

Spotlight on  
your Data!

## An Inspiring Collection of Modern Analytics Cases

Accompanied by  
Strategic Guiding Tools

Use Case Booklet

# Leading Data-Driven Business Models to Success

## Data is everywhere. Data is specific.

You may be familiar with the marketing phrase "Content is King. But Context is King Kong". It's a similar story with data. As leader, you have based your decisions largely on experience or past information and made them in the context of the issue at hand. But will this still be sufficient in the future to make good decisions quickly in an increasingly volatile business environment?

To set a new direction for the future without abandoning your roots, ambidexterity becomes critical management capability. Improving what works while constantly inventing is a monumental task especially if you want to motivate and bring others along for the journey.

This booklet presents a handy collection of practical examples of enterprises that have successfully managed ambidexterity to overcome the limitations of data in isolated contexts and organize it in such a specific way that added value and even competitive advantage have been created on this basis.

How does a company, its divisions and branches, teams and, in the end, individual employees get there? This booklet provides ideas and frameworks for the individual steps. And individual they are: Each company finds their way, depending on their strategic goals and maturity level.

- ▶ We first share thoughts that help you understand where to start.
- ▶ Then, some real-world customer stories showcase successful projects. They serve as inspiration to get your creativity up and running.
- ▶ In the last section, we show ways to close the gap between prototype and operational project, and between one project and the workbench.

We hope to provide an inspirational read.

**Thorsten Warnecke**

Principal Data and Analytics

Camelot Management Consultants

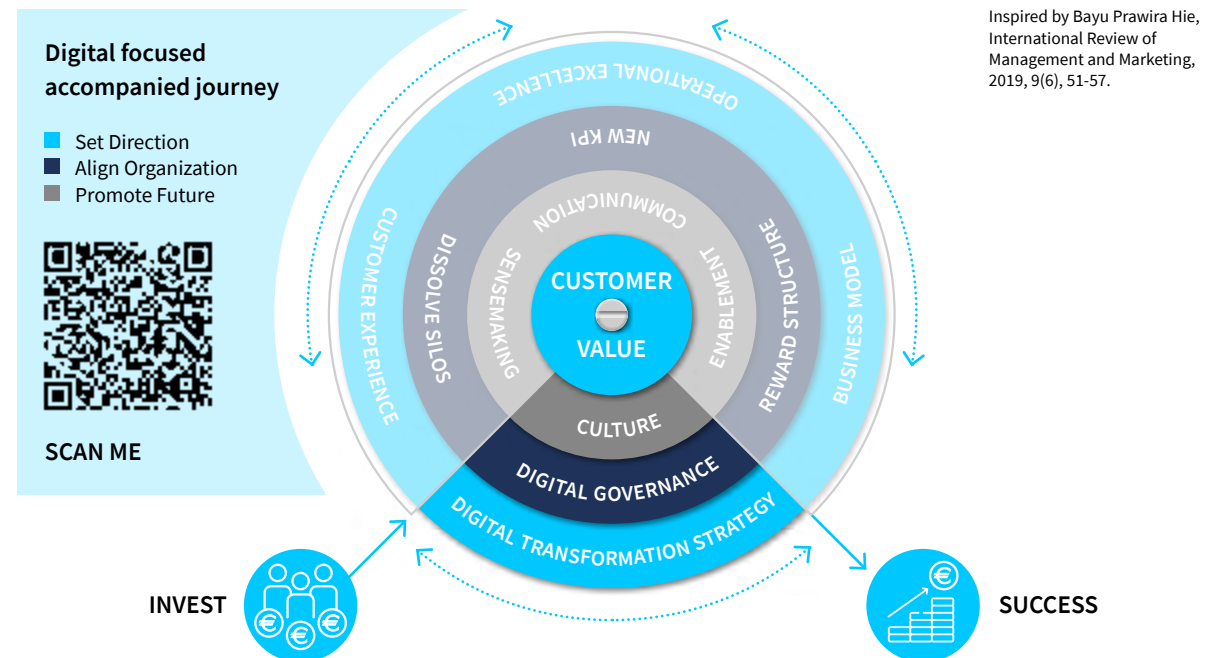
# Defining the Most Valuable Next Step

## Spotlight on – Your show

No matter where you stand: the next step towards a more data-driven team, division or company depends on your specific goal. Generally, you focus your activities on achieving a previously defined vision. Focus areas or strengths are very good starting points in this mode of ambidexterity. Therefore, every data analytics journey is unique.

In essence, our goal is to help you get the most value out of your investments in innovative use cases. We want to give you strategy elements of both Exploit and Explore. For better orientation and straight focus, we have designed the model below. Selecting one expression from the areas of digital transformation strategy, digital governance and culture already helps to set the direction, align the organization, and promote the future. This specifies the basic thrust towards the target picture and provides you with sufficient capacity for reflective formulation of derived goals. The latter is particularly relevant in the context of data, data management, and analytics concepts that seek change in data-driven decision-making cultures.

We want to support people through modern data architectures and innovative concepts in the area of data product management to get more out of their data assets, to promote data competencies and thus successively achieve an effective handling of data & analytics by all roles in the organization.





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Real Industry  
Use Case  
**#01**

## Camelot Analytics Use Cases

# Handwriting Extraction Using Optical Character Recognition

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ State-of-the-art Optical Character Recognition (OCR)
- ▶ Human-in-the-loop approach for fast data validation
- ▶ One-click deployment as docker containers
- ▶ Increase in data quality and consistency, achieved by an intelligent mix of data science approaches

# Handwriting Extraction Using Intelligent Optical Character Recognition

Getting handwritten information from forms into your systems is taking a huge amount of time and is sensitive to mistakes. The solution can support your organization in reducing time and error rates by using Data Science and AI. Improve your processes and bring your data to a new quality level.

## Liberate highly-qualified resources from repetitive work



### CHALLENGES

- ▶ Information from thousands of hand-written forms needed to be entered into a system manually
- ▶ It took 400 hours per month to manually enter the data into the target system in the covered scenario alone
- ▶ Highly qualified lab personnel were involved in the time-consuming process, preventing them from working on more value-adding tasks



### APPROACH

- ▶ Automated extraction of handwritten text using Intelligent Optical Character Recognition
- ▶ Automated data validation and enrichment layer using a set of data science approaches
- ▶ Human-in-the-loop approach using an intuitive user interface for extraction validation



### RESULTS

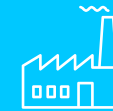
- ▶ Faster and simpler data extraction process
- ▶ End-user application enables human-in-the-loop approach for data validation
- ▶ Single point of document and data management
- ▶ Enrichment of data and consistent data
- ▶ Streamlined, tool-assisted, end-to-end process



# 180 hrs

can be spent on more valuable tasks every month

## SETUP



**INDUSTRY**  
Pharmaceutical



**REVENUE**  
~ €58 bn.



**EMPLOYEES**  
~ 100K



**TIME TO VALUE**  
6 months



**APPLIED AREA**  
Artificial intelligence & data science



Real Industry  
Use Case  
#02

## Camelot Analytics Use Case

# Data-driven Analysis of Project Structure Plan Elements

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ Enables identification of critical errors in classifications
- ▶ 3 critical errors in classifications identified
- ▶ Inconsistencies between guidelines and practice identified
- ▶ The eligibility to activate a plant using classic data analysis and machine learning is now predictable
- ▶ Identification of further use cases and synergies with existing initiatives



# Data-driven Analysis of Project Structure Plan Elements

To keep track of individual steps even with many projects, a data-based analysis of the project structure plan elements can identify weaknesses and help optimize them. This creates a higher transparency. By using an approach that combines text mining and text understanding, inconsistencies and opportunities for improvement are made visible. This aids for example in the correct activation and allocation of completed workloads in company accounts.

## Uncovering project controlling inconsistencies



### CHALLENGES

- ▶ Failing overview of existing project data due to a steadily growing number of projects that are maintained in multiple systems
- ▶ No binding or applied references and rules for individual items' accounting in project
- ▶ Individual items in projects have not been applied in a binding and consistent manner
- ▶ Uncertainty and uncertainty regarding the project status and balance sheet activation obligations
- ▶ Mis-classifications were not highlighted due to the complexity of the underlying manual approach



### APPROACH

- ▶ Quantitative analysis for a complete overview of inventory data
- ▶ Machine learning-supported topic classification
- ▶ Qualitative interviews with SMEs to test and review the findings
- ▶ Derivation of weaknesses and blind spots within existing processes for data maintenance and updating
- ▶ Evaluation of reasons and causes for data inconsistencies



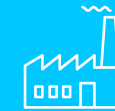
### RESULTS

- ▶ Semantic data model in the project creation and management process connected with corresponding SAP objects
- ▶ Visualization of the existing data and inconsistencies
- ▶ Universal suggestions for analyzing the project element structure
- ▶ Trained machine learning model for automated classification of short project texts

> 90%

accuracy for balance sheet capitalization of project elements

## SETUP



**INDUSTRY**  
Transportation



**REVENUE**  
~ €9 bn.



**EMPLOYEES**  
~ 35K



**TIME TO VALUE**  
6 months



**APPLIED AREA**  
Artificial intelligence & data science



Real Industry  
Use Case  
#03

## Camelot Analytics Use Case

# Identification of Supply Chain Scenarios and Scenario-based Rules

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ Visualization of supply chain networks
- ▶ Cloud-based rule mining approach
- ▶ Automated data mining process for supply chain discovery
- ▶ Increase in data quality and consistency

# Identification of Supply Chain Scenarios and Scenario-based Rules

Often, supply chains lack sufficient transparency. A two-step approach with initial knowledge-graph build-up and subsequent clustering and data mining accelerates the creation of new insights. A smart combination of master data and supply chain scenarios unleashes unseen optimization potentials and enables 'first time right' configurations.

## Self-driving forensic analysis of product and delivery configurations



### CHALLENGES

- ▶ Overview of existing supply chain scenarios was not available
- ▶ Complicated and error-prone process of setting up new product supply chain data
- ▶ The rules driving each supply chain scenario were neither well-understood nor documented



### APPROACH

- ▶ Mine and cluster supply chain scenarios directly from master data
- ▶ Visualize and compare existing supply chains using network graphs
- ▶ Identify wrong and non-compliant supply chain setups using graph similarities



### RESULTS

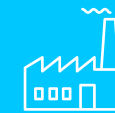
- ▶ One-click-visualization of all existing supply chain scenarios
- ▶ Simple master data creation for new products using a rule-based approach
- ▶ Improved data quality by remediation of wrong supply chain setups



# 20-fold

faster identification of supply chain scenarios and rules

## SETUP



**INDUSTRY**  
Pharmaceutical



**REVENUE**  
~ €22 bn.



**EMPLOYEES**  
~ 35K



**TIME TO VALUE**  
6 months



**APPLIED AREA**  
Data engineering

Real Industry  
Use Case  
#04

## Camelot Analytics Use Case

# D&A Strategy to Combine SAP with Cloud Data Warehouse

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ Easy entry into the topic of cloud and hybrid
- ▶ Ideal alignment of SAP and hyperscaler's ecosystems
- ▶ Optimal work and load distribution between Enterprise Data Warehouse, Data Lake and Data Hub
- ▶ Efficient reuse of existing R scripts in the new environment





# Extending a Well-established On-prem Architecture by a Lakehouse Environment Supporting Data Science

In the highly competitive retail market with many external influencing factors, decisions have to be made quickly and based on data. This project initiative is intended to supplement the existing enterprise data warehouse with a big data and data science architecture. This creates a future-proof, flexibly reactive platform.

## Fueling a multi-channel business model with scalable cloud capabilities



### CHALLENGES

- ▶ A new powerful data science environment needs to be created alongside the existing SAP "BW on HANA"-based enterprise data warehouse
- ▶ This calls for a new, intelligent data management



### APPROACH

- ▶ Discussing requirements and testing workloads; estimation of cost, suggestion of best-of-breed components
- ▶ Designing a holistic concept and blueprinting the new overall architecture
- ▶ Identifying the critical success factors of data storage and processing



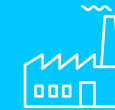
### RESULTS

- ▶ Develop a deployment strategy for Data Hub, Data Lake and Data Science Core
- ▶ Preparation of the contents for decision-making by the management board
- ▶ Positive decision for roll-out by decision makers now leads to the implementation of the cloud architecture

# 1+1=3

more than the sum of its parts

## SETUP



**INDUSTRY**  
Retail with 2,000 stores and E-Commerce



**REVENUE**  
~ €1.2 bn.



**EMPLOYEES**  
~ 12K



**TIME TO VALUE**  
3 months



**APPLIED AREA**  
Data & analytics cloud strategy

Real Industry  
Use Case  
#05

## Camelot Analytics Use Case

# Embarking on the D&A Value Journey

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ Creating analytics platform to support more domains in launching / developing data products
- ▶ Improving the findability, accessibility, interoperability, and reusability of digital assets
- ▶ Data mesh concept ensures scaling and data federalism



# Embarking on the D&A Value Journey

The main goal was to create a trusted analytics foundation by improving the findability, accessibility, interoperability, and reusability of digital assets. This creates a solid basis for further analytics use cases from domains that are hungry for data products.

A proven approach to D&A strategy assessment specifies the vision, articulates the mission and the roadmap for implementation



## CHALLENGES

- ▶ Existing analytics architecture did not cater to urgent business expectations and demands
- ▶ Growing lack of understanding because current solutions are often too rigid, SAP-centric, and slowly realized
- ▶ Previous approaches did not cope with the diversity of data and could not manage the desired data at scale



## APPROACH

- ▶ A powerful 10-point approach enables a solid data foundation for analytics execution
- ▶ Creating transparency about D&A project prioritization and results
- ▶ Learnings from previous projects suggest earlier consideration and involvement of D&A roles
- ▶ Showing how to create a large backlog from organizational, operational, capability, and capacity topics to deliver 360° products



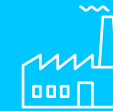
## RESULTS

- ▶ Create an environment that allows for proactive ideas and contributions around D&A by business areas & functions
- ▶ Ensure that roles working with data are aware of their tasks and responsibilities
- ▶ Strengthen the existing SAP architecture with native HANA and data intelligence components
- ▶ Extend the supervised data lake or lakehouse approach to include the data mesh concept for more federalism and scale

69%

of the upcoming digital initiatives will profit directly from this D&A strategy

## SETUP



**INDUSTRY**  
Chemicals and consumer goods



**REVENUE**  
~ €1.2 bn.



**EMPLOYEES**  
~ 12K



**TIME TO VALUE**  
3 months



**APPLIED AREA**  
Data & analytics cloud strategy



Real Industry  
Use Case  
#06

## Camelot Analytics Use Case

# Rule Mining based on Parallel Computing

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ Easy to explain: The selected algorithm and its decision process is transparent
- ▶ Identify large data sets and their dependencies in just a few minutes
- ▶ “Container” architecture and open interface
- ▶ Data maintenance with rule-based suggestions for higher data quality



# Rule Mining Based on Parallel Computing

Rule mining has been widely used for quite some time now. A popular and well-known application is within market basket analysis: what are you likely to actually buy, given that you put a combination of other goods in your shopping cart? Results are used to present customers with frequently bought together items – we have all seen that when shopping online. Rule mining, as the name suggests, mines data for rules, or dependencies and their patterns. In addition to field-based data quality rules, rule mining can be a powerful tool to improve the state of your enterprise information.

## Supply chain scenario discovery with subsequent rule mining



### CHALLENGES

- ▶ Existing supply chain scenarios are plentiful and hard to maintain
- ▶ Governing rules for supply chain scenarios and their configuration little known due to complexity
- ▶ Creation and maintenance of material and product master data in different contexts led to incorrect configurations
- ▶ Time-consuming communication loops and processes from multiple inquiries and necessary validations of values between data stewards and experts



### APPROACH

- ▶ Automated discovery of supply chain scenarios and graph based visualization
- ▶ Automated discovery of data dependencies in these scenarios using the frequent pattern growth algorithm
- ▶ Definition and implementation of an application supported by this algorithm for non-technical personnel
- ▶ Enabling the processing of large, high-volume data sets

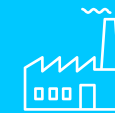


### RESULTS

- ▶ Insights over the currently existing supply chain scenarios
- ▶ More correct and consistent data maintenance
- ▶ Fully automated detection of data-based rules and dependencies including their quality criteria for comparability and selection
- ▶ End-user application recognizes, selects and stores business rules based on scenarios that can be used to support data maintenance
- ▶ Performance optimization through Spark implementation

**20%**  
faster product setup & configuration

### SETUP



**INDUSTRY**  
Pharmaceutical



**REVENUE**  
~ €22 bn.



**EMPLOYEES**  
~ 35K



**TIME TO VALUE**  
6 months



**APPLIED AREA**  
Data engineering

Real Industry  
Use Case  
#07

## Camelot Analytics Use Cases

# Automated P&L Analysis for Measure-driven and Future-oriented Controlling

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ Automated drill down analyses
- ▶ Flexibility to define “relevant” deviation (e.g., thresholds)
- ▶ Direct visualization of the most relevant needs for action
- ▶ Proactive controlling: suggestion to rectify deviations & learning





# Automated P&L Analysis for Measure-driven and Future-oriented Controlling

Finance and controlling practices are undergoing rapid change. Retrospective work is found to be on the decline when looking at what controllers prioritize. Instead of reporting quantitatively, their work is shifting towards predictive-qualitative measures that interpret the findings from a quantitative analysis. Toolboxes are still lagging behind and number-crunching remains repetitive. Transparency is missing, which often is the reason for a poor P&L analysis or even budget deviations. With an automated P&L analysis, more transparency can be created, and the controlling processes can be optimized. Moreover, the automated P&L analysis natively generates management.

## P&L automated root cause analysis (next step: measure suggestion system)



### CHALLENGES

- ▶ Missing transparency in terms of the performance of different locations, e.g. profit centers
- ▶ Time consuming analysis to identify the relevant deviations to explain month-end result
- ▶ Missing management-adequate preparation of results – tedious, repetitive slide generation
- ▶ Focusing on the analysis of the past instead of developing measures to get back on track



### APPROACH

- ▶ Quality check of database for actuals and budget
- ▶ Develop automated drill down functionalities to identify most relevant deviations between budget and actuals
- ▶ Preparation of a management-friendly visualization
- ▶ Discussion and training of controlling mindset as a business partner (decision & measure orientation)



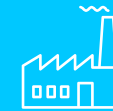
### RESULTS

- ▶ Automated drill down analysis
- ▶ Waterfall visualization of month-end closing plan / actuals deviations
- ▶ Time for Controlling to concentrate on storytelling and measure development
- ▶ Optimized management decision support
- ▶ First steps to generate system-based action suggestions (continuous learning of the system to improve action options)

80%

less effort for quantitative, retrospective analyses

## SETUP



**INDUSTRY**  
Service provider



**REVENUE**  
~ €1 bn.



**EMPLOYEES**  
~ 10K



**TIME TO VALUE**  
3 months



**APPLIED AREA**  
Data analytics & machine learning

Real Industry  
Use Case  
#08

## Camelot Analytics Use Cases

# Reduce Supply Chain Volatility in a Single Day with Next-generation Demand Forecasting

Project blueprints for  
quick & powerful insights

### BENEFITS

- ▶ High demand forecast accuracy
- ▶ Reduced supply chain volatility
- ▶ Plug-and-play for immediate use





# Reduce Supply Chain Volatility in a Single Day with Next-generation Demand Forecasting

Low forecast accuracy is the most underrated issue companies are facing as it exponentially accelerates the volatility up the supply chain amplifying the Bullwhip Effect. Outdated technology and missing know-how often even increase forecast errors instead of reducing them. Control demand volatility and increase forecast accuracy with CAMELOT's next generation demand forecasting know-how, technology, and service.

## A one-day workshop with immediate benefits



### CHALLENGES

- ▶ High distrust in demand forecasting and therefore supply chain ignores forecasts
- ▶ Outdated technology and algorithms in use leading to insufficient forecast accuracy
- ▶ Missing know-how to improve algorithm set-up and therefore not automation following high manual planning effort
- ▶ Manual planning is highly biased due to company politics and sales incentives



### APPROACH

- ▶ We collect three years' demand history and execute a deep data analysis and forecast simulation
- ▶ In a one-day workshop, the analysis results and insights are presented
- ▶ If the results are promising the insights can be immediately implemented in the existing IT landscape or our forecasting technology can be used



### RESULTS

- ▶ Proven significant increase of forecasting accuracy, efficiency, and speed
- ▶ Positive effects on the supply chain (lower inventory, high production efficiency, fewer lost sales, ...)
- ▶ Plug-and-play approach establishes best-practices in a single day
- ▶ Business service without IT dependency and time-consuming technical implementation

**+ 9%-points**  
forecast accuracy

### SETUP



**INDUSTRY**  
Chemicals



**REVENUE**  
~ €2.7 bn.



**EMPLOYEES**  
~ 7.5K



**TIME TO VALUE**  
1 month



**APPLIED AREA**  
Data science

Real Industry  
Use Case  
#09

## Camelot Analytics Use Case

# Data Extraction from Batch Records

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ Faster digitization of data
- ▶ Enables analytics for previously untapped areas
- ▶ Highly qualified employees can dedicate work better
- ▶ Increase in data quality and consistency





# Data Extraction from Batch Records

In legacy environments, culture measurements across time series in laboratories had been mostly taken and filled in by hand, into ever-changing layouts of spreadsheets or printed forms. In order to make sense of large amounts of batch records, they would have to be digitized first. Due to historical growth and changes, as well as mediocre scanning quality of this handwritten information, this may seem like an ordeal that is even more time-consuming without knowing whether the data even serves its analytical purpose.

## Data science powered patch record pipelines



### CHALLENGES

- ▶ Extraction of data from documents is a slow and tedious manual process
- ▶ Data are presented in various formats and documents of different ages, layouts and versions – sometimes only 2 documents per version
- ▶ Great deal of employees' time and effort spent on repetitive tasks
- ▶ Manual data extraction is inconsistent, faulty and error-prone



### APPROACH

- ▶ Automate data extraction using machine learning approach
- ▶ Simplify process by integrating the solution with a simple user interface
- ▶ Enrich and correct data using various data science methods
- ▶ With analysts and similar roles in mind, provision of a prototype front-end application to extract, validate and interact with the data

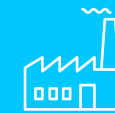


### RESULTS

- ▶ Free up resources by reducing time spent on repetitive tasks
- ▶ Improved data quality through reducing errors; better insights and analytics
- ▶ Harmonized input handling – standard solution for digitizing and extracting information
- ▶ Code, walkthrough and productive solution delivery

**100%**  
of version and data drift  
remediated

## SETUP



**INDUSTRY**  
Life sciences



**REVENUE**  
~ €12 bn.



**EMPLOYEES**  
~ 35K



**TIME TO VALUE**  
9 months



**APPLIED AREA**  
Artificial intelligence & data science

Real Industry  
Use Case  
**#10**

## Camelot Analytics Use Cases

# Life Cycle Detection Based on External Data Sources to Enhance Make-or-Buy Decision-making

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ Clear understanding of how external information is related to market
- ▶ Robust algorithm that estimates the market potential for spare parts, leveraging external data
- ▶ Proof-of-concept and prototype development in very short time and with small budget
- ▶ Alerting define to allow exception-based planning



# Life Cycle Detection Based on External Data Sources to Enhance Make-or-Buy Decision-making

The decision to make or buy certain goods should be the result of a profound analysis and business acumen. What stands in the way of such a practice are multiple perspectives on the life cycles of products and, generally, a certain difficulty when anticipating changes or spotting the status of a particular part during production. Conversely, decisions in business selection can have serious effects and must not be made by instinct. Life cycle detection based on data sources is able to enhance the make-or-buy decisions.

## Status of parts, goods, and components within the product life cycle



### CHALLENGES

Missing transparency on the market potential of spare parts leads to:

- ▶ Over-production for phase-out products
- ▶ Stockouts for phase-in products
- ▶ Lost profits, as wrongly classified products are outsourced to third-party suppliers



### APPROACH

- ▶ Process and responsibilities analysis
- ▶ Data analysis (sales, POLK and IHS data)
- ▶ Benchmark algorithms fit for spare parts life cycle detection & train model
- ▶ Review system architecture
- ▶ Prototype alert report as basis for exception-based planning

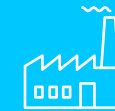


### RESULTS

- ▶ Detailed description of current life cycle management process and responsibilities
- ▶ Identification of quick wins
- ▶ Analysis results based on sales history, PLOK and IHS data
- ▶ Life cycle detection regression model
- ▶ Template alert report as basis for exception-based planning
- ▶ Potential IT solution and implementation roadmap

**96+ %**  
precision of detection algorithm

### SETUP



**INDUSTRY**  
Automotive



**REVENUE**  
~ €3.9 bn.



**EMPLOYEES**  
~ 16K



**TIME TO VALUE**  
3 Months



**APPLIED AREA**  
Data science

Real Industry  
Use Case  
**#11**

## Camelot Analytics Use Cases

# Margin Optimization across Complex Value Chains

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ End-2-end simulation
- ▶ Margin optimization
- ▶ Agile project management
- ▶ Quick prototype development





# Margin Optimization across Complex Value Chains

Companies often struggle in optimizing their margins. The reasons range from different strategies to complex pricing logics. The combination of Camelot's industry experts, market experts, and Camelot's data science team can optimize your complex value chains with the support of algorithms. The results are reflected in transparency of margin drivers, increased productivity, optimized capacity usage and much more.

## Margin optimization across complex value chains



### CHALLENGES

- ▶ Different BU strategies and incentives for selling semi-finished and finished products
- ▶ For BU1 low transfer price to BU2 vs. high chemicals market price
- ▶ Interdependencies between value chains and markets (semi-finished products can be sold by BU1 directly or used in the value chain of BU2)
- ▶ Complex pricing logics based on individual customer contracts



### APPROACH

- ▶ Combine Camelot's chemical engineers and market experts with Camelot's data science team
- ▶ Gather internal and external data to create an end-2-end Value Chain Model which considers: raw material prices, production costs, production capacities, bill of materials, market demand, and individual customer contracts
- ▶ Detailed what-if simulations
- ▶ Apply an optimization algorithm to determine margin optimal production



### RESULTS

- ▶ Productive prototype
- ▶ Full transparency on all margin drivers
- ▶ Simulation engine to analyze all possible scenarios (e.g. contract price changes, raw material price increases)
- ▶ Optimized capacity usage for all stages of the value chain

# 18%

(22M) increase margin for 2 BUs

## SETUP



**INDUSTRY**  
Chemicals



**REVENUE**  
~ €59 bn.



**EMPLOYEES**  
~ 110K



**TIME TO VALUE**  
6 months



**APPLIED AREA**  
Data engineering

Real Industry  
Use Case  
#12

## Camelot Analytics Use Cases

# E-Commerce Compatible Demand Forecasting

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ Roadmap for a successful implementation of the solution in AWS
- ▶ Robust algorithms that outperform every classical deterministic forecast
- ▶ 25% reduction of lead times for overseas shipments
- ▶ 95% of item availability



# E-Commerce Compatible Demand Forecasting

The e-commerce industry is facing many challenges. Their impact is both tremendous and business-critical, ranging from simple stockouts to lost profits. Data science and data engineering can help to improve the accuracy of forecasts by generating an algorithm based on a wide range of data (including market data, weather, customs, live traffic and many more), which provides probabilities for the occurrence of possible future scenarios.

## Know and act upon the demand of highly stochastic products



### CHALLENGES

- ▶ Using general average-based forecasting created issues to meet customer demand
- ▶ Increased lead times for phase-out products
- ▶ Stockouts for products shipped from overseas factories
- ▶ Lost profits as big eCommerce companies were penalizing our customer due to stock-outs



### APPROACH

- ▶ Process and responsibilities data analysis, data cleansing, look for external data that could improve the analysis, probabilistic forecast
- ▶ Data analysis (IBP data, eCommerce market data, inventory and sales data, external data such as weather, customs, and live traffic in key points)
- ▶ Generate probabilistic forecast algorithm that provides probabilities of occurrence for every possible future scenario within expected lead time



### RESULTS

- ▶ Outperform classic forecasts
- ▶ Analysis results based on sales history, inventory, IBP and external data
- ▶ Probabilistic forecast model
- ▶ Outperform every previous forecast used
- ▶ Potential IT solution and implementation roadmap in AWS

**95%**  
of item availability ensured

### SETUP



**INDUSTRY**  
eCommerce



**REVENUE**  
~ €120 m.



**EMPLOYEES**  
~ 100K



**TIME TO VALUE**  
5 months



**APPLIED AREA**  
Data science

Real Industry  
Use Case  
#13

## Camelot Analytics Use Cases

# Manufacturing: Supply Chain Resilience Cockpit

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ Supply chain resilience in a SAP Cloud-connected world
- ▶ Overview of affected stock levels, suppliers and products
- ▶ Derived recommendations for actions based on calculated KPIs
- ▶ Faster decisions through full transparency





# Manufacturing: Supply Chain Resilience Cockpit

A manufacturer aims to build a solution for minimizing the risk of supply chain disruptions due to external influencing factors. To this end, a solution was implemented that brings transparency into the supply chain and creates precautions against changes or disruptions, where internal data is combined with a lot of different external data providers.

## Supply chain resilience in a cloud-connected world



### CHALLENGES

- ▶ Global supply chain leaders have been forced to fundamentally rethink traditional ways of working, where the greatest threat in navigating disruptions is acting with yesterday's logic
- ▶ Preventing the development of unexpected events is impossible. However, there are ways to implement measures which can mitigate against the impact of these disruptions



### APPROACH

- ▶ Maintaining transparency over supply chains due to external influencing factors. E. g. Governance risks, industrial accidents, natural disasters
- ▶ Definition of major risk areas which can disrupt the flow of the supply chain
- ▶ Integration of a prediction, where delivery problems could occur
- ▶ Managing contingencies and being aware of the mundane can strengthen over and suspend deliveries entirely

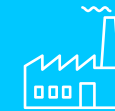


### RESULTS

- ▶ Overview of affected stock levels, suppliers, production plants and products
- ▶ Derived recommendations for actions based on calculated KPIs
- ▶ Faster decisions through full transparency
- ▶ Transport management and tracking is easy to integrate
- ▶ Financial impacts are listed directly

**70+ %**  
reduction in lead times

### SET UP



**INDUSTRY**  
Manufacturing



**REVENUE**  
~ €3 bn.



**EMPLOYEES**  
~ 19K



**TIME TO VALUE**  
3 months



**APPLIED AREA**  
Supply chain analytics

Real Industry  
Use Case  
**#14**

## Camelot Analytics Use Cases

# Integrated Financial Planning Based on SAP Analytics Cloud

Project blueprints for  
quick & powerful insights



### BENEFITS

- ▶ Replace myriad of excel workbooks used globally with one tool
- ▶ Avoid loss of information throughout the planning process
- ▶ Step reduction in manual work and increased accuracy
- ▶ Speeding-up decision-making
- ▶ Increased process and data governance



# Increased forecast accuracy with the use of intelligent cloud-based analytics tools

The company is a leading global supplier of high-grade refractory products, systems and services used in industrial high-temperature processes above 1,200 °C in the steel, cement, non-ferrous metals and glass industries, among others. With a value chain ranging from raw materials to refractory products and performance-oriented overall solutions the company serves customers in nearly all countries worldwide.

## Integrated Financial planning based on SAP Analytics Cloud



### CHALLENGES

- ▶ Various business units with different planning approaches, each department planned individually
- ▶ Only Excel-based planning, leading to missing governance in the process
- ▶ Basic granularity of planning, as system integration was unavailable
- ▶ A lot of manual adjustments and planning steps necessary in current planning
- ▶ Merger of two main companies with different planning approaches



### APPROACH

- ▶ It is essential to reduce the manual working steps within the (Excel-based) process and reach, with SAC, a “single point of truth” planning platform on an integrated data-base technology.
- ▶ The standardization and harmonization of processes within an integrated financial planning combined with the linking of essential contents of the supply chain planning (to-be-process).
- ▶ Increase governance with workflows and data governance to increase planning quality and reliability on the forecasts, as planning and review process can be integrated



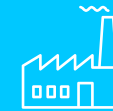
### RESULTS

- ▶ Replacement of an Excel macro solution
- ▶ Reduction of the workload within the planning process by 60%
- ▶ Optimization of planning through precise forecasts
- ▶ Faster decisions through the use of simulation scenarios
- ▶ Transparency thanks to the integration of workflows and increased data governance

# 60 %

reduction of workload within planning process

## SETUP



**INDUSTRY**  
Manufacturing



**REVENUE**  
~ €2.3 bn.



**EMPLOYEES**  
~ 12K



**TIME TO VALUE**  
6 months



**APPLIED AREA**  
Financial & sales planning

## From Idea to Value

These project examples show the bandwidth of possible solutions. They are examples for success cases in a very specific setting.

The most promising cases for your organization are dependent on your competitive arena, your business model, and your company's and offering's strengths.

The question is: How do you find a path between your current stage to the envisioned maturity level? In the last section of this paper, we share two ideas that bring your organization to the next level.



# Option 1: EXPLORE Stage

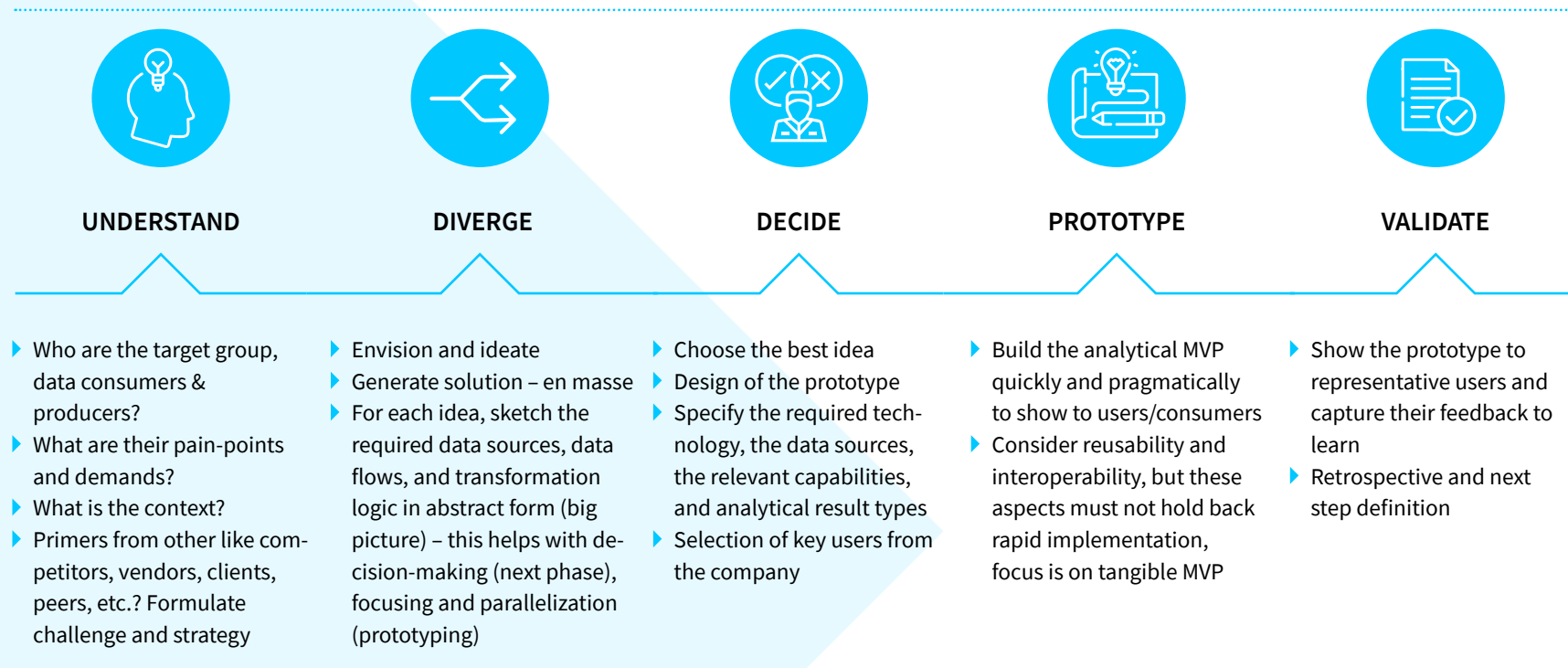
## Analytics Design Sprint: From Idea to Value

The Analytics Design Sprint is a proven method for a lean and guided idea-to-value creation process. In five clearly defined steps, a project or initiative team collaborates to

- ▶ understand the goal,
- ▶ generate, sift and prioritize ideas,
- ▶ prototype the most promising solutions
- ▶ validate the prototype to get a clear understanding of the value for customers.

Depending on your organization’s goal and maturity it can be valuable to extract and iterate one of the steps, e.g., prototyping + validation, for further ideas. This method allows a dual-track approach that usually covers the period of one working week: Discovery in the first part goes hand in hand with development in the second part.

### ANALYTICS DESIGN SPRINT



# Option 2: EXPLOIT Stage

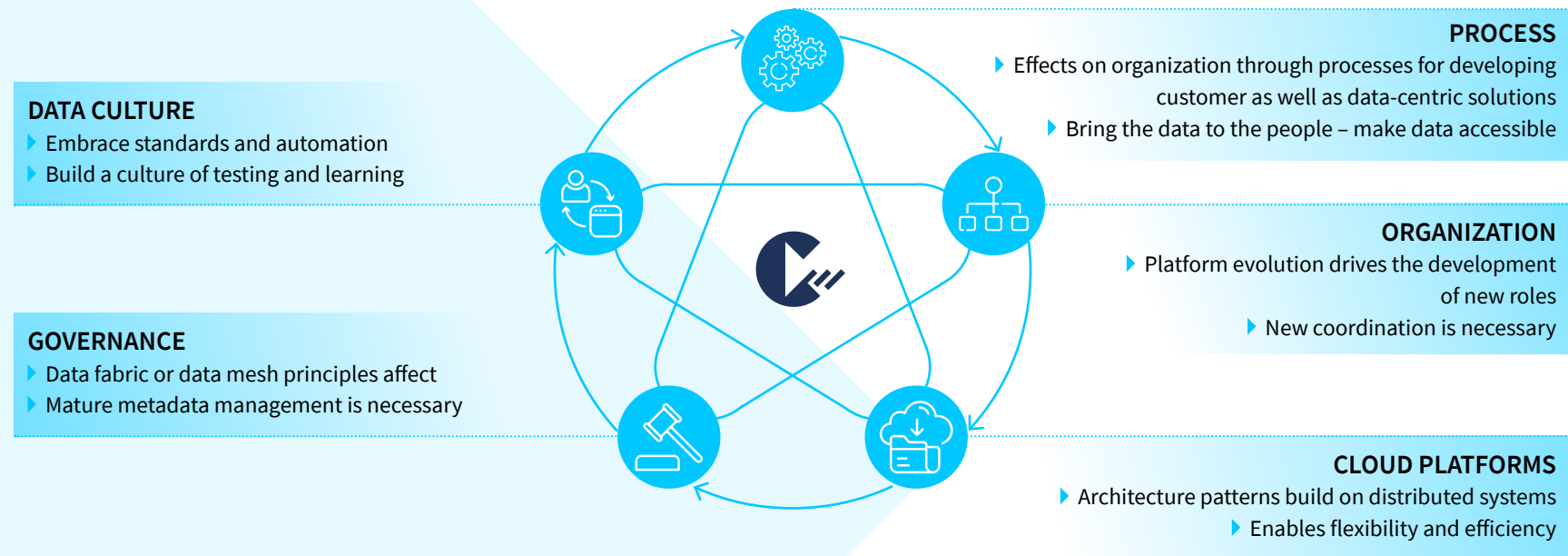
## Data meets xOPs: Targeting Your Organization's Data Operating Model

With successful prototypes and proof-of-concept projects comes operations: xOps. This describes the ability to run data and analytics projects reliably and efficiently. Initially, this raises more questions than it answers for most organizations:

- ▶ Which skillset do I need for my ideal xOps for different roles?
- ▶ What new roles do we need to establish?
- ▶ How can enablement work?

The trick is to simultaneously develop a certain maturity in the five dimensions shown below, as each improvement in one segment influences the other segments.

### MATURITY IN FIVE DIMENSIONS



# Grow as You Go

There's a thing with analytics' solutions: once you start you are probably never really finished.

Expectations are high: Data management processes have to be shortened, query performance has to be accelerated, model accuracy has to be improved, new types of analysis have to be enabled, data competence in the company has to be expanded, ... and the list goes on.

Armed with this knowledge, a focused question and objective should provide the north star for initial analytical use cases. This should be a challenging but reachable step.

Even though these analytics pilot cases are in the spotlight and capture the imagination of management, there are important flanking issues to consider. Experience shows that while they may not attract as much attention, they still need to be considered for sound operations. Indeed, governance, process and organizational models have a defining character and are therefore usually long-lasting guiding principles. Therefore, these framing factors deserve the same attention as the use cases themselves – and grow as you go – towards your own vision and mission.

## Camelot Management Consultants

We are a global management and technology consulting firm focusing on value chain management. Our mission: turning our clients' value chains into a competitive advantage and creating lasting impact where our clients need it most. By combining our industry focus, value chain process expertise, and technology know-how, we guide our clients from strategy to sustainable technology adoption.

[www.camelot-mc.com](http://www.camelot-mc.com)

### Why Camelot

- Developing a consistent Enterprise Architecture for modern Data Management, Analytics, Data Science, and Automation.
- Providing a holistic, vendor-independent approach that supports your transition to a data-driven enterprise.
- Designing, implementing or optimizing solid yet elastic architectures and processes & aligning LoB and IT roadmaps.
- Providing guidance through assured experience, best practices & hands-on expertise.

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Camelot Management Consultants

## Camelot Management Consultants

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