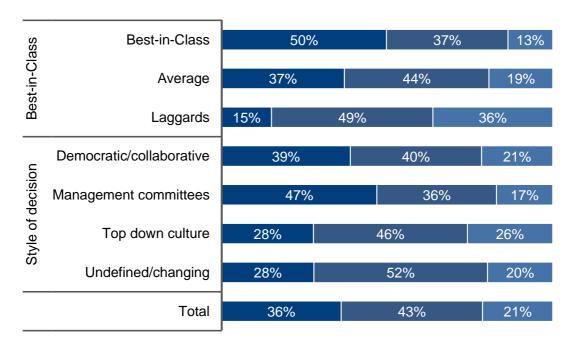
- The success of an organization is often measured in financial terms so the finance department naturally tends to be heavily involved in defining and measuring success. For this reason, it is no surprise to see the finance department being cited by 60% as playing a prominent role in data management and governance.
- While some technical input is important for data management and governance, the IT department should not manage and govern data on its own. Instead, a business function (such as finance) or cross-departmental group (such as a BICC) should take the lead. 41% said that IT departments manage and govern data although only 10% said that the IT department alone is responsible for this. We would be concerned if the latter figure were any higher than this.
- The responsibility for data management and governance varies little when comparing best-in-class companies with others. One notable exception is that BICCs are much more likely to take responsibility in best-in-class companies (52%) compared to average companies (40%) and laggards (28%). Cross-departmental alignment is crucial to successful data management and governance. BICCs are cross-departmental by definition and, in organizations in which BICCs are in place, it is important that they play a major role in this area.

# **Defining and using KPIs**

Key Performance Indicators (KPIs) play a central role in governing decision making in an organization since they can be used to align strategic and operational objec-



tives and focus decision makers' attention on the right goals. We asked whether, and how pervasively, organizations are using a common definition of KPIs (Figure 8).



- KPIs are defined and used
- KPIs are defined but not pervasively used
- No common KPIs defined

Figure 8: Common definitions of KPIs total, by best-in-class and decision style (n=667)

- 79% of respondents have a defined, common set of KPIs in their organization but only 36% are using them pervasively across the organization. This is obviously a major issue and an area for improvement.
- A key characteristic of best-in-class companies is that they rely on defined and pervasively used KPIs much more than average and laggard companies, indicating that their data governance is more effective.
- Organizations run by management committees and those with a democratic/collaborative culture are much more likely to define and use common KPIs than companies with a top down culture.
- The larger the company, the more likely it is to have a common set of KPIs.
   44% of organizations with more than 5,000 employees use defined KPIs and only 13% have no common KPIs.



# **Collaborative decision making**

Survey participants were asked about collaboration in their organizations: where people collaborate, where it adds value in the decision making process and how their decision style influences information culture.

### Where and how people collaborate in business

To better understand the nature of collaboration in organizations, we asked where people generally collaborate for business (Figure 9).

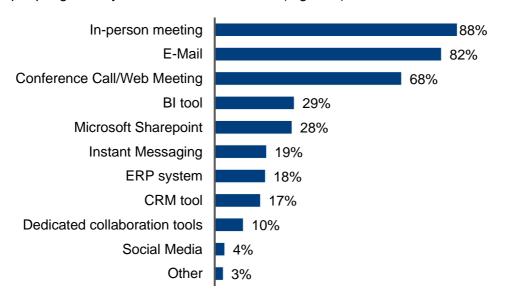


Figure 9: Where do you generally collaborate for business? (n=728)

- Direct, personal interactions via in-person meetings (88%) and conference calls/web meetings (68%) are two of the three most popular ways to collaborate. Using IT to collaborate is done primarily by E-Mail (82%) while all other software-based approaches are much less common.
- With regard to business software, the most popular means of collaborating is via BI tools. It is interesting to see that BI tools are more popular for collaboration in business than Microsoft Sharepoint and other dedicated collaboration tools. Note that our findings relate to collaboration in business in general, not just in decision making. Our impression is that the potential of BI tools is often overlooked when considering software to support collaboration in business, and that BI tools should form a cornerstone of collaboration strategy.
- BI tools are especially popular for collaboration in mid-sized companies (35%). This market segment also makes more frequent use of ERP tools for collaboration (24%) than small (15%) or large companies (14%).



- Dedicated collaboration tools are rarely used (10%), a seemingly poor reflection on the current availability and quality of collaboration software.
- Little variation was found when we analyzed these findings by best-in-class status. The only notable difference was that best-in-class organizations use BI tools for collaboration much more than other companies.
- Manufacturing companies are more likely to use their ERP and BI systems for collaboration.
- Collaboration using BI tools is far more widespread in Europe (35%) than in other regions.

We have noticed an increasing trend for collaborative functionality in BI tools, and even in tools that are labeled as "collaborative BI". Our survey reveals a clear order of decision support processes that could benefit from collaboration (Figure 10).

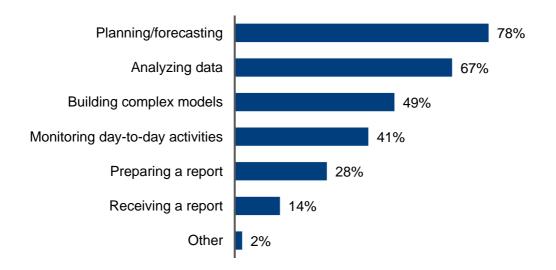


Figure 10: Decision support processes where collaborating with other people would add value (n=720)

- Our sample shows little appetite for more collaboration in reporting. However, there's a much stronger feeling that collaboration adds value where data analysis is concerned. 67% of respondents agreed with this statement, and in larger companies the figure was even higher (74%).
- Planning and forecasting is collaborative by nature and, as expected, the majority of respondents (78%) believes that collaboration adds value to the process.



### Decision culture and its influence on information culture

Another area of interest to us is the decision making style in organizations and how this influences information culture. We discovered some notable differences between companies based on their decision making culture and industry sector.

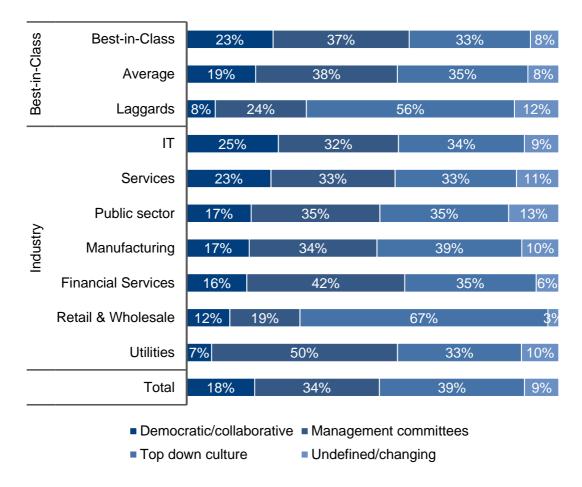


Figure 11: Decision style total and by best-in-class, Region and Industry (n=718)

- The top down approach is the dominant style of decision making with 39% of companies employing it, followed by 34% of organizations run by management committees and only 18% making decisions in a democratic or collaborative fashion.
- IT and services organizations are the most democratic when it comes to decision making. The utilities and retail and wholesale industries are the least democratic but each also stands out for a different reason. While decision making in utilities companies, the least democratic of all industry sectors, seems to be dominated by management committees (50%), an overwhelming 67% of respondents from retail and wholesale companies have a top down culture of decision making.



 A correlation can be identified between democratic/collaborative decision making and the perception of being better decision makers. The more collaborative the decision making approach, the more people tend to classify their company as best-in-class. On the flipside, respondents from companies with a predominantly top down culture feel they are lagging behind the competition in using data for competitive advantage.

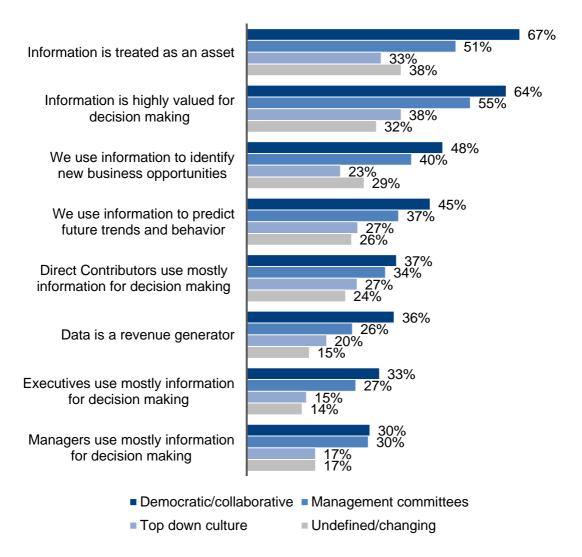


Figure 12: Statements on information culture true today by style of decision making (n=716)

Throughout this study we have highlighted results that show the influence that different styles of decision making have on various aspects of the organization. In this section we will show the correlation between decision making styles and respondents' views on their organizations' information culture (Figure 12).

Democratic/collaborative decision makers place the highest value on their information. In every aspect of information culture, companies with a democrat-



ic/collaborative style of decision making scored the highest values. Companies with this decision making approach currently attach the same level of importance to their information as the average level that all companies hope to achieve in the future.

 Organizations with a top down culture are much less likely to use and value their information than more democratic/collaborative companies. For nearly all the statements about information culture we asked about, less than half the respondents in top down run companies thought they were true compared to democratic/collaborative companies.

While the analysis in Figure 12 indicates that a collaborative/democratic decision culture correlates with a good information culture, we wanted to know explicitly whether respondents thought that their organizations would perform better if more people participated in a more collaborative decision making approach. The results were surprisingly clear (Figure 13).

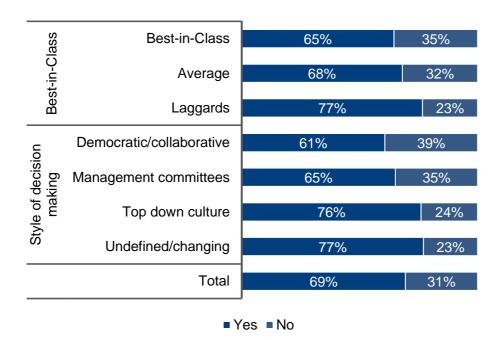


Figure 13: Better with more collaborative decision making total and by best-inclass, style of decision making and region (n=692)

On average 69% of respondents think their organizations would perform better with more participation and collaboration in the decision making process. Furthermore, over 75% of people in laggard companies and businesses with top down cultures or undefined decision making approaches feel strongly that they would achieve greater success with more collaborative decision making.



We urge organizations to immediately look into ways to change their decision culture and improve collaboration. This is the route to unlocking the potential of collective intelligence and achieving the information culture required to address one of the key challenges in business today: turning information into a competitive advantage.



# Appendix: methodology and demographics

This BARC study is based on an empirical survey exploring information culture in companies worldwide. 743 business and IT decision makers completed our online survey in February 2014. BARC promoted participation in the survey through a variety of channels, including websites, various newsletters and partners in several countries. After data cleansing, we had a total of 731 validated survey completions on which to base the study.

The participants in this study represent a wide range of industries with the most responses coming from services (21%), manufacturing (18%) and IT (18%). Financial services (14%), retail and wholesale (7%) and the public sector (7%) were also well represented in the survey. The remaining participants came from utilities (4%), transport and logistics (3%), telecommunications (2%) and other industries (3%). 40% of respondents came from mid-sized companies with 250 to 5,000 employees, a third came from small companies with less than 250 employees, and another third from large companies with more than 5,000 employees.

About two-thirds (65%) of all participants were from Europe. 28% came from North America and 8% from other regions.

We asked participants to indicate their level of seniority. 39% work in middle-tier management, 35% in lower-level management, and 25% are top-level decision makers.

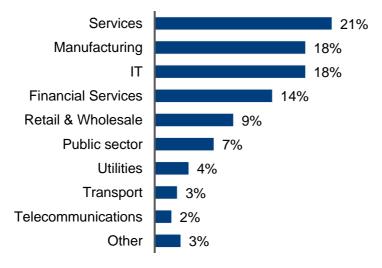


Figure 14: What is your primary industry? (n=731)



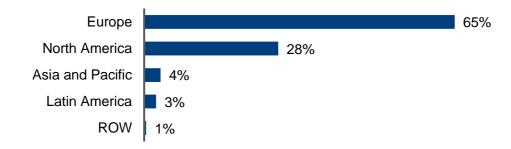


Figure 15: Where is your company's headquarters located? (n=731)

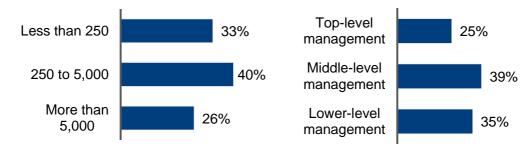


Figure 16: How many employees work in your organization? (n=731)

Figure 17: Please indicate your level of seniority in your organization (n=702)

We also asked respondents how their organization is using data to achieve a strategic advantage over its most serious competitors. This enabled us to identify what makes them stand out from the rest. Approximately half (45%) said they utilize business data just as well as their competitors. We refer to this group as "average" companies. 34% stated that their companies use their data better than their competitors. In this study, we refer to this group as "best-in-class" companies and examine what makes them different to the rest. A further 21% believe their companies do not utilize their data as well as their competitors. We refer to this group as the "laggards".

We found no major deviation from the overall sample in geographical location and company size of best-in-class companies. However, the breakdown of the industry sectors of best-in-class companies reveals a couple of notable outliers: on the high side, 40% of services companies consider themselves to be best-in-class, while only 27% of financial institutions feel that they use their data to achieve a strategic advantage over rivals.

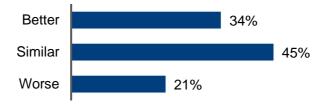


Figure 18: What is your judgment on how your organization is using data for a strategic advantage compared to your most serious competitors? (n=680)



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