



↳ The Sector Review

Every year the Swedish association of consulting engineers and architects (STD) publishes its Sector Review in December. The report is produced in co-operation with its Nordic colleagues in Denmark (FRI and Danske Ark), Norway (RIF), Finland (SKOL & ATL) and Iceland (FRV & SAMARK). It summarizes the developments in the industry in the Nordic region with some European coverage as well, with figures for 2015 and some comments on 2016.

"Our industry has had a very rough time for the last 8 years" says EFCA President Flemming Pedersen, "and now we see some light at the end of the tunnel, as the 2016 edition of the STD Sector Review reveals". "It's encouraging to see," he continued, "that on the whole the industry is on a fragile path to recovery around Europe, as orders have increased and turnover grown." Indeed, profitability improved in 2015 at European level. The (pretax) profit margin of the 200 largest companies grew in 2015 to 4.3%, from 2.1% in 2014. This development has continued in 2016, as is also reported in the EFCA Barometer, with growing turnovers and improved profitability. The prospects for 2017 are also positive, with half of the countries expecting growth in turnover and the remainder expecting status quo.



Consolidation has been intense in recent years. It has continued this year too, but at a slower rate. A clear trend in Sweden, though, has been diversification. Companies are broadening their service-offers, especially into architecture and construction.

Arcadis remains the largest engineering firm in Europe with 26,947 employees and Aecom is the largest engineering group worldwide, with around 87,000 employees.

The Sector Review can be ordered at: <https://www.std.se/in-english/sector-review/order-the-sector-review-2016>

Digital construction and closer collaboration critical for survival in changing markets



Christophe Castaing

Using 3D modelling software, layering it with data, and working very closely with your partners in construction and engineering projects is now critical if European companies are to survive in this challenging and rapidly changing market.

This is exactly what some companies are doing by adopting Building Information Modelling (BIM) as their standard operating procedure. It is also what some countries are doing by creating an environment which actively supports it. But there is a real danger for those who are not preparing themselves to work with this revolutionary management approach of losing opportunities in Europe and emerging markets to competitors from Asia.

China is a good example of a global player setting BIM as standard. "We were approached by the Chinese about an airport project in Africa," says Christophe Castaing, Chair of EFCA's BIM Task Force and Director of Digital Engineering at Egis. "They insist on using BIM. It is important for many international projects. Korea is moving the same way and is providing serious competition to even the best companies in Europe for important contracts."

Fortunately, several European countries have been researching and promoting BIM as a tool to improve quality and effectively deal with the massive data requirements of 21st century clients. The EU tasked the European Committee for Standardisation (CEN) to review and harmonise standards to help roll BIM out across the industry. EFCA has been an important contributor to the process. "BIM relies on such standards," Mr Castaing says. "They are also in the FIDIC¹ Contracts used by the World Bank so we are helping integrate BIM requirements here too. The World Bank is an important organisation (co-)funding projects in Central Europe as well as in developing countries."

The future of Europe is in building sustainable urban areas

Construction in Europe has been depressed in recent years but Mr Castaing doesn't see it remaining that way. "On the contrary," he says. "If you accept there are a lot of changes going on everything has to be modified whether it is for migrants in Sweden or rising water levels in the Netherlands. The future of Europe is in building new kinds of sustainable urban areas."

Those companies that have streamlined and embraced BIM will be in the forefront to benefit, not least because the EU Public Procurement Directive now allows greater emphasis on quality and collaboration, and a growing number of countries require it for their publicly

State of the consulting engineering sector; autumn 2016

Every six months EFCA is conducting a market survey among its members. The results are published in the Barometer report.

The most significant trend emerging from the autumn 2016 Barometer survey of the consulting engineering markets in Europe, is that we can identify a stabilisation of the markets in southern European countries but at a lower level than before the crisis in 2008. The northern European countries have, for several years, seen positive growth, and these markets appear to be stabilising at a high level.

The global size of the architecture and engineering market in Europe is around € 350 billion, according to Eurostat.

The sector in general is reflecting the growth of European economies, particularly the level of investment in gross fixed capital formation. The sector is influenced by the budget constraints of the governments across Europe. As the public sector has reduced its investments, the market for engineering services is affected. However, in spite of retraction in the public market, the order stocks of many consulting engineering companies are growing, due to an increase in private sector demand.

The main challenges as perceived by the sector are lack of qualified staff, lack of investments and low fees.

Another challenge is the increasing competition from contractors. This challenge can be disruptive for the building industry, and poses both threats and opportunities for consulting engineering companies.

A second growing challenge is political instability which is affecting the market. Some of the factors are not predictable such as the Brexit-related uncertainty, geopolitical tensions and security threats in Europe and the outcome of elections and referenda across Europe in 2017.

Market developments during 2016 and expectation for 2017

In this EFCA Barometer report (data collected in November 2016), the market signals are positive. Nine out of nineteen countries expect an improvement in order stock over the next six-month period. Of the remaining ten countries in the survey all, except for Turkey, expect orders to be at an unchanged level.

In addition, eight countries expect turnover to increase in the first half of 2017, and importantly, the survey shows an increase in profitability. Finally, there is an expectation that numbers of staff will increase in 10 out of 19 countries.

In conclusion, activity in the consulting engineering industry in Europe is improving. However, Greece and Turkey, are expected to face continued difficulties and are the exception to the rule in this survey.

funded projects. Countries like Norway, France and the UK grasped the potential early on, facilitating collaboration with a data dictionary, new standards or investing in research and strategic support. A new ISO standard (19650) for information management in BIM is being launched in 2017. EFCA is helping companies understand how the ISO and the European CEN standards could impact them. It is publishing a handbook, to coincide with the ISO standard coming on stream in June 2017, which explains things like the different levels of BIM, information requirements and contract issues.

Consulting engineers best placed to take the lead

Mr Castaing is upbeat about progress in creating a European-wide enabling environment but he is also anxious about uptake of BIM. He talks of a recent EFCA survey that showed only 16% of consulting engineers being excited about this emerging approach. He wants all consulting engineers to recognise the system is here to stay and it is only going to become more pervasive in the future. Are they best placed to take the lead in this digital, collaborative, creative system? "Absolutely!" he says.

BIM is a virtual construction site holding data that can be adjusted at the keyboard as projects progress. Virtual commissioning, on a 3D model, before commissioning a project on the ground is already taking hold. Decision-making is faster, there is less time taken up in re-drawing plans, and there is more communication as one company's actions may immediately impact another's. "Clients are asking for a lot in their projects," says Mr Castaing referring to the growth of issues like health and safety, climate change, and environmental impact. Environmental issues have become so important they may account for a massive 50% of the data being handled on a single project. Despite the information load, BIM can still improve value for money.

"Compare the situation with 10-15 years ago," Mr Castaing suggests. "It could take three years from design concept to construction. BIM can help deliver it in two. That means maybe 30% more time for designing better solutions for the client." Being able to do more up front is music to the ears of EFCA and its members who have long been calling for more project time for planning and design as global issues such as resource scarcity and climate change must be factored in.

Important investment

"It is an important investment," says Mr Castaing, "and any sized company can, should, participate. BIM is accessible to everyone but there is a paradox. Small companies are more flexible, able to change relatively easily to adopt it. On the other hand, we need to also invest in research and large companies are better equipped for that."

Specialist software could be an issue in the future. "We don't want to be too dependent on specific software," he warns. "We are in this for the long-term and how many software companies will be around in 20 years' time? The aviation industry has good experience developing its own standardisation and is recommending the construction industry does the same."



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EFCA has member associations in 25 countries, and is the sole European federation lobbying on behalf of engineering consultancy and related services, a sector that employs around one million staff in Europe. EFCA contributes with a strong and cohesive input to legislative actions of its national associations on issues affecting market conditions. Furthermore, the organisation works as a Europe-wide platform for national associations and their member firms to gather relevant facts and discuss issues with their counterparts.