



IMP³rove Assessment Triggers Process Innovation at a Tier 2 Automotive Supplier

Case Study submitted by

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1 The company

The company in which the IMP³rove assessment took place was founded in 1863 and manufactured gears for the clock industry for many years. In 1970 they began developing modular planetary gear systems and began to manufacture plastic injection-molded parts in 1980.

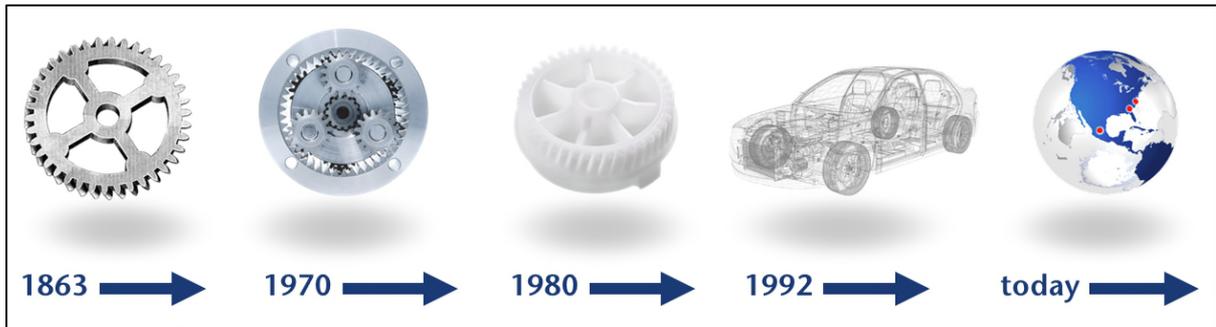


Figure 1: From gears for clocks to worldwide supplier for the car industry

In 1992 the company decided to shift their focus completely to the automotive component supply market. The company's core competencies are metal, plastics and their combination for the manufacture of gears, drives and assemblies.



Figure 2: Current products for assisted steering systems, electric parking brake and electric seat adjustment

Today, the company mass produces components for power windows, valve controls, power steering, electric parking brakes, seat adjustment, steering wheel adjustment and much more.

A turnover of approximately EUR 250 million is forecast for 2012, with an increase of more than 20% when compared with 2011. The number of employees alone rose from 1600 to 1800 from June to September 2012.

Internationalization is also a goal that the company has consistently pursued: The plants in the USA, Mexico and China have been expanded significantly; the company's export share in 2012 is at 60%.

2 IMP³rove Assessment

2.1 Results

In 2011, the company's head of development decided to perform an assisted IMP³rove Assessment. The analysis of the key strategic aspects to promote innovation produced the following picture:

- In terms of manufacturing processes, business units that are essentially independent were created in 2005 as the result of a revolutionary **organization innovation**. These business units are able to efficiently manufacture product lines. Individual combinations of manufacturing technologies together with integrated manufacturing supervision and order control, as well as the required logistics for these processes, is what make the business units uniquely profitable.
- Customer requests are fulfilled in the central development department with evolutionary **product innovations**. When an order is received, a basic outline of the manufacturing processes is created in this department as well. This outline is then given to the business units, where final development takes place.
- The business units are responsible for ensuring that the company remains economically competitive over the course of the product's lifespan by consistently advancing **process innovations**. Process innovation also moves forward evolutionarily.

The company was able to survive the 2009 economic crisis without laying anyone off by creating a solidarity pact with its 900 employees; this meant that they were equipped with a highly qualified and highly motivated team when the market rebounded in 2010. Electronic assistance systems are becoming increasingly common in car manufacturers' mass-produced series and the combination of a high degree of competitiveness, international manufacturing infrastructure and innovative solutions means that the company can expect to see enormous **growth** in the coming years.

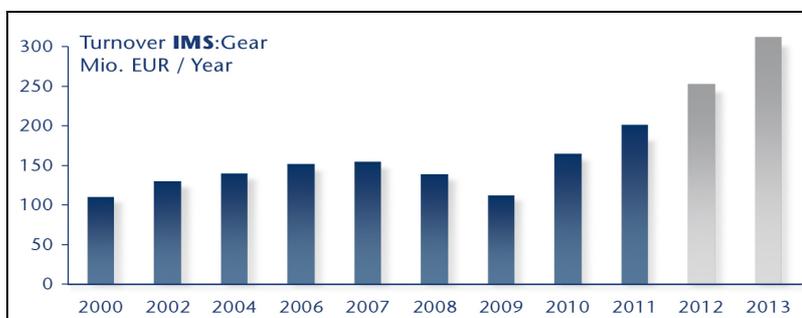


Figure 3: The company's turnover development

2.1.1 IMP³rove Assessment in Detail

The assessment report clearly shows that the **time-to-market** and **time-to-profit** figures were significantly higher than the average in the reference group “Mechanical engineering company with > 250 employees”.

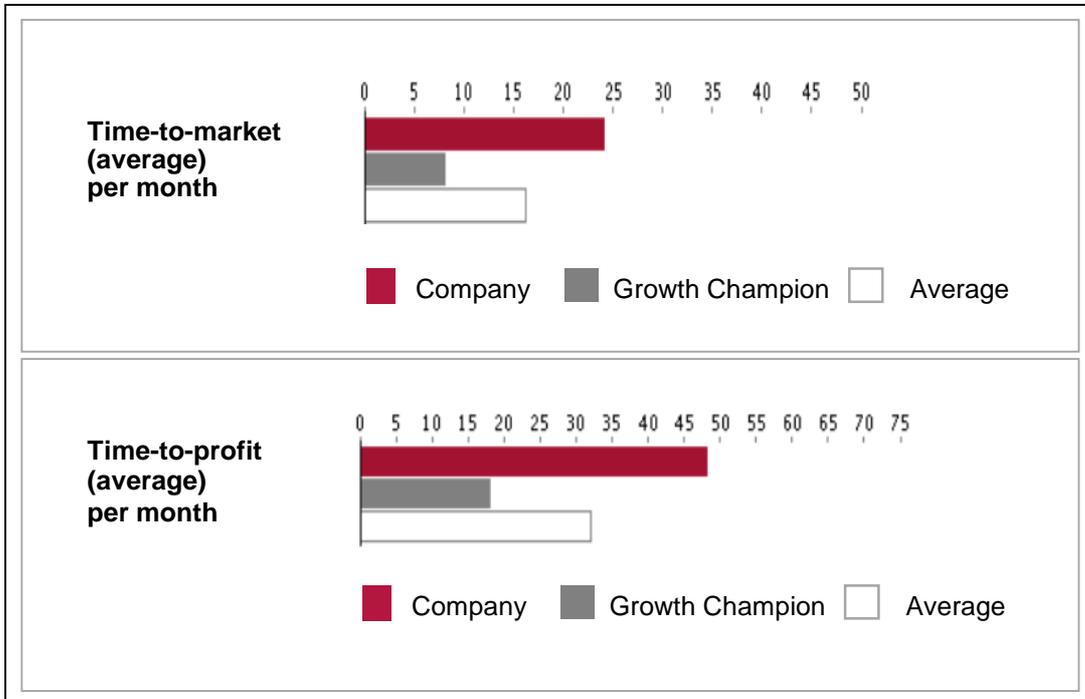


Figure 4: Figures from the IMP³rove Benchmarking

This calculation was confirmed by the participants of the management workshop who had made it their goal to interpret the assessment results on the basis of the assessment report and to determine what follow-up measures were needed. The effective innovation strategy states that customer requests are to be used to drive innovation in order to waste as few resources as possible on development strategies that are not market-relevant.

The flip side of the coin is that, naturally, the company invests very little time in strategic long term development efforts and that they have very little in the way of standardized, pre-tested modular assemblies to offer as customer solutions – to a certain degree, the starting point is always the one that they have already reached by developing solutions for similar customer requests. The lack of strategic preliminary development then results in time-to-market and time-to-profit figures that are relatively high.

However, the management workshop also led to the realization of additional consequences of this innovation strategy: The automobile industry has been using a uniform parts strategy for quite some time now to try to reduce the procurement costs they incur through their suppliers. For the company, this sourcing strategy means that the number of parts per order increases steadily every year.

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At the same time, the product life cycles in the automobile industry have been decreasing drastically since the 90s, which results in less and less development time for suppliers. Whereas earlier, mistakes in the development process affected individual series, automobile manufacturers' platform concepts and modular systems have led to a continuous increase in project risks for customer-driven developments due to the immense growth in order quantities. The fact that steering and brake assistance components that are critical for safety make up an increasing percentage of the product portfolio further increases the risk for the company.

When asked whether the innovation strategy should be changed to include a department specifically designated for preliminary development, the participants in the management workshop responded in very different ways (see Figure 3).



Figure 5: The management workshop participants are line up on a virtual scale: Against (left) or for (right) a designated preliminary development department

It became increasingly clear that this discussion also represented a cultural shift from reactive to preventative actions and measures. The discussion arrived at a point at which other aspects of the development process came clearly into focus: Because the final development of the manufacturing process occurred within the business units, it is vital for the success of the company that the required knowledge is available in those business units.

Here, the assessment showed (see Figure 4) that only around 50% of the knowledge required for the company's success has been documented or exchanged for innovation projects!

Due to the enormous growth in sales, this requirement could no longer be completely fulfilled: The company's "veterans", aka the employees with the required experience were so tied up with the process of growing that at times, younger, inexperienced employees had to take on this role.

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The IMP³rove report also clearly shows (see Figure 4): that only approximately half of the knowledge required to further innovation is available to the entire organization either in written form or other exchange mechanisms.

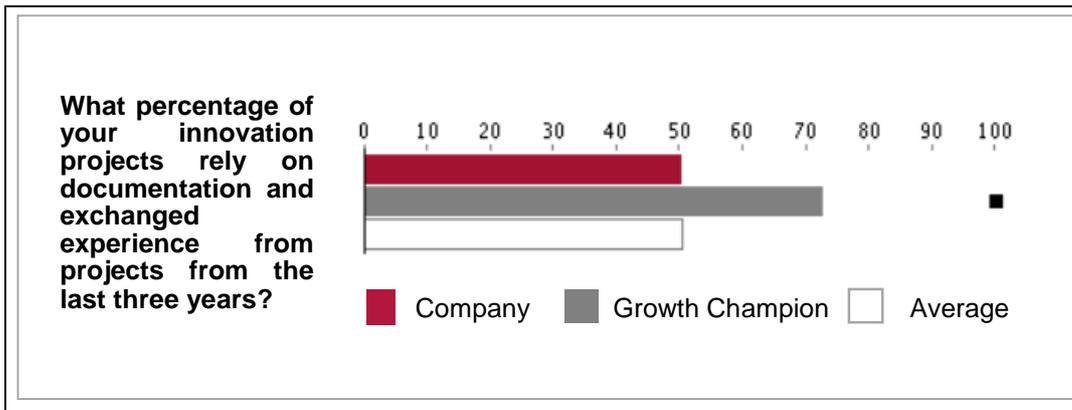


Figure 6: Extract from the IMP³rove report: How much of the company's innovation is based on documented or exchanged knowledge?

This means that every employee is their own “island of knowledge”, and that this knowledge is available only to very few people. Together with the large number of new, inexperienced employees that were hired, this poses a serious threat to the innovation process and the new product launches.

It is therefore clear that the questions “How can we identify gaps in knowledge?” and “How can we transfer knowledge from our expert employees to the new employees?” need to be solved as quickly as possible, so that the existing innovation process is not put at risk. The question of a specifically designated preliminary development department with a possible reduction in time-to-market and time-to-profit has been shifted to second priority and has been put aside for the time being!

In a second management workshop, a decision report was drawn up for the company management that proposes the creation of a knowledge management structure with the following operative goals:

<p>Creation of “knowledge maps” to identify individual experts’ knowledge that is critical for success These maps also offer the possibility for new employees to compare the target knowledge with their actual knowledge</p>	
<p>Introduction of a mentoring process that would allow for an effective transfer of knowledge from experienced employees to inexperienced employees, thereby simultaneously creating training sessions that could be used with other employees for additional mentoring.</p>	
<p>Development of an internal Wiki for the company where fundamental knowledge can be stored, making it available to the entire organization (preventing “islands of knowledge”). Training sessions will be stored in this knowledge database as well.</p>	

Selected employees will introduce vital process knowledge during the process development phase within the business units. These employees will be specially trained for this task and then dispatched to the department for a period of time.



The creation of a new central unit will provide a structure for achieving the targets, without affecting the reliable fundamental structure of the business units. The central unit will be called the *Competence Center*.

In the second phase of the process, the *Competence Center* will complete additional tasks.

- A qualification platform will be created that will be used to train employees as needed based on a qualification matrix.
- “Communities of practice” will be created. These are groups of experts that work to advance certain company-wide topics and make the knowledge and expertise of the entire organization available. The “Center of Competence” is the initiator and moderator of the “Communities of practice”.

The executive board approved the proposal in its entirety.

2.1.2 Benefits

Within the first ten months, the first stage of the process was completed with support from the IMP³rove consultants:

- The *Competence Center* was created as a fundamental organizational structure with 9 employees, who have all been trained in specially-developed mentoring methods.
- Experts from the plastics and metal division created knowledge maps and this knowledge has been greatly increased within the company due to the large number of mentoring sessions.
- The company-internal Wiki was set up and is currently being filled with the fundamental knowledge base.
- Two experts are temporarily working on innovation projects in the business units and are applying their knowledge at critical junctures. At the same time, this knowledge is also being documented and stored in the Wiki.

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At the follow-up meeting for the project, the company was pleased with the knowledge management solution, even though it was not yet possible at this time to quantitatively assess the results.

The company wants to address the question of whether the time-to-market and time-to-profit figures in the development process can be significantly reduced in a few months with a new workshop once all of the Competence Center processes are running smoothly. The experiences that were gathered during the introduction of the Competence Center will surely contribute much to this discussion.

Thus, after a surprising shift at the management workshop, the IMP³rove assessment led to process innovation with high impact on the sustainable growth of the described company.

2.2 Contact

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