

Edgecam Case Study

Back in 2005, the market demands made it clear that Edgecam (now part of the Planit group) needed to provide state-of-the-art 5-axis machining capabilities both to a large user base but also to attract new customers. This article describes how this challenge was addressed and what happened afterwards.



Demand for 5-axis

For many years, machine tools have been available with support for 4 and 5 axes. However, in the early days they were expensive and therefore only affordable for specialised applications, where they provided the only way to produce the parts. Typically, these applications included Impellers, Ports, Blades, and other very demanding parts.

More recent trends have seen the cost of these machines come down significantly bringing them within range of more general manufacturing companies. The availability of these machines combined with increasing competition from low-cost countries, raised a new question. How can a part be machined more efficiently using a 5-axis machine? Of course, manufacturers wanted their CAM systems to help them answer this question.

The Make or Buy Decision

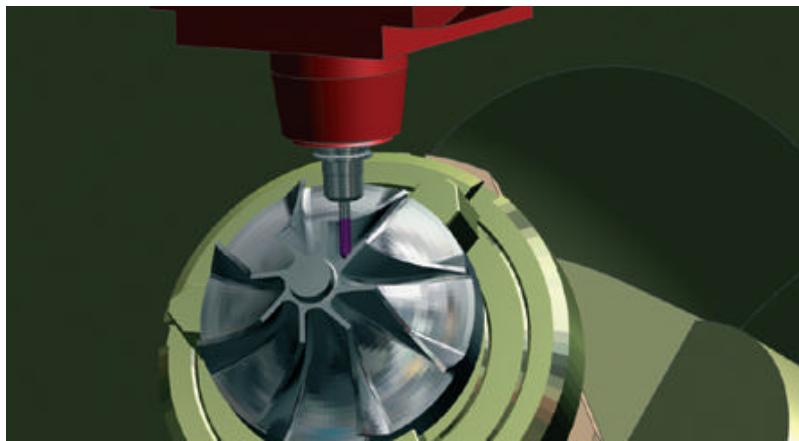
Edgecam has always been very proud of the size and strength of its development team, and had always tended to develop toolpath algorithms in-house, rather than use components. So, the natural

option was to invest development resource into 5-axis to produce a unique solution targeted specifically at the needs of the Edgecam users.

However, before committing to such a major development project, it made sense to consider what other options were available, and so a number of external providers were considered. Of these, ModuleWorks proved to be the most competitive because of the size of the development team, the commitment to 5-axis technology and the application knowledge gained over more than 10 years working closely with end users.

So, the choice became one of developing in-house or using ModuleWorks as a component. The following factors were considered in making the choice:

- Time to Market,
- Cost (short-term and long-term),
- Development Risks (new or proven technology) and,
- The Ongoing commitment to developing the product.



After assessing these factors, it became clear that using the ModuleWorks component was the natural choice. With an existing, proven best-in-class solution and a large development team committed to continual development, it would be impractical to compete without investing many times the amount of money into in-house 5-axis development for a long time into the future. And so, the choice was made.

One major advantage of this choice was that the in-house development team were able to focus on other important areas, adding to the strength of the overall product.

Yavuz Murtezaoglu, Managing Director for ModuleWorks says, "The make or buy decision is always an important part of the decision to use component software. In this respect, the software industry in many years behind other industries, such as car manufacturing, where buying in components is often the default choice. However, we have seen a transition over the last few years, in that most CAD/CAM providers are now happy to accept that everything cannot be developed in-house and they have become much more open to using best-in-class component software."

The Challenges of using a Component

The challenges of using the ModuleWorks 5-axis component came on two sides: software development and product management.

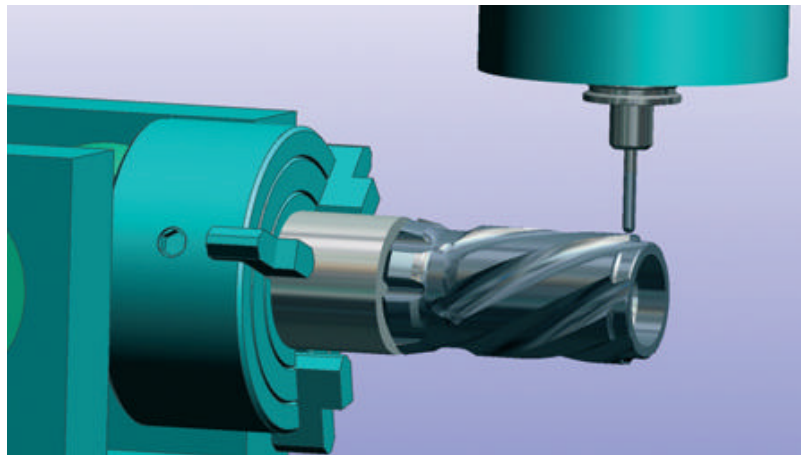
The challenges of software development included all the technical details: compiler versions, STL versions, understanding the API. With support from ModuleWorks, these were largely addressed without too many difficulties.

The challenges of product management proved to be greater than expected. Naturally, it was necessary to design a solution to keep the same 'look-and-feel' as the rest of Edgecam. However, the greater challenges proved to be in learning about the range of options available for 5-axis machining within ModuleWorks and the range of applications that these could be used for. The challenge was how to provide the power and flexibility, while maintaining the ease of use that Edgecam is known for.

How to differentiate Edgecam

The solution to the product management challenge— how to differentiate Edgecam— was to rely on the existing strengths of the Edgecam product, and simply extend them to 5-axis machining. These strengths include:

- Solids integration (Feature finding, associativity)
- Ease of use (modern, customisable UI)
- High quality simulation
- Strength in Mill-turn



So, as part of the 5-axis project, dedicated functionality was developed to find 5-axis features on a solid model. Easy to use dialogs were created to allow complex 5-axis techniques to be used without

becoming a 5-axis machining expert. High quality, full machine simulation was included to allow clear visualization of the machine movement. And finally, extra effort was put in to provide a strong solution for 5-axis on turning centres.

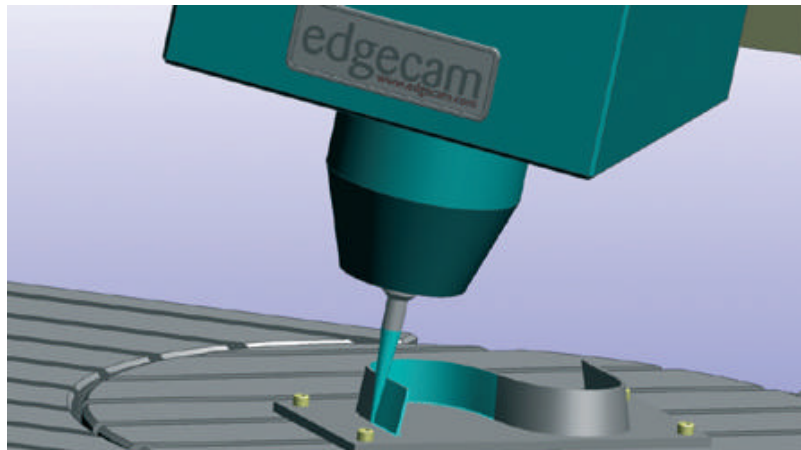
A Successful Release

The new Edgecam 5-axis module was launched in early 2006, and even in the first year its sales far exceeding expected figures. A significant number of early sales was achieved from the existing user base, who quickly learn how to use the new module due to the similar look and feel of the product. And the 5-axis module soon started to open up new sales opportunities with many prospects having a need for the functionality.

The focus on the Mill-turn market also proved to be very successful, combining the strengths of the new 5-axis component, with well-established Edgecam strengths in the mill-turn area.

And finally, relationships with machine tool partners were significantly helped, due to the ability to drive the full range of machine tools manufactured by a company.

Overall, the 5-axis component is now a strategically significant part of the Edgecam product, and contributes greatly to the revenue generated by Edgecam.



Ongoing Partnership

As Edgecam moves forward, each new release includes additional features in the 5 axis component. Edgecam and ModuleWorks have formed a successful partnership to maintain, support and enhance the product with each release giving added value to the customers. Further, this close partnership has opened the possibility of further collaboration on other projects in future.

Raf Lobato, Development Director for Planit Metals summarises the benefits as follows, "The partnership between Planit and ModuleWorks has been very successful. We have a very strong product in a technically demanding area, and are confident that the continued investment of ModuleWorks will ensure that this product remains highly competitive in future."