



# From digitisation to digital transformation

The role of French and German  
management accountants in the  
digital age



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# Key conclusions

- ▶ This research project presents comparative empirical evidence on the role and work of French and German management accountants in the digital age.
- ▶ Twenty-six interviews with management accounting experts have been conducted in Germany and have subsequently been compared with a similar data set from France.
- ▶ Data quality missions, IT system harmonisation, fostering efficiency in budgeting processes, the implementation of self-service reporting tools for managerial decision-making and scrutinising digitalisation initiatives, represent the most important tasks of the management accountants interviewed.
- ▶ Overall, interviewees expect consistently high or even increasing importance of management accounting in the digital age. By actively exploiting the opportunities arising from digital tools and new data sources, and by combining these opportunities with their profound knowledge of business processes, management accountants prove their importance for companies in the digital age.

# Abstract

This research project aims at generating comparative insights into the work, challenges and roles of French and German management accountants in the digital age. Based on comprehensive qualitative empirical evidence, this study shows that data quality missions, IT system harmonisation, fostering efficiency in budgeting processes and the implementation of self-service reporting tools for managerial decision-making, represent the most important tasks of the management accountants interviewed.

By contributing to an improved and timelier situational awareness and scrutinising the economic consequences of digital initiatives and investments, management accountants play an important role in the digital transformation of their companies. Moreover, the empirical evidence highlights that French management accountants do more active advise management as business partners than reported in previous empirical studies.

At the same time, German management accountants are strongly investing in increasing the efficiency and accuracy of budgets and forecasts through predictive analytics. Thus, they try to leverage the opportunities arising in the digital age to overcome traditionally time-consuming budgeting processes. For the future, management accountants intend to build more strongly on non-accounting data to provide even more added value to their companies.

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# Introduction

The digital age is widely discussed as a major challenge for the management accounting profession (e.g., Brands, 2014; Quattrone, 2016; Cavelius, Eendenich and Zicari, 2020). However, it is unclear how potential changes in the work and role of management accountants in the digital age triggered are materialising in business practice. Other corporate functions or technology – through better data, digital tools and more efficient processes (e.g., Warren, Moffitt and Byrnes, 2015; Quattrone, 2016) – put into perspective concerns about a potentially weakening position of management accountants or even other corporate functions or technology replacing of management accountants. Although there has been published a plethora of thought pieces and normative articles on these aspects underlining the importance of the subject for companies around the world, the empirical evidence in this area is still extremely scarce. Against this background, the objective of this study is to increase our knowledge on the influence of the digital age on the role and work of management accountants.

The research project builds on the distinction between two crucial and interconnected, yet different facets of the digital age: *Digitization and digital transformation* (Ross, Beath and Sebastian, 2017; Figure 1). On the one hand, digitisation refers to using disruptive technologies to ensure data reliability, cost and operational efficiency, process discipline and security of transactions (Ross, Beath and Sebastian, 2017). The role of management accountants as owners of the corporate financial and non-financial information systems that facilitate and influence managerial decision-making (e.g., Demski and Feltham, 1976; Chang, Ittner and Paz, 2014) underlines the importance of the digitisation for management accountants. On the other hand, digital transformation refers to transforming companies toward more innovative, flexible and customer-centric business models (Ross, Beath and Sebastian, 2017). For many years, providing strategic guidance and challenging top-managers in their decision-making have been discussed as major tasks of management accountants (e.g., Roslender and Hart, 2003; Goretzki and Messner, 2019), thus, providing good arguments that management accountants should play an important role in the digital transformation of their companies.

The interconnection between digitisation and digital transformation is underlined by the fact that bringing innovative (yet profitable) products and services to the market at a large scale and faster than competitors, is only possible if companies can build on efficient and reliable processes; in other words, if they have digitised their business processes (Ross, Beath and Sebastian, 2017). Vice versa, a digitally transformed business can be expected to bring opportunities for further digitising business processes through new data with potential for value-adding analyses. Moreover, digital business models seem suited for high levels of cost and operational efficiency. For management accountants, Big Data, predictive analytics and other disruptive technologies are likely to imply new opportunities for measuring actual and forecasting future performance and building and visualising more comprehensive management control systems (Warren, Moffitt and Byrnes, 2015). Empowered by digitised business processes, management accountants might participate in spotting business opportunities, new strategy formulation and implementing new business models (Cavelius, Eendenich and Zicari, 2020). Figure 1 summarises these aspects.

Figure 1: Two sides of the digital age

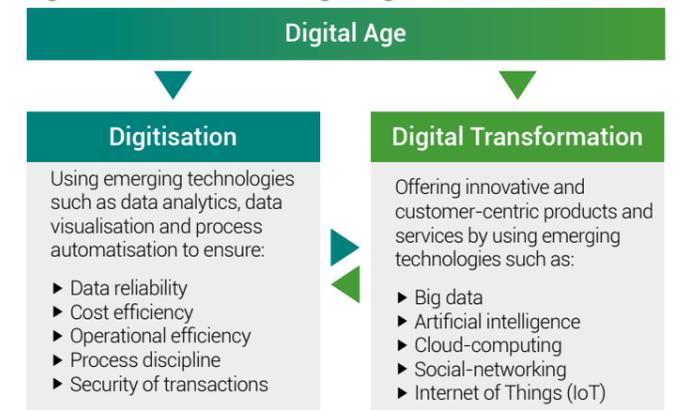


Figure based on Ross, Beath and Sebastian (2017)

# Objectives

- ▶ The overarching objective of this research project is to increase our knowledge of the influence of the digital age on the role and work of management accountants.
- ▶ The study intends to guide management accountants in business practice in navigating their departments and companies through the digital age.
- ▶ Given that France and Germany belong to each other's most important trading partners and given the huge number of French-German corporations, comparative insights into the work of French and German management accountants aim at enabling cross-country learning effects.
- ▶ Management accountants working in multinational companies having subsidiaries in France and Germany will especially benefit from the insights provided by this study.

# Research method

This research project builds on qualitative empirical evidence from two sets of interviews with management accounting experts. In a first step, 26 interviews with senior management accountants; specialised consultants; and data analytics, innovation, risk management and IT experts have been conducted in major German cities. The companies of the sample comprise German global players and hidden champions from the manufacturing, finance, insurance, logistics and infrastructure sectors; start-up companies that gained national and international recognition as well as leading medium and large-scale consulting companies with specific expertise in management accounting and digital issues (Table 1). The heterogeneous nature of the sample aims at providing rich and comprehensive insights into the subject under study.

To increase reliability, observations, company visits and company and public documents triangulated the interview data. In a second step, the results of the German interviews were compared with a similar set of interviews conducted in France. Against the background of close economic ties between France and Germany, this research approach allows for comparative insights into the work of management accountants in two of the most important continental-European economies in the digital age.

**Table 1: Interviewees**

Organisation	Industry	Position
1	IT & MA* Consulting	Senior Consultant
2	IT & MA Consulting	Senior Consultant
3	Academia	MA & Digitalisation Accountant
4	Plant construction	Management Accountant
5	Automotive supplier	Head of MA
6	IT & MA Consulting	Partner
7	Manufacturing	Business Intelligence Analyst
8	Automotive Supplier	Management Accountant
9	Infrastructure and Recycling	Management Accountant
10	Retail	Head of Digital MA
11	Startup Incubator	Head, MA Expert
12	Academia	MA, Audit & Digitalisation Researcher
13	Banking	Risk Manager
14	Industrial Services	Management Accountant
15	E-commerce	Senior Management Accountant
16	Software	Head of Finance
17	Data Analytics	CEO
18	Manufacturing	Head of Finance Transformation
19	Consulting	Head of Data Analytics Center
20	Infrastructure	Head of Planning and MA Systems
21	Insurance	Head of Digitisation & Shared Services
22	Infrastructure	Head of Strategic Planning
23	Consulting	Director
24	Consulting	Manager
25	IT Services	Senior Management Accountant
26	Infrastructure	Head of Data Management and MA

**\*MA - Management Accounting**

# Findings

At the time of the interviews, digital issues represent core aspects for all companies of the sample at both the corporate and at the management accounting level. Accordingly, digital issues hold prominent positions on top-management agendas as new competitors and new competing products or services arise from the digital age. However, even if companies visited defined strategies to foster digitisation and digital transformation, they have been implemented and internalised throughout the companies to very different degrees. In other words, the sample comprises companies that are at the beginning of their digitalisation journeys, companies that have made first or substantial steps on this path and companies that can be characterised as pure digital players.

While interviewees underline that digitisation is not a new phenomenon but has already entered corporate agendas via the implementation of ERP systems since the 1990s, they share the opinion that digital issues are nowadays more massively influencing all aspects of their companies – including the management accounting area. Consequently, particularly the bigger companies of the sample have established projects and working groups that aim at transforming the management accounting and related functions – such as bookkeeping, risk management and treasury – toward digital internal service providers or have established hubs and management accounting teams exclusively dedicated to digital issues. The following sections zoom into the role and work of management accountants in the context of the digitisation and the digital transformation of their companies.

## Management accounting and digitisation

All interviewees met during this research project are strongly engaged in the digitisation of their companies. In this context, data quality missions and system harmonisation are most often mentioned as central challenges. These two aspects play a crucial role in the everyday work of the interviewees – even in those companies that can be characterised as pure digital players. Moreover, efforts to move budgeting practices toward more efficient or data-driven processes and implementing self-service reporting tools for decision-makers have been identified as the most time-consuming tasks and projects of management accountants at the time of the interviews. In the following, these facets of the work of management accountants in the digital age will be analysed in greater depth.

**Data quality and quantity** – Because it can be considered a fundamental prerequisite for any meaningful analysis, ensuring data quality is of overwhelming importance for the management accountants interviewed.

Interviewee 26: "I think that especially in the digital age, the mission of the management accountant is to be the guarantor of the correctness of data, that data is really valid; data must be correct and at the same time it shouldn't be too much nor too little data."

Although this data work is characterised as highly time-consuming, a valuable side-effect is the resulting supreme knowledge and understanding of data that becomes a valuable resource for answering ad-hoc questions and delivering tailored advice to top management and a distinguishing feature of management accountants against other corporate actors.

Interviewee 5: "But this can actually also help: It is easier to answer why-questions if you have been involved in data preparation."

While in the past management accountants might have been challenged by getting a sufficient amount of data, they nowadays need to select the right data to be analysed and enrich their analyses – which de facto still focus widely on accounting and specifically on cost accounting data – by non-accounting data from multiple sources (e.g., customer, production, sensor and web data). Analysing masses of data comprehensively and fast and delivering tailored management advice based on these analyses becomes both a key challenge and an important value-added management accountants deliver.

Interviewee 6: "I mean, [in the digital age] management accounting has a product to offer to the company which is indeed an improved situational awareness. And in the end, this should lead to increased revenues."

In this context, advanced mathematical and statistical expertise become important for management accountants as they need to be able to make the best usage of the emerging heterogeneous data masses by (e.g., running regression analyses on complex data-sets and drawing meaningful conclusions from emerging data lakes). In this context, new software tools and data systems become important enablers.

**IT tools and systems** – The finding that the interviewees are strongly engaged in data quality issues is connected with the IT system and tool landscape because in heterogeneous IT landscapes data quality issues are more likely to emerge.

In this context, most companies of the sample are planning or undergoing major changes in their IT systems and the implementation of new ERP systems is dominating these changes and the work of the interviewees.

Interviewee 24: "SAP HANA will be the dominant topic for bigger corporations in the coming years. Definitely. And companies will also need to do some preparatory steps and think about an according implementation strategy."

Given that data reliability has long since been a major concern for management accountants, the implementation of new ERP systems comes along with the hope of sustainably solving data reliability and IT infrastructure issues through developing and implementing comprehensive data and IT infrastructure frameworks.

Interviewee 7: "We are actually also changing our ERP system. And in the course of this, it was decided to basically establish an overarching concept. And for the management accounting area this basically means that we are also implementing a new Business Intelligence System as kind of add-on tool to fulfill the requirements of management accounting."

**Budgeting, planning and forecasting** – The areas of budgeting, planning and forecasting are not only traditional core areas of the work of German management accountants (e.g., Hoffjan et al., 2012) but are also areas in which many of the companies of the sample are experimenting with advanced data analytic techniques. The objectives of such initiatives comprise increasing process efficiency and moreover accuracy of predicted data.

Interviewee 23: "You want more accuracy. But you moreover want an increase in efficiency because especially in the planning and forecasting process, enormous resources are burned."

Accordingly, several companies of the sample are running a traditional budgeting or forecasting process in parallel to experimenting with data-driven processes. Subsequently, the results of both approaches are systematically analysed and compared. Even if the results from these test balloons are very heterogeneous, in some cases the forecasts resulting from data-driven predictive processes are treated as "first choice" compared to expert forecasts because they reach a higher degree of accuracy. These results clearly show that predictive analytics is very likely to enter the management accounting area more extensively soon –

especially, because intelligent systems are improving in accuracy with each forecasting cycle through learning effects.

Interviewee 18: "In terms of predictive sales forecasts, we implemented six pilots and others are about to start. Acceptance in the business units varies significantly. In my former business unit, in the meanwhile, I know, they consider the data-driven forecast as first choice and the expert forecast as the second choice."

## Self-Service Reporting Tools

An additional important development in management accounting triggered by the digital age is the broad dissemination of self-service tools that offer decision-makers at all corporate levels – in the best case real-time – access to decision-relevant information.

Interviewee 16: "Self-service-analytics is a topic that we are actually pushing very hard. That's something we are actually working on very concretely: Just offering – I would not say all – but many people a very simple access to the data which is relevant for that specific person."

Such self-service tools are characterised as a significant step forward in terms of user-friendliness and efficiency and – in the best case – free-up management accounting resources for more future-oriented tasks (such as providing advice on managerial decision-making) and avoid that reports are periodically built that are finally not used to a significant degree. However, self-service tools might also carry the danger of decreasing direct contact between management and management accountants as managers can comprehensively access data management accounting provide without getting in direct contact with management accountants. In this context, the management accountants interviewed underline that they need to actively bring forward their specific financial and business expertise that goes beyond the information available in the research of the newly implemented self-service reporting tools. Obviously, this specific management accounting expertise becomes more important for the complex questions faced by managers.

Interviewee 20: "In a group, questions are incredibly complex and multifaceted. Simply speaking, as a manager you don't get the answer by drilling down."

## Toward digitally transformed companies

The management accountants interviewed hold an important role in the digital transformation of their companies. More specifically, they regularly act as critical counterparts and provide the necessary data infrastructure needed for decision-making. However, in some companies, management accountants are characterised as the questioners of digitisation and digital transformation as they play an important role in showing the economic consequences of decisions and potential digital transformation paths and in scrutinising digital investments. Reminding a heterogeneous set of corporate actors that digital initiatives need to provide an added value for the company instead of being an end in itself becomes an important task of management accountants in the digital age. The ever-increasing amount of available software tools brought forward by multiple actors and the massive investments necessary for digitally transforming companies underlines this task's importance.

*Interviewee 26: "And finally, what you are implementing, should in the end also bring value for the company. In the digital age, I can do a lot where I potentially say: 'This is nice to have, but actually does not bring a concrete advantage and definitively not a financial benefit.'"*

Through advanced data analyses, new tools and their expertise, management accountants can show an added value to companies undergoing or striving for a digital transformation. Examples interviewees mention comprise a better customer segmentation, based on individual customer characteristics that resulted in higher profits, more comprehensive views on current and potential future business and more user-friendly and timely reports that allow a timely reaction to market changes. This added value is widely recognised within the companies of the sample, resulting in a very high number of requests reaching the management accounting departments in the context of digital initiatives. Consequentially, several interviews underline that the number of requests received in the management accounting department significantly exceeds available resources. Accordingly, requests need to be evaluated and prioritised in terms of the expected added value for the companies.

*Interviewee 10: "The demand is definitively there: So, marketing has a huge list of questions with things they would like to do with us."*

For companies that succeed in transforming their business models, this development implies several challenges for the management accountants interviewed. For example, platform-based businesses or hybrid business models in which digital products or services complement traditional value creation processes become a challenging, yet important, task for the interviewees of this field study as they require newly designed steering processes.

*Interviewee 18: "And obviously, new topics at which we need to look at are arising with the new business models. How to control digital business? How to control a new business unit for technical products? Whenever new developments come up [we need to take care of them]."*

Considering the intentionally heterogeneous sample of companies visited, it appears that within the more recently founded companies that follow – from the beginning – digital business models, management accountants seem to face fewer challenges in assuming a more active role in digital issues. On the other hand, in the mature companies of the sample, overcoming longstanding management accounting routines and legacy systems represent a significant challenge for their management accountants in playing an active role in the digital transformation of the company. Overall, the data analysis shows that even if management accountants don't regularly represent the primary driver of the digital transformation in the companies visited, management accountants play an important role in such processes through their role as enablers and critical counterparts. Accordingly, besides contributing to better situational awareness, scrutinising and showing the economic consequences of both digitisation and digital transformation processes become key tasks for management accountants in the digital age.

## The Role of French and German management accountants in the digital age

To gain cross-national comparative insights into the roles and challenges of management accountants in the digital age, this section provides a comparison of the results provided in the previous sections with a comparable set of interviews conducted in France (Cavelius, Eendenich and Zicari, 2020). Germany and France represent the most important continental European markets economically and belong to each other's most important trading partners. A huge number of major French-German corporations and business initiatives underlines the close ties between the two countries. Accordingly, a comparison of management accounting practices in both countries can be considered of significant relevance for business practice (Eendenich, Brandau and Hoffjan, 2011).

Both data sets show that, in the digital age, French and German management accountants face similar challenges. Data reliability missions, IT system harmonisation and supporting management in their decision-making are central missions of management accountants in both countries at the time of the interviews. In this context, it is interesting to observe that, over the last years, management accountants in France seem to have taken a more active role in business processes and more often take over a business partner role than reported in previous empirical studies (e.g., Hoffjan et al., 2012).

Digitisation can be considered an important enabler of such an increasingly active stance of French management accountants in management because the data and technology emerging from the digital age allow for more tailored, user-friendly and timely advice with the potential of underlining the value management accountants add and increasing the acceptance of the management accounting function among other corporate actors. However, in both countries, most management accountants seem to rely still heavily on internal (management) accounting data, instead of fully leveraging the potential of the increasing variety of internal and external data evolving in the digital age. In this context, it becomes paramount to engage in cross-functional activities to gain an even better understanding of business processes and ensure access to data from multiple sources. In this context, the legacy of strongly being considered cost accountants can represent an important hurdle – especially for the German interviewees.

In terms of predictive data analytics, the companies of the German sample have invested considerably more effort than peers from the French data set. Accordingly, the companies visited in Germany run more and more advanced pilots that aim at replacing traditional budgeting and forecasting processes with data-driven approaches. These stronger investments are likely connected with the traditionally more elaborated and thus, more time-consuming budgeting processes in Germany (Hoffjan et al., 2012). Accordingly, investments in data-driven budgeting processes might be more urgent and economically speaking more promising in Germany as the potential for saving time and financial resources seems to be significantly higher in Germany as compared to France. In the French sample, efforts in the area of planning, budgeting and forecasting seem to focus more on increasing efficiency of processes by more traditional means and increasing flexibility by turning fixed cycles into rolling forecasts.

Despite these differences, the interviewees in both countries underline the importance of management accounting in the digital age. The next section summarises the results of this research project.

# Conclusion

The objective of this research project was to increase our knowledge of the role, work and challenges of management accountants in the digital age. Building on the distinction between the digitisation (the use of disruptive technologies to ensure data reliability, cost and operational efficiency, process discipline and security of transactions; Ross, Beath and Sebastian, 2017) and the digital transformation (the use of emerging technologies to transform companies toward more innovative, flexible and customer-centric business models; Ross, Beath and Sebastian, 2017), comprehensive empirical data was collected in France and Germany and analysed.

Overall, the management accountants interviewed are strongly engaged in the digitisation of their companies and play an important role as enablers and critical counterparts in the digital transformation of their companies. The chosen comparative research approach has highlighted that over the last years, French management accountants have successfully moved towards active business partners of management. In this process, using data and tools arising from the digital age have been identified as important enablers. At the same time, the sampled German companies are more intensively than their French peers investing in predictive budgeting approaches to increase the efficiency and accuracy of these processes.

The interviewees met during the research project expect that management accountants will continue to play an important role in their companies in the future. In doing so, management accountants need to build on the opportunities of the digital age to develop an even more overarching understanding of business processes instead of only focusing on accounting data. Corporate silos need to be broken down in the thinking and working of management accountants to provide added value: Instead of reporting transactions, management accountants need to be able to tell comprehensive data-driven business stories to convince managers of their advice.

However, resource restrictions are an important threat to the interviewees of this research project – particularly if management accountants are heavily involved in time-consuming digitisation issues. In this context, prioritising tasks and ad-hoc requests become a key challenge. Accordingly, some management accounting departments of the sample have established formalised processes that allow to systematically prioritise those requests with the highest expected added value for the company. The potential for such a large number of requests reaching the management accounting departments visited underline the important role management accountants have to play in the digitisation and digital transformation of their companies.

If management accountants master the challenges described in this research project, they are likely to play an important role in their companies in the future. Even if automatised processes progress fast, data need to be analysed, systems need to be managed and ad-hoc questions of top management will continue to be regularly too complex and too unstructured to be answered by simply relying on digital self-service tools. Many corporate actors engage in the opportunities of the digital age, such as advanced data analytics. However, combining profound data knowledge with a comprehensive understanding of business processes regularly represents a distinguishing feature of management accountants. Accordingly, this empirical research project provides good arguments that management accountants are likely to play a crucial role in the digitally transformed company of the future.

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