

# The Benefits of an Integrated Approach to Business Intelligence and Planning

BARC Research Note  
Authors: Dr. C. Fuchs, Dr. C. Bange  
July 2016



## Table of contents

Management Summary .....	3
The BARC decision support framework – a holistic approach to supporting decision making .....	4
Trends in Business Intelligence.....	5
Integrated Business Intelligence and planning – an essential prerequisite for modern management support.....	8
Benefits of integrated BI and planning .....	10
Conclusion.....	12

This research note was prepared by BARC, an independent market analysis firm.

The reprint is made available by SAP.



## Management Summary

The simplest definition of management is to plan, steer and control an organization's performance. Planning and controlling this performance relies on the analysis of the past outcomes of operational processes. Planning tries to anticipate and reflect future developments in the enterprise's process goals and structures. Supporting this closed-loop management cycle from reporting and analyzing process results to prediction and planning for adapting the operational processes is a key task for Business Intelligence.

Most organizations globally accept the fact that they should enable and encourage their decision makers to base their decisions more on facts than on gut feel and experience. Deriving completely new insights and benefits from data is a key capability in digital transformation. However, the challenges and requirements have increased in recent years with the needs for digitalization, speed, agility, big data, and cloud computing.

These global developments and challenges drive a number of important trends related to the usage of software and technologies for BI and data management and to the way BI is organized. Data discovery/visualization, self-service BI, predictive analytics, and the integration of BI and performance management in one common platform are currently the top four BI user topics that BI practitioners identify as the most important trends in their work. Additionally, several data management trends like data quality management or the use of analytical databases are gaining importance, providing the architectural and technical basis for the aforementioned BI trends.

Integrated functionality for BI and performance management (in particular 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 is no planning without supporting functionality for reporting, analysis and monitoring (dashboarding). The integration of BI and planning with professional software solutions in one common platform is essential to optimally support the management cycle. 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 form 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 such as risk management, financial consolidation, etc.

The reality in many companies is that integrated BI and planning is an often proclaimed, but seldom achieved goal. Reasons such as internal policies, difficulties with historically grown system landscapes and maybe also the very limited number of integrated software systems available on the market could account for this. So Excel, as the lowest common denominator, is often the default first choice for integrating BI with planning. However, the lack of coherence of data and functionality resulting from using multiple tools for BI and planning, and using Excel instead of specialized software tools for BI and planning, are frequently cited reasons for user dissatisfaction, inconsistencies or error susceptibility with BI and planning in companies today.

The integration of BI and planning in one common software platform is a means of avoiding problems and user dissatisfaction in BI and planning processes. In particular, best-in-class companies recognize this important relationship and therefore regularly opt for professional integrated software platforms for BI and planning. Companies that use integrated software platforms for BI and planning experience far fewer problems than companies that address BI and planning separately with different software tools. Paying attention to the integration of BI and planning is therefore especially important for companies when selecting software products.

## The BARC decision support framework – a holistic approach to supporting decision making

The simplest definition of management is to plan, steer and control an organization’s performance. The “BARC Decision Support Framework” shows how management tasks relate to each other, but also to process execution and to strategy management (see Figure 1). Decisions are taken on many levels - strategically, tactically and operationally - and include data about the past (e.g. in reporting), about processes currently running (in activity monitoring) but increasingly also about the future (in planning, forecasting and predictive analytics). Decisions should also be aligned with the organization’s vision and strategy as well as the objectives and targets of individuals and departments. The combination of these levels and the closed loop from using data about the past to predicting the future is shown in Figure 1.

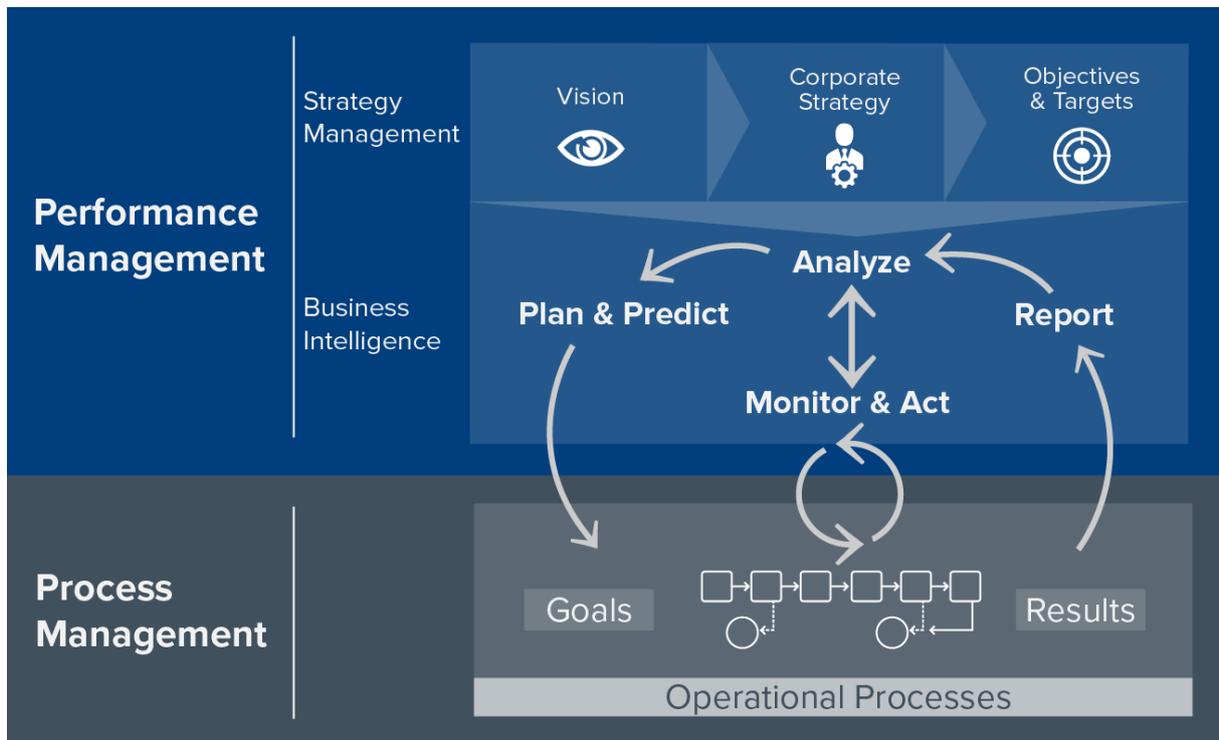


Figure 1: The BARC Decision Support Framework

Planning tries to anticipate and reflect future developments in the enterprise’s process goals and structures. Planning and controlling an organization’s performance relies on the analysis of the past outcomes of these processes. Selected process results are typically reported once processes have finished executing – typically in daily, weekly or monthly cadences – and aggregated to (key) performance indicators for further analysis. Supporting this closed-loop from reporting and analyzing process results to prediction and planning for adapting the operational processes has always been a key task for Business Intelligence (BI) systems. BI systems were mostly used for tactical or strategic decision making.

***“Efficient steering, controlling and planning needs an integrated performance indicator framework that is aligned with an organization’s strategic objectives and targets”***

The rapidly increasing need for faster decision making (up to “real time”) has added emphasis to the steering of an organization’s performance – adding information on present process execution to the

views on the past, in reporting and analysis, and on the future in planning. Enabling rapid reaction to current developments by monitoring quality, time or cost of processes is the goal of operational decision making.

Steering, controlling and planning should be based on an integrated performance indicator framework that is aligned with an organization's strategic objectives and the targets of decision makers. Defining this framework and aligning it with the organization's goals is one of the key tasks of strategy management, adding direction and content to the decision support framework presented.

## Trends in Business Intelligence

Most organizations globally accept the fact that they should enable and encourage their decision makers to base their decisions more on facts than on gut feel and experience. Having the appropriate knowledge, processes and technology in place to support this should not only enable them to better manage performance but also create opportunities to generate completely new insights and benefits from data – a key capability in digital transformation.

*“Deriving completely new insights and benefits from data are a key capability in digital transformation”*

While trying to achieve this, the **challenges** have not abated in recent years:

**Digitalization:** Confronted with the need to transform to digital business models based on data and software, organizations have understood the challenge of innovation from data to improve their operational excellence or change their business models. The goal of digital transformation for many companies is to become a data-driven enterprise across the value chain – from the digitalization of assets such as in IoT combined with service-oriented business models and the digitalization of business networks (suppliers) with automated decision models based on machine learning, through to fully digitalized selling, delivery and invoicing/money collection processes for data products.

**Speed:** The need for faster decision making due to increasing competition and volatility of markets.

**Agility:** Businesses need to adapt faster to changing customer and market behavior and are increasingly driven by fast-changing digital, data-driven processes. The need for speed and flexibility to adapt to new requirements and developments have led to rapidly growing demand for data discovery and self-service business intelligence in the hands of business users and the introduction of intra-year rolling planning and forecasting cycles.

**Big data:** Making use of constantly growing amounts of data coming in diverse formats from more and more internal and external data sources have led to the introduction of new technology like Hadoop, creating more heterogeneous IT architectures but also a skills gap in organizations, both technically and on the business side.

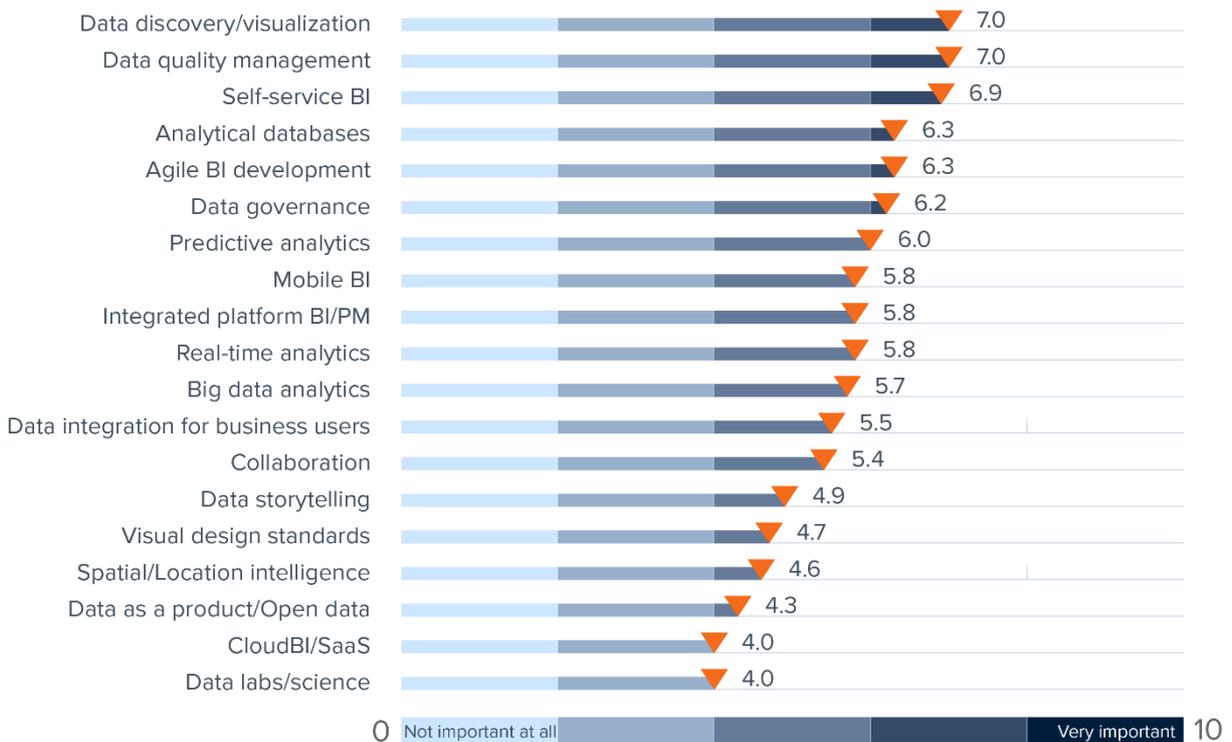
**Cloud computing** has long time been a controversially discussed topic, particularly with regard to data privacy and security, which used to be the main concerns inhibiting the trend from becoming mainstream. But we see cloud computing now being investigated or adopted by many companies. The benefits such as immediate availability of BI and planning services (“time to value”), reduced local IT involvement in BI (e.g. no hardware, no installation required) as well as scalability and flexibility are obvious. Also security is often now seen as something that a professional provider can provide better than the (typically limited) in-house IT resources.

These global developments and challenges drive a number of important trends related to the usage of software and technologies for BI and data management and to the way BI is organized.

***“Data discovery/visualization, self-service BI, predictive analytics, and the integration of BI and performance management in one common platform are currently important BI user trends”***

To gain a better understanding of the perceived importance of current BI trends, BARC asked almost 2,800 BI practitioners worldwide how important current BI trends are for the organizations they work in. The **BI Trend Monitor 2016** provides a comprehensive picture of regional, company and industry specific differences, delivering an up-to-date perspective on the BI market. The importance of this trend analysis is underpinned by the fact that the trends are

ranked based on the opinion of a large number of practitioners worldwide instead of being the opinion of one single analyst company or software vendor. As Figure 2 shows, data discovery/visualization, self-service BI, predictive analytics, and the integration of BI and performance management in one common platform are currently important BI user topics that BI practitioners identify as the most relevant trends in their work. Additionally, participants indicated several important data management trends like data quality management or the use of analytical databases that provide the architectural and technical basis for the aforementioned BI trends.



**Figure 2: Importance of BI Trends from “Not important at all” (0) to “Very important” (10)**  
**Source: BARC BI Trend Monitor 2016, n=2,794**

**Integrated functionality for BI and performance management** (in particular 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 is no planning without supporting functionality for reporting (e.g. results reports), (advanced) analysis (e.g. analyses of planned and actual values) and monitoring (dashboarding). Since the seamless integration of planning and BI functionality is essential to support planning processes optimally, this trend will be covered separately in the following section. Newer trends like self-service BI, data discovery/visualization and predictive analytics are increasing in importance for many

companies (see Figure 3) due to constantly growing amounts of available data, both internally and externally, as well as improved software functionality to support self-service for business users. These trends have a major impact on integrated BI and planning and therefore also drive the demand for easy-to-use, visual, advanced software products covering BI and performance management.

**Self-service BI and planning** have been on organizations' wish lists for a long time and remain a high priority in terms of satisfying demand from business users for agility and flexibility. As IT departments struggle to satisfy this demand, many companies are evaluating software products with a special focus on ease of use and rapid results for business users. Demand from departmental users for the provisioning of self-service capabilities and for data to be available anytime, anywhere and on any device is putting pressure on IT and BI organizations. As a result there is a growing trend among enterprises to enable power users to build or design their own reports, planning forms, data/planning models, logic, interfaces or queries. But beneficial self-service BI and planning requires strong data governance, on the one hand avoiding overly strict standards and rules that kill flexibility and creativity, and on the other hand avoiding the chaos that inevitably results from total freedom for business users. Striking the right balance between flexibility and data governance is a crucial element in the success of self-service BI projects. Data governance is essential for data-driven companies that are extending self-service BI and planning.

***“Visual data discovery has evolved into one of the most important trends in the BI market”***

Functionality that business users want to use in a self-service manner typically affects two subject areas: data discovery/visualization and predictive analytics. **Visualizations and visual navigation** in data to support a **data discovery** process for users has evolved into one of the most important trends in the market, especially for business users

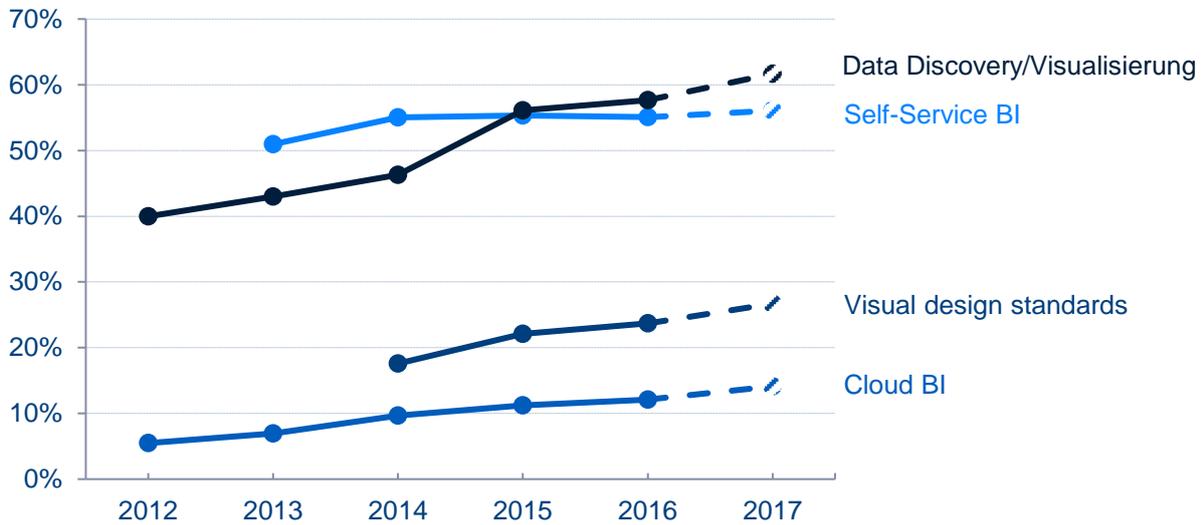
(see Figure 3). Many companies recognize that data-driven decision making, as opposed to relying on gut feeling, have become more important since decisions should increasingly consider all important influencing factors in a reasonable, comprehensive and proactive way. Tables of numbers and static charts that used to be the norm for providing information to BI users are no longer sufficient to support fast and flexible decision making based on large amounts and varieties of actuals and plan data. Interactive and new visualization types that can be used and consumed in a self-service manner are required to enable decision makers to see, within an instant, major trends, as well as spot outliers. Furthermore, there is now a push for greater simplification and visually appealing interaction and navigation in data (highly graphic, yet relatively simple user interfaces to dig deep into data, drag-and-drop functionality, responsive charts and visuals). As a subsequent trend there is an increasing demand for 'visual design standards'. Visual design standards are the practice of presenting relevant information in a way that it can be understood in an effective and efficient manner (e.g. via the deployment of a common 'visual language' – usually called notation guideline – with formatting rules and design standards). Therefore, as an important requirement in many companies, visual design standards have to be supported by modern BI and planning software products (e.g. supporting the [International Business Communication Standards \(IBCS\)](#) for the conceptual, perceptual and semantic design of comprehensible BI and planning results).

Since many companies today are quite mature in their use of BI and planning (software), there is an increasing demand to “do more than just reporting” as a common resolution among BI decision makers.

**Advanced data analysis and predictive planning** have great potential to tap more benefits from investments in software systems and data. Being able to predict the future as accurately as possible is a goal for every company to align processes and resources proactively. Therefore, many companies strive to use modern software technology to make forecasts based on historical data and analyze complex business relationships. Advanced data analysis and predictive planning use mathematical and statistical formulas and algorithms in order to generate new information, identify patterns and dependencies, as well as calculate forecasts. The number of potential use cases

***“Being able to predict the future as accurately as possible is a goal for every company to align processes and resources proactively”***

is immense and ranges from discovering complex relationships between business drivers and resulting (financial) variables (cause-effect relationship), conducting (automated) forecasts for probable future developments, doing (risk) simulations based on probability distributions (Monte Carlo simulation) to preventing contract cancellations, forecasting machine downtime, monitoring and evaluating social media, and predictive policing.



**Figure 3: Adoption of BI trends (in use), timeline**  
 Source: BARC The BI Survey 12 / 13 / 14 / 15 / 16, n=2,155 / 2,265 / 2,303 / 2,376 / 2,617

### Integrated Business Intelligence and planning – an essential prerequisite for modern management support

That integration of BI and planning in one common software platform is essential to optimally support the management cycle is acknowledged by users across all company sizes, industries or geographies (see Figure 4). The demand for this integration has remained stable and relevant for years in many companies. In particular, best-in-class companies in BI and planning attach great importance to this topic.

***“The integration of BI and planning in one common software platform is essential to optimally support the management cycle”***

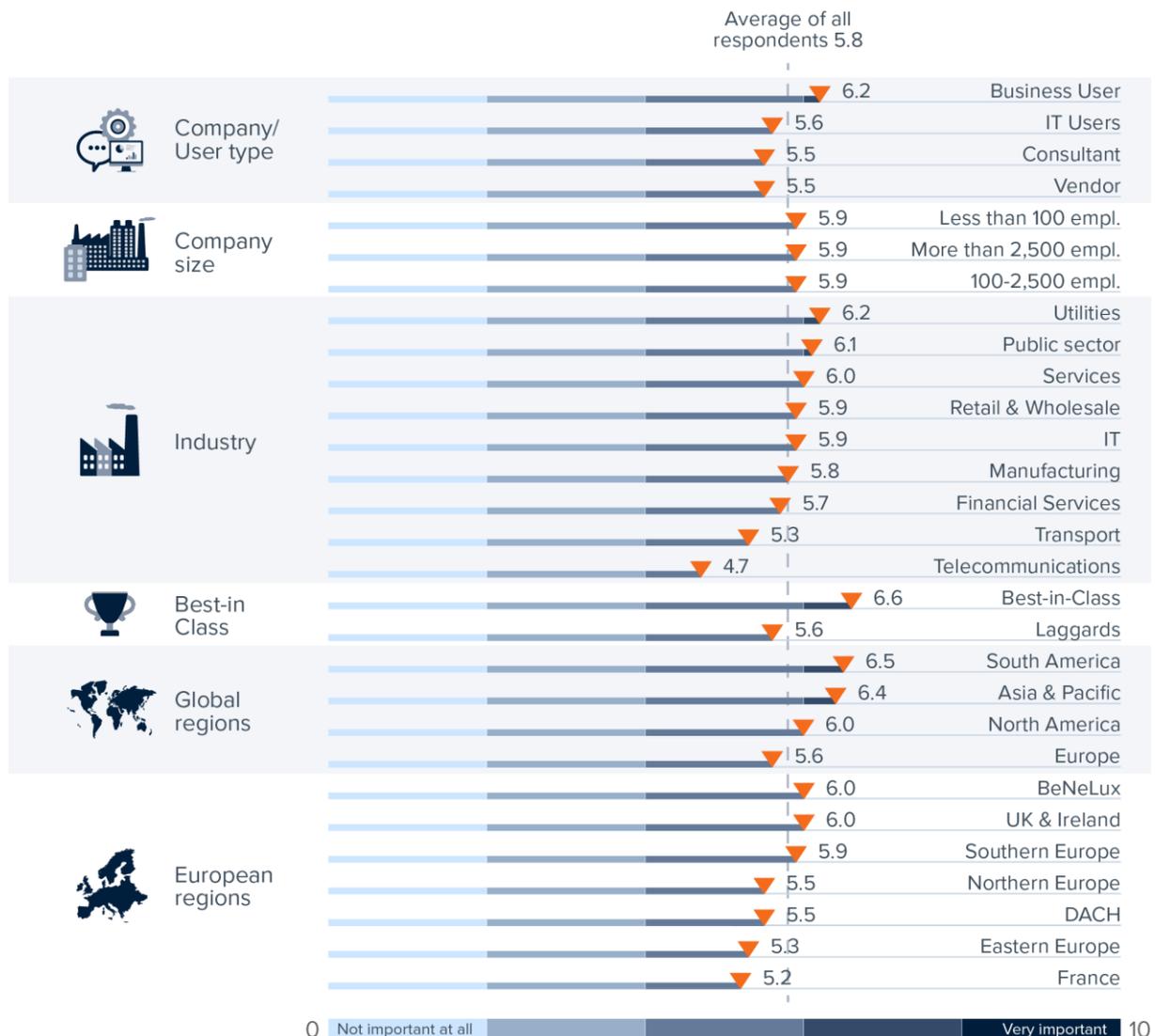
A decisive factor for sustained success when integrating BI and planning is the support of professional software solutions. To avoid time-consuming and error-prone data transfer processes between software systems, an integrated database for actuals and plan data represented in a consistent data model form 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 such as risk management, financial consolidation etc. (single point of truth). Based on this, a consistent data model has to be established that flexibly supports modeling of enterprise – as well as departmental – data views supplemented by flexible time horizons for short-term operational, mid-term tactical and long-term strategic considerations.

To achieve a truly integrated user experience, both BI functionality and sophisticated planning and forecasting functionality should be available in an integrated BI and planning platform. Key capabilities to be delivered web-based and cloud-ready should include:

***“Best in Class companies are 18 % more likely to consider an Integrated BI and Performance Management platform very important”***

- Core BI functionality, e.g. for cyclic standard reporting, IT-defined dashboards or traditional OLAP analyses.
- Advanced BI functionality corresponding mainly to the trends mentioned in the previous section (e.g. predictive analytics, support for big data).
- Functional support for top down and bottom-up, centralized and decentralized, as well as operational and financial planning processes.
- Combination of easy to use and self-service functionality for business users with possibilities to govern data and functionality.



**Figure 4: Importance of integrated platforms for BI and performance management from “Not important at all” (0) to “Very important” (10) by user type, company size, industry and region.**  
Source: BARC BI Trend Monitor 2016, n=2,463

The reality in many companies is that integrated BI and planning is an often proclaimed, but seldom achieved goal. Reasons such as internal policies, difficulties with historically grown system landscapes and maybe also the very limited number of integrated software systems available on the market could account for this. So Excel, as the lowest common denominator, is often the default first choice for integrating BI with planning. However, users invariably become disillusioned with the Excel route due to its lack of planning, collaborative and data management functionality.

Supporting BI and planning on an integrated data platform and with an integrated tool or application is a goal worth investing in. A lack of coherence of data and functionality resulting from using multiple tools for BI and planning, and using Excel instead of specialized software tools for BI and planning, are frequently cited reasons for user dissatisfaction, inconsistencies or error susceptibility with BI and planning in companies today.

## Benefits of integrated BI and planning

The integration of BI and planning in one common software platform is a means of avoiding problems and user dissatisfaction in BI and planning processes. In particular, best-in-class companies recognize this important relationship and therefore regularly opt for professional integrated software platforms for BI and planning. BARC's market research regularly shows that companies using integrated software platforms for BI and planning experience far fewer problems than companies that address BI and planning separately with different software tools. As BARC's survey of over 350 respondents in Figure 5 unequivocally shows, serious problems like "insufficient data quality", "software systems insufficiently comply with requirements" and "simulation and scenarios not displayable in software tool" are more likely to occur when using separate software tools for BI and planning instead of one integrated product. In contrast, 17 percent of companies report they have no significant problems at all when using professional integrated software platforms for BI and planning compared to only 5 percent using separate tools for both topics.

***"Companies who use an integrated BI and planning solution are 13% less likely to report that their solution insufficiently complies with their requirements"***

***"Companies who use integrated BI and planning experience 3 times less problems than companies who do not"***

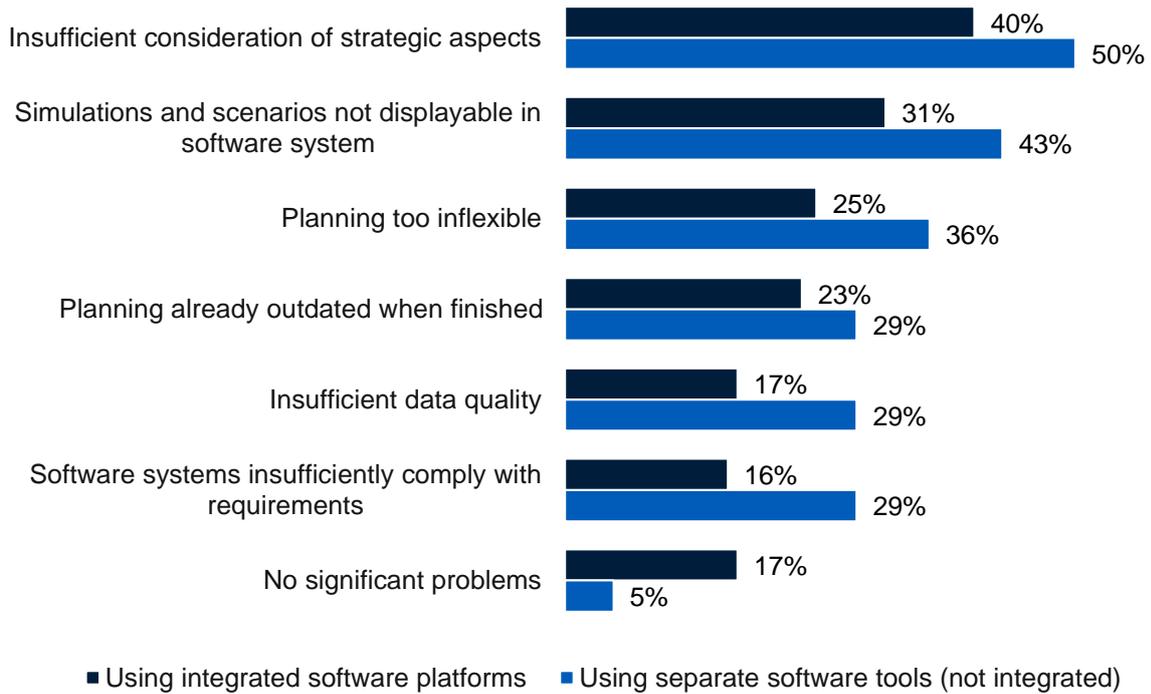
Paying attention to the integration of BI and planning is especially important for companies when selecting software products. If products are not evaluated thoroughly in this regard **major problems** could arise further down the line when using the solution:

- Lack of speed and agility due to latency between creation of data and data analyses as well as the need to integrate actuals and plan data before being able to carry out planning, reporting and data analysis tasks.
- Data quality problems, foremost inconsistencies, when trying to connect data and data structures for actuals and plan data held in different databases and applications.
- Different user interfaces and user experiences for BI and planning leading to decreased productivity, user satisfaction and additional effort on training and supporting users.
- Additional effort in managing data transfer processes between BI and planning environments.

***"The integration of BI and planning in one common software platform is a means of avoiding problems and user dissatisfaction in BI and planning processes"***

- Additional IT costs from running several software systems, server environments, maintaining security, dealing with user problems, update processes etc.
- Additional licensing costs for different BI and planning environments.

Overall the evidence we collected over many customer interactions and surveys strongly suggests that integrating BI and planning in a common software platform and methodology shows significant benefits.



**Figure 5: Biggest problems in the planning process, differentiated by usage of an integrated platform for BI and planning vs. using separate software tools**  
 Source: BARC The Planning Survey 14, n=358

## Conclusion

The integration of BI and planning in one common, professional software platform is essential to optimally support the management cycle. Integrating BI and planning in a common software platform and methodology shows significant benefits and is a means of avoiding problems and user dissatisfaction. With that, the integration of BI and planning is an essential prerequisite for modern management support.

Using professional software solutions is a decisive factor for sustained success when integrating BI and planning. To optimally support the whole management cycle and an organization's performance, some major requirements have to be covered by software solutions:

- Provide flexible functionality for all aspects of the whole management cycle in one integrated product (planning, monitoring, reporting and (advanced) analysis).
- Provide seamless integration of BI and planning functionality, especially to support planning and forecasting processes with advanced and predictive analysis.
- Provide one single integrated technical platform for actuals and plan data based on a consistent data model.
- Provide consistent data modelling capabilities to flexibly and efficiently support modeling of enterprise and departmental data views supplemented by flexible time horizons for short-term operational, mid-term tactical and long-term strategic considerations.
- Support business user self-service and data discovery with an easy-to-use visual interface and support for collaboration.
- Provide enterprise-scale features for large company scenarios such as security, data and user scalability, administration support, reliability, web-based tools with deployment flexibility (cloud and on premises), etc.

Best-in-class companies in BI and planning have a focus on the integration of both topics. The resulting benefits are obvious and should convince every organization to investigate steps to achieve this. Supporting BI and planning on an integrated data platform and with an integrated tool or application is a goal worth investing in. Therefore, when selecting software products for your company, you should pay strong attention to the aspects mentioned in this research note to support the whole management cycle optimally and become a best-in-class company in BI and planning.

Copyright © BARC GmbH 2016. All rights reserved.

**Business Application Research Center – BARC GmbH**



A C X P G R O U P C O M P A N Y

**Germany**

BARC GmbH  
Berliner Platz 7  
D-97080 Würzburg  
+49 931 880651-0  
[www.barc.de](http://www.barc.de)

**Austria**

BARC GmbH  
Goldschlagstr. 172 / Stiege 4 / 2.OG  
A-1140 Wien  
+43 1 8901203-451

**Switzerland**

BARC Schweiz GmbH  
Täfernstr. 22a  
CH-5405 Baden-Dättwil  
+41 76 3403516

**France**

BARC France (Le CXP)  
8 Ave. des Ternes  
FR-75017 Paris  
+33 1 530505 53

**Rest of the World**

+44 1536 772 451  
[www.barc-research.com](http://www.barc-research.com)

