



GM: Doubles research investment in Sweden

Automaker General Motors' decision to allocate part of its research and development budget to subsidiary Saab Automobile in Trollhättan strengthens Sweden's position among the leaders in vehicle technology. Trollhättan's favorable environment, featuring top research expertise and effective collaboration between industry, universities and government authorities, is attracting a growing number of players to the Swedish automotive cluster.

"GM's policy is always to invest research money where the best minds are – wherever that is in the world."

Blair Carlson
Chief Science & Technology Officer, GM Sweden

Blair Carlson, head of Saab's research center in Trollhättan, sees a bright future. "Naturally, we want to tap into the experience and cutting edge knowledge that players in the industry and leading universities have created over a long period of time," he says. "Together with the best partners, we will in different ways continue to generate new knowledge and develop new cars."

Center of excellence in Trollhättan

In the fall of 2005, GM's executive management decided to allocate SEK 100 million of its global vehicle research and development budget to Trollhättan. The investment doubles GM's research operations in Sweden and stretches initially to 2008. GM intends to use the knowledge gained at its Saab subsidiary across the entire group.

Strategic research projects have been commissioned in vehicle safety, lightweight construction using high-strength steel, fuel economy, hybrid technology and advanced production systems.

"In vehicle safety, our focus is primarily on crash safety. One example is pedestrian

protection, where the car stops automatically when an accident is imminent or shields the pedestrian in an actual collision in the most damage-minimizing way," Blair Carlson explains.

Safety integration

The ability of Swedish engineers to integrate safety and environmental thinking into the technical development is a crucial component.

"Swedes are brought up with a strong security mindset. This presents a unique opportunity to develop these aspects," Carlsson says.

Virtual test environment

Saab is also a leader in virtual production, an area of research that is gaining importance and makes it possible to test-run an entire production line in advance, thereby increasing flexibility and efficiency.

"Today, Sweden's advanced vehicle knowledge provides great opportunities for more players who wish to participate in the development effort," Carlson says.

Cost-competitive R&D

Partly as a result of information efforts from Invest in Sweden Agency (ISA) and its Intelligent Vehicle Safety Systems (IVSS) initiative, GM has realized that Sweden's auto industry research environment and engineering competencies are of top international class and highly cost-competitive.

Close collaboration

A partnership network linking subcontractors and leading universities, along with key support from the government and Swedish authorities further strengthens a compelling case.

This partnership model enables Saab, for instance, to commission Chalmers University of Technology and the Royal Institute of Technology in Stockholm and access their laboratories. In turn, this gives

the universities greater understanding of industry's needs. Subcontractors such as Autoliv and other system and component manufacturers are also involved in various joint projects.

Best competency and costs

GM is now benefiting from this infrastructure. It is also the main reason why Saab and Sweden were prioritized by GM amid fierce global competition, thereby securing their strategic position in the vehicle industry.

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Says Blair Carlson: "In this case, the best competency and cost picture for the prioritized projects was in Sweden."

Facts about GM:

- *General Motors Corp. is one of the world's largest car and truck manufacturers.*
- *Revenues 2005: US\$192.6 billion.*
- *Unit production 2005: 9,051 million worldwide*
- *Number of employees: 327,000 worldwide*

Facts about IVSS:

Intelligent Vehicle Safety Systems (IVSS) is a joint venture between public sector agencies, private sector companies and industry organizations aimed at stimulating research and development and strengthening the Swedish vehicle safety cluster. ISA is the program initiator.

"It has been the best governmental cooperation that GM has experienced. The Swedish government shows speed, sensitivity and flexibility and has been very cooperative. Of course such things matter when we discuss the location of research resources".

Lawrence D. Burns
Vice President, R&D and Strategic Planning, GM
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