



## Flexibility and close collaboration are the keys to success at u-blox

### Customer:

u-blox

### Product:

wireless modules

### Services:

- » Negotiating Power
- » New Product Introductions
- » Testing
- » Volume Manufacturing
- » Supply Chain Management

### Business objective:

The growing, fables, positioning and wireless communication technology firm u-blox needed to streamline its complex manufacturing process which had become a barrier to growth. With a rising bill of materials, little buying power and only a local footprint, u-blox needed to partner for global success.

## The challenge

u-blox is a global provider of leading positioning and wireless communication technologies for consumer, automotive and industrial markets. Established in 1997 by three doctoral students and their professor from ETH University in Zürich, Switzerland, the founders saw a big opportunity for their small company to design the chips and modules used for positioning and wireless communication.

Adopting a fables business model allowed the company to focus on its core activity of design. By remaining lean and focused, u-blox had a perfect approach to penetrate a highly-competitive and complex marketplace.

Initially, the u-blox model was to work with several partners in Asia to source chips, negotiate prices and ship them back to its manufacturing partner in Europe to assemble the final modules.

However, by 2001 the relentless pace of innovation and escalating costs associated with a complex supply chain created intense pressures, and u-blox needed to find a new strategy to sustain growth from its base in Switzerland.

"We realized that our bill of materials was a huge part of our cost base, which made it a barrier to our global ambitions. We needed a leading manufacturer with the buying power to negotiate down our component costs as well as the cost of the distribution infrastructure for our inbound materials. The global buying power of Flex was many times greater than our own, so we approached them to start a conversation", explains Peter Zimmermann, Senior Director Supply Chain Management & Sourcing.

## The solution

### Disciplined execution

u-blox partnered with Flex which began to manage the entire supply chain for inbound materials including negotiating prices, purchasing parts and managing lead times.

In 2003 Flex consolidated u-blox manufacturing in Europe to its site in Althofen, Austria.

The geographic closeness to u-blox headquarters meant they both operated in the same time zone, and spoke the same language. It also allowed the partners to closely collaborate and optimize the design of the production process for this high-volume, high-mix requirement.

Some 350 u-blox modules are assembled at any one time, while another 30 to 40 modules are in a limited production or testing phase. And between one and three new products are introduced each week. These could be engineering samples or a test unit which could move onto mass production, depending on the end customer.

## Flexible, Transparent Manufacturing

u-blox may need to make a change to the product being manufactured, and can do so at Flex up to 45 minutes before the cycle begins. Similarly, the test engineers can provide real-time feedback to their colleagues at u-blox where design improvements can be made.

Flex has built a generic production line which, at very short notice, can be modified to produce exactly what is required.

While flexibility is a key ingredient in running such a large scale, complex and dynamic production process, equally important is transparency.

By sharing production and supply chain information in real time, u-blox can quickly decide to change the production schedule via automated electronic data interchange (EDI) messaging, if needed.

Peter Zimmermann details the accurate planning needed to successfully manage u-blox's business: "Our goal has always been to supply our customers with their product requests on time and we are committed to these high-service levels. However, we have often been challenged by our customers to deliver products to them at very short notice, so we need a flexible system that can cope with changes in production with very little warning. It is highly unlikely that we could have that type of close relationship with a supplier in Asia."

## Continuous Improvement

The Flex team put a system in place to capture every opportunity to improve.

Monthly or bi-monthly u-blox Supply Chain Workshops are held to discuss ideas for continuous improvement.

A Quarterly Business Review (QBR) is run separately, to analyze key performance indicators (KPIs). The u-blox sourcing team and Flex, host 'supplier days' to collaborate with existing and new suppliers and strengthen the team supporting this mission.

There are two teams in Flex dedicated to u-blox – one which works closely with u-blox project managers on new product introductions. The other is the supply management team which takes care of all products in mass production which are delivered around the world from the hub in Althofen, Austria.

With a commitment to further automate the production lines and test equipment, reductions in the throughput time is a regular occurrence. Flex has introduced in-line flashing, test machine automation and a new pick and-place-machine to improve overall efficiencies.

## The result

### Intense collaboration

Flex is now responsible for shipping modules to the end customer in variety of formats, from a single module, to a ream which has up to 250 pieces.

Having a single partner to exclusively manage the entire outbound logistics for u-blox globally gives the company tremendous visibility and transparency, and offers potential for even more efficiencies.

The commitment to close collaboration between Flex and u-blox is telling in the very nature of the business relationship.

Peter Zimmermann describes the support u-blox has received: "The calibre of the Flex people we work with is outstanding. Their understanding of processes and technology is underpinned by their desire to constantly strive for new systems that they believe we need. They are passionate about what they do and completely focused on all aspects of the business including logistics, NPI and quality. We have a very strong relationship with our Flex colleagues which is a result of our daily phone calls and regular face-to-face meetings."

u-blox has grown to be the world's largest supplier of positioning modules selling 24.5 million units in 2018 alone, and offering 430 different types of modules.

Peter Zimmermann, concludes: "Our colleagues in China question why we have our production base in Europe. To them it seems strange, but in response we say Flex has supported our growth from the very beginning when we were a very small company. That flexibility has been there from the start with capacity, people and materials made available as and when we needed them during our challenging growth years. Maintaining our growth and keeping costs down as well as introducing continuous improvements is necessary for our ongoing success. With an obvious and passionate customer focus at Flex, we can realize our ambitions to grow and maintain our high service standards into the future."

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