

HTC Sweden

Customer Success Story

AutoCAD® Electrical  
Autodesk® Inventor™  
Autodesk® Productstream™

# Polishing an All-Digital Workflow

## Autodesk solution for Digital Prototyping supports rapid growth

“Our choice of Autodesk solutions is largely a result of our vision of a complete, digital world within the company’s walls.”

—Karl Thysell  
Head of Product Development  
HTC Sweden



### Project Summary

Founded three decades ago, HTC Sweden (HTC) has grown from a small family business into a multinational company by focusing on product innovation. HTC’s grinding machines have radically altered the options for working with stone floors—and revolutionized the look, feel, and use of concrete floors. The company’s machines use diamonds to polish concrete, turning it into a beautiful, luminous floor that is easy to clean and maintain.

Using its Autodesk solution for Digital Prototyping, HTC develops ground-breaking products in an all-digital product development workflow—where conceptual design, engineering, manufacturing, and procurement teams are connected by a single digital model. This single digital model simulates the complete product, and gives HTC engineers the ability to visualize, optimize, and manage their designs before producing a physical prototype.

HTC uses Autodesk® Inventor™, the foundation for Digital Prototyping, for 3D mechanical design and documentation, AutoCAD® Electrical for electrical controls design, and Autodesk® Productstream™ for managing and tracking all design components of the digital prototype.

Supported by its Autodesk solution for Digital Prototyping, HTC has:

- Achieved up to 200% annual growth, growing from a \$7.5 million to \$56 million-company in six years
- Slashed the number of physical prototypes from five to one
- Integrated Productstream with enterprise resource planning (ERP) system to connect suppliers in a streamlined, online supply chain

### The Challenge

Full of entrepreneurial spirit, Håkan Thysell started his first company when he was 19 and HTC in 1987. At first, Thysell focused on stone floors but adapted the technology to concrete floors. Then, in 1992, he expanded HTC by manufacturing the machines needed to create his unique floors. The company’s trademark entrepreneurial spirit has propelled its growth—and generated 200 design patents in the process. The company’s flagship product, called HTC Superfloor, is a grinded and polished concrete floor prized and used by companies such as AstraZeneca, Hitachi, GeKås, IKEA and Sahlgrenska Universitetssjukhuset. HTC’s grinding machines, which are based on technology created and perfected by HTC, use diamond tools to polish concrete and any kind of stone, whether it is granite, natural stone, or even marble.

Autodesk®

By placing a high premium on product development, HTC has become the industry's market leader. Keeping its place at the top requires the company to continue generating new ideas and innovating new products. Karl Thysell, son of HTC's founder and head of HTC's product development department, explains: "HTC is the story of a man who is never satisfied. The day you wake up thinking that all is done or that something is as good as it will ever get you are dead as an entrepreneur."

Not only must the company continue to innovate, it must do so at a rapid pace. "Time to market is crucial to us," continues Thysell. "We are undisputed market leaders and that is how it's going to stay. That means we must launch products at a rate with which our competitors can't keep up. And every new product must hold the high quality that has become our hallmark."

### The Solution

To support innovation and ensure rapid time to market for its products, HTC relies on Autodesk technology. For two decades, the company has used Autodesk's CAD technology in its development work. When Autodesk launched advanced 3D capabilities with Autodesk Inventor, HTC immediately adopted the technology. Now, the company prides itself on being at the forefront of technology with its full-scale digital workflow that ties together all departments and functions in the product cycle.

"Our choice of the Autodesk solution for Digital Prototyping is largely a result of our vision of a complete, digital world within the company's walls," says Karl Thysell. "We must be able to design, test, create, and purchase components, release designs for production, and complete our products all in one chain. We trust the digital information we create—and are able to make decisions based entirely on digital simulations of our designs."

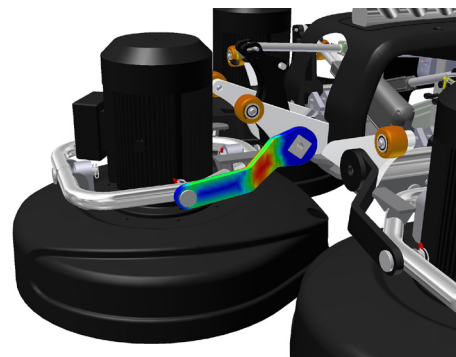
Using Autodesk Inventor, HTC can design, visualize, and test a complete grinding machine before it produces a physical prototype. With Inventor, HTC's designers can simulate the entire range of motion for each component in the machine—and then optimize the design using integrated performance and strength analysis. Inventor works seamlessly with AutoCAD Electrical, which HTC uses to create electrical controls system designs for its machines. It can then import these electrical designs directly into the digital prototype. All reviews, revisions, and general feedback on designs are handled digitally, another way that HTC saves time with its all-digital product development and production pipeline.

To manage all design data, automate the release management process, and manage engineering changes and bills of material, HTC uses Autodesk Productstream. Contributing to the goal of an all-digital pipeline, Productstream is connected to HTC's Microsoft Navision ERP system. With this integration, HTC hopes to streamline its procurement, making it more efficient.

### The Result

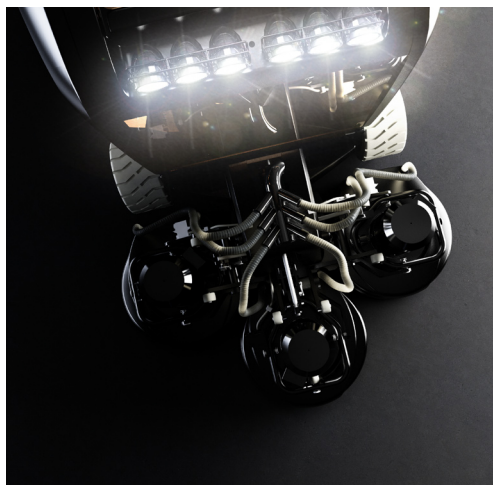
With its Autodesk solution for Digital Prototyping, HTC now produces a single research prototype before it launches a product. The savings has been enormous, a single prototype can cost over \$500,000—and before adopting Autodesk technology, HTC produced as many as five physical prototypes per new product.

The company has also been able to support its rapid growth with the Autodesk solution for Digital Prototyping. Local and export markets are developing quickly and the company is opening up a new business line for floor maintenances. "Our machinery segment grows about 30-40% annually, while the new business area is expected to reach 200% this year," says Håkan Thysell, HTC's founder.



Looking ahead, Karl Thysell hopes to use HTC's digital models more robustly, publishing them for commercial purposes. He envisions developing exploded views, manuals, assembly instructions, and web updates directly from the digital data. With the Autodesk solution for Digital Prototyping, HTC will have all the tools it needs for making this leap. "We need to get our marketing materials and manuals up to speed so that we do not burden the fast product development unnecessarily," Thysell concludes. "Since we are pretty well up to speed in our development process, this is quite an urgent issue—it's burning!"

To find out how Autodesk solutions for Digital Prototyping can help you get innovative products to market faster, visit [www.autodesk.com/digitalprototyping](http://www.autodesk.com/digitalprototyping).



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