

RESEARCH REPORT

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EXECUTIVE SUMMARY

Wearable Device Market Forecasts

Smart Watches, Fitness Trackers, Smart Glasses, Smart Clothing, Body Sensors, Wearable Cameras, and Other Wearable Devices for Consumer, Enterprise, Healthcare, Industrial, Public Safety, Sports, and Other Markets

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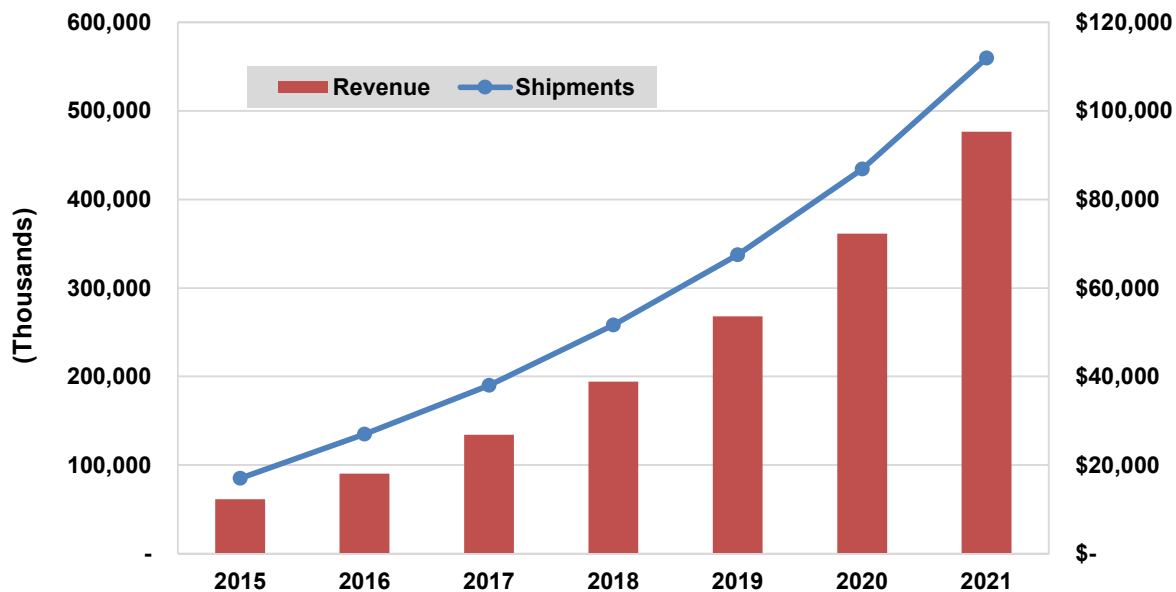
SECTION 1

EXECUTIVE SUMMARY

The wearables market in 2015 experienced ups and downs, but, overall, the market continues to be promising, with fitness trackers and smart watches being the main drivers of volume and growth. The wearables market experienced higher than expected growth in 2015, especially in fitness trackers, for which unit sales have more than doubled since 2014. According to Tractica’s analysis, the wearables market grew from 35.5 million shipments in 2014 to 85.0 million in 2015, a year-over-year growth of 139.4%. While the Apple Watch performed lower than expectations in unit sales, in terms of dollars it is the largest revenue generator in the wearables market with an estimated \$5.5 billion in revenue, outperforming even some smartphone device vendors. In terms of shipments, Tractica estimates Apple sold 11.9 million watches, compared to an earlier estimate of 16.7 million.

Tractica forecasts that the market for wearable devices will continue to demonstrate healthy growth between 2015 and 2021, with total shipments for all wearable devices projected to grow from 85 million in 2015 to 560 million in 2021, representing a compound annual growth rate (CAGR) of 37%. Corresponding device revenue is estimated to grow from \$12.3 billion in 2015 to \$95.3 billion in 2021.

Chart 1.1 Total Wearable Device Shipments and Device Revenue, World Markets: 2015-2021



(Source: Tractica)

This 1Q 2016 update has forecasts based on actual 2015 shipment data, vendor activity, innovation over the past 12 months, and, notably, the consumer response to wearables during 2015. Fitness trackers have emerged much stronger than earlier anticipated. Despite concerns about early abandonment of trackers, and the possible cannibalization by smart watches, fitness trackers remain one of the largest wearable segments in terms of shipments. Fitbit remains the strongest player in the market with a 43% market share of

fitness tracker shipments, but is likely to be eclipsed over the next few years by Xiaomi, which ended up with a 24% market share of tracker shipments in 2015. Tractica expects growth to continue, with annual fitness tracker shipments reaching 187.2 million by 2021, a CAGR of 25% between 2015 and 2021.

Tractica's assumption in 1Q 2015 was that smart watches would dampen the growth of fitness trackers. While Tractica continues to believe this will kick in at some point during the forecast period, the overall market for health and connected fitness is much bigger than earlier anticipated. There seems to be a larger population of users, beyond fitness enthusiasts, adopting fitness trackers today, including those that are unfit and would like to use trackers as a way to educate themselves about their activity levels.

However, the bulk of the revenue for wearables will still come from smart watches due to the higher average selling prices (ASPs). As forecast 12 months ago, the majority of revenue growth is expected to come from the Apple Watch. Although the Apple Watch has sold lower volumes of watches, at an estimated 11.9 million units for 2015, its watch revenue for the 9 months that it sold watches was \$5.5 billion, which is approximately 10% of the total watch market globally and half the revenue share of Swatch, the world's largest watchmaker. Apple will very likely become the largest watchmaker in the world over the next 12 to 18 months, and is already the most successful wearables company. Rather than being a failure, as has been suggested in the popular press, the Apple Watch has galvanized the wearables market, increased competition, and driven the traditional watchmakers out of their slumber.

While issues with design, copycat notifications, features, connectivity, battery life, and usefulness of watch apps remain for the Apple Watch and most other smart watches, Tractica sees a more positive outlook for the smart watch market compared to 12 months ago. For its part, the Apple Watch has pushed both large and small-to-medium watch manufacturers into action, with multiple micro-segments and price brackets emerging from kids' watches, fashion watches, watches for the elderly, watches for adventurers, analog smart watches, voice-controlled smart watches, and many others. Rather than being seen as a quartz watch replacement, smart watches are being adopted by naked wrists, i.e., by users who never wore watches in the first place or who stopped wearing them long ago. The smart watch is introducing a completely new customer segment into the watch market and Tractica expects more smart watch vendors to target this untapped segment. Tractica's estimates for smart watch shipments through 2020 have been increased compared to last year, with shipments in 2021 reaching 227.3 million. This is still less than 25% of the overall shipments for watches globally.

Wearable cameras represent the third largest wearable device category after fitness trackers and smart watches. GoPro, the largest and most well-known wearable camera company, had a disappointing 2015, especially in 4Q 2015 when unit sales estimates were 33% lower than the previous year. Despite the current uncertainty in the wearable camera market, Tractica continues to believe that wearable cameras will scale in the longer term, with traditional camera makers entering the market at some point.

Smart clothing has also seen increased activity, with Tractica increasing estimates as new categories like smart footwear start to emerge, which provide increased accuracy of tracking steps and advanced analytics around foot placement and cadence for runners. The year 2016 will see the introduction of smart running shoes from Under Armour, iFit, and smart soles from Zhortech. Smart clothing shipments are estimated to grow from just under 1 million units in 2015 to 24.7 million units by 2021, a CAGR of 71.6%, with smart footwear making up a large portion of those forecasts.

Smart glasses continue to be a niche segment and Tractica has not changed its earlier estimates, with the market expected to reach annual shipments of 7.9 million by 2021. Smart glasses continue to be adopted in the enterprise, with consumer adoption of smart glasses dependent on the commercial launch of augmented reality (AR) glasses like Microsoft HoloLens and Magic Leap.

The body sensors segment has been expanded to include a number of healthcare related wearable devices including wearable patches, wrist devices, and movement sensors. Wearable patches have the largest growth potential among body sensor device types as they are low cost, have wireless connectivity, and can be used to monitor physiological data to deliver medication. By 2021, Tractica estimates there to be 27.6 million shipments of wearable patches annually.

The “Other Wearables” segment has also seen new device categories added such as the smart headphone for consumers. Connected earphones or smart headphones like those from Bragi, Misfit Specter, and Under Armour with wireless heart rate monitors (HRMs) are ushering in a new era of headphones becoming connected and adopting features like activity tracking and voice-based assistants.

In summary, 2015 was the biggest year for wearables so far, with fitness trackers outperforming industry expectations and smart watches coming out strong, despite the Apple Watch disappointing in terms of unit sales. While fitness is the overwhelming driver for wearables today, there are a number of micro-segments emerging, ranging from kids’ watches, to smart footwear, to new healthcare devices like wearable patches that will drive this market forward. Experimentation is driving part of this trend, both from vendors and early adopters, which will lead to disappointed users and companies that will fail. The winners will be those that continue to experiment and seek out new consumer segments, rather than replace existing ones. Wearables are part of a macro trend where computing is diverging from the smartphone and moving onto the body, driven by sensors, machine learning, big data analytics, and the need for more efficient user interfaces that can allow technology to fade into the background.

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SCOPE OF STUDY

This market forecast report covers the market for wearable devices, including smart watches, smart glasses, fitness trackers, smart clothing, body sensors, wearable cameras, and other wearables. Body sensors include pregnancy and baby monitors, headbands, HRMs, posture monitors, wrist devices, movement sensors, wearable patches and 3D trackers. Other wearables include location trackers, smart jewelry, gesture control devices, smart headphones, pain management devices and delivery pods. The market data is categorized by device shipments and revenue, and is segmented by world region, application market, and connectivity technology. The application markets covered in this study include consumer, enterprise, industrial, public safety, healthcare, sports, and others. The connectivity technologies include Wi-Fi, Bluetooth, NFC, radio frequency identification (RFID), cellular, GPS, and others. The forecast period for this report extends from 2015 through 2021, with 2015 representing actuals and the 2016 to 2021 period representing Tractica's projections for market growth.

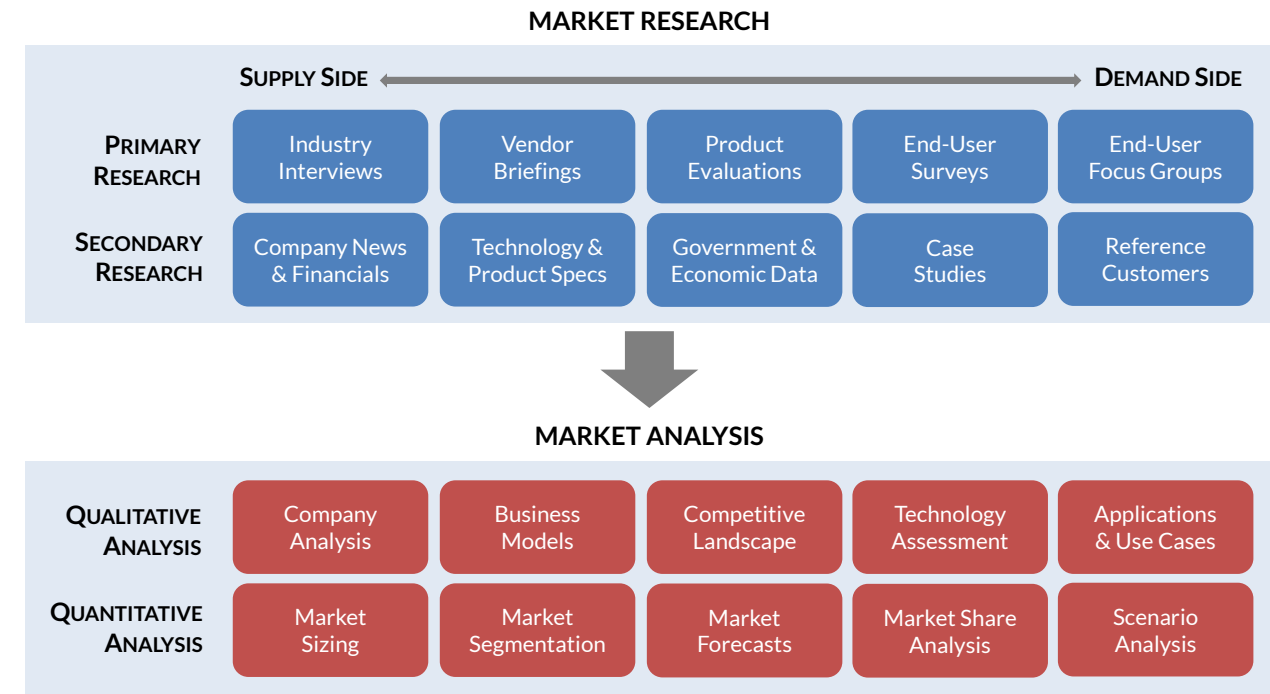
SOURCES AND METHODOLOGY

Tractica is an independent market research firm that provides industry participants and stakeholders with an objective, unbiased view of market dynamics and business opportunities within its coverage areas. The firm's industry analysts are dedicated to presenting clear and actionable analysis to support business planning initiatives and go-to-market strategies, utilizing rigorous market research methodologies and without regard for technology hype or special interests including Tractica's own client relationships. Within its market analysis, Tractica strives to offer conclusions and recommendations that reflect the most likely path of industry development, even when those views may be contrarian.

The basis of Tractica's analysis is primary research collected from a variety of sources including industry interviews, vendor briefings, product demonstrations, and quantitative and qualitative market research focused on consumer and business end-users. Industry analysts conduct interviews with representative groups of executives, technology practitioners, sales and marketing professionals, industry association personnel, government representatives, investors, consultants, and other industry stakeholders. Analysts are diligent in pursuing interviews with representatives from every part of the value chain in an effort to gain a comprehensive view of current market activity and future plans. Within the firm's surveys and focus groups, respondent samples are carefully selected to ensure that they provide the most accurate possible view of demand dynamics within consumer and business markets, utilizing balanced and representative samples where appropriate and careful screening and qualification criteria in cases where the research topic requires a more targeted group of respondents.

Tractica's primary research is supplemented by the review and analysis of all secondary information available on the topic being studied, including company news and financial information, technology specifications, product attributes, government and economic data, industry reports and databases from third-party sources, case studies, and reference customers. As applicable, all secondary research sources are appropriately cited within the firm's publications.

All of Tractica's research reports and other publications are carefully reviewed and scrutinized by the firm's senior management team in an effort to ensure that research methodology is sound, all information provided is accurate, analyst assumptions are carefully documented, and conclusions are well-supported by facts. Tractica is highly responsive to feedback from industry participants and, in the event errors in the firm's research are identified and verified, such errors are corrected promptly.

Chart 7.1 Tractica Research Methodology


(Source: Tractica)

NOTES

CAGR refers to compound annual growth rate, using the formula:

$$\text{CAGR} = (\text{End Year Value} \div \text{Start Year Value})^{(1/\text{steps})} - 1.$$

CAGRs presented in the tables are for the entire timeframe in the title. Where data for fewer years are given, the CAGR is for the range presented. Where relevant, CAGRs for shorter timeframes may be given as well.

Figures are based on the best estimates available at the time of calculation. Annual revenues, shipments, and sales are based on end-of-year figures unless otherwise noted. All values are expressed in year 2016 U.S. dollars unless otherwise noted. Percentages may not add up to 100 due to rounding.

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