



THE FUTURE OF GERMAN MECHANICAL ENGINEERING

SUCCESSFUL IN A DYNAMIC ENVIRONMENT

Mechanical engineering is the backbone of the German economy. However, the expected change in the market has the potential to significantly alter the competitive conditions. This study was conducted as a joint effort between the VDMA and McKinsey & Company. It highlights the success patterns in the industry, describes the most important trends, and derives fields of action that can help to sustain the competitiveness of German mechanical engineering in the future.

Success patterns

Company size as an opportunity – larger companies are gradually more profitable (Ø 2 - 3 PP) due to professionalization and internationalization



Internationalization as key growth driver (vs. diversification) – global players Ø 2 PP more profitable than exporters



Operational excellence as basic prerequisite – operational champions 2 PP more profitable and grow 5 PP faster, particularly in the solutions business



Consistency in the business model indispensable – companies focused on core business Ø 1 - 2 PP more profitable and grow Ø 3 - 4 PP faster



Innovation as criterion for competitiveness – 97% of German mechanical engineering companies are innovation leaders or fast followers



Premium companies with higher growth, but no significant profitability advantage – higher profitability only in combination with international operations (> 50%)



Individual machine/component business more profitable (Ø 2 PP) than solution providers, but solution providers grow faster



Aftersales/service with growth potential – opportunity to compensate volatility and lower profitability in traditional business



Industry affiliation sets the pace: average profitability varies from 3% to 9% – profitable industries with intense competition



Management structure determines strategy – externally managed companies slightly more profitable, family-run companies grow faster



Industry trends



		I			
		I		I	
VI					V
VI	I				
			IV	V	
			I		
III					
		II			
Cannot be influenced in the medium term					
Cannot be influenced in the medium term					

■ Trend makes success model more important
 ■ Trend has little/no influence

The success patterns

The survey of over 330 mechanical engineering companies and in-depth interviews with over 50 executives identified ten success patterns for the industry – some obvious, others surprising. Success was measured by profitability (EBIT margin) and revenue growth.

The trends

The competitive landscape is changing: mechanical engineers are facing the challenge of securing long-term growth and profitability in the midst of these changes. This study identified **five core trends in mechanical engineering**:

- a **Increasing demand for customized system and integration solutions.** Customized solutions benefit from the technological lead of the manufacturer – they become more important as a differentiator.
- b **Shift of demand to countries outside Europe.** The BRIC countries and North America are at the center of international expansion – particularly in sales, service, and production. Research and development mostly remains in the home country.
- c **Increasing relevance of aftersales/service.** The expansion of aftersales/service activities is a high priority. However, the path to successful business models is very challenging here.
- d **Increased competition due to new market participants.** Foreign companies are becoming increasingly competitive not only in terms of price, but also product quality, which in turn increases competitive pressure.
- e **Growing importance of the competitiveness of Germany as a location.** The numerous location benefits of Germany are offset by high cost levels. Continuous improvement helps to secure the competitiveness of the location.

The fields of action

Most German mechanical engineers feel they are well prepared for these trends. However, in order to remain successful in the future, they need to achieve improvements in six fields of action by combining the success models with the trends:

- I **Targeted and granular internationalization and growth strategy.** Achieve profitable growth by economically driven prioritization of markets and use of the right business model.
- II **Expansion of aftersales/service segment through integrated innovative solutions.** Generate profitable growth of 10% to 15% through integrated, innovative solution offerings, separate pricing for aftersales/service activities and through an optimized service network strategy.
- III **Standardization and modularization, while providing customer-specific offers and new business models.** Save 10% to 20% in material costs and 10% to 15% in SG&A costs by increasing the number of identical parts and modularizing products and processes, while at the same time fulfilling individual customer requests.
- IV **Continuous optimization of the product/portfolio value.** Save 10% to 20% of direct costs with innovation targeted at customer value and by continuously reducing product costs using technical levers (e.g., teardowns) and commercial levers (e.g., professionalized purchasing).
- V **Excellence, in particular in domestic operations.** Reduce direct manufacturing costs (excl. material) by 10% to 30%, and SG&A costs by 20% to 30% through increased efficiency in the workflow and optimized supplier structures.
- VI **Stringent, risk-differentiated project management, particularly in the solutions business.** Reduce costs and lead times throughout the value chain by 10% to 15% by selecting high-yield projects, employing a systematic quotation process, and through stringent project execution.

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