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European Construction Monitor

2017–2018: A looming new construction crisis?

European Construction Monitor is a publication edited and distributed by Deloitte.

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July 2018

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1. Introduction

We are pleased to present the seventh edition of the European Construction Monitor, which looks at the latest market developments, trends and merger & acquisitions in the European construction industry. This 2017-2018 publication complements the "European Powers of Construction" (EPoC), a Deloitte research paper examining the status of major European-listed construction companies.

Local construction markets are gaining traction all across Europe. Northwestern European markets showed the strongest market growth over 2017. Both Northern and Western Europe are expected to show a stabilizing market growth for the coming years. Southern European markets are expected to grow decently.

Construction companies are becoming increasingly aware of the opportunities arising from the economic growth of local construction markets, which is reflected in the increase of M&A activity: a total of 194 transactions were noted in 2017 compared to 149 in 2016.

This European Construction Monitor analyses the market trends in the European construction industry by looking back and forward at the same time. In producing this outlook Deloitte has combined these analyses with the in-depth, local knowledge its European member firms have of M&A, real estate, construction and infrastructure.

Supply chain pressure remains a major issue in Northwestern Europe

Over the last years we have reported signs of increasing supply chain pressure in many Northwestern European construction markets. Supply chain pressure remains a major issue that construction companies have to face in countries like Ireland, the UK and the Netherlands. M&A activity indicates construction companies are focusing on strengthening their position in local markets.

But the current rapid market recovery is triggering sharply increasing prices. Combined with a lack of suppliers and personnel this could well lead to a new construction crisis. In the UK and the Netherlands construction companies filed for bankruptcy due to major losses on projects where they had been exposed to rapidly increased supply costs.

M&A not yet utilized to realize digital agenda

Digitalization and technology are two major themes in the construction industry. This report elaborates on the main trends in the industry and analyses the digital strategy of major construction companies in Europe.

We found that almost all construction companies are aiming to become "leading in digital construction" over the next few years. Large parts of the construction companies' strategies cover digitalization and technology.

An analysis of the M&A activity of the Top 50 listed European Construction companies shows that only few, including Vinci, utilize M&A to realize their digital agenda. The majority of the construction companies focus on internal start-ups and partnerships with innovative ecosystems.

However, in the mid-market there have been a number of transactions in the tech enabled construction space, such as the carve out of NBS from the Royal Institute of British Architects which are set to catalyze the growth in this space.

Highlights in this publication

- Almost all construction firms want to lead in digital but construction companies have not yet utilized M&A to realize their "digital" agenda
- M&A activity within the European construction sector is finally picking up
- M&A activity indicates a focus on strengthening "their classic" position in local construction markets
- Supply chain pressure remains a major issue in Northwestern Europe, resulting in a looming new construction crisis
- Industrialization of the construction sector a "must" issue (again)


PORCH CORNICE
Metal O.G. Gutter
Facia
Soffit
Bed Mold
Boxing
Hose Bibb
Double Joist
Conc. Step Footing
Hot water

2. Context – market outlook

The three main themes – market growth, profit margins & digitalization – are used to briefly describe the market development in the European construction industry.

Market growth

Over the last year, market growth has been the predominant trend in the construction industry throughout Europe. Northwestern Europe showed the largest increase in market growth in the past few years. However, growth in Northern and Western Europe is expected to stabilize in the coming years. The Southern European construction market continues on last year's road to recovery and a decent market growth is expected for the coming years. Market growth for Northwestern and Southern Europe combined is forecasted at 2.5% a year on average in 2018–2022[1]. Construction companies in Eastern and Central Europe seem to have finally left behind the aftermath of the economic crisis and are trying to catch up with the rest of Europe, resulting in a slightly higher expected market growth of approximately 4.4% on average in 2018–2022[2].

In terms of production growth most EU construction markets are still largely dependent on public investments in, for instance, infrastructural projects. Growth in the residential and commercial construction sector is highly dependent on geographical subregions. Our local experts from the Netherlands and France notice this geographical dependency.

Figure 1 shows the outlook for market growth of countries included in this analysis.

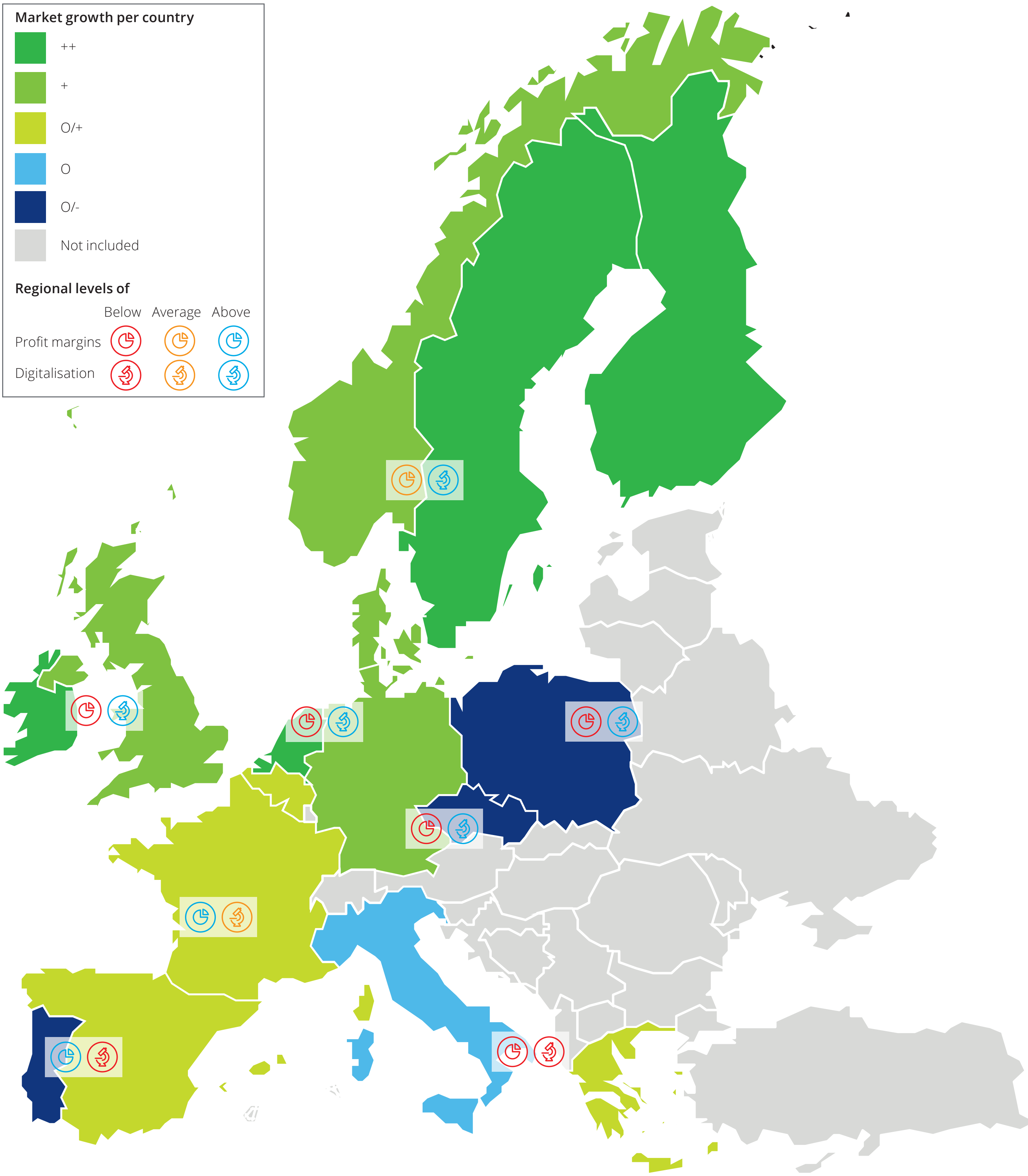
Compared with the pre-crisis period, the production output in most European countries has recovered and transcended 2010 levels. Although Southern European construction markets are recovering over the past few years, production volumes in Portugal (52.5%), Greece (52.4%, 2016), Italy (68.0%), France (89.9%) and Spain (95.0%) have not (yet) reached 2010 levels[3].

Profit margins

The production growth in most European construction markets resulted in an increase in construction costs over recent years. During the financial crisis and its aftermath many (sub)contractors and suppliers in the construction industry went bankrupt. Now, as many of the EU construction markets are flourishing, the shortage of subcontractors and suppliers is further increasing construction prices. In addition, many well-trained construction personnel have been retrained to work in sectors other than the construction sector. As a result, the profit margins of mostly large construction companies are under pressure in several European submarkets.

When looking at the profit margins, we observe different trends throughout Europe. In the Northern European countries costs have increased, but due to high activity levels it is expected that overall profit margins will not be affected and will even increase in the coming years. In the western part of Europe, such as the UK, Belgium, the Netherlands and Ireland, operating margins are under pressure due to an increase in labor costs, which cannot be offset with higher activity levels. In the southern and eastern countries, profit margins are less affected by construction costs. Construction costs have risen less than the European average, or have even declined in some of these countries.

[1] Source: Construction Intelligence Center – Global Construction Outlook to 2022
[2] Source: Construction Intelligence Center – Global Construction Outlook to 2022
[3] Source: Eurostat (2018) – Production in construction – annual data


Market growth per country
++
+
O/+
O
O/-
Not included
Regional levels of
Below
Average
Above
Profit margins
Digitalisation

When looking at the profit margins, we observe different trends throughout Europe. In the Northern European countries costs have increased, but due to high activity levels it is expected that overall profit margins will not be affected and will even increase in the coming years. In the western part of Europe, such as the UK, Belgium, the Netherlands and Ireland, operating margins are under pressure due to an increase in labor costs, which cannot be offset with higher activity levels or be passed down the supply chain. In the southern and eastern countries, profit margins are less affected by construction costs. Construction costs have risen less than the European average, or have even declined in some of these countries.

3. Shaping trends

Over the past few years a number of trends have been shaping the construction industry or are expected to have a great impact in the near future. This section outlines a selection of the shaping trends, ranging from internationalization strategies to disruptive innovations and new entry companies.

Internationalization strategy by larger construction companies

The share of cross-border deals shows a decline for the second year in a row, although the absolute number of cross-border deals increased. This also applies to the share of intercontinental deals within the cross-border deals, indicating that although construction companies tend to strengthen their positions in local markets, the international focus of European construction sector seemingly continues to be a dominant strategy. For example, VINCI, a France-based construction group, increased its activities in areas such as Europe (especially in Germany and the United Kingdom), America, Asia and the Middle East.

This view is supported by the European Powers of Construction (EPoC 2016), which shows a ranking of the top 20 listed European construction players ranked by market capitalization. This study shows internationalization to have increased in the last seven years. In 2016 international sales of the EPoC represented 52%, an 8 percentage points increase since 2010.

The growth strategy of Europe's larger international oriented construction conglomerates continues to focus on both internationalization and diversification as top priorities. In 2016, the "International construction" category represented more than 50% of the Top 20 EPoC by sales and included some of the largest EPoC in terms of sales (up to nine groups fall within this category). Total revenue recorded by these groups amounted to EUR 130,709 million compared with EUR 106,401 million in 2010.

Supply chain pressure

Over the past few years the market conditions on the European continent have recovered rapidly. Simultaneously, we have observed an increase of supply chain pressure in most countries. Our local experts have noted two important recurring supply chain pressure themes. The first theme comprises the high pressure on margins of larger construction companies due to the shortage of subcontractors and materials. The second theme comprises the widespread shortages of qualified labor, which hampers growth.

High pressure on margins due to shortage of subcontractor and materials

While construction volumes developed over the past few years, we have seen sharply increased subcontractors' prices starting to put pressure on the operating margins of larger construction companies. Supply chain pressure increases in recovering markets, where many subcontractors went bankrupt during the crisis. The scarcity of subcontractors in the now rising market results in higher prices and pressure for main contractors to bring tier 2 expertise in-house. In addition, many local markets also experience a shortage of materials. One example is the shortage of pile drivers in the Netherlands, this drives up the construction costs and increases the pressure on the margins of mainly the larger construction companies. In the UK Brexit is anticipated to further exacerbate this trend with some construction companies such as United Living outlining that they will begin to stockpile construction materials.

The growth strategy of Europe's larger international oriented construction conglomerates continues to focus on both internationalization and diversification as top priorities.

Where in recent years signs of supply chain pressure were mainly noticed in Northwestern European construction markets, we now see signs of supply chain pressure throughout Europe. All countries – apart from Spain and Greece - are experiencing supply chain pressure in some form. Brexit is expected to have an impact on the construction market. This trend is reflected in the construction cost indices for residential buildings over the period 2010 to 2016.

Inflationary pressures will challenge construction companies, which may have to fix prices months and years ahead of completing a project. With uncertainty in the construction industry, builders, contractors and suppliers need to be concerned about the increasing costs of building materials. Rising material and supply prices is a multi-dimensional problem that requires contractors to be proactive in managing budgets and job costing, especially with continued demand for materials. Over the last years, there has been a steady increase in construction input costs in countries like the Netherlands and Germany, where local experts expect the input cost inflation trend to continue, if not sharply steepen. The shortage of materials, resulting in input cost inflation, is pressuring the margins in the European construction markets.

Widespread shortages of qualified personnel, which hampers growth
In many European countries the construction industry is flooded with work and our local experts state that the labor shortage is pushing back projects for months. The lack of capacity at subcontractors, driven by the shortage of available and skilled personnel, pressures sector margins even more.

Throughout Europe, the quantitative and qualitative shortage of labor is increasingly becoming a major issue in the construction sector. Some companies have taken measures such as increasing spending on training and raising workers' pay, while others are advancing their technology usage to offer employees new skills and growth opportunities. However, implementation of advanced technologies requires highly skilled employees. The labor shortage has its background in the economic downturn, when many construction companies went bankrupt and employees were laid off and forced to retrain to professions other than the construction sector. In addition, the construction sector has great difficulty in attracting and retaining the technology-born millennia generation, despite technological developments in the sector.

Our local experts across Europe expect that if the construction industry is not able to attract more and qualified labor or find new ways to drastically improve productivity, the chronic labor shortages could result in substantial negative economic impact.

Disruptive innovations

The construction industry is generally considered a traditional industry in which innovation is limited.

Smart materials
Start-ups work on improving existing materials by reconstructing the chemical structure of building materials to turn them into smart materials, such as self-healing concrete, thermal insulation, aerogel and photovoltaic glazing. These innovations harness energy from pedestrians and cars to instantly generate solar energy for skyscrapers, avoid the ruin of concrete and reach a maximum efficiency of thermal bridging.

Virtual & Augmented Reality (VR & AR)
VR and AR makes it possible to test every centimeter of a building in an artificial computer or robot. Therefore, these technologies help avoid possible danger in the construction process to persons. One example is testing the resilience of roofs under different weather conditions.

3D printing & additive manufacturing
Professionals use 3D printing technologies to develop detailed models as well as real size objects. It is already possible to build 3D printed houses in less than 24 hours, at relatively low costs.

Internet of Things (IoT)
The value of IoT in the construction sector is based on collecting data and online inspection infrastructure. One example of this perspective is that in the near future street lights can measure traffic and warn people in traffic about possible accidents. It does so using numerous sensors that will have the possibility to catch every potential threat signal.

Construction Management Software (CMS)
CMS comprises the adaption of intelligent software solutions, such as measuring and managing build materials in warehouses and the prediction of procurements for iterations, with which intelligent software solutions save a lot of valuable time and money. The intelligent software provides a clear understanding of a building company's performance.

Drones
Drones make it possible to provide construction companies with high-quality and precise information. In the construction industry, they are used to inspect and deliver data in a very short amount of time, making this technology a resourceful and efficient solution.

New construction industry parties

Innovation and digitalization in the construction industry are not only driven by traditional construction companies. Over the past few years a lot of companies specialized in innovative technologies and services have entered the construction industry. Some of these companies could become construction industry disruptors. This trend towards innovation and digitization has also attracted Private Equity to the sector, who have remained absent for a number of years. A few new entries are introduced below.

The Boring Company

Elon Musk's Boring Company aims to enhance tunneling speed while reducing costs by new technologies. The goal of The Boring Company is to reduce the costs of tunneling by a factor of 10 or more. By placing vehicles on a stabilized electric skate the standard tunnel diameter could be reduced in half, reducing costs by 3-4 times. Furthermore, the company aims to increase the speed of tunnel boring machines through, e.g., automation, increasing power and going electric.

Toronto Smart City Development – Alphabet/Google

The city of Toronto has handed over the responsibility for part of its infrastructure to Alphabet, Google's holding company. Alphabet's subsidiary Sidewalk Labs has signed an agreement to develop the 800 acres waterfront land to a hypermodern wired city in which infrastructure and buildings become flexible and responsive to their users continuously changing needs. The combined vision of Alphabet and the city of Toronto aims to integrate the latest digital technology to the urban landscape in order to address some of the biggest challenges facing cities including energy use, housing affordability and transportation.

Tesla Solar Roof

In 2016 Tesla announced the production of the Tesla Solar Roof, combining product innovation and sustainability with a traditional product. The glass roof tiles consist of a large amount of solar cells while its design looks like traditional types of stone or slate tiles.

Industrialization of construction processes

Not a new one on the block, though recently gaining new momentum is the industrialization of construction processes. More companies are looking at the fabrication of building parts. The maturation of concrete printing methods enables companies to scale up and robotize prefabrication of building parts off the building site. Companies like Voorbij Prefab in the Netherlands are becoming more and more visible in the construction industry.

Innovation and digitalization in the construction industry are not only driven by traditional construction companies. Over the past few years a lot of companies specialized in innovative technologies and services have entered the construction industry.

CLOSE-UP

Digitalization and technology strategies of construction companies

Adaptation of new digital technologies takes a flight in the construction industry. All construction seminar nowadays address the latest trends, such as 3D printing or Smart Materials. But to what level is digital construction part of the strategies of European construction companies? This section focuses on the strategy of six of Europe's largest construction companies. The companies include Vinci, ACS, Skanska, Strabag, Balfour Beatty and BAM. The analysis is based on their annual reports.

Top European construction companies make a strong effort to understand the benefits of using innovation and technology developments in activities in their business. They all share a focus on new technological developments, new business creation and knowledge investment. Such focus enhances customer interaction early on in the construction process and connects all process stakeholders through digitalization. All the top performers in the European construction sector develop new technology applications, such as drones and robotics.

Company	Country	BIM	3D/4D printing	Robotization/ Drones	Partnerships & knowledge sharing
Vinci	France	Specifically appointed	Specifically appointed	Specifically appointed	Specifically appointed
ACS	Spain	Specifically appointed	Not appointed	Generally appointed	Specifically appointed
Skanska	Sweden	Generally appointed	Generally appointed	Generally appointed	Specifically appointed
Strabag	Austria	Specifically appointed	Not appointed	Specifically appointed	Specifically appointed
Balfour B.	UK	Specifically appointed	Specifically appointed	Specifically appointed	Specifically appointed
BAM	Netherlands	Specifically appointed	Specifically appointed	Generally appointed	Specifically appointed

Specifically appointed   Generally appointed   Not appointed

The table above shows the six construction companies and the extent to which they address the themes (robotization/drones, 3D/4D printing, BIM and Partnerships and knowledge sharing) in their strategy. As shown in the figure, all of the top construction companies mention the focus on digital innovations as a part of their strategy. Almost all of the companies analyzed describe projects where BIM technologies are applied. Furthermore, the focus on partnerships is increasing. All of the companies discuss particular partnerships and sharing knowledge with universities in the technology business. However, contrary to expectations there is little focus on the supply chain.

Digitalization and technology strategies of construction companies

For example, NCC digitalizes the construction processes and architectural drawings to capture possible design errors before construction starts, sharing information with suppliers about the exact materials to deliver. Their program, Virtual Design and Construction (VDC), allows to follow and visualize project progress and allows to enter into a dialog with customers at an early stage, offering and overview of the quality, time and cost of the project. Skanska uses automation and robotization of the construction process, and focuses on BIM, autonomous vehicles, automation and robotics, material advancements, drones and 3D printing. Eurovia, a subsidiary of Vinci is also developing new predictive maintenance systems by integrating networks of sensors in road and rail infrastructure.

Digital strategy of top EU construction companies strongly focused on internal start-ups and partnerships with innovation ecosystems

The top European construction companies all focus on innovative technological developments. In order to become leading in digitalization, the strategy of the largest construction companies is strongly focused on digitalization and technical innovation. Themes that feature prominently in their annual reports. Furthermore, the creation of new start-ups is growing, both internally and through collaboration and partnerships with other ecosystem players.

4. M&A analysis

The earlier sections have outlined the market developments and shaping trends of the European construction industry. But how can these developments and trends be translated into or reflected in M&A activity? This section elaborates on the M&A developments in the European construction market.

Building on the previous editions, we have analyzed the M&A activity of construction companies combined with installation, engineering and infrastructural companies involved in the construction sector. Including them in the sample size allows for the presentation of a comprehensive picture of M&A activity within the construction sector.

Developments in 2016 – 2017

Due to the economic recovery in local construction markets, Deloitte expected an increase in market activity with an increase in the number of M&A deals. This seems to be holding true for 2017.

M&A activity within the European construction sector shows a significant rise over 2017 compared to a relatively stable level of M&A activity during previous years: 194 deals were recorded in 2017 compared to 149 deals in 2016. We have been noticing a continuous increase in the number of deals since 2013.

Although consolidation of market growth is expected in most of the European construction markets for the coming years, we expect the upward trend to continue over 2018.

Strong focus on residential markets

The significant increase of the targeted Residential Builders is remarkable. Over 2017, 42 deals targeting a residential builder were noted, compared to an average of 21 deals over the past four years. This significant increase reflects the flourishing housing markets in many European countries.

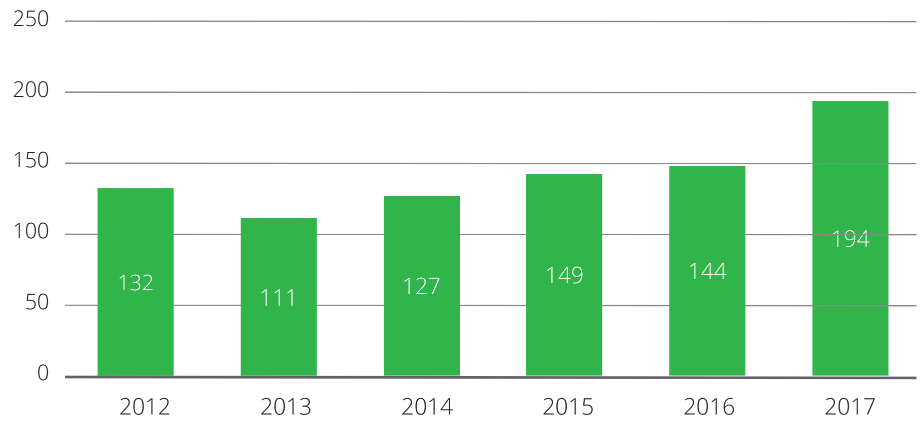


Figure 1: number of transactions in the construction sector
Source: Mergermarket, 2018

Bidding war around Spanish toll-road operator Abertis Infraestructuras SA

In May 2017, Atlantia SpA, the Italian based and listed infrastructure company, announced a voluntary tender offer to acquire Abertis Infraestructuras S.A, the Spanish based and listed infrastructure company. However, in November 2017, Hochtief AG, the German listed and based construction company majority owned by Spanish based ACS made a counter offer for Abertis. In December 2017, both bidders were preparing to improve rival offers in a nearly 20 billion euro takeover battle. However, Atlantia confirmed in March 2018 that they had come to a preliminary deal with Hochtief under which they will take joint control of Abertis, putting an end to a bidding war that lasted for over more than four months.

Increased market value

The average deal value of individual transactions increased to EUR 327 million in 2017, up from EUR 203 million in 2016. Compared to an average deal value of disclosed transactions of approximately EUR 241 million in 2015 and EUR 253 in 2014, the average deal size seems to be significantly higher compared to the past 4 years. The increase in average deal value indicates an increase in market value driven by an economic uplift in most European construction markets.

Focus on strengthening position in local markets

Strategic deals, i.e. non-PE deals, show an increase for the fourth year in a row: 150 strategic deals in 2017 compared to 81 in 2013. The share of strategic deals compared to the total deals in the industry remains stable at around 77.3%. Since 2010, the share of strategic deals has fluctuated between a maximum of 82.4% (2010) and a minimum of 73.0% (2013).

Strategic deals can be divided into two main categories: diversification deals and core deals. Diversification deals involve transactions in which the buyer and seller are not within the same industry, while in core deals they are. In 2017, there were 92 core strategic deals compared to 67 in 2016. The share of core deals compared to the total number of deals remains relatively stable. In 2017, the share of deals focusing on the core business was 47.4% compared to 45.0% in 2016. The share of diversification deals is also in line with last year's monitor. In 2017, 29.9% of all deals were recorded as diversification deals, compared to 28.2% in 2016.

The increase of the share of strategic deals in general and the share of deals focusing on core business more specifically, indicates that construction companies are focusing on strengthening core business.

The divestment of Heijmans

Heijmans announced in 2016 it would reduce their focus to the Netherlands with a tightened focus on core competences. This resulted in the divestment of the Belgian activities and the sale of all German activities over 2017. The Belgian activities have been divested to Besix.

For the second year in a row the share of cross-border deals showed a slight decline: 47.9% in 2017 compared to 54.9% in 2015, although the absolute number of cross-border deals increased to 93 cross-border deals in 2017, up from 76 cross-border deals in 2016. This also applies to the share of intercontinental deals within the cross-border deals: 39 deals in 2017 compared to 34 in 2016.

Combined with the increase in the total number of deals and an increase of the share of strategic deals, these trends indicate that construction companies are seeking to generate more profits in their national markets. This corresponds with the recovering local construction markets across Europe. However, the international focus, both on the continent and intercontinentally, continues to be a dominant strategy for most of the larger construction companies.

The increase of the share of strategic deals in general and the share of deals focusing on core business more specifically, indicates that construction companies are focusing on strengthening core business.

Rapid market recovery leading to a new construction crisis?

Since 2013, we have increasingly reported signs of market recovery in most of the local European construction markets. The number of insolvencies is an indicator of market recovery. Figure 4 illustrates the continuation of market recovery in the Europe construction sector since 2011. Compared to 2015, the number of insolvencies in the construction sector in Western Europe dropped by 7.1%. In Central & Eastern Europe, the number of insolvencies remained relatively stable with a slight increase of 0.8%. Fueled by the economic uplift of most of the European construction markets, we expect the number of insolvencies to drop further over 2017.

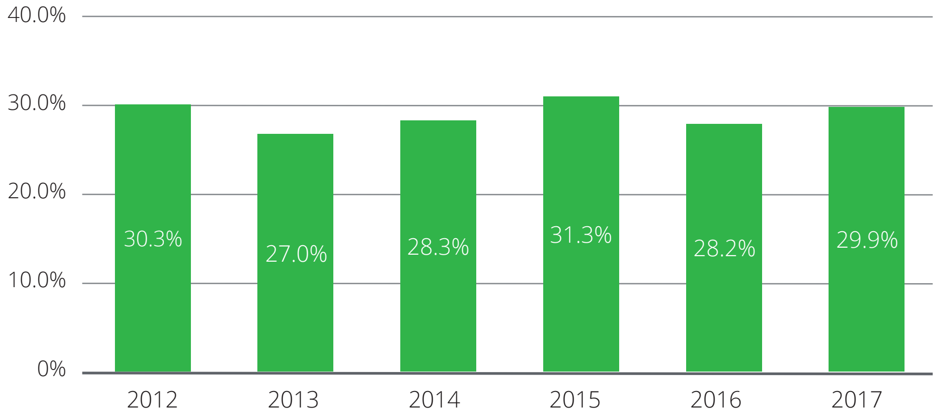


Figure 2: Percentage of cross-border transactions
Source: Mergermarket 2018

Stukton transfers shares Tidal Bridge BV to BAM

A joint venture of Strukton International and DEC started a feasibility study for the Palmerah Tidal Bridge project in Indonesia. This project involves the construction of a floating bridge with the world's largest tidal power plant connected to it.

Tidal Bridge was an innovation in a new country for Strukton from the start of this research. In a reconsideration of the strategy, it was decided that Indonesia will not be a home country for Strukton in the near future.

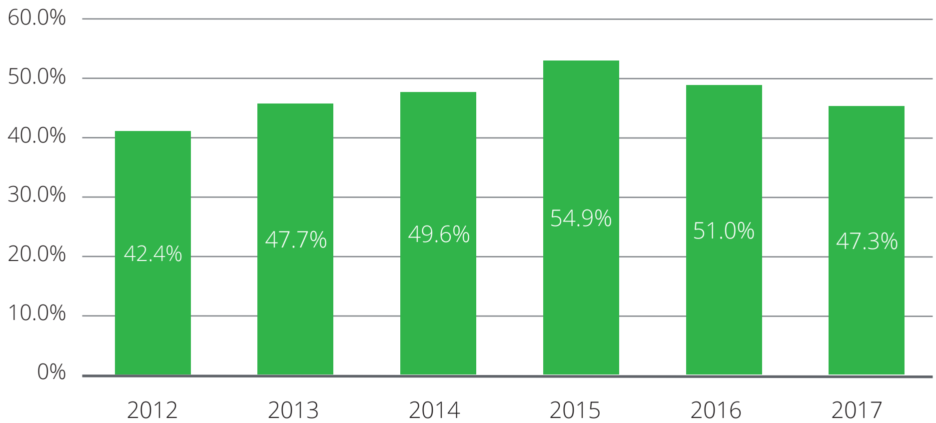


Figure 3: Percentage of diversification transactions
Source: Mergermarket 2018

In contrast to the decline of the total number of insolvencies the construction industry is possibly facing a new crisis due to the rapid market recovery. In most Northwestern European countries supply chain pressure has increasingly become a major issue for construction companies over the last few years. This has not only resulted in pressure on margins of the larger construction companies in these markets, it has also resulted in the slowdown of construction production due to high prices and lack of personnel and the insolvencies of construction companies due to unprofitable projects.

In January 2018, the UK's second-largest construction company Carillion filed for bankruptcy due to payment delays and overreaching on unprofitable projects in 2017. Carillion's bankruptcy has mayor implication for over 45,000 current and former employees and ongoing projects, for which a solution must be found in the course of 2018. In the Netherlands, a relatively small construction company called Moonen has filed for bankruptcy in 2018, for reasons similar to those of Carillion. The Dutch construction company VolkerWessels, which raised EUR 575 million through an IPO in May 2017, has recently announced the delay of several projects due to increased prices and declining flexibility of suppliers. Construction firms should look at new ways to industrialize their sector in order to counter their supply chain issues and take advantage of the huge market demand. Based on the expected continuation of market growth in markets facing high levels of supply chain pressure, we expect to see more construction companies struggling with agreed project budgets resulting in project delays or even insolvencies.

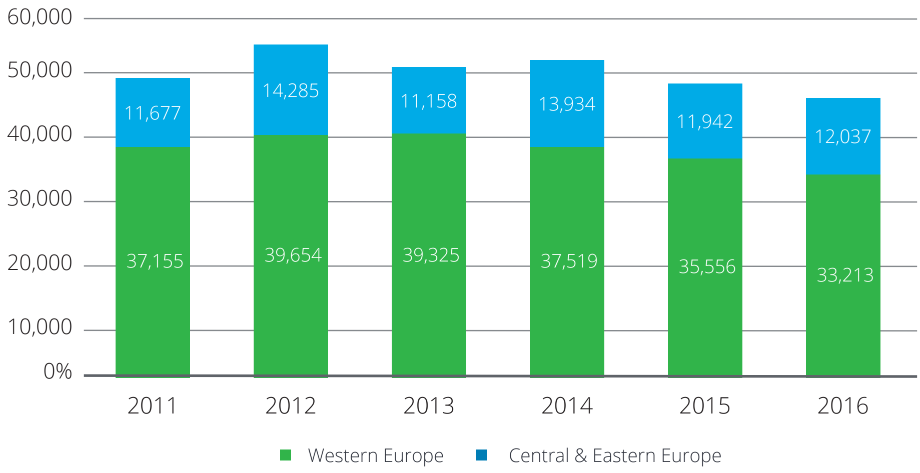


Figure 4: Number of insolvencies in the construction sector
(Source: Creditreform.de, 2017)

M&A not (yet) utilized for realizing digitalization agenda

Almost all larger construction companies aim to become leading in digital construction over the next few years. The top 50 European construction companies claim that digitalization is a significant part of their strategy, often substantiated by exemplary projects or clear targets.

Hence, we would expect construction companies to utilize M&A to achieve their strategic objectives. However, little to no evidence has been found to underpin this strategic focus on digitalization and technology within the M&A activity of the Top 50 European Construction companies. The majority of these companies behave traditionally on the M&A market with a focus on the construction, real estate, energy and transportation (toll road operators) sector. One exception is Vinci. In contrast to the other large construction companies, Vinci has been very active in acquiring digital and technology companies over the past few years.

While a few M&A digitalization and technology focused transactions took place over the course of 2017, M&A activity is thus not (yet) used to achieve these strategic objectives. Our local experts indicate that the majority of the European construction companies are adapting internal departments to meet the strategic objectives.

In January 2018, the UK's second-largest construction company Carillion filed for bankruptcy due to payment delays and overreaching on unprofitable projects in 2017.

Vinci and its utilization of M&A activity to make the digital strategy viable

Although the majority of the top 50 European construction companies tend to achieve their digital and technology strategy internally, Vinci seems to be one of the exceptions. In February 2017, Vinci Constructions acquired a 30% stake in XtreeE SAS, a France-based developer of 3D printing technology for architectural design. In November 2017, Vinci Energies UK required Cougar Automation, a UK-based company that provides services in Cyber Security, IoT and Control Systems Integration.

5. Conclusion

Driven by the market recovery, M&A activity in the European construction sector is finally picking up. This section sums up the most notable trends in the industry and elaborates on what to expect in the coming years.

Most European construction markets show largely positive indicators for growth focusing on strengthening positions in local markets. Based on the continuing market growth in both Northern, Western and Southern Europe, we expect a continuation of the increase in M&A activity.

Construction companies in mainly Northwestern European countries are facing challenges resulting from continuing supply chain pressure. A new construction crisis is looming with companies in the UK and the Netherlands struggling with rapid price increases in the supply chain and a shortage of qualified personnel. We expect these trends to continue to hamper margins of the larger construction companies and also production planning, thus possibly leading to more insolvencies.

Meanwhile digital construction is the hottest new theme in the construction industry. Most construction companies recognize the importance of technological innovation and elaborate on their digital agenda in their strategies to some extent.

Furthermore, industrialization is a ‘must’ theme again. However, analyzing the M&A activity of the top 50 European listed construction companies shows that the majority does not utilize M&A to realize their digital agenda. The main focus is on internal start-ups and partnerships with innovative ecosystems. One exception is Vinci, which has been active in the acquisition of digital and technology companies over the past few years. In order to realize their challenging digital ambitions we expect more construction companies to follow Vinci’s M&A strategy.

Furthermore, several disruptive innovations are entering the market, such as smart materials, VR & AR, IoT and 3d printing. Over the past few years a lot of companies specialized in innovative technologies and services have entered the construction industry. In order to become leading in digitalization, the strategy of the largest construction companies is strongly focused on digitalization and technical innovation.

Appendix

Construction sector in Europe – outlook

The following table highlights the opinions and views of local Deloitte specialists on the short and medium term outlook for local construction markets. Subsequent pages provide extensive insights for each country.

Country	Outlook	Highlights
Austria	o/+	• The M&A strategy of Strabag SE is focused of expansion in its special division, PPPs, property development and property management services and is looking for acquisitions in these fields • Porr is searching suitable targets in its core markets in Austria, Germany, Switzerland, Poland, the Czech Republic and Slovakia to raise its market share and strengthen its work force
Belgium	o/+	• Profit margins continue to be under pressure as construction businesses suffer from high labor costs, compared to Eastern Europe, and considering factors such as the stagnating economic climate and the reduced public spending due to budget constraints • Mainly due to the compressing margins, M&A in the construction sector is characterized by an increasing focus on diversification deals and the reinforcement of the local position
Czech Republic	o/-	• The development and construction forecast for 2018 and the following years is more critical than current rates of decline • There are no noticeable large M&A transactions in the construction market in Central Europe
Denmark	o/+	• The Danish construction market is expected to grow at a rate of 10-15%. The total market will probably grow 5-10%, but the market share for the larger companies will increase. Therefore they will grow10–15%. • M&A activity levels are generally high but not in the construction sector, where the number of transactions is limited.
Finland	+	• Private equity companies are expected to continue to consolidate smaller and mid-sized construction companies • The usage of BIM is gaining traction, especially in planning and construction projects. However, some might argue that fully adapting BIM into operations would need a generation shift in the engineering and construction companies
France	o/+	• After several years of decline and a moderate growth in FY2016, FY17 was a positive year for the construction sector, essentially driven by the residential sector. Further (although lower) growth is expected for FY18 • M&A trends are characterized by continuous focus on diversification and international deals. However, there are some limited local and pure construction transactions as well
Germany	o/+	• The short-term and mid-term outlook for the German construction market predicts an ongoing strong demand for housing and infrastructure investments • Many players in the market are making strong efforts in implementing and improving digital construction know-how and processes
Greece	o	• The Greek economy is recovering and expected to grow in the coming years • During 2017 M&A activity within the Greek construction and infrastructure sector has rebounded
Ireland	o	• US Private Equity funds, which hold around 40 sites valued in excess of 800m, are expected to continue deleveraging their positions, considering their typical investment parameters, with greater levels of institutional investment entering the country from the US and Europe
Italy	o	• The Italian economy continues on its road to recovery, the same goes for the construction sector which reported an increase in total construction investments of 0.3% in real terms for 2016, mainly due to the non-residential construction subsector • The larger Italian companies in the construction sector are focusing their growth strategies on developing and diversifying their overseas books, both in developing markets (Africa and Asia) as well as growing into established markets that require large infrastructure investments (e.g. USA)

+ : optimistic o : neutral – : pessimistic

Country	Outlook	Highlights
The Netherlands	o/+	• 2017 was the fourth consecutive year in which production in the construction sector in the Netherlands increased • This growth in the construction sector has a big impact on the workforce. In the period of 2018-2022, the construction sector will need 55,000 new employees in executive construction
Norway	+	• Construction is a major driver of Norwegian economy, as the industry accounts for 16% of Norwegian GDP • Norwegian housing prices have decreased in 2017, mainly driven by a decrease in the Oslo area. Statistics Norway has forecasted Norwegian housing prices to fall continuously in both 2018 and 2019, until a moderate increase by 2020
Poland	o/+	• The strategies of construction companies in Poland comprise organic growth rather than through M&A. • Polish construction companies are focusing on the Polish market and its core strategy although beyond 2020 there is awareness of the need to diversify, especially construction companies which are significantly reliant on publicly procured contracts and EU funds
Portugal	o	• Larger sized construction companies are acquiring small and medium-sized construction companies with the intention of expanding services or with vertical integration in mind. • Larger companies are focusing mainly on deleveraging through the sale of non-core assets. Construction companies focus on core assets and continue to focus on international markets, especially Africa and Latin America.
Spain	o	• The recent appointment of a new Government in Spain, due to a no-confidence vote in parliament, could delay or even halt the highly awaited € 5bn PIC motorway PPP • Private equity has focused its activity on higher value added assets, such as parking or gymnasiums concessions, where, due to the atomization of the Spanish market, a build-up process can take place and operational adjustments are easier to perform • The two main strategies of the major construction companies involve internationalization and debt restructuring processes, which include deleveraging and core business focus
Sweden	+	• The growth in the construction market will continue in 2018, but to a lesser extent than in the years before • Sweden's M&A activity is stable and in line with the activities over the last years. The division of deals within the same country or outside the country are evenly distributed
United Kingdom	o/-	• Government spending cuts and the withdrawal of private sector investment plans following the referendum vote prompted construction output to slip, by 1.1% from July to September, the biggest quarterly fall for four years • Currently, the construction industry is facing margins pressure, and has struggled to recover to the pre-financial crisis levels. Whilst margins have had short periods of improvement, the overall trend over the last decade is one of decline • It is expected that the construction market will be in decline in the short to medium term as the uncertainty of the Brexit process unfolds • There are some sub-sectors which are expected to buck this trend namely housing and in particular social housing where the UK has a large and growing deficit. This sector is expected to benefit the most from positive government stimuli. • The tech enabled sector is also expected to grow with the UK expected to be the global leader in this sector in the coming years. Private Equity is seen as the incubator for this trend and we expect to see a number of M&A transactions to drive this.

+ : optimistic o : neutral – : pessimistic

Overview per country

(in alphabetical order)

o/+ Austria

The Austrian construction sector exhibits marginal growth (1.4% - 1.6% in 2017 and 1.6% forecast until 2021) and a stable development in the sector's employment level (1.2% for 2017). The margin pressure is still high. It can primarily be countered by reducing production and logistics costs. This is due to regulations in the subsidized housing sector and limited public investments due to stressed public households and the European stability pact. This forces competitors to build faster at lower costs which requires higher efficiency and productivity.

Many digital technologies in the Austrian market, i.e. paperless construction sites, simultaneous engineering, digital logistics and invoicing, crowd investing, automation and predictive maintenance, create fundamental changes to processes in the construction industry. According to the real estate experts these technologies will have a major impact on the business.

The implementation of BIM systems in Austria has been gradually gaining in significance in the last few years, a tendency which is expected to continue in the coming years. Smart contracts are not that common so far. However, in the public sector Wien Energie has been working on a pilot program where experimental Blockchain purchases with live trading systems have been run. The first Blockchain transaction, involving an international gas transaction, was concluded on that basis in November 2017.

o/+ Belgium

The Federal Planning Bureau estimates the economic growth to be 1.7% in 2017, mainly driven by increased consumer spending and business investments. This is projected to be slightly less in 2018 – 2022, mainly due to lower productivity and demographic aging. Last year, the M&A activity in the Belgian construction market continued to be very diverse, in line with previous years, and this is expected to go on in the coming years.

In comparison to other countries, Belgium's real estate expert notice an increasing focus on diversification deals, mainly due to shrinking margins and due to the construction sector's cyclical character. The proportion of cross-border transactions is similar to domestic transactions. Profit margins continue to be under pressure, as construction businesses suffer from high labor costs, compared to Eastern Europe, and considering factors such as the stagnating economic climate and reduced public spending due to budget constraints.

Currently, the digitalization in the Belgian construction sector is limited. Real estate experts claim that this is mainly because contractors do not seem to think the new technologies are necessary to apply in the industry. However, in Belgium there is a slight increase in the use of digital technologies such as connected technologies, BIM, robotization and 3D-printing. While large construction and engineering companies increasingly use BIM, compared to its neighboring countries (UK, FRA, NL) its use in Belgium is not widespread.

Furthermore, in Belgium the following trends are observed: more diversification towards real estate development, more integrated solutions for infra and capital projects including associated services in terms of maintenance & operations after delivery.

o/- Czech Republic

The result of the construction industry for the year 2016 was a 6.3% year-on-year decline. The construction production volume has dropped back to the level of the year 2012. According to the Czech experts the development forecast for 2017 and the following years is even more critical. Furthermore, there is a lack of major noticeable M&A deals in the construction market in Central Europe. The market is still recovering from the financial crisis, which heavily affects the construction market.

Central Europe focuses on the core domestic business, rather than diversification. Furthermore, due to increased prices of building materials and increased wages in the construction sector, Central Europe expects that large construction companies will acquire specialized subcontractors. However, it is not expected to be a major trend.

The trend of digital construction and BIM construction in the construction market is in its early stages. The market slowly changes the existing environment and tries to adapt to digital construction activities. Within the concept of Construction Industry 4.0, there is an increase in the interest in themes such as innovation, robotization and digitalization.

The construction industry is facing a long-term lack of high quality and qualified workers, encompassing craftsmen, technicians and managers alike. The industry has been challenged by a shortage of qualified staff for decades.

o/+ Denmark

The Danish local experts expect a 10-15% growth rate in the construction market. There is a shortage in human capital resources. This is the greatest challenge for more than 50% of the companies in the sector in the coming year.

M&A activity levels are generally high, but not in the construction sector, with its very limited number of transactions. The construction sector had no noteworthy deals in 2017, even though the market is expected to show a 10-15% increase in activities and profits in the coming year. Profitability is getting better - not because of efficiency gains but due to the high activity level. PPP is still waiting for the final breakthrough in Denmark. Construction companies focus on their core activities and local markets instead of diversification and internationalization.

Increased digitalization is on the agenda, especially at larger companies. Danish experts expect BIM and digital construction to mature in the coming years among the large and medium-sized companies. The sector uses BIM on a broader scale. Implementation of VDC, drones, and 3D printing is limited to the large companies only. Cyber risk is a focus area for many construction companies, especially the larger companies. However, it is an area for further development.

+ Finland
In 2017, construction volume growth in Finland was strong at 5% at same time when Finland's GDP in real terms grew by 2.6%. While the GDP growth is expected to slightly accelerate in 2018 to 2.9%, the construction volume growth is seen decelerating to 2% being below the GDP growth first time since 2014.

Renovation construction in Finland is still expected to continue on a stable growth path in 2018, while housing construction could well reach its peak level this year. Currently, the construction sector's growth is slowing down and is expected fall to 0% in 2019 after years of strong growth.

Private equity companies are expected to continue to consolidate smaller and mid-sized construction companies. Furthermore, some Finnish construction companies are currently looking to expand in Sweden.

Driven by increasing revenue, profitability has generally improved since 2014. In 2017, construction companies' profitability continued to improve as well and the sector's aggregate EBITDA margin rose to 5.9%, up from 5.1% in 2016.However, increasing costs may cause pressure on profitability in 2018. Large construction companies have experienced the largest profitability improvements, partly driven by new building construction and large projects.

The use of BIM is gaining traction, especially in planning and construction projects. However, some might argue that fully adapting BIM into operations would need a generation shift in the engineering and construction companies. As of yet, Smart Contracts and Blockchain are not widely used in Finland.

o/+ France
After several years of decline and a moderate growth in FY16, FY17 was a positive year for the construction sector with a 4.7% growth. The growth was essentially driven by the residential sector. A further growth (although lower) is expected for FY18 (2.4%)
M&A standpoint FY17 was very active for lead construction groups such as Vinci, which acquired four companies: Seymour White, Infratek ASA, Eitech AB and Acuntia SA. The number of international transactions is still high, mainly with other European companies, and there is a clear increase in the number of acquisitions in France, which is in line with the recovery of the French construction sector. Although the focus on diversification continuous, FY17 saw a return of pure construction transactions (e.g. Seymour Whyte and Benedetti Guelp acquired by VINCI). The main focus of the larger French construction companies is on international markets (Europe, North and South America) but several significant local transactions took place in FY17.

The profitability of the sector continues to be relatively low and although the sector is recovering in terms of volume, no significant improvement in profitability is expected in the short term. The focus of construction companies is clearly on cash management. Cash management is an absolute priority for the companies in the sector due to the low margin generated. Most of the players are in a situation of negative working capital thanks to a tight monitoring of contracts cash position.

o/+ Germany
The short-term and mid-term outlook for the German construction market predicts an ongoing strong demand for housing and infrastructure investments. The construction industry shows a very high degree of capacity utilization, facing workforce shortness, increased competition for sub suppliers and increasing price levels.

Over the last few years, the investment of construction businesses to (mostly strategic) investors from outside Germany overshot German investments, with private equity only playing a minor role. A few years ago, German No. 1 Hochtief was taken over by Spanish ACS and the civil engineering business of the then German No. 2 Bilfinger was sold to (Swiss) Implenia. The largest deal in 2016 in Germany was Bilfinger's sale of their remaining Real Estate Business to private equity investor EQT. However, in 2017, EQT subsequently resold the building segment to Implenia again. While 12 years ago, 4 of the top 5 players in the German construction market were German-based groups, now 4 of the top 5 players are headquartered outside Germany.

German experts indicate that integration of additional business segments related to the core business is a relevant driver for M&A activities. In contrast, diversification beyond the supply chain is unusual. Currently, apart from the few very large construction groups, internationalization does not seem to be a major driver, as most players show a quite high degree of capacity utilization resulting from domestic demand. Investors from outside the construction industry (or the construction-related industry) rather stay away from the construction markets.

Many players in the market are making a strong effort in implementing and improving digital construction know-how and processes. The major challenge within the German market will be standardization, due to the fact that the construction landscape is quite fragmented. The German government and the major industry associations take significant and joint efforts to support standardization.

Innovations are applied all over the construction life-cycle with noticeably growing relevance. This may be a risk, especially for smaller or mid-sized, specialized suppliers. They could be displaced by new solutions. The major players show a certain level of supply-chain integration and tend to integrate such new technologies, accordingly.

o Greece

The Greek economy grew by 1.4% during 2017, following a 0% growth in 2016, while the average annual real GDP growth for the years 2018 to 2021 is estimated to be in the range of 1.9% or slightly above. After numerous reforms and austerity measures, Greece produced primary surpluses between 2014 and 2017 and also expects to do so in 2018 and the following years.

As part of infrastructure development and the privatization programs, significant infrastructure investments in airports, motorways, trains and ports have been completed, while a number of developments are under construction or in an advanced licensing phase.

During 2017, M&A activity within the Greek construction and infrastructure sector has rebounded. For example, an international tender for the 40-year concession of 14 regional airports reached its financial close in Q2 2017, as well as the disposal of 67% of Thessaloniki Port Authority for a consideration of €232m. Within the framework of the Greek Privatization Program, Athens International Airport (AIA) is to be awarded a 20-year extension of its concession agreement, expected to be concluded within 2018, for a consideration in the order of € 1.1 bn (plus VAT). Moreover, the Greek-Indian consortium of GEK Terna-GMR Airports has been short listed to undertake the design, construction, operation and maintenance of the new Kastelli airport, in Heraklion – Crete, an investment in the order of € 480 mn.

Apart from these concessions, several other transactions were completed in 2017. This includes the disposal of a 32 % stake in two major shopping malls to an international fund, the acquisition of 5-star hotels in Athens and other hotels in touristic destinations, while retail & office buildings primarily in Athens and Thessaloniki were acquired by Real Estate Investment Companies, as well as the marble quarry assets of a major marble producer that became insolvent.

Moreover, the tenders for long-term concession of Egnatia motorways and of ports and marinas are ongoing, while banks are disposing of non-core investments, many of them with significant assets such as hospitals and real estate backed non-performing loan portfolios.

o Ireland

The Irish construction sector has remained largely unchanged for decades. Factors such as one off engagements, bespoke contracts, unique buildings, on-site activities and the fragmented nature of the industry have all led to issues with supply chain management. Resource availability is seen as a critical issue in the Irish Construction Industry. At 6.2% in 2017, construction cost inflation was well above the national general inflation rate, largely due to upward pressure on labor costs. The economic downturn has resulted in historically low levels of new apprentices over the past 7-8 years across all trades. In addition, significant numbers of skilled workers and professionals emigrated from the country during the economic downturn which has compounded the skills shortage problem. Further, with large numbers of specialist subcontractors exiting the market, competition in certain key areas is weak, which is leading to escalating costs. It is projected, with the current increase in construction activity, that these issues will become even more acute in the short to medium term.

The Irish Construction Industry has traditionally been relatively slow on the uptake of new smart technologies, but momentum is now building quickly in this regard. With a significant upturn in activity within the sector, heightened client expectations and improving efficiencies, BIM activity is increasing rapidly in Ireland and is now mandatory for new centrally funded public projects in neighboring countries, England and Scotland. Through its Action Plan for Jobs 2017, the Irish government is committed to following a similar path by expanding its implementation.

In recent years, the property/construction sector has ranked fourth from an M&A perspective, behind technology, agri-food and healthcare/pharma. Construction sector transactions contributed to 1% of the total number of M&A deals completed in 2017, compared with 2% of transactions in 2016. US Private Equity funds, which hold around 40 sites valued in excess of 800m, are expected to continue to deleverage their positions, considering their typical investment parameters, with greater levels of institutional investment entering the country from the US and Europe.

o/- Italy

The Italian economy continues on its road to recovery with a GDP increase from 0,8% in 2016 subsequently rising to over 0,9%, which will be followed by the Italian construction industry. The sector reports an increase in total construction investments of 0,3% in real terms for 2016, mainly due to the non-residential construction subsector (0,6%) compared to residential (0,1%).

The larger Italian companies operating in the construction industry are focusing their growth strategies on developing and diversifying their overseas books. Both geographically into developing markets (Africa and Asia) as well as growing into established markets that require large investments in infrastructure (e.g. USA) and also across different business lines e.g. road, rail, ports, tunneling, buildings, etc.

Within the Italian construction industry there is an increasing sensitivity to integration within the construction cycle. Italian companies are developing "sustainable" – projects that have increasing balance from both an economic and environmental perspective that can also produce cost efficiencies. The approach looks to encompass the whole construction lifecycle from pre-construction to post-construction and retirement/demolition and disposal of the assets. By collaborating with the supply chain partners in the design and supply of the products the construction process is becoming fully aligned, to shorten the planning and forecasting process.

In comparison with the other major industries such as the manufacturing and automotive industries, the construction industry is very conservative in adapting new technologies. Industry players indicate that this is because the sector operates at low margins and has suffered a lack of investment in research and development over recent decades. However, construction contracts based on BIM technology are increasing. Of these projects, 58% relate to public works, demonstrating an increasing sensitivity of the public administration to this topic in recent years. BIM implementation is expected to continue to increase as the introduction of a new law related to public tenders ("Codice degli appalti D.Lgs 56/2017) stipulates that from January 1, 2019 the BIM will become obligatory for projects with a value greater than 100 m.

o/+ The Netherlands

In 2017, for the fourth year in a row, production in the construction sector in the Netherlands has increased. Due to economic growth, demand for both residential and commercial buildings continues to grow. Due to the flourishing housing market, the growth of construction was above average in the past year. The strong growth in housing construction is also driving infrastructure production. After the strong growth of 7% in 2016, the production increase this year amounts to 5.5%. For 2018 the construction sector is expected to grow by 4.5%.

This growth in the construction market has a big impact on the workforce in the Netherlands. Executive construction will need 55,000 new employees in the period of 2018-2022. Most of this demand is needed in the next two years, while the current inflow is only gradually growing. As a result, the pressure on the construction labor market will increase even further in 2018 and 2019. As from 2020, the construction labor market is expected to reach calmer waters.

Extensive digitalization is the next big thing in the Dutch construction sector. Mid-October 2017, the world's first 3D-printed eight-meter bicycle bridge was opened, made of pre-stressed and reinforced concrete. According to builder BAM, the bridge could carry 40 trucks. Eindhoven University of Technology is currently developing printed houses and aims to develop larger bridges, viaducts and other constructions with 3D concrete printers.

Construction is expected to play a key role in solving the environmental challenges facing society. Energy-neutral new construction in 2020, a big increase in productivity and a circular sector in 2050: solid goals that the Netherlands has committed to in the Paris Climate Convention. But innovating also involves risks. Cyber Security in terms of data protection & smart buildings is one of those risks. Most construction companies fail to address this right now.

M&A activities in the Netherlands are dominated by Heijmans. Heijmans sold German company Heijmans Oevermann GmbH to PORR Deutschland GmbH, part of the Austrian construction company PORR AG. The sale of Oevermann represents an important step towards further debt reduction and a structural improvement of the capital ratios. Heijmans also sold its subsidiary Franki, which specializes in foundations, to PORR Deutschland. Next to parts of its German subsidiary companies, Heijmans sold its stake in the Belgian companies Heijmans Bouw, Heijmans Infra and Van den Berg to Belgian construction company Besix. The transaction yields more than € 40 million for Heijmans, which the company will use to reduce its debts.

VolkerWessels raised € 575milion through its initial public offering on the Amsterdam stock exchange. The country's second-largest construction company had been fully owned by the Wessels family. The value of the entire group is more than € 1.8bn.

One of the biggest infrastructure projects in the Netherlands, the € 1.4bn Zuidasdok, comprises the widening and undergrounding of a southern motorway through Amsterdam's main business district. The design and realization of Zuidasdok has been awarded to ZuidPlus, a combination of Fluor, Heijmans and Hochtief.

+ Norway

In 2016, the total turnover for the construction industry in Norway increased by 5.7%. During the first half of 2017, the total turnover for construction activities in Norway increased by 7.8% compared to the same period of 2016. Revenue growth in construction has been stable over the past four years. the annual growth rate was between 5.0% and 6.8%. The largest growth in revenues has been in building construction, with an increase of 8.2% in the first half of the year. The lowest growth can be observed in infrastructure-related construction.

Interestingly, Norwegian experts observe that a sample of Norway's 500 largest companies across all industries reduced its EBIT by 8% from 2015 to 2016, whereas the 27 construction companies within top 500 increased their EBIT by 33%. Although they observe slim margins for the five largest companies, the margin development in the industry seems to be positive.

Construction is a major driver of Norwegian economy, as the industry accounts for 16% of Norwegian GDP. The Norwegian construction market continues to be highly fragmented, with a few large players and intense local competition. Only three construction companies (Veidekke, AF Gruppen, Skanska) in Norway exceed NOK 10 billion in revenues. M&A transactions in the Norwegian market in 2016 and 2017 primarily involved large players taking over midsize companies. In September 2017, Norvestor Equity AS (Norway-based private equity firm) acquired a 60% stake in Wexus Gruppen AS, a Norway-based manufacturer and supplier of semi-permanent modular buildings, established in 2016. The merger of Betonmast and Hæhre Isachsen Group forms the fifth largest construction company in Norway. The two former companies have been large in two different areas: Betonmast in residential and commercial property and public buildings, Hæhre Isachsen mainly in road construction.

Deloitte observes that current market conditions within large-scale public infrastructure such as roads and railways could lead to industry consolidation, as midsized Norwegian-based entrepreneurs find the market challenging due to competition from larger and often foreign firms.

Norwegian housing prices decreased in 2017, mainly driven by a decrease in the Oslo area. Statistics Norway has forecasted Norwegian housing prices to fall continuously in both 2018 and 2019, until they will rise moderately by 2020. However, the housing price development in 2018 YTD May has been strong with an increase back to peak levels in April 2017 before the down turn. Such development may affect building activity negatively in the years to come.

In recent years, international competition has increased. The economic downturn in Europe brings foreign contractors to a strong market in Scandinavia, particularly in engineering. The expected outcome is sharper competition, particularly in large-scale and complex construction and infrastructure projects.

Large Norwegian players recognize that the technological development and digitization will have a major impact on the building and civil engineering industry. NCC reports that VDC (Virtual Design and Construction) and BIM empower a major leap in technology, resulting in higher quality and lower costs in the projects.

o/+ Poland

The Polish construction market is expected to be in good standing in 2018–2020 due to solid GDP and investments growth expectations and significant EU funds available for infrastructure projects. However, shortages of skilled workforce in the construction sector translates into pressure on salary growth, combined with growth in the cost of materials which might not be fully passed through into construction contracts (especially procured by public authorities, i.e. road and railway construction contracts), might result in margins being materially squeezed out. The Polish construction market is already penetrated by well diversified construction companies that are part of the major international construction groups. The positive market outlook for the construction sector might potentially support M&A activity on the Polish Construction Market although currently transaction activity is low.

The strategies of construction companies in Poland assume organic growth rather than through M&A. Polish construction companies are focusing on the Polish market and its core strategy due to inflow of significant EU funds in Polish economy until 2020 from the current EU budgeting perspective. The Polish construction companies that already have international eminence, in particular in Scandinavian countries, state that they will focus on maintaining their market position on the international markets. Small/medium-sized construction companies, especially specialized in a particular construction segment, or having some long-term maintenance contracts, i.e. for road maintenance might represent interesting targets for larger construction groups. Another possible stream of possible transactions may come from the sale of companies by founders. Many companies in the construction sector were established in the early 1990s and now the founders are close to the retirement age. Without any successors for the companies, the founders might decide to sell the business.

There is an increased focus on digitalizing the major portion of the design stage, especially in large construction groups who has sufficient funds to utilize innovative technologies. Virtual modelling and drones have a huge potential and may significantly increase efficiency at the design stage. BIM is slowly becoming a recognized solution but it would be an overstatement that it is widely used on the local market.

o Portugal

The performance of the sector is forecast to accelerate, with a CAGR of 5,1% for the six-year period 2016–2022. IIt is anticipated a considerable investment in the sector will be driven by higher levels of residential and commercial construction. In addition to state subsidies for residential construction, the more consistent use of European funds for non-residential construction will also play an important role.

The strategic development plan for the Transports and Infrastructure in Portugal totals an investment of € 6.1 bn in projects for five main sectors (Railway, Maritime-Port, Highway, Public Transport, Airline) to be concluded until 2020. The construction of the second airport in Lisbon is expected to begin in 2019 and to be concluded during 2023, with an investment value between €300 to €400 m.

Moreover, the residential construction market is expected to increase in importance and account for 13.1% of the industry's total value in 2021 supported by on the growing strength of urban regeneration of city centers, highly correlated with the strong expansion of the tourism sector.

Larger sized construction companies are acquiring small and medium-sized construction companies with the intention of expanding services or with vertical integration in mind. Larger companies are focusing mainly on deleveraging through the sale of non-core assets. Construction companies focus on core assets and continue to focus on international markets, especially Africa and Latin America.

During the Portuguese financial crisis and subsequent construction crisis, specialized construction labor emigrated to other European countries and to African countries. Due to the increasing activity in the Portuguese construction market, construction companies are facing several challenges in getting the work done with quality and on time.

Although drones are being tested regarding construction of infrastructures (quality assurance), Portuguese construction companies are typically late adopters of new technology. As BIM is usually requested by clients in mostly medium-sized to large construction projects, Portuguese construction companies are preparing engineers to work with BIM.

o Spain

Spanish conservative Prime Minister Mariano Rajoy and his government were forced out of office on 1 June 2018 by a no-confidence vote in parliament, which resulted in socialist Pedro Sánchez becoming the new Prime Minister and a new Government being appointed in Spain. The country's infrastructure sector is currently uncertain as highly anticipated public investment plans such as the € 5 bn road PPP program known as the Extraordinary Investment Plan in Highways (PIC) could be delayed or even cancelled. Infrastructure funds already present in Spain have increased and consolidated their portfolios, basically on availability payments and minimum guaranteed revenues assets; infrastructure funds such as Aberdeen, DIF, Meridiam and JLIF have become common participants in most Spanish PPP processes. Furthermore, some new infra funds like Queens Point, Mirova and UBS have included Spain on their radar and are opening an office in Madrid. Their strategy focuses on availability payments and risk demand assets. Private equity has focused their activity on higher value added assets, such as parking or gymnasiums concessions, where, due to the atomization of the Spanish market, a build-up process can take place and operational adjustments are easier to perform. The direct foreign investment in real estate and infrastructure sectors has been increased to around 250%, where they have allocated funds of € 1,000 millions.

Two major construction company strategies were implemented in 2017, depending on the companies' financial health: (1) debt restructuring processes include bigger construction groups such as Sacyr and OHL as well as medium sized groups and (2) portfolio rotation strategy: focusing on their core activities and selling their mature assets try to raise equity for investments in new projects.

Spanish construction companies start analyzing the potential integration of their supply chain in order to align different parties and increase their projects' profits. There is no lack of availability of resources, suppliers or contractors. However, there is an increasing demand of more qualified roles, with international experience and skills and digital/new technologies capabilities (BIM being in demand the most). The construction sector in Spain has been historically slow to adapt new technologies. BIM techniques are still in the early stages of development and are not yet ready to be deployed at the scale and speed which would be required by for large projects on a consistent basis. The attempt by the Spanish authorities to regulate BIM use, at least at public sector level, will undoubtedly accelerate the adoption by the Spanish companies in the next few years.

+ Sweden

The overall construction market outlook for Sweden continues to be positive after the recovery in 2014. Public investments in infrastructure and housing are the main drivers for growth. Over 2016 the total construction output grew by around 4.5%. Growth is expected to stabilize over 2017 and 2018, mainly due to stabilisation of the total number of permits issued for the construction of residential buildings. As pointed out last year, Sweden is facing a housing shortage – especially in the major cities. The Swedish government has announced plans to provide financial support and build 250,000 houses by 2020. New amortisation requirements are expected to lead to a more balanced housing market.

In line with last year, M&A activity on the Swedish construction market remained steady. The number of transactions recorded in 2016 matched the 2015 activity. M&A activity on the Swedish construction market predominantly involves domestic transactions. Inbound and outbound cross border transactions are mainly recorded between Nordic countries. Of the four largest Swedish construction companies (NCC AB, Skanska AB, JM AB and Peab AB) only Skanska AB was involved in M&A activity in 2016. Skanska divested Skanska Installation to Assemblin AB.

o/- United Kingdom
'The UK construction sector experienced significant challenges throughout a turbulent 2016. Government spending cuts and the withdrawal of private sector investment plans following the referendum vote prompted construction output to slip by 1.1% from July to September according to the Office for National Statistics, triggering the biggest quarterly fall in four years.

UK construction sector growth slowed during June 2017, as political uncertainty and concern about the economic outlook deterred new orders. In 2017, the growth rate for new orders in June slowed to its weakest level since March of 2017. High activity levels in the sector at the start of 2017 came against a backdrop of rising labor and materials costs, a slowing housing market, fewer contracts for commercial offices, and nervousness about government delivery on infrastructure projects.

Currently, the construction industry is facing margins pressure, and has struggled to recover to the pre-financial crisis levels. Whilst margins have had short periods of improvement, the overall trend over the last decade is one of decline. The collapse of Carillion has had a material impact on the sector both direct through the cascade onto the supply chain and also a corresponding decrease in confidence in the sector. Analysis of available FY 2016 accounts indicate another drop in margins, potentially impacted by uncertainty following the Brexit vote. The impact of cost inflation in the sector is that of regional variation with London experiencing the majority of this. The impact is also expected to increase in the run up to and immediately post Brexit as European workers leave who form the backbone of the construction labour market. Higher margins in the UK construction sector tend to come from long-term relationships, such as five-year service contracts, rather than one-off building contracts. These long-term arrangements, such as for civil work, tend to be driven by organizations where establishing a relationship is key to accessing a pipeline of contracts.

Presently, governments are seriously promoting the use of DBFM (Design, Build, Finance and Maintain) contracts for their construction and infrastructure projects. In this structure, the government entity presently enters into an agreement with a private party under which it allocates responsibility such as designing, constructing, financing, operating and maintaining the project.

According to the UK, around 93% of construction industry players agree that digitalization will affect each and every point of value chain. The UK industry is aware of the importance of the megatrend toward digitalization. Digitalization of construction is one of the biggest trends facing the industry according to the UK, with BIM and compliance at the forefront of this shift to drive increased efficiency, productivity and ultimately improved margins from the construction sector. Tech-enabled construction businesses represent a small and niche vertical in the construction sector and one which UK experts feel is poised for a material opportunity for growth in the coming years. In addition it is expected that the increased adoption of BIM and tech enabled innovations will drive a modular/offsite revolution in the construction sector with design for manufacture and assemble forming being driven by government backed infrastructure projects.