Dissertation title:

„Systematik der strategisch-taktischen Investitionsplanung für die Produktion“

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Problem definition and scope of research

Nowadays production enterprises face a competitive environment which is characterized by fluctuating orders and customer demands for an increasing number of product variants with a shorter product life cycle. Considering these conditions, a target orientated investment planning is necessary in order to increase the competiveness and to assure the sustainability of a production enterprise. Therefore, production investment planning has to be closely linked to the strategic planning. However, the production investment planning is in praxis mainly focused on existing problems of operative daily business. A financial evaluation of investment projects based on present production structures is predominant. In contrast, production should be developed based on long-term targets and production investment planning should be strategic orientated in order to gain competitive advantage. Particularly strategic market potentials should be therefore considered. Furthermore, middle term production investment needs for differentiated manufacturing processes on production segment level which are required for the achievement of strategic targets should be deducted on the tactical level. A complete systematic for the support of these planning tasks was until now not available. Considering the existing deficits, the objective of this work is to develop a systematic approach for the strategic-tactical production investment planning.

Research method and results

Firstly a conceptual systematic for strategic-tactical investment planning, which supports the alignment of investment planning on functional level with strategic objectives in order to gain competitive advantage, was developed. For this the following strategic-tactical investment planning phases, as well as the corresponding tasks of each phase, were specified: development of the strategic target system and problem definition, search for strategic alternatives and evaluation of target achievement, evaluation of the consistency of alternatives and issue-related strategic implementation on tactical level.

Next, existing approaches to describe the tasks of the specified investment planning phases for the concrete functional area of production were discussed. The existing research deficits were identified. A conceptual, qualitative-empirical and combined research approach was applied to contribute to overcome these research deficits.

For the phase of development of strategic target system and problem definition, as well as for the task evaluation of target achievement, a conceptual Manufacturing Strategy Deployment (MSD) approach was developed. This approach supports the alignment of production investment planning with strategic targets in order to gain competitive advantage, to identify strategic strengths and weaknesses, to deduce the need of strategic actions in the production area and to evaluate the target achievement of strategic and tactical decisions.

Furthermore, expert interviews were carried out to obtain empirical results on what information is necessary for the selection of strategic and tactical production alternatives. Moreover, empirical results were obtained on how the evaluation of the consistency of alternatives in strategic-tactical production investment planning can be carried out.

In addition, a combined research approach was applied. Based on the results of the expert interviews a conceptual approach was developed to support the deduction of middle term production investment needs as element of the issue-related strategic implementation. Key performance indicators, which support the deduction of the middle term needs of new, capital widening and replacement investments for technical machines for differentiated manufacturing processes on the production segment level considering capacitive planning, were provided.

A systematic for strategic-tactical production investment planning was developed in this research work. This systematic can provide production management with information about the required middle term investment needs on production segment level in order to link production investment planning closely to strategic targets, with the objective of gaining competitive advantage.