



European Contractor Monitor **H1-2019**

Digital Construction

Preface

In a growing – or even booming – construction sector, the contractors are facing many challenges to meet their clients' requirements and demands. Building faster, building smarter, delivering a digital model are only a few of these challenges. Enabling digitalisation and using BIM could help contractors in their search for internal optimisation and external customer focus. This report focuses on the level of **digitalisation and BIM adoption** in the building construction sector in 8 European countries.

As a recurring chapter, the first part will profile contractors in each country in terms of project segmentation and economic development. The theme part, **digitalisation in construction**, will provide insights on the following topics:

- How do contractors exchange information with external stakeholders?
- With whom do they share information and what kind of information is shared?
- How often are certain 'digital tools' being used?
- Do they know and use BIM?
- Why have the contractors not yet started with BIM and when are they planning to do so?
- What is the attitude/ opinion towards certain digitalisation and BIM?
- What do the BIM users experience in their daily practice?

The **topics** that are and will be covered in 2019 are:

Recurring: **Profiling contractors** (project segmentation, economic development)

H1 2019 Theme: **Digital Construction**

H2 2019 Theme : **Media orientation**

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If there are any suggestions or remarks on our reports, please let us know. We're always looking for ways to improve, so your feedback is more than welcome.

 <p>Management Summary</p>	 <p>Profiling the Building Contractors</p>	 <p>Digitalisation in Building Construction</p>
 <p>BIM Users</p>	 <p>Appendices</p>	

Management Summary

In this report, you will find the results of the European Contractor Monitor 2019 H1, which focusses solely on the mid-sized (5 – 15 fte) and the large (16+ fte) building contractors in 8 important European countries.

It does not only contain data on the segments that contractors are active in, it also gives you a clear view on their attitude towards digitalisation and level of digital usage. Digitalisation and BIM usage is considered to be one of the most important construction trends for the upcoming years. This is being acknowledged by both architects (ArchVision) and contractors (European Contractor Monitor). From the European Architectural Barometer 2017 (ArchVision) we know that BIM usage amongst architects had shown a steady growth since 2013. European Contractor Monitor 2018 H2 also showed that, on average, one out of ten contractors use BIM in their projects.

Given the low level of BIM penetration in some countries, however, we decided to broaden the theme of Contractor Monitor 2019 H1: digitalisation of the construction sector. This report deep dives into not only BIM awareness and usage, but also into the level of digital usage and the general attitude towards digitalisation, especially in countries where BIM usage is still an exception. The questionnaire was designed in such a way that the BIM users received BIM-specific questions and those that do not use BIM received digitalisation questions.

As you will read in this report, Country X and the Country Y are the frontrunners when it comes to BIM. These are exactly the two countries that were also ahead in the application of prefab in projects (European Contractor Monitor 2018 H2). It is clear that digitalisation helps prefab and that applying prefab requires a certain level of digitalisation. There are, however, different reasons why these countries are more used to BIM. In Country X, the crisis experienced at the beginning of this decade triggered contractors to do things differently and in a more advanced way. In Country Y, on the other hand, the government is the main driver for using BIM. This governmental influence is seen in other European countries as well. In the devoted chapters, more detailed information and insights are provided.

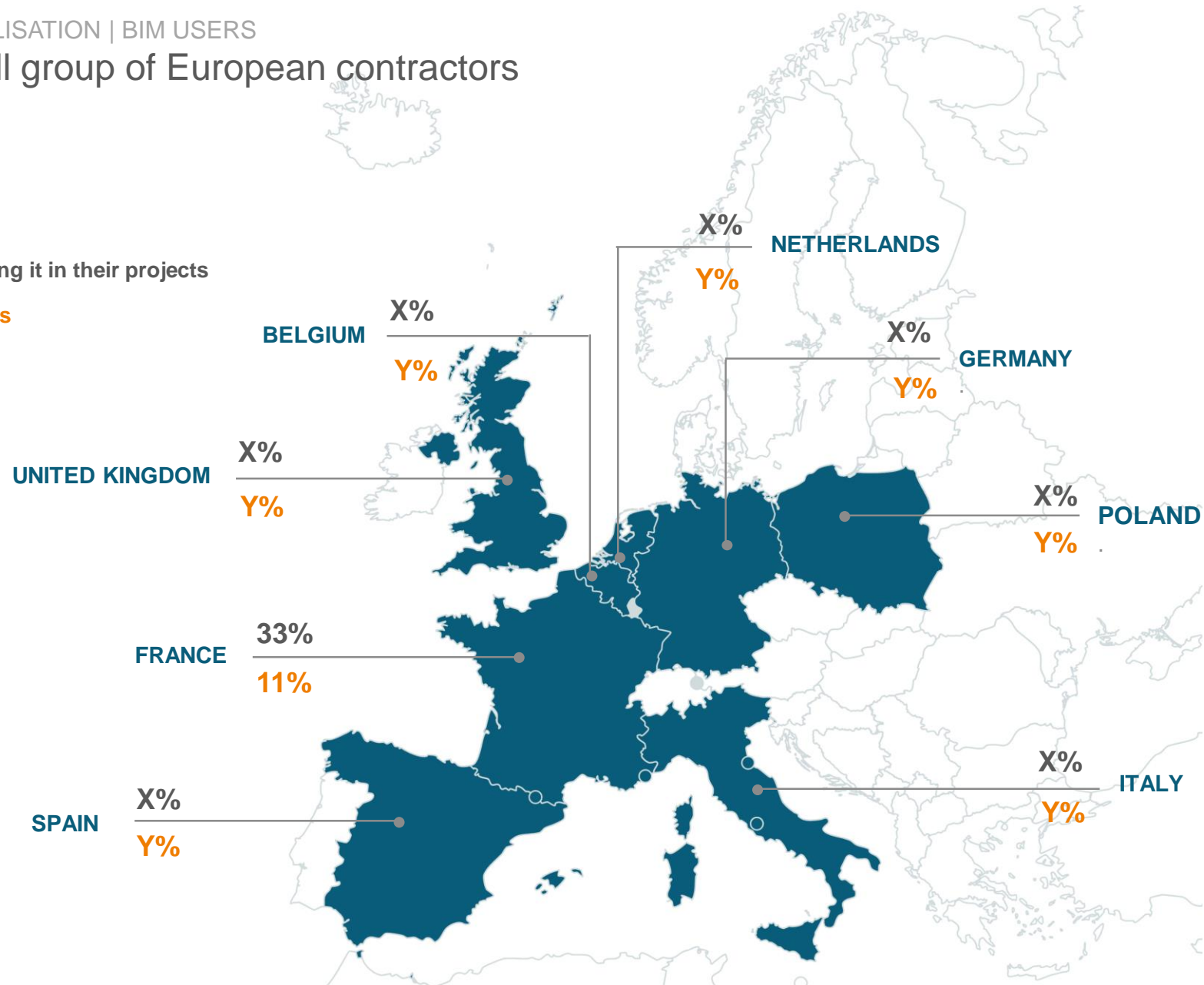







BIM is used by only a small group of European contractors

BIM penetration in Europe

% of contractors aware of BIM, but not using it in their projects

% of contractors using BIM in their projects

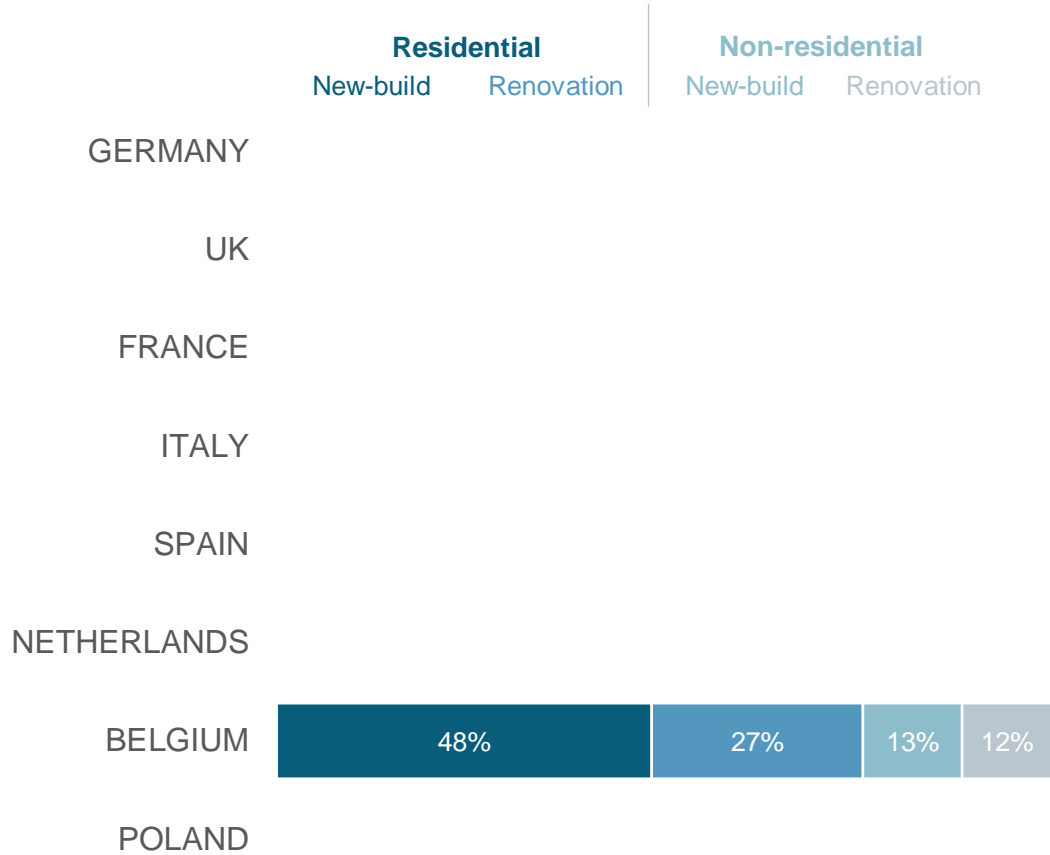


 <p>Management Summary</p>	 <p>Profiling the Building Contractors</p>	 <p>Digitalisation in Building Construction</p>
 <p>BIM Users</p>	 <p>Appendices</p>	



On average, more than half of European contractors' turnover comes from residential projects

What percentage of your **turnover** do you get from ... projects?



In Country X and country Y, contractors rely more heavily on residential renovation and non-residential renovation projects than in other countries.

X contractors have the highest share of non-residential projects in their turnover distribution.

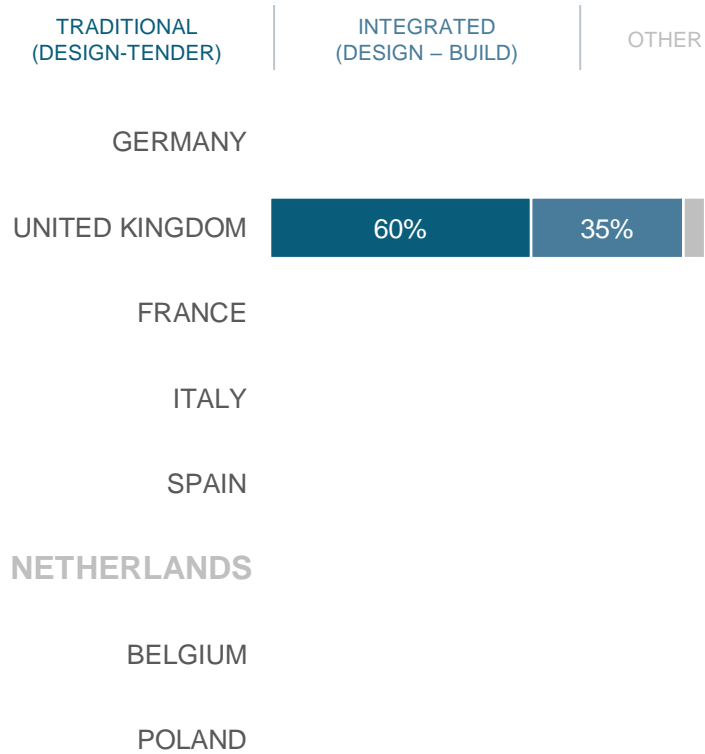


European contractors still work with traditional contracts. However, there are differences between countries.

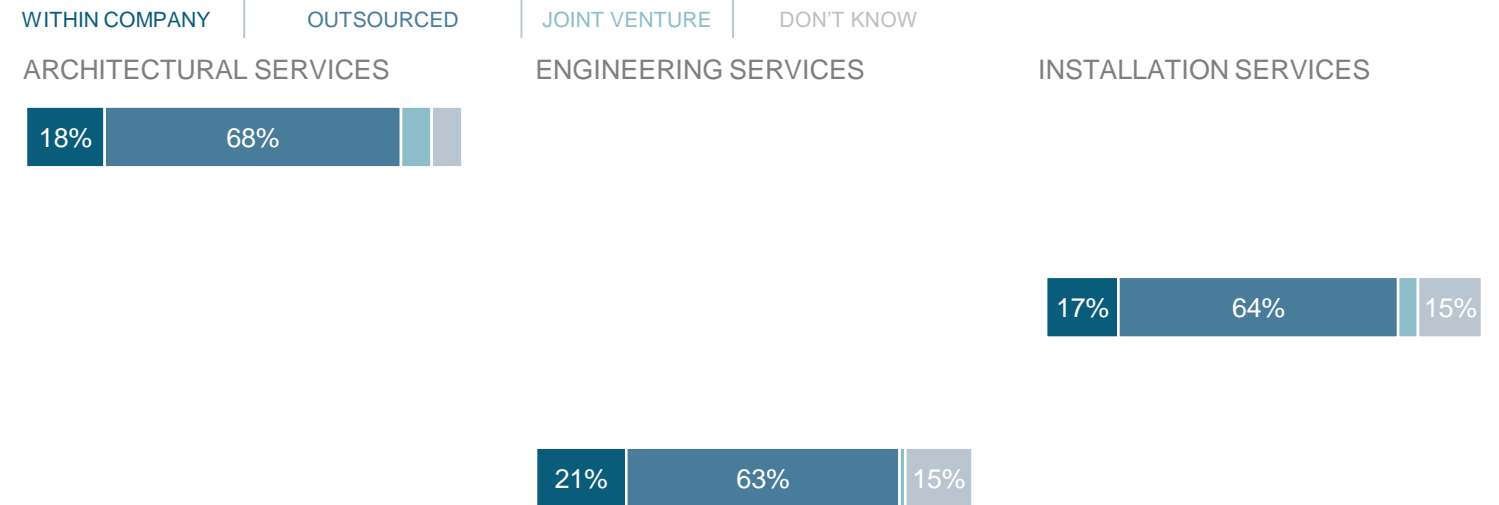
Country X has the highest percentage of contractors that are hired to be involved in both the design and the building phase of a project.

A substantial amount of XXXX contractors are also working with other types of contracts, which are not specifically the traditional type or design-and-build contracts. This could be due to their self-developed concepts, as well as the joint ventures they form with other services.

What is the **share** of the following types of contracts in your projects?



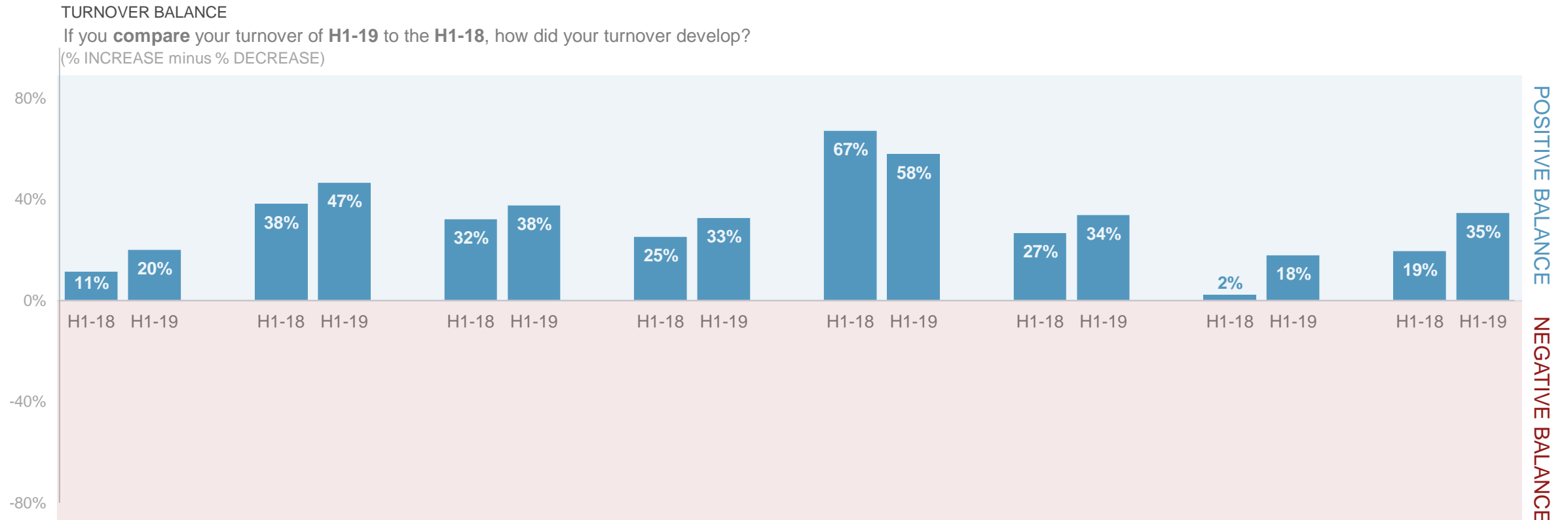
How are the following services **organised** in your projects?





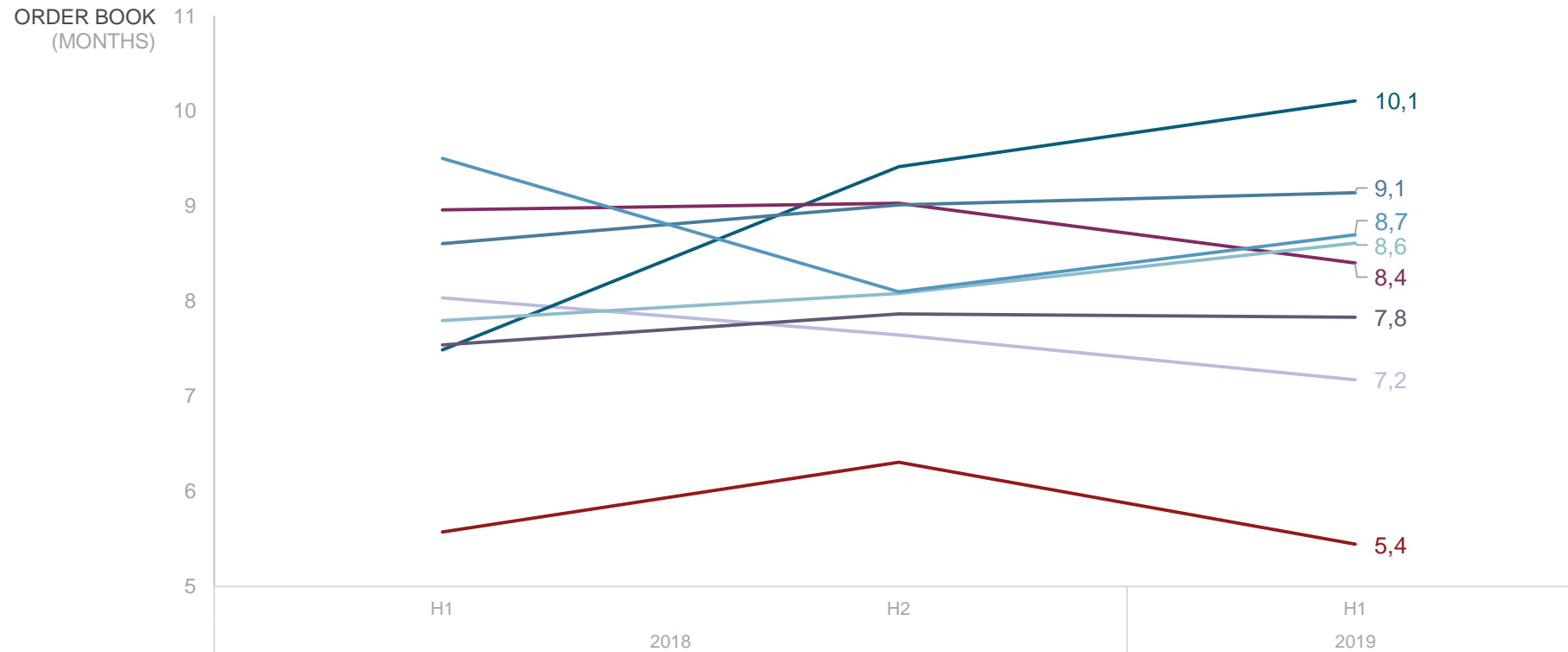
On average, European contractors experienced a slightly more positive first half in 2019 than in 2018

The growth in construction productivity in the country X is also reflected by the turnover development of the contractors. Although slightly less than last year, the Netherlands has the highest share of contractors with a positive turnover balance. More than half of the Dutch contractors indicated an increase of more than 5% in their turnover.





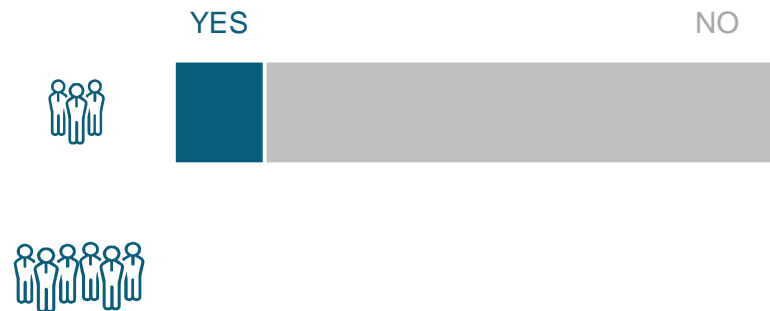
How big is your current **order book portfolio**?
So for how many months will you be able to keep your current staff working?



How many **full-time employees** does your company have?



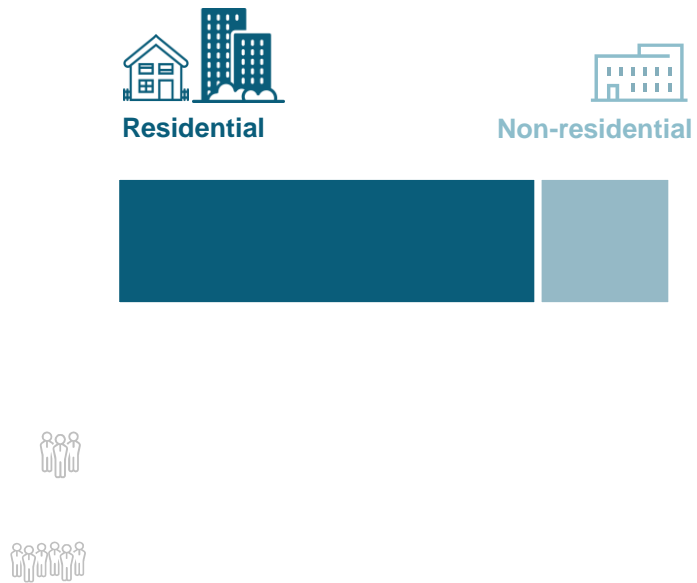
Does your company **develop and build** projects by itself?



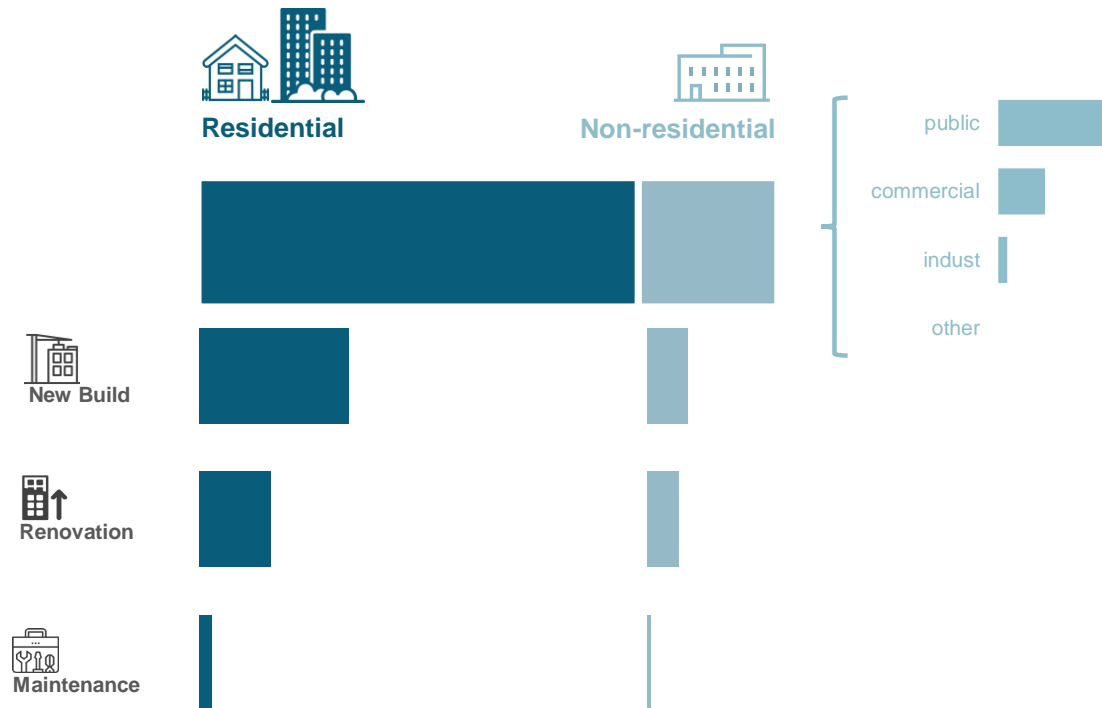
PROJECT SEGMENTATION

What percentage of your **turnover** do you get from ... projects?

BY COMPANY SIZE

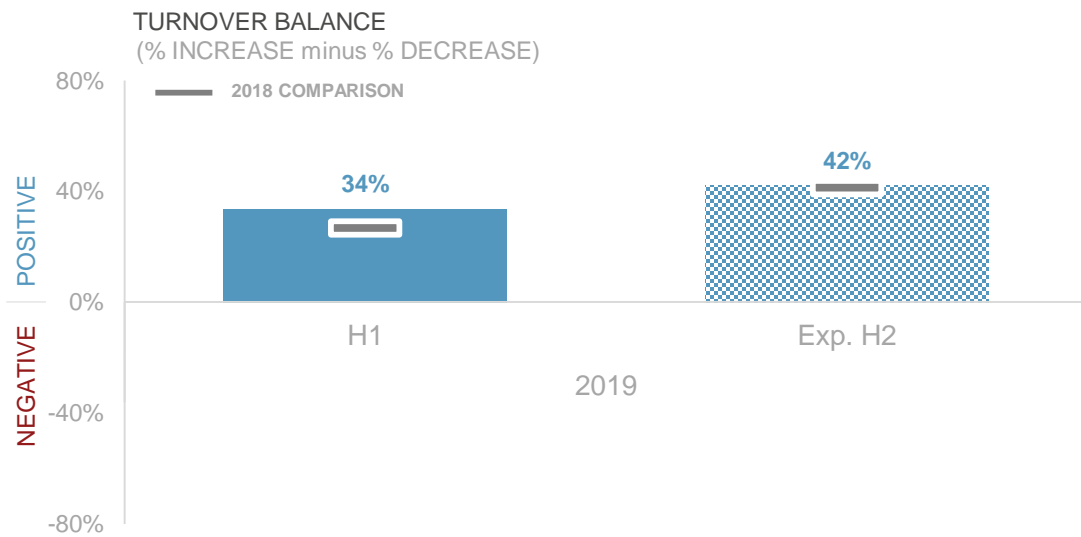


BY PROJECT TYPE

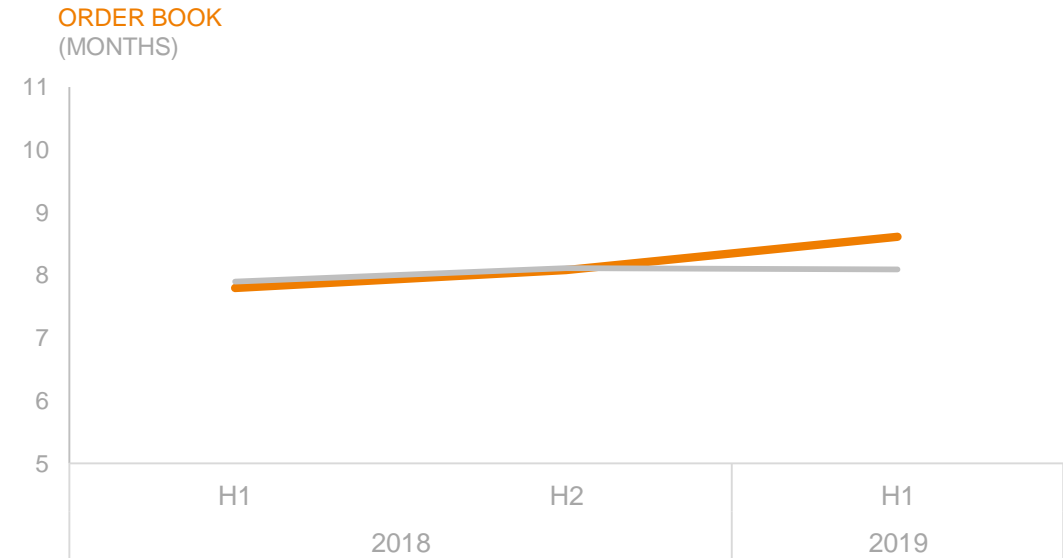


XXX contractors experienced a positive turnover development in first half of 2019. Their expectations are even higher for the second half of 2019.

If you **compare** your turnover of **H1-19** to the **H1-18**, how did your turnover develop?
 What are your **expectations** for the development in **H2-19** compared to **H-2018**?

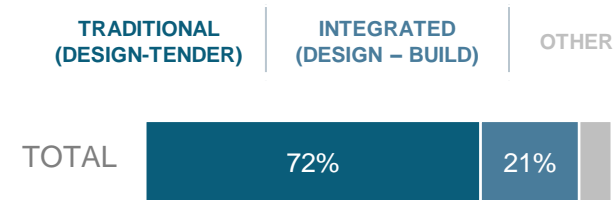


How big is your **current order book** portfolio?



XX contractors are working with **traditional contracts**, meaning that they are contracted only for the building phase. We see the traditional way of working also in the organisation of the different services. **More than two thirds of the contractors outsource** these activities to external parties, rather than working in a more collaborative or integrated way.

What is the **share** of the following types of contracts in your projects?

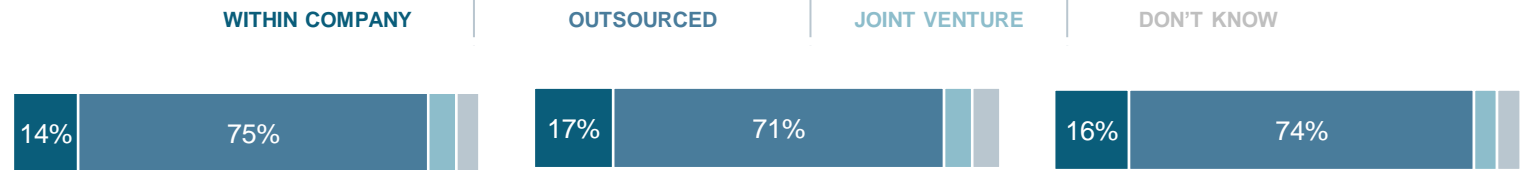







How are the following services **organised** in your projects?

ARCHITECTURAL SERVICES

ENGINEERING SERVICES

INSTALLATION SERVICES



 <p>Management Summary</p>	 <p>Profiling the Building Contractors</p>	 <p>Digitalisation in Building Construction</p>
 <p>BIM Users</p>	 <p>Appendices</p>	



Introduction

As mentioned in the preface, this report is all about “**Digital Construction**”, including Building Information Modeling (BIM). In our previous report, we already investigated BIM briefly and found out that BIM was not very common in most European markets. That is why we decided to look at this subject from a broader perspective: the digitalisation of the construction sector. The questionnaire was designed in such a way that the BIM users received BIM specific questions (next chapter), and those that do not use BIM received digitalisation questions (this chapter).

In order to use BIM, USP believes that the contractors need to meet certain conditions. These conditions include **exchanging information digitally** with other stakeholders in the construction value chain, making **use of certain digital tools** and having a ‘**digital attitude**’. The latter means that the contractors should be open to implement (new) digital tools and see the benefits of them. This chapter describes the conditions per country, as well as the BIM adoption (awareness and usage).

Looking at the initial condition, the question about how contractors mainly exchange information with external stakeholders gives a clear answer: X% of all European contractors do this mainly by E-mail.

Since the amount of observations regarding other means of information exchange than E-mail is too low, with whom the information is shared and what kind of information it involves are not presented on a country-level but on a European level. Some highlights of these results, which are fully shown on the next page, are as follows:

- Contractors mostly share their information with clients and architects. However, in more advanced ways of exchanging information (cloud storage, generic and specialized), we see that the relative share of subcontractors increases. Although this represents only a small part of all contractors (X% in total) it is good to see that these methods include more external stakeholders. This is the first indication of all stakeholders working closely together and all working with the latest available data.
- In the traditional ways (post and E-mail) contractors mainly share invoices and legal documents (proposals, contracts and agreements). In the cloud solutions, the project related information becomes more important (project planning, product information, 2D and 3D drawings).

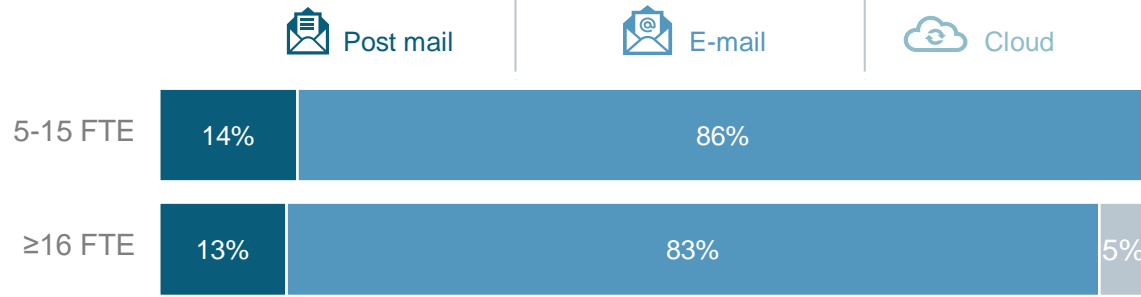
The detailed overview of use of certain digital tools and digital attitude is reported on a country level.

This subchapter describes the following topics for Germany:

- How do contractors exchange information with external stakeholders?
- With whom do they share information by E-mail?
- What kind of information is shared by E-mail?
- How often are certain 'digital tools' being used?
- What are, according to the contractors in this country, the best examples of digitalisation?
- Do they know and use BIM?
- Why have the contractors not yet started with BIM and when are they planning to do so?
- What is their attitude/ opinion towards certain digitalisation and BIM statements?

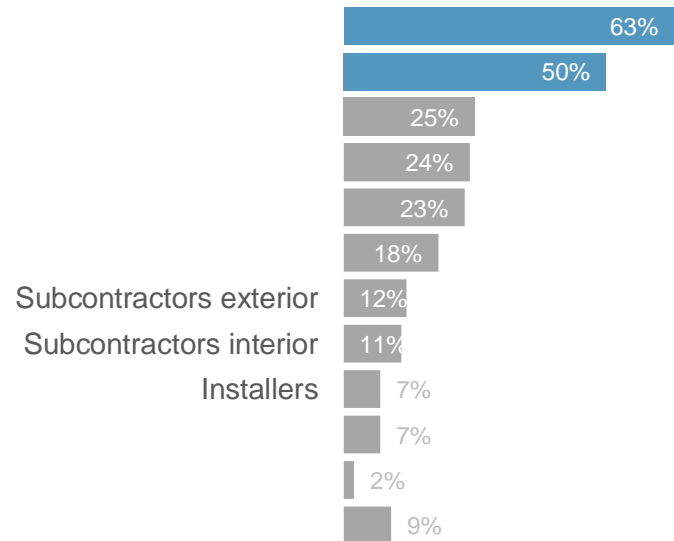


How do you mainly **exchange information** with external stakeholders?

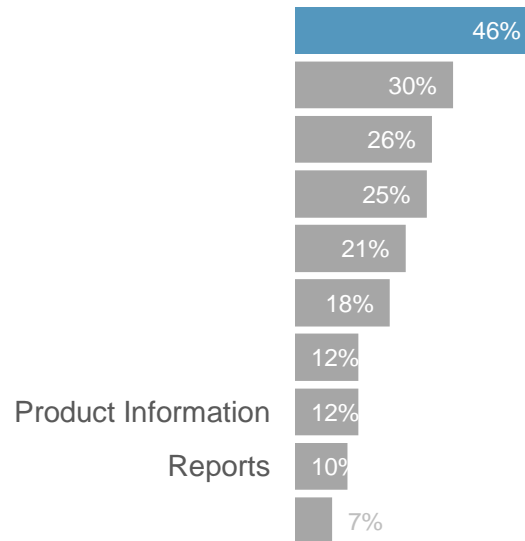


Although the majority use E-mail for exchanging information, XXX is one of the few countries where **post mail** is still used to a certain extent by contractors (big and small) for exchanging information with stakeholders.

Which stakeholders do you share the information with by **E-mail**?

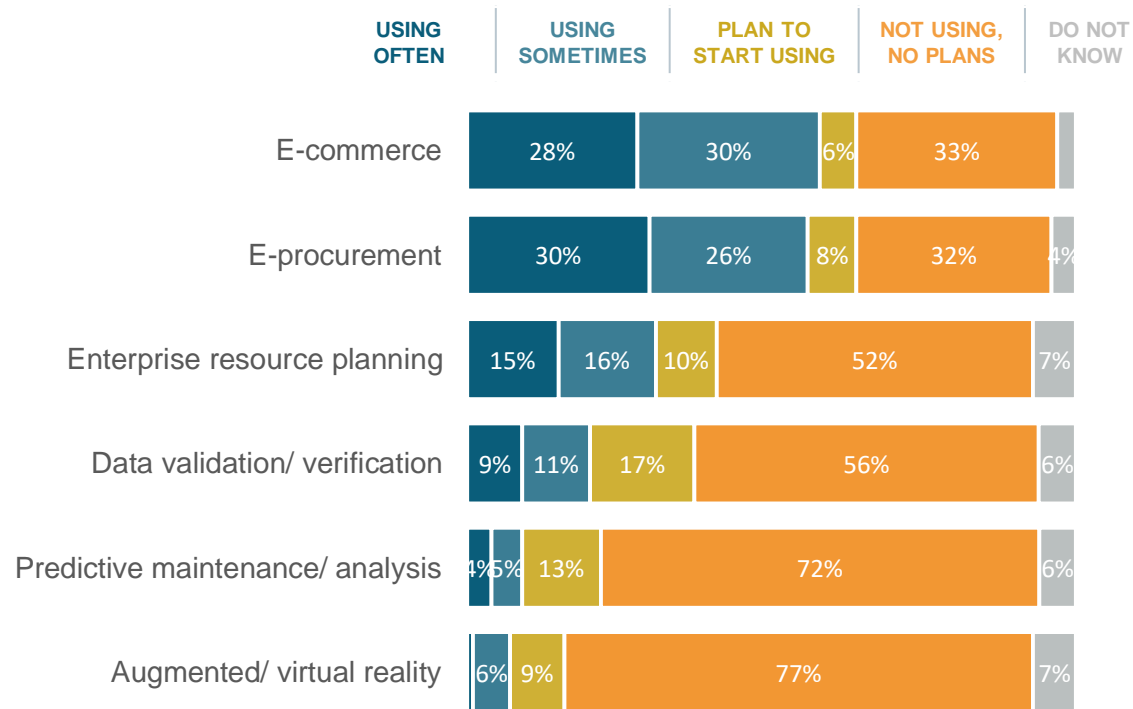


What kind of information is shared by **E-mail**?

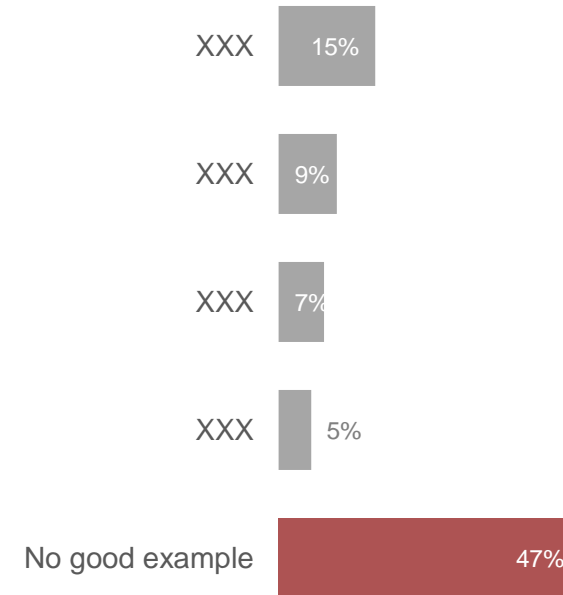


The most used examples of digitalisation are **XXX and XX**. These two examples are also mentioned as being best examples. Another example that was mentioned a couple of times as the best example is 3D printing. It seems that XXX contractors are not digitally minded since they **do not have plans** for using some of the examples presented. Next to that **they cannot think of any good examples**.

How often do you use the following examples of digitalisation?



What are the best examples of digitalisation?



XX contractors do see the benefits of digitalisation and also see the need to change the present culture. Although they are not ready for a digital revolution themselves, they do not expect a lot of competition from outside the construction sector.

Most XXX contractors see the possibility of collaborating with manufacturers in the earliest stages of a project, but they do not see it leading to more direct ordering. Being one of the most experienced countries in BIM, contractors in the UK also see the difficulties it will bring to the construction site.

To what degree do you **disagree** or **agree** with the following statements?

ALL CONTRACTORS

N=150

STRONGLY AGREE | AGREE | NEUTRAL | DISAGREE | STRONGLY DISAGREE | NO OPINION

In order to successfully implement the digital possibilities **the present culture has to change**

Digitalisation will lead to smoother projects due to **better communication** between trades

BIM & Digitalisation will **support sustainability** with new technologies and more transparency

Digitalisation will lead to **better customer relationships**



Digital revolution leads to **competition from outside** the construction sector

Our company is **ready for the digital revolution** in our industry

BIM-USER AND BIM-AWARE CONTRACTORS

N=80

STRONGLY AGREE | AGREE | NEUTRAL | DISAGREE | STRONGLY DISAGREE | NO OPINION

BIM will lead to **more collaboration** with manufacturers in the earliest stages of a project

BIM is difficult to implement at the construction site, because people are **not able to understand** the information

BIM is difficult to implement at the construction site, because people **are used to traditional drawings**

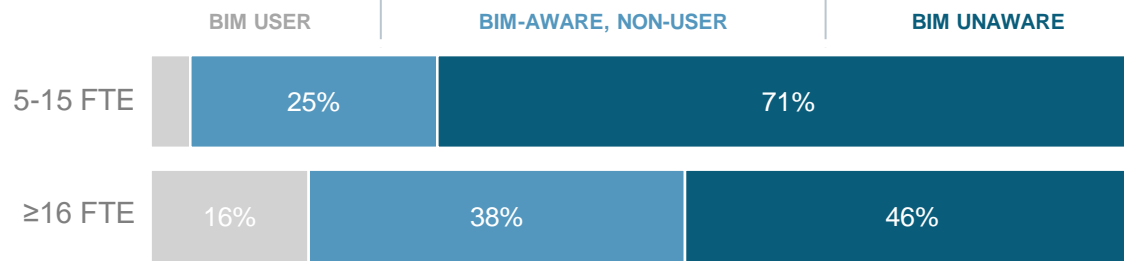


I would like to have a **central BIM database** with all relevant information from all relevant manufacturers

Using BIM leads to **more direct ordering** from manufacturers

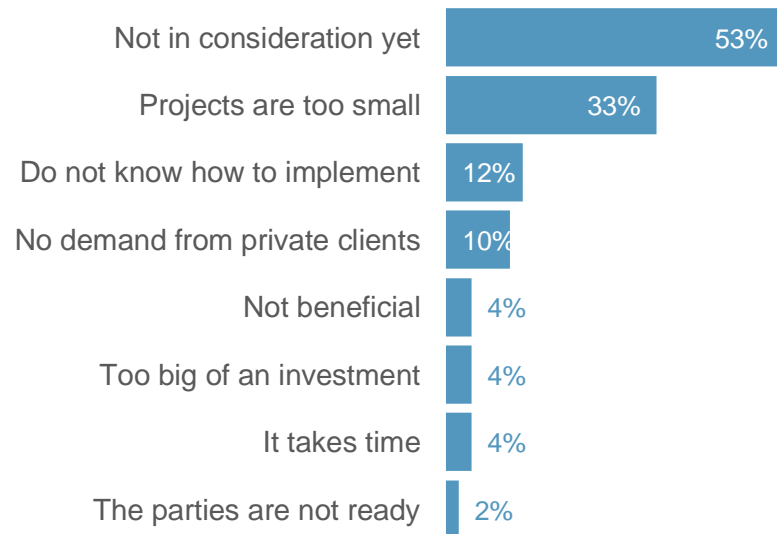
The **needs** of BIM users are **not** completely fulfilled by the big software suppliers/houses

Are **you familiar** with the term BIM and do you **use** it?

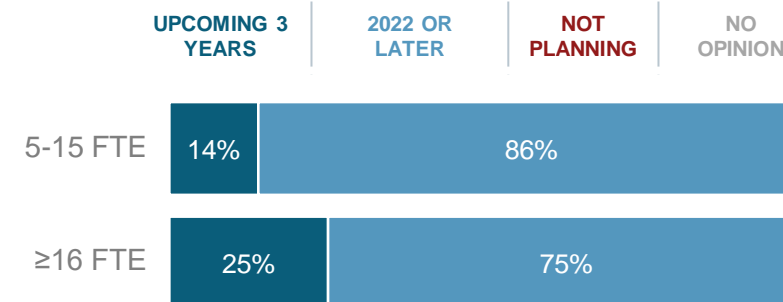


Half of the larger contractors in XXX are familiar with BIM. It is less known amongst the mid-sized contractors. From our European architects' study we have seen the awareness of BIM increasing in XXX. The main cause was the announcement by the XX government in 2014 that BIM will be mandatory for all public projects. This seems to have its effect on contractors as well.






Why has your organisation **not** yet started using BIM?



When will your company **start** using BIM?



Most XXX contractors who have heard of BIM but do not use it, have not really taken the usage into consideration yet. However, they all think they will start using it in the – rather far – future.

 <p>Management Summary</p>	 <p>Profiling the Building Contractors</p>	 <p>Digitalisation in Building Construction</p>
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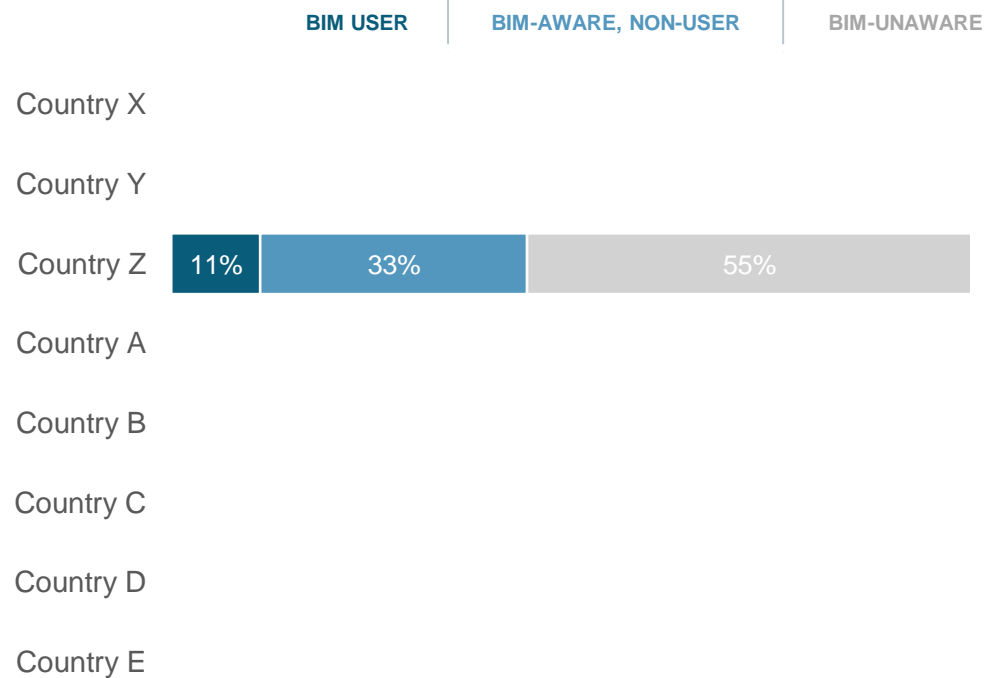
Introduction

This last chapter is focusing on the BIM-users. To recall things, we show the BIM usage and awareness on the right-hand side of this page. Most users of BIM can be found in the Netherlands and the United Kingdom. The number of observations in these two countries is enough to present the results on a country level. The results of the remaining countries are reported on average as the 'Rest of Europe' due to an insufficient amount of observations of BIM users per country*.

Topics we will address in this chapter are:

- Share of projects in which BIM is used
- When and why they started using BIM
- The advantages and disadvantages of BIM
- The features within BIM they are using
- The channels users use to find specific BIM information from manufacturers
- Manufacturers who provide the best BIM information
- Usage of open files versus native files
- Clients requiring BIM

Are you **familiar** with the term BIM (Business Information Modelling) and do you **use** it?



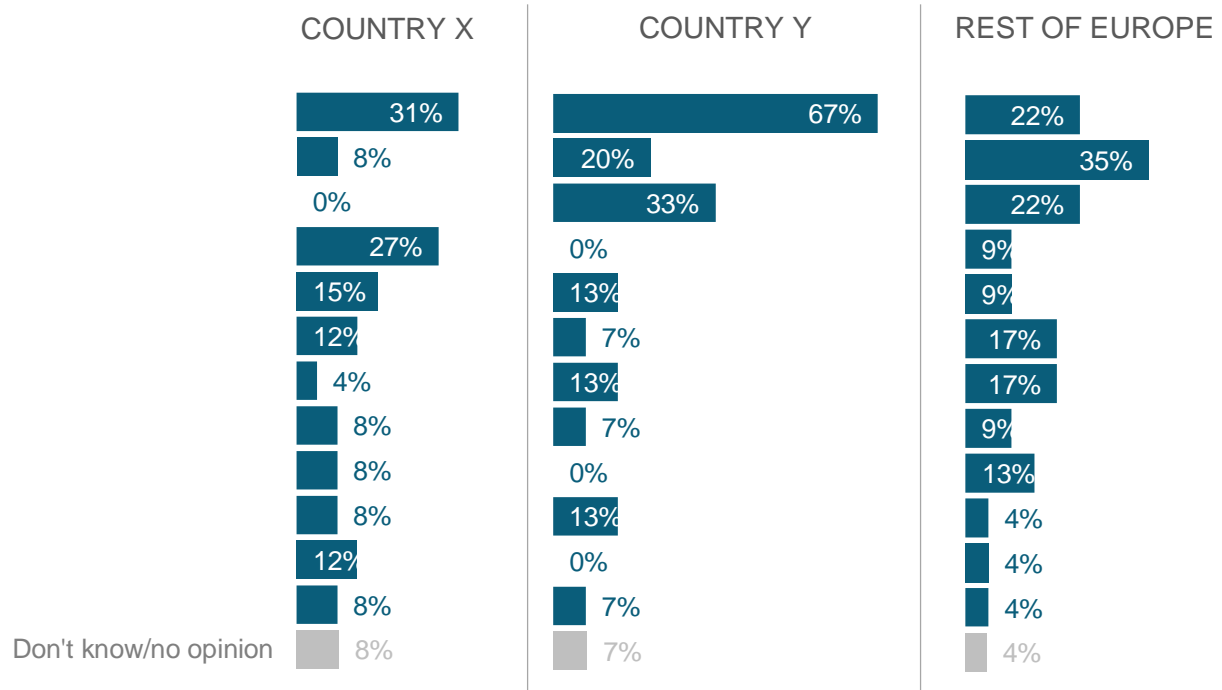
*Germany (n=10), France (n=17), Italy (n=4), Spain (n=9), Belgium (n=7) and Poland (n=7) are averaged and reported as the rest of Europe.

Advantages and disadvantages of BIM

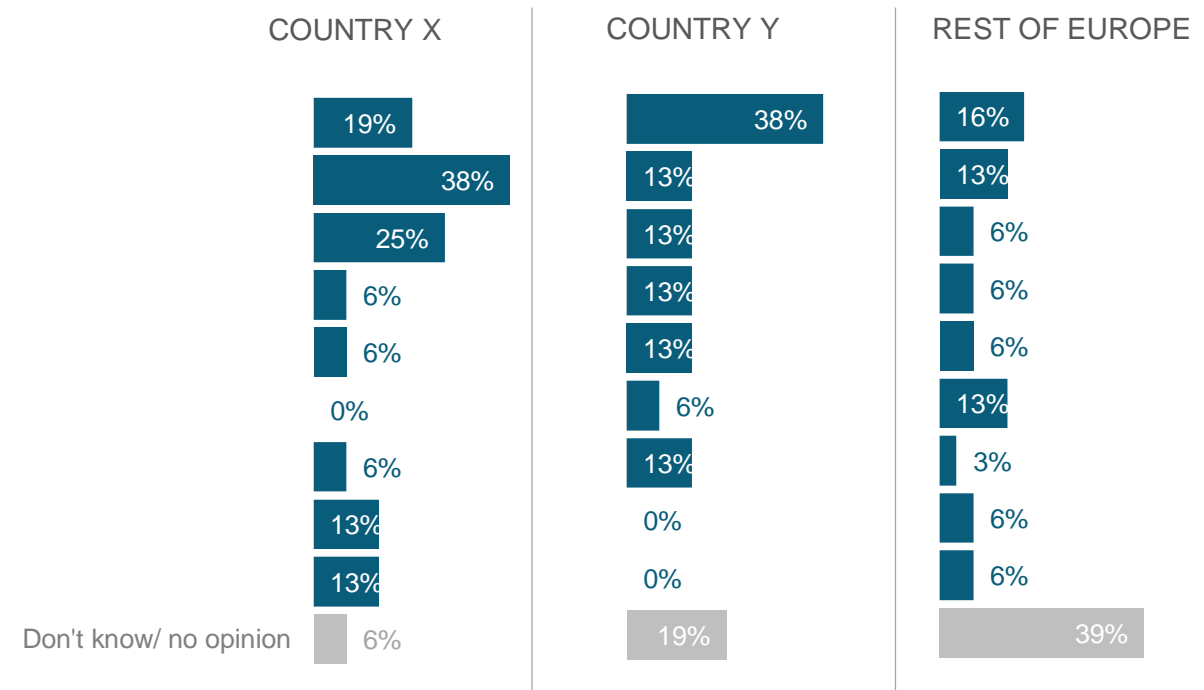
The advantages and disadvantages the BIM users see are very different throughout Europe.

XXXXXXXXXXXXXXXXXXXX

What do you consider to be the greatest **advantages** of BIM?



What do you consider to be the greatest **disadvantages** of BIM?



USP Marketing Consultancy

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