Management for Professionals

Ferri Abolhassan *Editor*

The Drivers of Digital Transformation

Why There's No Way Around the Cloud

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Foreword

Apple is the most valuable company of all time. It is a technology corporation with a market value of more than 700 billion US dollars (cf. AFP, Bloomberg, dgw 2014). Apple is also the world's most valuable brand. As such, it is the most prominent example of a finding that is no longer merely a passing trend – namely, that the successful companies of today are digitalized companies. They are stirring up global markets and overtaking even 100-year-old enterprises with breathtaking speed. By the same token, every single company will be affected by this development, and every single business model will wind up being put to the test – by new and often very young competitors.

Anything that can be digitized will be digitized, and anything that can be networked will be networked. This applies to people, machines, and products alike. Software is increasingly becoming a decisive production factor, because all of these networked machines must be controlled and all the digital data must be stored, processed, and meaningfully analyzed. So the successful companies of today also have to be – or become – "software companies." And software lives in the cloud.

Digital Transformation Is an Imperative

This book aims to explore what this development means to the business leaders of today – whether they are at the head of a start-up or a long-established company. One thing is certainly clear: Digital transformation is now essential to corporate growth. What's more, Europe's future prosperity depends on successful digitalization. Until now, however, most of the biggest digital success stories have taken place in the USA and Asia. Europe in general, and Germany in particular, must not get left behind here. As a classic industrialized nation and the land of the post-World War II economic miracle, we have great opportunities available to us. But we have to seize them. Now.

Some of the foundation stones for this success have already been laid. Back in 2012, digitalization triggered a growth momentum of around 145 billion euros in Germany (cf. Bitkom 2014). A few companies were quick to take advantage of digitalization. The German mail-order company Otto is one example. Thanks to

digital transformation, this long-established firm moved on from traditional catalog sales and developed into Germany's largest online retailer for lifestyle products. Otto now sells more furniture online than IKEA (cf. dpa 2015). ING-DiBa is another digital success story. Operating not even a single branch office, this financial institution – which now has more than eight million customers – made the leap to become Germany's largest direct bank by far (cf. Frühauf 2014) and the third-largest retail bank in Germany.

This goes to show that successful digital business models are out there. But that's only the beginning. The strategy consultancy Roland Berger foresees an additional cumulative potential value of 425 billion euros in Germany by the year 2025 if German industry succeeds in its digital transformation. For Europe as a whole, the researchers have forecast extra potential value of 1.25 trillion euros. But they also point out the danger of missed opportunities: If digital transformation fails, it could lead to potential losses of up to 605 billion euros in Europe (cf. Kurzlechner 2015). This can't be allowed to happen.

Many managers are already aware that now is the time to get things on track. Nearly one in two German companies is preparing itself for the fact that new technologies will eventually call its own business model into question (cf. Ernst & Young 2015). And it's true. Digitalization requires us to rethink – or at least rework – our current business models. But digitalization can also give rise to entirely new and disruptive approaches. What many successful young companies have in common is their consistent focus on customer value and the use of superior software platforms which enable them to attract a very large number of customers very quickly. This is how Airbnb became the largest hotel provider without owning a single bed of its own, and how Uber became the largest taxi company without owning a single vehicle.

Digital Transformation Is a Management Issue

The examples reveal something else as well: The pace at which companies must respond to new demands continues to grow. There was a time when the average life expectancy of a company was 75 years. Now it's just 15 (cf. Hagel III 2010). And in more and more cases, the lack of a digitalization strategy is the deal breaker. Take Kodak, for instance: The camera and photo specialist once had 140,000 employees and annual sales of around 28 billion US dollars. Kodak missed out on the digital transformation and ultimately had to file for bankruptcy. Parallel to this, a software company named Instagram became the world's largest digital photo-sharing app – with just 13 employees. When Instagram was sold to Facebook in 2012, it cost one billion dollars (cf. Thun 2014).

Digitalization is not purely an IT issue. It is strategically important and critical to business. In light of this, when it comes to the digitalization of production processes (what are known as "Industry 4.0" applications), the management or executive board is usually responsible for handling things (cf. Bitkom 2015). Digitalization has become a management issue – as it should be.

Incidentally, this applies to big businesses as well as mid-sized companies – the so-called *Mittelstand* – which are the backbone of German industry. German Chancellor Angela Merkel thinks the issue is not yet anchored deeply enough in many small to medium-sized enterprises (cf. Fietz 2015). She has also stressed that just appointing an IT officer is not enough, because the impetus has to come from the management. And she is right – after all, CEOs are the ones who must make sure their companies are agile enough to anticipate changes and react to them quickly. The CEO has to establish the parameters for digitalization so that the IT department can cope with the new requirements.

Digital Transformation Requires the Cloud

Speed and agility are key when it comes to introducing new products and processes. Cloud computing is the technological basis for this. The cloud is what makes it possible to achieve the high velocity demanded in this age of digitalization. It makes the necessary services faster, more flexible, and more secure.

The question is no longer whether the cloud should have a place in a company's strategy – the question is about the form and scope of that place. Integrated ICT providers are the obvious partner here because cloud computing requires both technological foundations and consulting expertise – "hardware" *and* "software," if you like. One essential component of this is a strong broadband network for fixed lines and mobile communication – ideally transnational, pan-European, and all-IP. This calls for IT security which is "made in Germany" and hosted in highly secure data centers. But it also calls for sophisticated IT quality management, which is vital in the digital world, coupled with the relevant experience in digital transformation.

Ultimately, every company has different requirements and different goals which must be continuously adapted to the market conditions. An ICT partner is therefore like a company's "architect of the digital future."

Digital Transformation Requires Trust

There is another obstacle to overcome, however: More than one-third of all Germans currently say that they are mostly afraid of digitalization. Only for the under-45s do the opportunities outweigh the fears (cf. Dörner et al. 2014). This is where entrepreneurs, IT service providers, and politicians come in. Through our work, we must create a sense of trust and emphasize the possibilities that digitalization offers.

A sensitive approach to data is crucial to this. Data is the raw material of the digital economy. We have to harness the masses of accumulated data and use them efficiently – but *for* people, not *against* them. Data security and data protection must therefore always be the top priority.

Thanks to its strict data protection policies, Germany enjoys a great advantage here. We should make use of it. It is good to see that Europe is finally on its way to creating a cross-border general data protection regulation. European interior and justice ministers recently agreed to reform Europe's data protection rules. This will give a considerable boost to the establishment of unified standards. This is precisely what we have always pushed for because it is an important basis for shared and secure digital platforms in Europe. In this way, we can create a real counterbalance to the strong economic regions of the USA and Asia.

This book provides insights from various perspectives into how companies can get started with their digital transformation, which factors are critical to success, and how much potential is offered by the cloud. Specific practical examples show how German and European companies can work with the right partners to shape the upcoming second phase of industrial digitalization.

The future of the German and European economy is at stake here. We are in a strong position: Germany is an industrialized nation with an outstanding reputation as a supplier to the world. The time has come to take our expertise in mechanical and plant engineering and our understanding of quality and combine them with the advantages of digitalization. We have the necessary technologies. We just need to put them to use.

The game is on – let's get the ball rolling.

Deutsche Telekom AG
Bonn, Germany
November 2015

Tim Höttges
Chief Executive Officer

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Tim Höttges has been CEO of Deutsche Telekom AG since January 2014. From 2009 until his appointment as CEO, he was the member of the Group Board of Management responsible for Finance and Controlling. From December 2006 to 2009, Höttges was the member of the Group Board of Management responsible for the T-Home unit. In this position, he was in charge of the fixed-network and broadband business as well as integrated sales and services in Germany. From 2005 until being appointed to the Group Board of Management, Mr. Höttges headed European operations as a member of the Board of Management of T-Mobile International. From 2000 to the end of 2004, he was Managing Director Finance and Controlling before becoming Chairman of the Managing Board of T-Mobile Deutschland. Mr. Höttges studied business administration at Cologne University, after which he spent three years with a business consulting company. At the end of 1992, he moved to the VIAG Group in Munich, where he was a divisional manager from 1997 and later became a member of the extended Management Board responsible for controlling, corporate planning, and mergers and acquisitions. As a project manager, he played a central role in the merger of VIAG AG and VEBA AG to form E.ON AG.

Contents

Pursuing Digital Transformation Driven by the Cloud

1

Ferri Abolhassan

Could all of the estimated 85 million pet owners throughout Europe use an app to track the activities of their pets? How could smart pills improve healthcare for over 26 million chronically ill people in Germany (cf. German Foundation for the Chronically Ill 2015) by providing them with more personalized treatment? How can a firefighter quickly find the information he needs – building plans, hydrant locations, interactive location maps – at any time of day so that he can get straight to the scene and save lives? How can over 100,000 employees in a global company work together effectively across national borders and local IT barriers? The scenarios could not be more different. But they have one important thing in common: The solution relies on the cloud.

1.1 The Cloud Can Do Many Things

The cloud is the basis for the digitalized business models and processes that will play a pivotal role in businesses in the future. For we will soon be living in a world in which everything is networked to everything else. Studies (cf. Kremp 2014) have estimated that there will be over 200 billion interconnected devices by the end of the decade. Dealing with these vast numbers requires technology that is reliable and stable. The cloud can do that. The Internet of Things, Industry 4.0 – virtually all of the IT sector's recent innovations rely on businesses being able to harness the speed and scalability of the cloud. It is the backbone and the brainpower of the entire digitalization movement. It offers more data storage and data analysis capacity. It makes it possible for an almost limitless number of users to capture and analyze huge data volumes centrally.

There are some conditions, however, including fast, high-performance broadband connections and powerful, secure data centers with high levels of flexibility

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