



# Digital Marketing in Germany

Study »Value added by digital marketing«

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# Executive Summary

## Relevance of digital marketing for the economy and society

The Study »Value added by digital marketing« highlights the relevance of digital marketing in Germany. It provides policymakers, journalists, users, providers, and the interested public with a well-grounded foundation for assessing the value added by digital marketing based on key economic data as well as insight into practice.

- **Spending** on digital marketing has been increasing since 2018 and amounted to a **total of 25.61 billion euros in 2022**. This includes the salaries of advertisers with a share of 6.58 billion euros. Search engine advertising (34 percent) and digital banner advertising (25.8 percent) accounted for the largest share of spending on services.
- The **value added** by digital marketing in Germany amounted to **19.75 billion euros in 2022**. The domestic intermediate inputs and imports were at 5.86 billion euros.
- With **246,582 employees**, measured in full-time equivalents (FTEs), in 2022, digital marketing is an important source of employment. Advertisers account for over half of the direct employment effects.

- **Income effects in 2022** encompassed a **pay-roll total of 12.17 billion euros**, based on gross employee salaries. The resulting tax and duty burden, based on income tax and social security, was 5.74 billion euros.
- Many free online services were only possible thanks to personalized advertising: More than 53 percent of the participating companies confirmed this in a survey conducted by Bitkom Research. Slightly over 85 percent of companies agreed that they reach more customers by tailoring their advertising to customer groups.
- Digital marketing is a diverse and constantly evolving sector. The diversity of players, formats, technological and creative solutions facilitate a **multifaceted ecosystem** that benefits a wide variety of companies and consumers.

The study at hand shows that digital marketing adds substantial value to the economy. The focus here is on the generated output, value creation, and employment and income effects along the value chain. The key indicators clearly show the pivotal role of digital marketing, even if additional effects are to be expected. Digital marketing facilitates better access to information for consumers, stimulates consumption, and creates diverse and innovative product and service offerings, among other things. **The induced and extended effects resulting from this multiply the impact of digital marketing on Germany's economic growth.** According to other studies, these effects are higher by a factor 4.5 to 7. Digital marketing is thus a pivotal area for a successful digital economy.

# The aim of the study and the definition of digital marketing

It is the aim of the study to understand the value added by digital marketing. To do so, the key economic indicators on output, value added, employment, and income effects of digital marketing are determined. For modelling these key indicators, Statista Q, a market research institute, compiled relevant market data from independent databases, market surveys on online and digital marketing, various market and economic indicators, historical developments, current trends, reported key data from important market participants, and assessments by market experts. Sources used include input-output tables, statistics from the Federal Employment Agency, statistics from the Federal Statistical Office, market studies such as the Digital Advertising Report 2022, the OVK report, the report Dialogmarketing-Monitor 2022 »Der Nutzen von YouTube in Deutschland« Report 2021, and the German Entertainment & Media Outlook report. This information was used to model robust and credible data by combining top-down, bottom-up, and nearest-neighbor approaches.<sup>1</sup>

This study is founded on a consistent definition of digital marketing that comprises the following segments: digital video advertising (incl. CTV), search engine advertising,

digital banner advertising, digital audio advertising, influencer marketing, email marketing, affiliate marketing, social media advertising, and digital out-of-home advertising.<sup>2</sup>

In order to deliver robust data, the focus of this study was on online channels. Furthermore, the differentiation between sales and acquisitions was taken into account as was the comparability with similar studies, and non-transparent markets were excluded. For this reason, the segments sponsoring, business listings, digital trade fairs and events, studies/reports, and digital classified ads were omitted.<sup>3</sup>

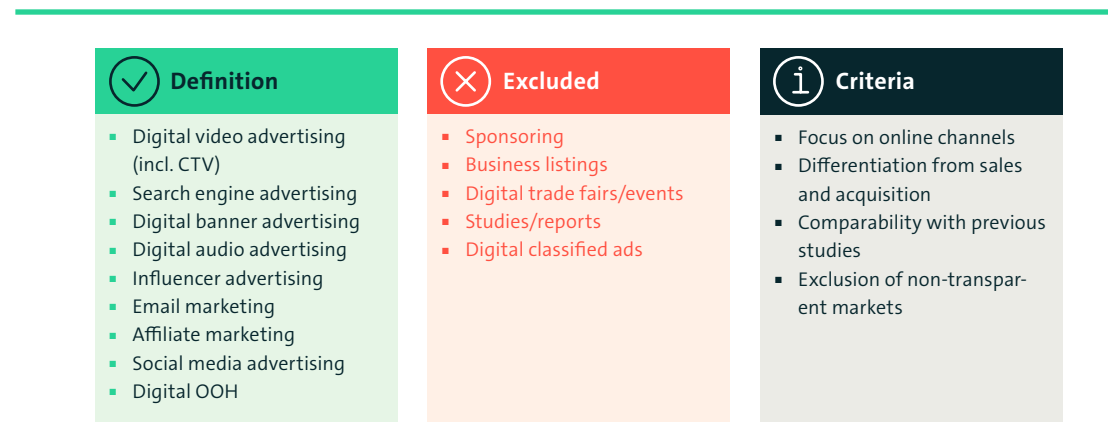


Figure 1: Definition of digital marketing

<sup>2</sup> For the definition of the segments, see the appendix

<sup>3</sup> For the criteria for excluding these segments, see the appendix

<sup>1</sup> The methodology of the key indicators can be found in the appendix

To determine employment and income effects, the relevant actors along the value chain were divided into the categories »advertisers«, »planning and conceptualization« (agencies), and »placement & distribution« (marketers, platforms, publishers, influencers, creators).

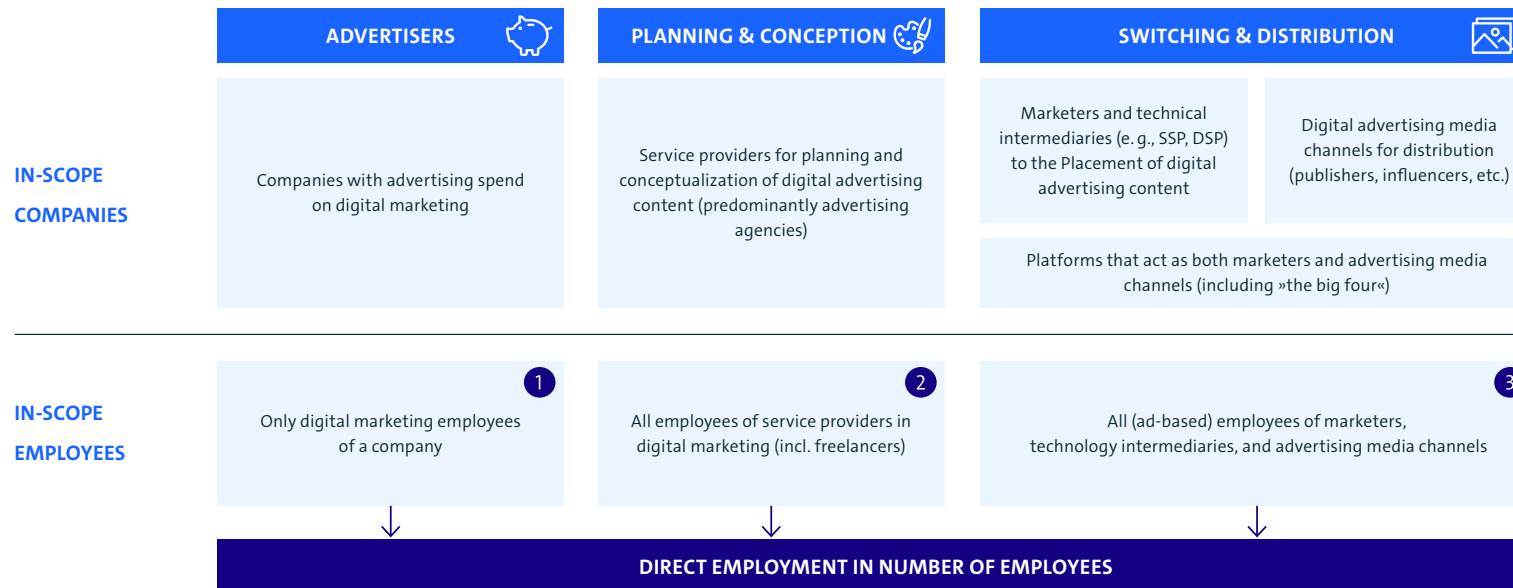


Figure 2: Employment along the value chain

# Macroeconomic perspective on digital marketing



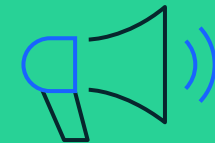
Spending from  
**25,61 bn. euros**  
in 2022



Value creation in  
Germany of  
**19,75 bn. euros** in 2022



Total workforce of  
**246,582 full-time  
equivalents** in 2022



Income effects with a pay-roll  
total of **12,17 bn. euros**  
and a tax and duty burden of  
**5,47 bn. euros** in 2022



# Digital marketing on a growth course in Germany

The everyday use of digital and social media has increased during the COVID-19 pandemic. For companies, digital marketing became essential to being able to continue to contact their customers and market their products and services through digital channels despite the restrictions imposed by the pandemic. Businesses recognized the value of increasing their use of digital channels and made increasing investments in digital marketing.

In 2022, spending for advertisers responsible for marketers in »planning & conceptualization« and »placement & distribution« of digital marketing, including salaries of marketers in Germany amounted to 25.61 billion euros. This corresponds to an increase of €5.57 billion (27.8 percent) compared to 2020 and an increase of 9.19 billion euros (56.1 percent) compared to 2018.

Salaries of advertisers, too, saw a continuous increase to 6.58 billion euros in 2022. This represents an increase of 2.65 billion euros (67.4 percent) compared to 2018.

These modelled data reflect the expenses of advertisers for »planning & conceptualization« and »placement & distribution« of digital marketing. This includes the full range of spending including all segments of the underlying definition of digital marketing used here. In addition, the study investigated the salaries of those persons who are directly responsible for digital marketing in their position as advertisers. The study at hand is therefore able to give a holistic overview of spending.

This study validates data on direct digital marketing spending along the value chain. This spending is due to the interaction of advertisers with agencies, marketers, platforms, publishers, influencers as well as creators and creates a direct contribution of 25.61 billion euros to the gross domestic product (GDP).

Digital marketing's fundamental role and its way of operating distinguishes it from other industries. It improves the availability of information for consumers, stimulates consumption, and creates a diverse and innovative range of products and services.<sup>4</sup> By doing so, digital marketing contributes to economic growth in many ways that go beyond direct spending along the value chain.

Digital marketing spending (in billions)	2018	2020	2022
<b>Total</b>	€ 16,41	€ 20,04 ↑ +22,1%	€ 25,61 ↑ +27,8%
<b>Internal costs of advertisers</b>	€ 3,93	€ 5,37 ↑ +36,7%	€ 6,58 ↑ +22,4%

Table 1: Digital marketing spending

4 ↗ The economic importance of advertising – DIW Econ (2016)

All segments of digital marketing spending that are aimed at service providers saw an absolute increase. Search engine advertising (34.0 percent), digital banner advertising (25.8 percent) and digital video advertising (17.7 percent) accounted for the largest share of spending in 2022.

Compared to the situation before the pandemic, digital video advertising, influencer marketing, and digital out-of-home advertising have become increasingly relevant fixtures in the digital marketing mix.

### Digital marketing spending in 2022 (in percent)

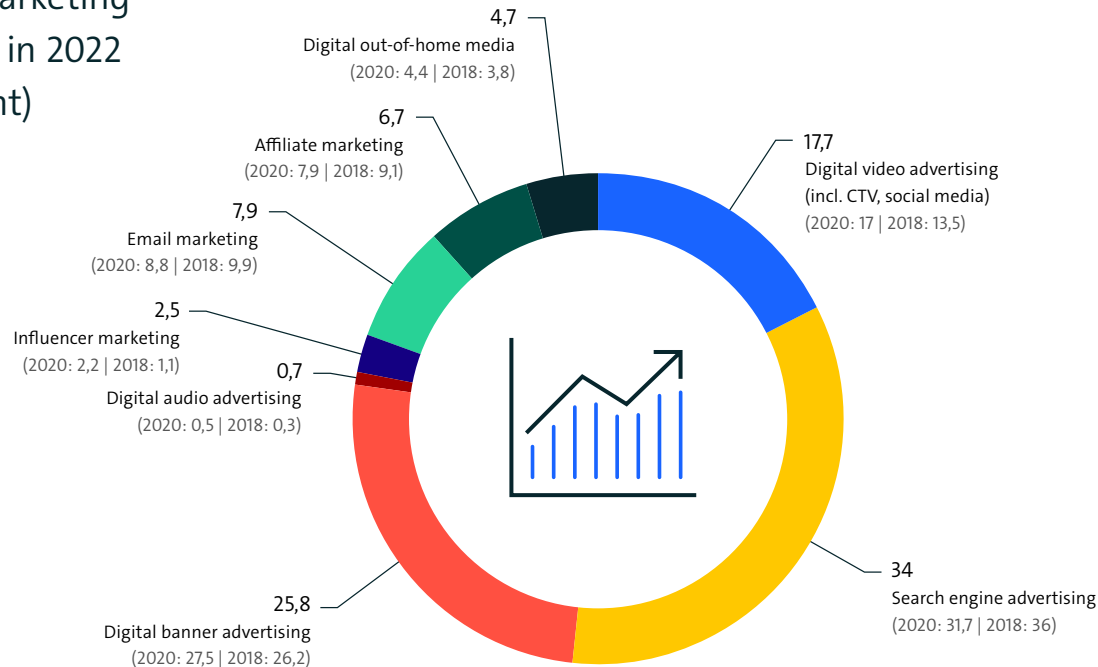


Figure 3: Digital marketing spending in 2022

IAB Europe examined the economic effect of digital advertising in Europe in two research reports in which it documented the dependency of digital industries from advertising.<sup>5,6</sup> In its 2017 report, the macroeconomic value of digital advertising was seen to increase 4.5-fold when induced and extended effects were taken into account in addition to direct and indirect spending. The study of the World Federation of Advertisers (2017)<sup>7</sup> showed that every euro invested in advertising in Germany generates up to 7 euros of additional GDP in the German economy. Even though the exact identification of all macroeconomic effects lies outside of the scope of this study, the above-mentioned studies underscore the great importance of digital marketing for the German economy.

5 ↗ How online advertising enables the digital economy for the future (2015)  
 6 ↗ The Economic Contribution of Digital Advertising in Europe (2017)  
 7 ↗ The Value of Advertising – World Federation of Advertisers (2017)

# Billions of euros in value added in Germany

The value added of digital marketing in Germany amounted to 19.75 billion euros in 2022, significantly increasing by 7.27 billion euros compared to 2018. This is equal to a growth rate of 58.3 percent.

The value added was calculated as the difference between the production value and the domestic intermediate inputs as well as the imports. The production value of digital marketing encompasses spending of advertisers as well as the advertisers' costs for personnel and, as previously shown, equals 25.61 billion euros in 2022.

The value of domestic intermediate inputs and imports amounted to 5.86 billion euros in 2022.

To determine the domestic intermediate inputs and imports, the input-output ratios of the following areas of relevance for the digital advertising market were analyzed: publishing services, service providers in audio-visual media, music publishers and broadcasters (online share), IT and information services, as well as services in advertising and market research. The three most important industries for domestic intermediate inputs that are not in digital marketing include services in IT and information, real estate services, and telecommunications services.

At 77.1 percent, digital marketing exhibits a very high real net output ratio, which is due to its high demand for personnel and low demand for imports. The real net output ratio refers to the share of value added in the production value.

	2018	2020	2022
<b>Value creation in digital marketing</b> (in billions)	€ 12,48	€ 15,48 ↑ +24,0%	€ 19,75 ↑ +27,6%
<b>Domestic intermediate outputs and imports</b> (in billions)	€ 3,94	€ 4,56 ↑ +15,7%	€ 5,86 ↑ +28,5%

Table 2: Value added in the digital marketing sector, domestic intermediate outputs and imports

## Real net output ratio in digital marketing



■ Value creation in the areas of digital marketing  
■ Domestic intermediate outputs and import

Figure 4: Depth of value added in digital marketing

# Total workforce in digital marketing is growing

The digital marketing sector is continuously creating new jobs and, at 246,582 full-time equivalents (FTEs) in 2022, is an important source of employment. Not only did it increase by 17.7 percent in 2020 compared to 2017, but this trajectory continued during the current time of crisis with an increase of 14.2 percent in 2022 compared to 2020.

Indirect employment, on the other hand, consists of effects that result from the delivery of products and services to companies in digital marketing. It amounted to 29,295 FTEs in 2022.

Digital marketing (in FTEs)	2018	2020	2022
<b>Total</b>	183,510	215,938 ↑ +17,7%	246,582 ↑ +14,2%
<b>Direct employment</b>	160,581	189,633 ↑ +18,1%	217,287 ↑ +14,6%
<b>Indirect employment</b>	22,929	26,305 ↑ +14,7%	29,295 ↑ +11,4%

Table 3: Employment in digital marketing

# 246,582

Full-time equivalents in 2022

## Direct employment (in percent)

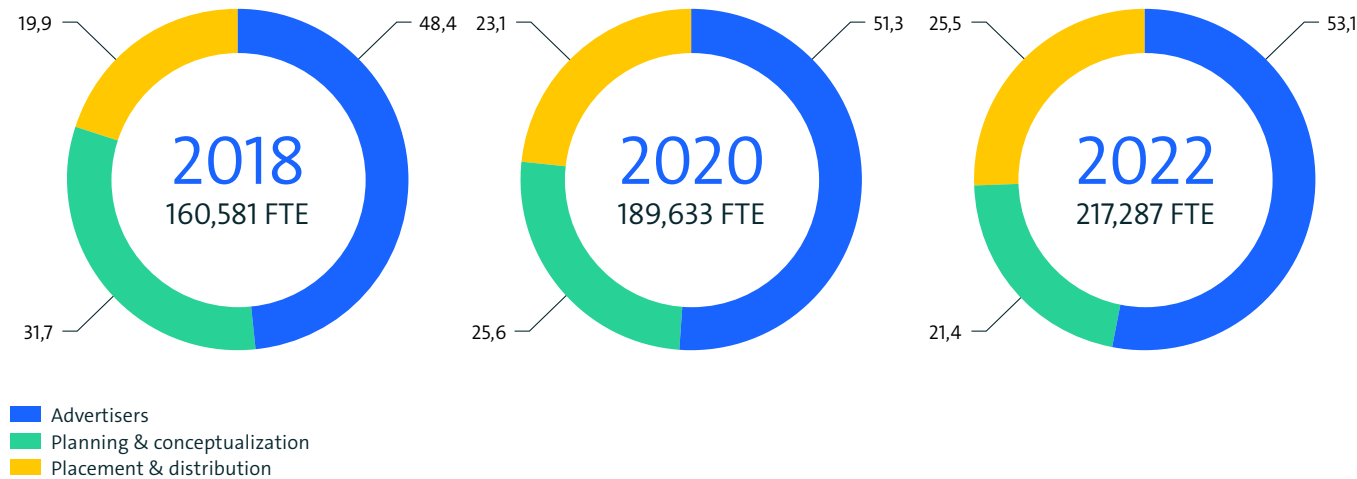


Figure 5: Direct employment

Of the total workforce in 2022, 217,287 FTEs are attributable to direct employment effects along the employment value chain. Direct employment effects include employees at advertisers and at companies in »planning & conceptualization« as well as »production & marketing«. Measured in FTEs, advertisers account for more than half of direct employment as of 2020. This in-sourcing

trend in digital marketing has continued so that advertisers now account for 53.1 percent of all FTEs, which were 115,284 FTE in 2022. Between 2020 and 2022, there was a slight decrease by 1,950 FTEs in direct employment in »planning & conceptualization«. However, during the same period, direct employment in the area of »placement & distribution« increased significantly by 11,597 FTEs.

**Side note:** Induced employment in 2022 was 22,864 FTEs. It is highlighted specifically here. In economics, the induced employment effect refers to the employment that results from the consumption of the economic subjects employed directly or indirectly in digital marketing. This means that a company's digital marketing staff uses their salaries to spend them on consumption, including clothing, entertainment, or other consumer goods. This, in turn, leads to an increase in manufacturing or demand in each respective industry and thus triggers employment effects.

# Continuous increase in income effects through digital marketing

The pay-roll total in 2022 was 12.17 billion euros, with 54.1 percent going to advertisers, 19.7 percent to companies in »planning & conceptualization«, and 26.2 percent to companies in »placement & distribution« of digital marketing. Along with the increase in employment, the pay-roll total also grew, by 67.8 percent between 2018 and 2022, especially among advertisers. The tax and duty burden based on income tax and social security amounted to 5.47 billion euros in 2022. Advertisers recorded the biggest increase with an additional 0.55 billion euros (21.2 percent) since 2022. The digital marketing sector thus generates important income effects.

The study defines income effects as the pay-roll total in the area of »digital marketing«, based on the employees' gross salaries, tax and duty burden, income tax, and social security.

Pay-roll total of direct employment (in billion euros)	2018	2020	2022
<b>Total</b>	7,88	10,24 ↑ +29,9%	12,17 ↑ +18,9%
<b>Advertisers</b>	3,93	5,37 ↑ +36,9%	6,58 ↑ +22,4%
<b>Planning &amp; conceptualization</b>	2,36	2,44 ↑ +3,4%	2,40 ↓ -1,5%
<b>Placement &amp; distribution</b>	1,59	2,43 ↑ +52,3%	3,19 ↑ +31,5%

Table 4: Pay-roll total of direct employment

Tax and duty burden, direct employment (in billion euros)	2018	2020	2022
<b>Total</b>	3,60	4,78 ↑ +32,6%	5,74 ↑ +20,2%
<b>Advertisers</b>	1,84	2,59 ↑ +41,1%	3,14 ↑ +21,2%
<b>Planning &amp; conceptualization</b>	1,01	1,02 ↑ +1,2%	1,05 ↑ +3,1%
<b>Placement &amp; distribution</b>	0,76	1,16 ↑ +5,4%	1,55 ↑ +3,3%

Table 5: Tax and duty burden, direct employment

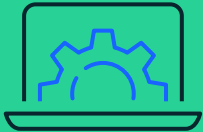
# Industry perspectives on digital marketing



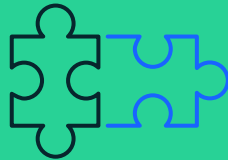
Customers and companies benefit from personalized advertising



Digital marketing is a driver of innovation



Personalization in digital marketing and technological implementation



Innovative linkage of out-of-home media and social media



# Customers and companies benefit from personalized advertising

Digital marketing has become an indispensable part of our everyday lives – including when interacting in social networks, consuming digital media, or shopping in e-commerce shops. Personalized targeting is important to draw the attention of customers to those products and services that are potentially able to fulfil their needs or solve their problems. In a typical advertisement, people learn what service or product it is, where they can buy it, how much it costs, and why they should buy it. Digital marketing enables companies to disseminate information about a broad range of products and services. This creates incentives for companies to create more nuanced offerings in order to stand out from the regional or global competition, and thus drive forward innovation.

The results of a representative survey commissioned by Bitkom, Germany’s digital industry association, show: Many free online services are made possible only by personalized advertising. 53.8 percent of the companies surveyed agree with this statement. Customers also benefit. 62.1 percent of companies believe that customer satisfaction increases through personalized products. Just over 85 percent of companies agree that they reach more customers by tailoring advertising to customer groups.

<b>Many free online services are only available via personalized advertising.</b>	<b>Total</b>
<b>Agree fully</b>	27,4%
<b>Somewhat agree</b>	26,4%
<b>Somewhat disagree</b>	21,7%
<b>Do not agree at all</b>	18,7%
<b>Don't know/no opinion</b>	5,8%

Table 6: Free online services through personalized advertising

<b>Customers are more satisfied when companies can provide them with personalized products.</b>	<b>Total</b>
<b>Agree fully</b>	21,7%
<b>Somewhat agree</b>	40,4%
<b>Somewhat disagree</b>	19,8%
<b>Do not agree at all</b>	14,2%
<b>Don't know/no opinion</b>	3,9%

Table 7: More customer satisfaction through personalized products

<b>Companies reach more customers by tailoring advertising to customer groups. Total</b>	<b>Total</b>
<b>Agree fully</b>	47,4%
<b>Somewhat agree</b>	38,1%
<b>Somewhat disagree</b>	7,0%
<b>Do not agree at all</b>	5,3%
<b>Don't know/no opinion</b>	2,2%

Table 8: More customers through advertising for target groups

Source: Bitkom Research (2022): The survey included 503 companies with 20 employees or more. The survey is representative of the overall economy in Germany.



# »The future is private!« – A look at the personalized advertising to come

Privacy-enhancing technologies will be essential for the next generation of digital advertising. For this reason, all market participants should aim to invest in a range of projects to develop solutions and processes together with researchers, global organizations, and developers.

Privacy-enhancing technologies (PETs) facilitate minimizing the amount of processed data and thus contribute to protecting personal information.

Privacy-enhancing technologies use advanced techniques from cryptography and statistics. These techniques help minimize the data to be processed while maintaining important functions such as ad performance measurement and personalization. Among the most important PETs that are being developed by Meta are multi-party computation (MPC), on-device machine learning, and differential privacy.

## Multi-party computation

Multi-party computation enables two or more organizations to cooperate while limiting the information each party can access.

The data are consistently encrypted during transfer, making sure that no party can see the other party's data. In doing so, multi-party computation makes it possible for two companies to use the same dataset, for example, while each party only has access to its own section of information.

Meta has started testing a solution dubbed Private Lift Measurement, which uses multi-party computation, as early as 2020. It helps advertisers improve their performance. Moreover, the framework for private computation is made available in an open-source format, enabling all developers to create data privacy-friendly services using multi-party computation.

## On-device machine learning

Another privacy-enhancing technology is the so-called on-device machine learning. It involves training an algorithm based on insights gleaned directly from the device without having to send individual data, for example, on a purchased article or an email address, to a distant server or cloud.

This technology could help find new ways to display relevant ads to people without the platforms learning about the user's behavior on other apps or websites.

## Differential Privacy

Another technology that can be used alone or in conjunction with other privacy measures is differential privacy. Differential privacy works by inserting carefully calculated »noise« into a dataset. Say 118 people purchased a product after clicking an ad, a differential privacy system would add or subtract a random amount from this number.

This process makes it harder to find out who exactly purchased the product after clicking the ad. This technology is often used for large datasets that are made available for research purposes.

# The value added of the ad-based internet

■ Digital marketing is accelerating the German economy. The direct value added of digital marketing in Germany in 2022 amounted to just under 20 billion euros, as shown by this study of Bitkom. We can be proud of the contribution we are making in terms of digitalization, innovation, and growth in Germany.

Philipp Justus, Country Manager, Google Germany

## The open, ad-based internet

The internet has become an indispensable resource for people, providing them with a variety of tools, information, and content every day. It is for this reason that about 80 percent of the German population is now online.<sup>8</sup> This would be unthinkable without ad-based content because it finances an essential part of the content available online. This was confirmed by a survey of 500 German small and medium-sized companies and decision-makers conducted by the Connected Commerce Council. More than 90 percent of respondents use data-driven advertising, and more than 75 percent stated that targeted advertising was »valuable«.

Brandon Mitchener of Connected Commerce Council concludes that this form of advertising is one of the most important innovations for small businesses in the last twenty years. Targeted advertising makes it possible to find relevant target groups at low marginal costs making it particularly essential for small and medium-sized businesses. One of the companies receiving a sustainable benefit from the data-driven and targeted advertising by Google Ads products is the ↗ »das schöne Leben« concept store from Havixbeck in North Rhine-Westphalia. Their business idea: Selling high-quality and attractive delicatessen and design products. By expanding their targeted online marketing, the founders were able to triple their online sales – despite the coronavirus pandemic and operating from a small town.

## Digital advertising promotes online retail AND brick-and-mortar businesses

However, digital advertising not only supports online retail but also the brick-and-mortar retail sector. This was proved by the ↗ advertising campaign of MediaMarktSaturn, which successfully targeted omnichannel customers and increased online and physical sales. In line with this, the initiative ZukunftHandel, a broadly based digitalization program for retailers, kicked off in September 2020.

Since then, more than 400,000 people have accessed information on the various offerings of ZukunftHandel.

## Digital marketing as a driver of innovation

However, the value of digital marketing goes way beyond mere advertising. The future of the internet depends on whether we will be successful in building a responsible, private advertising model – capable of safeguarding a sustainable internet that is safe for people, better for businesses, and successful for publishers. With this in mind, the Google Chrome Team has launched the Privacy Sandbox initiative; it aims at improving data protection on the internet worldwide and, at the same time, providing publishers, creators, and developers with the tools they need to build successful businesses. Google Ads is working in parallel on solutions that take into account or complement the suggestions of the ↗ Privacy Sandbox. In addition, consensus, control, and transparency of users play an essential role in making the ad-based, open internet safer and better. Innovative products like »My Ad Center« as well as »My Account« are being developed by the ↗ Google Safety Engineering Center in the heart of the city of Munich and will help make the entire internet more secure and more useful for everybody.

<sup>8</sup> Statista, internet users in Germany. (Nov 2022)

# Innovative linkage of out-of-home media and social media

T-Systems is showing everybody how data-driven out-of-home media works in combination with mobile advertising in the B2B sector.

Together with emetriq – a specialist for data-based digital advertising and a subsidiary of Deutsche Telekom –, T-Systems has launched a data-driven out-of-home media campaign. The innovation was in the extension of digital out-of-home advertising with social media communication.

The benefit of combining digital out-of-home advertising with mobile communication on a smartphone lies in the merging of online and offline communication and the increase in brand awareness. It also increases the performance of the campaign in terms of generated leads.

This was done by booking various digital signage displays at airports, train stations, and bus and tram stops in large cities all over Germany. The displays showed T-Systems' sustainability campaign »Rethink the System«.



Figure 6: Out-of-home media campaigns

The first step was to identify every passer-by of the target group (business and IT decision-makers) based on real-time, behavioral geodata. Considering this very narrow B2B target group, an audience fit of 23 percent was very good. Conversely, this meant that every fifth person reached was within the target group.

The second step was to display the campaign at a later time on the mobile terminal device of every identified contact.

The results of the retargeting of the OOH contacts speak for themselves! With over 2.77 percent, the click-through rate



Figure 7: Campaign on mobile terminal devices

was very good compared to other B2B campaigns in the industry. This illustrates the very high relevance of the follow-up contact and confirms the hypothesis that the first contact using OOH media has a subconscious effect on the target group.

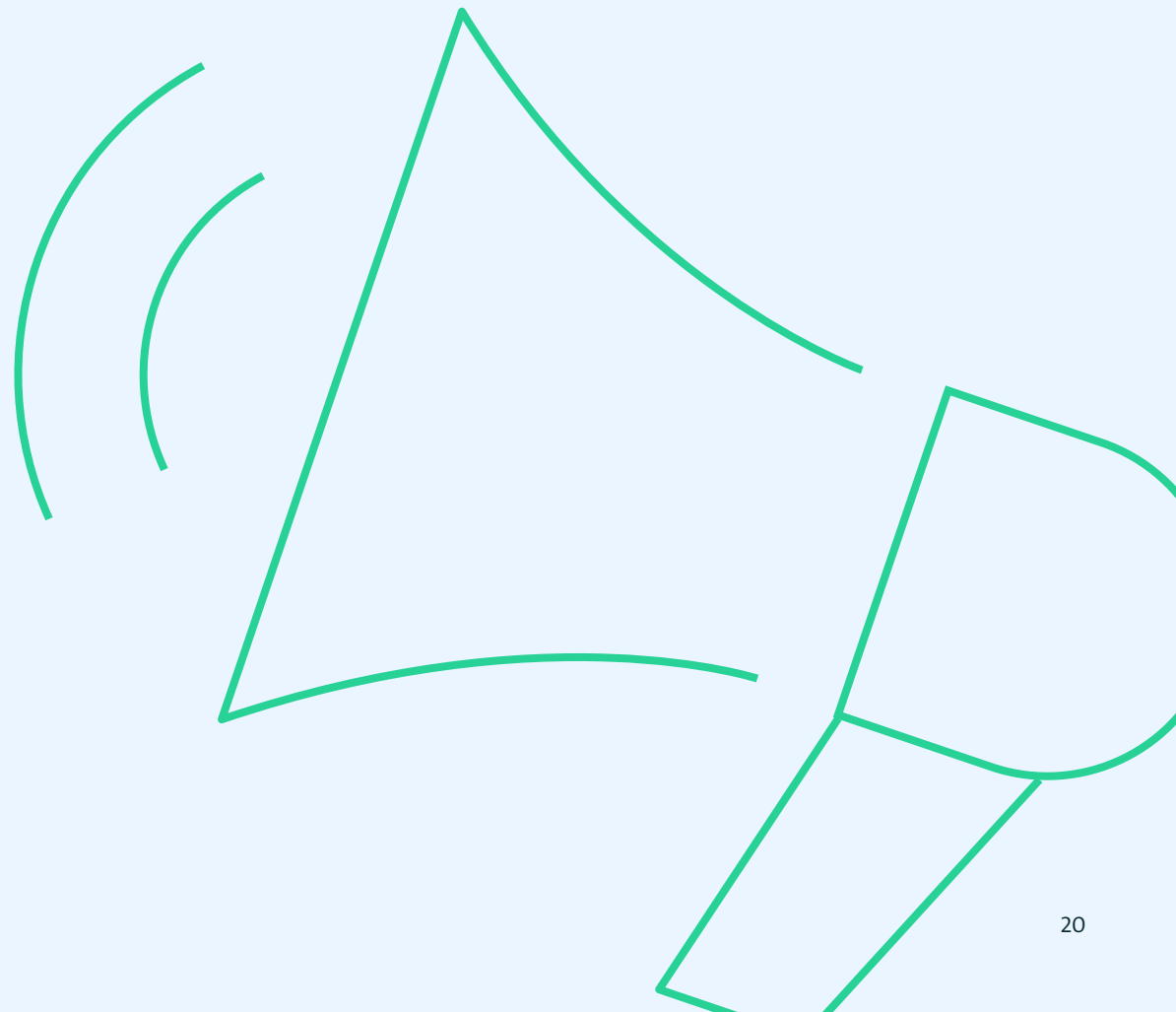
All there is left to conclude is that combining and extending out-of-home media with advertising on mobile terminal devices works very well. Soon, this will be complemented with other advertising formats, for example, placement across the entire customer journey—online and offline.

# Conclusion

The digital marketing sector is highly relevant because it creates an important added value through generated output, value creation, employment, and income effects. The continuing growth seen in these key macroeconomic indicators underscores the relevance of digital marketing for the economy and society.

Digital marketing opens up a diverse and multifaceted ecosystem comprising many different actors, formats, and technological as well as creative solutions. Both customers and companies benefit from this.

Above all, personalized advertising forms the basis for many free online services and, in many cases, is the prerequisite for the diverse and innovative digital offerings available today.



# Appendix

Segment	In-Scope	Definition
<b>Digital video advertising (including connected TV)</b>	Yes	Digital video advertising includes all advertising formats within web-based videos, app-based video players, social media, or streaming apps, which can be seen on computer screens, smartphones, tablets, and other internet-connected devices. Connected TV advertising encompasses both in-stream video advertising of TV broadcasters and in-stream video advertising from other suppliers.
<b>Search engine advertising</b>	Yes	Search engine advertising (or SEA) refers to the placement of advertisements within, above, or next to the organic search results displayed on search results pages. These advertisements are usually in text form but also occur in image format.
<b>Social media advertising</b>	Yes	<p>Social media advertising refers to all paid content that is featured in social networks or business networks such as Facebook, Twitter, or LinkedIn for advertising purposes. Among others, this content includes sponsored posts that are displayed to users in between organic content in their newsfeeds as well as advertisements next to the newsfeed.</p> <p><b>Note:</b> In order to avoid duplicates, this category is not accounted for separately in the spending sub-segments, as social media advertising is included in the digital video advertising and banner advertising segments.</p>
<b>Digital banner advertising</b>	Yes	Banners are ads in various sizes and formats that are placed on a website or within an app and that typically contain a link to the advertiser's website. While classic banners are static representations of texts and images, so-called rich media banners are now also possible, allowing sounds, animations, or videos to be played.
<b>Digital audio advertising</b>	Yes	Digital audio advertising encompasses all advertising revenue generated through pre or in-stream audio advertising in music – which also includes all types of radio services – and podcast streaming services. These include ad-supported free versions of premium subscription services or ad-based services.
<b>Influencer advertising</b>	Yes	Influencer marketing includes all advertising fees paid directly to influencers (or their trusted persons or agents) for them to post or show live sponsored content (e. g., posts, videos, and/or stories) on social media to advertise products and services to their followers. Sponsored content typically includes images, videos, livestreams, and/or text.
<b>Email marketing</b>	Yes	Systematic sending of advertising and product information to (potential) customers via email.
<b>Affiliate marketing</b>	Yes	Affiliate marketing refers to a collaborative partnership between a seller of goods, the merchant, and the operator of a website on the internet, the affiliate. Affiliates use their website to advertise the products and services of third-party companies and receive a commission for each sale. Affiliate marketing is an instrument that can be used for both performance-based marketing and data-driven marketing.
<b>Digital out-of-home media</b>	Yes	Digital out-of-home media refers to all kinds of outdoor advertising in public areas. The out-of-home advertising market encompasses all spending for large-scale public advertising (e. g., billboards), advertising on street furniture (e. g., bus stops), in public transport (e. g., buses and trains), and other advertising formats (e. g., place-based media). Digital out-of-home advertising also includes all revenues that were generated using forms of internet-connected out-of-home media. The content in this segment relates exclusively to digital revenues.

Segment	In-Scope	Definition
<b>Digital classified ads</b>	No	Classified ads are defined as paid listings on a subject-specific online platform. The price of the digital classified ad is typically not dependent on its success but on format, position, and the duration of ad placement. Due to the sales-heavy nature of digital classifieds, they were classified as out-of-scope here.
<b>Business listings</b>	No	Business listings includes all sales generated through awards (best employer) or paid placement on price comparison websites, job portals, etc. These sales can be targeted at employer branding (HR), sales or marketing. Accordingly, this category is not included in this definition of digital marketing.
<b>Digital trade fairs/events</b>	No	<p>The goal of event marketing is to promote a company, product, or brand. To do so, the right target group must be reached, addressed, and invited to the event. The event is not primarily about the product to be marketed, but it is omnipresent.</p> <p><b>Note:</b> Out-of-scope due to the strong sales focus and the separation between sales &amp; marketing.</p>
<b>Studies/reports</b>	No	Studies/reports are used specifically in the area of public communications and content marketing. These reports can serve marketing purposes (awareness), but also sales purposes (lead generation). Accordingly, these marketing studies/reports are not considered.

# Methodology

Key indicator	Methodology
<b>Spending</b>	<p>Spending in the digital marketing sector reflects the expenditure of advertisers for »planning &amp; conceptualization« and »placement &amp; distribution« of digital marketing. To model spending, deep web research was carried out in order to review all relevant market studies. The market studies were assessed for their information content and robustness. All the spending within the aforementioned segments was included according to the definition of digital marketing. To glean a holistic overview of spending, additionally, the salaries of those directly responsible for digital marketing in the company.</p>
<b>Value creation</b>	<p>The calculation of value creation in digital marketing is based on a combination of top-down and bottom-up modelling. The input-out tables of the Federal Statistical Office's national accounts/ domestic product are used to determine the value creation. The input-output tables are used to identify the relevant areas for digital marketing and the inputs outside the digital marketing sector. The value of the identified domestic intermediate outputs was subtracted from the production value to calculate the approximate value added. The production value corresponds to spending on digital marketing.</p>
<b>Employment</b>	<p>Digital marketing employment figures are based on a comprehensive top-down and bottom-up approach. The relevant actors along the value chain »planning &amp; conceptualization« (agencies) and »placement &amp; distribution« (marketers, platforms, publishers, influencers, creators) were analyzed bottom-up for their staff numbers in digital marketing. The gleaned figures were validated with the public figures of the Federal Employment Agency using a top-down approach.</p> <p>The indirect employment effects were calculated using the calculated domestic intermediate outputs in the task area »Value added« and approximated for the areas using the paid gross salaries. Additionally, induced income effects were included.</p> <p>To calculate the induced employment effects, the income effects of direct and indirect employees were first calculated via the average gross salaries per sub-sector. Note: The calculation of the induced income effect is controversial.</p> <p>In the absence of a specific income multiplier for digital marketing, a multiplier of 1.3 is assumed based on comparative studies. The chosen multiplier of 1.3 is considered a conservative estimate.</p>
<b>Income effects</b>	<p>Direct income effects are calculated on the basis of recorded employment and earnings statistics. Earnings of employees and managers were recorded to determine direct income effects. The earnings statistics are based on public statistics of the Federal Employment Agency and the Federal Statistical Office. Income tax was modelled based on the average burden by income. Social security contributions include unemployment insurance and pension insurance (employee and employer's share).</p>

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Bitkom e.V.  
Albrechtstraße 10  
10117 Berlin

## With the kind support of



## Contact person

Dr. Florian Bayer  
P +49 30 27576-162  
f.bayer@bitkom.org

## Project team

Dr. Florian Bayer | Greta Schnaack

## Design

Anna Stolz | Bitkom

## Image sources

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**Bitkom e.V.**

Albrechtstraße 10

10117 Berlin

P +49 30 27576-0

bitkom@bitkom.org

[bitkom.org](https://bitkom.org)

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