



Prototypes in Half the Time

The Situation

“Our designers learned OneSpace Designer Modeling in one-fourth the time it would have taken them for a parametric system.”

Peter Farnung, CAD Systems Manager, Leica Camera AG



Company profile

The Leica Camera AG, headquartered in Solms, Germany, is one of the world's leading manufacturers of cameras, lenses, and binoculars.



The Challenges

- We were looking for an inexpensive, high-performance, user-friendly 2D solution to replace the Medusa setup we had.
- We wanted to design an innovative camera and were looking for a 3D solution that would enable us to quickly and effectively achieve our goals. It would have to allow for easy combination of freeform faces and true geometry. This project could not be done with 2D.
- The solution should come from one source, be compatible and expandable.

The Solutions

- 50 licenses OneSpace Drafting
- 60 licenses CoCreate Data Management
- 30 licenses OneSpace Modeling
- Modules: OneSpace Surfacing, -Sheet Metal, -Assembly, and -Parametrics

The Results

- Secure data through error minimization thanks to OneSpace Modeling; e.g., we can run collision checks on components, do simulation tests, etc.
- Can get data to production much faster (prototype).
- Prototypes can be made at least 50% faster than with 2D
- Productivity and innovation increase, faster time-to-market
- Employees were productive within only 3-4 weeks; with a parametric system it would have taken 2-4 times longer

With 1,400 employees worldwide, the enterprise achieved a turnover of ca. \$1.3 million in 2001.

Leica products enjoy a cult status; they are well thought out, precision engineered, and are produced with an optical precision that is unmatched.

Two terms define Leica today: innovation and tradition. Numerous forward-looking innovations have emerged in the foreground of a 75-year tradition in the design and construction of 35 mm cameras and lenses. Among them are a number of technological breakthroughs. These innovations have resulted in remarkable high-end products that continue to redefine the boundaries of technological possibility.



“We wanted to replace our Medusa licenses with a less expensive, higher performance, and user-friendlier CAD solution. The choice fell naturally to CoCreate,” says Peter Farnung, CAD System Manager at Leica Camera AG, of their situation. “We could solve our problems with CoCreate’s OneSpace Drafting, based on ME10, so the number of ME10 licenses we wanted grew quickly,” says Farnung happily.

But Leica was faced with the limitations of the 2D solution when they decided to develop an innovative camera with designer surfaces. “Freeform surfaces can be better and more precisely designed with 3D,” says Farnung. He continues, “Therefore, we looked for a 3D solution with which we could quickly and effectively achieve our goals. Freeform surfaces and true geometry would have to be combinable.”

Leica did a benchmark with the objective of designing the front casing of a camera – a complex part for which freeform surfaces and true geometry have to be created. The engineers designed the front casing with help from SDRC’s Master Series, PTC’s Pro/E and CoCreate’s OneSpace Modeling.

“We determined that the functionality is very similar; the difference between the systems lies in the operability,” remembers Farnung. “OneSpace Modeling can be learned very quickly and it is simple to use – intuitive,” recalls Farnung. “We need designers who develop innovative products and not computer scientists who program the development process,” he continues. “There are other systems on the market today that are better known for freeform surface design. They did not come into consideration for us because they were too expensive and offered an incredible number of functions that we would never use,” explains Farnung. “OneSpace Modeling, when used with OneSpace Surfacing, completely covers our needs. All our designers use this solution,” says Farnung happily.

Leica sees little chance for the use of a parametric system in its situation because so many alterations are necessary when developing a product. Parametric systems are unsuitable for the very important task of creating variations on an existing design. “We have to be in the position – often within a single day – to quickly and easily integrate changes, ideas, and feedback. This is considerably more difficult to do with a parametric system than with CoCreate’s solution because with the parametric system the designer has to concentrate on the history of the design. CoCreate’s solution allows for the quick and easy integration of changes, feedback, and ideas, which gives our designers more time for innovation,” Farnung explains.

Leica uses other modules from CoCreate for specific applications and the Work Manager technology for data management, which allows for parts to be located ca. 70% faster than before.

“Thanks to CoCreate’s solutions, we now have better data because we can minimize errors in a number of ways. For example, we can run collision tests on components and do simulations. We can get the data to production (prototype) more quickly as well. Thanks to 3D, prototypes can be produced at least 50% faster than with 2D. A further success was that our employees were fully productive within only 3–4 weeks. With a parametric system it would have taken 2–4 times as long. All in all, we are profiting from an increase in productivity and innovation as well as faster time-to-market,” summarizes Farnung.

Leica will soon evaluate Personal Collaboration with the intention of further increasing efficiency. “Some of our production is done in Portugal and we are working with Asian partners on the development of digital cameras. If we could look at designs online and in real time, discuss them and even solve problems, we would have further potential for enormous savings,” concludes Farnung.

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