TRANSPARENCY AS THE BASIS FOR OPERATIONAL EXCELLENCE

Introduction of a holistic production system at ThyssenKrupp AG

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ThyssenKrupp is improving the operational excellence and performance of its global production network with its project 'drive'. Together with management consultants ROI the global corporation is developing and rolling out the ThyssenKrupp production system. The aim is to achieve greater work safety, quality and productivity along the entire value chain of the production process.

In doing so, the group is having to overcome a number of challenges with regard to complexity. Around 29,000 people at 70 locations around the world are deployed in production of the 'Components Technology' business division alone. The portfolio of products is broad. In the automotive sector it ranges from assembled camshafts, cylinder head hood modules, crankshafts and steering and absorber systems to springs, stabilizer bars and the assembly of axle modules. In the industrial field, Components Technology supplies components for construction machinery, wind generators and numerous applications in general engineering. The business division's eight business units all hold leading market positions with their products. This must be continuously secured through the highest levels of quality and operational excellence in all value creation processes. The comprehensive portfolio of products does not make this task any easier as it results in a profusion of manufacturing processes. In addition, different production systems existed in parts of the individual business units as a result of the corporate structure that grew over time and expanded through acquisitions.

For this reason, the business division pursued the 'drive' project to develop the ThyssenKrupp Production System (TKPS), which forms the backbone of the company for operational excellence and performance. During the development of the production system particular importance was placed on taking into account the many constraints faced by individual plants. This was managed through two iteratively combined approaches – top down and bottom up.

"The production system is our navigator for continuous improvement and implementation of standards."

Efficient Processes for Greater Sustainability

The project's strategic framework was provided by the ThyssenKrupp mission statement and the guiding principles of the individual business units. Following a top-down approach, the project team used these to derive goals and operationalized requirements for the business divisions. Principles and methods of lean production were then assigned to these goals.

"We used this approach to create the basis for further customizing the production system from the bottom up with what we regarded as relevant content. The production system created in this way is our means of navigation in order to achieve operational excellence in all areas of our organization," says Dr. Alexander Gulden, Head of BA CT Technology, Innovation & Sustainability and director of the project at ThyssenKrupp AG.

Accordingly, a common understanding of an innovative and above all effective operational excellence system emerged in close cooperation between all eight business units. A project team consisting of TK employees and ROI consultants ensured that this aspiration was put into everyday practice. To this end, the

team developed 14 principles (cf. figure 1). They form the fundamental criteria of the production system.

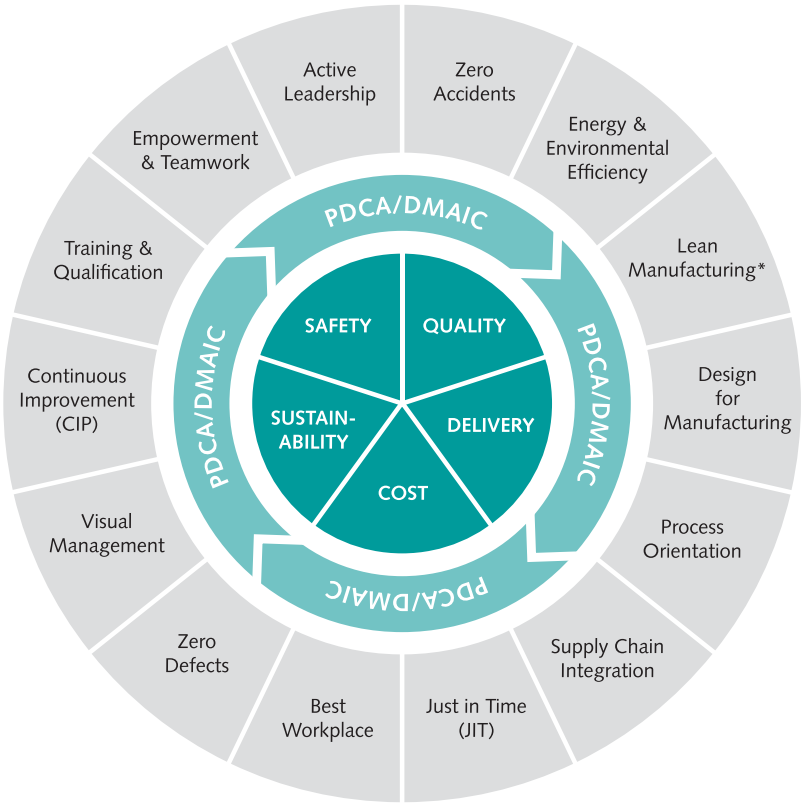
"Besides established principles like 'just-in-time' or 'zero defects' we included new principles like 'green responsibility' and 'supply chain integration'. The important thing for us about 'supply chain integration' is involving our suppliers more actively in our development and production processes. We want to use this to further reduce the lead time for our products and be able to produce more flexibly," says Alexander Gulden.

The 14 principles were subsequently fleshed in terms of content and given concrete target states such as the integration of a zero-defect culture. They define the future operational direction of the company. The involvement of the business units in this process not only allowed the use of business area-specific experience and the systematic transfer of knowledge across individual sectors, it also increased the acceptance of the new system among all participants. This was how a complete and ThyssenKrupp-specific production system developed.

Structured Introduction of Best Practices

The so-called OPX Maturity Scan was developed to ensure continuous improvement at individual plants and the structured exchange of expertise and best practices. This tool, based on the principles of the production system, is used to determine and assess the level of maturity of the production system. Using an appropriate system of KPIs, improvements can be measured qualitatively, allowing "operational performance" to be represented transparently.

The principles constitute the assessment categories and a total of 41 subitems with their target states represent the upper limits of assessment (level 5). The target states were broken down into the various states of expression (levels 0 – 4). This resulted in a uniform classification of performance. In addition, this allows improvement potential at the assessed plant to be gauged direct from the next level up. It also allows concrete measures to be derived from this. The best practice solutions are documented at each level 5 of a plant, serving the other plants as a template for implementation.



ThyssenKrupp Production System
*Design of plant and machinery concepts from lean perspectives

ThyssenKrupp AG

ThyssenKrupp AG is Germany's largest steel and technology group. In the 2013/2014 financial year the group generated sales of around € 41 billion with around 160,000 employees in almost 80 countries. ThyssenKrupp has more than 850 direct and indirect subsidiaries and shareholdings around the world. Internationally, it has 2,500 production facilities, offices and service centers, two thirds of which outside of Germany.
www.thyssenkrupp.com

Productivity Increases thanks to Annual Assessment

In future, the assessment of the individual plants will be performed once a year as part of the operational excellence initiative. It will create corporate-wide transparency of performance in accordance with uniform standards. This will allow consistent operational and strategic target planning at plant and company level. The inter-plant exchange of knowledge and resources will also be greatly simplified. The interaction of the production system with the tool used to assess the level of maturity will allow productivity to be increased efficiently and continuously over the entire production landscape of the Components Technology business division.