



Digitalisation in finance and accounting and what it means for financial statement audits

*Survey on status quo and
further digital development*

Confidence in the future

Preface

Digitalisation is transforming companies and other organisations more fundamentally than the business world has ever seen. As companies are transformed, so too are their finance and accounting functions, and in turn, their financial statement audits. But what will auditing of financial statements look like in the future? “That depends on the rate of change within companies, among other things”, says Robert Köthner, Chief Accounting Officer at the car manufacturer Daimler, in a conversation with PwC (see interview from page 22 onwards). And what is the rate of change in the companies’ finance and accounting departments?

Status quo and development compared with the previous year

PwC wanted to find out exactly, so we split this question into more than 40 detailed questions and asked officers from finance and accounting departments at 76 large and medium-sized companies based in Germany for detailed answers. We received them at the end of 2017. We’d like to thank the companies we surveyed for taking the time to reply.

The survey findings are presented in the pages below using graphs and text, each with brief assessments by PwC. Finance and accounting managers answered questions on the following topics:

1

Current state of finance and accounting

2

Digital future of finance and accounting

3

Current state and development of digitalisation in financial statement audits

4

What digitalisation means for cooperation between external auditors and clients

In the final section of this publication we provide a concise guide to a few of PwC’s digital applications. We are already using most of them successfully with clients.

We conducted the first survey on digitalisation of financial statement audits back in 2016, with 98 companies. It was very well received, which, along with the relevance digitalisation has for participants and for PwC as auditors, inspired us to conduct this second survey. This was a much more in-depth look at fewer companies. However, we decided to include some graphs comparing some of the findings from the current survey with the responses from 2016 to give more insight into overall trends.

We also added a transcript of an interview with the Chief Accounting Officer at Daimler AG to offer you even more specific insights. We are very grateful to Daimler for giving permission to print this.

We hope all our readers will benefit from reading this report. If you would like to find out more about applications for state of the art financial statement auditing, please contact us. We’d be happy to make the time to talk with you.



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En route to the digital future

One clear indication that finance and accounting (including financial statement audits) will change in the short and medium term is how participants rate the limiting factors for the use of technology: All the arguments stated in the survey against the use of new technologies are seen as having less weight. In particular, just 18% of participants view data protection and security as limiting factors. In 2016 the figure was 54%, three times higher. However both issues remain extremely important.

Data protection requires rules and trust

An increasing proportion of data used by management teams to manage their transactions is today generated outside the companies and is no longer under their control. At the same time this information is also available to people outside the company, for example clients, investors, suppliers, shareholders or the general public. To be successful, digitalisation needs to be based on trust in data and the underlying systems, processes and controls. New technologies, information streams, roles and relationships in this eco-system reinforce the need to build trust, and pose risks. All of this requires new approaches to building trust. PwC is aware of this and we work on it day to day.

The companies' finance functions appear to be cautiously optimistic that they will get a grip on data protection in future, and even work on it jointly with the auditors: just 7% of participants cite "low" levels of acceptance in their own company's finance and accounting department, 53% less than 2016. Trust is increasing.

Fewer concerns about reductions in staff

From our daily work with our clients we know that new technologies such as robotics and artificial intelligence bring with them concerns about reductions in staff numbers. The survey also confirmed this: 19% of the decision-makers surveyed at the end of 2017 think that there will be a "considerable" technology-related reduction in staff numbers in their finance and accounting departments. However, this is lower than the 27% response rate in 2016. By contrast, the percentage of participants who expect to see only a "marginal" reduction in staff numbers is up 4% to 24%. And there has been an increase from 34% to 42% in those who expect reductions in staff numbers "in the medium term but not immediately".

Currently we are actually seeing that our clients' finance and accounting departments need more financial, IT and regulatory experts. Why is this? For example, training is required in artificial intelligence (AI), newly acquired datasets need to be structured, analysed and evaluated and increasing amounts of regulatory requirements need to be complied with. Yes, some reductions are to be expected in employee capacities for routine work. But at the same time employees will be added for new types of activities with new technologies.

New technologies for a wide range of areas of activity

New technologies include AI, software robots (robotics) and blockchain. The companies surveyed at the end of 2017 would like to make use of these new technologies in future in a wide variety of areas of finance and accounting. They are currently looking mainly at document recognition (22%), direct data processing with customers and suppliers (20%) and payment transfers (19%). While the companies surveyed (intend to) use new technologies for specific purposes in the financial statement audits, this is particularly for system settings and general, subledger analysis. According to the survey, new technologies continue to play relative minor roles in analysing business processes, reporting and documentation.

Artificial intelligence is increasingly relevant

Although AI is still in the early stages of development, it was already being used by 18% of the companies surveyed at the end of 2017, particularly for smart document OCR (Optical Character Recognition) and automating payment transfers. For example, the software now actually understands invoices and bills of lading rather than simply matching order numbers and invoice amounts. In the financial statement audits of the future, the companies surveyed think that AI will be particularly useful for detecting anomalies in posting data (34%) and identifying process vulnerabilities (25%), checking simulations of estimates or invoice forecasts (19%).

Over half of the companies surveyed still do not use AI, as in 2016. It is still seen as difficult to evaluate unstructured data and mass data systematically using AI.

Robert Köthner, Chief Accounting Officer at Daimler, also recognises the importance of data. As a result, his company is very actively considering how it can “develop a data culture and improve data quality”. A clear majority of the decision-makers surveyed already rate the importance of comprehensive data collection and analysis of these data as quite high (41%) or high (23%) for their companies’ competitiveness.

Robotics and blockchain still at an early stage

With regard to new technologies, apart from AI, companies are mainly looking at robotics. 13% of the companies already use software robots and 22% intend to do this. Many finance officers are planning to use them to execute routine activities in particular. The decision-makers are focussing here particularly on posting standard business transactions as well as data analysis/preparation.

Blockchain remains less used. 8% of the companies surveyed use this technology. And those who are already using blockchain want to use it above all to ensure data integrity, process transactions and manage customer and supplier relations. Blockchain is also used for signing contracts.

With regard to financial statement audits, 70% of the decision-makers surveyed at the end of 2017 expect the degree of automation to be between 10% and 40% by 2022. Just 58% of participants thought this in 2016.

The end of the Excel era is bringing new information gains

The survey clearly shows that the Excel era is swiftly coming to an end in finance and financial statement auditing. As a leading audit company, PwC is also obliged to invest huge amounts in new technologies, and we are well aware that we also still have many challenges to overcome, for example in analysis and reprocessing of mass data to achieve added value. We can do it, but only by working together with our clients.

We have already developed appropriate tools. An increasing number of clients are working with these and working with us to refine them. We present a few of these applications at the end of this publication. For example, one of our tools GL.ai (General Ledger artificial intelligence) uses algorithms in financial statement audits to save time when analysing large data sets and identifying areas of risk. PwC won the 2017 “Audit Innovation of the Year Award” organised by the “International Accounting Bulletin” (IAB) for GL.ai. It was the firm’s second award in a row: in 2016 the IAB gave the innovation award to our Halo family of auditing software.

Other new tools have also improved, for example, how we detect and address system vulnerabilities and other anomalies in finance and accounting compared with previous decades, or operate industry-wide benchmarking. This is how we know that new technologies can not only make financial statement audits more efficient, they can also bring companies additional information gains. Customers who authorise us to run additional analyses (and give us extra access to data this requires) confirm this. But unfortunately many companies are not yet where they would like to be (and could be) on this, which in turn has an effect in the sense of a new type of “audit preparedness” on the frequent expectations of added benefit from the financial statement audits.

Demand for progressive thinking and tolerant error culture

Companies also need to be ready to test new technologies and processes in an error-tolerant approach jointly with the auditor. “Ultimately the level of digitalisation that the auditor can apply will mirror that of the client in each case”, says Robert Köthner, Chief Accounting Officer at Daimler AG. If the client is less digitised, using digital auditing tools is all the more difficult. We share his view.

Companies that just want their auditors to sign off a report may minimise auditing costs but they are also missing out on the added value that the financial statement audits can provide them by using new technologies. Participants identified KPI analyses of individual business processes as one example. The three areas where the biggest changes are expected due to digitalisation of financial statement audits are audits of IT systems, historical financial information and business processes.

Politics must set the right focus areas

Experts are predicting that the amount of data will double every two to three years in future. If companies want to standardise, structure, analyse and use these data profitably to secure their competitiveness, it’s not just they themselves and we as auditors that need to act as drivers, but politics too. The political debate on digitalisation is currently revolving mainly around creating an infrastructure that is fit for mass data. That’s quite correct. But new approaches are also required on how to design data protection so that it puts fewer obstacles on companies’ paths to digitalisation. The European Union’s General Data Protection Regulation, which comes into force from the end of May 2018, is a very big challenge here for all participants.

We’d once again like to thank the companies that took part in this survey on the state and development of digitalisation in the finance and accounting sector. The results of the survey are summarised below.

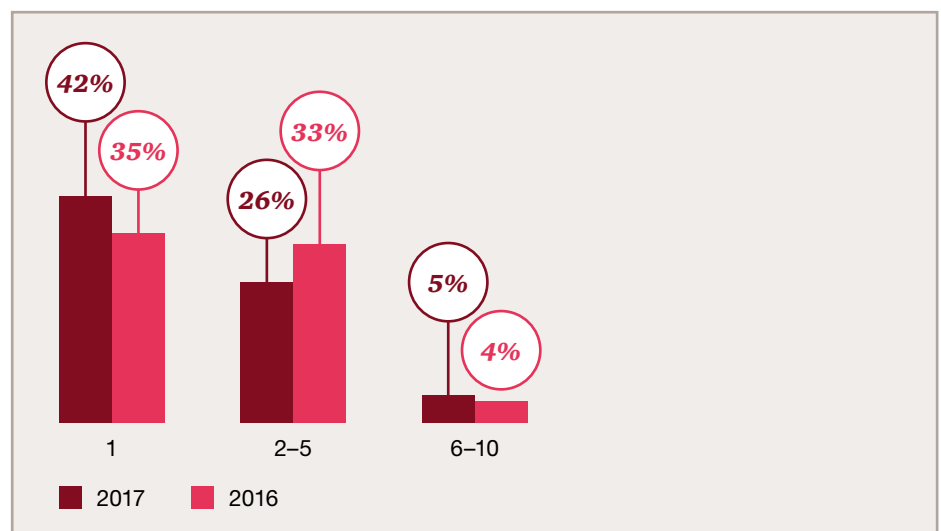
1 Current state of finance and accounting

The first part of the survey looks at how the decision-makers surveyed rate the status quo of digitalisation in their own finance and accounting, how they combine new technologies with existing ones, what their finance and accounting departments are already using new technologies for, and what value artificial intelligence, robotics or blockchain in the finance function is adding to their company. The survey also casts light on the use of new technologies in stakeholder communication and what digitalisation means for employee numbers. This first part of the survey also includes a presentation of just a few initial future expectations from participants. We drill down into these future expectations in the second part.

Number of computer centre locations down

42% of the companies surveyed at the end of 2017 operate just one computer centre for their finance and accounting. This is up 7% on 2016. The number of companies using two to five, or more than ten computer centres has fallen considerably. Only a small minority run six to ten computer centres, virtually the same as 2016. 20% of the companies surveyed at the end of 2017 do not use any in-house computer centres because they do not compile consolidated financial statements. More of this type of company were included in the current survey. However the trend is clearly towards a reduction in computer centres.

Fig. 1 Number of data centres per company surveyed



What PwC says

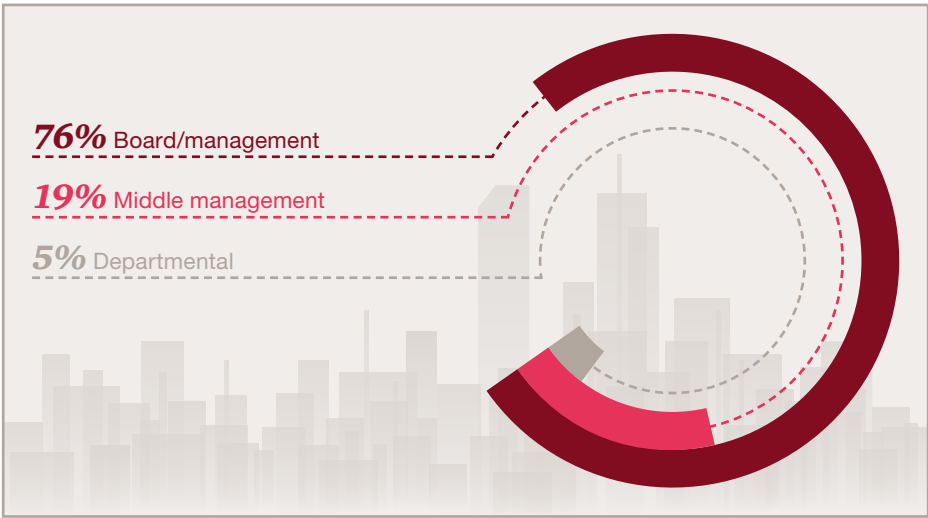
There are many benefits to consolidating computer centres. For example, spreading data across fewer computer centres makes them easier and quicker to control, manage, structure and process.

Digitalisation predominantly an issue for top management

In more than three quarters of the companies surveyed, the board or management decide on the technological architecture of finance

and accounting. In just 19% this task is assigned to middle management; just 5% assign it at department level.

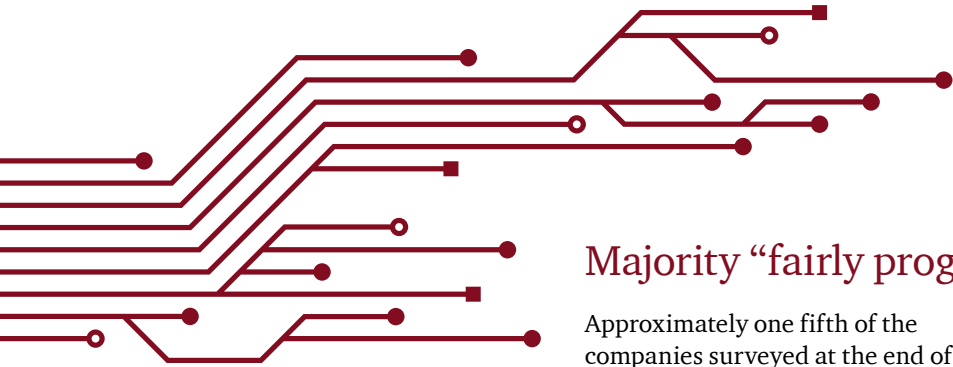
Fig. 2 Responsibility for technological architecture



What PwC says

The majority of managers surveyed recognised that digitalisation is a cross-cutting strategic issue and that finance and accounting is an important part of it. We view this recognition as key to the success of digitalisation in companies and other organisations. The higher this cross-cutting issue is in the company's hierarchy, the more relevant it is across the whole organisation. This also increases the likelihood of a consistent, overall strategy.



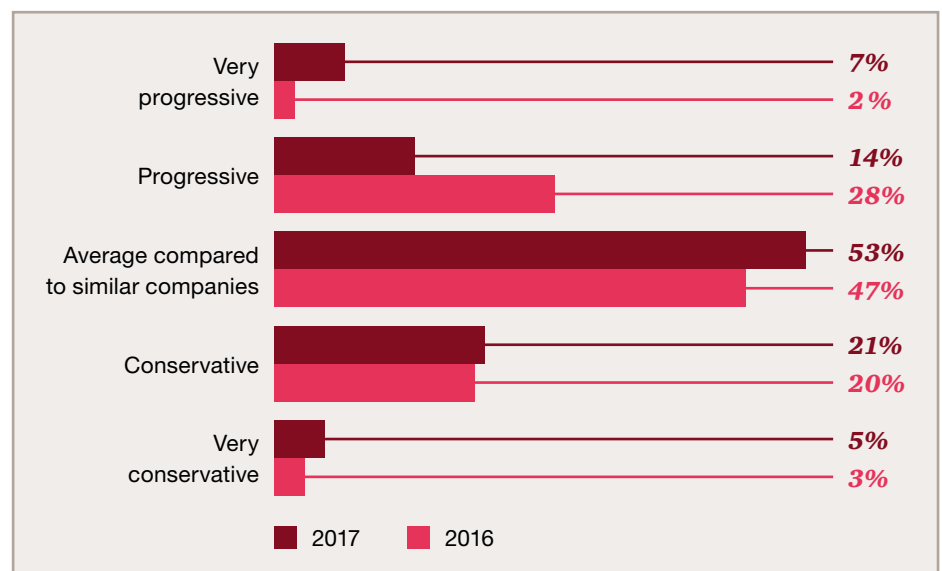


Majority “fairly progressive” on use of technology

Approximately one fifth of the companies surveyed at the end of 2017 describe the use of technology in their own finance and accounting departments as “very progressive” or “progressive”. Overall this marks a decline since 2016, although the “very

progressive” were up from a low level. 53% of the decision-makers surveyed at the end of 2017 think they are on a similar path as other companies. This was 6% more than the previous year. And 26% in turn rate themselves as conservative or very conservative.

Fig. 3 Use of technology in finance and accounting



What PwC says

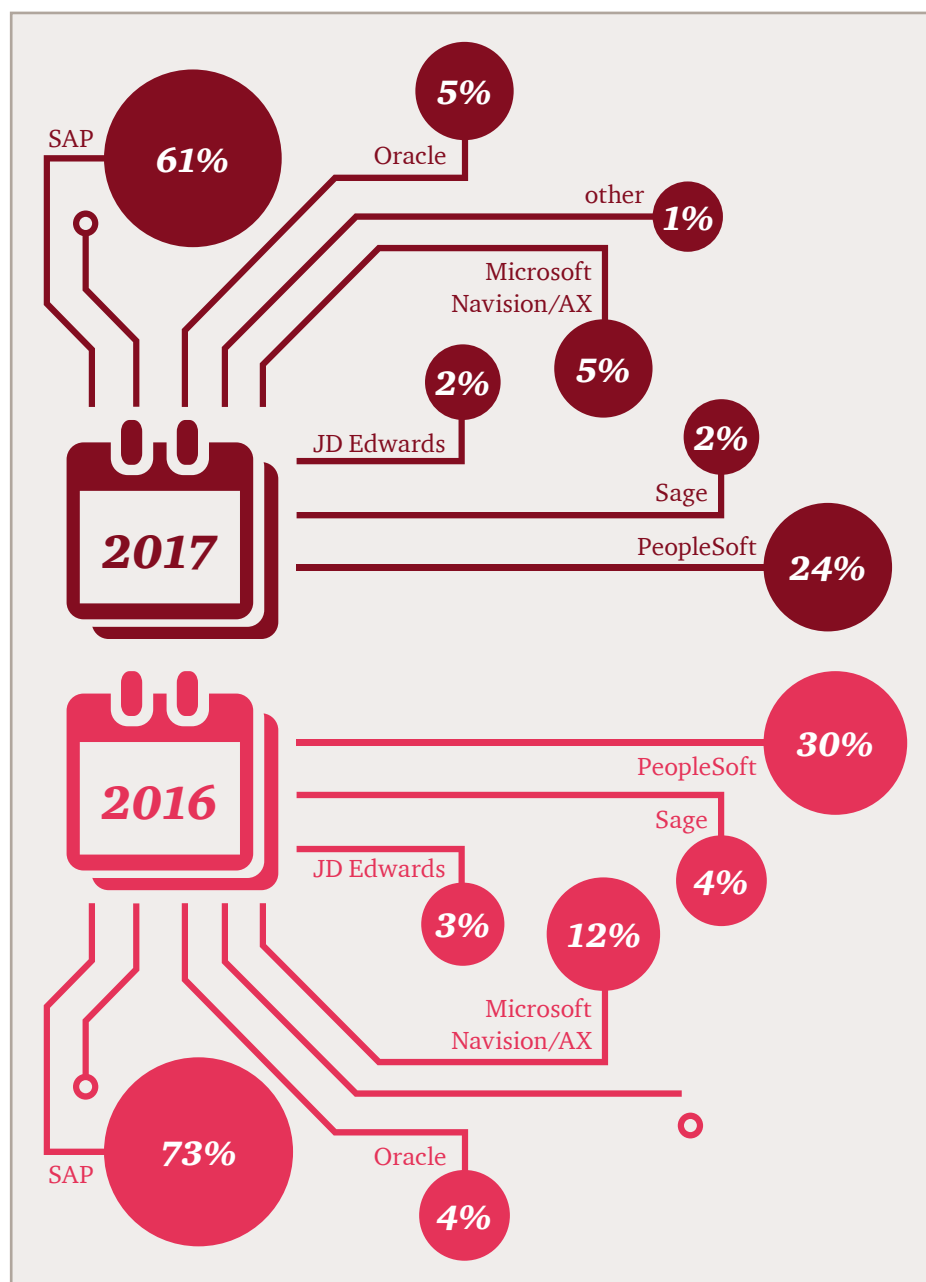
The fall in the number of those surveyed rating their company as “progressive” and the (slight) increases in “conservative” and “very conservative” are most likely due to the fact that in 2017 the digital revolution had a stronger presence in the media and in companies than previously. This also meant many finance and accounting managers realised that their divisions had a long way to catch up on new technologies such as artificial intelligence and robotics.

ERP system landscape stays roughly the same

The IT system most in use at the end of 2017 by the companies we surveyed was SAP's Enterprise Resource Planning (ERP), followed by Microsoft, Oracle and PeopleSoft solutions. (Since multiple answers were possible in the

2016 survey, the total figure in the graph is greater than 100%.) The reason for the drop in SAP's share shown in the graph is the change in structure of the companies surveyed at the end of 2017.

Fig. 4 ERP systems for finance and accounting



What PwC says

With the S/4 HANA system, SAP has heralded a new stage in its evolution. It is designed to deal with the relatively atomistic situation in which there are many other providers based on custom system landscapes and in-house creations. If companies use too many different software applications this can significantly reduce the potential for data standardisation compared with relatively homogeneous IT landscapes. One consequence of this is that it is harder to analyse the data, for human beings or artificial intelligence.

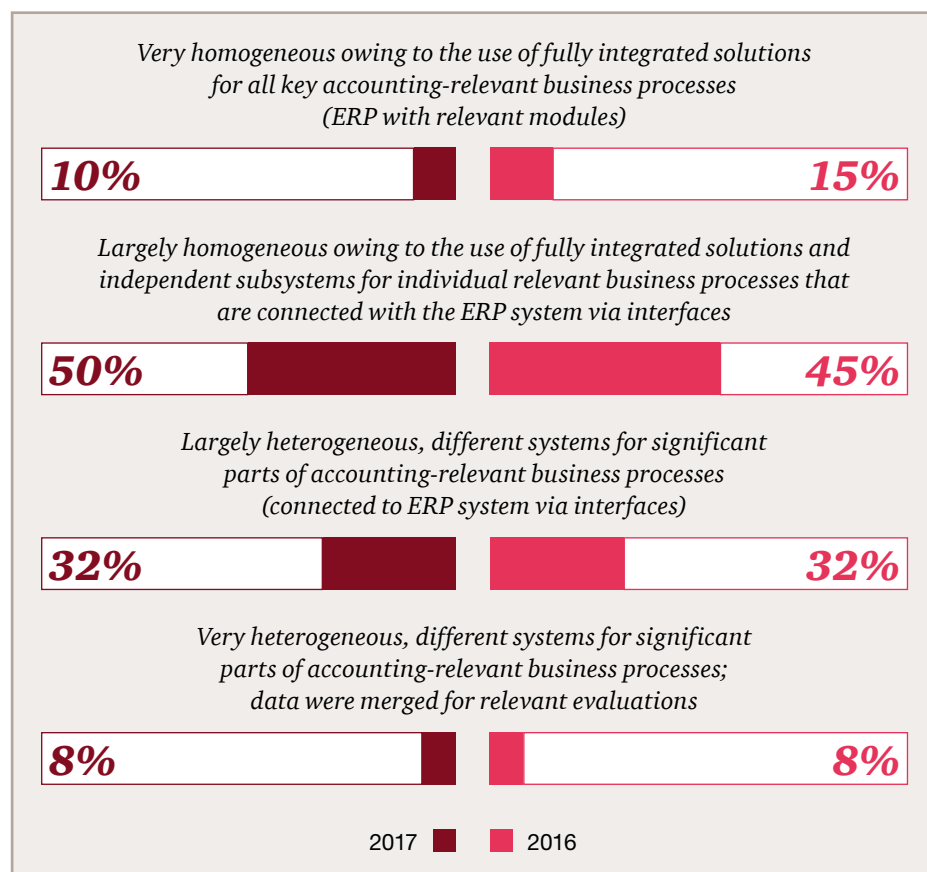
System landscapes predominantly homogeneous

Most of the decision-makers surveyed at the end of 2017 describe their current finance and accounting system landscape and finance function as being as very homogeneous (10%) or largely homogeneous (50%) because they use fully integrated solutions. Some IT solutions in these companies have independent subsystems for individual business processes that are connected to the ERP system.

What PwC says

Process standardisation forms a basis for successful digitalisation strategies. So the trend towards homogeneous system landscapes is conducive to digitalisation in finance and accounting. This is because the number of high-cost interfaces is reduced in homogeneous system and data can be analysed and processed more quickly, with fewer steps along the way.

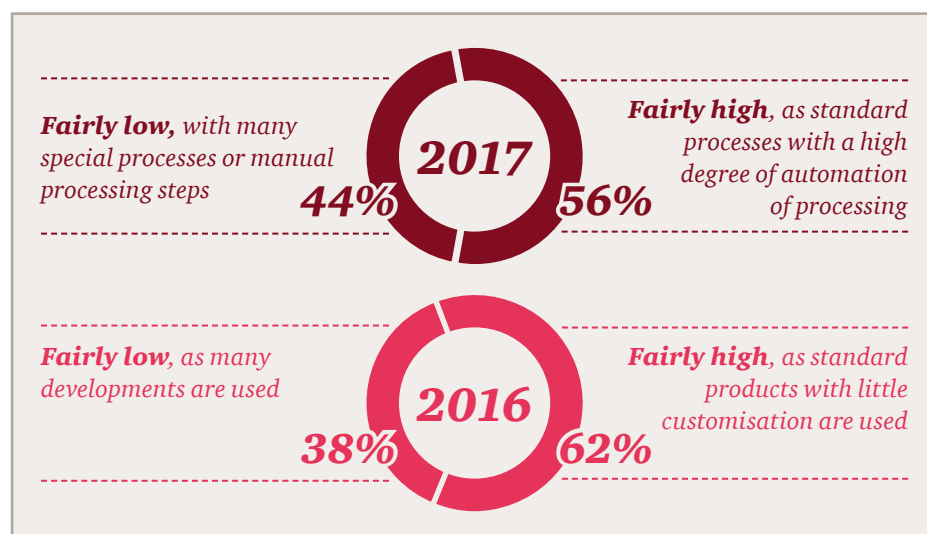
Fig. 5 Level of homogeneity/heterogeneity of system landscapes



Degree of standardisation of IT systems falls

44% of companies surveyed at the end of 2017 view the degree of standardisation of their current IT systems used in finance and accounting as fairly low. That's 6% more than 2016. Conversely: The proportion of companies with a fairly high degree of standardisation has decreased.

Fig. 6 Degree of standardisation of IT systems used



What PwC says

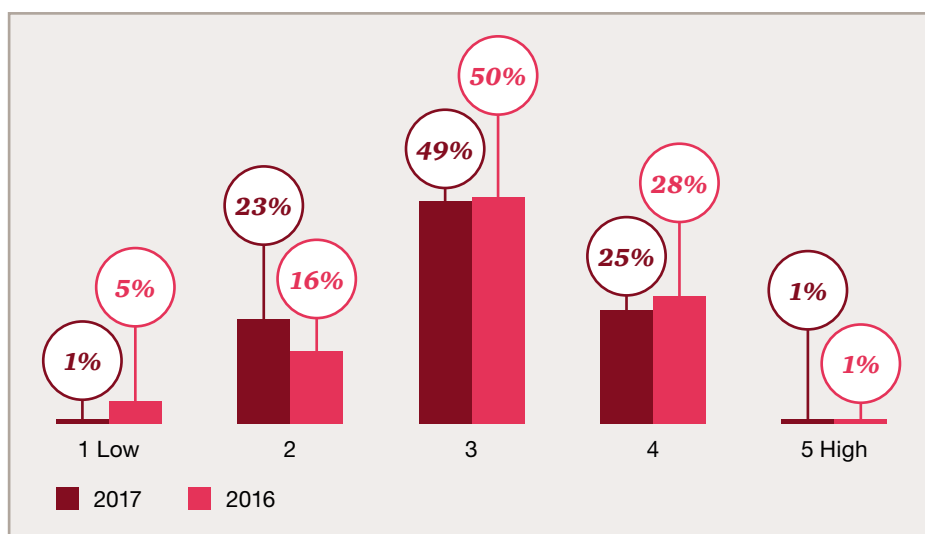
The companies' landscape has changed considerably in recent years, mainly due to acquisitions and sales of companies and parts of businesses. System landscapes are fragmented by mergers and acquisitions. Since a number of different systems collide in the new company structures and are often (at least initially) linked, the degree of standardisation drops and custom solutions increase. This acts as an obstacle to digitalisation since digital applications are easier and quicker to implement if the degree of standardisation is high.

Technology as substitute for human beings: the picture is not clear

Technical systems almost never replace manually activities in almost a quarter (24%) of the companies surveyed, an increase of just 3%. 49% describe the level of substitution at the mid-point between “low” and “high” (2016: 50%).

And 25% are seeing substitution by technology in their own finance and accounting departments. And the proportion of companies who gave the response “high” remains unchanged at just 1%.

Fig. 7 Substitution of manual activities by technology



What PwC says

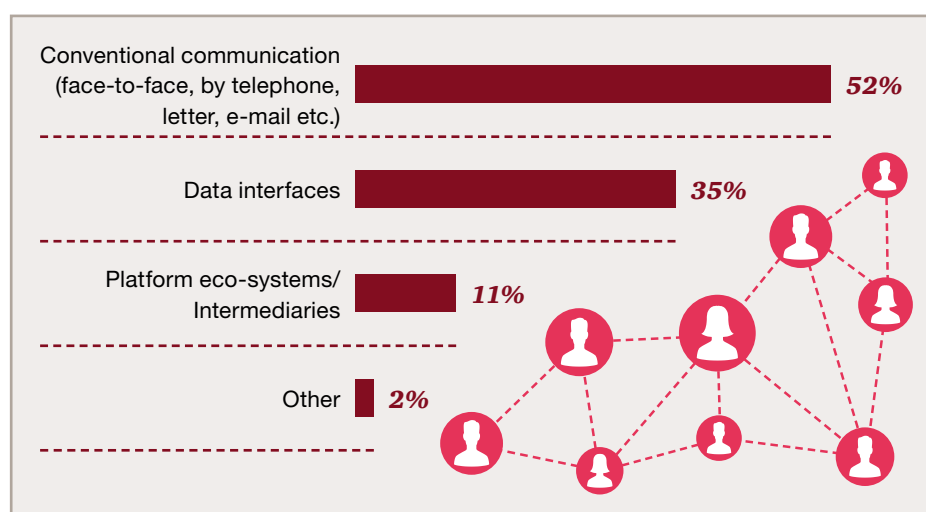
There are currently only a limited number of companies where digital technologies such as artificial intelligence are replacing human beings in finance and accounting. That's because there is still no fully automated system that can answer questions such as "How do I show leased assets on the balance sheet?". These types of questions need a level of judgement that so far only human beings can provide. Current business practice is much more about understanding the mass data generated and processing it automatically, for example recording all lease contracts present in the company. And questions about substituting human work with technologies are often difficult to answer. We think that is mainly due to the scope, across three levels: Firstly, even highly qualified people wonder whether new technologies can take on not just routine operations but also their jobs. Secondly, companies need to review their value creation and business models. And thirdly, the technological revolution could transform entire social systems. These uncertainties make for highly emotionally-charged forecasts about substituting people with technology.

Stakeholder communication still largely conventional

When asked about the nature of their interaction with stakeholders, 52% of companies confessed that they still communicate by conventional means. Suppliers, customers and other

stakeholders receive e-mails, letters, phone calls or visits from them. Data interfaces are only operated by 35%, and platform eco-systems are used by far fewer.

Fig. 8 Nature of interaction with stakeholders



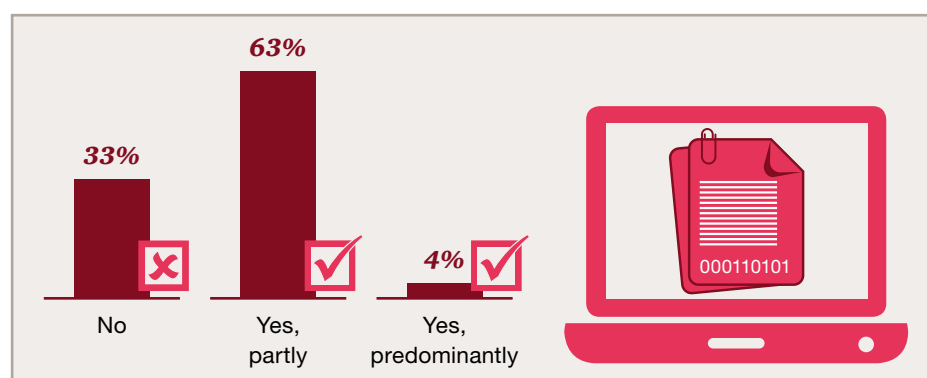
What PwC says

Something that the survey findings don't tell you: The trend is towards platform eco-systems. One feature of these is that they allow for heterogeneity (which in most cases makes digitalisation more difficult). Communicators using a platform of this type don't all need to use the same system, but their various applications are merged and made compatible using data interfaces. Sharing data internationally is often difficult here. It is extremely limited between Europe and the US due to the large number of data security regulations. At this point regulations are slowing down the pace of digitalisation significantly. Regulations that promote digitalisation would speed up the process.

Digitally signed documents on the up

Transmission of documents such as contracts, order confirmations and invoices are communicative transactions. However, a third of the companies surveyed do not yet receive them in the form of digitally signed documents. But 63% say they receive this type of document at times.

Fig. 9 Verification using digitally signed documents



What PwC says

These days we already share documents relatively quickly. It will take much longer before all participants sign these documents. Digital signatures significantly speed up business processes. And the digital signatories can be quickly and clearly identified. Digital signing is increasingly popular despite legal obstacles. It will also gradually roll out in financial statement audits.

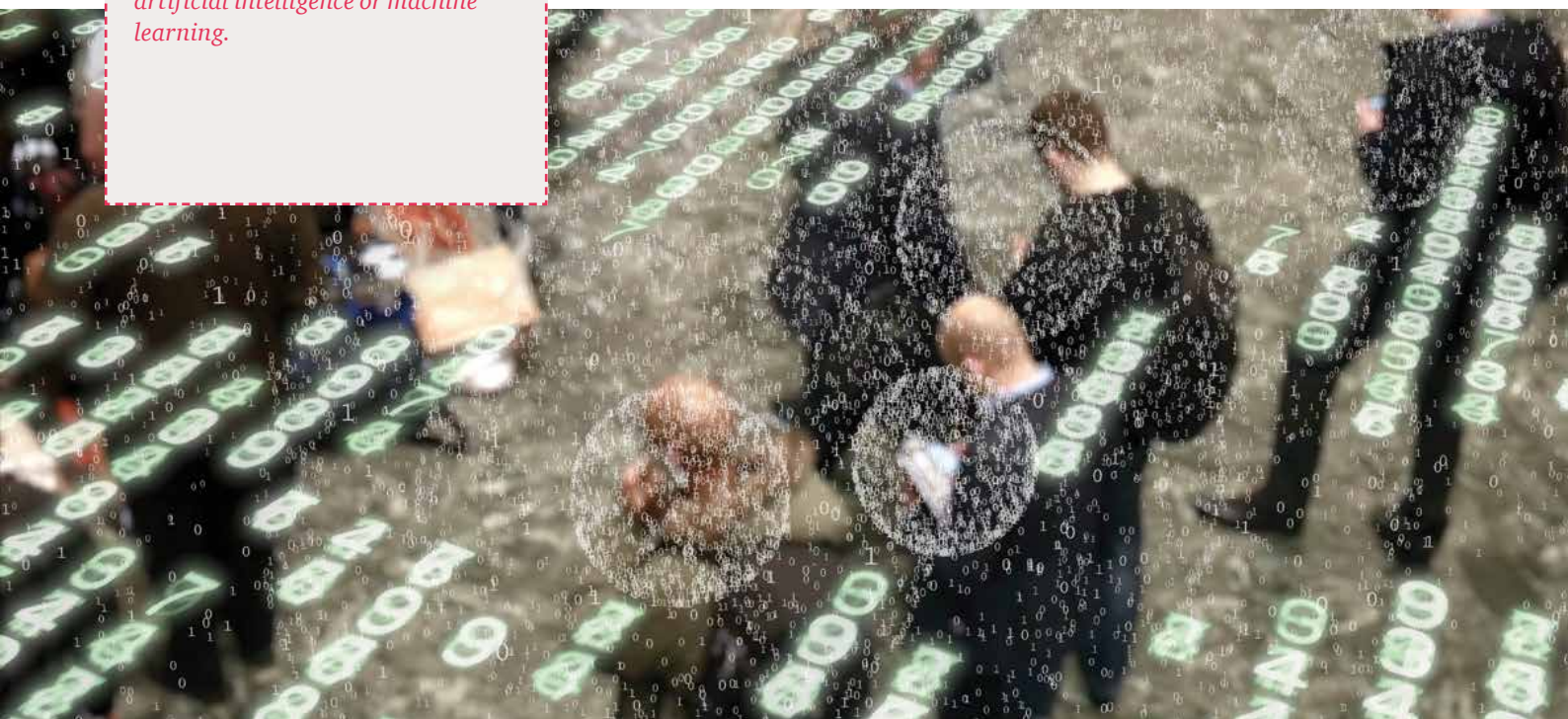
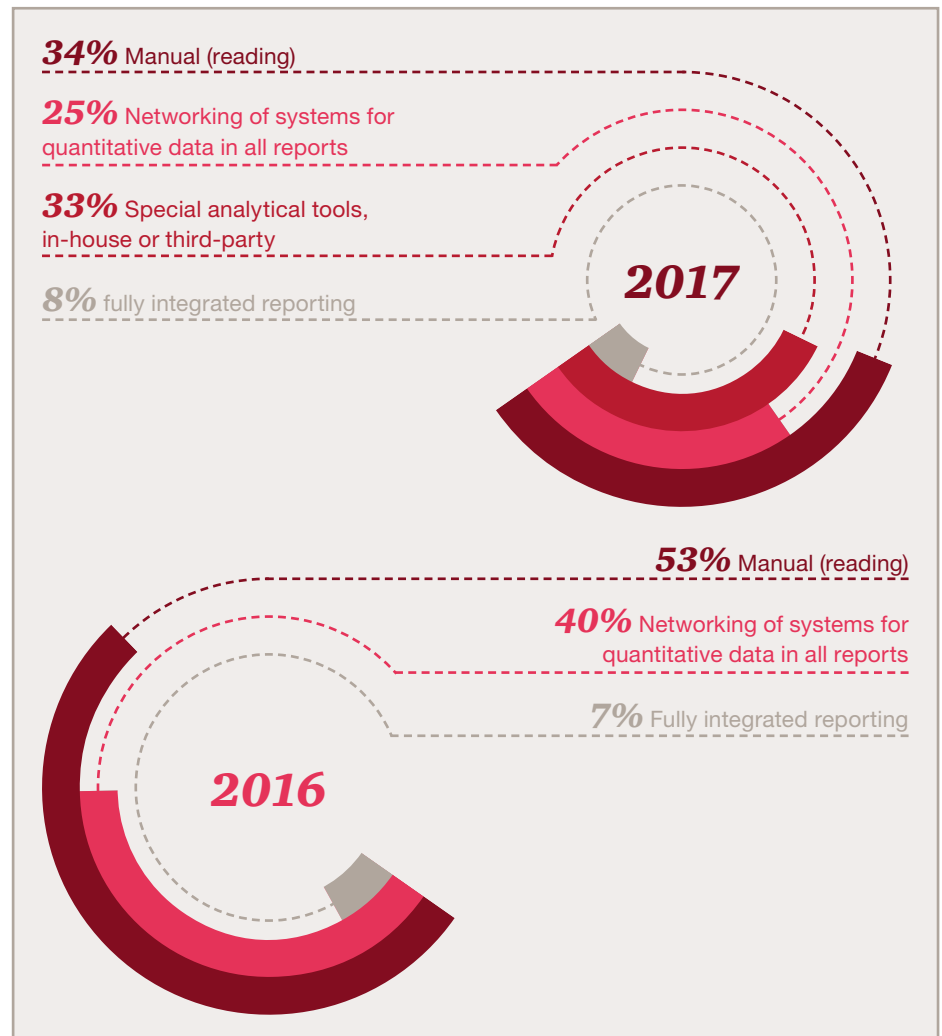
Integrated reporting still in the future

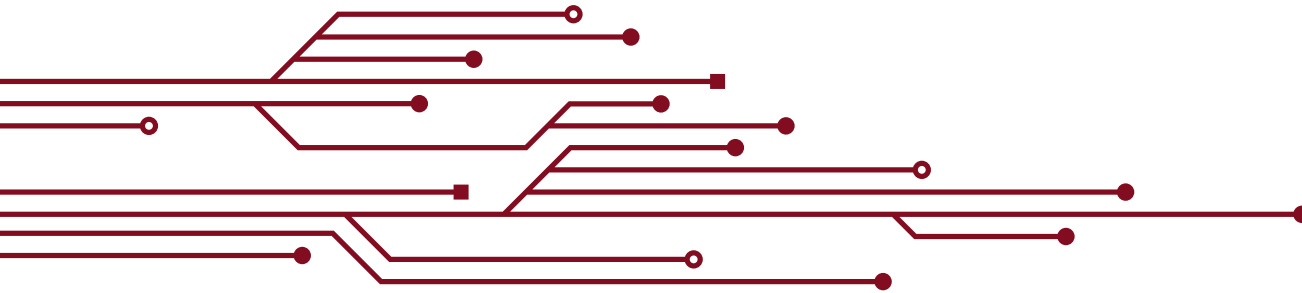
34% of decision-makers surveyed at the end of 2017 said that they are still analysing the consistency of their reporting in finance and accounting by reading it. In 2016 the figure was almost 20% higher. 33% use in-house or third-party analytical tools. This option was not available in 2016 and so is only shown in the 2017 graph. 25% of participants in 2017 network systems to check the consistency of quantitative data in their reporting only 8% compile integrated reports. That's only 1% more than 2016.

What PwC says

Little has changed since 2016. However the fact that in-house or third-party analytical tools are being used to a significant extent is evidence that technology is being used in a targeted way, but often without a switch to complete data integration. Integrated reporting requires all reports to be networked to ensure automatically that all data listed in one report match the data in the other reports. Manual consistency checking is a very time-consuming task and prone to error. We think it will be replaced by new processes in the near future, using artificial intelligence or machine learning.

Fig. 10 Analysis of consistency of reporting

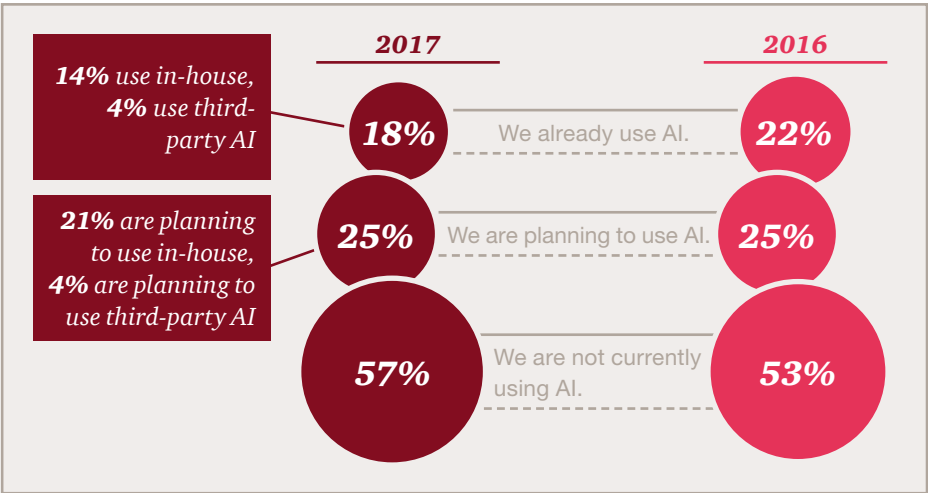




Artificial intelligence will take a while

18% of the companies surveyed at the end of 2017 said the megatrend artificial intelligence has arrived: 14% use in-house and 4% use third party systems. We didn't distinguish between these two options in the 2016 survey. Over half of the companies surveyed still do not use artificial intelligence, as in 2016. Judging from the companies' plans, implementation will increase in the next few years. 21% are planning to use in-house artificial intelligence and 4% are planning to use third-party solutions.

Fig. 11 Use of artificial intelligence



What PwC says

The companies' plans reflect the high potential offered by artificial intelligence. We predict that artificial intelligence will soon become routine, particularly in finance and accounting departments, for mid-size and large companies. The lack of take-up continues to be due to the fact that the companies first need to create the appropriate conditions it requires, such as standardising their processes and systems. Part of this involves dealing with their mass data – which can involve millions of accounts payable/accounts receivable postings. Simply trawling through these to identify, for example, anomalies in payment transfers, currently requires huge efforts.

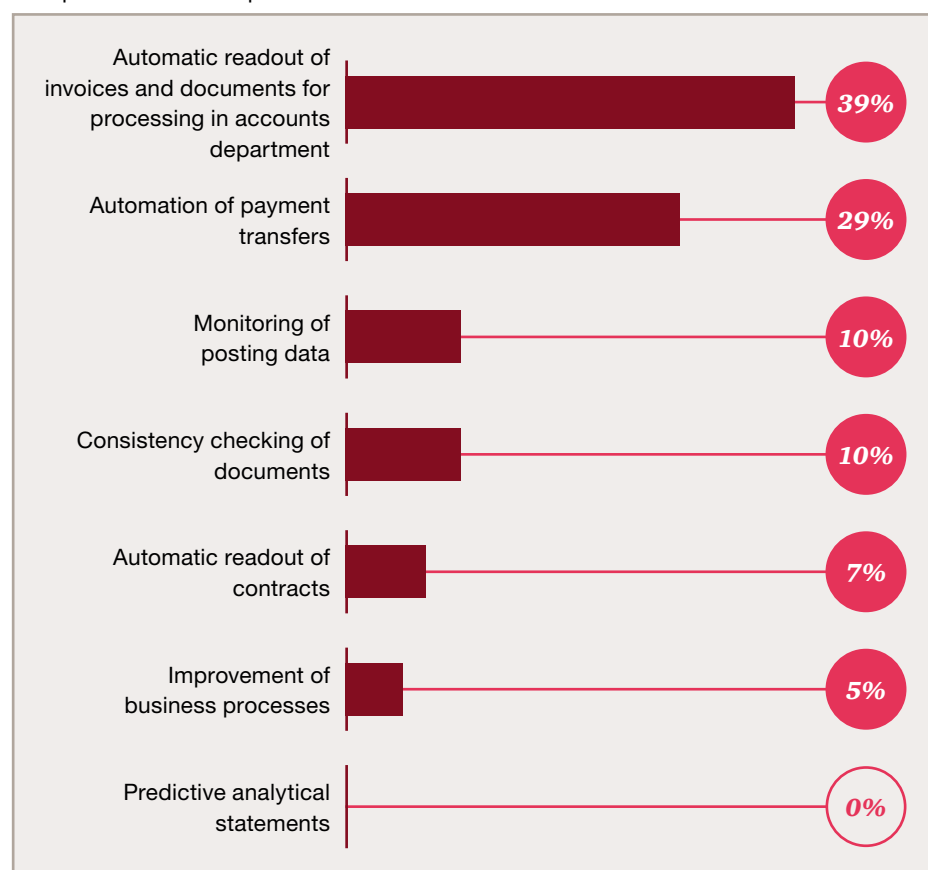
Artificial intelligence mostly in demand for document recognition

The most popular areas for artificial intelligence with the companies surveyed are automatic reading of invoices and documents for accounting (39% of responses) and automated

payment transfers (29%). Third place on the list of priorities is shared by monitoring posting data and consistency checking of documents, with 10% of responses each.

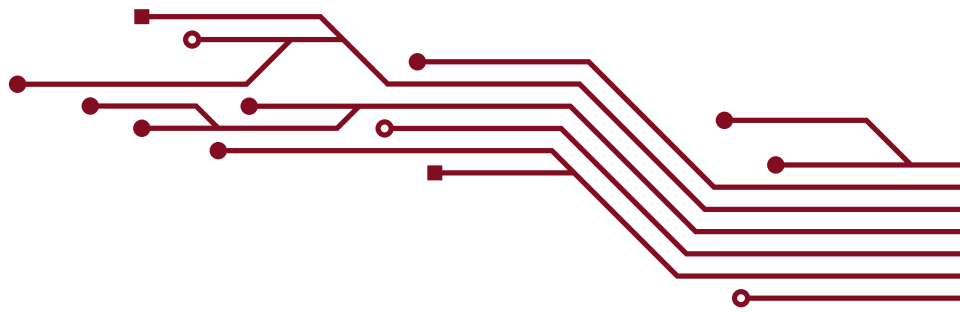
Fig. 12 Areas of finance and accounting supported by artificial intelligence

Multiple answers were possible.



What PwC says

Using artificial intelligence for automatic document recognition is already relatively popular because this technology operates sensitively. Technology without artificial intelligence, by contrast, operates using If-then formulae. For example: IF “Purchase invoice” appears at the top of the document, THEN it is a purchasing invoice. The problem with this is that: If just “Invoice” appears at the top, the technology does not recognise it as a purchasing invoice. Technology with artificial intelligence, by contrast, learns that a purchasing invoice might also simply be titled “Invoice”. That’s because artificial intelligence is constantly learning from past transactions. Automated reading of contracts using artificial intelligence is likely to be a topic for finance and accounting as well as chat robots. They would then give real time answers to questions such as: “Which invoicers submitted the highest invoices today and how high were they?” These chatbots will also learn using artificial intelligence.

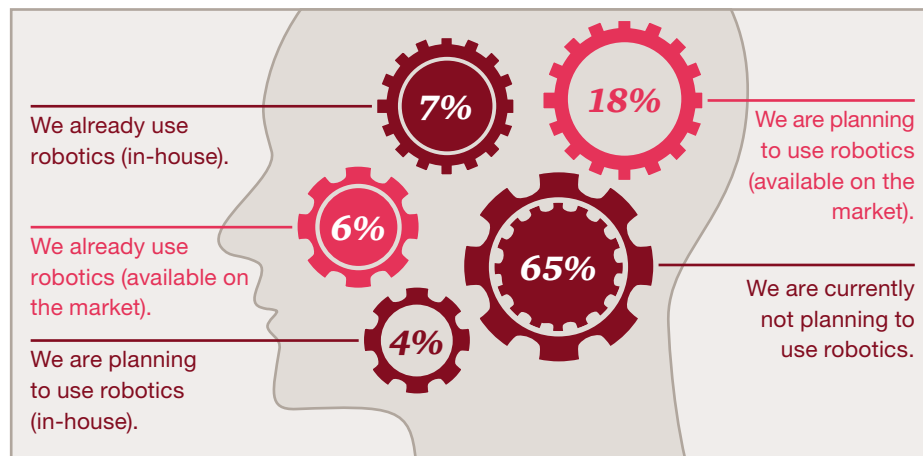


Robotics increasingly relevant

Are robotics relevant today in finance and accounting? The survey findings suggest they are. 13% of companies already use robots. And 22% are

planning to. The vast majority are planning to use robotics available on the market. A minority state that they will use in-house systems.

Fig. 13 Robotics in finance and accounting



What PwC says

Currently software robots that search for anomalies in finance and accounting are all the rage. If they find something the user decides whether it's a "hit" or not. Robots learn from this and increasingly recognise genuine anomalies in future. They are particularly suitable for routine activities, of which there are many in finance and accounting. Their big advantage is that they work round the clock.



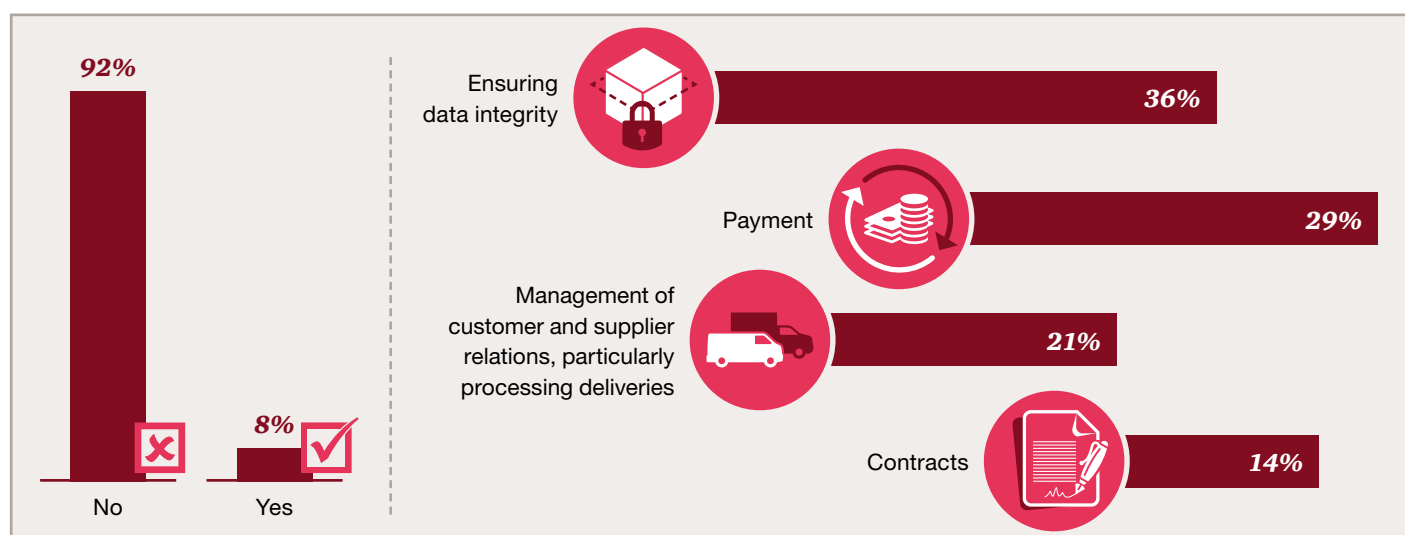
Blockchain still in the early stages

Everyone's talking about blockchain but it is far from universally used. 8% of the companies surveyed use this technology. And those who are already using blockchain want to use it above all to ensure data integrity, process transactions and manage customer and supplier relations. It is also used for signing contracts.

What PwC says

Finance and accounting managers should monitor developments in blockchain closely. It is still far from mature; in finance functions the technology has barely arrived. But this will change. A common problem with this is still how blockchains are administered and how companies stop administrators from manipulating them. Monitoring the administrators will become a key task for external auditors.

Fig. 14 Blockchain and potential areas in which it can be used



Blockchain – for joining up systems and complete transparency of systems

The starting point for a blockchain is a decentralised database that provides a record for every old and new transaction between companies and other participants. This database is constantly expanded and is linked to each element that is added. This develops into an infinitely large chain. In an ideal financial world, financial systems of all companies would be fully networked by a blockchain and all participants would have the same information status. Any reversal would not go unnoticed. Blockchains will change the scope of audits considerably. Financial statement audits and the quality seal will concentrate particularly on the interfaces between the individual blockchains and on areas with wide discretionary decisions. The findings from the financial statement audit will conversely become part of the blockchain.

Excursus

Digitalisation in finance and accounting at Daimler AG
Interview with Robert Köthner, Chief Accounting Officer

“The corporate culture plays a key role.”

How do you rate your own finance and accounting department with regard to the use of technology?

Daimler compiles its financial statement, including Notes and management report etc. within just 30 business days. That puts us pretty well at the top of our peer group in terms of timing. In a company with a turnover of over €160 billion, we couldn't do that without technology. So we can say that we already have a pretty high degree of automation, particularly in terms of transactions. But there are always opportunities for improvement. In many areas of finance data are frequently processed using Excel which we think leaves a lot of room for technical optimisations.

How do you use technology in finance and accounting?

During mid- to long-term large-scale projects such as the launch of new SAP products we achieve considerable automation effects based on the opportunities inherent in those products and by aligning the way we organise ourselves with the products. Changing corporate culture is just as important for us. We encourage our employees to think about current use cases and implement them themselves. And that means that unlike previously there is not a top-down strategy for simply implementing this. Instead, employees include internal digitalisation experts as “sounding boards” in the ideas development process and use them for implementation. And our “tone at the top” has changed significantly. We use leadership programmes to create an organisation-wide framework for increasingly trying out solutions. This gives our employees more latitude and opportunities to develop new solutions. If they work, they are scaled up.

How are your shared service centres (SSCs) doing on technology? To what extent can these or key functions be replaced by technology?

Our current use cases for robotic process automation (RPA) in the SSCs are designed, for example, to make financial statement posting, generate mass postings, replace many previously manual activities for the monthly financial statements. This frees up employees to concentrate on other issues. Depending on the objective, the time gained can be converted into quality or efficiency gains.

How do you see advanced analytics and artificial intelligence being used in finance and accounting?

We think there is lots of potential here. The departments are developing solutions for rolling forecasting or in sales analytics, for example.

Is there a strategy for technology in finance and accounting?

In line with the mantra “data is the new oil” we are actively looking at how we handle data and how we handle specific use cases. The ultimate goal is to develop a data culture and increase data quality to generate an effective data analytics tool landscape that will provide effective support for our products and services. This is also an area within our Best Finance Programme. It also means that a high level of clarity is needed on data inventories and data quality if we are to have any prospect of using the full bandwidth of digitalisation. So there are two levels here:

1. ensuring the right data quality in our backbone (ie, the ERP systems) and
2. handing users effective user tools (apps, data analytics solutions etc.).

How do you see the future of financial statement audits?

In our view, future developments in financial statement audits also depend, amongst other things, on the rate of change in companies. In relation to making substantive judgments, it's still inconceivable that there might no longer be teams of auditors at a client's site. But in relation to transactions, complete automation of auditing activities is conceivable much more quickly, I think. Cost pressures in the auditor sector mean they will have to act increasingly efficiently and effectively, since the risks are not decreasing. In our view there is great potential for the client in the internal control system in the form of automated analyses. This allows system and process vulnerabilities to be discovered. In relation to risk-oriented financial statement audits, in my view it is conceivable that artificial intelligence can be used to support the development of risk profiles at Group level.

Do you think that the future based on the opportunities offered by technology will involve full audits or systematic, technology-supported systemic audits?

We think that the medium-term future of financial statement audits actually lies in utilising and developing technology-backed system audits. The data inventories that would otherwise have to be analysed at the companies are too large. The challenging issues around data protection relating to extracting company data and processing it outside the company should not be overlooked. Ultimately the level of digitalisation that the auditor can apply will mirror that of the client in each case: If the client is less digitised, using digital auditing tools is all the more difficult. But in the long term I think it's conceivable that full audits will also be possible.

Can digital financial statement audits offer you benefits, particularly for the current financial statement audit?

The financial statement audit will in any case be more efficient and so more cost-effective, which is a benefit for us in terms of cost. This is something I am definitely expecting to see! There are good prospects for artificial intelligence to be used to examine forecast data and reports. The findings would certainly be of interest to us as well depending on the quality of the AI tools. We view the financial statement auditor in the company as a "sparring partner". It can play a supporting role in helping us to achieve and maintain our data quality targets.

Could you imagine working together with the auditor to test something such as the introduction of tools like data extraction tools that speed up the financial statement auditing process?

This would certainly be an option, subject to the legal requirements on data protection.



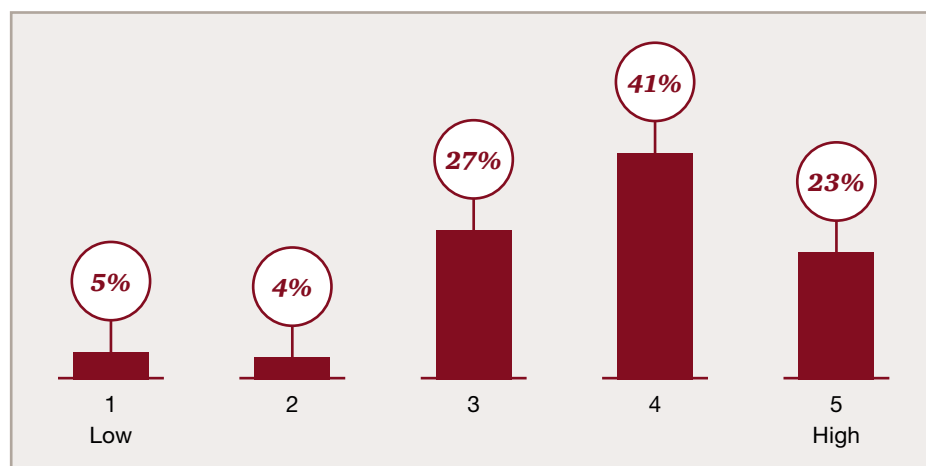
Robert Köthner
Chief Accounting Officer

Data analysis important for competitiveness

A clear majority of the decision-makers surveyed already rate the importance of comprehensive data collection and analysis of these data as fairly high

(41%) or high (23%) for their companies' competitiveness. Only a small minority think its importance is low or fairly low.

Fig. 15 Significance of data collection and analysis for competitiveness



What PwC says

Data availability and new technologies mean that benchmarking is undergoing a renaissance, particularly in certain specific sectors. Companies that make data-based comparisons between themselves and national and international companies are making increasing use of their findings to set their own corporate strategies. One advantage of using technology, such as automated capture and processing, is more accurate and rapidly available predictions of, for example, product sales and product cycles (predictive analytics). These predictions also feed in to the corporate strategy.

Conclusion: the status quo of finance and accounting

Digitalisation has arrived in finance and accounting, albeit later and more hesitantly than in other departments. Another positive development is that digitalisation is managed from the top floor in the vast majority of companies surveyed. The trends towards reductions in computer centres, homogeneity of system landscapes and the willingness

to standardise also promote digital processes.

New technologies such as artificial intelligence and robotics are facing delays due mainly to regulatory requirements and increasingly fragmented IT systems caused, for example, by mergers and acquisitions.

Overall the awareness of gaps in relation to new technologies has increased in the finance function. In other words, awareness of the need to open up the finance function for new technologies is increasing. This, but also the increasing pressure for efficiency, is contributing to the progress of digitalisation in finance and accounting.

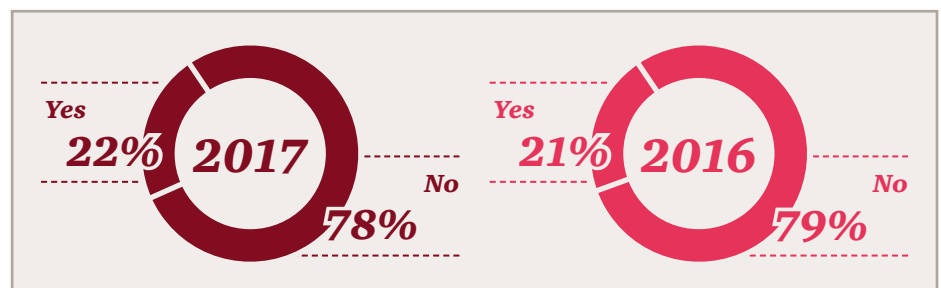
2 Digital future of finance and accounting

The second part of this survey looks at how the companies surveyed would like to make their financial and accounting more fit for the digital future. This includes developing their IT finance architecture, specific plans for using artificial intelligence and robotics, dealing with shared service centres and forecasts on developments in staff numbers.

Majority intends to keep the installed ERP system

The ERP systems installed in the finance and accounting departments at most of the companies surveyed are to continue. Just 22% of the decision-makers surveyed at the end of 2017 said they are planning to change their ERP system. That's only slightly up on 2016.

Fig. 16 Plans to change the ERP system in the near future



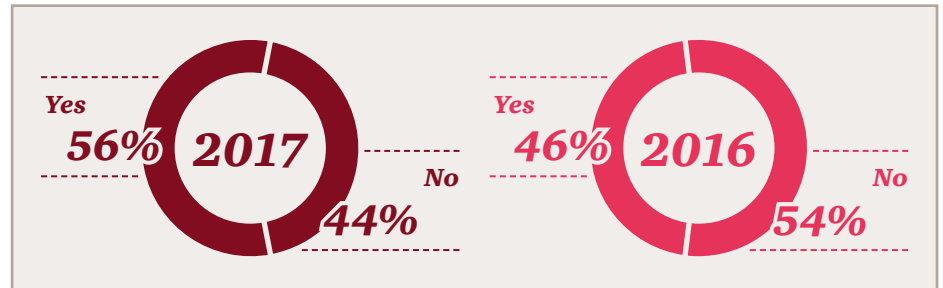
What PwC says

ERP systems are so integrated in companies that most companies intend to retain them and only change versions. Since ERP systems above all present specific standards, the companies implement customised software around their existing ERP systems, including systems with artificial intelligence. Connecting these to the ERP system is often associated with high time costs. A key challenge to the digitalisation in finance and accounting is therefore orchestrating the data across the different systems.

Expanding in-house ERP system is increasingly relevant

Over half of the companies surveyed at the end of 2017 (56%) plan to expand their in-house ERP system with a view to the progress in digitalisation. In 2016 the figure was 10% lower.

Fig. 17 Plans to expand the ERP system



What PwC says

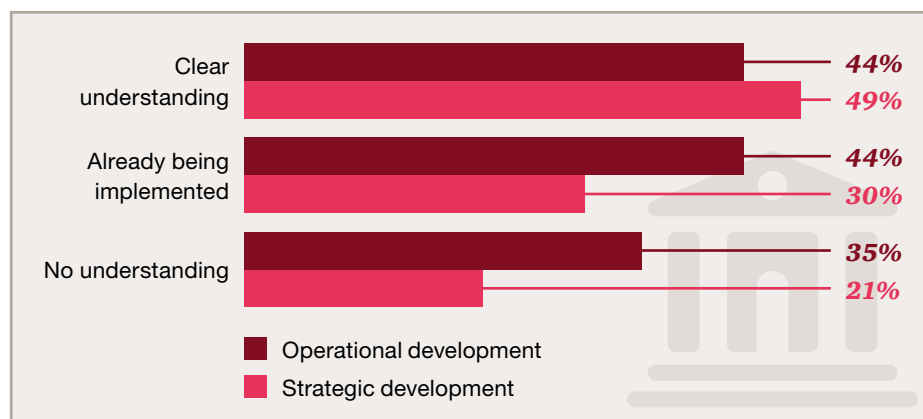
Expanding existing ERP systems is another component of the IT-related strategic development of finance and accounting. Expansion means that the companies build applications around their standard ERP system that enable customised processes. This allows, for example, digital analysis of financial data in contracts. Other applications increasingly in demand are document review software and posting robots that read out documents so they can be posted immediately.

Differences in how the digital future is understood

Almost half of the decision-makers surveyed (49%) thought they had a clear understanding of the IT-related strategic development of their finance and accounting. 44% said the same in relation to operational development. The same number of respondents said they were already at the operational

development stage, with just 30% also implementing strategic development. 35% had no understanding on operational development. And just over a fifth of participants don't yet have any understanding of what strategic development will look like.

Fig. 18 Understanding regarding development of IT finance architecture



What PwC says

Having a clear understanding means knowing what digitalisation might mean for your own finance and accounting and what strategic and operational steps need to be implemented, with clear timelines. These aspects need to be communicated within the organisation. It's just as important to launch a culture of pro-digitalisation change in finance and accounting. The management needs to involve employees actively in change processes and motivate them to help shape their future workflows. The current hype around technology also occasionally seems to overburden companies, which results in a status quo mindset - in our experience this is not always wrong but is risky.

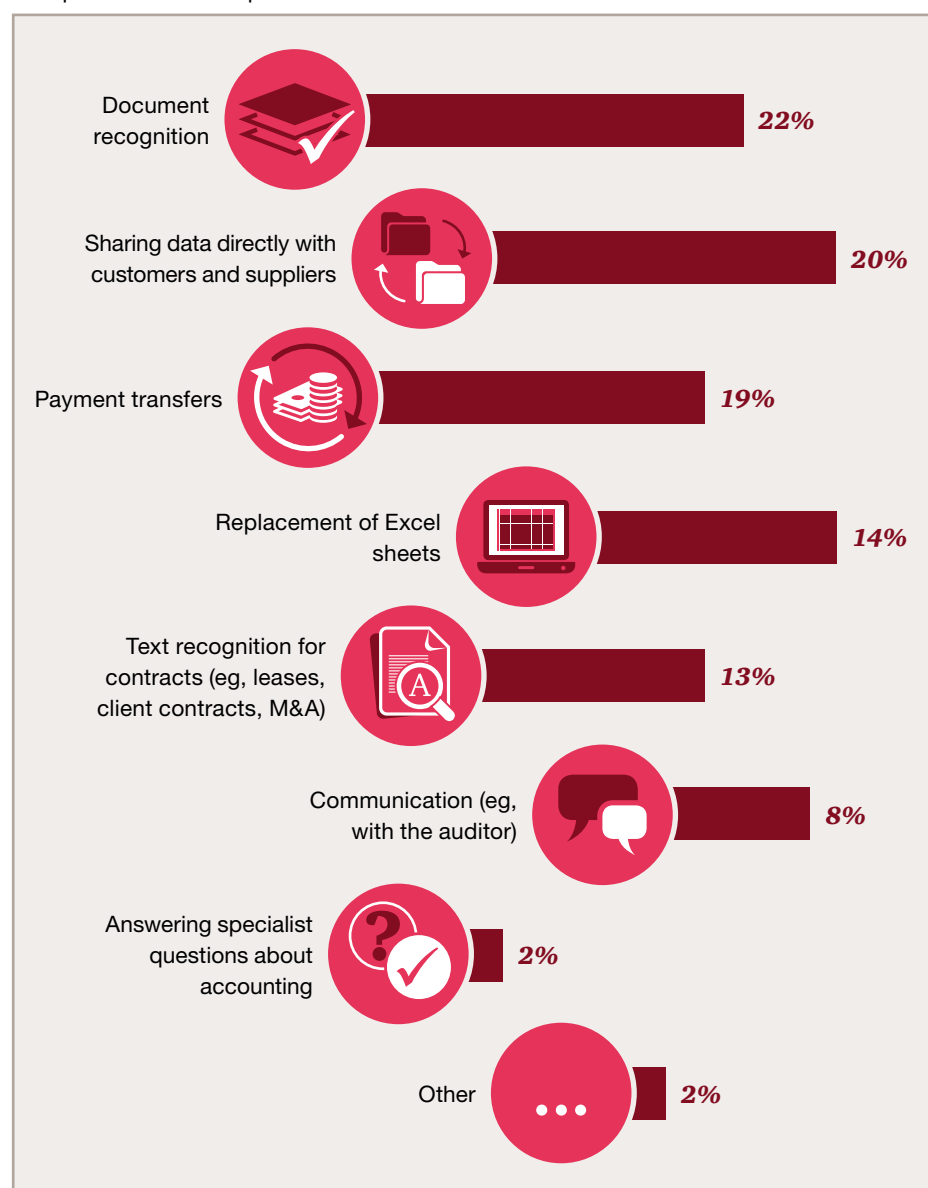
New technologies in demand in three areas in particular

The companies surveyed want to use new technologies in quite disparate areas. The highest responses were for document recognition (22%), direct data processing with customers and suppliers

(20%) and payment transfers (19%). In communication – with auditors, for example – the companies currently do not expect new technologies to play much of a role.

Fig. 19 Plans to use new technologies

Multiple answers were possible.



What PwC says

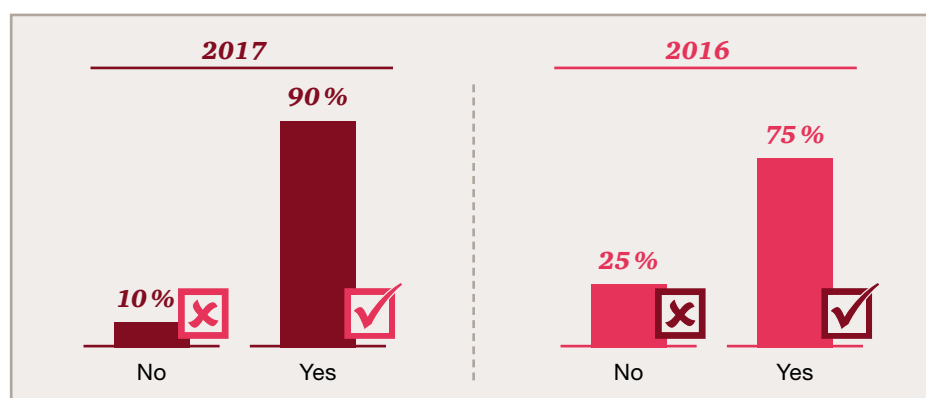
The trend for using new technologies to recognise unstructured data such as texts, images and speech will continue. This is the area with the greatest potential for new technologies. This is the area with the greatest potential for new technologies along with software robots that identify anomalies or trigger postings and transactions. Overall, plans for use of specific applications, with 22% positive responses at most, seem very low to us. To open more doors to technical progress in finance and accounting, considerably more use tests, prototypes and more tolerance of error (in this regard) are needed. Trying things out together on the “show, don’t tell” principle is currently the best way to benefit quickly from new technologies. And technologies such as chatbots are already available for direct sharing of ideas, which is probably the biggest change to how we interact and collaborate and is therefore still often viewed as “science fiction”. The use case of “Siri for Accounting” will soon be available, however. This is a contradiction that we are currently addressing with agile developments and prototypes (“minimum viable product”).

Use of technology promotes focusing on substantive issues

Almost all of the companies surveyed at the end of 2017 (90%) responded in the affirmative when asked whether increasing the use of technology in finance and accounting allowed them

to concentrate more on substantive issues. The figure was just 75% in 2016. “Substantive issues” are improvements to technical tools and process optimisation.

Fig. 20 Focus on substantive issues through use of technology



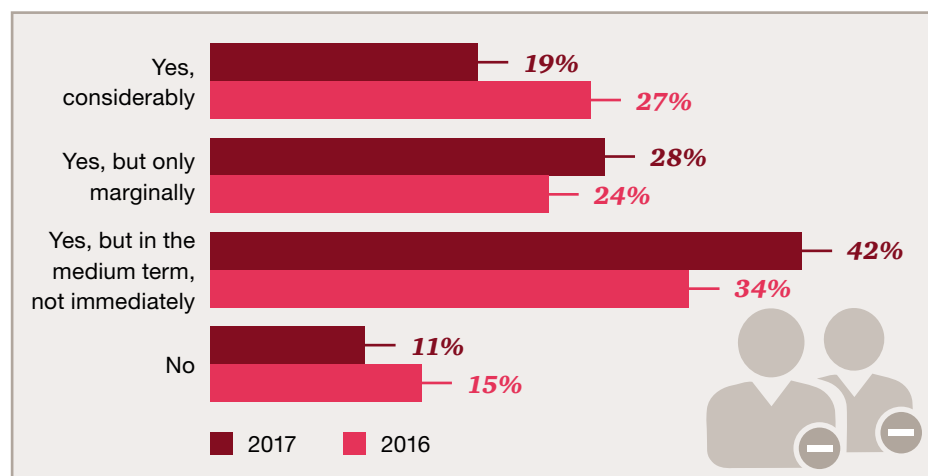
What PwC says

Most respondents recognise that new technologies free up finance from routine activities, allowing employees time to concentrate on more demanding tasks. But we also see that finance and accounting are very often tied up by current projects such as restructuring in many companies. So there's little time left for actually implementing technology. Once again there is a great deal of unused potential for the future.

Fewer concerns about reductions in staff

19% of the decision-makers surveyed at the end of 2017 think that the number of employees in their finance and accounting departments will fall “considerably” as a result of technology. In 2016 the figure was 27%. By contrast, the percentage of participants who expect just a “marginal” reduction in staff has increased by 4 to 28%. And the proportion of respondents expecting reductions in staff numbers “in the medium term, not immediately” rose from 34% to 42%. Just 11% (2016: 15%) now expect job losses due to digitalisation.

Fig. 21 Technology-related reduction in staff numbers in accounting



What PwC says

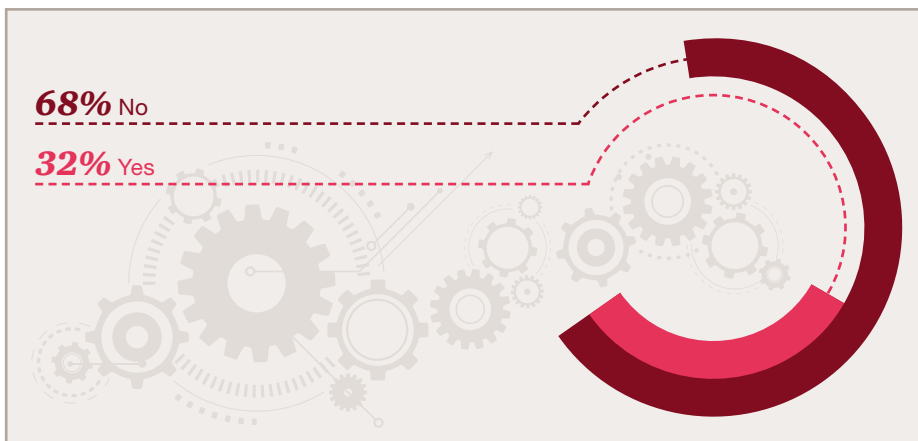
The sharp fall for the response “yes, considerable” seems to indicate that some managers have shed a common prejudice, that technology will largely replace human beings. We too don’t expect this to happen. We are actually currently seeing that more finance, IT and regulatory experts are needed in finance and accounting. That’s because training in artificial intelligence is required, newly acquired datasets need to be structured, analysed and evaluated and increasing amounts of regulatory requirements need to be complied with. Yes, it is to be expected that employee capacities will drop for routine work and employees will be added for new types of activities. The big challenge is to manage the shift to new tasks and job specifications in finance and accounting that digitalisation requires. The same applies to audits.

A third is planning to use robotics for routine activities

Almost a third of respondents (32%) is planning to use software robots (robotics) to run routine activities in finance and accounting. The decision-

makers are focussing here particularly on posting standard business transactions as well as data analysis/preparation.

Fig. 22 Plans to substitute routine activities with robotics



What PwC says

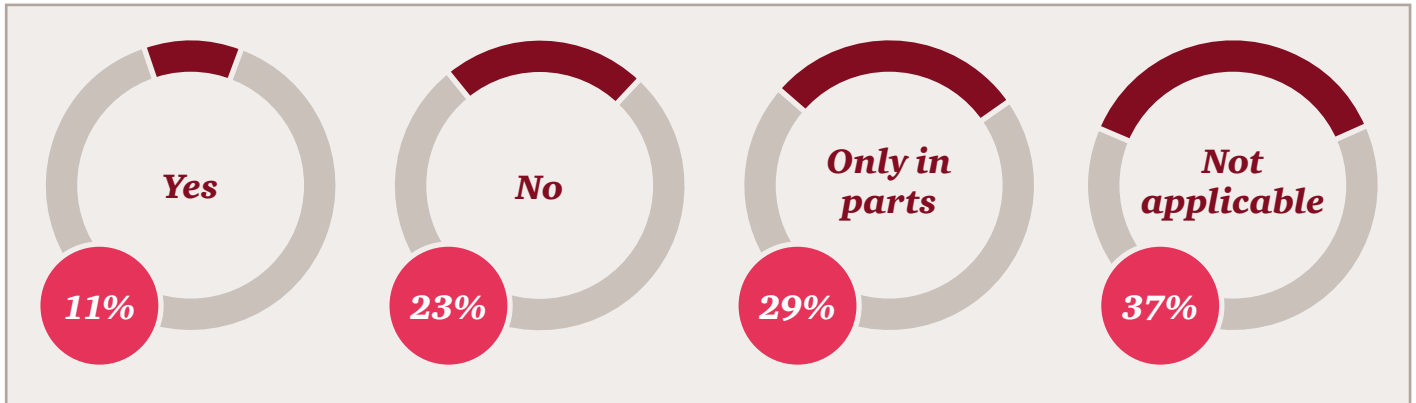
One of the reasons 68% of respondents still have no plans to use robotics is that some decision-makers underestimate how relatively easy it is to program software robots, particularly for a large number of routine activities. Companies who decide not to use robotics for this reason are also missing out on the huge leverage they can achieve using it. One application that is increasingly proving its worth is RPA. This refers to software and algorithms that automate repetitive, rule-based processes and activities at no cost. Over the next few years RPA will make a key contribution to efficiency gains in financial statement audits as well. Users can expect a return on investment within months.

Shared Service Center largely remain untouched

Just 11% of the companies surveyed that use a shared service centre plan to replace it completely by using

technology. 29% expect this only in parts, and 23% do not expect it to happen at all.

Fig. 23 Plans to substitute manual activities in shared service centres using technology



What PwC says

PwC's expectations are different here: Shared service centres will feel the heat of new technologies. That's because they were created to bundle standardised routine activities and generate scaling effects to reduce staff costs. But it is routine activities that are increasingly being taken over by digital systems such as artificial intelligence. This is compounded by the fact that salaries and wages in countries like India where many shared service centres have moved are increasing, so that wage arbitrage advantages compared with, for example, Western Europe are melting away. The commercial justification for shared service centres is not affected by new technologies, but they will probably affect the range of services they offer. For example, it is easy to imagine that classic delivery centres will be converted into training centres for artificial intelligence.

Conclusion: the future of finance and accounting

The ERP system environment needs to be future-proofed. More and more companies are working towards this by "building on" digital applications. The first/next areas of application for artificial intelligence, robotics etc. are document recognition. Implementation of new technologies in finance and

accounting is frequently blocked by current projects such as restructuring.

This day-to-day problem can only be dealt with by developing a clear, shared understanding of how to develop the IT finance architecture

There are still significant gaps here. Digitalisation needs a transformative culture

3 Current state and development of digitalisation in financial statement auditing

The third part of this survey looks at a key part of finance and accounting: the financial statement audit. In detailed terms, it looks at current and expected use of technology in the financial statement audit, expected changes in individual areas of activity, future degrees of automation, expected information gains by auditors, how limiting factors affect the use of technology and future areas in which artificial intelligence can be used.

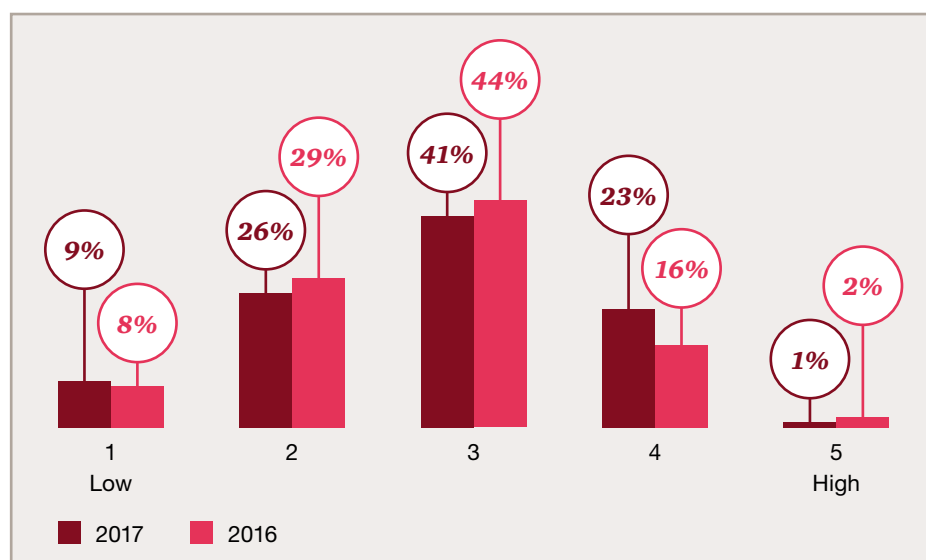
Extent to which technology is used is mainly low to moderate

9% of the companies surveyed at the end of 2017 rated the use of technology in audits as low and 26% as fairly low. The latter figure marks a slight decline since 2016. A similar slight decline

is shown in the share of respondents who put the technology level at 3, the midway point on a scale of 1 to 5 (41%). There was a significant increase in the number of companies who put

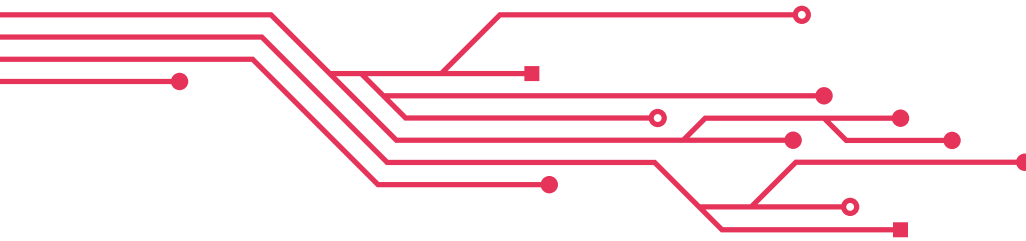
the extent to which technology is used in auditing at “fairly high” (23%). Hardly any respondents put it at “high”, however.

Fig. 24 Extent to which technology is currently used in auditing



What PwC says

This finding makes it clear once again: There is still potential for development and efficiency gains to be made in financial statement audits as well. PwC is opening up this possibility for its clients with Halo for SAP, for example. This solution allows accounting systems to be checked automatically with no additional burden on clients. Another of PwC's tools is GL.ai which makes the auditing of financial statements more efficient based on artificial intelligence and machine learning.



What PwC says

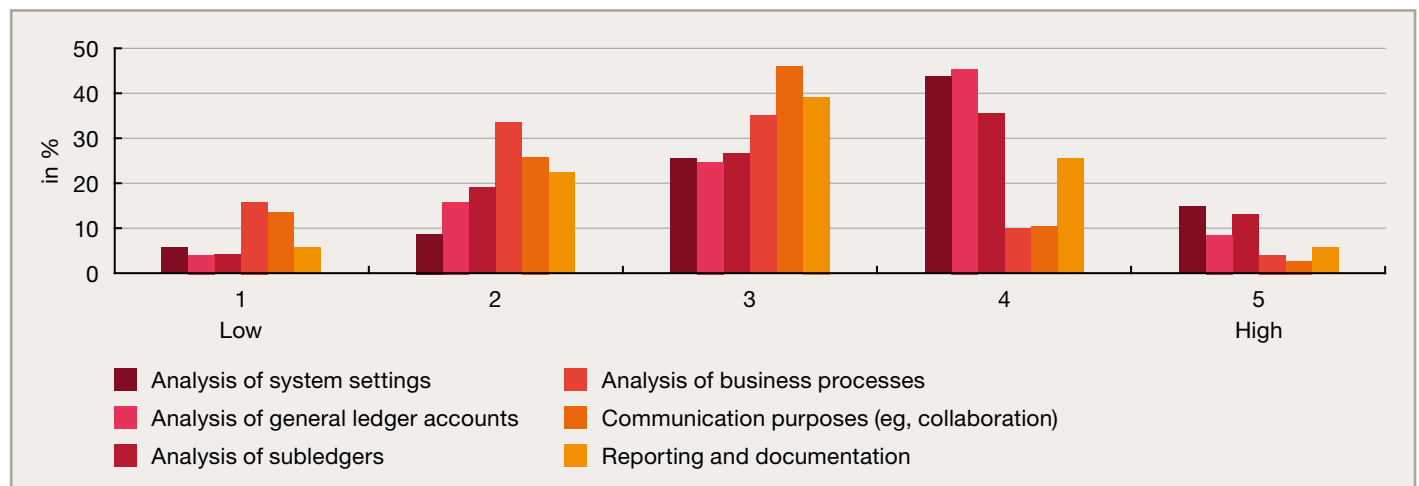
There is considerable potential for catch-up in the “Reporting and Documentation” field in the short term. It is already technically possible to fully automate production of audit and business reports. But in practice there is insufficient standardisation, which is essential for the efficient use of digital technologies. Instead, more and more new Excel sheets are still created for single work steps in many companies. This too will have to change in view of the high pressure to create efficiencies.

Use of technology for data analytics relatively high

Where the companies surveyed do use new technologies in audits, it is mainly to analyse system settings and general and subledger analysis. However

technology still plays a relatively minor role in analysing business processes and reporting and documentation.

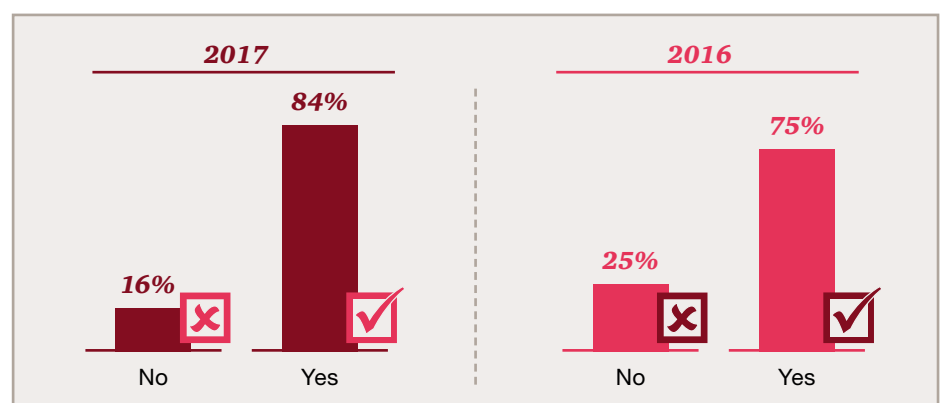
Fig. 25 Tasks for which technology is used in financial statement audits



Vast majority predicts major changes

Will the financial statement audit change enormously due to technology-led change in the next few years? 84% of participants at the end of 2017 answered “yes”. Just 75% expressed this opinion in the 2016 survey.

Fig. 26 Enormous change expected for financial statement audits due to technology



What PwC says

Finance and accounting managers have been seeing their companies change due to digitalisation for some time now, and this change has also affected their work. Their auditors are also changing and using new technologies to increase added value and efficiency of the audit, too. Auditors can no longer analyse the mass data they encounter in companies manually; they can only face new challenges by adopting technology.

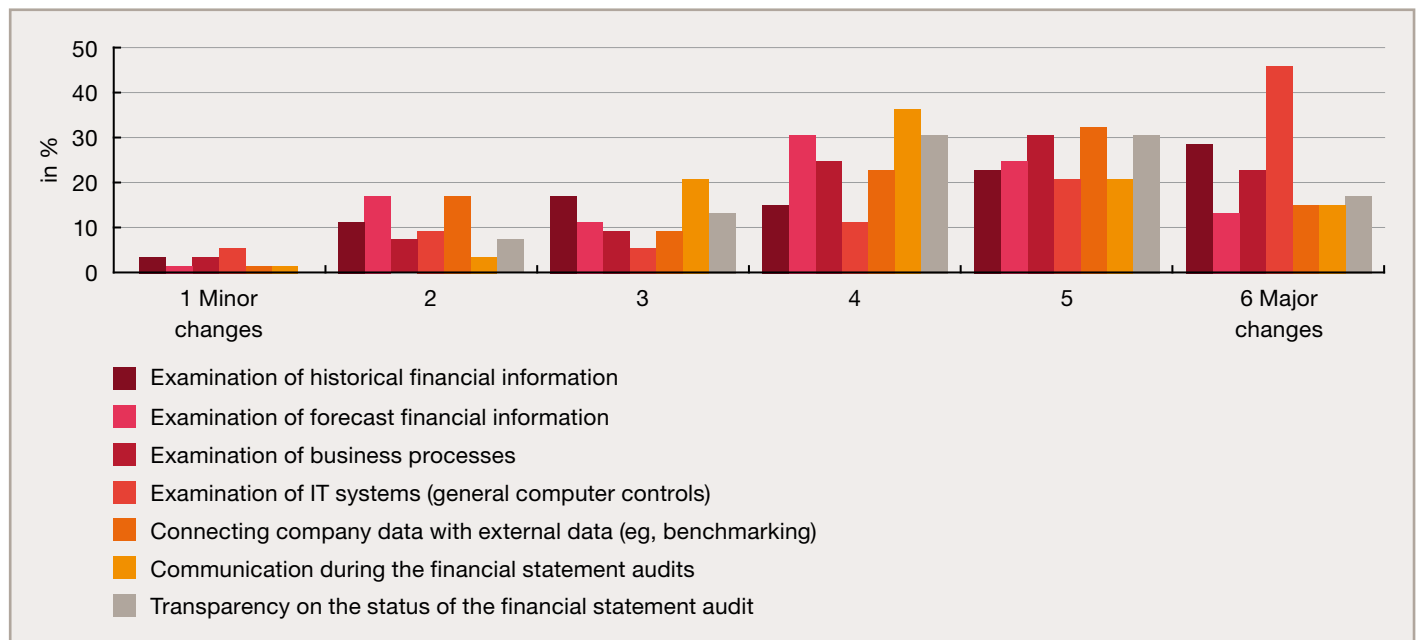
Changes expected in IT system audits

The three areas where the biggest changes are expected due to digitalisation of financial statement audits are examination of IT systems (general computer controls), examination of historical financial information and examination of business processes.

What PwC says

The emphasis placed on examination of IT systems in responses to expected changes is due to the increase in mass data and companies' needs to secure mass data. "General computer controls" here means: The IT system ensures automatically that access to data is blocked for unauthorised persons and inaccurate data cannot enter the system. Another driver of data security is the EU General Data Protection Regulation which becomes effective on 25 May 2018.

Fig. 27 Areas of financial statement audits where changes are expected due to use of technology



Degree of automation up to 40% seems realistic

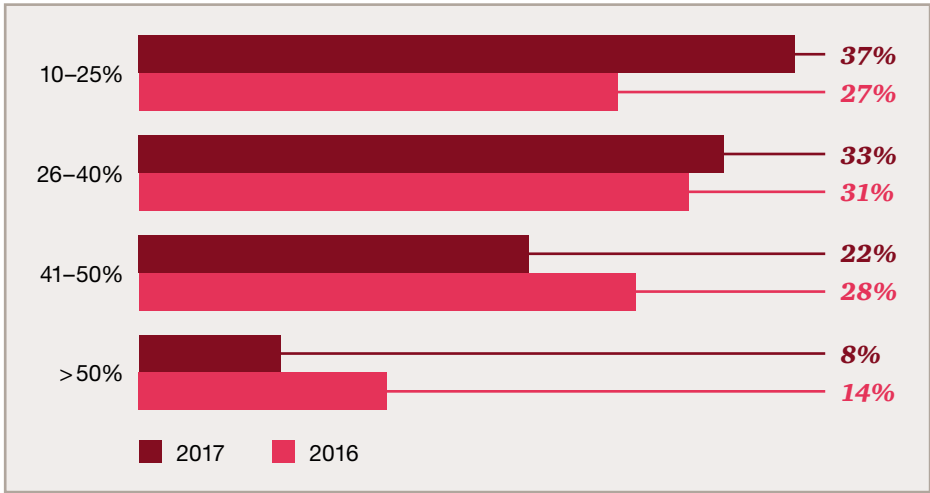
70% of the decision-makers surveyed at the end of 2017 expect the degree of automation in financial statement audits due to digitalisation to be between 10% and 40% by 2022; just 58% of participants thought this in 2016.

However the percentage of decision-makers expecting the degree of automation to be over 40% is now significantly lower, from 42% in 2016 to 30%.

What PwC says

To prevent any misunderstanding: We think that a 40% degree of automation in financial statement audits is very high. This finding signals that decision-makers are thinking progressively. In our experience, there are several reasons for the decline in expectations around the degree of automation from over 40% since 2016: many companies now have a more sober view of what technology is capable of today. In addition, for finance and accounting face-to-face communication with the auditor continues to be at least as important as efficiency gains from automating auditing activities.

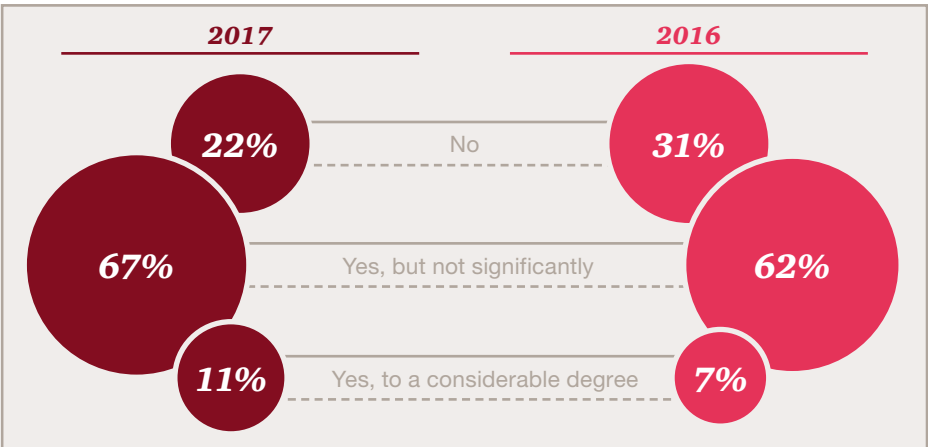
Fig. 28 Expected degree of automation of financial statement audits due to digitalisation in the next five years



More support for information gains

Just 22% of the companies surveyed at the end of 2017 do not believe that digitalisation of the financial statement audit will provide them with more information about their own company. So the sceptics have lost almost ten percentage points since 2016. However, 67% of participants in 2017 expect new information (2016: 62%), although not to a significant degree. And 11% think the amount of new information due to digitalisation will increase “considerably”. That’s 4% more than 2016.

Fig. 29 Expectations regarding additional information due to digitalisation of financial statement audits



What PwC says

The financial statement audit provides substantial information gains to companies. Customers who authorise us to run additional analyses (and give us extra access to data this requires) confirm this. But unfortunately many companies are not yet where they would like to be on this. They also need to be ready to trial new technologies and processes jointly with the auditor. Companies that just want their auditors to sign off a report may minimise auditing costs but they are also missing out on the added value that the financial statement audits can provide them by using new technologies.

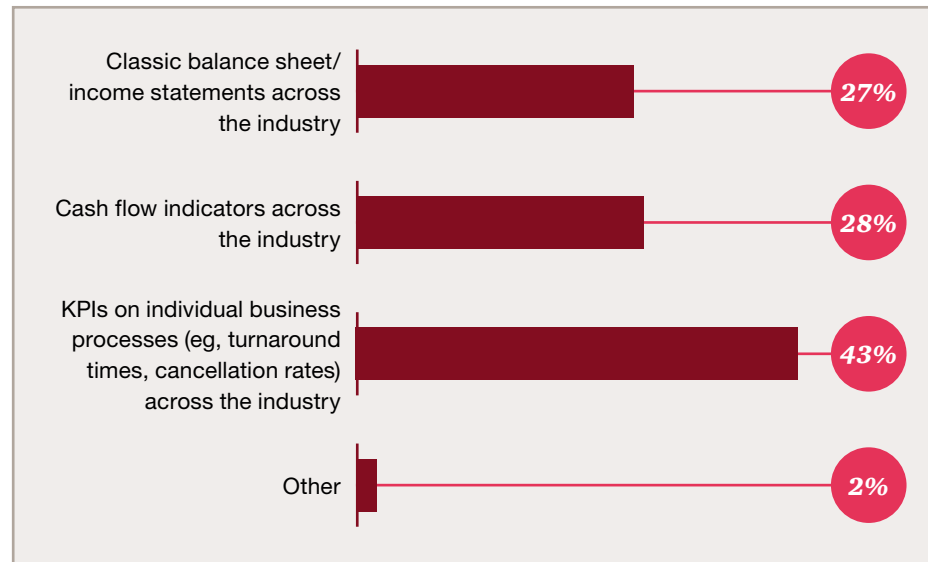
KPI analyses on business processes in particular demand

43% of the survey participants expressed particular interest in KPI analyses on individual business processes such as turnaround times and cancellation rates compared with the rest of the industry.

28% thought cash flow KPIs compared with the rest of the industry were the most interesting, and 27% digital analyses of classic balance sheet and income statement KPIs.

Fig. 30 Interest in analyses of finance and business processes

Multiple answers were possible.



What PwC says

Companies have been able to buy or obtain from their auditor classic balance sheet, income statement and cash flow KPI benchmark comparisons for many years. Therefore KPI analyses are also particularly interesting in relation to new technologies, in PwC's view. As well as digital tools, this also needs permission to look behind the scenes. And virtually only financial statement auditors get this permission, at least to the extent required for KPI analyses. We use the PwC Benchmarking tool, which we developed with the Fraunhofer Institute for Intelligent Analytical and Information Systems (Fraunhofer IAIS) and which identifies fully automated industry benchmarks based on publicly available data.



Arguments against increasing use of technology are losing strength

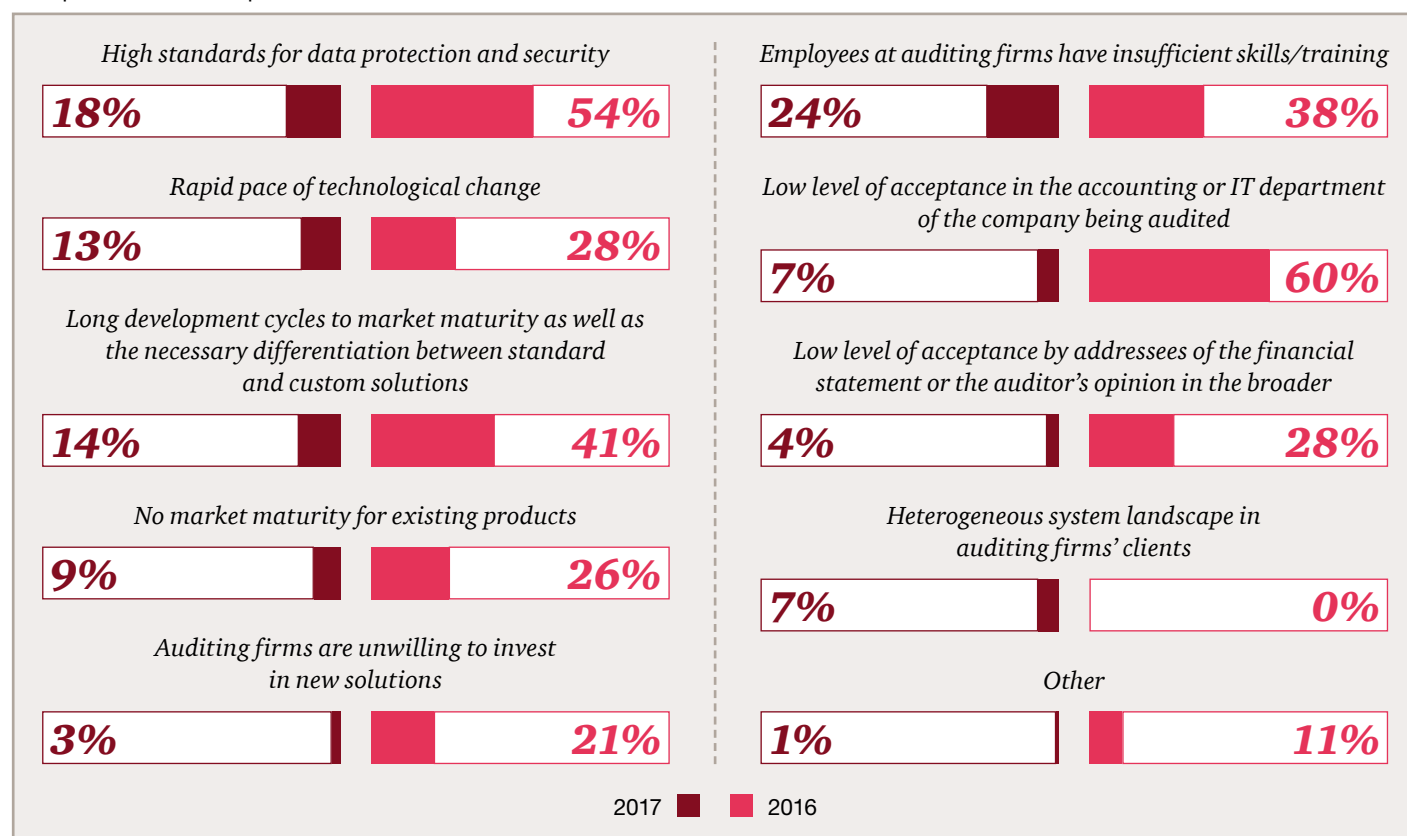
Almost all the factors cited in the survey that might limit the use of technology in financial statement audits have lost “weight” in 2017. Three outstanding examples of this: just 18% of participants at the end of 2017 still

view data protection and security as limiting factors. In 2016 the figure was three times higher at 54%. A similar significant shift in opinion is revealed with respect to development cycles felt to be long. In 2017, just 14% of the

participating companies thought this was a limiting factor; in 2016 the figure was 41%. Just 7% of participants cite “low” levels of acceptance in their own company’s finance and accounting department, a decrease of 53%.

Fig. 31 Limiting factors for the use of technology in financial statement audits

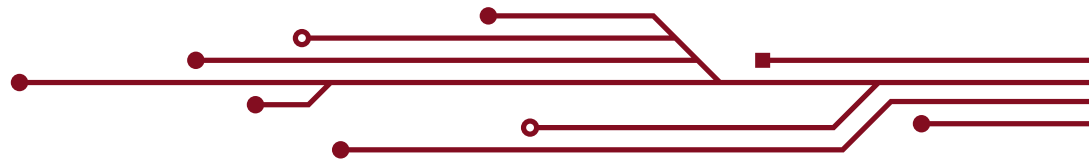
Multiple answers were possible.



What PwC says

Based on our experience, the fact that company decision-makers now think potential limiting factors are less able to slow down implementation of new technologies in financial statement audits is mainly due to three developments.

Firstly: The pressure on companies to create efficiencies through digitalisation is increasing. Faced with this they also need to make a virtue of necessity in financial statement audits. Secondly: Corporate cultures are changing. Classic financial departments such as finance, treasury, financial control and internal audit are also accepting change, particularly since there are an increasing number of IT and data specialists working in them. Thirdly: Trust in data protection and IT security is increasing.



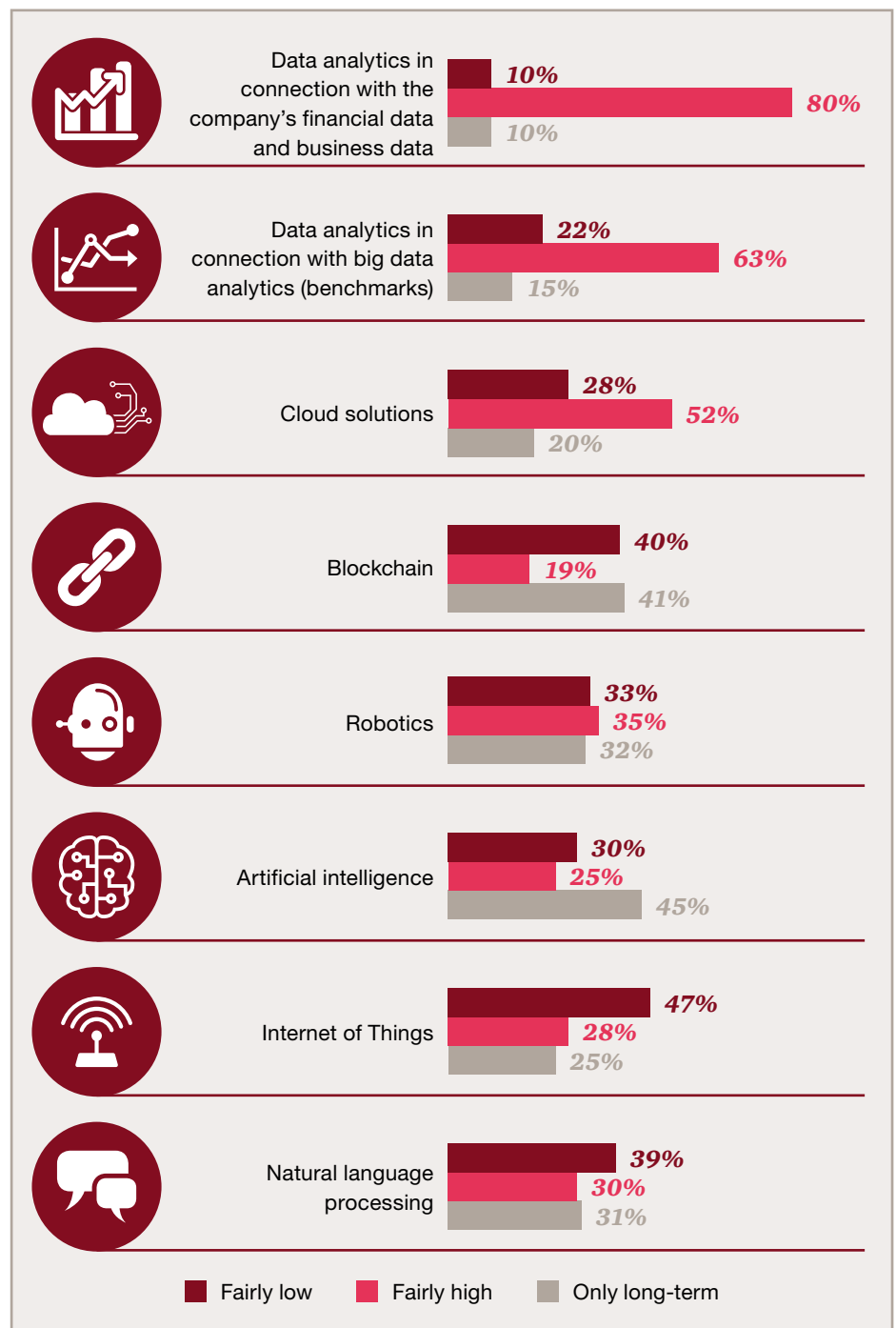
Data analytics and clouds highly affected by technology

When asked about the short- to medium-term influence of various technological trends on financial statement audits, decision-makers revealed three favourites (“fairly high”): data analytics in connection with the company’s financial data and business data (80%), data analytics in connection with big data analytics (benchmarks) (63%) and cloud solutions (52%). They think the influence of natural language processing, blockchain and the Internet of Things is fairly low. Top scorers in the fairly long-term expectations of a positive influence are artificial intelligence (45%), blockchain (41%) and robotics (32%).

What PwC says

We think that solutions with artificial intelligence have the greatest potential over the long term. Based on our experience, the fact that the participants mainly have mass data analyses on their radar for the short- and medium-term is because this is where companies could still make many improvements. They also have to standardise more data and processes before artificial intelligence can operate efficiently.

Fig. 32 Influence of technological trends on financial statement audits





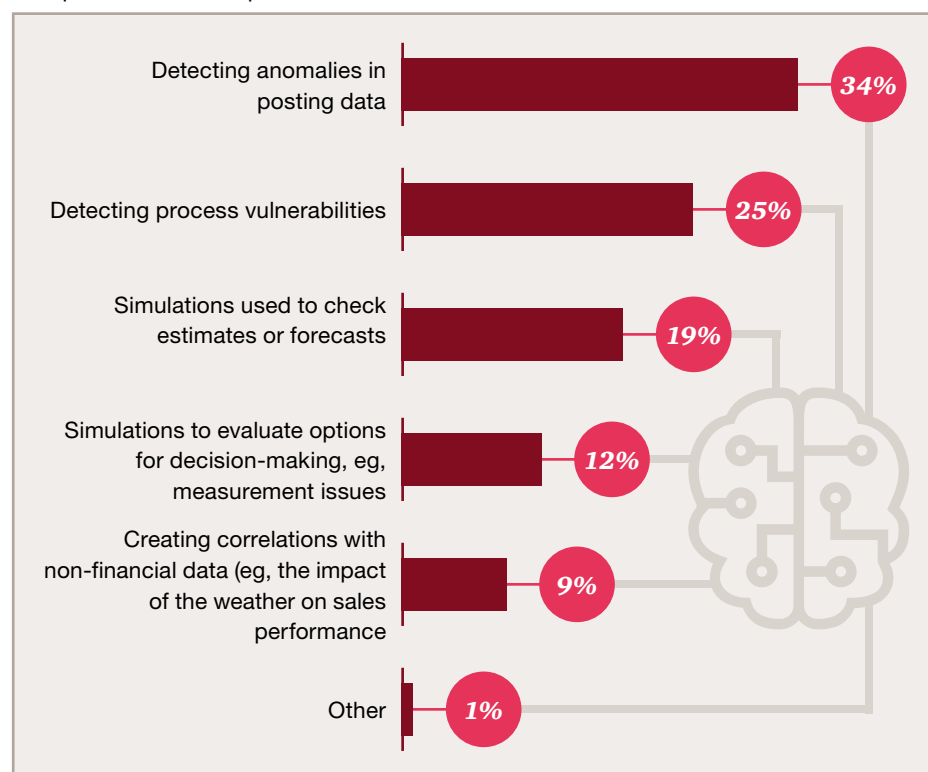
Artificial intelligence should identify anomalies and vulnerabilities

Participants currently think that artificial intelligence would be best used in financial statement audits for the following purposes: detecting anomalies

in posting data (34%), detecting process vulnerabilities (25%) and simulations used to check estimates or forecasts (19%).

Fig. 33 Aspects of artificial intelligence suitable for financial statement audits

Multiple answers were possible.



What PwC says

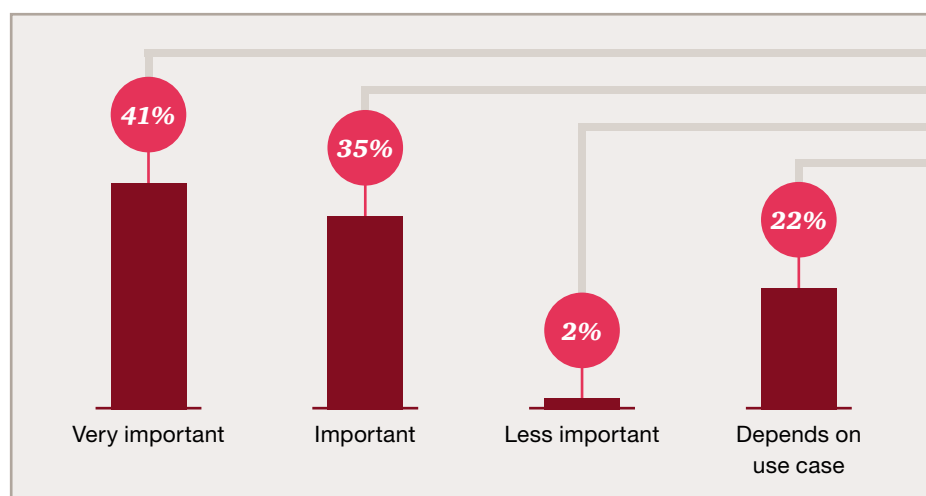
For example, artificial intelligence identifies anomalies in the posting data and process vulnerabilities better if it searches for them more frequently. So it needs to be “fed” with as many cases as possible, but the software settings must be company-specific. These settings should go into detail: Which employees have access rights, and where are they located? Do employees post items on Saturdays too? How many different workflows are there for the same activity? And how long do they each take? This gives the auditor and the company itself a detailed overview of the processes.

Artificial intelligence should be traceable

Trusting blindly in artificial intelligence? We're a long way off from that. 76% of participants said that precise traceability of analytical results through artificial

intelligence is very important (41%) or important (35%). Traceability depends on the specific case for most of the other participants.

Fig. 34 Importance of precise traceability of analytical results by artificial intelligence



What PwC says

Decision-makers' desire for traceability is understandable. But can it always be achieved? Let's assume artificial intelligence reads data from a 500 page long business transfer agreement and identifies a risk from a South-East Asian project. The reason for the risk warning is that the software recognises a context which represented a risk in other agreements that it analysed previously. Making this process precisely traceable is hardly possible. But this is actually not difficult as long as finance and accounting views artificial intelligence's function as supplying information for human intelligence. A human being such as an auditor can look at the risk warning and assess it.

Conclusion: status quo and development of digitalisation of financial statement audits

The extent to which technology is currently used in auditing is still relatively low, although there are already IT solutions that operate reliably. The finance and accounting decision-makers in the survey said it was likely to be used mainly for data analytics. "Reporting and documentation" has the greatest potential for catch-up in the short term. It's also clear that the age of Excel sheets in finance and accounting is coming to an end. The survey participants expect huge changes

in financial statement audits due to new technologies: particularly in examination of IT systems, historical

70% of participants expect the degree of automation in financial statement audits to be up to 40%.

financial data and business processes. Expectations regarding additional

information gains by auditors remain muted. So auditors are pleasantly surprised when companies are willing to test new technologies in practice jointly with the auditors. These tests are likely to increase, with new tools such as software with artificial intelligence used to track down posting anomalies and process vulnerabilities being implemented. That's because arguments against new technologies in financial statement audits, as the survey clearly shows, are losing weight.

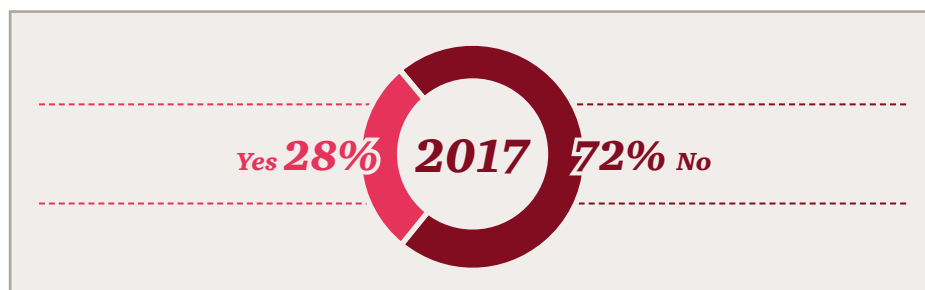
4 Importance of digitalisation for auditor-client collaboration

The fourth part of the survey looks at the client's collaboration with its auditor. It looks at how important on-site audits will be in future and how clients view testing of new processes by the external auditor in their companies, or data provision.

Modern communication media still largely unused

Just 28% of the companies surveyed at the end of 2017 use modern technologies other than e-mail to communicate with financial statement auditors. "Modern" is defined, for example, as tablets which clients and auditors use to access unified databases, communicate in virtual rooms or with chatbots.

Fig. 35 Use of latest technology to communicate with auditors



What PwC says

So far, modern communication media are only being implemented slowly. One reason for this is that financial data are highly sensitive and many audit clients rightly take a very cautious approach to them. Leaving the local office environment there is a serious problem with accessing safe Internet environments. This is a major and understandable drawback. But: Many companies often do not have modern tools for auditor/client communication.

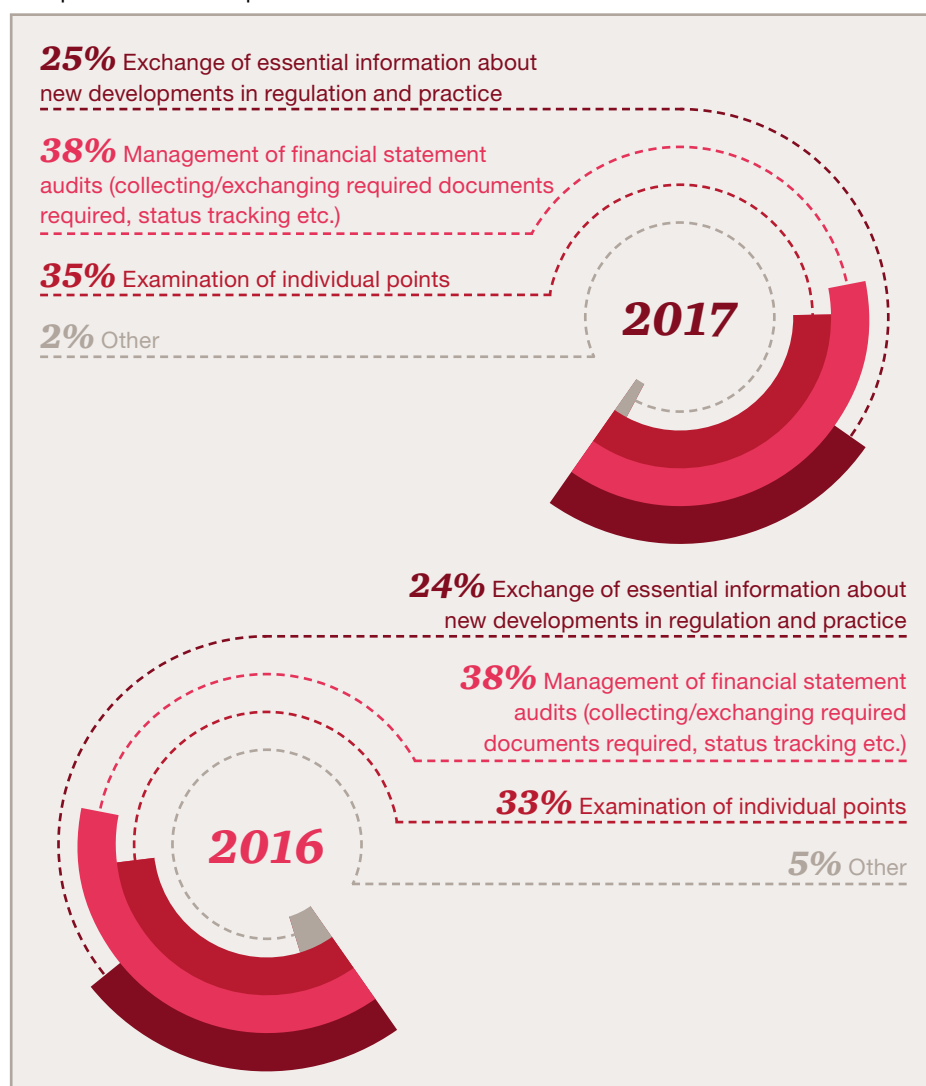
Technology for exchanging information and detailed examinations is often not state of the art

73 of the decision-makers surveyed at the end of 2017 said that the use of technology is not state of the art, particularly in two areas of communication with auditors: management of the financial statement

audit (38%) and examination of individual points (35%). Many companies see technological deficits in the exchange of essential information about new developments in regulation and practice as well.

Fig. 36 Areas of collaboration with auditors in which the use of technology is not yet state of the art

Multiple answers were possible



What PwC says

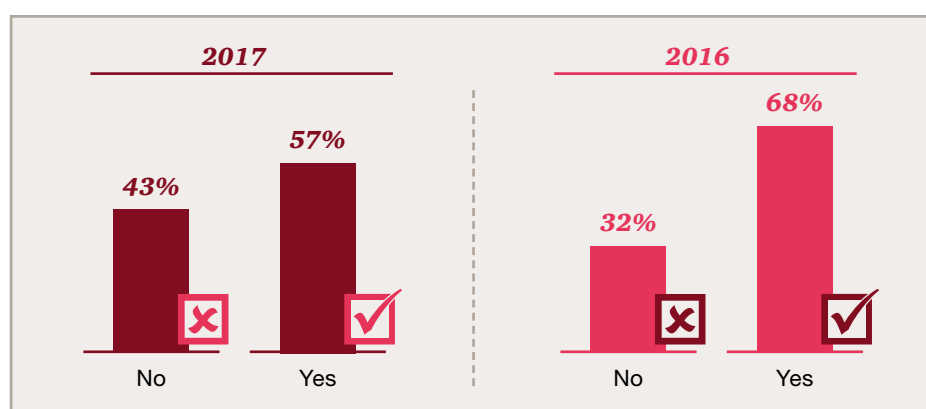
We are not surprised by this finding either. PwC uses software that permits structured collaboration with clients. The PwC audit teams rely on “Connect” for efficient and secure information sharing in financial statement audits. This tool optimises and documents document sharing on a real time basis. Communication is no longer by e-mail or phone call, but functions in a structured way within an audit planning policy. And we are continuously improving this tool.

Importance of on-site financial statement audits decreasing

Just 57% of the companies surveyed at the end of 2017 think that financial statement audits will still take place

on site in five years' time at their own companies. This is a decline of 11% since the 2016 survey.

Fig. 37 Financial statement audits will still be conducted on site in five years' time



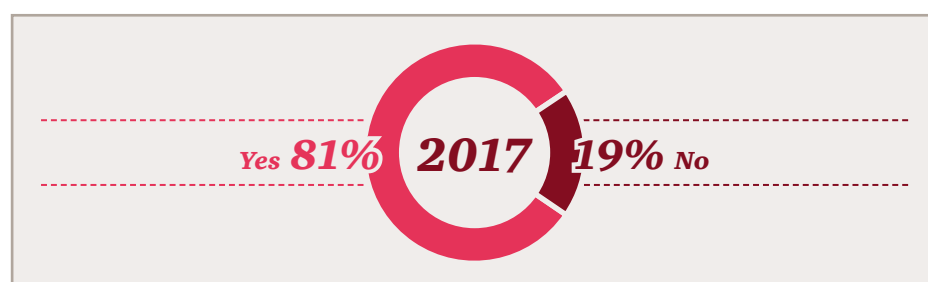
What PwC says

We think financial statement audits will continue to be conducted on site in the audited company in future but no longer with the same number of audit experts as in previous decades. The other members of the audit team will meet them and the clients in virtual rooms. This is possible due to advances in automation and modern communication tools. In future, it will be possible to involve audit experts from around the world quickly and without travel costs for all auditing tasks where required. Modern communication tools such as video conferencing are now seen as routine and are being increasingly integrated into team and client interaction.

Technology tests must provide added value

81% of the companies surveyed would permit testing of new processes and technologies in their own finance and accounting departments if they optimised the financial statement audit.

Fig. 38 Acceptance of testing new processes and technologies to optimise financial statement audits



What PwC says

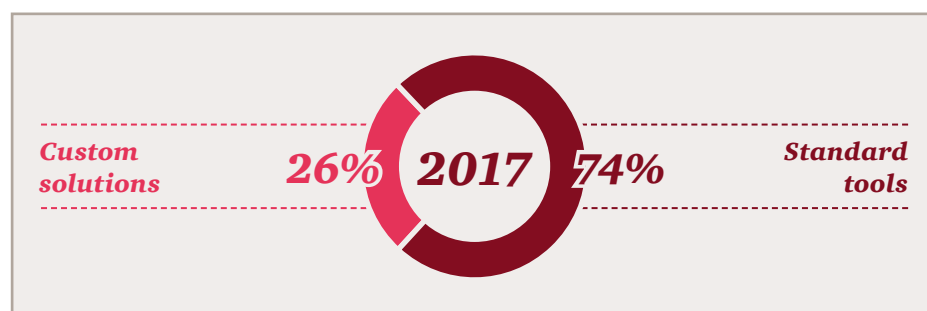
“Optimising the financial statement audit” will mean different things depending on the client’s requirements. There is relatively little room for optimisation if clients simply want their accounts to be signed off. There is potential for optimisation for clients who want to maximise the value of the financial statement audit for their company. Preparatory effort is required on both sides to realise the potential. Clients and auditors need to work together to define new tasks, adjust tools to the company’s needs, install new interfaces and try out the new functions under operational conditions. Audit clients need a clear strategy for digitalisation of their financial statement audits, and auditors need a clear commitment from their clients.



Standard tools far more popular than custom solutions

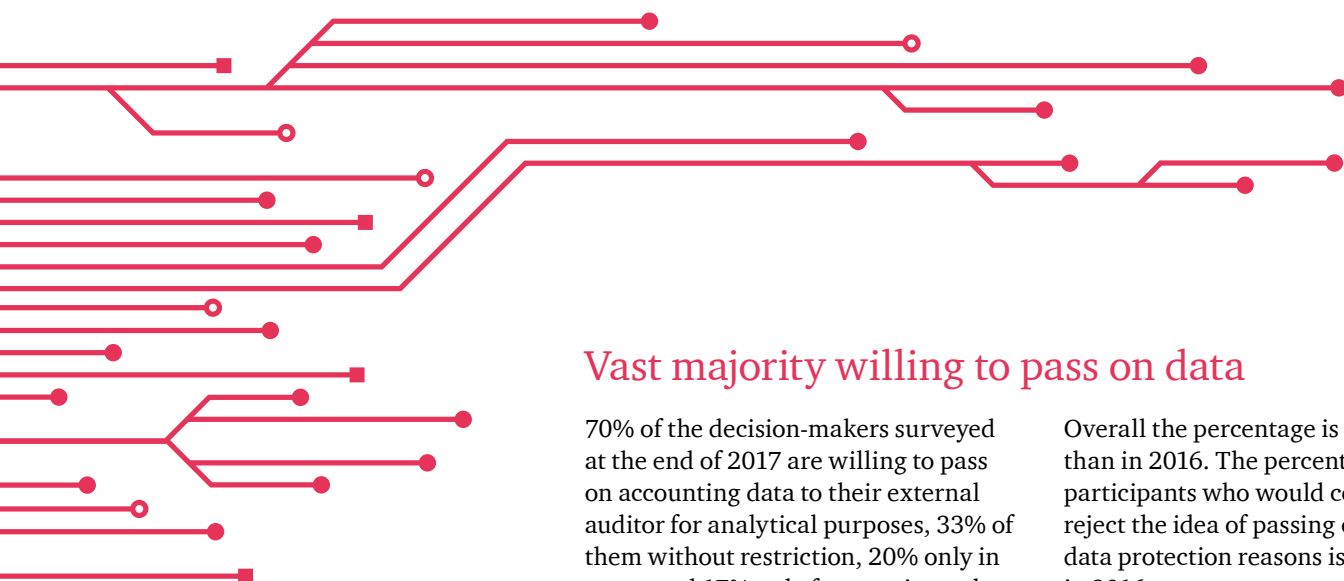
74% of survey participants prefer standard tools in their finance and accounting data analysis. Just a quarter or so prefer customise analytical tools.

Fig. 39 Data analysis benefit from standard tools or custom solutions



What PwC says

Custom solutions have two main disadvantages: They are more expensive to develop and they need to be tweaked repeatedly in routine use, which is also costly. Standard tools make more commercial sense since they allow companies to work with their own individual data. Professional data and analytics standard tools are now easy to learn, use and integrate.

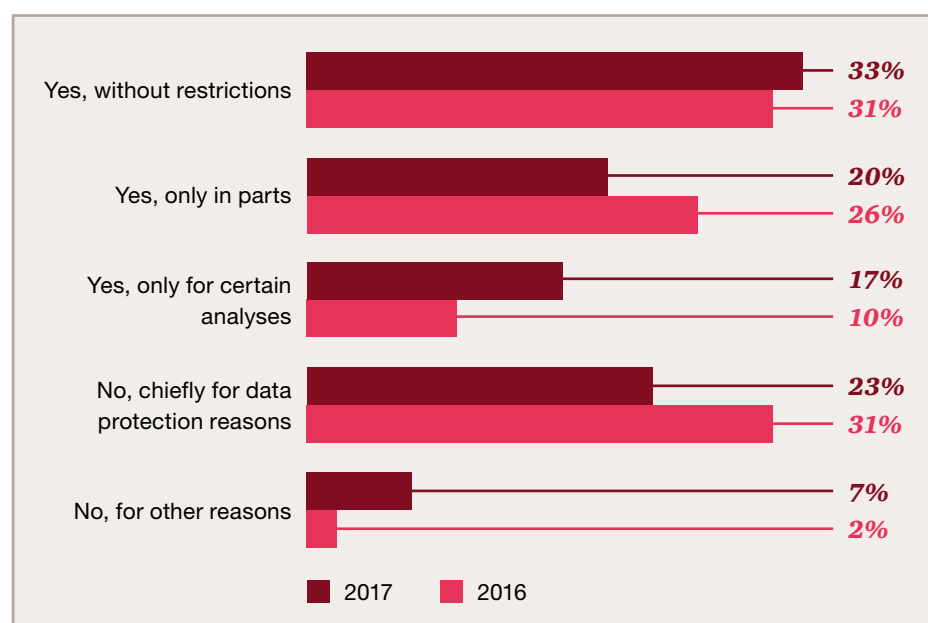


Vast majority willing to pass on data

70% of the decision-makers surveyed at the end of 2017 are willing to pass on accounting data to their external auditor for analytical purposes, 33% of them without restriction, 20% only in parts, and 17% only for certain analyses.

Overall the percentage is slightly higher than in 2016. The percentage of survey participants who would completely reject the idea of passing on data for data protection reasons is far lower than in 2016.

Fig. 40 Access to accounting databases for analytical purposes



What PwC says

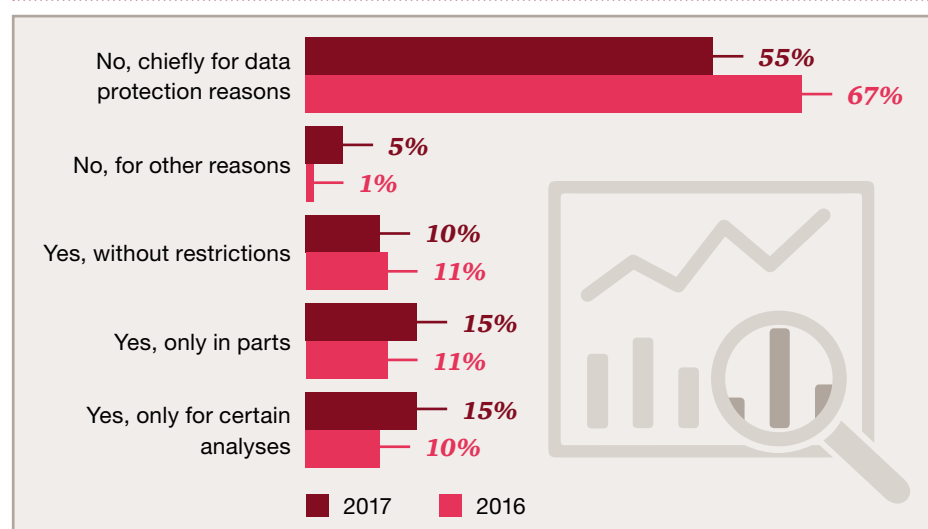
It is a good idea to pass on data to the external auditor for analytical purposes since this makes the audit findings more valid. Additional data allow the external auditor to conduct additional analyses that provide added value to the client. PwC guarantees clients that their data will be handled in an absolutely reliable and confidential manner.

Passing on data for comparison with external data largely rejected

Participants remain largely sceptical on whether the external auditor should be allowed to use the accounting data passed on to it for benchmarking with external data. A total of 60% of

participants at the end of 2017 rejected this entirely. In 2016 the figure was 68%. Only one in ten of participants would permit this type of benchmarking “without any restriction”.

Fig. 41 Access to accounting databases for benchmarking purposes



What PwC says

Our experience shows that companies' scepticism is often based on an emotional response. They are concerned that their data will be used in a context that is disadvantageous for them and that they will lose control over their data. This concern is unfounded in collaboration with PwC. The informational value of internal company data increases exponentially if they are analysed in conjunction with, for example, external industry or even weather data.

Conclusion: importance of digitalisation for auditor-client collaboration

Communication is essential for collaboration in many ways. Many countries still use e-mails and face-to-face meetings, because modern tools have not been implemented. PwC uses digital communication solutions and is continuously refining them. Automating communication reduces the costs of auditing. There is considerable potential for optimisation in client-auditor communications. But the digital

tools needed for this must be tested together in practice. Standard tools generally make more commercial sense than customised developments, both for communication and data analytics. They allow auditors not only to meet high expectations on automation and efficiency, but also to generate added value for their clients – provided that clients pass on data for innovative analyses.

If clients also permit them to combine specific internal data with external data, the informational value of the internal data increases exponentially. PwC guarantees 100% confidentiality in its handling of all client data and for all types of analysis.

PwC tools for digital financial statement audits

PwC sets high quality standards for statutory audits and financial statement audits. We use our comprehensive auditing, sector-specific and technology-specific skills to meet our clients' demanding requirements. Modern digital applications, which we are continuously improving in close collaboration with our clients, allow us to conduct increasingly efficient financial statement audits, with increasing added benefit. One added benefit is cross-sector examination of business processes. For companies using an

SAP ERP system, another standard software product, or an in-house product, PwC experts can analyse their accounts quickly and efficiently and assess the company's performance. We are already successfully using the following digital tools with clients, or developing them jointly with the Fraunhofer Institute for Intelligent Analytical and Information Systems (Fraunhofer IAIS) and the German Research Centre for Artificial Intelligence (DFKI).

Aura – for planning and documenting audit procedures

This software program was developed by PwC experts from its worldwide network. It includes the "Aura online" add-on. This is a web-based tool that allows documents to be accessed online. It allows Aura users to work flexibly from anywhere in the world. Aura is a workflow-based tool that helps auditors to develop auditing strategies, to document the audit and to manage it. Aura supports the risk-based approach to auditing and ensures procedures are implemented consistently.

Connect – for efficient and secure information sharing in financial statement audits

This tool optimises and documents information sharing on a real time basis. Audit teams can see right away what information is missing and needs to be acquired. The tracking feature identifies who is responsible, facilitating collaboration within the audit team. It can be accessed from any location by PC, tablet or smartphone. It also provides current project status reports and improving planning.

RPA – for automated processes using software robots

PwC uses its Halo and Celonis tools to help its clients to analyse processes via data mining, reduce process costs, keep to schedule, save time and improve process quality. PwC analyses multiple processes by, for example, degree of standardisation, frequency of error or master data quality. Benchmarks are also used to support process optimisation. One of the most effective process optimisation strategies is based on RPA. That's because RPA software takes tasks previously carried out by employees and automates them. It uses the same system access as the employees, making implementation quicker since there is no need to apply system-wide changes. Self-learning software can be bolted on to RPA, allowing other corporate decisions to be automated using data-based processes.



Halo – for transparent, audit-proof and optimised SAP systems

PwC relies on its automated audit tool Halo to analyse large amounts of data efficiently in financial statement audits. Halo combines intelligent analytical algorithms with an interactive graphical interface. For example, Halo for SAP trawls process workflows and information flows in SAP systems for potential risks. Document and process data are read, structured, combined, analysed and visualised in the system. Other Halo tools are currently being developed, for example for the financial sector and performance analysis. Halo guarantees high levels of transparency and audit compliance. Auditors quickly gain an understanding of the workflows and identify risk areas. Halo detects potential areas for system and process optimisation.

GL.ai – for a risk evaluation of mass data in seconds

PwC uses this tool to analyse large amounts of data and identify risks during financial statement audits. Even for our most experienced auditors it is time-consuming to analyse profiles and behavioural patterns of every single one of a client's employees for irregularities such as errors or fraud. GL.ai uses algorithms for this task. The award-winning tool analyses billions of data within seconds. PwC auditors developed the algorithms and trained them to replicate the auditors' decision-making process. This makes the process far quicker and more secure.

The principles of accounting remain the same, even in the digital age. But technological trends have the potential to transform accounting. Digital technologies act on the basis of programmable parameters, so they process data far more quickly and reliably than human beings. They provide an opportunity to fundamentally redesign many financial

procedures and generate added value. This allows companies to overcome the problem of increasing complexity, improve the quality of financial statement audits over the long term, and save costs. PwC is using its auditing, sector-specific and technology-specific skills to support its clients in the digital age, too. You can rely on that.

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About us

Our clients face diverse challenges, strive to put new ideas into practice and seek expert advice. They turn to us for comprehensive support and practical solutions that deliver maximum value. Whether for a global player, a family business or a public institution, we leverage all of our assets: experience, industry knowledge, high standards of quality, commitment to innovation and the resources of our expert network in over 150 countries. Building a trusting and cooperative relationship with our clients is particularly important to us – the better we know and understand our clients' needs, the more effectively we can support them.

PwC. 8,700 dedicated people at 28 locations. €1.33 billion in turnover. The leading auditing and consulting firm in Germany.

Impressum

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