

Sourcing



Which data sources are already available and in use?
 Which internal data sources are available but not yet in use?
 Which external data sources of partners or customers can be accessed?
 Which public data sources can be accessed?
 Which additional data sources are required to enable the desired utilization?
 Which (additional) data sources and data arise because of the key activities as part of the new or changed business model? Which ones as part of the new customer relationships? Which ones as part of the new (marketing, sales and distribution) channels?
 How can so-called data network effects be used, meaning, data leads to an improved offering, which leads to more customers seizing the offer and in turn produce more data?

Reference:
 See Data Landscape.

Examples:
 Owned data: sensor data, log file data, ERP system data, data from transactions in online shops, data from anonymous surveys etc.
 Earned data: customer data from CRM systems, social media data, mobile apps usage data etc.
 Paid data: data from data brokers, data marketplaces ("data places"), data exchanges etc.
 Public data: data from Federal Bureau of Statistics, Wikipedia, web crawlers, social media monitoring, open data platforms etc.

Refinement



Do we have to check the data and if necessary, e.g. correct or filter it?
 Can we complement missing data with data from other sources?
 Do we need to anonymize or delete data?
 Can we aggregate diverse data sources and link data using common identifiers?
 Do we need to normalize data (e.g. demographic data) or transform it into another representation or format?
 Which metrics and key performance indicators (KPI) can we calculate?
 Which models for making predictions or recommendations can we create?
 Which visualizations do we need for showing key figures, trends or correlations?
 How do we integrate the analytics results into existing business processes?
 Which manual steps are required in order to ensure quality throughout the analytics process?

Examples:
 Data cleansing & normalization
 Data aggregation, integration & transformation
 Data sampling or data compression
 Data loading e.g. to data warehouses (ETL processes)
 Exploratory data analysis (data discovery & data mining)
 Feature engineering & selection
 Predictive & prescriptive modeling (training & test)
 Visualization as part of dashboards and/or reports
 System integration & testing
 Deployment, monitoring and maintenance

Utilization



Which value propositions for our customers do we want to create from the data?
 How can the data improve our customer relationship?
 How can the data make our (marketing, sales and distribution) channels more efficient?
 How can we use the data to increase revenue?
 How can the data enable us to better understand our customers and partners?
 How can we monetize our data in order to create new sources of revenue (e.g. data-as-a-service)?

Reference:
 See Analytics Maturity.

Examples:
 Descriptive: monitor the performance of key activities such as marketing, sales & service to optimize costs.
 Diagnostic: identify the most profitable customer segments.
 Predictive: predict the demand of key resources (e.g. employees).
 Prescriptive: send customers personalized offers via the most suitable channel to improve the relationship.
 Autonomous: adjust prices on a daily basis, based on customer demand and the competition's offering.

Tools



Which integration solutions do we need for integrating external data sources?
 Which database systems do we need for storing the data?
 Which systems do we need for aggregating, integrating and transforming the data?
 Which analytical tools do we need for performing descriptive and diagnostic analytics?
 Which modeling tools do we need for performing predictive and prescriptive analytics?
 Which visualization tools do we need for building dashboards, reports etc.?
 Which integration and automation tools do we need for automation?

Examples:
 Data management: ETL tools, SQL, NoSQL, graph databases etc.
 Data processing: MapReduce systems, in-memory-analytics, data warehouse systems etc.
 Data analysis: spreadsheet tools, statistics tools, mathematical software, programming languages etc.
 Data modeling: modeling tools, SaaS offerings, machine learning clouds etc.
 Data visualization: self-service BI tools, infographic design tools etc.
 Data automation: marketing automation tools, service orchestration tools etc.

People



Who takes care of data quality?
 Who is responsible for data protection?
 Who manages the IT systems?
 Who designs the analytics processes?
 Who implements the analytics processes?
 Who carries out the analysis?
 Who interprets the results?
 Who creates and validates the prediction and recommendation models?
 Who designs the visualizations?

Examples:
 Data steward
 Data protection officer
 IT administrator
 Big data engineer
 Software architect
 Data scientist
 Business analyst
 Information designer

Partners



Which partners or customers provide us with their data sources (data-on-demand or data-as-a-service)?
 Which product providers supply us with the necessary tools (as software-on-demand or software-as-a-service)?
 Which implementation tasks can we outsource to external service providers?
 Which responsibilities (roles) can we outsource to external service providers?
 Which external expert know-how do we need (consulting and/or training)?

Examples:
 Market research companies
 Data & address dealers
 Software & SaaS providers
 Platform operators
 Business Intelligence & data science service providers
 Agencies and consulting companies
 Freelancing experts