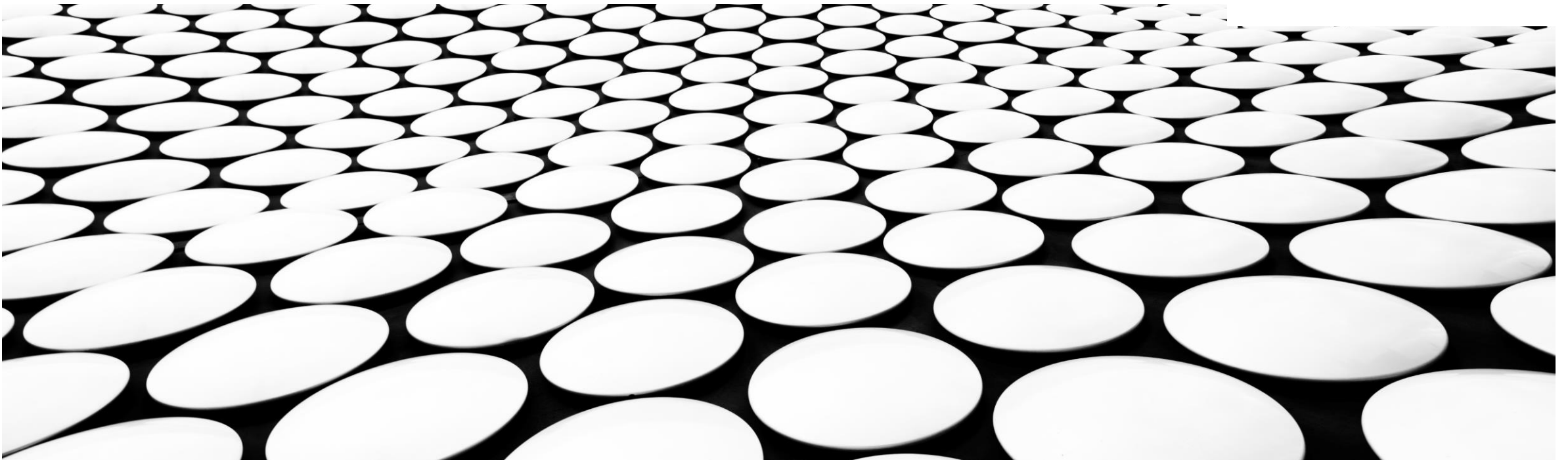


RISEBCG – Group Assignment (Apple Inc.)

Group 5 – RISEing STARS



Finding new areas of growth and reduce revenue-dependence on iPhone

Background:

Revenue growth in Consumer Electronics segment has slowed from 14% CAGR¹ (2012-15) to 3% CAGR (2015-20). There is also a high dependence on iPhone as a revenue driver, contributing 50% of revenues in 2020².

Recommendations:

We recommend looking for areas of growth in:

1. **Key Emerging Markets - India and Indonesia for iPhone**
 - Explore tie-ups with major telecommunication companies in India and Indonesia to be price-competitive via the iPhone SE in these key growth markets that have **rising smartphone penetration** and **current low Apple market share**
2. **Key Emerging Consumer Trends – EdTech for iPad & Medical Wearables for Apple Watch**
 - Introduce education-focused iPads and new features that enhances blended learning to adapt to rising trends in EdTech industry
 - Capitalise on current Apple Watch capabilities to tie-up with governments for public health initiatives and leverage on rapidly growing global medical wearables market

Impact:

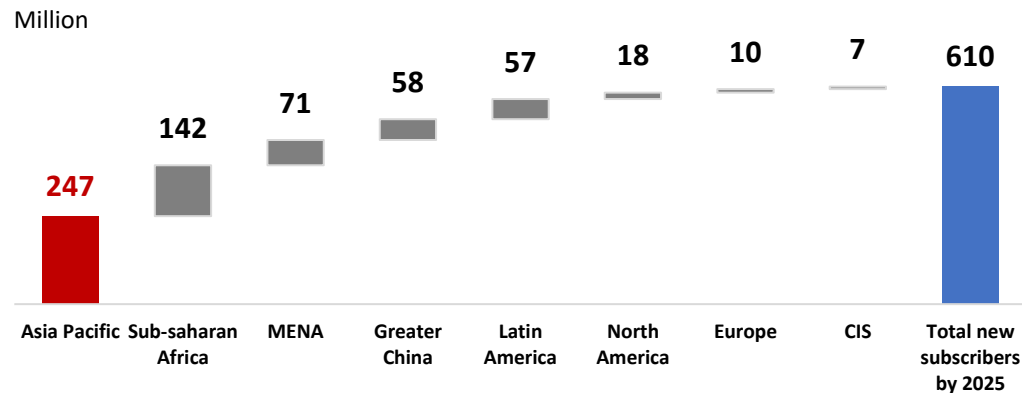
By capturing key emerging markets and consumer trends, Apple could **potentially achieve +21% (USD 56.8 bn) Consumer Electronics revenue growth by 2025 (from CY2020)** and **diversify revenue sources**

¹ CAGR = Compound Annual Growth Rate, ² Apple Inc. Financial Statements

Asia Pacific (APAC) is a key growth market given growing mobile subscriber base, large smartphone market, and rising middle-class

- Asia Pacific accounts for 40% of expected mobile subscriber growth globally by 2025, and the region currently has the largest base of Unique Mobile Subscribers

Figure 1: Expected new mobile subscribers globally by 2025, by region



- Asia Pacific is expected to have the 3 largest smartphone markets by 2025

Top three largest smartphone connections¹ globally (2025)



China:
1,493 mm



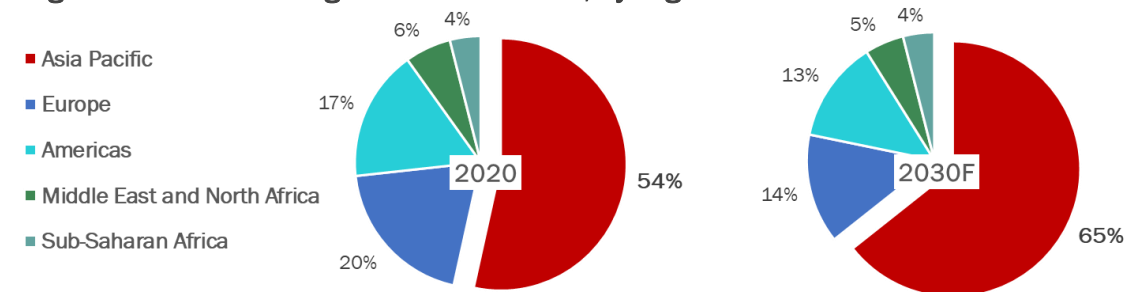
India:
1,041 mm



Indonesia:
351 mm

- Asia Pacific is also expected to have the fastest growing middle-class by 2030, representing 65% of global middle-class population

Figure 2: Share of the global middle-class, by region in %



¹ A smartphone connection is defined as a SIM card registered and used in a smartphone device at the end of the period. It does not represent the number of smartphone devices sold or shipped.

Source: 1. GSMA Intelligence; 2. Brookings Institution

Within APAC, India and Indonesia look attractive given rising smartphone penetration and Apple's low market share

- Smartphone penetration rates are expected to reach **32% by 2022 in India** and **89% by 2025 in Indonesia** – this represents a large market that Apple could potentially compete in
- Apple's current low market share of 3% in India and 8% in Indonesia** represent an opportunity to grow the brand's presence

Figure 3: Smartphone penetration rate in India and Indonesia, % share of population

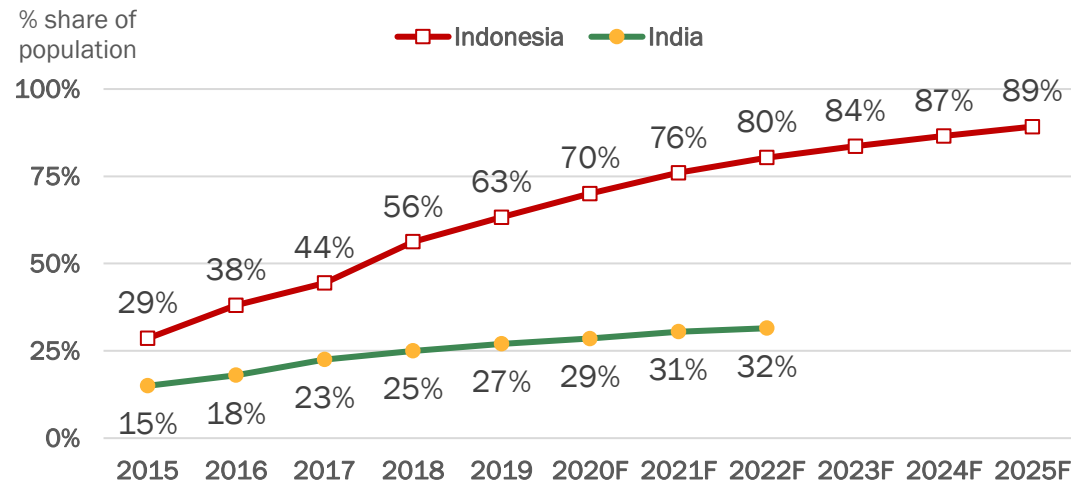
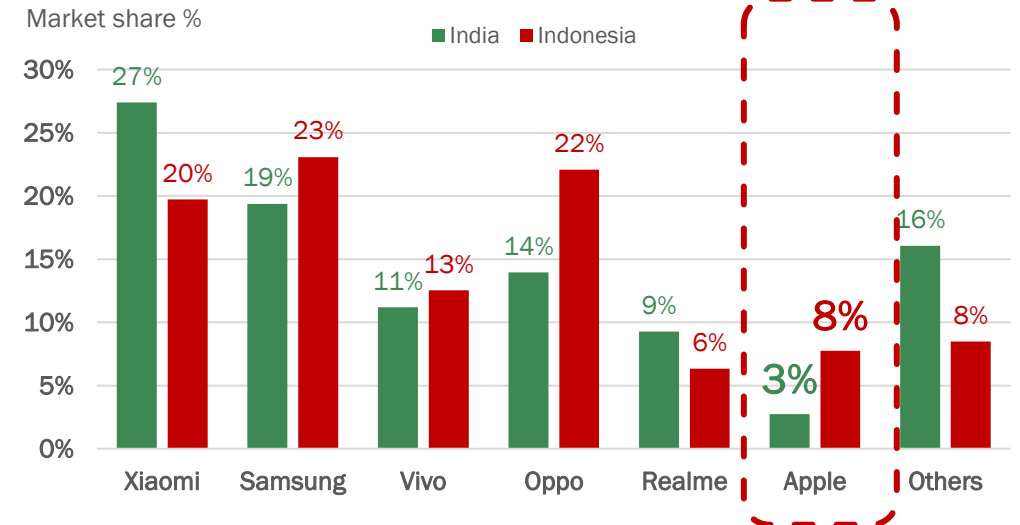




Figure 4: Mobile vendor market share in India and Indonesia, as of Feb 2021



Source: 3. Statista; 4. Statista

Affordability is an important purchase driver in India and Indonesia – Apple's iPhone SE is a viable price-competitive product

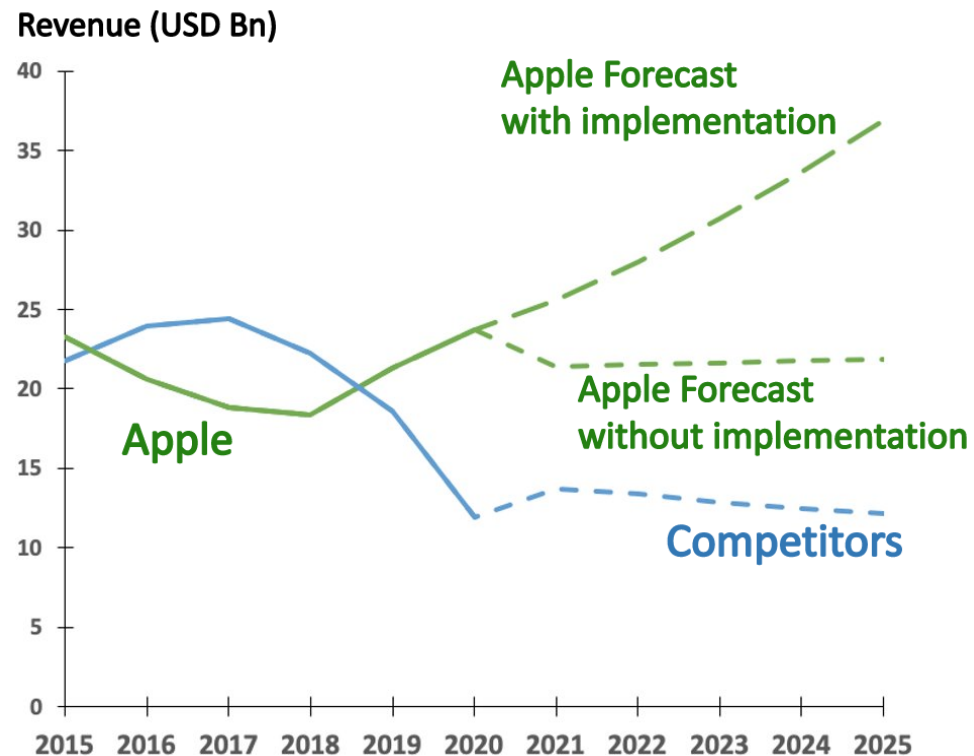
- “Price” is a key factor in smartphone purchase decisions in both countries:
 - **Indonesia:** “Price” was ranked as the 2nd most important factor at 21%, after “Quality” at 24%¹ in Consumer Electronics
 - **India:** consumers attribute “Social Influences” and “Status Symbol” to Apple’s smartphones vs. “Price” to competitor Samsung²
- 
- Aggressively promote and distribute iPhone SE in these countries:
 - Explore tie-ups with leading telecommunication providers: BSNL, Airtel and Jio in India, and Telkomsel, XL Axiata and Indosat Ooredoo in Indonesia
- 
- We forecast an incremental USD 17.6 bn iPhone revenue opportunity assuming a 5% increase in market share
 - India: USD 12.1 bn
 - Indonesia: USD 5.5 bn

¹ Deloitte Consumer Insights Survey (2019)

² International Journal of Advance Research in Computer Science and Management Studies

Niche market: EdTech represents a potential +9.6% CAGR iPad sales growth opportunity

Figure 5: Global forecasts in tablet revenue

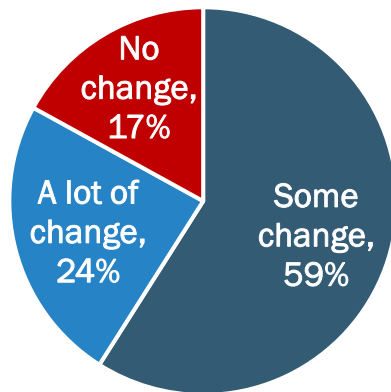


Source: 5. Statista, Bloomberg, HolonIQ

- EdTech industry is expected to grow at +12% CAGR (2019-25), while iPad revenue growth has declined at -3% CAGR (2012-20)
 - Apple can leverage on the growing EdTech market:
 1. Introducing education-focused iPads
 - Competitively-priced (against competitors with similar technical specifications)
 - Durable (ability to handle accidental damages for younger students)
 - Inclusion of only the essential features for students
 2. Introducing new features to enhance “Blended Learning”
 - Ability for teachers to have master control on some functions to prevent distractions during classroom lessons (functions such as internet connection and screen takeovers)
 - Ability for teachers to easily reply to students' questions and vice-versa, during and after class (no matter classroom, online or self-paced learning)
 - Ability for teachers to see a compilation of answers, by student or by question, instantaneously
- By adapting to industry trends from 2021-25 onwards, Apple could potentially be rewarded with a +9.6% CAGR in iPad sales revenue; this represents a USD 13.2 bn opportunity.

Potential 3.6 million new Apple Watch purchases from demand in upcoming public health initiatives and corporate partnerships

Figure 6: Market survey of Apple Watch owners



83% of surveyed Apple Watch owners said the device contributes to their overall health

Corporate Partnerships

- 11% Growth in number of employers offering financial incentives in wellness programme (2018: 86%)

National Public Health Initiatives

- Tie-ups with government public health programmes¹ resulting in nationwide bulk demand:
 - **Potential 3.6 million new Apple Watch purchases from the UK initiative**
- Apple's technological capabilities poised to capture the up-trend in global wearable medical devices market²

¹ Guardian.com, Lumihealth SG, SmartNation.co.sg,

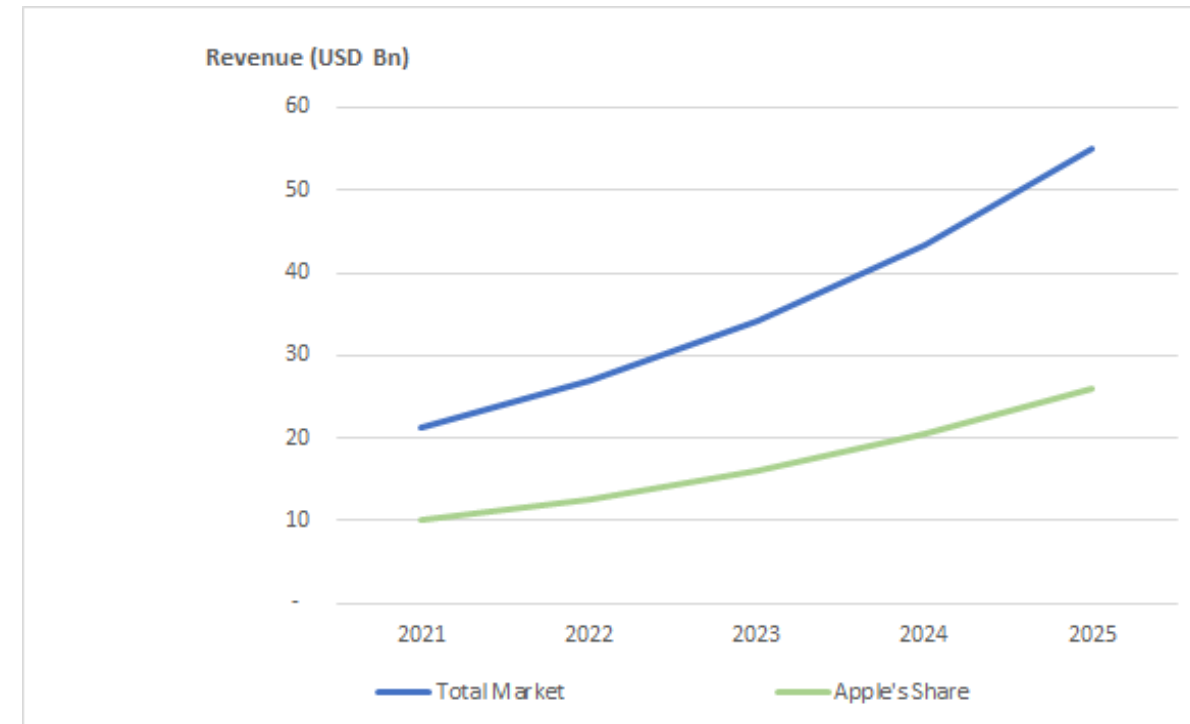
² healthpayerintelligence.com

Source: 6. Wristly

Growing Medical Wearables market also offers opportunity for growth in non-iPhone products

- Predicted growth of **26.8%** in global market for medical wearables between 2021-2025
- Apple's global market share assumed to be **47%** (based on 2014-2020 records)
- Estimated **USD 26.0 bn opportunity** by 2025 by riding forecasted global medical wearables market growth

Figure 7: Global market forecast of Medical Wearables, 2021-2025



APPENDIX

CALCULATIONS

Calculation methodology for incremental iPhone revenue

Incremental iPhone Revenue by 2025, Indonesia:

Indonesia Expected Population in 2025	282.46	MM	Source
Expected Smartphone Penetration Rate by 2025	89%	of population	Statista
Expected Smartphone Market in 2025	251.98	MM	Statista
Expected increase in Apple's Smartphone Market Share	5%		Assumption
Expected Increased Units of iPhone SE by 2025	12.60	MM units	
iPhone SE Price in Indonesia	IDR 6,371,916		Flipkart
USD/IDR	14,525	as of 31 Mar 2021	Bloomberg
iPhone SE Price in Indonesia	\$438.69		
Expected Incremental iPhone Revenue	\$5,527.06		

Incremental iPhone Revenue by 2022, India:

India's Expected Population in 2022	1.41	BN	Source
Expected Smartphone Penetration Rate by 2022	31%	of population	Statista
Projected Smartphone Market in 2022	441.24	MM	Statista
Expected Increase in Apple's Smartphone Market Share	5%		Assumption
Expected Increase in Units of iPhone SE by 2022	22.06	MM units	
iPhone SE Price in India	\$550.00	USD	Apple India
Expected Incremental iPhone Revenue	\$12,133.98	MM	

Calculation methodology for incremental iPad revenue

Incremental iPad Revenue by 2025:

Apple's iPad Revenue in CY2019	\$21.28BN
Forecasted EdTech Industry CAGR (2019-25)	12%
Apples' Expected Optimization Rate of EdTech Trend	80%
Forecasted iPad Revenue CAGR (2019-25)	9.6%
Apple's Forecasted iPad Revenue in CY2025	\$36.88BN
Apple's iPad Revenue in CY2020 (base year)	\$23.73BN
Expected Incremental iPad Revenue from EdTech Trend	\$13.15BN

Source

Apple Financials

Statista

iSuppli; IHS; IDC. Average Apple's share over 35 quarters

Apple Financials

EdTech Data Derivation, CAGR and Forecast Growth Calculations

Global Tablet Revenue

Year	Apple Revenue (bn)	Others Revenue (bn)	Total Revenue (bn)	Apple Forecast Revenue (bn)
2015	23.23	21.773	45.00	-
2016	20.63	23.962	44.59	-
2017	18.80	24.438	43.24	-
2018	18.38	22.270	40.65	-
2019	21.28	18.610	39.89	-
2020	23.72	11.916	35.64	-
2021	21.41	13.741	35.15	25.6
2022	21.52	13.386	34.91	28.0
2023	21.64	12.882	34.52	30.7
2024	21.75	12.497	34.25	33.7
2025	21.87	12.162	34.03	36.9

Source:
Bloomberg

Forecast:
Machine
Learning
Codes

Derived

Source:
Statista

3

EdTech Expenditure

1

Year	EdTech Expenditure (bn)
2019	183
2020	227
2021	268
2022	295
2023	327
2024	365
2025	404

Source:
HolonIQ

CAGR Calculation

$$CAGR = \left(\frac{V_{final}}{V_{begin}} \right)^{\frac{1}{7}} - 1$$

$$= \left(\frac{404}{183} \right)^{\frac{1}{7}} - 1$$

$$= 12\%$$

Forecast Growth Rate

2

- CAGR represents compound average growth rate in the EdTech industry.
- Based on a 12% industry growth, Apple has a 9.6% growth potential rate (assuming 80% optimisation) should Apple expand into the EdTech industry.
- 9.6% growth in each forecasted revenue

Market for EdTech usage to aid the delivery of blended learning

"Blended learning focuses on optimising achievement of learning objectives by applying learning technologies to match personal learning styles."¹

- Offline and Online Learning
- Self-Paced and Live, Collaborative Learning
- Structured and Unstructured Learning
- Custom Content with Off-the-Shelf Content
- Work and Learning

Upward trend in the adoption of blended learning²

- Students score better in blended-learning classrooms than traditional classrooms.
- Textbook providers morphing into digital-learning providers
- Children have access to computers
- Parents supportive towards using technology as a learning tool

¹ Centra Soft

² The Atlantic

Calculation for estimated incremental revenue arising from UK proposed public health initiative

- Participation rate of Singapore government's public health initiative = 13% of Singapore's population
- UK population: 66.65 million (2019)
- Assuming similar participation rate in UK as in Singapore:
 - Projected number of participants = $13\% * 66.65 \text{ million} = 8.66 \text{ million}$
 - % of people in UK that do not own a Smartwatch = 88%
 - Projected no. of participants looking to purchase Smartwatch = $8.66 \text{ million} * 88\% = 7.62 \text{ million}$
 - Market share of Apple relating to Smartwatches (2015 – 2020) = 47%
- Projected no. of new purchases from public health initiative in UK = $7.62 \text{ million} * 47\% = 3.6 \text{ million}$

APPENDIX

SUPPORTING SLIDES

Usefulness of Apple Watch in preventive care and general fitness

Apple Watch features that aid in health-tracking trends:

- **Apple Watch Series 6 (2020 model):**
 - Blood oxygen saturation monitoring feature
 - Native sleep-tracking capabilities
 - FDA-approved electrocardiogram sensor
 - Upgraded heart health monitoring¹
- **Apple Heart Study:** A study shows that Apple Watches has an 84% positive predictive value on detecting irregular heart-rate pulse²

These irregular heart-rate pulse is linked to Atrial Fibrillation – a leading cause of stroke and hospitalisation – that is often undetected.

- **83% of surveyed Apple Watch owners said that the device contributes to their overall fitness and health³**

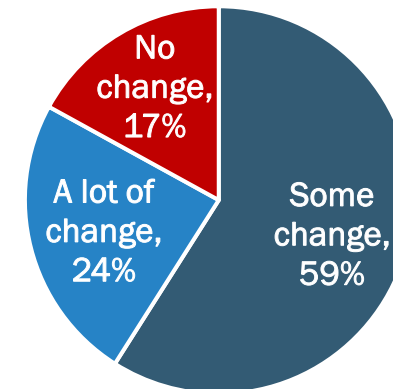
¹ Cnet.com/news

² med.Stanford.edu

³ mobihealthnews.com

Source: (Right) Wristly

Figure 6: Market survey of Apple Watch owners



83% of surveyed Apple Watch owners said the device contributes to their overall health

Potential government support and corporate tie-ups to boost demand for Apple Watch

Public Health Initiatives

- Lumihealth - Partnership between Apple and Singapore government
- Live Healthy SG - Partnership between Fitbit and Singapore government
- Singapore National Steps Challenge – Financial rewards were given out to participants who made and tracked a set number of steps (13% of SG participated)

Corporate Partnerships

- 11% Growth in number of employers offering financial incentives in wellness programme (2018: 86%)

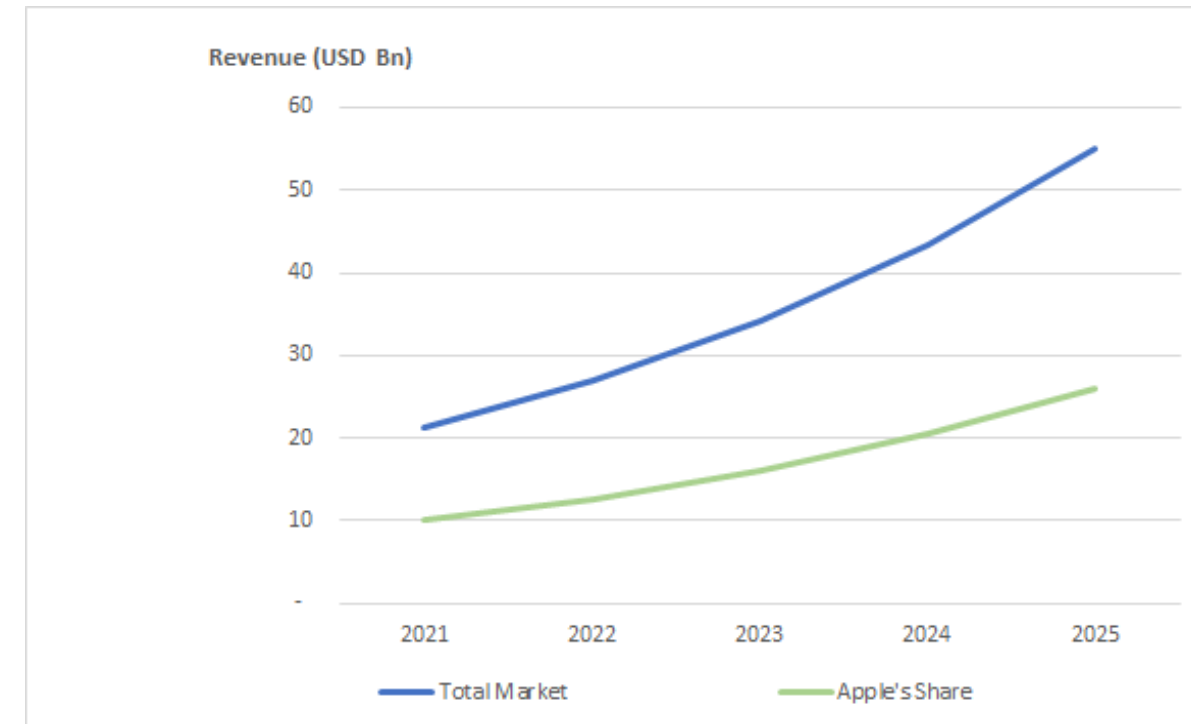
Potential Demand from UK Government Public Healthcare Programme

- UK government proposed health programme modelled after Singapore National Steps Challenge
- Estimated 3.6 million new purchases of Apple Watches from UK's proposed initiative

Growing Medical Wearables market also offers opportunity for growth in non-iPhone products

- Predicted growth of **26.8%** in global market for medical wearables between 2021-2025
- Apple's global market share assumed to be **47%** (based on 2014-2020 records)
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Global market forecast of Medical Wearables, 2021-2025



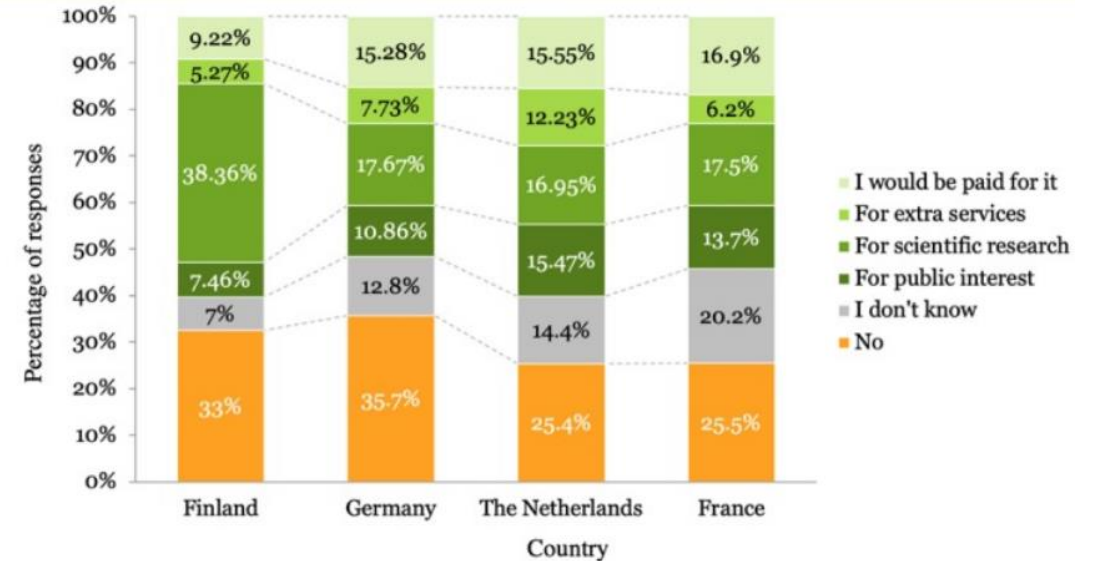
Majority of people are willing to share personal health data

Majority of consumers ok to share personal health data

- 50-60% of respondents in a survey are willing to share their personal health data for a host of reasons.
- Privacy concerns remain as consumers are worried over the misuse of information.

Apple demonstrates best privacy protection amongst competitors

- Business model does not engage in selling data, third-party selling, targeted advertisements, third-party tracking, tracking and profiling of users, unlike competitors



Product	Sell Data	Third-party Marketing	Targeted Ads	Third-party Tracking	Track Users	Ad Profile
Apple Watch	No	No	No	No	No	No
Verizon Gizmo Watch	No	Unclear	Yes	Yes	Yes	Yes
Fitbit Ace2	No	Yes	Yes	Yes	Yes	Unclear
Samsung Galaxy Watch Active	Yes	Yes	Yes	Yes	Yes	Yes
Garmin Vivo	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear

Source: ncbi.nlm.nih.gov (US National Library of Medicine, National Institutes of Health)

The smart-home market represents a huge potential market for Apple

- The Smart Homes Market was valued at USD 79.13 billion in 2020 and expected to reach USD 313.95 billion by 2026 and grow at a CAGR of 25.3% over the forecast period (2021 – 2026)
- Based on the latest statistics, there were about 30 million smart homes in the US in 2020. This number represented 25% of all American households. It's estimated that the percentage of smart homes will grow considerably by 2021, reaching 28%. – **at this estimated rate, by year 2045, 99% of American households would have switched to smart homes**
- A recent survey shows that about 81% of real estate purchasers would be more inclined to buy a house if it came along with smart technology products. Therefore, we can easily conclude that there is an appeal for smart home hardware in the US
- Studies show that about 47% of US-based Millennials have at least one smart home product within their homes. As such, the popularity of this market is currently at its all-time high, since more and more people are looking to automate their homes. After all, 57% of Americans believe that this technology saves them at least 30 minutes on a daily basis



Developing a smart-home system, “Siri-Pod”, Apple can break into the smart-home market

- 46% of US population uses Apple devices
- As “Siri-Pod” works best with other Apple devices, current users will potentially make the switch from Amazon/Google smart-home devices
- Amazon and Google do not have an eco-system advantage
- Convenience is the most significant factor in smart-home usage
 - Example of Apple’s eco-system advantage over competitors:
 - 100% handsfree shopping experience: viewing stores on Apple smart TV, making purchase options by speaking to “Siri-Pod”, pod process payment and shipping through ApplePay
- Apple’s smart device market share in the US shows that Apple users choose quality and convenience over price. With this eco-system advantage, Apple can price comfortable 15-30% over competitors

“Siri-Pod” potentially opens further opportunities for Apple to expand into the Home-category

- Examples of potential home-goods:
 - Air Doors:** smart-door that is compatible with “Siri-Pod”. Opens naturally when you approach it, helpful when your hands are full
 - Curtains Pro:** set of curtains that closes/opens on command from “Siri-Pod”
 - Magic Maid & Bin:** a robotic vacuum connected to a magic bin, that vacuums your floor upon command from “Siri-Pod”. Self-cleaning that discards waste to the magic bin
- Based on success of Apple products like the Apple Watch that is priced ~56% more than its closest competitor, Apple has pricing-power when it comes to marketing these home-goods in the future

Exhibit 1: Global Smartwatch Vendor Shipments and Marketshare in Q1 2020

Global Smartwatch Vendor Shipments (Millions of Units)	Q1 '19	Q1 '20	Growth YoY (%)
Apple	6.2	7.6	22.6%
Samsung	1.7	1.9	11.8%
Garmin	0.8	1.1	37.5%
Others	2.7	3.1	14.8%
Total	11.4	13.7	20.2%

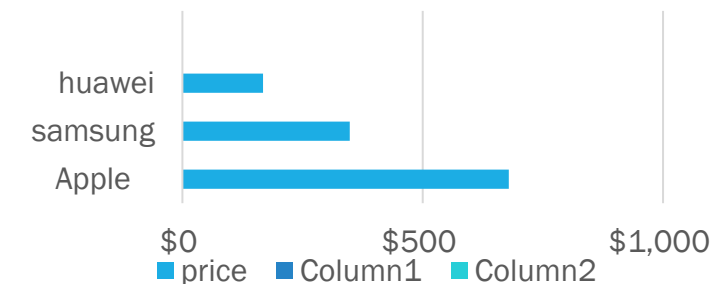
Patently Apple

Global Smartwatch Vendor Marketshare (% of Total)	Q1 '19	Q1 '20
Apple	54.4%	55.5%
Samsung	14.9%	13.9%
Garmin	7.0%	8.0%
Others	23.7%	22.6%
Total	100.0%	100.0%

Total Growth: Year-over-Year (%)	37.7%	20.2%
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CLICK ON IMAGE TO ENLARGE

Smartwatch prices



APPENDIX

FRAMEWORKS

Situation-Complication-Question (SCQ)

SITUATION

Apple Inc. is an American multinational technology company headquartered in Cupertino, California, that designs, develops, and sells consumer electronics, computer software, and online services.

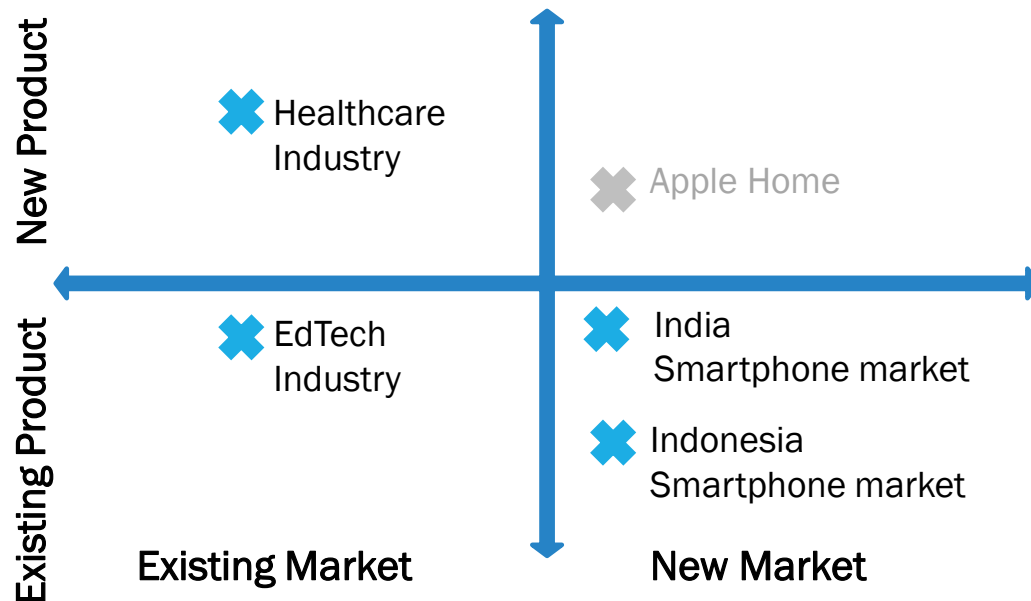
COMPLICATION

Apple is highly dependent on the iPhone as its main revenue generator, even as it faces stiff competition from the likes of Samsung and Huawei.

QUESTION

How do we achieve growth in Apple's consumer electronics business?

BCG's Strategy Framework: How do we achieve growth in Apple's Consumer Electronics segment?



Hypothesis #1

Expanding iPhone ownership in emerging markets promotes growth for Apple consumer electronics

Hypothesis #2

Expanding Apple products and its applications beyond consumer usage in niche markets to generate new growth

Strengths and Weaknesses analysis

STRENGTHS

- Strong brand name
- Easy to use
- Seamless connection with other Apple products
- Strong firewall as compared to its other competitors
- Consumer loyalty (Good ecosystem)

WEAKNESS

- Expensive (impression)
- Monopolistic
- America-centric
- Inflexible