Swiss Steel Product- and Market Strategies
A Minimill Perspective

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Auszug aus
Proceedings Dr. Manfred Wolf Symposium
May 10-11, 2002 Zürich, Switzerland
Verlag Stahl & Eisen 2003
Introduction

Swiss Steel, in whose name I am speaking to you today, is a young company. It started 1996 from the merger of two long established steel firms, Von Roll Stahl AG and the von Moos Group. This amalgamation represented the conclusion of many years of restructuring in the Swiss steel industry.

Until 1993 there were four steel producers in Switzerland: Von Roll Stahl AG (since 1812), von Moos Stahl AG (since 1842), Monteforno SA (since 1952) and Ferrowohlen AG (since 1954).

While the first two steel producers trace their origins to the last century, the other two arrived on the scene in the 'fifties' after world war two.

As most mini mill at that time, the early success of all four Swiss works was based on the simple strategy:

- serve local markets
- avoid technical complexity
- focus on reinforcing bar for building construction

All four companies were manufacturers either predominantly or exclusively of concrete reinforcing steel, a product that was in great demand locally during the building boom at that time. However, with the rise of market saturation in the mid 'seventies, a situation of excess capacity gradually built up.

The development was accentuated by a phenomena, which is typical to the steel industry: every investment in new production lines led unquestioning to a higher output. The shrinkage of the Swiss concrete reinforcing steel market forced manufacturers to search for new markets.

While von Moos Stahl especially developed and increased its production of higher quality steels, the other producers gradually raised their export volumes of concrete reinforcing steel. However, the constant fall in prices for this products soon set limits on the economic viability of the strategy.

At the beginning of the 'nineties, the Swiss steel industry had a production capacity of approximately 2 million tons per year while the real production stood at 1.3 million tons. Against this, the demand for concrete reinforcing steel and steel mesh stood at around
600'000 tons. It was clear that this could not continue. The question was "What can we do now?"

Thanks to an exemplary restructuring program, the Swiss steel industry was able, single-handedly and without government support, to cut back excess capacity in concrete reinforcing steel and to bring itself into line with the local demand. This involved the withdrawal of Ferrowohlen from the market and the closure of Monteforno. Bearing in mind the present day price levels for concrete reinforcement steel, it is not difficult to envisage what would have happened without this restructuring.

Even the two remaining producers had trouble working successfully. Therefore the only logical step seemed to be a merger. In 1996, this move was formalized with the assistance of the banks providing the capital. Out of von Moos Stahl AG and Von Roll Stahl AG arose the new enterprise Swiss Steel, which saw Switzerland's entire steel production consolidated in two locations but under one holding company.

The newly formed organization underwent a comprehensive business reengineering process. The entire enterprise was restructured on a process-orientated base, and flat hierarchies were established. A total of 360 jobs were phased out as a result and productivity per employee rose accordingly.

From the very start we were aware of the need to make huge changes. We had to simplify our processes and reduce our costs in a way, which would enable to hold us in the competitive European market.

New corporate culture:
• Market-driven and customer-focused
• Lean and precise, management in coaching functions
• Added value orientated

Process-orientated organisation:

The restructuring and reengineering programs established the foundations for economically viable steel production in Switzerland. It is up to us to make use of these favourable conditions to develop a successful marketing policy.
We have set ourselves three strategic objectives:

- Concentrate on steel: i.e. be successful in steel making, steel processing and steel marketing
- Encourage our employees to be entrepreneurial
- Create value: for our customers, for our employees and for our shareholders

Not only our strategy and structure had to be put in place, also the process of developing a new corporate culture had to be started. Our aim is to be market-driven and customer-focused. This might seem rather obvious but the investment-intensive steel industry in particular has traditionally been characterized by a strong production-focus. Increasing job lots and reducing the number of types of steel seem like self-evident steps for producers. We are gradually trying to get all our employees to adopt a market and customer focus. Not an easy task, by any means!

**Market Strategy**

We chose the "Competence Centre" organizational form as our basic structure. Each of these company units has a clear corporate function within the framework of a clearly defined product/market portfolio. These units have a high level of independence, authority and responsibility. The holding company is very lean in structure and has control of strategic and financial areas.

![Swiss Steel Organizational Chart](image)

**Stahl Gerlafingen AG**, the "Competence Centre" for construction and reinforcing steel, has a product range geared in particular towards the Swiss construction industry. It also manufactures flats and skelps for the engineering industry, with a significant proportion going to the export. The production capacity of Stahl Gerlafingen is approx. 630'000 tons per annum. The market volume per annum for reinforcing steel in Switzerland is currently around 450'000 tons per, and for steel mesh approx. 100'000 tons. The sales of the products are made almost exclusively via the Swiss steel trade. In 1999 we had a market share of about 60%. We aim to meet at least 70% of the domestic demand. Thanks to the restructuring of the Swiss steel industry, we are an efficient and productive supplier in
Steeltec AG: Steeltec was formed consequently, focussing on a clear market driven approach: the production facilities of von Moos steelworks an the trading activities of von Moos Bright bar division, located in CH, D, F, I merged and formed the Centre of competence, named Steeltec. The name underlines that steel is more than only a product: it stands for products and customer services equally. Steeltec AG produces cold drawn steel with a capacity of approximately 100'000 tons per annum. In this area we are the leading supplier in Switzerland. But our export markets also play an important role. Our particular speciality, high-strength special steel, is highly regarded all over Europe, especially in the automotive and machine construction industries.

von Moos Stahl AG: The Swiss steel producer near Lucerne; operator of the world’s first curved mold continuous caster: the Centre of Competence for production and sales of quality-, special engineering- and free cutting-steels, which has a production capacity of approx. 520'000 tons per annum, is utilized at present on 420'000 tons per annum. The main strategy of von Moos Stahl is:

- Improve product mix
- Keep the reached standards and volumes in quality steels
- Improve volume and develop special engineering-steels
- Push and improve volume and applications of the free cutting-steel-sector, including alternative solutions

History: 1956 von Moos had decided to install a Concast continuous billet casting machine, likely a horizontal-, vertical- or bending-type caster at that time. But von Moos’s existing building was not very high. After a visit to the Barrow place. With Stahl Gerlafingen - the Centre of Competence for construction and reinforcing steel - Swiss Steel has set itself the goal of taking in locally-available scrap metal, efficiently converting it and offering it as a product of high quality in the domestic reinforcing steel and steel mesh markets. This is because we are convinced that the domestic production of reinforcing steel makes sense, both on macroeconomic and environmental grounds. Conversely, for the reasons I set out at the beginning of this paper we both have to and want to reduce our basic products, which were previously exported in large volumes. The exports should be limited to higher-grade steels or niche products.
caster in GB, during their flight back to Zurich, von Moos's works manager Emil Schneckenburger jointly with C. Küng sketched one of the possibilities (on the back of their dinner menu): the idea of a curved mold, an idea for which they submitted a patent application on September 1956! The bending-type machine von Moos had already ordered was duly installed, however, and only after it had been commissioned in March 1959, the curved mold idea had been revived. A pilot-scale caster was built at von Moss with a height of only 5 m (bending radius of 2 – 4 m), and the first billets were cast with this curved mold unit in March 1963. The billets measured 85 mm square. The development-work was done in complete secrecy, as the steelworks headquarters in Lucerne had not given any funds for such tests! Truly, a pioneer- and courageous work at that time. The Lucerne curved mold caster certainly made the major contribution to the remarkable breakthrough of continuous casting. Not only did it reduce the capital cost of the plant, but it also opened the way to new production concepts with different metallurgical parameters. The high market acceptance of the curved mold opened up a broad field of developments to all of us. (The development of continuous billet-casting at von Moos is described in details in Dr. Heinrich Tanner’s book: Continuous Casting A REVOLUTION IN STEEL, published in 1998). Should similar visions guide a new age in these days? More about it later.

Present: On the strength of expertise built up over many years, as well as with significant investments, von Moos Stahl wants to play a leading role in this area within the principal markets of Germany, France, Italy and Austria. Out of our own drawing plants (Steeltec AG), there is practically no market for these products in Switzerland because lack of corresponding industries. Our major customers are automotive parts supply, cold heading, forging and chain making. The steel-plant of von Moos Stahl has over the last few years been renewed. More than CHF 40 Mio in new investments have been spent: 1998 a three-strand Convex® billet caster 130 – 160 mm square (billet-formats of 135 an 160 mm square are presently produced) has successfully been commissioned, 1999/2000 followed by rebuilding our EAF with a new 70 MVA-transformer, efficient exhaust and dedusting systems, all equipped, with sophisticated state-of-the-art automation systems (Level 1 and Level 2) for monitoring and controlling of all machine activities, melting- and casting-process parameters and the highly automated analysis.

With the same consequence, a modernisation program at the 1982 commissioned rolling mill has been started: on April 2nd of this year an operative production planning and control system (Level 3) has successfully been commissioned and a new five-strand three-roll "Kocks-Block®" will be put in operation after the three-weeks summer brake of this year. Both investments (and more to be implemented) will allow von Moos Stahl to improve the product quality further and to respond to customers needs and desires with more flexibly than before. It will also be possible to accommodate urgent, unscheduled customer requests in existing production lines even more effectively.
Modernisation measures that have already been realized, as well as those still being implemented, provide the basis for continuous improvements of our product quality. These measures include:

- Process stability
- Purity level
- Surface quality
- Geometric tolerances

Product developments:

When processing quality and special steels into items such as screws, bolts and connecting rods, heat treatment steps (such as annealing, quenching and tempering) and cold or warm forming processes are carried out, depending on the application.

The aim of materials development is the production of a material with the same or improved properties compared with existing materials, but with less manufacturing inputs. To achieve this aim, von Moos Stahl is working closely with its customers and in cooperation with Freiberg Technical University, where a full-scale prototype rolling mill assists in the development of materials and processes quickly and economically.

An important, characteristic property of free-cutting steels is its cutting quality, which is 'set' through chemical analysis and target secondary metallurgy. A comprehensive internal research and development programme is in progress with the aim of future improving the properties of free-cutting steels. Following the production of various prototypes, a detailed product characterisation, using machining tests, is currently carried out at various universities.

**Shareholders structure of Swiss Steel AG**

Swiss Steel is a public share-holding company traded on the Swiss stock exchange. The merger in 1996 was pushed and supported by a consortium of the major Swiss banks. Loans and the 'new investment' in Von Roll steel works were converted into share capital. By this means, the bankers consortium got a 70% share and with it the majority of Swiss Steel AG. At present, the two remaining and leading Swiss banks (UBS and CS) share 50.4%. The rest is widely spread. The banks communicated goal is to withdraw and reduce the engagement as Swiss Steel shareholders completely.
Swiss Steel performance and prospective

A fundamental question: Can incremental improvement alone restore profitability, or is some step change in business needed? Are there any other options? Indeed, Swiss Steel has showed a remarkable improvement in the financial result over past few years:

Profitability is the core issue, no question about it. However, the present and above described strategy needs funds to stay in business (technology and competence) and rises further questions:

- Is the present chosen strategy lasting and effective?
- How far can or should the product mix be shifted to special steels of higher quality (available market, technical complexity, capital for equipment upgrades, skilled manpower)?
- How sustainable is profitability of LEADED STEELS, given the strategic pressure on the environment, ecology and toxic dispersion (development of alternative products)?
- Can a less profitable part of product mix be converted to other products also needed in the Swiss home market (e.g. flat products, section-bars)?

Three strategic options:

1. Continuation (stay as independent Swiss steel producer; further restructuring)

2. Look out for a strategic partner who will:
   - Secure present business and jobs involved in Switzerland
   - Make use of the locally-available scrap metal (approx. 1.2 Mio tons p.a.)
   - Bring enough and effective potential for synergies and workload to the remaining two steel mills in Switzerland

3. ‘Back to the roots’ (the early success-strategy of mini-mills): concentrate and serve local markets with present and new products

Why should Swiss Steel not combine the strategic options and make use of their strengths of the early company history (e.g. mid of the ‘fifties’): imagination, inventiveness, courage and heart?

No doubt, alternative no. 2 is favourable, especially in view of bankers and might be short term. Personally I would like to develop some ideas at this symposium based on the option no. 3 ‘back to roots’ and conclude this paper with a vision: ‘serve local market with FLAT PRODUCTS by means of using STRIP CASTING technology, keeping in mind present and upcoming problems in respect to transports (emissions, tax and plugged routes), economy and ecology, protectionism etc.'
Strip casting technology for Swiss Steel? – a case study

Strategic approach no. 1: The home market is not covered by Swiss Steel

Strategic approach no. 2: Ideas to cover home market by introducing home made flats
Strategic approach no. 3: New processes for flat products have been developed

Strategic approach no. 4: The TWR-process is designed for ‘mini-mills’ (approx 400 – 600’000 tpa)

Strategic approach no. 5: Switzerland and its neighbour region have quite a high demand for ‘simple’ flat products – the result of market analysis is encouraging:

- Uncoated coils are purchased (only into CH approx. 400’000 tpa)
- ‘Low’ demand on surface quality and profile
- Low grade steel quality demand (St 37, 44, 52)

Strategic approach no. 6: Flat products could be introduced into the market in planed strategic steps, not giving up present market (multiple phase model). Steel cycles behave different.

Strategic approach no. 7: An integration of a DSC/TWR-caster installation into existing works is possible either at Gerlafingen or Emmenbrücke.

A case study at Emmenbrücke (Gerlafingen)

Double-strategy: SBQ (rebar) and flat products

Phase I: Decision to be made (project-start)
- Increase melt-shop production and capacity to a maximum (improved economics of steel-making)
- Current market still satisfied (no loss of current revenue)
- Add flat products to the market in line with demand and acceptance (improved revenues)
- Development period for strip casting (competency, risk management, etc.)

Phase II: Only when strip casting is commercially proven
- Progressively substitute long products for flat (market shift, improved returns)
- Remaining long product line is under-utilized (benefits of improved returns may compensate negative impact; buy-in billets of higher grades, e.g. TOP12® as an option.) TOP12 is a new corrosion resistant steel for the building construction, developed by von Moos Stahl.

Phase III: Phase out long products (maximize economics of the plant)

Summary and conclusions
Swiss Steel will be able to execute such a project at present only with a strategic partner. The project contains high risks (technique not yet commercialised, new market). A double-strategy might be more favourable keeping Gerlafingen in mind.

Key Issues for a STRIP CASTING project for Swiss Steel are and remain:
Consider carefully
- Improved melt-shop economics versus new capital employed
- Improved revenues with flats versus the technical risk

Such a project has a high potential - but involves high risks! Minimize the costs involved and manage the risk successfully are the key topics. Potential investors for sure will balance their risk with the potential on ROI. A successful start up of the Nucor Castrip Plant at Crawfordsville, USA and other plants with the intention to cast carbon strip will for sure ring in a new age in steel making. It might speed up decisions needed – similar to the time, when continuous casting was commercialised.
Swiss Steel – a value in history and in future! – Thank you for your attention.