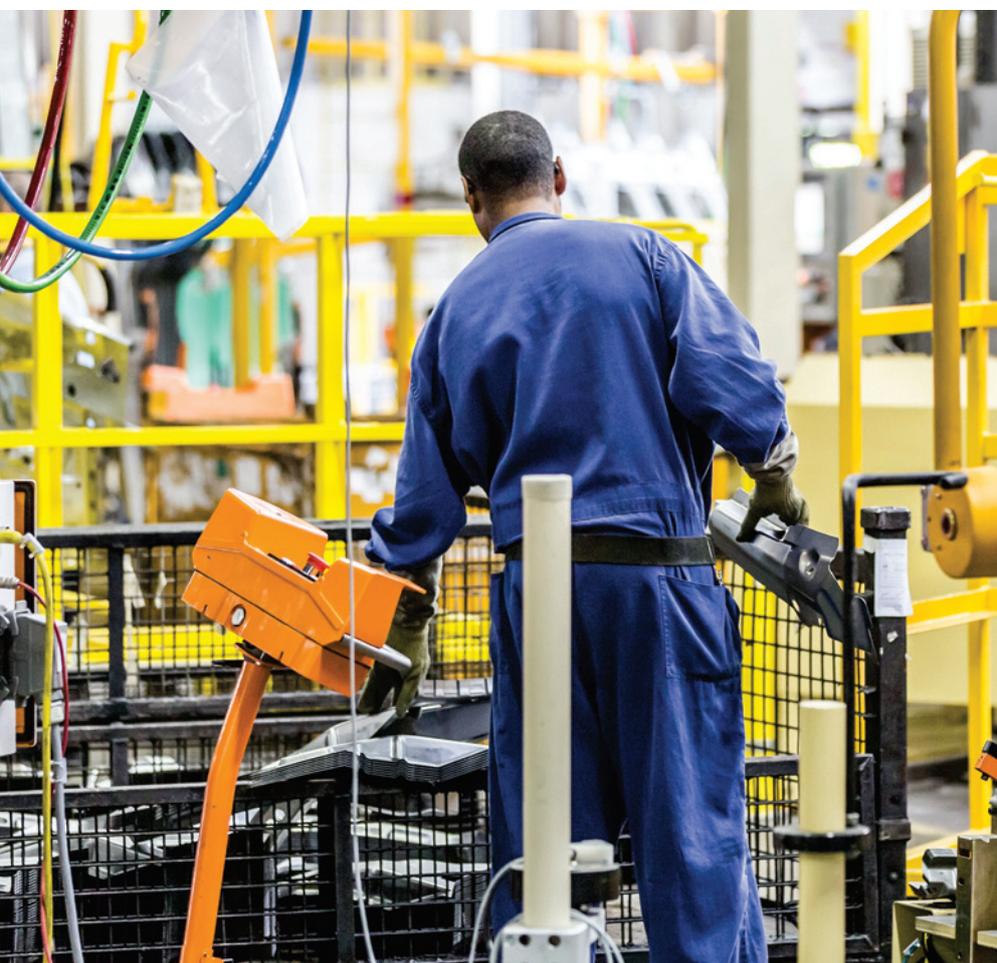


Industry 4.0: hype or reality?

The current state of play in Flemish manufacturing



30

organisations representing a total turnover of 16.4 billion euros and together employing more than 33,000 people.

86%

said they're at least on par with, if not ahead of, the competition with regards Industry 4.0 concepts.

87%

of the companies surveyed – across all provinces and sector – struggle to find the “right” talent.

5%

expected annual improvement on bottom line, not taking into account potential top-line impact.





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1. Introduction

Leading industrial and manufacturing companies in Flanders are already adopting Industry 4.0 and looking to see how they can translate it into their specific business context.



Industrial leaders in Flanders are already digitising essential functions within their internal vertical operations processes, as well as with their horizontal partners along the value chain. In addition, they're looking to enhance their product portfolio with digital functionalities and introducing innovative, data-based services. They have high expectations with regards the cost and efficiency improvements Industry 4.0 can bring.

While terms like the industrial internet or digital factory are also used to describe these changes, in this report we use Industry 4.0 as a shorthand to describe a journey industrial companies are taking towards a complete value chain transformation (see pages 6 and 7).

At the end of this transformation process, successful industrial companies will become true digital enterprises, with physical products at the core, augmented by digital interfaces and data-based, innovative services. These digital enterprises will work together with customers and suppliers in industrial digital ecosystems. These developments will fundamentally change individual companies, and transform market dynamics across a whole range of industries.

The key findings we explore in this report – the first of its kind to be carried out in Belgium - confirm that no industrial company can afford to ignore the fundamental changes that Industry 4.0 will generate. At the end, we provide a pragmatic, step-by-step blueprint for how industrial companies can successfully build a digital enterprise.



Peter Vermeire
Partner, PwC Belgium



Dirk Torfs
CEO, Flanders MAKE

Please reach out to us for more details on our research or to discuss our approaches.

***The digital transformation is underway:
now is the time for your company to act!***

2. Business meets technology

Making the right strategic decisions for your company and industry means bringing business requirements and market trends together with proper understanding of current and future technological maturity and applications.

That's why PwC and Flanders MAKE collaborate; to bring business and technology together to the benefit of clients.

PwC's strength lies in our ability to understand and advise on the voice of the business, identify and design new business processes from operational, organisational and financial viewpoints, while also capturing the legal and tax implications of new business models.

Flanders MAKE focuses on the development of new technologies, linking research institutes with first industrial use cases and advanced technology development.

Business dimension

1. Digitisation of the horizontal and vertical value chains
2. Digitisation and of products and service offerings
3. Digital business models and customer access



Technology dimension

1. Developing technology in cooperation with industry
2. Set-up of research projects with industry and universities
3. Set-up of I4.0 pilot factory/ living lab



This is a powerful alliance that will enable Industry 4.0 to flourish within Flanders, and bring a compelling story to industry. By introducing the business dimension at an early stage, organisations are much better placed to keep up with rapidly evolving technologies, thereby increasing their impact and in turn helping further speed up their development.

3. Executive summary

Meeting increasing consumer demands

Manufacturers in Flanders appear confident that they'll manage to deal with technological developments under the umbrella of Industry 4.0. They're more concerned with how they'll find the technical talent to realise new technologies within a specific business context to solve a particular issue, something 87% of respondent admit to struggling with.

Industry 4.0 is already transforming businesses

Our study reveals that Flemish manufacturing has already adopted Industry 4.0, with half of respondents having not only identified their main strategic action points, but already active with implementation. A huge 86% believe they're at least on par with, if not ahead of, the competition with regards Industry 4.0 concepts.

The potential to drive significant performance improvements, and we've not seen it all yet

All our survey respondents anticipate significant gains from the implementation of Industry 4.0 initiatives on their bottom line. On average, companies expect to reduce operational costs by 2.6% per annum, while increasing efficiency by 2.4% annually.

Increased investments are planned, but we are not committing enough

For the anticipated benefits of Industry 4.0 to materialise, companies need to invest substantially. Our survey reveals that there's a strong willingness from manufacturers in Flanders to invest in digital operations and initiatives, and companies expect to significantly increase their annual investments over the next five years. While this is a hugely positive sign, when compared to the global investment average, Flanders' manufacturing industry is still significantly lagging.



Blueprint for digital success

Think big, start small, scale fast. Develop an overall strategy, but don't lose yourself in a plan that doesn't materialise. Undertake small pilot projects to gain better understanding of a technology's potential and drive culture change, and adapt your strategy with own insights and learnings from others.

Intensified collaboration is critical for success

There's a clear need for a more sustainable and open ecosystem of partners, specialising in different areas, through which knowledge is shared openly and fluently. This requires a culture change from an overall company perspective. Good examples of such ecosystems are popping up, but there's room for many more.

Data and what you do with it are a crucial Industry 4.0 enabler

Data lies at the heart of the fourth industrial revolution. All companies in our survey recognise the increasing importance of data; with the overall level of importance expected to rise by 24% over the next five years. While a majority already have a data driven mind-set and processes in place, there's still more to do and greater potential to be leveraged. Their greatest concern is attracting the required competences; experts who can turn huge amounts of data into valuable insights, distinguish between relevant and irrelevant data, and handle data manipulation and advanced algorithms.

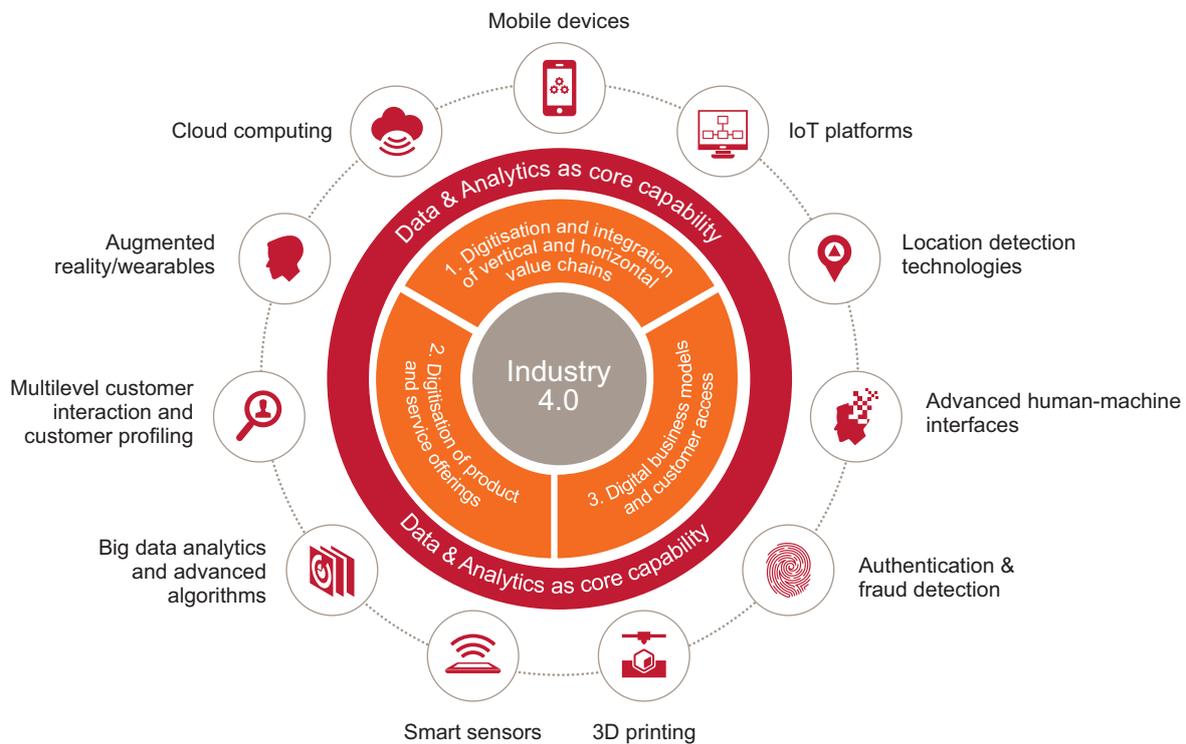
People unlock the value of transformation

Most companies are mainly concerned about the people dimension of Industry 4.0, rather than the technological side. Every respondent expects there to be a huge impact on human capital that will be represented by a shift in required skills and competences. The biggest challenge companies currently face is a lack of digital talent; they need more digital expertise to be able to transform existing capabilities into new ones, life-long learning will be crucial.

4. Industry 4.0: Business meets technology

What do we mean by Industry 4.0?

Industry 4.0 framework and contributing digital technologies



The term Industry 4.0 originated in 2011 as the result of an initiative by the German government. Its initial goal was to boost local manufacturing and promote the further digitisation of production processes. Between 2011 and 2015, a whole host of definitions and understandings of the term Industry 4.0 emerged.

For the purposes of this report, we take the term 'Industry 4.0' to stand for the fourth industrial revolution, also known as the 'Industrial Internet' or the 'Digital Factory', although neither takes as complete a view.

While Industry 3.0 focused on the automation of single machines and processes, Industry 4.0 focuses on the end-to-end digitisation of all physical assets and their integration into digital ecosystems with value chain partners. Generating, analysing and communicating data seamlessly underpins the gains promised by Industry 4.0.



In our view, Industry 4.0 is driven by:

1. Digitisation and integration of vertical and horizontal value chains

Production companies want to enhance the intelligence, modularity, flexibility and interconnectivity of their products and production systems. And they're searching for smart and flexible production systems to make highly-customised products in a single lot size. Industry 4.0 digitises and integrates processes vertically across the entire organisation, from product development and purchasing, through manufacturing, logistics and service. All data about operational processes, process efficiency and quality management, as well as operations planning, are available in real-time, supported by augmented reality and optimised in an integrated network. Horizontal integration stretches beyond internal operations, to suppliers and customers, and across all key value chain partners. It includes technologies from track-and-trace devices to real-time integrated planning with execution. Combining knowledge of several companies leads to open innovation ecosystems for a more reliable, more robust and better product. However, although collaboration and networking offer a lot of opportunities and have proven to be beneficial, most companies are very reluctant to do so.

2. Digitisation of product and service offerings

There's a general consensus that the Internet of Things (IoT), remote follow-up of production assets and the availability of large amounts of data offer enterprises the opportunity to launch new business models, which is a high priority for the future of companies. Going forward, product development will be more and more virtual due to digital twin technology, which enables the simulation of product behaviour and manufacturing, leading to a faster prototyping and first-time-right production. Digitisation of products includes the expansion of existing goods, e.g. by adding smart sensors or communication devices that can be used with data analytics tools, as well as the creation of new digitised products which focus on completely integrated solutions. Products can be made intelligent such that they can find their way through the production process and look for the most optimal production asset for their manufacture, with tracking and tracing features for future optimisation related to life time, maintenance, repair and up to recycling built in. By integrating new methods of data collection and analysis, companies are able to generate data on product use and refine products to meet the increasing demands of end customers.

3. Digital business models and customer access

Leading industrial companies also expand their offerings by providing disruptive digital solutions such as complete, data-driven services and integrated platform solutions. Disruptive digital business models are often focused on generating additional digital revenues and optimising customer interaction and access. Digital products and services frequently look to serve customers with complete solutions in a distinct digital ecosystem.

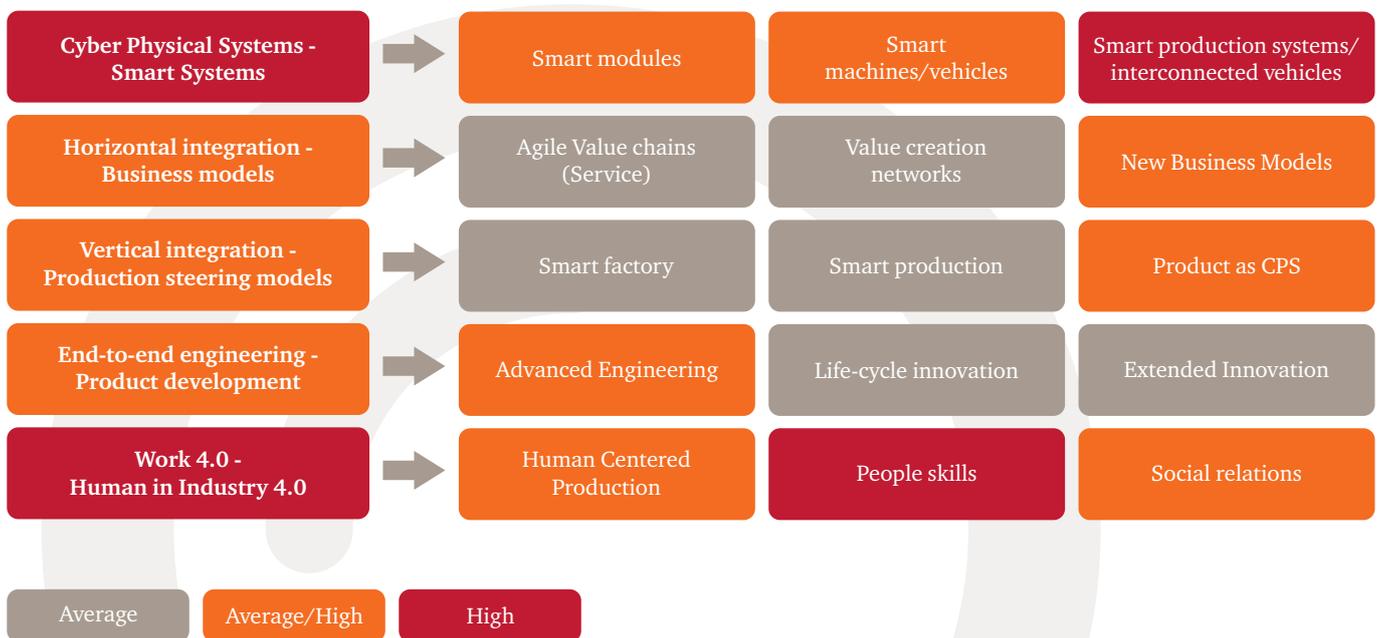
4. The role of people in Industry 4.0

Technology and people go hand in hand. Finding trained and skilled people is of crucial importance (see figure 9), but remains a big challenge. New education approaches, life-long learning and effective retention strategies are required to survive in a digital world. The organisations of the future will be very different, less hierarchical or even self-steering with proper accountabilities and responsibilities. The manufacturing industry will create new jobs using digital technologies and (disruptive) business models.



A focus on priorities

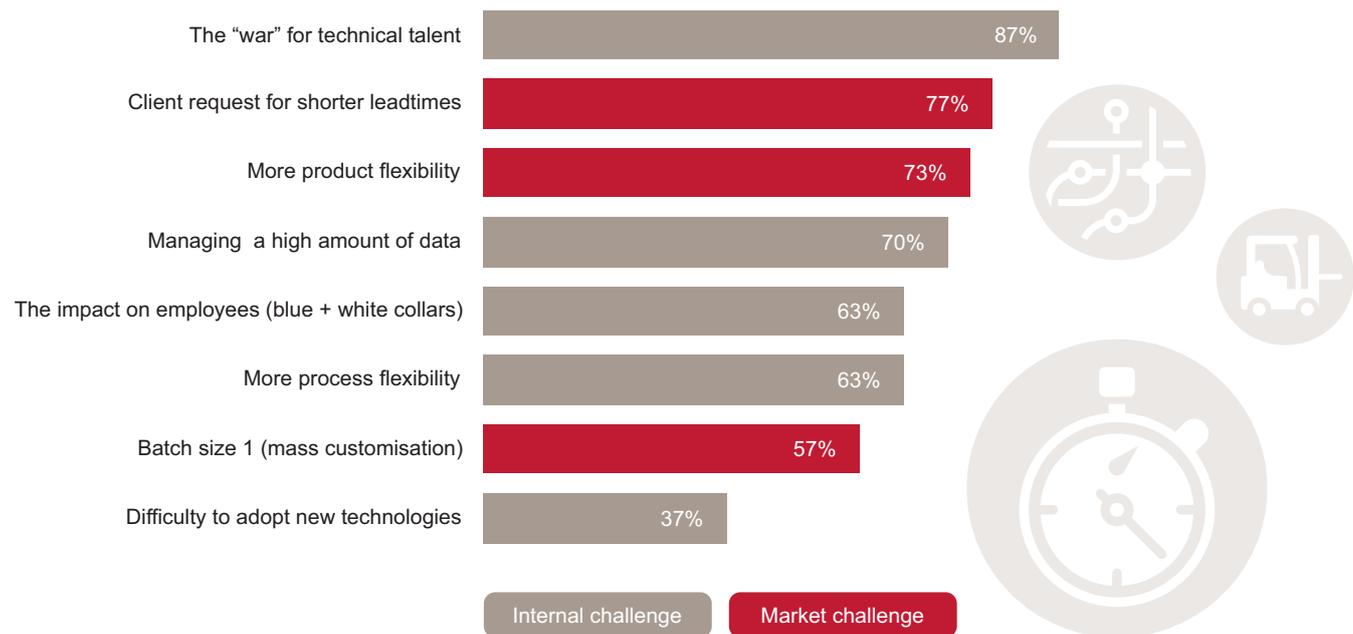
To clarify what we mean by Industry 4.0 and make discussion of the topic easier, the following framework was created, and has been adopted by the Flemish Government. We asked the leading companies we spoke with to indicate their priorities within the framework – as shown by the different colours. Smart production and people skills were identified as the highest priorities, with many of the supporting themes of average to high priority. These are essential to the implementation of the highest priority topics.



5. Key findings of our research

a. Meeting increasing consumer demands

Figure 1. Which challenges do you see for your (manufacturing) processes in your industry?



In today's environment where client expectations are getting higher and higher (acknowledged by 77% of survey respondents) industrial companies need to be more agile and flexible than ever. Customers expect a more diverse product portfolio (73%) which leads to a greater supply chain complexity. This not only means a drop in average series size (57%), but also requires more flexible processes (63%), as well as the ability to manufacture products efficiently with a new or existing asset base. In addition, customers expect products to move through the total value chain at a higher speed resulting in shorter lead times (77%), and to pay less for them.

To cope with these increasing demands, companies look to find solutions in digital and technological breakthroughs, under the umbrella of Industry 4.0. In the past, companies have managed to deal with technological developments and, as a result, it seems that most are confident that they'll be able to do so within Industry 4.0, just 37% of respondents considered this to be a challenge.

The main challenge, it seems, lies more in the process of realising new technologies within a specific business context to solve a particular issue. That requires technical talent which not only has a deep understanding of the technology – and indeed a variety of technologies –, but can also see how the technology would impact an existing process. Eighty-seven percent of the companies surveyed - across all provinces and sector - struggle to find the "right" talent. Big Data is recognised as an area where skills need to be developed, especially when more data will become available and people need to turn data into value-added insights. There's currently a psychological barrier too; with much uncertainty about what new technologies will mean for existing jobs, at both white and blue collar levels (63%).

b. Industry 4.0 is already transforming businesses

Figure 2. What is your perception about Industry 4.0?

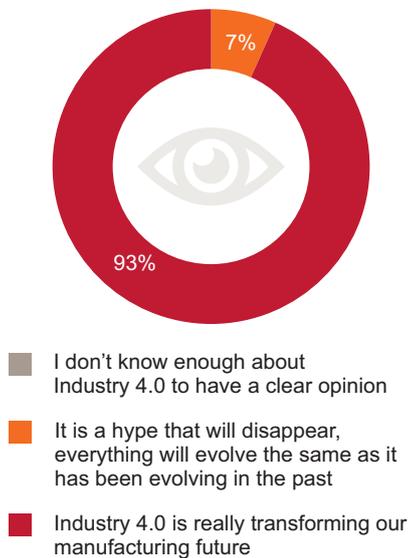
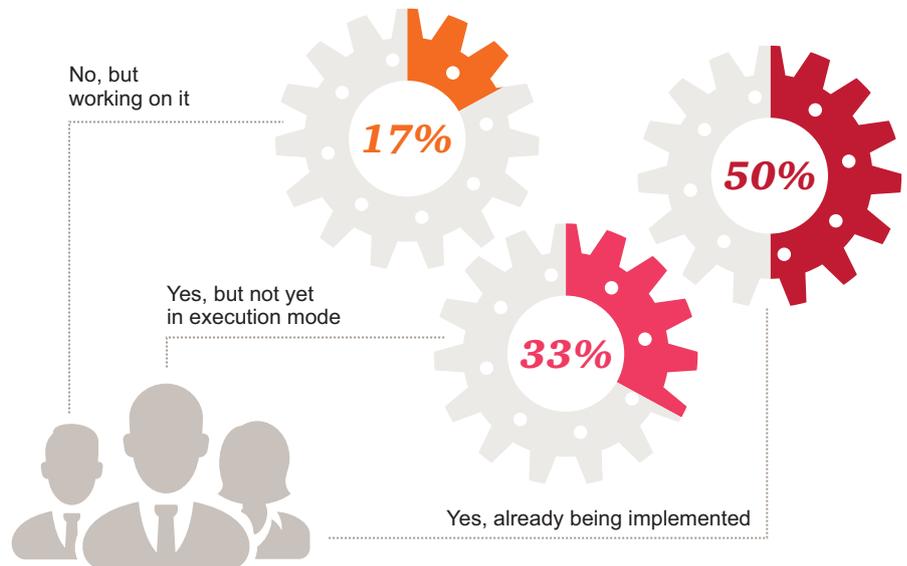


Figure 3. Do you already have a strategic plan in place to introduce new technologies into your daily operations?



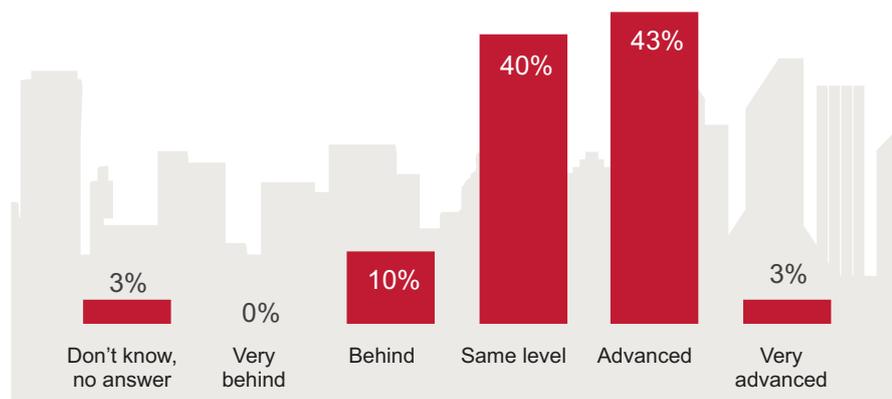
The already unclear definition of Industry 4.0 when it first emerged was exacerbated by the myriad of buzzwords that grew to refer to the new technologies and concepts that were introduced to the industrial scene: cyber-physical systems, cloud computing, virtual reality, Internet of Things (IoT), smart sensors, cobots, etc.

As a result, people struggled with the whole Industry 4.0 concept and often perceived it as simply an existing concept being given a new name.

However, our study reveals that Belgian manufacturing has adopted Industry 4.0; 93 % of participants acknowledged the transformation implied by Industry 4.0 for their business.

Eighty-three percent of surveyed companies are actively looking to translate Industry 4.0 and implement it into their business and/or operations strategy, but not necessarily under the Industry 4.0 umbrella. Half of the organisations we spoke with have already identified their main strategic action points and are in the process of implementation. Asked about their current position compared to competitors, 86% said they're at least on par with, if not ahead of, the competition with regards Industry 4.0 concepts. Seemingly, overall, respondents are quite confident about their maturity level and are not afraid of the future.

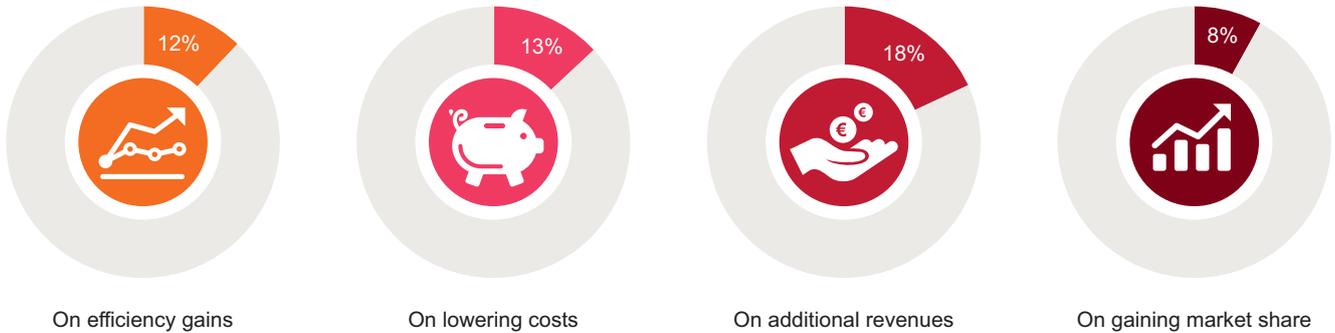
Figure 4. How advanced is your company in terms of building digital operations capabilities compared to your main competitors?



The big question remains; do respondents have a clear and complete understanding of the true potential of Industry 4.0: how is it reflected in the maturity of their strategic plans, and are they capturing all possibilities offered by today's technologies?

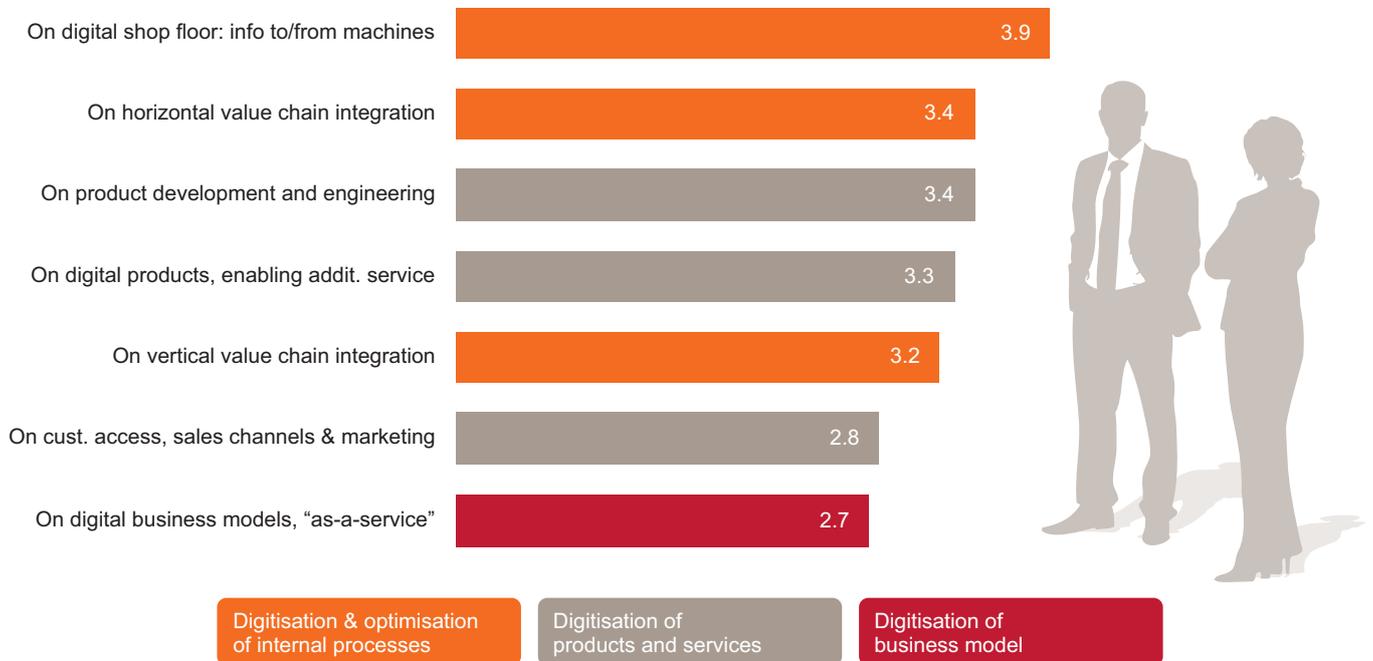
c. The potential to drive significant performance improvements, and we've not seen it all yet

Figure 5. What cumulated benefits from digitisation do you expect in the next five years (cumulated percentage)?



All our survey respondents anticipate significant gains from the implementation of Industry 4.0 initiatives on their bottom line. On average, companies expect to reduce operational costs by 2.6 % per annum, while increasing efficiency by 2.4% annually. This is completely in line with global expectations from a cost and efficiency perspective¹.

Figure 6. Where do you see the biggest potential for digitisation and integration to improve your processes?



On a scale from 1 to 5 (1 = low and 5 = very high)

¹ PwC's 2016 Global Industry 4.0 survey 'Building your digital enterprise'

Cost savings can be achieved by implementing smart manufacturing initiatives. For example, companies are moving to integrated planning and scheduling for manufacturing. Such systems combine data from within the enterprise – from sensors all the way through to ERP systems – with information from horizontal value chain partners, like inventory levels or changes in customer demand. Integrated shop floor planning improves asset utilisation and product throughput time. Another example is predictive maintenance of key assets, which uses predictive algorithms to optimise repair and maintenance schedules and to improve asset uptime.

System-based, real-time end-to-end planning and horizontal collaboration is now possible using cloud-based planning platforms. Companies that use such systems to become better integrated with horizontal value chain partners, including suppliers and key customers, can significantly improve efficiencies and reduce inventories. In addition, the implementation of track-and-trace devices on products will lead to better inventory performance and reduced logistics cost.

When we consider the impact on market share growth and revenue increase, the landscape is quite polarised and two distinct groups emerge:

1. One group (16 companies) has rather low expectations of Industry 4.0 outside the digitisation and further optimisation of internal processes. Companies that fall into this group don't see any way to digitise their products or start selling additional services, nor do they see any potential in digitised customer interaction. Overall, they don't consider Industry 4.0 as a means to differentiate themselves from the competition by creating a unique selling point. For them, Industry 4.0 is more of an incremental evolution, they don't expect a real disruption.

2. The second group is smaller (six companies) and has very high expectations with regards to Industry 4.0. These companies foresee a potential 30% (at least) increase in revenues and corresponding market share growth, based on additional services resulting from digitised products and unique customer experiences that will strengthen their position in the market. These companies also have a strong ambition to be market frontrunners, and to grow and/or strengthen their market leadership. For them, Industry 4.0 will enable them to identify what truly sets them apart in the market and will change the way they do business.

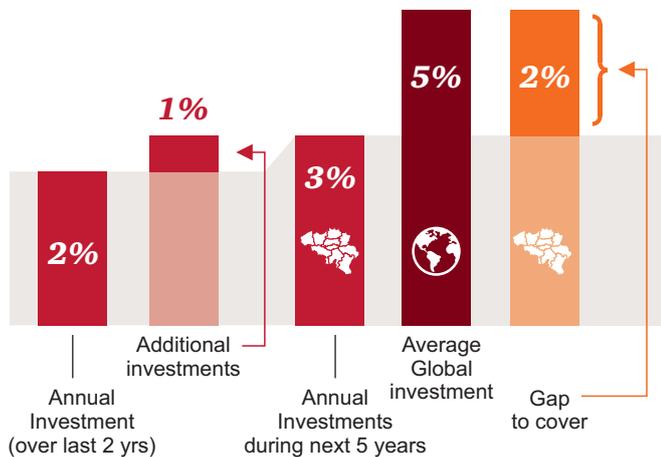


“At Picanol weaving machines, we see a high impact of Industry 4.0 on our product, our processes and our people. To better respond to the specific needs of our clients, we work on making our processes more flexible by combining both our product and process development skills. Although it might seem counterintuitive at first sight, we are focusing also on standardisation. By building in our customisation as late as possible in the process, we are able to deliver what the client needs at an acceptable cost.”

Geert Ostyn - VP weaving machines Picanol

d. Increased investments are planned, but we're not committing enough

Figure 7. How high are your company's current and future investment in digital operations solutions? (% of operating revenue)

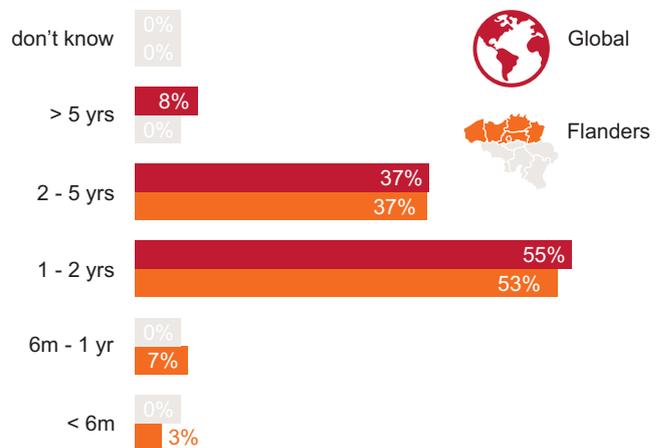


For the anticipated benefits of Industry 4.0 to materialise, companies need to invest substantially. Our survey reveals that there's a strong willingness from manufacturers in Flanders to invest in digital operations and initiatives, and companies expect to significantly increase their annual investments over the next five years to an average of 3% of annual revenue.

While this is a hugely positive sign, when compared to the global investment average of 5%², Flanders' manufacturing industry is still significantly lagging. To be successful and achieve its ambitions, Flanders needs to at least keep up with the pace of other regions. If organisations in Flanders remain at current levels, they'll fail to unlock the full potential of Industry 4.0. We can't expect to enjoy the same return on investment as other regions if we only invest half what they do.

Looking ahead, many of those who haven't invested substantially during the past two years plan to step up their investment in the coming five years, which will help close the gap. However, just over a third of companies still expect to keep their future investment relatively low, indicating that they may be waiting for the 'perfect' technology. In our view, this is short-sighted. As indicated above, the biggest challenge companies face isn't buying the right technology, but transforming their organisation and culture. This requires long-term change programmes. It simply won't be possible for companies to achieve advanced digitisation without making a step change in investment, especially given the continued rapid progress anticipated by companies who have already invested and are leading the charge. The investment required to catch up with these companies is likely to be too costly, and faster-moving companies will have a significant advantage when it comes to positioning their offerings as a 'platform of choice' within digital ecosystems. Perhaps most importantly, companies who try to jump in too late will find that their internal cultures have lagged behind.

Figure 8. Which return on investment period (ROI) do you expect from your digital investments?



A major focus of investment will be digital technologies, like smart sensors or connected devices, as well as supporting software and applications, like manufacturing execution systems (MES). The difficulty for some is to define a clear business case, although it seems all companies recognise the importance of the underlying IT infrastructure as a crucial enabler to generate, store and analyse data, and steer processes.

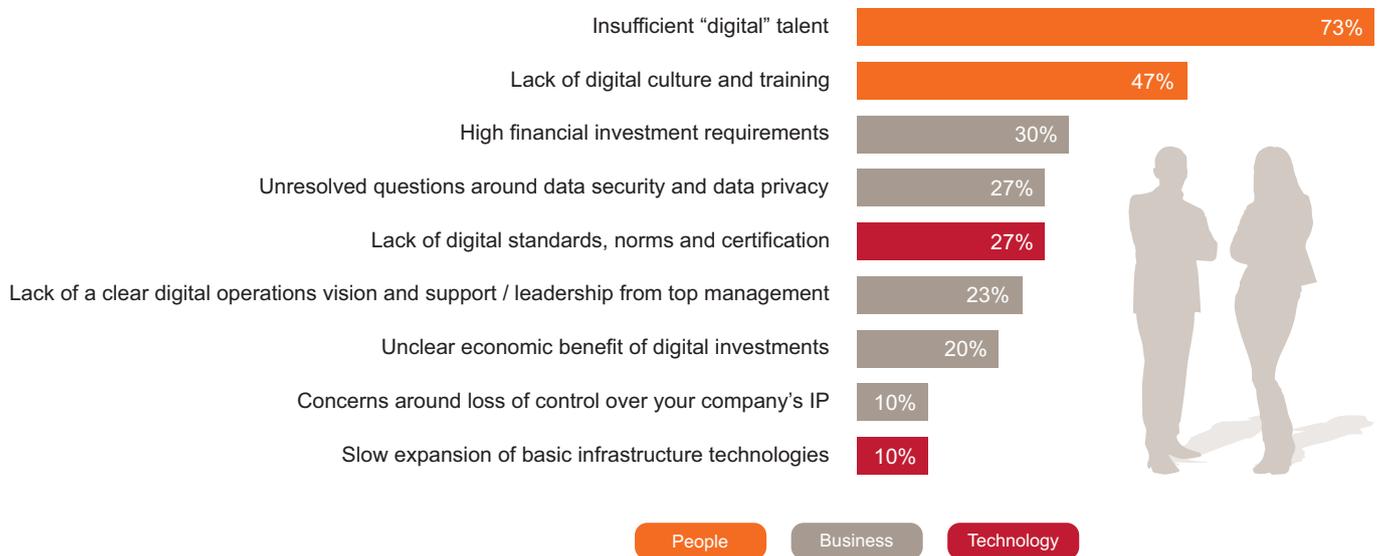
Looking at the projected return on investment (ROI) period for investments, there's a clear preference for a one to two year horizon (53%). Only a few companies (7%) have indicated a willingness to invest on the more long term (> 5y), which is comparable to the global average.

Within the next five years, advanced implementation of Industry 4.0 will become a 'qualifier to compete' and is also likely to be seen by investors as a 'qualifier for funding'. Companies who haven't kept up will not only find themselves struggling to maintain market share, but are also likely to face higher capital funding costs.

² PwC global report 'Building your digital enterprise'

e. People unlock the value of transformation

Figure 9. Where are the biggest challenges or inhibitors for building digital operations capabilities in your company?



Although when talking about Industry 4.0 a lot of attention is spent on technologies, its success will be very much determined by what people do with these technologies. As such, humans lie at the heart of Industry 4.0 transformation.

Most companies are mainly concerned about the people dimension of Industry 4.0, rather than the technological dimension (see figure 9). Indeed, with regards to hurdles identified in our survey, the top two concerns are people, followed by business dimension, and only then technological constraints.

Every respondent expects there to be a huge impact on human capital. Both blue and white collar jobs will be affected, mainly due to a shift in required skills and competences. The biggest challenge companies currently face is a lack of digital talent. They all have talented people, but as new technologies and applications flourish and at speed, they need more digital expertise to be able to transform existing capabilities into new ones. And it's not a one-off exercise, life-long learning will be crucial.

The overall company culture will also have to embrace new technologies and accept rapid change in daily operations. This requires an agile and open culture, a concern for 47% of companies surveyed. To create a truly

'digital culture', it's essential to have a clear digital operations vision that inspires and motivates employees. Today, 23% of the surveyed companies indicate that they don't yet have a complete picture.

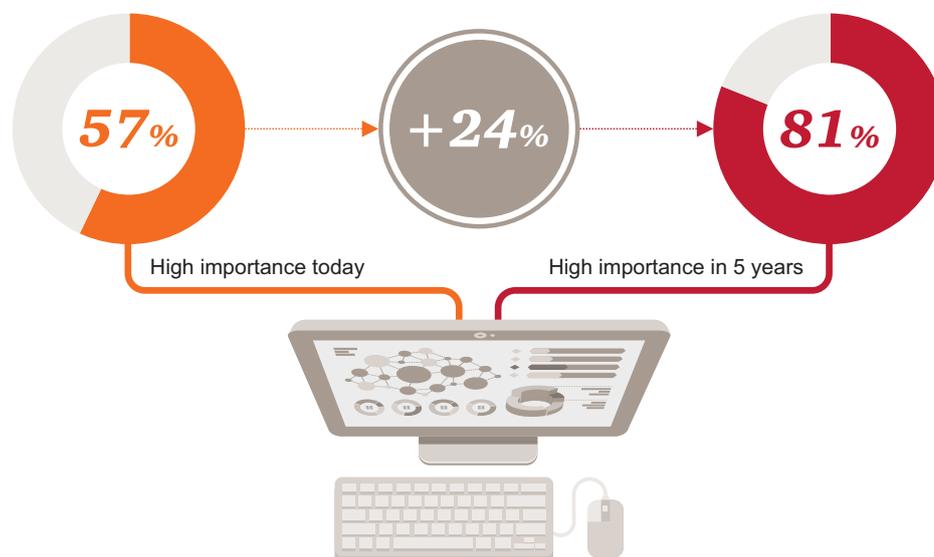


“We recognise the crucial importance of data for both internal operations and to gain access to and support clients. Over the last years, we’ve invested significantly in physical assets. We now need to focus on the virtual data layer that our new assets create. Even more importantly, we need to invest in our people, and that’s why we recently introduced the role of CIO to our management team to make sure we address the data challenge in a professional way, and give it the right level of attention.”

Danny Dresselaerts – CEO Brouwerij Martens

f. Data and what you do with it, a crucial Industry 4.0 enabler

Figure 10. Data and analytics are becoming increasingly important to decision-making



Data lies at the heart of the fourth industrial revolution; data can be used to improve products (e.g. the addition of features based on user feedback and quality improvements as a result of better process understanding) as well as enabling processes (e.g. maintenance and reliability of assets, planning, transportation and logistics processes), but the massively swelling information flow brings little value without the addition of the right analytics techniques. The rapidly growing number of sensors, embedded systems and connected devices as well as the increasing horizontal and vertical networking of value chains result in a huge continuous data flow.

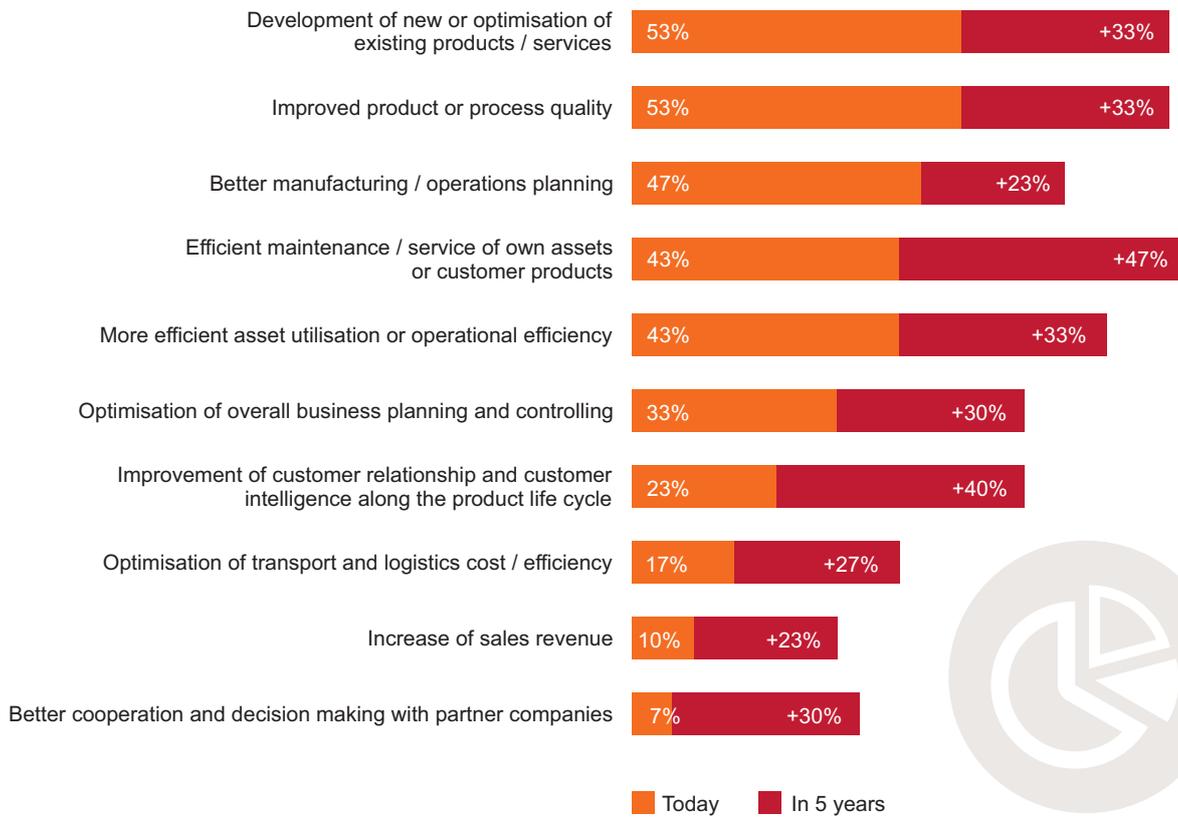
All companies in our survey recognise the increasing importance of data; with the overall level of importance expected to rise by 24% over the next five years; and data will become “the” source of truth on which decisions are made. A majority of participants (57%) indicates that today, although they already have a data driven mind-set and processes in place, there’s still more to do and greater potential to be leveraged. They’ll not only have access to larger amounts of data, but it will be better quality data, which, combined with more robust data analytics process and system compatibility, will heavily impact the data-driven culture of their business.

Again, the biggest challenge companies are experiencing is the difficulty to attract the right competences; experts who can turn huge amounts of data into valuable insights, distinguish between relevant and irrelevant data based on process understanding, and can handle data manipulation and advanced algorithms. Only when they have sufficient expertise can companies start to exploit opportunities within their business context.

The impact on data privacy, data property and corresponding data security need to be tackled on a case-by-case basis, as this will vary depending on the specific position in the value chain.

Concrete applications of advanced data analytics don’t need to be reinvented. Companies are already using data or see future benefits from increasing data usage in existing business processes. The biggest potential, and probably the first application areas to be further exploited, lies in more efficient maintenance of assets, improved product and process control, and optimisation of products and services.

Figure 11. In which areas are you using (big) data analytics today and in 5 years?

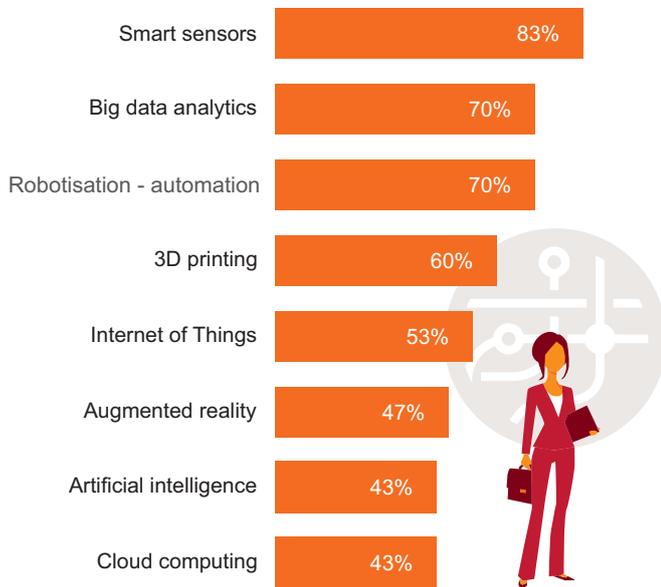


“Data capturing, processing and analyses are must haves to enable autonomous passenger transport. Our next generation buses and coaches will be equipped with the necessary technology to support this.”

Peter Wouters - Managing Director VDL Roeselare

g. Intensified collaboration is critical for success

Figure 12. Which technologies do you think will improve your manufacturing?

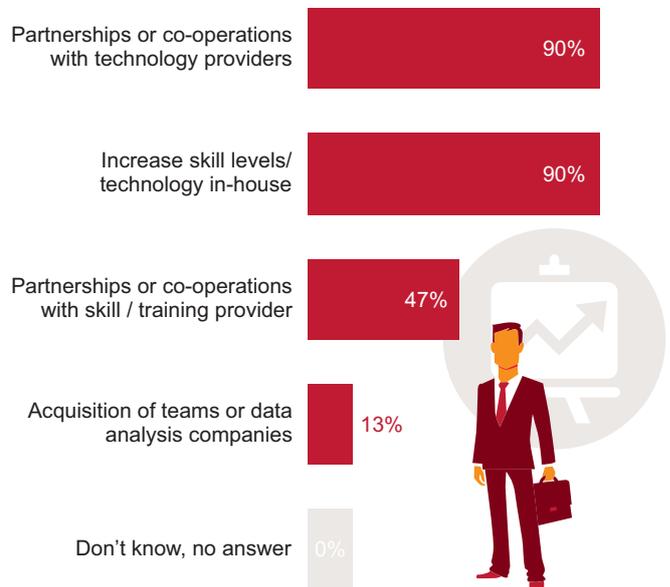


While a lot of new technologies are knocking on the door, few people have the latest insights about these state-of-the-art technologies. To overcome this challenge and follow the curve, companies need to think about an ecosystem setup. Indeed, the increasing complexity of the world means companies need to work together with partners, even establishing joint initiatives, and leverage the individual strength of each to accelerate developments.

Figure 12 offers an overview of the technologies expected to bring value to manufacturing processes according to our survey. Some technologies are non-questionable (e.g. smart sensors – Big Data), others are more specific and not universally applicable. How can you keep up with such a broad range of different technologies, each evolving very rapidly and requiring specific skill sets?

Most companies initially rely on competent partners to help them develop in-house skills. This is not a new approach, and is still very much based on traditional practices. How can firms tackle this in a faster-evolving world, where skilled resources are scarce and new technologies are widely spread?

Figure 13. How are you planning to improve your technological (eg. Data analytics) capabilities in the future?



There's a clear need for a more sustainable ecosystem of partners, specialising in different areas. This ecosystem will need to be open to a certain degree, with knowledge shared openly and fluently, and clear agreements on intellectual property (IP) in place. It also requires a culture change from an overall company perspective, rather than at the individual level.

Good examples of this ecosystem approach and cross-company collaborations are popping up, but there's room for many more. However, many companies seem reluctant to open up their borders and share best practices with non-competing industry peers.

h. Blueprint for digital success

Based on conversations had as part of the study as to how participants have approached or are approaching their individual Industry 4.0 journey, we've compiled a step-by-step blueprint for success. Although step-by-step, we recommend moving with deliberate speed, so as not to lose first-mover advantage.

Figure 14. **Blueprint for digital success**



1. Map out your Industry 4.0 strategy

Evaluate your own digital maturity now and set clear targets for the coming five years. Prioritise the measures that will bring the most value to your business and make sure these are aligned with your overall strategy. Identify in which group you belong (see page 12).

2. Create initial pilot projects

Use pilot projects to establish proof of concept and demonstrate business value. Target a confined scope, but highlight the end-to-end concept of Industry 4.0. Not every project will succeed, but they will all help you take a cross-functional and agile approach with customers and technology partners – the new norm of the future (see page yy). Project success will help you gain buy-in from the organisation, and secure funding for a larger rollout. This is the only way to start creating your digital culture. Design pragmatically to compensate for standards or infrastructure that don't yet exist. Collaborate with digital leaders outside your organisation, by working with start-ups, universities and/or industry organisations to accelerate your digital innovation.

3. Define the capabilities you need

Building on lessons learned in pilots, map out in detail what capabilities you need to achieve your vision. Include how enablers for Industry 4.0, like an agile IT infrastructure, can fundamentally improve all of your business processes. Remember to develop strategies for attracting people and improving processes, as well as for implementing new technologies. Your success with Industry 4.0 will depend on skills and knowledge, and as we've seen, this should be your biggest concern (see page 14).

4. Become a virtuoso in data analytics

Consider how to best organise data analytics; cross-functional expert teams are a good first step. Later, these capabilities can be fully embedded into your functional organisation. Learn to get value out of data by building direct links to decision making and intelligent systems design. Use data to improve products and their use in the field, and to offer and build new service offerings. Think big, but start small, with 'proof of concept' projects (for example in the application areas mentioned on page 16).

5. Developing into a digital enterprise

Capturing the full potential of Industry 4.0 often requires company-wide transformation. Look to set "the tone from the top" with clear leadership, commitment and vision from the C-suite and financial stakeholders. Foster a digital culture: all your employees will need to think and act like digital natives, willing to experiment with new technologies and learn new ways of operating. Remember that change doesn't stop once you've implemented Industry 4.0. Your company will need to reinvent its capabilities at faster rates than in the past to stay ahead of the game.

6. Actively plan an ecosystem approach

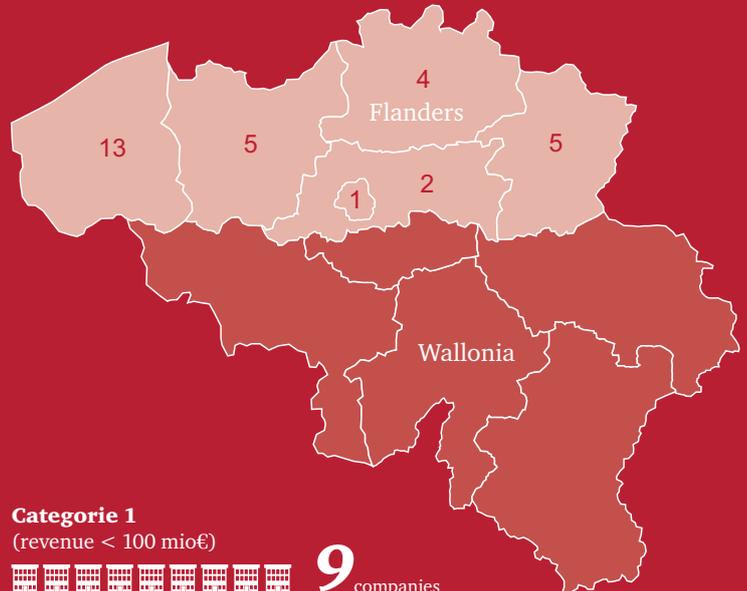
Develop complete product and services solutions for your customers. Use partnerships or align with platforms if you cannot develop a complete offering internally. You may find it difficult to share knowledge with other companies, and you may prefer acquisition, but look for ways to bridge this gap – perhaps with technical standards – so that you can profit from being part of platforms that you don't fully control. Real breakthroughs in performance happen when you actively understand consumer behaviour and can orchestrate your company's role within the future ecosystem of partners, suppliers and customers.

6. About the study

PwC Belgium and Flanders MAKE conducted a series of face-to-face interviews (between October 2016 and February 2017) with relevant experts from a sample of leading industrial companies in Flanders, of different sizes, on the topic of Industry 4.0. The aim was to capture the current Industry 4.0 maturity level within Flanders and explore industry expectations of future challenges and opportunities.

The study is the first of its kind in Belgium and is based on PwC's 2016 Global Industry 4.0 survey *'Building your digital enterprise'* to allow Flemish results to be compared with a global perspective.

Thirty organisations representing a total turnover of 16.4 billion euros and together employing more than 33,000 people have participated to the study.



Categorie 1

(revenue < 100 mio€)



9 companies

Categorie 2

(100 mio € < revenue < 100 bio€)



14 companies

Categorie 3

(revenue > 1,000 mio €)



7 companies

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7. The research team



Peter Vermeire
Partner
Tel: +32 9 268 80 64
peter.vermeire@be.pwc.com



Dirk Torfs
CEO
Tel: +32 11 79 05 70
dirk.torfs@flandersmake.be



Johan Van der Straeten
Senior manager Industry 4.0 lead
Tel: +32 3 259 30 74
johan.van.der.straeten@be.pwc.com



Sonia Vanderlinden
Programme manager “human-centred production”
Tel: +32 11 79 05 51
sonia.vanderlinden@flandersmake.be

Additional contributors:

Benjamin Elen
David Desmet
Laurent Brackenier



Ger van den Kerkhof
Manager Marketing & Sales
Tel: +32 11 79 05 60
ger.vandenkerkhof@flandersmake.be

Additional contributors:

Frederik Petré
Stijn Pauwels
Bert Dexters



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