

# »» SMEs in Germany are slow to adopt e-commerce

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E-commerce, the digital distribution of products and services, holds great opportunity for many businesses. From opening up new groups of customers through expanding market reach to the manifold ways of keeping pace with evolving customer needs – the potential is enormous, but many small and medium-sized enterprises (SMEs) are not harnessing it yet.

SMEs generated around EUR 153 billion in turnover through online sales channels in 2015. That was 4 % of their total turnover. Around one in six SMEs uses e-commerce channels. Even if not every industry is equally suited for e-commerce, it is clear that digital selling is still in its infancy in many parts of the SME sector.

Yet the analysis shows that expanding e-commerce activity goes hand-in-hand with higher growth. Business expectations are also significantly more optimistic. But the downside is lower profitability as strong competitive pressure clearly takes its toll on businesses.

E-commerce will continue to grow in importance and spread across small and medium-sized enterprises. This will occur not only through a gradual transition within established SMEs, but also through generational change. Younger entrepreneurs are more determined to adopt digital sales channels, and digital founders with online business models are moving up. Already about one in five start-ups is launched by a digital founder.

## Evolving customer needs: e-commerce can be the answer for many SMEs

Digitisation brings lasting changes to business processes. Modern digital technologies and interconnection are occupying a growing space in business practice. For many SMEs, the advancing intensification of digital business processes offers great opportunity to secure growth and competitiveness into the future.

However, digitisation among German SMEs still has significant growth potential, as a study by KfW Research has recently revealed.<sup>1</sup> At the same time, it is also important for many SMEs to meet the changed needs of their customers – whether they are end-consumers or businesses. For example, information and communication behaviour and, with it demands, have changed greatly: Permanent availability, fast delivery times, real-time advice, individual offers, user-friendliness and mobile capability are only some aspects customers are increasingly demanding.

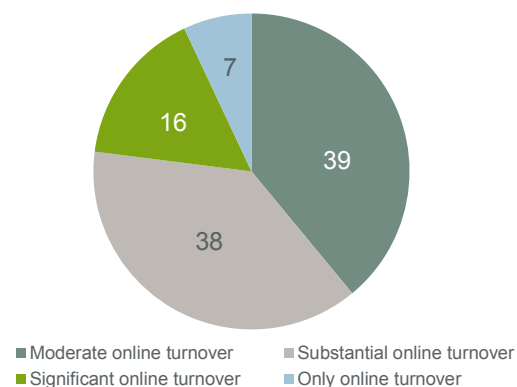
The digital distribution of products and services through e-commerce solutions holds great potential for responding to these changed needs. This applies to business relations with end-consumers (business-to-consumer, or B2C) as well as with businesses (business-to-business, or B2B).

## E-commerce promises benefits on many levels

E-commerce is fundamentally an (additional) sales channel, the key features of which are speed, flexibility and transparency. The opportunities they provide to businesses are manifold: greater visibility, broader market reach, reduced warehousing costs, shorter delivery times, more efficient procurement processes and higher customer satisfaction.<sup>2</sup> But most of all, e-commerce activities can generate turnover that would not eventuate through conventional means (such as stationary trading, sales forces, trade shows and mail-order catalogues). This can enable SMEs to tap into new, digitally-oriented customer groups or expand their sales area to other regions and even beyond Germany's borders.

## Figure 1: Full focus on e-commerce is still an exception among SMEs

Percentages of businesses by class, only SMEs with online turnover



Notes: *Moderate* online turnover up to and including 10 % of total turnover. *Substantial* online turnover above 10 % but less than 50 % of total turnover. *Significant* online turnover of more than 50 % but less than 100 % of total turnover.

Source: KfW SME Panel 2016.

## Online turnover of SMEs is around EUR 153 billion

This special analysis of the KfW SME Panel 2016<sup>3</sup> provides first answers to the question where SMEs currently stand with regard to e-commerce. The turnover generated by SMEs through online sales channels in 2015 amounted to some EUR 153 billion. That was roughly 4 % of SMEs' total annual turnover.

Only around 16% of all SMEs generate any turnover through these sales channels. In other words, more than eight in ten SMEs do not (yet) use online sales channels to deliver their products and services (84%). It must be borne in mind, however, that e-commerce is not equally suited for every business. To the extent a business generates turnover online, the average contribution of 20% to total turnover is considerable.

**Very mixed picture – most online turnover is concentrated on a small segment**

There are big differences between businesses (figures 1 and 2). In around 39% of businesses with online turnover, the proportion is moderate and does not exceed 10%. Their online sales can generally be assumed to constitute an additional offer for customers to accompany traditional sales channels. Accordingly, this group’s total e-commerce turnover volume is modest (EUR 10 billion). For almost the same number of businesses (38%), e-commerce turnover plays a substantial role, accounting for 10–50% of total turnover.

For around one in six digital sellers (16%), online turnover already plays a significant role, contributing more than 50% of total turnover. Seven per cent generate turnover exclusively through online sales channels. This relatively small group alone (less than 1% of all businesses) generates one third of all SMEs’ e-commerce turnover.

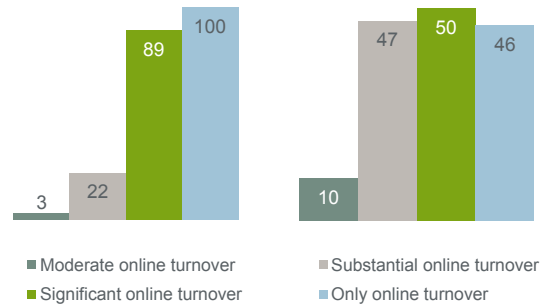
**SMEs still have a below-average low share of e-commerce**

Measured by available estimates of the total volume of e-commerce in Germany (box), SMEs are greatly under-represented, at around 15 to 20%. For comparison: SMEs account for 46% of aggregate exports, 44% of corporate investment activity and 69% of aggregate employment

– much higher proportions.<sup>4</sup> This shows that SMEs have not yet broadly embraced e-commerce.

**Figure 2: Small segment accounts for large portion of total online turnover**

Left: Percentage of online turnover in total turnover by types/Right: online turnover by types in EUR billions



Notes: *Moderate* online turnover up to and including 10% of total turnover. *Substantial* online turnover above 10% but less than 50% of total turnover. *Significant* online turnover of more than 50% but less than 100% of total turnover.

Source: KfW SME Panel 2016.

This is probably true most of all in retail consumer business (B2C). If we set the corresponding proportions in relation to aggregate economic data (see box), SMEs generate some EUR 9 billion annually in the B2C segment (6% of SMEs’ total online turnover). For comparison, Amazon, the biggest online retailer, sells products worth around EUR 8 billion annually in Germany.

B2C is clearly more perceptible to the public than B2B. At around EUR 144 billion, SMEs generate the bulk of their e-commerce turnover in rather more “invisible” transactions with business customers (94% of SMEs’ total online

**E-commerce in Germany**

According to the definition of the German Federal Statistical Office, e-commerce (electronic trading) refers to the buying and selling of products and services through electronic networks, especially via the internet or an EDI (electronic data interchange). EDI enables the electronic exchange of data between computer systems of different businesses through what are referred to as dedicated lines (such as telephone lines). In order to count as e-commerce, the activity must involve ordering products or services using these electronic networks. Payment and delivery can still be made using conventional means.

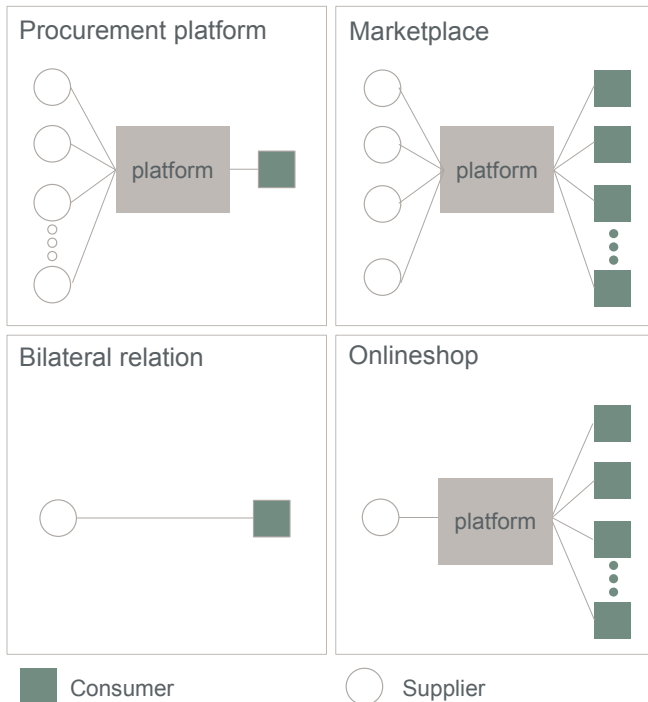
In 2015, almost three-fourths of the population made purchases through the internet (73%). In 2007 that share was just 52%. The propensity to purchase consumer goods through online channels has grown strongly within a short time in Germany. The country ranks fifth within EU-28 (EU average: 53%). Exact figures on total turnover generated in direct business with retail customers through online sales channels (B2C) are not available. B2C e-commerce turnover in Germany is estimated to have totalled EUR 42 billion to EUR 53 billion in 2016.

In addition to sales to retail consumers, procurement and selling processes between businesses along the value chains (B2B) play a large role that is often more important than the B2C area. B2B e-commerce turnover in Germany was estimated at around EUR 870 billion in 2012, of which some 80% was via automated data exchange (automated transfer and processing of recurring and easily predictable orders).

Sources: Destatis, Eurostat. Bundesverband E-Commerce und Versandhandel Deutschland e.V. (bevh) (German Federal Association for E-Commerce and Mail Order Selling), Institut für Handelsforschung (IFH) (Institute for Trade Research), Cologne.

turnover). Component suppliers in the engineering and automotive industry, for example, play a major role in these B2B transactions. Many SMEs also operate as suppliers for manufacturers or construction firms (especially for regular or high-frequency orders for electronics, sanitary equipment, tools, office materials and building materials).

**Figure 3: Business models in e-commerce**



Source: Rendition by KfW Research based on Mittelstand 4.0 – Agentur Handel (2016), Leitfaden B2B-E-Commerce, IFH GmbH, Cologne.

### Online penetration varies greatly - retailers seize potential most effectively

The potential for using e-commerce differs significantly from one industry to another. The main determinants are the characteristics of products and services. But other criteria are also crucial to penetrating individual market segments, such as the competitive situation, market entry barriers, concentration processes, customer demands, traditions and the regulatory framework.<sup>5</sup> Accordingly, different e-commerce business models exist depending on the nature of these criteria (Figure 3).

Not surprisingly, SMEs generate the bulk of e-commerce turnover in retail and wholesale (around EUR 80 billion, or 52%). Not only do SME traders have more frequent direct contact with retail consumers themselves. Many of them also play a major role in supplying other firms as intermediaries between producers and buyers. Nearly one in three trading companies generated online turnover (31%). The proportion of online turnover in their total turnover is 25%.

### Service providers can do more

E-commerce covers not just classic trading of goods. It also extends to service enterprises such as ticket sales agencies, travel agencies, hotel booking sites and financial service providers, insurers and even brokerage or auctioning platforms. Also of relevance is the provision of online customer service solutions (personal advice, downloads etc.) for business customers.

Nevertheless, the use of digital sales channels is relatively rare among service providers (13%). The mean share of digital turnover is also below average, at 17%, and most of it is in the form of a supplementary offer. This is very largely due to the fact that many services cannot be delivered digitally.

### Young SMEs and younger business owners are most keen to sell digitally

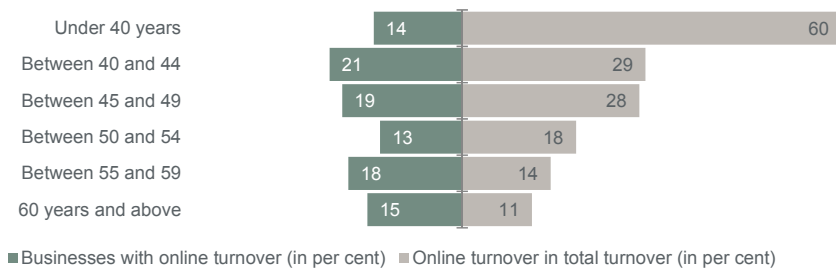
It is evident that while smaller and younger enterprises do not conduct e-commerce more often than large or established SMEs, the contribution of these channels to turnover is more significant (see table for an overview of segments). The smaller and younger the enterprise, the larger the share of online turnover. Accordingly, there are more SMEs in these segments that have focused their business model very strongly on the digital distribution of products and services.

E-commerce plays an important role particularly for the youngest businesses that have been on the market for up to ten years (average share of turnover 41%). This is a reflection of the structural development. As the KfW Start-up Monitor has shown, in 2015 already one in five start-ups was launched by digital founders – some 160,000 persons.<sup>6</sup> They are the founders who create new markets or put pressure on established markets by using digital technologies (e.g. app providers, software/IT developers). They are the driving force behind digitisation. The use of e-commerce is often an integral part of their business models.

This is consistent with the fact that the average share of turnover through e-commerce in total turnover decreases continuously with the age of the business manager (Figure 3). If the business is managed by a relatively young entrepreneur under the age of 40, the mean contribution to turnover is roughly six times higher than in an SME headed by a person over 60 years of age (60% vs. 11%). It is not that younger business owners exhibit a higher propensity to use e-commerce – the corresponding proportions per age class vary only minimally. But when they use these channels, they often do it to a much higher degree. Age therefore appears to be a barrier to the extent to which digital sales channels are used.<sup>7</sup>

**Figure 4: Young entrepreneurs are more eager to embrace e-commerce**

Percentage of SMEs with online turnover by age of business owner (left); percentage of online turnover in total turnover if selling online (right)



Source: KfW SME Panel 2016.

**E-commerce spurs growth and optimism ...**

The use of e-commerce makes a significant difference to businesses' performance. SMEs with pronounced e-commerce activities achieved higher turnover growth in the 2015 business year (Figure 4, left). The mean turnover growth rate of SMEs with significant online turnover even reached 15% in 2015 – almost 4 times that of SMEs without e-commerce turnover (4%). What is also evident is that the greater the focus is on e-commerce, the more strongly businesses have grown.

Moreover, these businesses are much more optimistic about the years ahead (Figure 4, middle). The proportion of SMEs with positive business expectations up to 2018 far outweighs the proportion of SMEs with negative expectations.<sup>8</sup> In the group of enterprises with the strongest online focus the balance between optimists and pessimists is +52 percentage points. In enterprises without e-commerce this value is +20 – less than half.

**... but is much less profitable**

SMEs that rely on e-commerce feel the strong competitive pressure in online business. Although embracing e-commerce provides ways of lowering business costs, the customers' transaction costs decrease at the same time. They can compare prices and offers from various sellers quickly and without great effort. This limits the scope for SMEs to set their prices – and thus their margins.

SMEs with e-commerce activities are therefore less profitable despite strong turnover growth rates (Figure 4, right). In 2015, their average return on sales<sup>9</sup> was just 4%. By com-

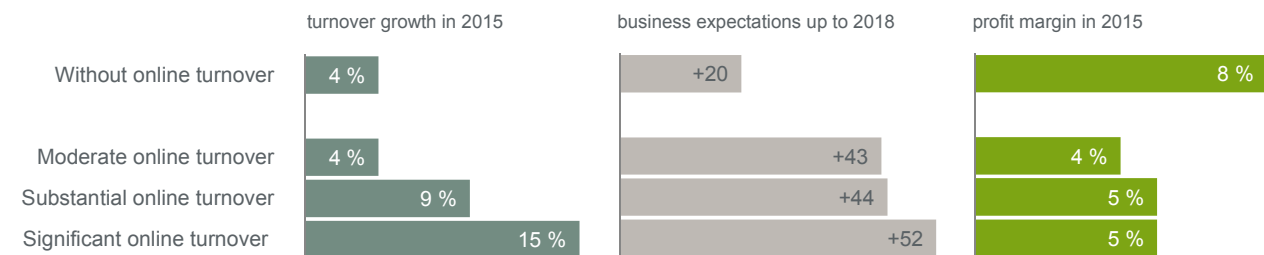
parison, SMEs that generate no turnover with e-commerce whatsoever are twice as profitable (8%). Within the online segment, on the other hand, a rising proportion of e-commerce activity leads to moderate profitability growth. This is probably due in part to the fact that companies reduce more cost-intensive sales activities when they increase their focus on e-commerce. Furthermore, they can use the advantages of digital technologies more effectively (adding a user costs little more). Nonetheless, these SMEs' profit margin also remains far below that of companies without e-commerce activity.

**E-commerce is not expected to boost investment**

Investment in the SME sector remains stalled and investment restraint has been evident since 2009. It is questionable to what extent advancing digitisation can provide significant impetus in the short term. A study commissioned by KfW recently found that SMEs' investments in digitisation projects currently amount to some EUR 10 billion a year.<sup>10</sup>

The analysis presented here confirms the picture that SMEs with online turnover have an above-average propensity to conduct investment projects, at 51% (the proportion of SMEs without online turnover willing to invest is 43%). However, their average investment intensity (investment volume per full-time equivalent employee) is far below average. In other words, they invest more often, but significantly lower amounts. While a small or medium-sized enterprise with online turnover invests around EUR 6,500 per FTE employee on average, enterprises without online turnover invest 1.3 times as much, or around EUR 8,300.

**Figure 5: Use of e-commerce affects businesses' performance**



Notes: *Moderate* online turnover up to and including 10% of total turnover. *Substantial* online turnover above 10% but less than 50% of total turnover. *Significant* online turnover more than 50% of total turnover. Because of the comparatively low number of cases in the group of SMEs that generate turnover exclusively online, in these evaluations they were added to the segment with significant online turnover.

Source: KfW SME Panel 2016.

## **E-commerce is gaining importance – transition in small steps is advisable**

There is no doubt that e-commerce will become increasingly important. SMEs are still tapping into the possibilities on a below-average level. They have a great need to catch up – and enormous opportunities to conduct more business through e-commerce. Clear positioning on the market combined with an adequate digital/online strategy (e.g. search engine optimisation, mobile capability, customer targeting and communication through social networks, alignment with internal processes) can put them on a path of growth and competitiveness.<sup>11</sup>

In this regard, studies have shown that gradual conversion is the most promising approach.<sup>12</sup> Small steps reduce the risk of errors resulting from insufficient experience. Businesses need to consider what are known as path dependencies: once the conversion is completed it is almost impossible to reverse.

## **IT skills are the main challenge**

Development opportunities also pose challenges and involve costs. Insufficient IT skills among the workforce are the greatest barrier to the use of digital technologies.<sup>13</sup> These skills must first be developed within the enterprise, for example through further training or new hires.

In addition, advancing digitisation makes protecting data and securing in-house IT infrastructure more imperative than ever. This applies not just to SMEs with e-commerce activities, but especially to them. KfW Research has recently shown that action is necessary. Between 2013 and 2015, one in three SMEs experienced specific security incidents – small businesses even slightly more frequently than large SMEs.<sup>14</sup> Protecting data also means work. First, employees have to acquire and upgrade their technical knowledge

(e.g. of monitoring and implementing legal requirements, system maintenance, database maintenance, and detecting and closing security vulnerabilities in user software). Businesses regularly underestimate these consequential costs in particular.

## **Industries are at different stages**

For all the euphoria, over-the-counter selling will hardly disappear, and certainly not in the B2C area. According to the German consumer research group GfK, a slower pace of e-commerce growth can already be observed in some retail segments (bookselling, electronics and media).<sup>15</sup> By contrast, the degree of maturity of digital sales activities remains low in some other segments (e.g. food retail), where cutthroat competition will intensify. Another development to continue monitoring in this context is the online sale of prescription drugs. ■

### **Database: the KfW SME Panel**

The KfW SME Panel (KfW-Mittelstandspanel) has been conducted since 2003 as a annual postal survey of small and medium-sized enterprises in Germany. The basic population of the KfW SME Panel includes all private-sector companies from all industries with annual turnovers of up to EUR 500 million.

With a database of up to 15,000 companies per year, the KfW SME Panel is the only representative survey of the German SME sector, making it the most important source of data on issues relevant to the SME sector. The main survey of the 14th wave of the KfW SME Panel was conducted in the period from 15 February 2016 to 10 June 2016.

Further information and the current annual report can be obtained at [www.kfw-mittelstandspanel.de](http://www.kfw-mittelstandspanel.de).



**Table: Online turnover in SMEs: key figures by segments**

	Online turnover (businesses in per cent)	Extent of e-commerce focus (company shares in per cent)			Online turnover in total turnover (in per cent)	Online turnover (in EUR billion)
		Moderat	Substantial	Significant		
<b>FTE-employment size class</b>						
Micro-enterprises (less than 5 employees)	15	6	6	4	37	39
Small SMEs (5 to 9 employees)	20	8	8	4	26	15
Medium-sized SMEs (10 to 49 employees)	21	10	9	2	25	43
Large SMEs (50 and more employees)	20	12	5	2	13	58
<b>Sectors</b>						
Manufacturing	21	10	7	4	14	14
Construction	10	2	7	1	22	6
Wholesale and retail	31	12	11	9	25	80
Services	13	5	5	3	17	52
<b>Company age</b>						
Up to 10 years	15	5	6	4	41	41
10 to 20 years	21	8	8	6	32	55
More than 20 years	14	5	6	2	12	52
<b>Total SMEs</b>	<b>16</b>	<b>6</b>	<b>6</b>	<b>4</b>	<b>20</b>	<b>153</b>

Notes: Moderate online turnover (share of online turnover less than 10% of total turnover) / Substantial online turnover (above 10% but less than 50%) / Significant online turnover (at least 50%).

<sup>1</sup> Cf. Saam, M., Viète, S. and S. Schiel (2016): Digitalisierung im Mittelstand: Status Quo, aktuelle Entwicklungen und Herausforderungen ('Digitisation in SMEs: status quo, current trends and challenges' – our title translation, in German). Research project on behalf of KfW Group. Centre for European Economic Research (ZEW), Mannheim. For a summary of the findings see Zimmermann, V. (2016): SMEs and digitalisation: The current position, recent developments and challenges, Focus on Economics No. 138, KfW Research, Frankfurt am Main.

<sup>2</sup> For more details and an overview of literature on the subject, see for example Lefebvre, L.-A. et al. (2005), Exploring B-to-B e-commerce adoption trajectories in manufacturing SMEs, Technovation 25, p. 1443–1456.

<sup>3</sup> Schwartz, M. (2016): KfW SME Panel 2016 – Businesses are using their financial strength, but not boosting investment, KfW Research, Frankfurt am Main.

<sup>4</sup> Schwartz, M. (2016): KfW SME Panel 2016 – Businesses are using their financial strength, but not boosting investment, KfW Research, Frankfurt am Main.

<sup>5</sup> Riehm, U. et al. (2003), E-Commerce in Deutschland. Eine kritische Bestandsaufnahme zum elektronischen Handel, Studien des Büros für Technikfolgen-Abschätzung beim Deutschen Bundestag (A critical inventory of electronic trade, studies by the Office of Technology Assessment at the German Bundestag - our title translation, in German), Berlin.

<sup>6</sup> A digital founder is an entrepreneur who, according to their own statements, offers products or services that are accessible exclusively through digital technologies. These include, for example, an (own) online shop or online marketplaces, but also communication exclusively via websites. For details see Metzger, G. (2016), KfW Start-up Monitor 2016: Labour market greatly lowers appetite for self-employment, innovative founders hold their own, KfW Research, Frankfurt am Main.

<sup>7</sup> Earlier studies by KfW Research also demonstrated that as business owners age, they generally invest less. See Schwartz, M. and J. Gerstenberger (2015), Ageing in SMEs is putting a damper on investments, Focus on Economics No. 85, KfW Economic Research, Frankfurt am Main; Leifels, A. (2016), Ageing boosts SMEs' need for successors – 620,000 business transitions by 2018, KfW Research, Focus on Economics No. 132, Frankfurt am Main.

<sup>8</sup> In order to assess the entrepreneurs' expectations, two indicators can be formed on the basis of the SME Panel: turnover expectations and earnings expectations. These were surveyed for the respective next three years and can express the following three levels of expectation: falling turnover/earnings compared with the survey year (-1 = negative expectations), unchanged earnings/turnover (0 = neutral expectations), increasing earnings/turnover (1 = positive expectations). The two indicators were subsequently combined into one indicator of business expectations. The following categories were defined for this purpose: 'pessimists':  $-2 \leq (\text{turnover expectations} + \text{earnings expectations}) \leq -1$  / 'neutral' (turnover expectations + earnings expectations) = 0 / 'optimists':  $1 \leq (\text{turnover expectations} + \text{earnings expectations}) \leq 2$ .

<sup>9</sup> Profit margin is defined as the ratio of pre-tax profit to turnover. The figure shows the mean values of profit margin weighted against turnover.

<sup>10</sup> Cf. Saam, M., Viète, S. and S. Schiel (2016): Digitalisierung im Mittelstand: Status Quo, aktuelle Entwicklungen und Herausforderungen ('Digitisation in SMEs: status quo, current trends and challenges' – our title translation, in German). Research project on behalf of KfW Group. Centre for European Economic Research (ZEW), Mannheim. For a summary of the findings see Zimmermann, Volker (2016): SMEs and digitalisation: The current position, recent developments and challenges, Focus on Economics No. 138, KfW Research, Frankfurt am Main.

<sup>11</sup> Cf. Almeida, F., Santos, J.D., Monteiro, J.A. (2013), E-Commerce Business Models in the Context of Web 3.0 Paradigm, International Journal of Advanced Information Technology, Vol. 3 (6).

<sup>12</sup> Cohen, S. and G. Kallirroi, (2006), e-Commerce Investments from an SME perspective: Costs, Benefits and Processes, The Electronic Journal Information Systems Evaluation, Vol. 9 (2), p. 45–65. – Lefebvre, L.-A. et al. (2005), Exploring B-to-B e-commerce adoption trajectories in manufacturing SMEs, Technovation 25, p. 1443–1456.

<sup>13</sup> Zimmermann, V. (2016): SMEs and digitalisation: The current position, recent developments and challenges, Focus on Economics No. 138, KfW Research, Frankfurt am Main.

<sup>14</sup> Schwartz, M. (2015), Harnessing the potential of digitalisation – with data protection and IT security, KfW Research, Focus on Economics No. 117, Frankfurt am Main.

<sup>15</sup> Doplbauer, G. (2015), Ecommerce: Wachstum ohne Grenzen? Online-Anteile der Sortimente – heute und morgen (E-commerce: growth without Borders? Online proportions of product ranges – today and tomorrow – our title translation, in German), GfK GeoMarketing GmbH, Bruchsal.