BearingPoint ®

Data & Analytics.
Analytical insights to boost your business performance

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Data & Analytics decodes client data to unlock business value and leverage untapped potential.
We derive insights using state-of-the-art analyses and appropriate analytical models.

The abundant amount of data available today has the power to fundamentally change companies and their business models. This increasing importance of data poses a great challenge to businesses regarding the processing, intelligent evaluation and usage of this rising flood of data. They require new technologies and capabilities to extract valuable business insights and become truly data-driven organizations.

In order to efficiently handle the exponentially growing volume, variety and velocity of data, storage must become lean and agile to facilitate constantly growing and evolving analytics. Systems must enable business users to easily locate and access relevant information and insights. Equally important is the capability of developing understandable and interpretable analyses in order to derive action plans and create tangible business value.

Gartner predicts through 2028, storage, computing, and advanced AI and analytics technologies will expand the capabilities of edge devices

Automated, data-driven decision support enables companies to make decisions based on future trends, risks and opportunities and so stay ahead of competitors. The use of data and analytics to drive innovation and mitigate risks has become an important asset. In response to this development, IT leaders anticipate the greatest increase in budget allocation for 2019 to be related to analytics. So far, only 30 percent of companies use analytic applications even though the majority considers predictive and prescriptive analytics as vital for their company's future success.

Gartner's recent survey of more than 3,000 CIOs shows that CIOs ranked analytics and BI as the top differentiating technology for their organizations. (Gartner 2018)

Data and analytics leaders are fueling transformation in the digital age

Organizations capable of leveraging analytics and governance to manage the overwhelming volume and complexity of data will dominate the market. Being a data and analytics leader refers to possessing a competitive advantage in terms of using data and analytics effectively. This no longer only concerns IT departments but all business departments within an organization. Thus, bridging the gap between business and IT, aligning objectives, and combining industry understanding with technological know-how is a crucial step in achieving analytical excellence.

BearingPoint's Data & Analytics team combines business understanding with technological expertise, to help clients make insight-driven decisions at all organizational levels. We enable clients to exploit the full potential of advanced technology, to build flexible and robust Data & Analytics solutions, and generate tangible business value.

Business analytics is classified into different types depending on business value and analysis maturity

Over the last decades, analytics has evolved from mere reporting and descriptive analysis to automated, augmented analytics.
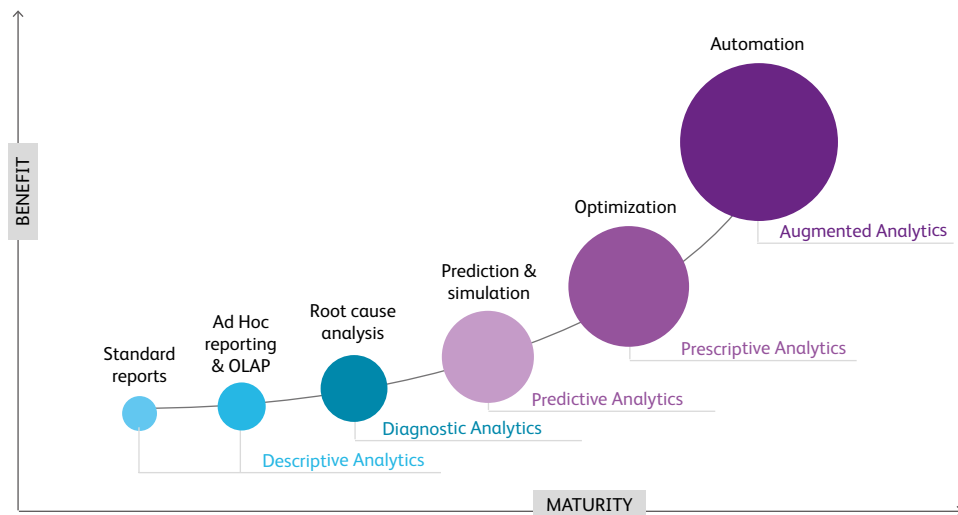

Image Source: Delaware in following Gartner 2016)

Analytics can be defined as a collection of techniques used to translate complicated problems into simpler, less complex ones that are easier to grasp, model, and solve. It originated in the mid-1950s, with the focus lying on descriptive analytics and standard reporting. Since then, continuous advances in statistics and mathematics enabled more refined methods for these business applications. Later coined as "business intelligence" (BI), companies used internal and structured data as a basis for their reporting and mostly descriptive analyses for several decades.

Accelerated by vast computing and storage capabilities, the technical possibilities for deeper analytics have emerged over the last years. Organizations are now capable of identifying patterns and anomalies in data to predict and simulate future outcomes, thus exceeding functionalities of mere reporting, analysis and visualization of data.

Today, problem-solving processes start with any type of data to optimize decisions and enhance business performance. With the ongoing development of AI technologies, augmented analytics has emerged, paving the way to decision making automation.
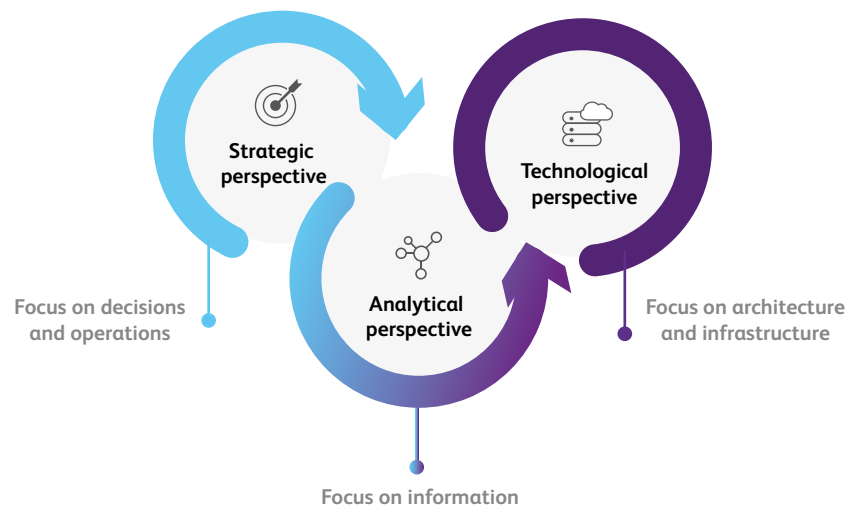
Traditional BI has become a commodity, therefore today's key differentiator between leaders and followers is future-oriented, predictive, prescriptive and augmented analytics, also known as advanced analytics.

Enabling analytical excellence

Our Data & Analytics perspectives

Achieving analytical excellence involves changes in every aspect of an organization – from employees' mindsets to technological capabilities including business and IT strategy, organizational structure, data and processes. From a strategic, analytical and technological perspective we enable our clients to generate valuable insights and support to make better decisions based on their data.

Our perspectives provide a holistic view on Data & Analytics challenges, particularly focusing on decisions and operations (strategy), information and knowledge (analytics) and IT architecture (technology). We support our clients in creating the agile IT organization they need to go digital by illuminating data and analytics topics from all perspectives:

Strategic perspective

Analytical perspective

Technological perspective

Focus on decisions and operations

Focus on information

Focus on architecture and infrastructure

Strategy

We help our clients to generate business value by enabling better decision making based on innovative technologies and transforming into data-centric organizations. Together with them we determine strategic business questions to be solved using data and analytics. In order to facilitate long-term analytic processes we find and implement the right organizational model and support our clients in driving this change.

Analytics

Our analytical perspective refers to the utilization of advanced analytical methods to extract usable and understandable knowledge from data. Machine learning, statistical modelling, pattern recognition and neuro-computing is used to derive insights and access untapped potential hidden in data.

Technology

In applying our technological perspective, we enable clients to manage structured and unstructured data using state-of-the-art technology. Cloud computing, serverless IT architectures and lambda functions serve as examples of new, scalable technologies that we propose to our clients depending on the issue at hand and existing IT landscape.
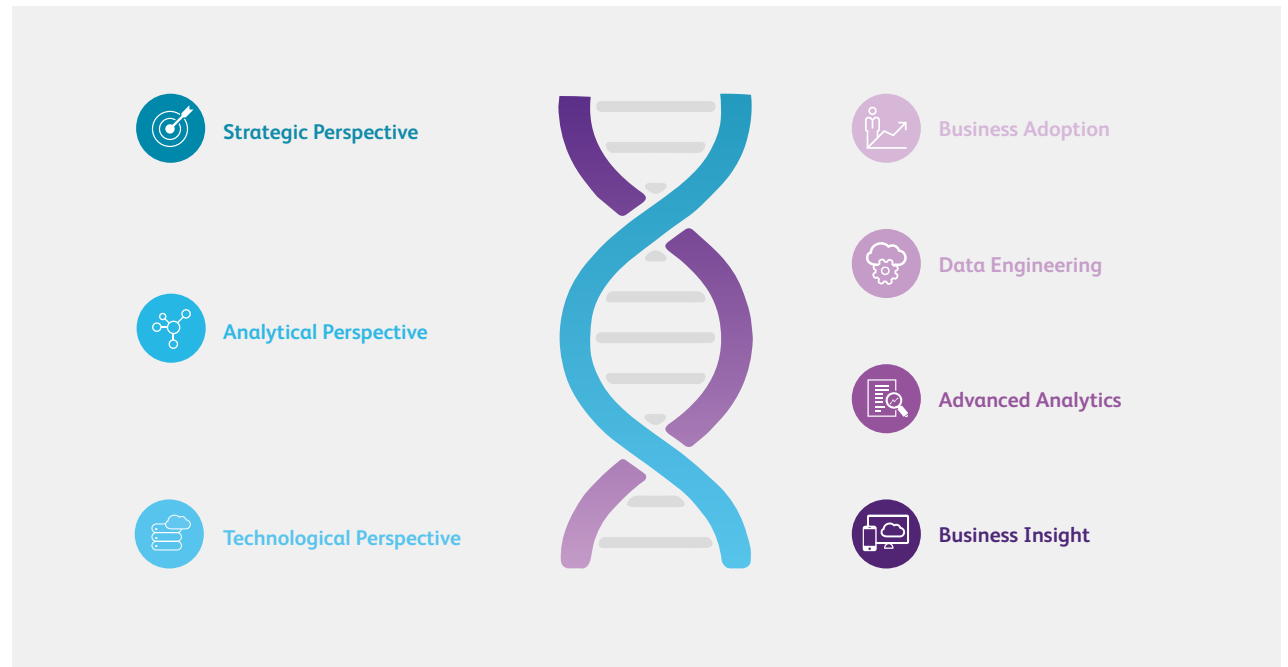
Turn data into value

Our Data & Analytics services

Across all perspectives we offer D&A services along the whole analytics value chain.
Our business value-driven and technology-oriented services cover all aspects of an analytics project.

We serve clients on all matters of the data analytics life cycle – such as defining the analytical business case, integrating multiple sources into a single point of truth, using statistical models and visualizing analyses results. Our services are complementary to one another and can either be performed consecutively within our experienced approach or stand-alone as individual services.

Additionally, we offer data governance as comprehensive service considering that processes, meta data management, auditing, data guidelines and compliance with regulatory requirements (e.g. GDPR) are key success factors for effective data and analytics projects.

The right perspective at analytics initiatives in combination with an elaborated and comprehensive service offering allows us to achieve optimal outcome in any analytical projects for our clients.

Strategic Perspective

Analytical Perspective

Technological Perspective

Business Adoption

Data Engineering

Advanced Analytics

Business Insight

Business Adoption

Incorporating business strategy, values, people and processes into an analytics intiative ensures long-term use of results.
We define data-driven business scenarios and align business processes and organization

Defining business scenarios aligned with the overall strategy is fundamental to achieve the highest business value from data and the most important step in every data and analytics initiative. BearingPoint supports business case definition and enables the alignment of processes and organizational structures for long-term value provision of insights for decision making and measure definition.

This includes appropriate governance, which is considered as a key success factor of data & analytics initiatives and projects, and involves the full integration of processes, metadata management, auditing, data policies, and compliance with regulatory requirements (e.g. GDPR).

Business value driven

- Data value identification
- Business case & value definition
- Business process mapping
- Data driven process (re-)design

Technology oriented

- Data and IT strategy
- Strategic data management
- Data science approach
- Process automation
- Data governance

Data Engineering

Data collection, exploration, preparation are key aspects of efficient analytics as basis for insights.
We enable effective use of data for analytics

Optimal data architecture is a prerequisite for successful data management and ensures data velocity necessary for real-time decision making. As accurate forecasts are essential to process high data volumes, data architecture is crucial for comprehensive data models.

Cloud-based architecture permits cost-optimized storage of large data volumes in accordance with client specifications. Transforming data into useful formats for analysis facilitates leverage effects of analytical techniques.

Business value driven

- Data stewardship and responsibilities
- Data quality management
- Data requirements analysis

Technology oriented

- Data architecture
- Data lake, data warehouse
- Data collection strategy
- Data quality management
- Data processing

Advanced Analytics

Analyses, algorithms and statistical models detect valuable findings from structured and polystructured data. We use statistical models and machine learning techniques to derive analytical insights

Advanced analytics is used more widely as enterprises utilize algorithms and statistical models for future-oriented or explorative analytics to provide new insights.

BearingPoint uses advanced analytical techniques beyond traditional business intelligence and performance management, to generate deeper insights and forecasts using intelligent machine learning algorithms. To resolve the business question or concern presented, a series of analytical processes is designed to dive into data, mine the necessary business insights, and provide useful answers.

Business value driven

- Business complexity reduction
- Automated decision-making
- Business impact assessment
- Action and measures alignment

Technology oriented

- AI, Machine learning
- Prediction and prescription
- Explorative analysis
- Forecasting and simulation
- Data mining

Business Insight

The suitable visualization of information and results makes data understandable and usable for further decisions.

Data analyses and results become less relevant if they are not easy to understand and translated correctly into necessary measures. For data-driven decision-making, information must be delivered to the right people at the right time in the right form.

Clearly structured and efficient communication of information helps users to analyze their data and apply the knowledge gained, thus drawing the right data-driven conclusions.

Business value driven

- KPI definition and report design
- Business interpretation and assessment
- Performance measurement

Technology oriented

- Reports and dashboards
- Self-Service BI, mobile services
- Data protection & security
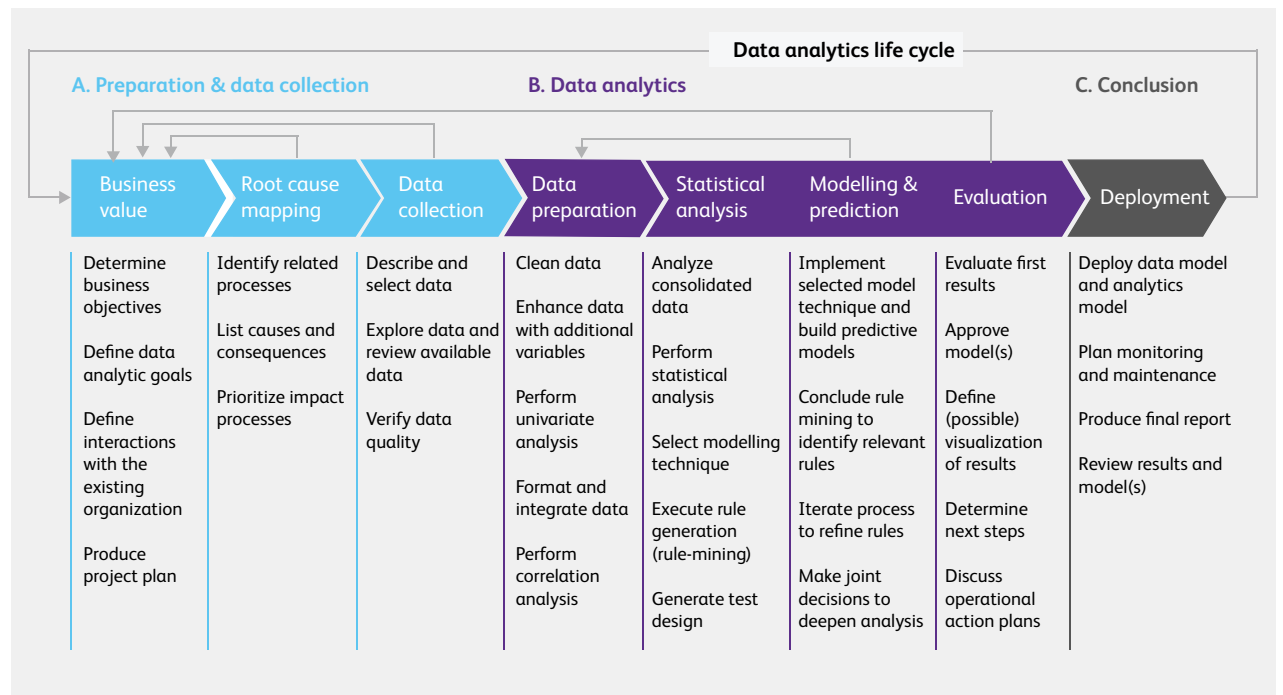- Roles and authorization

Following the D&A life cycle

Our proven approach is aligned with established processes for data and analytics projects

Based on our experience we pursue an agile methodology based on predefined activities within our Data & Analytics approach.

Typically, data and analytics projects loop through several steps multiple times and are therefore agile by nature. This characteristic is owed to the fact that analytical project results heavily depend on statistical models, variables and data types used and therefore, steps may have to be repeated until optimal models, variables and data types are identified. Likewise, lessons learned during each phase must be taken into account and may trigger deeper business questions, oftentimes resulting in new or subsequent data analytics processes.

Data analytics life cycle

A. Preparation & data collection   **B. Data analytics**   **C. Conclusion**

Business value	Root cause mapping	Data collection	Data preparation	Statistical analysis	Modelling & prediction	Evaluation	Deployment
Determine business objectives	Identify related processes	Describe and select data	Clean data	Analyze consolidated data	Implement selected model technique and build predictive models	Evaluate first results	Deploy data model and analytics model
Define data analytic goals	List causes and consequences	Explore data and review available data	Enhance data with additional variables	Perform statistical analysis	Conclude rule mining to identify relevant rules	Approve model(s)	Plan monitoring and maintenance
Define interactions with the existing organization	Prioritize impact processes	Verify data quality	Perform univariate analysis	Select modelling technique	Iterate process to refine rules	Define (possible) visualization of results	Produce final report
Produce project plan			Format and integrate data	Execute rule generation (rule-mining)	Make joint decisions to deepen analysis	Determine next steps	Review results and model(s)
			Perform correlation analysis	Generate test design		Discuss operational action plans	

Business value

This initial phase focuses on understanding project objectives and requirements from a business perspective, converting this knowledge to define an analytics problem and a preliminary plan to achieve client objectives.

Root cause mapping and data collection

Data exploration, detection of data quality issues, discovery of first insights and identification of subsets to formulate hypotheses regarding hidden information is performed during these stages.

Data preparation

This phase covers all activities required to construct the final dataset. After cleaning initially raw data and structuring it into an adequate data model, it will be fed into the modelling tool(s) used for analysis or transferred into further data marts.

Data exploration & Analytics implementation

We gain insights from the consolidated data set by performing descriptive and predictive or even prescriptive analyses, using state-of-the-art statistical methods and tools. This process includes determining and implementing the right visualization for each step of the analysis. Given the variety of techniques available to address a specific data mining problem, an iterative approach is used to identify the best fitting model and enhance the available data to it.

Evaluation

Our team evaluates the analytical model's results and determines how well the results serve for achieving business objectives. It may be necessary to adjust the model if certain business issues have not been sufficiently considered. The results are the basis for the definition of further action plans and measures.

Deployment

Depending on project requirements and objectives, the rollout phase can be as simple as generating a report or as advanced as implementing a repeatable data analytics process within a company.

Accelerating analytics with technology

Technology

BearingPoint uses a variety of data and advanced analytics tools in its projects that offer cutting-edge machine-learning algorithms, or state-of-the-art visualization possibilities, among them our own proprietary algorithm, HyperCube®. We collaborate with a large network of technology partners to deliver the best solutions to our clients for all our services.

We provide technology supported data science services along the entire data value chain and deliver powerful applications tailored to our clients' specific business needs. Therefore, we either use tools which are already in clients' use or recommend the adequate technology for the business problem.

Gartner predicts that analytic services and software are converging into new solutions that disrupt vendor practices and create prospects for organizations to differentiate competitively. Data and analytics leaders should embrace the disruption to leverage converged solutions across the organization.

BearingPoint's analytics hub

BearingPoint's unique Data & Analytics platform is used to perform business analytics projects and services for our clients – without the necessity of having to set up hardware or acquire resources necessary to implement and maintain such programs.

The service provides analytics software and operations through web-delivered technologies. Our experts offer analytical insights together with precise action plans and measures necessary to utilize these insights to achieve business objectives. This analytics service can either be provided once or on a regular basis as Analytics-as-a-Service (AaaS).

Our AaaS solution considers leading industry-standard analytic and visualization technologies. Data may be hosted on-premise or in the cloud, compliant with strict security and regulatory requirements, as well as data privacy policies.

Security | Governance | Data insight | Business case | KPI and report design

Statistics and prediction | Subgroup analysis | Streaming analysis

Advanced analytics

Data engineering
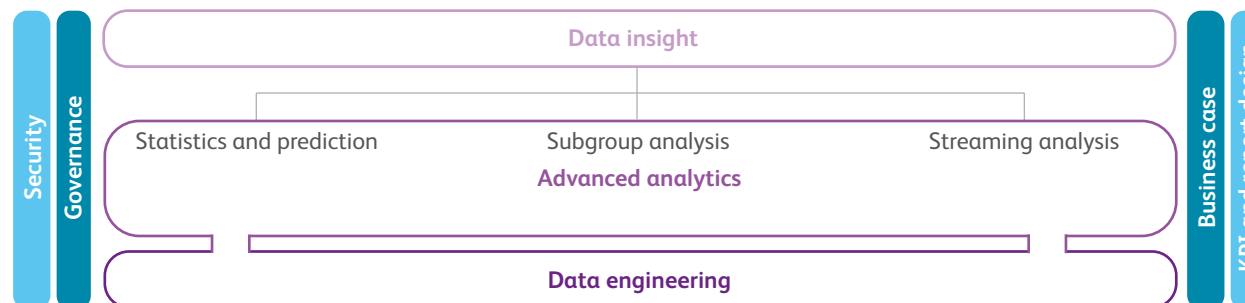
Our Data & Analytics portfolio

Analytical insights to boost your business performance

Predictive maintenance

Deploy predictive models to monitor production facility and equipment condition and determine when to perform maintenance or service to ensure a smooth production flow and avoid productivity losses.

Risk management

Use advanced algorithms and technologies to predict risks, gain risk-related insights and develop risk mitigation plans. Building on our strong footprint and experience in risk and compliance, we analyze client data to identify potential risks regarding business processes, operations and regulatory and security issues.

Sales performance

Understand client data to unlock commercially relevant insights in order to forecast future sales performance, improve sales strategies and sales outcome. Clients benefit from deep market awareness regarding trends and potential to find new markets and areas for future development and bring products and services to market quickly and efficiently.

Operational analytics

Improve your business operations and company-specific processes to increase efficiency, reduce spending, and enhance business performance. We solve complex challenges in supply chain and logistics, claim processing, customer service, and any other client-specific process.

Finance analytics

Perform simulations of financial scenarios and forecast trends to improve our clients' financial performance and profitability. BearingPoint leverages advanced analytics to support your decision-making and strategy to sharpen tomorrow's business goals.

Marketing analytics

Powered by advanced analytics, we support our clients in discovering new opportunities, detecting patterns in customer behavior and making data-based decisions in marketing. We enable our clients to understand and predict customer behavior and needs, and thereupon execute customized and efficient marketing strategies.

Quality management

Empower R&D and production to increase product quality sustainably and reduce time-to-correction. Using data generated across the entire supply chain – from R&D to social media – our experts support in developing a quality assurance strategy and creating predictive models to forecast quality issues and spare parts demand.

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About BearingPoint

BearingPoint is an independent management and technology consultancy with European roots and a global reach. The company operates in four units: Consulting, Solutions, Business Services, and Ventures. Consulting covers the advisory business; Solutions provides the tools for successful digital transformation, advanced analytics and regulatory requirements; Business Services provides managed services beyond SaaS; Ventures drives the financing and development of start-ups. BearingPoint's clients include many of the world's leading companies and organizations. The firm has a global consulting network with more than 10,000 people and supports clients in over 75 countries, engaging with them to achieve measurable and sustainable success.

For more information, visit our website www.bearingpoint.com.