References industry consulting

Competition & strategy

Version 02 (2019)
Industry consulting: Overview of the consulting portfolio of the WBA

- Market and customer potential
- Range of products and services
- Intelligent tools and services

External increase of customer benefits

- Lean, process and project management
- Supplier selection and management
- Industry 4.0 and system support
- Operational and organizational structure

Internal increase of efficiency

- Analysis of competition and strategy

Supporting processes

- Distribution, development and design
- Manufacturing, assembly and try out

- Customer acquisition and marketing
- Calculation and pricing
- Engineering, design and CAx process chain
- Additive manufacturing
- Planning and scheduling
- Technology usage
- Layout and location
- Manufacturing concept and automation

Market and customer (external)  Core processes (internal)  Supporting processes (internal)
Industry consulting: The detailed consulting offer of the WBA (I/II)

Market and customer potential
- Analysis of technological trends
- Analysis of market sizes and developments
- Determination of potentials for distribution and procurement
- Identification of potential customers and buyers

Range of products and services
- Analysis of market and customer demands
- Analysis of the company specific range of services
- Analysis of core competencies
- Development of service and business models

Intelligent tools and services
- Analysis of internal and external requirements
- Selection of sensors and actuators
- Conception of company-wide service platforms
- Development of databased services and business models

Supporting processes

Lean, process and project management
- Process analysis and process design
- Definition of key performance indicators and IT-based illustration
- Conception and implementation of a (digital) shop floor management
- Definition and implementation of agile methods of project management

Supplier selection and management
- Definition of scopes and relevant processes for procurement
- Identification, assessment and selection of suppliers
- Initiation and development of strategic partnerships
- Holistic assessment of options for national and international tool supply

Industry 4.0 and connectivity
- Analysis and maturity assessment of the Industry 4.0 status quo
- Development of objectives, concepts and roadmaps including investment budgeting for Industry 4.0
- Deduction of specific Industry 4.0 use cases including implementation support
- Recording and analysis of machine and production data

Analysis of competition and strategy
- Benchmarking for the determination of the organizational and technological performance
- Identification of action fields
- Identification of strategical success factors and strategy development
- Development of an implementation roadmap and deduction of specific measures

Operational and organizational structure
- Analysis of organizational structures and assessment of the degree of value creation
- Procedural and organizational reorganizational
- Conception and implementation of agile structures of organizational
- Deduction of measures for the organizational change
Industry consulting: The detailed consulting offer of the WBA (II/II)

Core processes

**Customer acquisition and marketing**
- Analysis of market and customer demands
- Development of strategies for distribution and marketing
- Identification and selection of relevant instruments for marketing
- Fine adjustments of selected analogue and digital instruments for marketing

**Calculation and pricing**
- Analysis and optimization of the used methods of calculation
- Analysis of conducted calculations for cost optimization
- Development of solutions for data capturing and provision
- Definition of requirements and selection of calculation software

**Planning and scheduling**
- Manufacturing process analysis and derivation of standard manufacturing processes
- Conception of a virtual/physical segmentation and clocking
- Conception of hard- and software for data capturing and provision
- Definition of requirements and selection of planning software systems

**Layout and location**
- Analysis and optimization of the material flow
- Basic and fine layout design and optimization
- Conception and further specification of logistics concepts
- Planning and support for relocation and transfer to existing and newly built locations

**Additive manufacturing**
- Identification of technological fields of application
- Analysis of requirements and benefits with regard to the spectrum of work pieces
- Assessment of the technologies and machine selection
- Additive manufacturing integration in existing process chains with focus on subsequent processing

**Engineering, design and CAx process chain**
- Conception and introduction of synchronised and agile product design processes
- Assessment and optimization of the standardization for tools and tool components
- Definition of requirements and selection of CAx systems
- Analysis and optimization of the CAx process chain

**Technology usage**
- Definition and improvement of the manufacturing performance
- Technology assessment and profitability assessment
- Analysis and optimization of manufacturing processes and methods
- Analysis and optimization of the operating times, idle times and set-up times

**Manufacturing concept and automation**
- Analysis of the actual and future range of tools
- Development of a manufacturing concept and technology road-mapping
- Analysis of requirements, specification and selection of machines
- Conception and selection of automation solutions
Industry consulting: Within the consulting projects there are four different project focuses

1. Market and customer
   - Market and customer potential
   - External increase of customer benefits
   - Internal increase of efficiency

2. Competition and strategy
   - Analysis of competition and strategy

3. Supporting processes
   - Lean, process and project management
   - Supplier selection and management
   - Industry 4.0 and system support
   - Operational and organizational structure
   - Request: Distribution, development and design
   - Manufacturing, assembly and try out
   - Supporting processes: Customer acquisition and marketing, Calculation and pricing, Engineering, design and CAx process chain, Additive manufacturing, Planning and scheduling, Technology usage, Layout and location, Manufacturing concept and automation

4. Individual combination
   - Intelligent tools and services
Industry consulting: Within the consulting projects there are four different project focuses

- Market and customer potential
- Range of products and services
- Intelligent tools and services
- Competitive and strategy

- Lean, process and project management
- Supplier selection and management
- Industry 4.0 and system support
- Operational and organizational structure

Supporting processes:
- Customer acquisition and marketing
- Calculation and pricing
- Engineering, design and CAx process chain
- Planning and scheduling
- Technology usage
- Layout and location
- Manufacturing concept and automation

External increase of customer benefits
Internal increase of efficiency
Analysis of competition and strategy
Development of a concept to establish an internal value creation network

**Approach**

- Benchmarking of the technological and organizational performance
- Detailed analysis of the job spectrum and the order processing
- Definition of competence areas and core processes
- Development of a general vision, mission and strategic success positions
- Definition of requirements and framework conditions of a global site networking
- Creation of a roadmap for the implementation of the site networking concept

**Results**

- **Strategic reorientation with fields of action and enhancement measures for several international equipment and tool making production sites**
- **Concept for a global networking of international equipment and tool making production sites**
Development of a concept for an internal equipment shop at Detroit Diesel (Daimler AG)

**Approach**
- Analysis of the internal order fulfillment process and the range of offered services
- Definition of the new strategic orientation, including strategic positions of success
- Development of the future product and service portfolio and the required technology variety
- Design of the future organizational structure
- Design of a new manufacturing layout with special regard to the process flow incl. detailed implementation plan

**Results**
- Concept for the new design of the equipment shop at Detroit Diesel (Detroit, USA) with action fields and measures
- Concept for the integration into global equipment shop network of Daimler Trucks
Analysis of the strategic alignment and development of a future strategy for the internal tool shop

**Approach**
- Status quo analysis of the market's competitive forces
- Analysis of the competitive position and performance of the tool shop
- Definition of strategic positions of success for the future tool shop strategy
- Elaboration of the future tool shop strategy in accordance with the company's strategy
- Derivation of a roadmap with timeline, measures and responsibilities for implementing the future strategy

**Results**
- Future strategies for the competitive orientation of the internal tool making
- Detailed roadmap for the implementation of future strategies
Implementation support for the strategic alignment of the internal tool shop of FESTO

**Approach**

- Detailing of the defined strategic alignment
- Specification of measures and responsibilities for the holistic implementation of the strategic alignment
- Derivation of a key-figure cockpit to enable the assessment of the roadmap implementation and the tool room performance
- Definition of work preparation workflows for all relevant order types
- Definition of tasks and responsibilities for the workflow implementation into daily practices

**Results**

- Defined workflows for the work preparation process
- Detailed roadmap for the implementation of the strategic alignment
- Cockpit consisting of aggregated key figures to evaluate the performance
Development of an industry 4.0 strategy for fischer Werkzeug- und Formenbau GmbH

**Approach**
- Analysis of core processes and identification of areas with high optimization potential
- Execution of an industry benchmark to determine the status quo as well as the targeted industry 4.0 maturity level of the individual areas
- Research and detailing or adaptation of industry 4.0 applications for toolmaking to address the identified areas
- Evaluation of industry 4.0 applications for the specific areas
- Time and content based implementation planning of the evaluated industry 4.0 applications
- Consolidation of all industry 4.0 applications for the respective areas in an industry 4.0 roadmap as well as an industry 4.0 strategy

**Conclusion**
- Detailed industry 4.0 applications for a future-proofed orientation of fischer toolshop
- Elaborated approach including responsibilities for the implementation of the industry 4.0 strategy
Strategic positioning of Haidlmair

**Approach**

- Identification and status-quo analysis of strategic success positions
- Status-quo analysis of activities, processes, resources, organization and competencies
- Definition of medium- and long-term goals of the tool shop
- Determination of future strategic success positions
- Definition of future of activities, processes, resources, organization and competencies
- Development of concrete measures to constitute the future tool shop

**Results**

- Status-quo analysis of the strategic position of the external tool shop
- Future strategic positioning with concrete measures for its realization
Development of a strategy for the plastics competence center with tool shop and injection molding of ifm electronic gmbh

**Approach**

- Performance of a benchmarking as well as an analysis of order fulfillment, order data and core competencies to evaluate the current status quo
- Deduction of tool room specific strengths and weaknesses and definition of core competencies with regard to competing internal and external tool rooms
- Identification of strategic target dimensions and development of potential strategic scenarios for future positioning
- Selection of a strategic target state in order to maximize the value and benefit generated by the tool room for the overall company
- Definition of measures to achieve the selected target state

**Results**

► Detailed analysis and evaluation of organizational and technological performance
► Developed future strategy for a competitive and optimized internal tool room
Holistic strategical conception and efficient process design of the internal tool shop of igus

**Approach**
- Development of fields of action for the design of the future and efficient "world-class tool shop" of igus
- Development of concepts for detailing the defined fields of action
  - Development of a holistic strategy and a target-oriented organizational concept with order-related segments
  - Determination of required machine and employee resources as well as design of external cooperation with suppliers
  - Design of different processes for planning and efficient execution of orders as well as selection of supporting software systems
  - Development of a process-oriented and efficient layout with several segments

**Result**
- Holistically redesigned tool shop with focus on efficient order processing and strategic enabling of the series production
Benchmarcking und strategic positioning of MA Automotive’s internal tool rooms

Approach
- Recording of order fulfilment processes at both MA Automotive’s internal tool rooms located in Chivasso (IT) and Uitenhage (SA)
- Benchmarking and in-depth analysis of the organizational and technological performance of both sites in comparison to the international competition
- Derivation of location-specific strengths and potentials as well as definition of individual fields of action to optimize site-specific order processing
- Development of a holistic vision and strategic positioning as well as elaboration of an implementation road map

Results
- Detailed benchmarking of organizational and technological performance
- Location-wide strategic positioning as well as roadmap for implementation
Status quo analysis of the performance and development of a concept “Tool and Die Making for the Future”

Approach
- Benchmarking of technological and organizational performance of two tool shops
- On site status quo audit of the tool shop
- Key evaluation of organizational and technological performance compared to competitors
- Definition of recommendations for action to improve the performance
- Development of a concept "Tool and Die Making for the Future" at both locations

Results
- Benchmarking analysis of the status quo performance of two tool shops
- Development of a concept “Tool and Die Making for the Future“ for both locations
Realization of an audit in order to execute a strategic positioning in the Die Industry

**Approach**
- Benchmarking the technological and organizational performance
- Specification of the inspection area
- Analysis of the competitive arenas (acc. to Porter)
- Determination of strategic success positions
- Analysis of the process landscape
- Evaluation of the core processes
- Derivation of process strategies
- Derivation of areas of action
- Planning the implementation

**Model strategic positioning**

**Result**
- Confirmation of the current market gap strategy and measurement planning in the areas of action “Brand Image“, “Industrialization“, “Autodidactic Tool Manufacturing“ and “Employee qualification“
Conception of a strategic orientation for internal tool making

Approach
- Benchmarking of the technological and organizational performance
- Detail analysis of the order processing as well as the range of products and services
- Definition of competences required for efficient tool making
- Classification of the status quo of the efficiency of tool making
- Derivation of boundary conditions for the strategic reorientation based on a defined target state
- Definition of measures to reach the target state

Results
- Required competences for efficient tool making
- Company-specific boundary conditions based on the target state
- Roadmap and measures to reach the defined target state
## Development of a strategy for Ossenberg tool making

### Approach
- Analysis of central customer-benefit-features and position in the competitive environment
- Definition of current and future strategic positions of success
- Analysis of the status quo and strategical interpretation of activities, organization, competencies, resources and processes (strategic profile)
- Development of a specific vision and mission for Ossenberg tool making
- Definition of measures for the operative implementation of the vision and mission

### Results
- Detailed strategic profile as well as specifically defined vision and mission
- Precise measures for the implementation of determined goals
Strategy development in the tool and die making in six steps

**Approach**

- Analysis of Porter's 5 competitive forces
- Determination of strategic success positions
- Conception of a strategic program
- Derivation of the management profile
- Identification of the core processes
- Definition of an measures

**Result**

- Differentiation and reorientation of the business areas of the tool manufacturer towards a strategy of a system provider in tool making
Strategic Alignment of the Global Tool Supply of Welser Profile GmbH

Approach

- Performance and requirement analysis of tool supply
  - Benchmarking of the organizational and technological performance of both tooling sites Ybbsitz and Bönen
  - Detailed analysis of the order spectrum
  - Determination and analysis of customer requirements
  - Identification and analysis of European competitors

- Determination of site-specific competence profiles, derivation of the order spectrum per site and definition of a comprehensive lead structure for future tool supply

- Definition of vision, mission and strategic action fields incl. measurable goals and measures for further development and synchronization of tool supply

Results

- Detailed performance and requirement analysis of tooling sites of Welser Profile GmbH
- Derivation of the site-specific order spectrum and definition of a synchronized strategy
Conception of an international tooling footprint with internalized mold making competence in the electronic industry

**Approach**
- Analysis of past mold demand and forecast of future mold demand for series and prototype molds
- Development of 7 different scenarios for internalizing mold making and setting up an international tooling footprint for repair and maintenance as well as new mold making for series and prototype molds
- Evaluation and selection of preferred scenario by conducting a detailed decision analysis including an extensive calculation of ramp up and running costs
- Conception of future overall mold development process and future organization for molding department as well as development of an implementation plan with the overall goal of significantly accelerating mold development

**Results**
- Concept of an international tooling footprint for series molds and prototype molds
- Defined overall mold development process, organization and implementation plan
# Project planning for technical due diligence of tool shop acquisition for an international automotive OEM

## Approach

- Due diligence planning of a multi million Euro tool shop acquisition for an international automotive OEM
- Development of a detailed project setup including schedule, tasks and deliverables
- Analysis of potential overall project risks considering environmental, operational, legal and general factors
- Definition of a detailed RASI-Matrix as a framework for allocation of project responsibilities
- Involvement of all necessary business functions including tool shop, press plants, body in white, purchasing, corporate properties, IT, finance, legal, tax, human resources, corporate strategy and board of management

## Result

- Detailed technical due diligence project plan including schedule with tasks, deliverables and responsibilities as well as a holistic risk analysis
Strategic development of the tool supply of a European automotive OEM incl. the design of a “Tooling & Launch Center”

**Approach**
- Analysis of the tool procurement process for the supply of tools for all car body manufacturing plants
- Analysis of the current supplier network
- Analysis of the past tool demand and the calculation of future tool demand for the years 2017 to 2029 for all current and planned derivatives
- Development of scenarios and design of future production strategic tool supply for all car body manufacturing plants
- Design and business case calculation of a “Tooling & Launch Center” for the production of tools as well the achievement of a shorter ramp up phase of procured tools

**Results**
- Strategically designed tool supply for the car body manufacturing for all plants
- Developed “Tooling & Launch Center” for the prod. and launch of car body tools
Benchmarking and development of a market strategy for the internal tool making division of a South Korean OEM

**Approach**
- Benchmarking of the organizational and technological performance of an internal tool making division with regard to the competition
- Creation of a strengths and weaknesses profile and identification of fields of action in order to increase performance
- Development of an action plan in order to realize the identified potentials
- Development of a market strategy to extend tooling services beyond the parent company in order to increase internal capacity utilization
- Identification of potential markets, sectors and products for a structured new customer acquisition

**Results**
- Evaluated organizational and technological performance including action plan development
- Developed market strategy for the supply of tool making services on the open market
Benchmarking for the plastics processing industry focused on injection moulding in 2014

**Approach**
- Definition of a questionnaire for the collection of business data regarding organizational and technological fields
- Completion of the questionnaire by each company and comparison of specific key figures
- Discussion of first benchmarking results with all participants in a joint review meeting
- On-site visits of all participating companies including best practice lectures and company tours for an intensive exchange of experience
- Preparation of an individual key figure evaluation and handover at a final project conference

**Results**
- Best practice comparison of injection moulding companies based on raised key figures
- Identification of strengths and weaknesses for the derivation of individual measures
- Exchange of experience among the participants at the on-site visits
The WBA Tooling Academy

Contacts

Prof. Dr.-Ing. Wolfgang Boos, MBA
WBA Aachener Werkzeugbau Akademie GmbH
CEO
Campus-Boulevard 30
52074 Aachen
Phone +49 241 990163 02
Mobil +49 151 188686 11
Fax +49 241 990163 29
Email w.boos@werkzeugbau-akademie.de

Dr.-Ing. Tobias Hensen
WBA Aachener Werkzeugbau Akademie GmbH
CEO
Campus-Boulevard 30
52074 Aachen
Phone +49 241 990163 64
Mobil +49 151 188686 17
Fax +49 241 990163 29
Email t.hensen@werkzeugbau-akademie.de

Christoph Kelzenberg, M. Sc.
WBA Aachener Werkzeugbau Akademie GmbH
Head of Consulting
Campus-Boulevard 30
52074 Aachen
Phone +49 241 990163 65
Fax +49 241 990163 29
Email c.kelzenberg@werkzeugbau-akademie.de

Dr.-Ing. Kristian Arntz
WBA Aachener Werkzeugbau Akademie GmbH
Head of Research & Development
Campus-Boulevard 30
52074 Aachen
Phone +49 241 990163 73
Fax +49 241 990163 29
Email k.arntz@werkzeugbau-akademie.de