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6.6 KUK (Shanghai) Co., Ltd.

Electronics and Precision Industry

- Setting up a production in China to follow a customer
- Achieving better quality, productivity and costs with fully automated and imported production equipment

SUMMARY

KUK AG ('KUK'), a most innovative supplier of micro-coils, electromechanical parts and printed circuit board (PCB) designs and boards is uniquely able to manufacture a particular high-precision micro-coil allowing the production of mobile phones incorporating larger screens. Following the development of handsets production in China, KUK has set up and improved quality production in its China subsidiary in record time.

Factors for success are analyzed:

- Speed in the fast changing electronics industry
- Location for keeping stable human resources after their training
- Local project management and operations management support to achieve speed and reduce risks

KUK's single client and product line are the obvious risks of its China operations.

INDUSTRY TRENDS

Mobile telecommunication is an industry that is growing at a tremendous rate. From 2002 to 2010 the number of mobile subscribers is expected to jump from 1 to 3 billion worldwide. Today, 400 million out of 2 billion subscribers are Chinese. By the end of 2005, about 750 million mobile handsets are expected to be sold globally, with China accounting for 90 million phones. China is currently the biggest producer of mobile phones worldwide. Experts forecast that close to three-quarters of the world's mobile phones will be produced in China by 2009.

MOTHER COMPANY – KUK Electronic AG

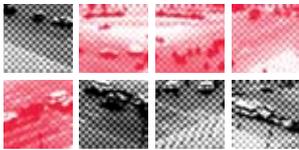
Becoming the most important Swiss coil producer in 15 years of existence

KUK Electronic AG is a highly innovative, family-owned and fast growing small-medium enterprise (SME), founded in 1990 in Appenzell and employing over 70 full time employees (and a number of temporary personnel working from home) with a

Figure 1:
KUK's activities in China
Source: Swiss China Survey, 2005

		B2B				B2C	
		Electronic Component	Industrial Equipment	Raw Material	Services	Consumer Goods	Services
Producing							
Purchasing	For own China operations						
	For mother company						
	For third party						
Selling	SOE						
	POE						
	FIE Global						
	FIE Local						

SOE - State-owned enterprises in China
POE - Private-owned enterprises in China
FIE Global - Foreign-owned international enterprises with operations in China that are clients of KUK in the global scale
FIE Local - Foreign-owned international enterprises with operations in China that are not clients of KUK in the global scale



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CASE STUDY

turnover of about USD20 million in 2004. KUK has become one of the biggest employers of Appenzell Innerroden. It mostly serves the automotive, medical electronics, information technology (IT), industrial electronics and machine industries with three product ranges.

Design and in-house production of:

- PCB assemblies
- specialty electro-mechanical components such as custom-miniaturized electromagnets
- micro-coils (small copper wire coils of specifically high requirements and/or particular shapes)

KUK provides PCB assemblies especially for the field of micro and precision electro-mechanical components. KUK is ISO9001.2000 certified.

In its 15 years of operations, KUK has grown to become the most important coil winder in Switzerland.

Competitive advantages

KUK owes its success mainly to the following strengths:

- Strong capacity to a speedy innovation in electro-mechanical products. In the rapidly moving, short product life market of electronics, KUK does not register patents and develops new products fast instead.
- The capability to develop production equipment in-house. KUK produces its own coil-winding machines for applications where large production capacities are needed.

KUK in CHINA

A unique micro-coil to allow bigger mobile phone screens

Competing with electronics and telecommunication giants like Siemens, KUK developed an innovative rectangular micro-coil which makes the use of rectangular loudspeakers for mobile phones possible, thus allowing more space and bigger display screens on mobile phone handsets.

KUK was able to offer the most competitive product/price advantages by developing its own coil-winding machines. As a result, KUK was selected as the sole supplier of micro-coils by its client which delivers unique (and patented) rectangular loudspeakers to the major mobile phone makers (Nokia and Sony Ericsson, for example).

KUK's subsidiary in China (the only other production site of KUK other than the one in Switzerland) was founded at the end of 2003 and was set up to begin operations in May 2004. A year later, the subsidiary was employing 100 full time employees and producing one million micro-coils per week.

Supply chain

Producing one product, KUK China has the added advantage of needing only one particular raw material — a thin insulated copper wire. This wire is purchased by the subsidiary from the initial Swiss supplier and exported to China. Finished coils are sold to KUK's lone customer.



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Start up general management

The initial management of KUK's China operations has been carried out, on part time terms, by one of the managers of the mother company who was also in charge of the company's overall sales since the production project was brought about by the client's requirement.

The sales manager traveled every two months to China to support two local managers:

- a local production manager overseeing production planning, productivity and quality
- a local administration manager in charge of ensuring material imports, delivering products, dealing with government bureaus to fulfilling the complex formal requirements of the Chinese administration and contacting the mother company in case of difficulties

Financial administration, accounting and related legal aspects were supported by a local services company (one which also managed the set up of KUK's project).

FACTS and ANALYSIS

Reasons to enter China: proximity to the client and prospects for other opportunities

KUK's client for the mobile phone coil — a Danish company — decided to move its operations to China in order to be closer to its own mobile phone-producing clients in China as well as to benefit from lower assembly costs. Moreover, as the quantity of orders for the new loudspeaker grew, mobile telephone clients required the set up of a second production site for KUK's micro-coil. Indeed, the production of mobile phones was dependent on the ability of a single supplier to deliver millions of dozens of coils. Should there be any production interruption in KUK's facility in Switzerland, the production of an equivalent number of mobile phones would be interrupted. The forecast for 2005 was for KUK to deliver a total of 50 million micro-coils in 2005 from two different production sites.

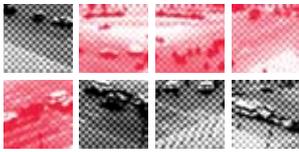
KUK had the option to set up a second production site either in Switzerland or in China. Any other location did not make sense to the management given the supply chain configuration.

In addition to being close to the client, a KUK subsidiary in China provided the opportunity to access China's market through one client and a minimal turnover to start with. KUK saw the possibility to serve other global clients in China and to source and procure components more economically from the country.

KUK's decision was made after the management was convinced of the feasibility of a China operation. Though not usually available in China, a start up workshop of small enough dimensions was obtained through the Swiss Center in Shanghai (SCS). Moreover, the SCS' network of support professionals was able to provide KUK with the necessary additional management resources to set up its operation professionally in China.

The decision to go ahead with the CHF3 million (USD2.34 million) investment mostly comprising custom-made coil winding machines was made in September 2003.





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CASE STUDY

Better productivity and quality through abundant, well-trained workforce

With the support of a China-based project management company implementing the set up, key staff hiring and company registration started in November 2003. Technicians and skilled workers were trained in Switzerland in February 2004. The first three custom-made production lines were imported under special tax and VAT-free (value added tax) status in April and production began in May 2004. Break even was achieved during the subsidiary's first year of operation. By the end of August 2004, the China production unit already achieved better productivity and a better scrap rate compared to the one in Switzerland, although the Swiss production facility is fully automated with machines designed and produced by KUK, thereby substantially reducing the costs of manufacturing.

The reasons for such performance are:

- KUK China's workforce is willing to work any possible shifts, allowing seven days and 24 hours operations for a maximum of 21 eight-hour shifts. By comparison, Swiss workers would be difficult to find for week-end and night shifts, so that KUK's Swiss headquarters would only be able to run about 17 shifts per week on average.
- KUK China could afford to hire more employee for effecting quality control than KUK would in Switzerland. As a result, more checks are performed ensuring a better monitoring of quality, faster reactions in case of quality problems and a lower overall scrap rate. Yet, well-trained and disciplined operators and middle-management were necessary to ensure that negative effects would not drag results down.

FACTORS FOR SUCCESS, RISKS and OPPORTUNITIES

Opportunities

Expanding in the China market

KUK's workshop (around 800sqm including offices) has been planned and installed with extra space to accommodate productions for new clients in China. Quite a few of KUK's other customers have operations in China and KUK is preparing to serve them adequately.

Freeing space for the Swiss operations

KUK's production in Switzerland is growing constantly; some of the labor-intensive operations may be effected more efficiently in KUK China, thus allowing best use of the Swiss infrastructure and better production costs.

Risks and difficulties

Single client and product

KUK China's main and obvious risk is its reliance on a single client and a single type of product. Though there are variations in the size of coils produced by KUK, they all fulfill the needs of the same mobile phone loudspeakers application.

Changes in client's requirements (or in technology) or the possibility of a company developing a competing loudspeaker for which KUK would not be a supplier present considerable risks. Diversification to acquire new clients is therefore a key priority.

Stretched management resources

Sales management in Switzerland and in China as well as the overall management of the China operations are delegated to only one person. To reduce the risk of insufficient management capacity, KUK has hired a local Chinese administrator, who studied in Switzerland, to support China operations from Switzerland. Yet, the challenge to ensure long-term suitable local management still needs to be conquered by KUK.

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Factors for success

Speed

In an industry of short product life cycles and unforgiving customers when deliveries are late, KUK had to make a quick decision to set up in China or in Switzerland and then to ensure a quick and seamless set up allowing for no loss of machine time. Equipment was actually shipped by air.

Human resources and location

To achieve speed and quality, finding suitable and qualified initial technicians and skilled operators who have been able to learn quickly in Switzerland is essential. Additionally, skilled personnels as such need to stay with the company long enough and to be capable to train colleagues and subordinates to meet the growing demand.

In order to retain staff after training in Switzerland, it was important for KUK to select a location where there is available and enough labor force that is already skilled. Indeed, should the skills of the staff in the area be far from standard level, they would be an interesting target for other foreign companies needing to hire skilled people after they obtain training from KUK. Some competitor companies would rather increase remuneration than invest on training newly hired staff on their own.

The industrial zone of Xinzhuang, south west of Shanghai, provides a good access both by car and metro, therefore it is convenient for well-trained Shanghai staff to travel to work.

Local project management and operations management support

To achieve speed without major oversights during the set up, KUK selected a professional project management company for the project preparation in all aspects as well as its execution. This enabled all set up elements to run in parallel, optimally and reduced considerably KUK's need for project management.

Professional handling was also instrumental in obtaining VAT and duty-free import of KUK's equipment, saving over half a million USD in taxes.

To sustain a smooth running operation during the first years, KUK retained the services of the same professionals, particularly to support reporting to the mother company for internal controlling and to optimize tax and legal issues.

*Information on KUK Shanghai courtesy of:
Walter Akeret - General Manager, KUK Shanghai, China
Case Study written by: Nicolas Musy
Approved for publication on: April 2005*

Notes

ⁱ Printed circuit board (PCB) - is a thin plate on which chips and other electronic components are placed. They are also called "cards".