Big Marketing Technology Lab

Seven technological developments that will shape the future of marketing

Institut für Customer Insight
Universität St.Gallen

Identify, investigate, inspire

Understand the future of marketing and be ahead of your competition.

Institut für Customer Insight

Universität St.Gallen

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7. Artificial intelligence will revolutionize how marketing decisions are made

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Editorial

This is a pivotal moment for marketers. New technologies are reshaping markets, the way we interact with our consumers, and their behaviors. Across industries, incumbents have to re-think their marketing strategies and their relationship with consumers, whereas start-ups often seem to understand today's consumer better. At the same time, consumers want more, they want it faster, they want it to be easier, and they want to pay less for it.

How do you make sure to stay on top of these developments and changes? And which of the changes are relevant?

At the Institute for Customer Insight at the University of St. Gallen, we have identified seven technological developments that already shape markets today and will impact them even more in the future. At our Big Marketing Tech (BMT) Lab, we identify and investigate these technological developments to inspire organizations to interact with consumers in new ways.

We invite all of you to join us on this journey. This report is meant as a dialogue. Join us in identifying and investigating future trends and inspire your organization and employees to spearhead this new era of marketing.

Yours faithfully,



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Seven technological developments that will shape the future of marketing



1

Voice marketing



2

Algorithmic consumption & connected devices



3

Programmatic advertising



4

Chatbots



5

Ad-blocking, cord-cutting & the subscription economy



6

Virtual reality



7

Artificial intelligence



1 Alexa is talking to your customer!

Voice marketing and branding: Consumer adoption of smart speakers is faster than that of smartphones.

Consumers continue to adopt voice assistants at startling rates. In spite of voice assistants being a very recent development (Amazon Alexa was released only in July 2015), already more than half of all U.S. households owned a smart speaker in December 2018 **(see Chart 1a)**.

For marketers, voice touchpoints in the form of voice assistants or skills are radically different from traditional touchpoints. For instance, voice touchpoints emphasize auditive cues over well-known visual cues such as product packaging or brand logos. Brands have spent years and millions building and optimizing their visual identity, be it their brand logo or brand color, but only a few brands have thought about their auditive identity. While consumers can identify, say, NIVEA by its blue, they may not know how these brands sound.

While voice shopping still seems to be in its infancy with low conversion rates, consumer–brand interactions through voice touchpoints are nevertheless gaining traction. This is evidenced by the increasing development of the Alexa Skills that facilitate such interactions **(see Chart 1b)**. Already today, one in five consumers in the US has used voice shopping, and voice shopping on Amazon tripled during the 2018 holiday season.[1]

Media companies use voice apps to disseminate the latest news to consumers (e.g., the BBC); transportation companies use voice apps to facilitate trip planning and ticket purchasing (e.g., Deutsche Bahn); car manufacturers use voice applications to simplify navigation (e.g., Audi); and other companies are finding ever-new ways of using voice apps to improve the consumer experience.[2]

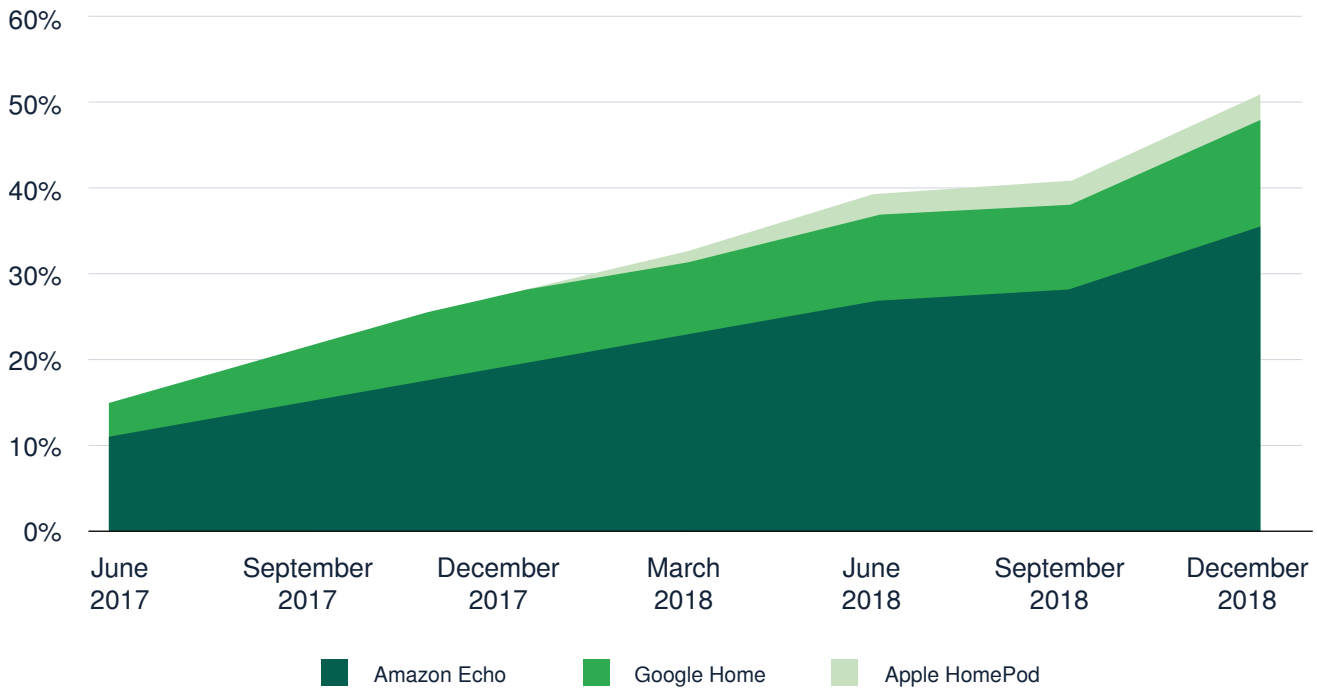
The possibilities of voice interfaces seem unlimited. Similar to the platform business, the underlying assumption is that the winner takes it all. So how do you make sure that you are ahead of your competition?

We recommend thinking about the following points

- How can my company use voice interfaces for consumer–brand interaction?
- How can I build an auditive identity for my brand?
- And how can I build early on capabilities and knowledge in this emerging field?

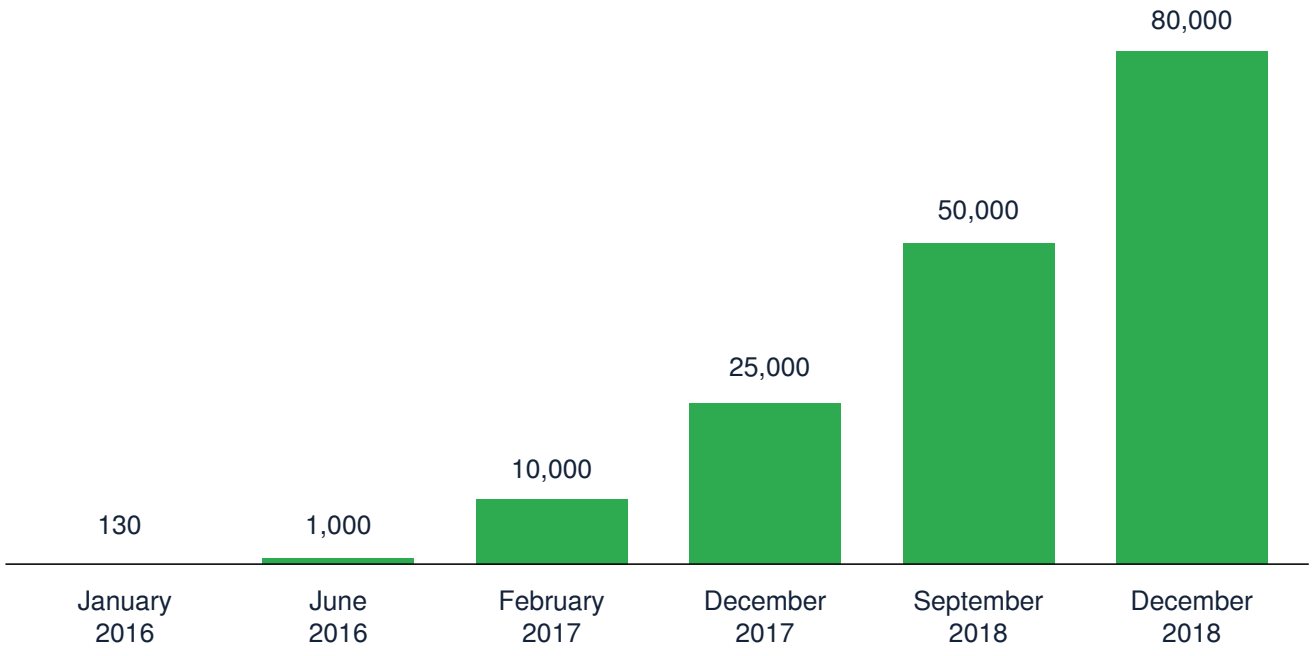
1. Amazon, "Amazon Customers Made This Holiday Season Record-Breaking with More Items Ordered Worldwide Than Ever Before," Amazon.Com Press Center, December 26, 2018, https://press.aboutamazon.com/news-releases/news-release-details/amazon-customers-made-holiday-season-record-breaking-more-items.
2. Johanna Gollnhofer and Sophie Schüller, "Sensing the Vocal Age: Managing Voice Touchpoints on Alexa," Marketing Review St. Gallen, no. 4 (2018).

Chart 1a – Percent of U.S. households owning at least 1 smart speaker



Sources: Consumer Intelligence Research Partners, Statista and Voicebot.ai.

Chart 1b – Number of Amazon Alexa Skills



Sources: Amazon, Fast Company, Voicebot.ai.

Table 1c – Examples of brand–consumer interactions via smart speakers and voice assistants

Retail and shopping	
Calvin Klein (USA)	• Smart speakers in changing rooms • Information about available sizes • Customer support
REWE (Germany)	• Recipe recommendations • Articles on sale at the REWE supermarket
Starbucks (USA)	• Ordering coffee
Banking	
Comdirect (Germany)	• Finance news • Stock price information
Sparkasse Bremen (Germany)	• Property finder • Games
Health and wellbeing	
Barmer (Germany)	• Sleep aid (e.g., dream-like stories) • Meditation
Gymondo (Germany)	• Workouts for various body parts and skill levels
Mobility	
myTaxi (Germany)	• Taxi ordering and payment
Deutsche Bahn (Germany)	• Departure times and routing

Source: Big Marketing Technology Lab, Institute for Customer Insight, University of St. Gallen.



2 Algorithms are your new customer!

Algorithmic consumption: The internet of things (IoT) is expected to quadruple in size over the next six years.

Already today, consumers watch movies recommended to them by the Netflix algorithms, they listen to the Discover Weekly playlist created for them by the Spotify algorithm, and in Switzerland, they can let the VIAC investment algorithm manage their private pension account according to their pre-defined risk preferences.[3] Worldwide assets under management by robo-advisors such as VIAC have been predicted to grow to $4 trillion globally by 2022, up from about $600 billion today **(see Chart 2a)**.

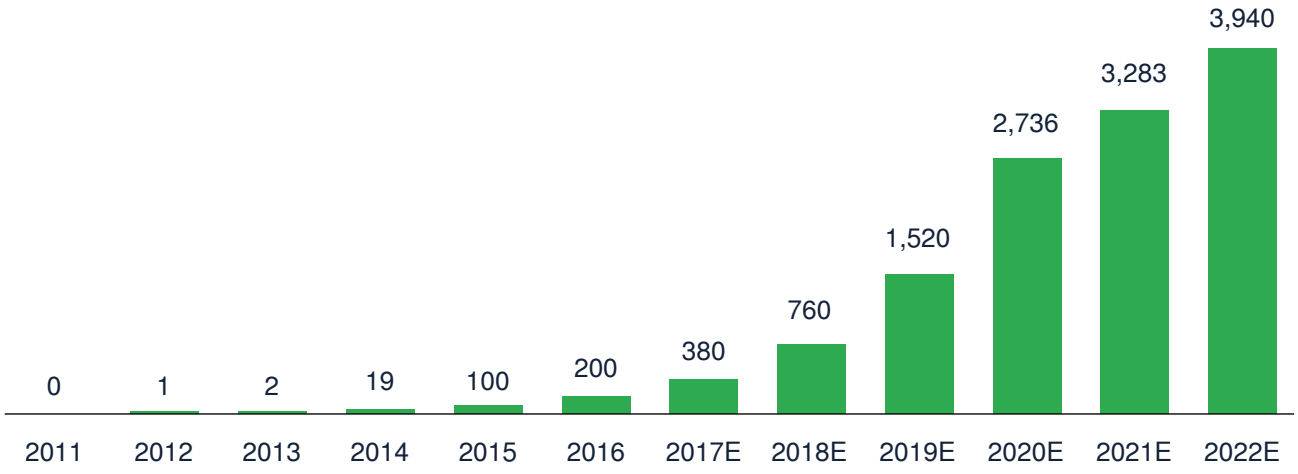
What seems restricted to movies, films, and finance right now is quickly becoming applicable to all product and service categories. Consumers are delegating more consumption decisions to algorithms **(see Chart 2b)**. In 2017, Wal-Mart filed a patent that described an IoT subscription service for consumers. In this patent, Wal-Mart's algorithm tracks the consumption of certain goods in a consumer's home and then decides whether the products should be replenished, replaced, or upgraded.[4]

With the number of connected IoT devices expected to quadruple in the next four years **(see Chart 2c)**, the amount of data held on consumer behavior is also expected to explode. Algorithms predicting consumption decisions will become more accurate and easier to use. If past consumer adoption of recommender systems is any predictor of consumer adoption of fully algorithmic consumption, big changes are expected in this area.

We recommend thinking about the following points

- Is my company marketing with algorithms such as search engines and product recommenders, etc., already today?
- How can my company use algorithms to facilitate the consumption of my products?
- How can I gather the necessary data to accurately and reliably predict consumption decisions?

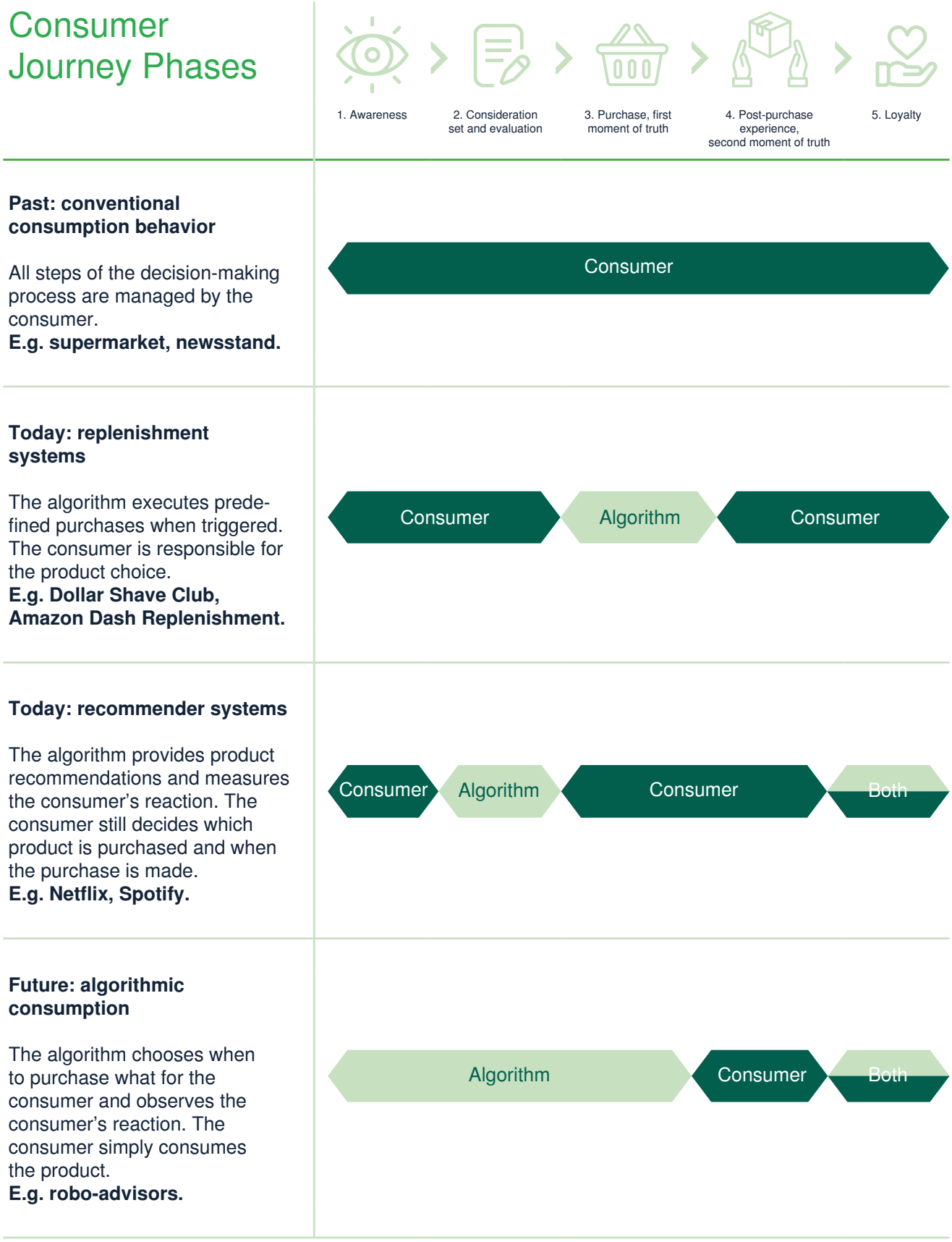
Chart 2a – Assets under management (AuM) of robo-advisors, globally (USD billion)



Sources: The historical data (2011–2016) were based on company disclosure and information provided by Aite and Credio. The prediction (2017–2022) is based on an estimate by Redesigning Financial Services, a think tank founded by the University of St. Gallen.

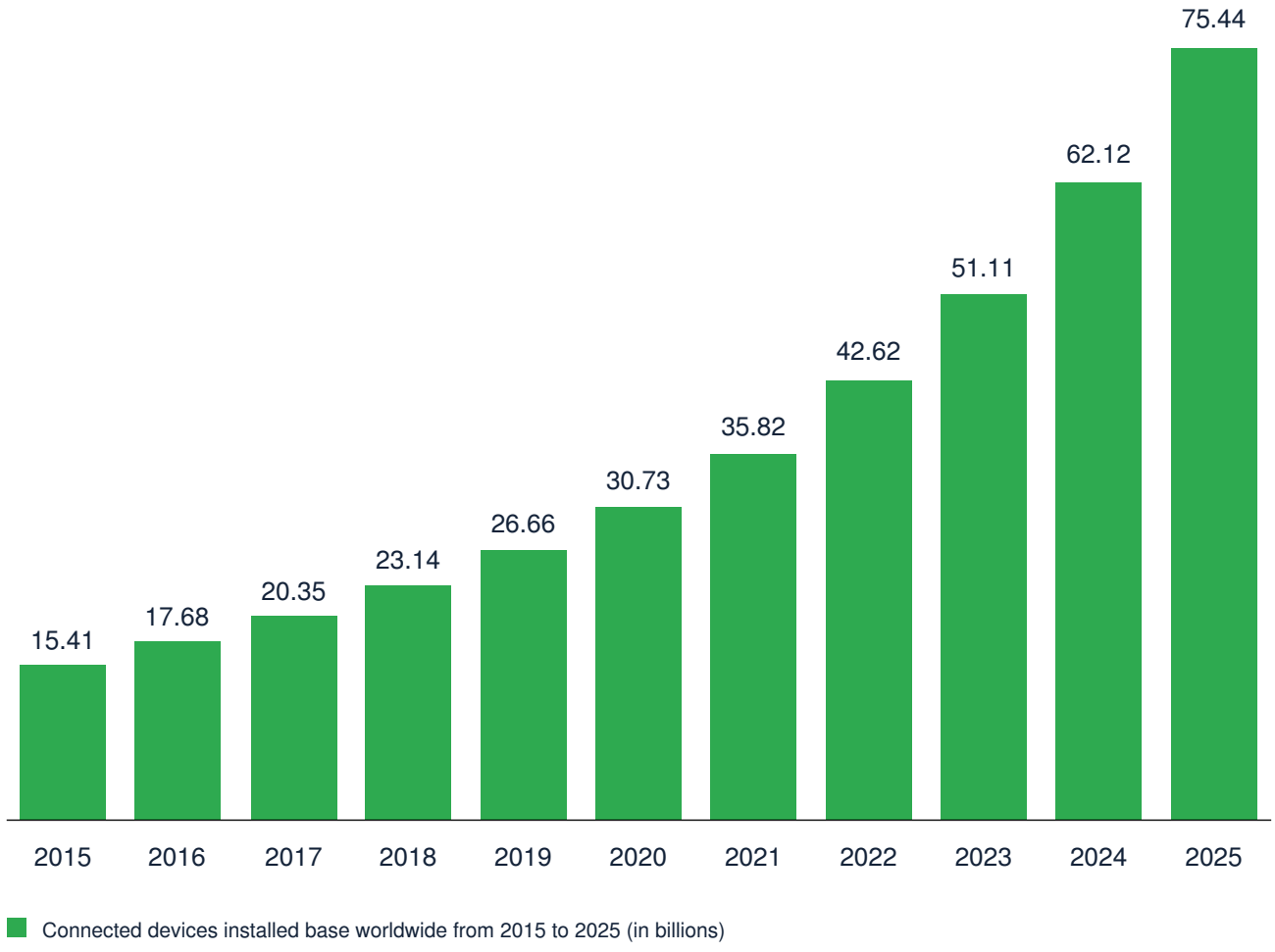
3. "VIAC – Vorsorge Mit Der Digitalen & Günstigen Säule 3a App Der Terzo Vorsorgestiftung Der WIR Bank," March 22, 2019, https://viac.ch/.
4. Chandrashekar Natarajan and Donald R High, "Retail Subscription in Internet of Things Environment," United States Patent, US 2017/0124633, October 19, 2017, https://patents.google.com/patent/US20170124633A1/en.

Chart 2b – Observed and expected forms of algorithmic consumption from the point of view of the consumer

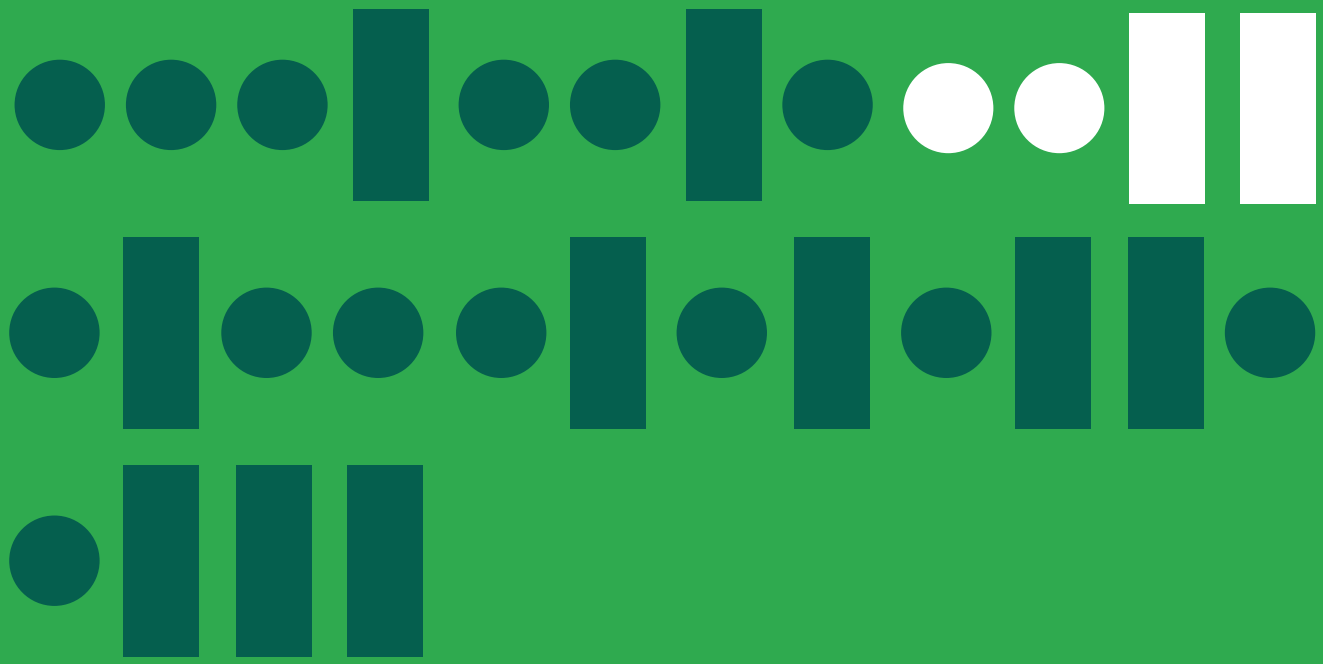


Source: Big Marketing Technology Lab, Institute for Customer Insight, University of St. Gallen.

Chart 2c – Internet of things (IoT) connected devices installed base worldwide from 2015 to 2025 (in billions)



Source: Statista.



3 The end of gut feeling in marketing!

Programmatic marketing: 85% of marketers already buy media programmatically.

John Wanamaker, a famous American businessman and marketer, once famously said, “Half the money I spend on advertising is wasted; the trouble is I don’t know which half”. This was the age-old problem of television, radio and print advertising. Marketers knew that it reached many individuals who would never be interested in buying the advertised product, but they couldn’t do anything about it.

This was because information on who received mass-communicated marketing messages wasn’t available. Marketers had to make educated guesses as to what consumers might like. They could only rely on gut feeling.

The age of gut feeling in marketing is over, though **(see Chart 3a)**. 2019 is the first year in which more than half of all advertising spending has been on programmatic ads **(see Chart 3b)**. Programmatic ads are bought via effective, instant, and automated bidding processes, which deliver relevant ads to selected customers. Instead of broadly disseminating ads to a demographic or psychographic customer target, programmatic advertising constantly optimizes placements according to consumers’ real-time reactions. 85% of all marketers already buy ads this way. Programmatic marketing constantly improves the ad targeting through an ongoing learning mechanism, thereby eliminating wasteful impressions. Referring back to Wanamaker’s quote, marketers now know which half of the money spent on advertising is wasted, and can now improve their media spending.

Programmatic advertising comes with three new challenges for marketers, though: Firstly, how can you make sure that your brand advertising does not show up in a harmful context (e.g., next to terrorist or hate speech videos[5])? Secondly, how do you make sure that you are not being defrauded by bots that can use up your media budget? Thirdly, how do you reconcile all the different ways the platforms measure ad success? These aren’t simple questions – even the world’s largest marketers are grappling with the exact same challenges.[6]

Nevertheless, if used correctly, programmatic marketing allows the targeting of specific customers to a far greater extent than before. It has created entire new forms of targeting, such as re-targeting. Furthermore, it is set to influence far more areas than just media buying: marketing message development, marketing research, and product development, to name just a few. At the same time, while it might seem limited to various forms of online advertising right now, it is set to expand to Out-of-Home[7] and TV advertising in the future. For example, Sky has announced that it will introduce programmatic ads in its channels in 2019.[8]

We recommend thinking about the following points

- Does my company have the capability and infrastructure to take full advantage of programmatic marketing?
- Is programmatic marketing influencing all my companies’ marketing processes as it should?
- Do I understand the programmatic buying policies that are guiding my ad spend?

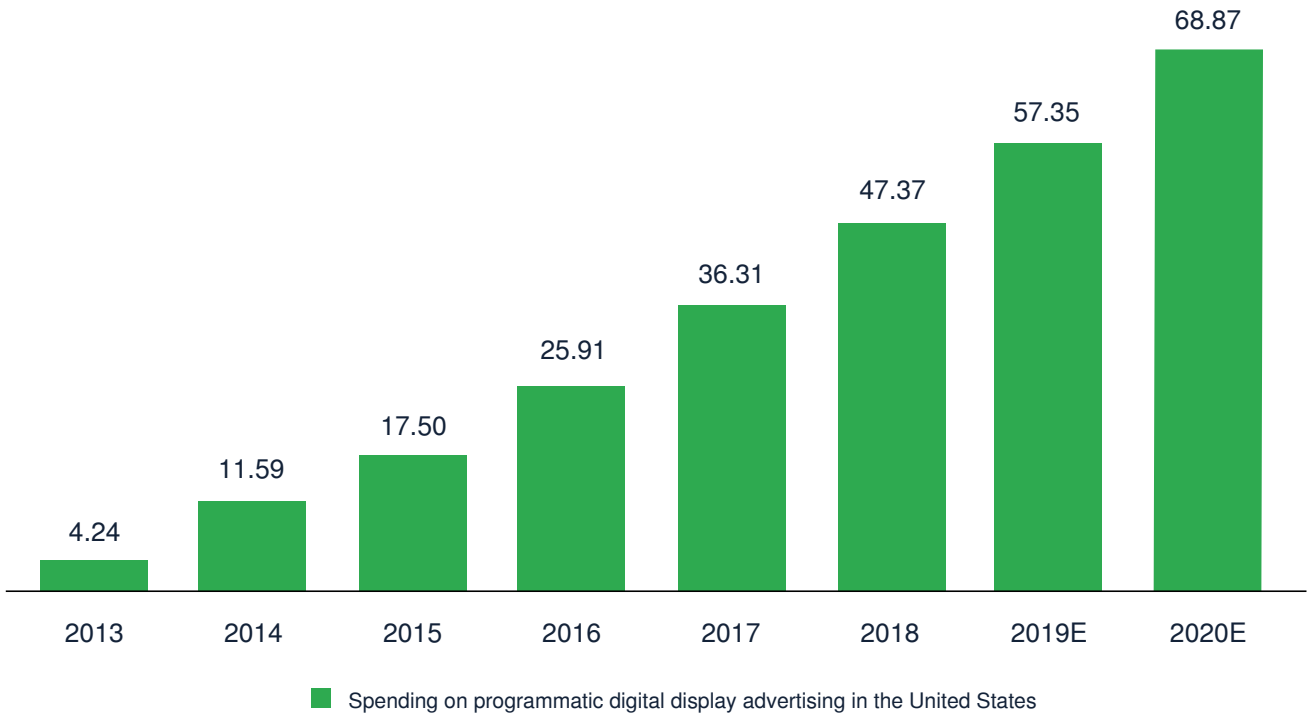
5. Cara McGoogan, “YouTube Refunds Advertisers after Terror Content Scandal,” Telegraph, July 2017, https://www.telegraph.co.uk/technology/2017/07/03/youtube-refunds-advertisers-terror-content-scandal/.
6. Lauren Johnson, “When Procter & Gamble Cut $200 Million in Digital Ad Spend, It Increased Its Reach 10%,” Adweek, March 2018, https://www.adweek.com/brand-marketing/when-procter-gamble-cut-200-million-in-digital-ad-spend-its-marketing-became-10-more-effective/.
7. Patrick Kulp, “The Digital Out-of-Home Industry Is Reaching a Programmatic Tipping Point, Execs Say,” Adweek, November 2018, https://www.adweek.com/programmatic/the-digital-out-of-home-industry-is-reaching-a-programmatic-tipping-point-execs-say/.
8. Seb Joseph, “Programmatic TV Ads Are Coming to Sky next Year,” Digiday, September 2018, https://digiday.com/marketing/sky-plans-get-programmatic-tv-2019/.

Chart 3a – Select platforms for buying ads programmatically (demand-side platforms and similar online platforms for advertisers)

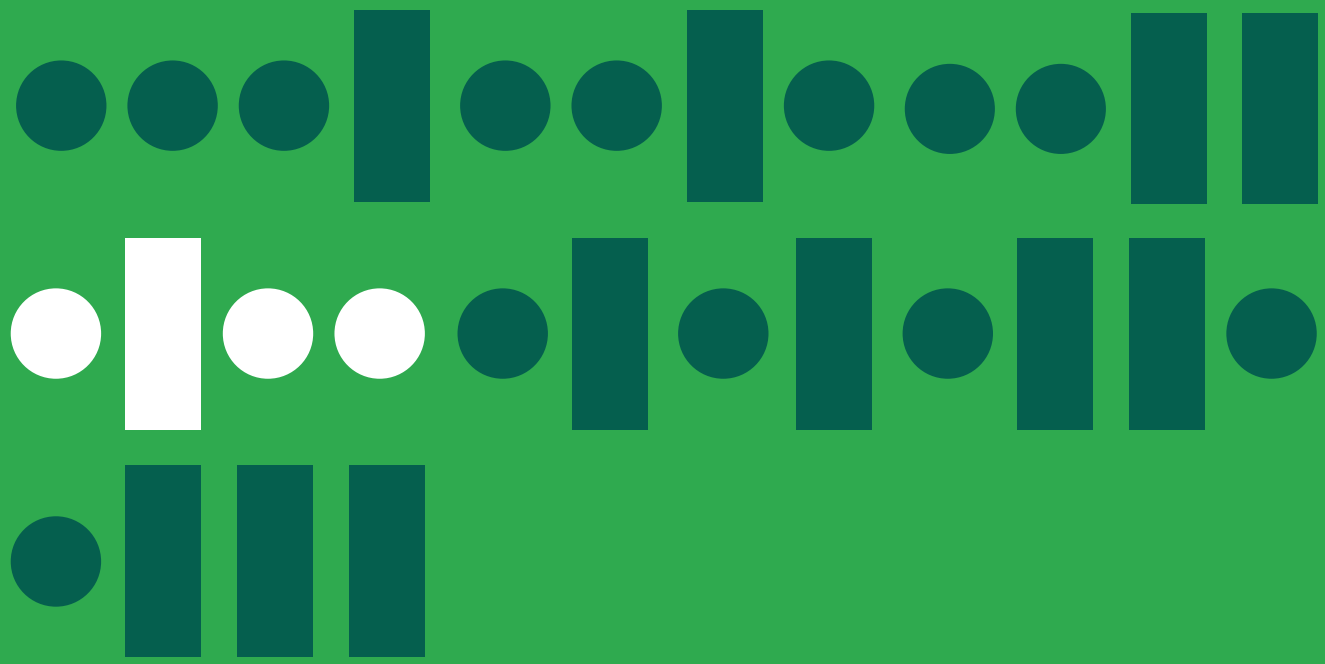
Demand-side platform	Parent	Main ad inventory
Facebook Ads Manager	Facebook	Facebook, Instagram, Messenger, Audience Network and WhatsApp (planned) ads.
Google Ads (formerly Google AdWords)	Google	Search, content (on websites within the Google's ad network), video (YouTube and other video websites), Gmail, Google Maps.
Google Marketing Platform (formerly Google DoubleClick)	Google	The Google Marketing Platform is for enterprise customers to plan, buy, measure and optimize digital media buys.
Snapchat Ads Manager	Snapchat	All Snapchat ads.
Bing Ads	Microsoft	Search ads on Bing and Yahoo!
Amazon Advertising	Amazon	Sponsored brands, products, stores, display ads, video ads, custom ads on Amazon, Amazon-owned websites (e.g., IMDB) and websites integrated into the Amazon's ad network.

Source: Big Marketing Technology Lab, Institute for Customer Insight, University of St. Gallen.

Chart 3b – Spending on programmatic digital display advertising in the United States (USD billion)



Sources: eMarketer and Statista.



4 Your best customer agent is a chatbot!

Chatbots: More than half of the global population is already using messenger services like WhatsApp, Facebook Messenger, and WeChat for their private communication – and they expect companies to do the same.

The usage of messaging apps like WhatsApp, Facebook Messenger, and WeChat has rapidly increased during the last couple of years **(see Chart 4a)**. This has caused consumers to expect to be able to reach companies and brands there as well. However, they do not only expect to reach companies there, but also expect the companies to communicate like them. Messenger apps have broadened the phenomenon of asynchronous communication: Consumers write their friends messages before they, e.g., enter their next meeting, and then read all the replies when the meeting is over.

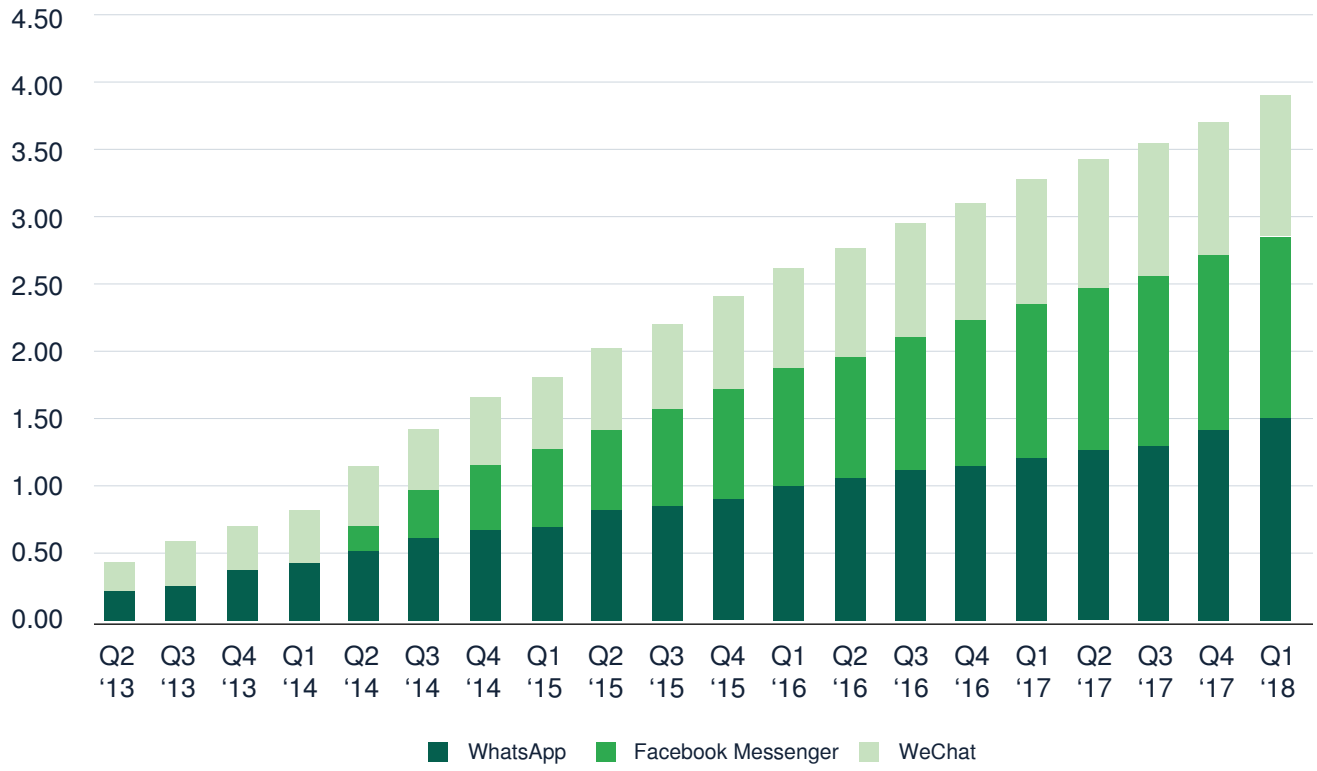
When synchronous and asynchronous messaging styles clash, it is a recipe for consumer frustration. Consumers hate re-describing the same problem over and over to several customer agents on the hotline. They hate waiting for the hotline to open to get a response to their question.

In view of the above, it will become a necessity for companies to have a fully proficient chatbot that can interact with consumers and human customer service agents alike. This is especially true for younger consumers, who prefer communicating by typed messages over all other forms of communication. Already today, the number of chatbots available on Facebook Messenger is doubling every year **(see Chart 4b)** and the examples online are endless **(see Table 4c)**.

We recommend thinking about the following points

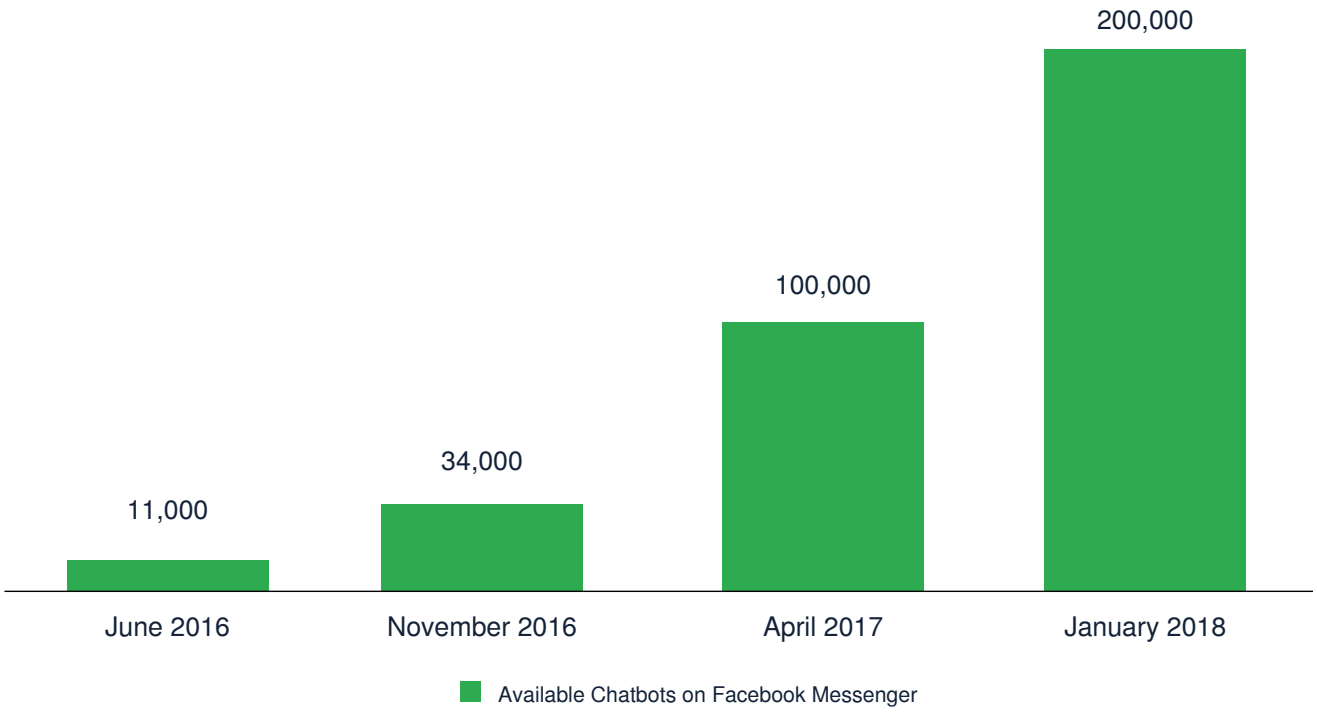
- Which frequent consumer questions and problems could be solved by a chatbot?
- For which issues do consumers prefer synchronous vs. asynchronous communication styles?
- How can I leverage chatbots to improve consumer connectivity?

Chart 4a – Monthly active users of messenger apps (in billions)



Source: Statista.

Chart 4b – Available chatbots on Facebook Messenger



Source: Statista.

Table 4c – Chatbot examples

Transportation		
Lyft (USA)	Ride-sharing app	● Request a ride via Facebook Messenger ● Get location and license plate information
SBB (Switzerland)	Train	● Get information about Zurich's main station (e.g., arriving and departing trains) ● Chatbot available in the "Mein Bahnhof" app
Entertainment and music		
Fandango (USA)	Movie ticket information and booking platform	● Find movie theatres nearby and get showtimes on Facebook Messenger ● Watch movie trailers ● Get directed to the page where you can buy the tickets
Spotify	Music streaming service	● Create a playlist with friends ● Share a playlist with friends
Food and retail		
Whole Foods (USA)	Premium grocery store	● Get recipe recommendations ● Chatbot recognizes food emojis and sends you the corresponding recipe ● Filter recipes for special dietary needs
Staples (USA)	Office supplies retailer	● Get status updates on shipments or returns ● Check whether items are in stock in store ● Purchase items
Beauty and skincare		
Sephora (USA, Switzerland)	Beauty retailer	● Get product recommendations and reviews ● Get product tutorials
L'Oréal (France)	Beauty and skin care manufacturer	● Simplify the recruitment process ● Identify and contact potential candidates ● Verify suitability of candidates (e.g., check availability during internship timeframe, degree levels, etc.) ● Answer questions from applicants (e.g., company culture, dress code, etc.)
Financial services and insurance		
Mastercard (USA)	Credit card company	● Receive information about credit card benefit programs ● Analyze credit card spend (e.g., spend on restaurants or gas in the month of May)
Ottonova (Germany)	Health insurance	● Customer service ● Mix of automated and personal messages
Credit Suisse (Switzerland)	Bank	External/for clients: ● Find closest ATM or branch ● Get information about opening hours ● Get information about core banking products (e.g., types of bank and savings accounts) Internal/for employees: ● Get help with core IT questions, such as password resets, email inbox size limitations, etc.
Revolut	Bank	● Respond to customer queries
Healthcare and pharma		
Woebot	Online psychotherapy provider	● Bridge time between psychotherapy appointments ● Check in on candidates with anxiety disorders and depressions ● Give daily lessons and recommendations based on cognitive behavioral therapy

Source: Big Marketing Technology Lab, Institute for Customer Insight, University of St. Gallen.



5 Your customer is hanging up on you!

Cord-cutting, the subscription economy, ad-blocking, and the death of radio and print – consumers are becoming elusive.

The rise of subscription-based video streaming technologies is fundamentally changing the media landscape. While television advertising used to be a reliable way of broadly reaching consumers, younger consumers in particular are cutting the cord and consuming video content solely through subscription-based streaming platforms such as Netflix or Amazon Prime **(see Chart 5a)**. The picture is similarly grim in other areas: Sales of the top 100 consumer magazines have declined 50% since 2000.[9] Likewise, a mere 19% of younger consumers say they listen to radio to keep up-to-date with music.[10]
On top of that, out of all the Internet users in Western Europe, 20% are using an ad blocker, making them unreachable even with online advertising.[11]

In sum, consumers are retracting to ad-free subscription services or using ad blockers, thus significantly cutting down possibilities for advertisers to reach consumers. Advertising has essentially become a "tax on the poor", who cannot afford the subscription fees to the ad-free services.

As a last resort, marketers are diverting an increasing amount of ad spend to social media, which has become a core touchpoint due to its broad reach **(see Chart 5b)**. The increasing consolidation of the channel (Facebook buying Instagram; Google buying YouTube) has led to the formation of walled gardens in which marketers are at the mercy of a few dominant players. Furthermore, the constant rise and decline of social media platforms and technologies is making it even more difficult for marketers to reach consumers: While only a few years ago Snapchat was used by most young consumers, today they have migrated over to TikTok.

Looking ahead, reaching consumers in the changing media landscape will become even more difficult. Subscription-based businesses are expected to further increase and will likely not allow for advertising, as consumers value the ad-free environment **(see Chart 5c)**.

Giants such as Facebook and Google will continue to write the rules regarding how companies can engage with their consumers. It will become increasingly important to raise the agility in communication planning in order to adopt touchpoint strategies for where consumers can be found, and to connect with consumers in a way they enjoy. Companies also need to think of alternative channels for marketing such as brand stores[12] or by using PR and earned media to their advantage.[13]

We recommend thinking about the following points

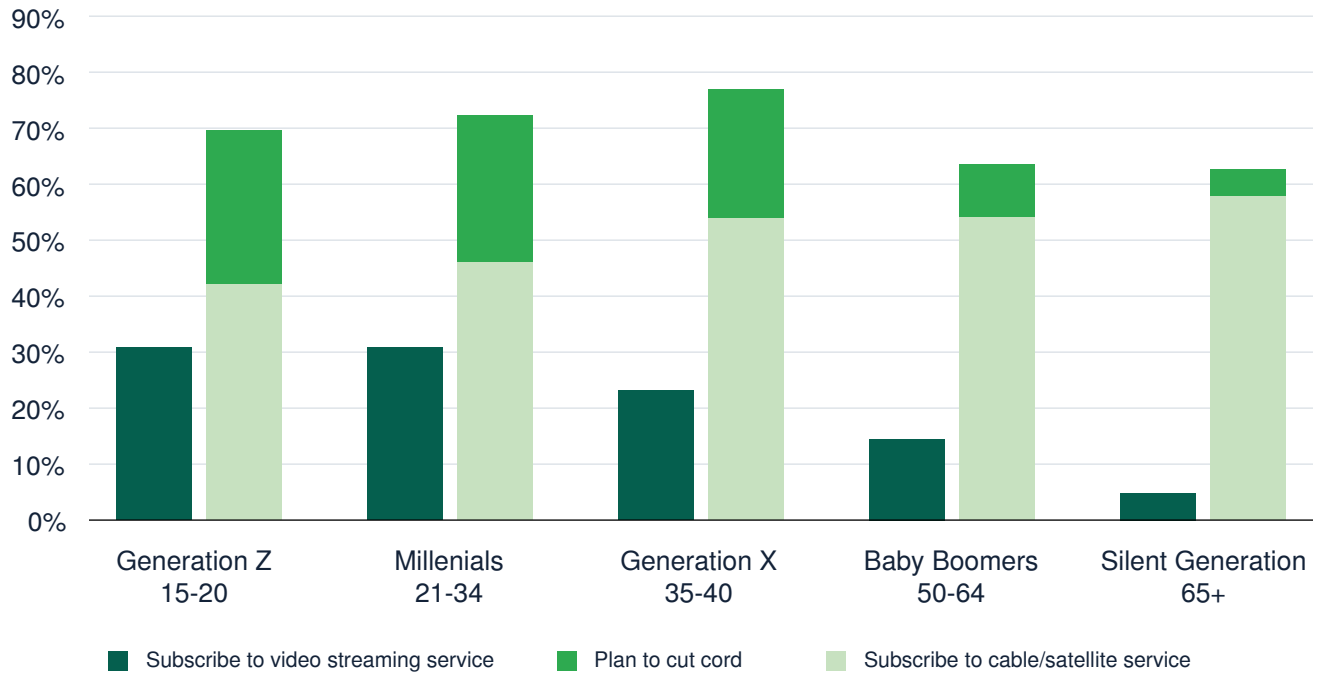
- Do I have a strategy to broadly reach consumers beyond conventional advertising channels?
- Do I know which social media platform my brand should be on?
- Does my company have the skills to evaluate new social media platforms as they emerge?
- Does my company have a strategy for earned social media marketing?
- Does my company have a strategy to turn ordinary consumers into advocates?

9. Mark Sweney, "Out of Print: NME's Demise Shows Pressure on Consumer Magazines," The Guardian, March 2018, https://www.theguardian.com/media/2018/mar/12/nme-vogue-death-print-magazines.
10. Jem Aswad, "Traditional Radio Faces a Grim Future, New Study Says," Variety, August 2017, https://variety.com/2017/music/news/traditional-radio-faces-a-grim-future-new-study-says-1202542681/.
11. PaigeFair, "2017 Global Adblock Report," PageFair, 2017, 20, https://pagefair.com/downloads/2017/01/PageFair-2017-Adblock-Report.pdf.
12. Robert Klara, "20 Years Ago, You Could Buy Apple Products at Sears. Then, Steve Jobs Made Retail History," Adweek, June 2018, https://www.adweek.com/brand-marketing/how-apple-escaped-sears-downward-spiral-to-create-the-coolest-space-in-retail/.
13. Elizabeth Lopatto, "Elon Musk Is the First Influencer CEO," The Verge, December 2018, https://www.theverge.com/2018/12/21/18150813/elon-musk-influencer-ceo-social-media-tesla-spacex.

Chart 5a – Share of consumers with cable (regular television) vs. subscription-based streaming services

TV and video subscription by age group

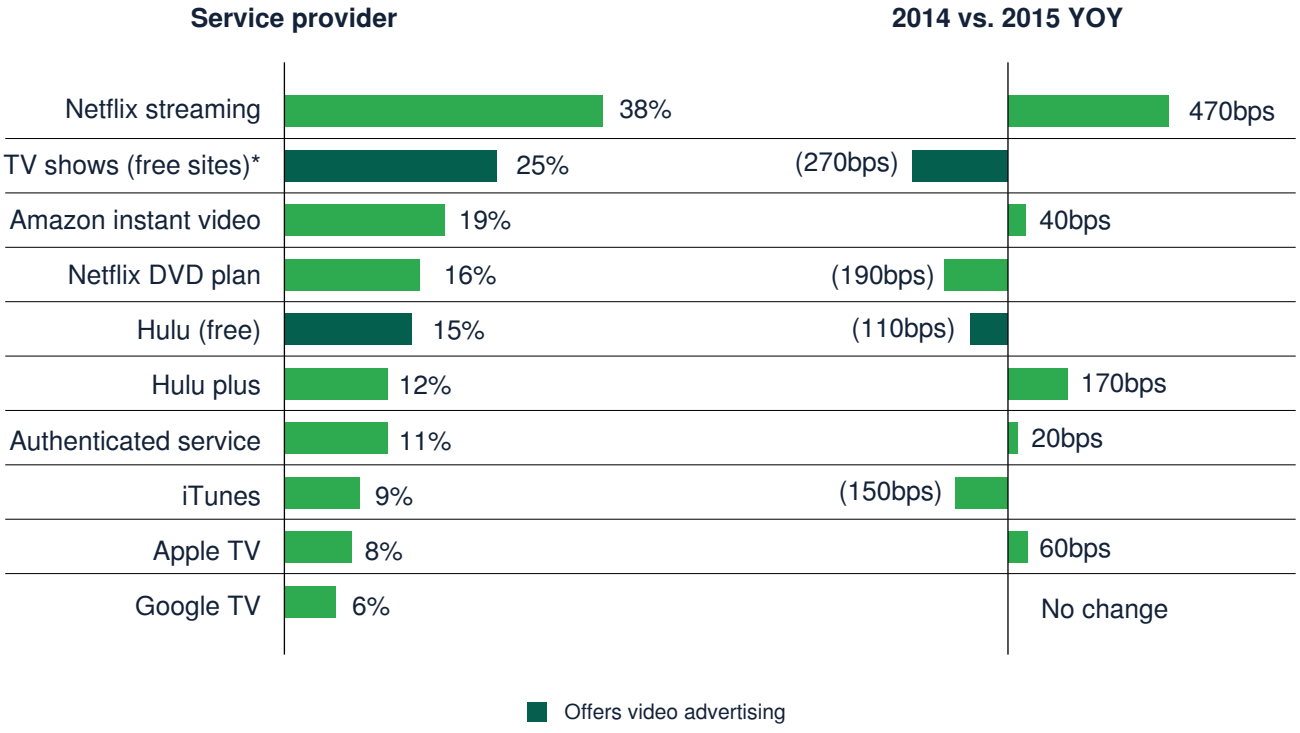
n=30,000 + Online customers across 63 countries, Q3 2015



Source: Nielsen.

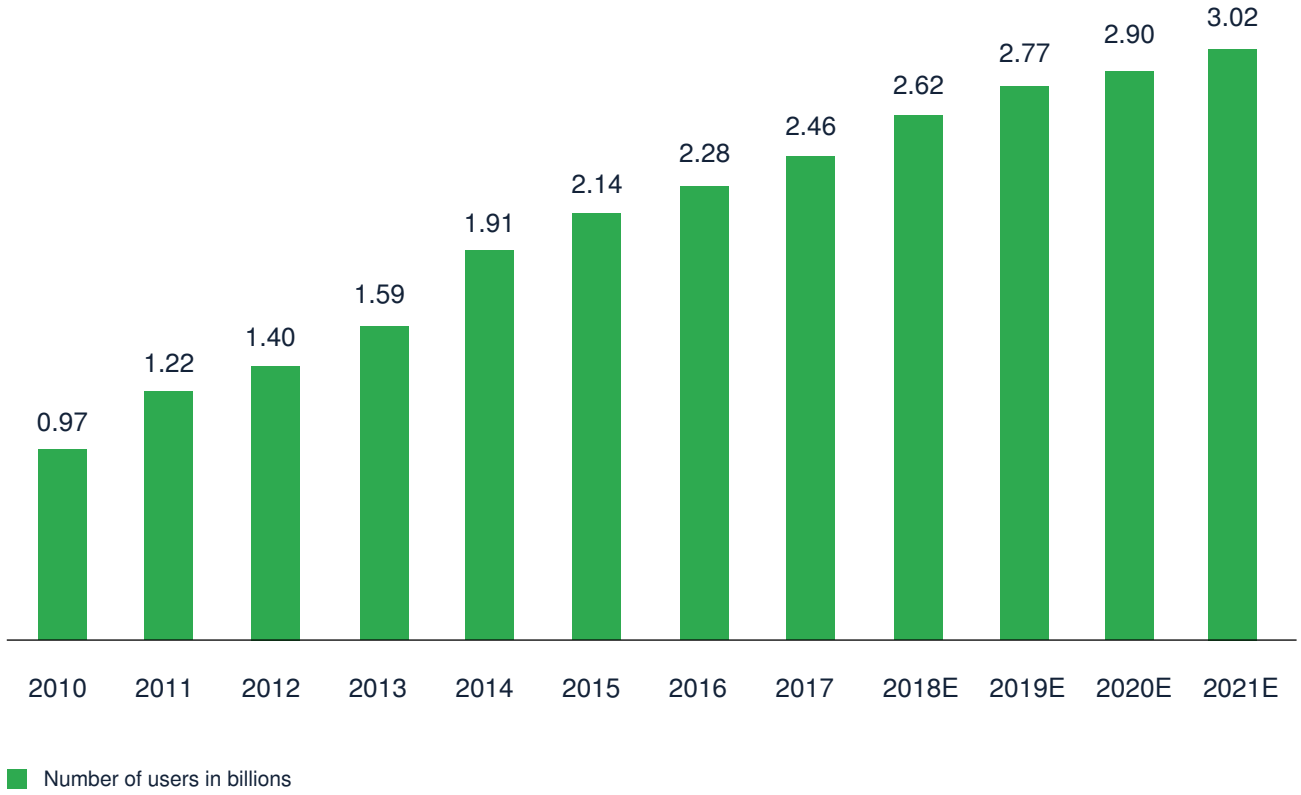
Percent of respondents who use on-demand TV series

March 2015



Source: Morgan Stanley research.
*Note: TV shows on free sites include network sites (ABC.com, MTV.com, etc.)

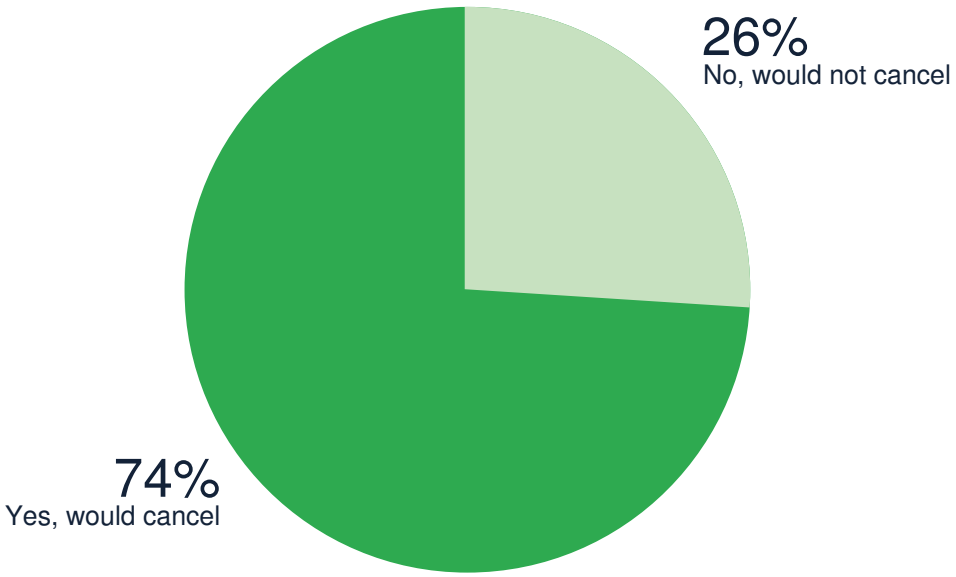
Chart 5b – Number of social media users in billions



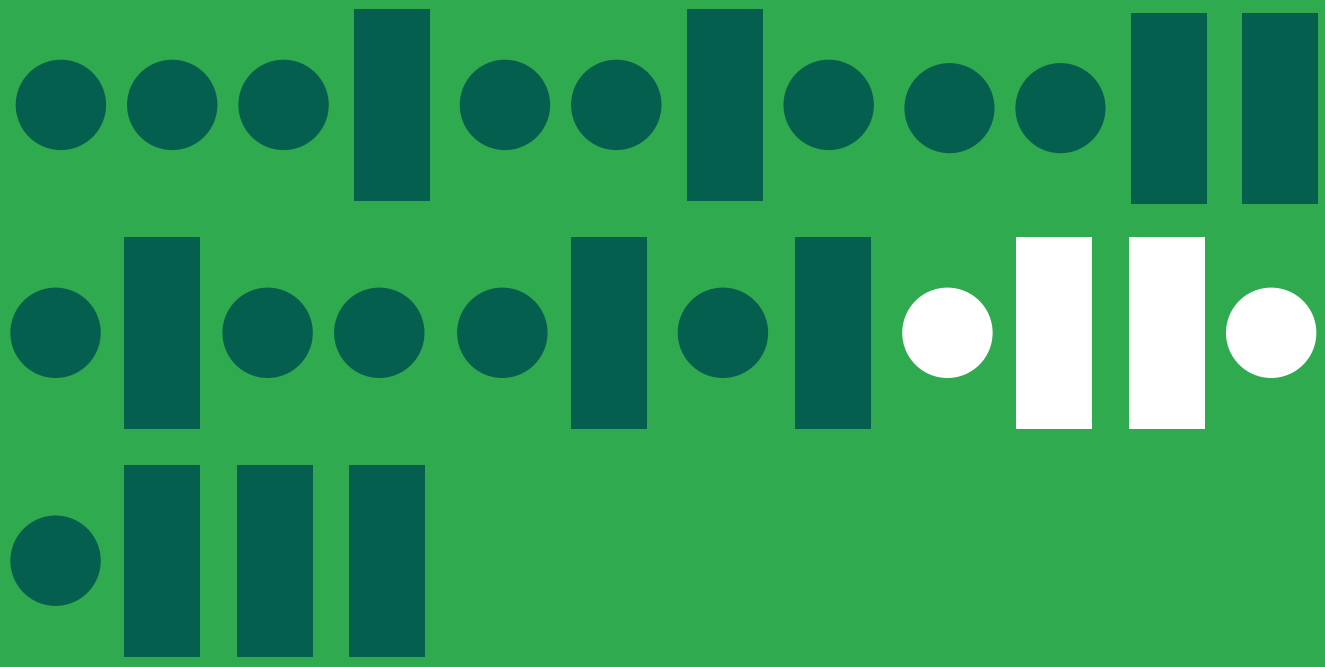
Source: Statista. The figures as of 2018 are an estimate.

Chart 5c – Percentage of users who would cancel if Netflix started showing ads

USA, n=1,200 Netflix users
June 2016



Source: All Flicks.



6 Virtual reality will replace real experience!

Virtual consumption experiences: Virtual-reality-capable devices are expected to quadruple until 2022.

While the terms augmented and virtual reality seem technical and distant, augmented reality is already integrated into our everyday life: We use Instagram or Snapchat filters to distort our faces. It is used during the halftime break to analyze football teams' strategies and tactics. Ikea uses it to enhance the iconic IKEA catalogue by letting consumers place virtual furniture inside their own living rooms. Virtual realities of retail shopping environments have become a popular tool for conducting marketing research, allowing manufacturers and retailers to test innovative concepts with shoppers in realistic, competitive contexts faster and cheaper than in real-life studies. Further technological breakthroughs and new use-cases for our smartphones are forecasted to add more opportunities for augmented reality touchpoints **(see Chart 6a and Table 6b)**.

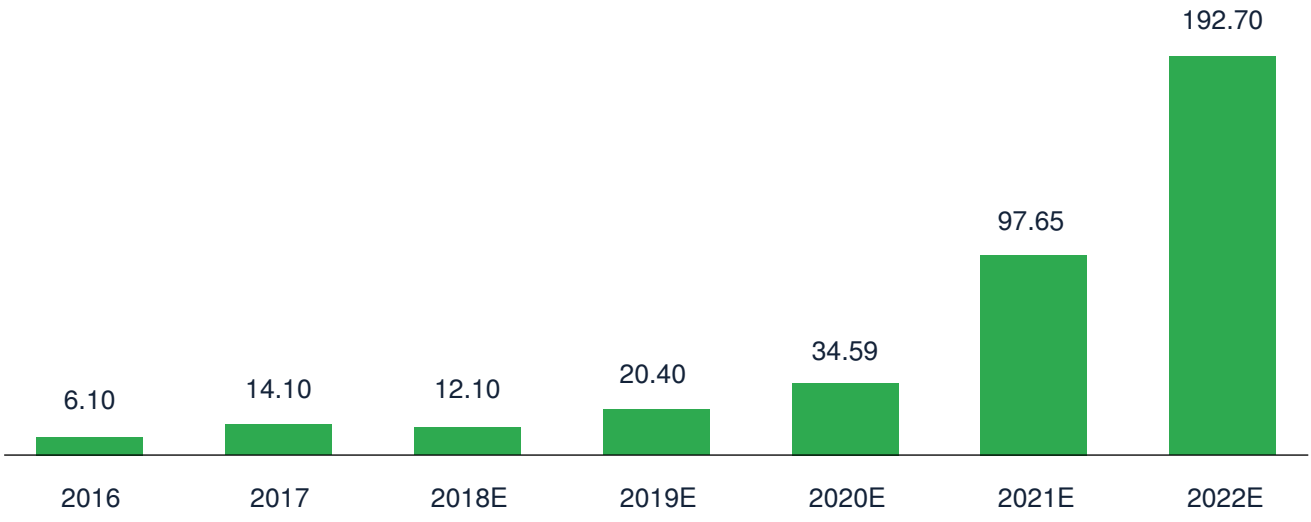
In spite of the fact that the technology is still in its infancy and that even technology giants like Facebook are not quite sure on how to implement virtual reality, nor how it is set to change consumers' lives, research has shown that virtual reality can replace our need for the real experience and satisfy us to a similar degree as consuming the real thing.

Consumption experiences in particular, which are consumed for the feelings and the experiences they deliver but come with a lot of unwanted costs and downsides, are set to be disrupted. Whether this is the entertainment industry, the feeling of driving a fast and exciting car, going on holiday or seeing a football game in the stadium, it is likely that all of these experiences will be impacted by virtual reality in the coming years.

We recommend thinking about the following points

- Does my company sell consumption experiences that could be replaced by experiences in virtual reality?
- If yes, does my company have a strategy to actively embrace virtual reality?
- Does my company leverage augmented reality to increase consumer connectivity?

Chart 6a – Forecast augmented (AR) and virtual reality (VR) market size worldwide from 2016 to 2022 (in billion U.S. dollars)



Source: Statista.

Table 6b – Virtual and augmented reality use cases

Retail		
Ikea	Augmented reality	• App showcases furniture in customer's personal living room
Sherwin-Williams	Augmented reality	• Find the perfect wall color for your home • Try different wall colors
Lacoste	Augmented reality	• Through the app, customers can see how a selected shoe will look on their foot • Reduces work for store clerks
Entertainment and telecommunication		
MTV	Augmented reality	• Augmented reality app allows consumers to project themselves next to their stars during the EMA music awards • Pictures with stars could then be posted on Snapchat
Samsung	Virtual reality	• Virtual reality application developed together with NASA using Samsung gear lets consumers walk on the Moon (virtual experience)
Beauty and skin care		
Sephora	Augmented reality	• Virtually try on make-up • Find the perfect make-up colors for your outfit • Additionally, use of in-store virtual reality mirrors where you can try on make-up without the hassle of applying it
Eucerin	Virtual reality	• Virtual reality application where dermatologists can "explore" the skin in a VR setting • Used at dermatological congresses to demonstrate skin expertise
NIVEA Men	Virtual reality	• Cooperation with Real Madrid • Lets consumers experience the Real Madrid team in a 360° VR setting (changing room, prep for the game, during the game, etc.) • VR glasses distributed at POS on purchase of 2 products

Source: Big Marketing Technology Lab, Institute for Customer Insight, University of St. Gallen.



7

Artificial intelligence will revolutionize how marketing decisions are made.

Artificial intelligence (AI): 85% of marketers will be applying artificially intelligent software by 2022.

Due to the fact that much of consumer communication and behavior now takes place online, everything is digitized and recorded.[14] All the data ever recorded by humankind is now said to double every two years. This has created a phenomenon called "big data".[15] Until recently, however, marketers could not make much of big data, as classic methods of analysis failed to generate insights from these vast amounts of unspecific, heterogenic, and constantly refreshing data. In 2013, it was estimated that only 0.5% of all the data ever collected had been analyzed.[16]

AI – artificially intelligent software agents that perceive their environments and take actions that maximize their chance of successfully achieving their goals – is beginning to support marketers. In particular, the subfield of machine learning has delivered exceptional breakthroughs. Machine learning algorithms are different algorithms that transform large datasets into actionable knowledge,[17] i.e., small programs that are artificially intelligent and understand relationships in the data that humans are unable to figure out.

These algorithms, along with further innovations in the realms of machine learning such as deep learning or reinforcement learning, will bring disruptions to the space of artificial intelligence and marketing that will overshadow everything we have seen before **(see Chart 7a)**. It is set to be the biggest disrupter yet to come, and its consequences are unforeseeable. In times like these, it is important to stay on the ball as the opportunities and threats are equally huge.

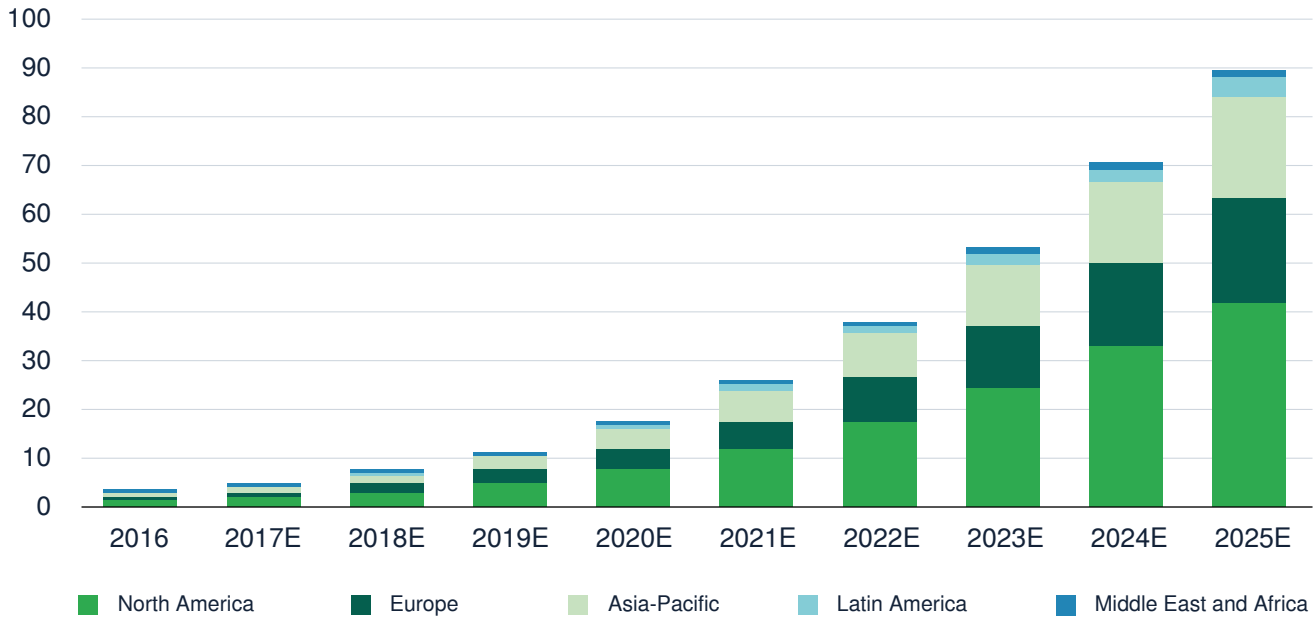
There are many areas set to be revolutionized by AI: predictive customer analysis, personalization, social listening, sentiment analysis, image recognition, product tagging, to name just a few. Due to the many possible applications, the rate of adoption of artificial intelligence is simply staggering **(see Chart 7b)**, and it is quickly becoming the new standard.

We recommend thinking about the following points

- Is my company exploring the application of artificial intelligence in marketing?
- Does my company have a clear strategy on how to embrace artificial intelligence?

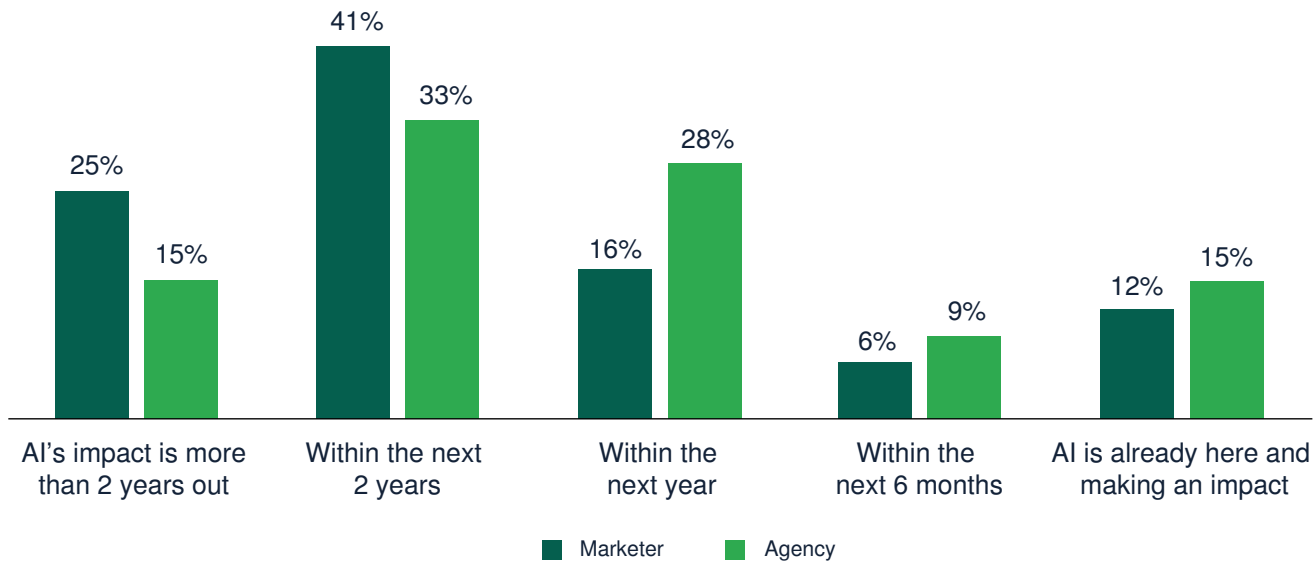
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16. Antonio Regalado, "The Data Made Me Do It," MIT Technology Review, no. July/August 2013, https://www.technologyreview.com/s/514346/the-data-made-me-do-it/.
17. Brett Lantz, Machine Learning with R, 2nd ed. (Packt Publishing, 2015).

Chart 7a – Artificial intelligence market revenue worldwide 2016–2025, by region in USD billions



Source: Tractica.

Chart 7b – Views on AI's impact on ad purchasing and targeting in the US in 2018

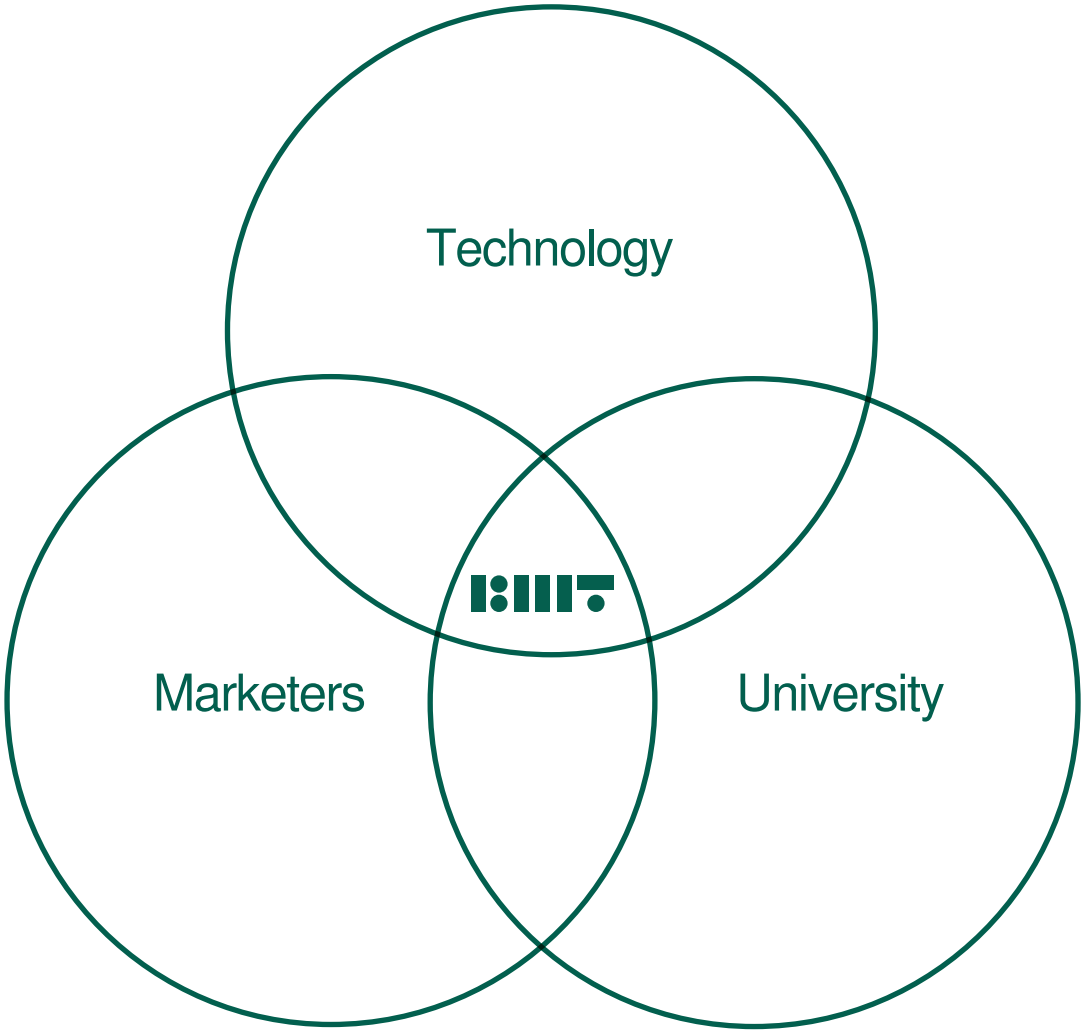


Source: Tractica.

Conclusion

There are numerous trends and hypes unfolding right now, and it is important to identify those that are relevant. Accurate predictions are impossible, but it is possible to better understand these trends and to be prepared once they gain traction. In this way, you will ensure that once the trend hits the market, you are well prepared and can stay ahead of your competition.

Our BMT Lab works at the intersection of marketing and technology with an academic focus. In this way, we are able to identify and investigate marketing trends as soon as they appear.



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