

HÖGSKOLAN VÄST

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# **Challenging the traditional manufacturing objectives**

**Designing manufacturing systems for both product  
manufacturing and value production**

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AKADEMISK AVHANDLING

som med tillstånd av Forsknings- och forskarutbildningsnämnden  
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## Abstract

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The design of new manufacturing systems is a complex process involving many stakeholders. The production of a profitable product is the value chain that steers the development projects, and requirements are specified around cost, product quality and the desired production volume. These requirements focus on the paying customer. In addition to the customer, there are, however, many other stakeholders who are not considered to any great extent. Individual good examples can be found where the large-scale production at the lowest cost is not the primary goal. Instead, the focus is on other value chains that create added value for new stakeholders related to the manufacturing system.

This research intends to explore the stakeholders of a manufacturing system and the added value that can be delivered to them. There is a focus on understanding the current practices for manufacturing system development, how requirements are specified and how decisions are made. An explorative social science approach was applied, where inspiration was taken from ethnographic and qualitative methods. Nine years of (interrupted) industrial PhD studies have enabled a long-term and deep data collection and analysis.

The research resulted in a theoretical framework built around a more holistic approach to the value chains of the manufacturing system. The paying customer's value chain remains primary but has been supplemented with new secondary external and internal stakeholders, and related value chains. Individual good examples have been identified in the industry that are used to exemplify the applicability of the theoretical framework in practice. The research also addresses challenges in changing today's way of working. A strong culture of customer focus and financially dominant decision-making processes are two aspects that consolidate today's way of working. With a more strategic focus, including holistic requirements and the management's openness to a broader decision basis, the conditions are created for designing manufacturing systems that contribute with greater added value for more stakeholders.