



The Role of the Engineering Consultant for Surveying in Foreign Projects

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1. Background

Austrian engineers have been renowned as experts, not only domestically, but also abroad for centuries. One only has to think of names such as Viktor Kaplan, Joseph Ressel, Carl Ritter von Ghega or Ferdinand Porsche. But the country has also produced a number of prominent geodesists: Joseph Liesgang, for example, made a major contribution to land surveying during the era of Maria Theresia. Between 1761 and 1765, he oversaw the surveying of the Vienna meridian, which extends 320 km from Brunn am Gebirge via Vienna to Varaždin. The starting point for the measurements was a 12km long section of what is today Wiener Neustädter Strasse, which was then known as the Neunkirchner Allee. From 1785, he headed the work on the Josephinen Kastaster, the land register, in Galicia.

Another renowned Austrian geodesist was Simon von Stampfer who played a significant role in the federal and provincial surveying between Bavaria and Austria in 1819. During the measurement of the well known meridian triangulation arc, the so-called Struve Arc, which extends from Hammerfest (near the North Pole) to Izmail (near the estuary of the Danube into the Black Sea), Stampfer undertook the conversion of the Russian etalons to the Austrian fathom (Klafter) standard. He also published logarithmic-trigonometric tables for universities which were used throughout the entire empire [1] [4].

Today, Austrian engineers are also renowned for being reliable and competent. The outstanding standard of education and the high technical status of the profession in Austria are key factors when it comes to projects abroad.

2. The role of the engineering consultant for surveying

In principal, the geodesist provides land-related information which serves as a basis necessary for various commercial activities, further planning work, for infrastructure projects and for buildings of all sorts, for agriculture, environmental protection and for the preservation of the cultural landscape. The EU has indisputably brought

fundamental changes to all professions; more competition, however, also means more opportunities in new markets. The limited geographic size of Austria places limits on the domestic market, making it both an opportunity and a necessity to expand into new markets. If one goes back to the 1990s and the period immediately after the fall of the Iron Curtain and compares the Eastern European countries of then with the status quo today, then one can see the rapid technological and economic development which has taken place. This was only made possible by western investors and lenders who financed and implemented necessary projects – projects that also require reliable partners.

Every projects starts with a search for suitable land and sites. The clarification of boundaries and ownership rights are the core activities of the engineer consultant for surveying. In several countries there are still no land registers and restitution issues remain unresolved. It is still possible, however, to reconcile the (mostly complex) requirements of investors with the local conditions in these markets.

Austria has had an exemplary land register system since the 19th Century which is admired worldwide. The quality of the system is highlighted by the fact that the majority of the countries in the former Austro-Hungarian Empire have again introduced this system and other countries such as Poland and Russia have also based their systems on the Austrian one. Austria is also playing a pioneering role in the modernisation process. The Austrian land database is serving as a model for modern solutions in several Eastern European countries [2].

This system-based knowledge is an advantage for engineering consultants for surveying working on projects in these countries. We often come across old land register plans that we are accustomed to. In technical terms, the details contained on these old plans are soon understood, allowing us to focus on the considerably more difficult issue – the question of ownership.

3. Partnerships – one approach to implementing foreign projects

Since many investors often favour an overall solution for their technical projects, it is important to take the opportunity to enter into inter-professional partnerships with other consultants such as land planners, architects, cultural technicians, etc in order to be able to offer such comprehensive solutions. The future also lies in international partnerships. The realities of the EU demand such international networks, particularly when one considers that Austria is a small member state with numerous neighbouring countries. The main focus of this paper will therefore be on the countries of Central and Eastern Europe.

What were the reasons behind our company, Vermessung Angst, acquiring investments abroad and involving itself in projects? Following the setting up, in 1968, and experience in managing a medium-sized surveying office in Vienna, the founder of Vermessung Angst, my father Josef Angst, began to look beyond Austria's borders for opportunities to expand. He sought footholds in those countries enjoying the economic boom and, as a result, set up various international operations in Central and Eastern Europe as a supplement to the company in Austria. There were no plans to outsource Austrian contracts abroad in order to take advantage of the lower wages, nor was the idea to use Austrian personnel abroad to any significant extent. The central idea was simply to establish strong partnerships abroad, particularly in Eastern Europe.

In the course of the expansion of the EU, these partnerships have given rise to a wide variety of advantages. For example, it is important to have a local partner in the home country where the project will be implemented when submitting tenders for international projects. In addition, the lack of effective borders has created numerous synergy effects such as the simple exchange of instruments and equipment. This makes investments more profitable. A specialisation in various key areas on the part of the individual companies can also be advantageous.

It is difficult to manage foreign projects only from Austria. True to our firm belief that the whole is stronger than the individual parts, the partnerships and cooperations with local companies that Vermessung Angst has entered into have proven to be extremely successful. The following factors have played a role in this success:

- The most difficult task, and one which requires more than a little good luck, is in the selection of the right foreign partner. A decision has to be reached in a short period of time and it has to be the right one in technical, organisational and relationship terms. The possibility of failure can never be excluded, which is why you need to be careful with investments in the early stages. Training of the future partner at the offices of the parent company and getting to know the key personnel in one's own office has proven to be effective and reduces the risk of later failure.
- The relationship with the general managers in situ should be on the basis of a partnership among equals. Any form of dictatorial management should be avoided.
- Suitable profit-sharing models (in terms of revenues and profits) and a reasonable dividend policy are a means of binding general managers more closely to the company.
- Financial support from the Austrian company is something which should be confined to the early stages if possible. The foreign company must be able to finance itself in the short-term.
- Good training of the partners and leading employees during the company's first few years also appears to be a further important success factor. Another is constant controlling and monitoring of the situation.
- One of the tasks of the Austrian company is to pass on information regarding technical developments to the partner companies and also to ensure that these companies update their technical equipment to the extent that this is financially possible and prudent.
- It is also important to constantly communicate requirements and to define targets in terms of turnover and profits. The Austrian company should also be a source of ideas with regard to the companies' strategic direction.

4. Training situation in CEE countries

One key factor relevant to a partnership-based approach to implementing foreign projects is the local training situation. The following is a summary of our experience to date in this regard in selected CEE countries:

- Czech Republic and Slovakia

The training of personnel (particularly in the Czech Republic) is excellent. Many academics have even completed two degrees (mostly one technical and one commercial). The quality of the work is very high.

■ Hungary:

The level of training and technology is on a par with Western Europe. The quality of the work, however, is often only satisfactory.

■ Croatia:

Both the level of training and the quality of the work can be regarded as good.

■ Bosnia:

As a result of the brain drain associated with the recent war, the level of training at present is very poor. The quality of the work also suffers as a result and can only be regarded as satisfactory.

■ Romania:

An increase in terms of quality has been seen in all sectors of the Romanian market in the past three years. The quality of the work still leaves a lot to be desired in some cases. The personnel (particularly the younger ones) are, however, diligent and willing to work.

The importance of knowledge transfer is dependent on the relevant training situation.

5. Knowledge transfer: how can it be ensured that projects yield the desired results?

As mentioned above, the level of training and education in the field of surveying is generally high in Austria. University-based education in particular, especially at the Vienna University of Technology, compares well internationally according to the global ranking of natural sciences in 2008 [5]. This ensures that leading personnel continue to have the skills they need to meet the challenges of this profession.

More problematic, however, is the area of public-sector education for school leavers following the discontinuation of the surveying course at the technical college in Vienna. This is leading to a lack of adequately trained technicians in an industry which, to a great extent, is dependent on personnel with qualifications of this level. The only way of securing a practical qualification in this industry in Austria is to complete an apprenticeship. A surveying course is offered by the Chamber of Architects and Chartered Engineering Consultants to apprentices who have gained several years' practical experience as a means of completing their training.

This also presents a problem for employers in Austria's private sector. There are only limited educational possibilities at the level of surveying technicians. The only real option left in order to

keep the skills of personnel updated and, ultimately, to underpin the profession's good reputation both at home and abroad, is to rely on in-company training.

Other European countries are also confronted with similar problems. In our experience, the engineering consultants are highly skilled, but it is difficult to find good technicians. One (part of the) solution can be knowledge transfer within partnerships.

Let's explore knowledge transfer further by means of an example:

An Austrian real estate investor commissions a survey of usable floor space in a shopping centre in Romania. Such assignments are still relatively rare in Romania, with the result that the personnel in this country are not up to performing such tasks. The situation in Austria in this respect is different. A wealth of appropriate requirement-specific knowledge has been established in the course of various past assignments of this nature. This experience can now be made available to the Romanian partner by means of knowledge transfer.

The first step in this case involved appointing a trained Austrian technician to work alongside the Romanian team during the initial project phase. When it was clear that the local team had understood what the task involved and was aware of the problems entailed, it was possible for the local personnel to complete the assignment.

The second step was the preparation of the plans. Although sample plans were made available, the first draft was not on a par with Austrian quality standards. This was followed by a week-long on-the-job training course in Vienna. The results of the training were very satisfactory and, consequently, not only had the necessary knowledge transfer taken place, but the local partner now has the skills necessary for further projects of this kind.

This is just one example of many, but highlights how knowledge transfer can work.

Last but not least, working in other countries is great fun since this constantly provides opportunities to broaden one's horizons and to meet people with completely different perspectives on life and radically different approaches to solving problems.

References

- [1] WALDHÄUSL Peter, *Vermessung und Weltkulturerbe, Presentation at the 14th International Geodetic Congress 2007, Obergurgl*
- [2] WESSELY Reinhold, *Geoinformation – Fundament der Wirtschaft (in German), VGI, Vol. 1/04*
- [3] http://de.wikipedia.org/wiki/Joseph_Liesganig; accessed on: 26.10.2008
- [4] http://de.wikipedia.org/wiki/Simon_Stampfer; accessed on: 04.11.2008
- [5] http://www.topuniversities.com/gradschool/schools/data/school_profile/default/viennauniversitytechnology/; accessed on: 18.01.2009

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