

## APPLE'S IPHONE IN INDIA: RINGING IN NEW FORTUNES?<sup>1</sup>

*Tulsi Jayakumar wrote this case solely to provide material for class discussion. The author does not intend to illustrate either effective or ineffective handling of a managerial situation. The author may have disguised certain names and other identifying information to protect confidentiality.*

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On September 7, 2016, Tim Cook, chief executive officer (CEO) of Apple Inc. (Apple), prepared to deliver his keynote address at the launch of the new version of Apple's flagship product, the iPhone 7. The new product was being launched two years after its predecessor models, the iPhone 6 and iPhone 6S. Apple had termed it "the best, most advanced iPhone ever"<sup>2</sup> and priced it at three times its cost.<sup>3</sup> However, Cook was worried. Amid a global slowdown in the smartphone market, Apple witnessed an 18 per cent year-on-year dip in iPhone revenue in the first calendar quarter (Q1) of 2016.<sup>4</sup> Consequently, Apple's revenues declined for the first time in 13 years. The company had leapfrogged to become the market leader in the smartphone market in Q4 of 2014 with the launch of the iPhone 6 and 6 Plus. However, it trailed to second position in fiscal year (FY) 2016 with a 14.4 per cent market share.<sup>5</sup> This number was way behind the Samsung Group's 20.5 per cent share of the smartphone market in 2016.<sup>6</sup>

A multitude of factors had caused a dip in iPhone sales in the United States and China—Apple's key markets. Apple was now eyeing India, the world's third largest smartphone market, to replicate its China growth story.<sup>7</sup> The India launch of the iPhone 7 was planned for a month later, on October 7, 2016. The base model would be priced at ₹60,000<sup>8</sup> (over US\$900<sup>9</sup>), about 39 per cent greater than the iPhone price in the United States.<sup>10</sup>

Would Apple's pricing strategy be effective in a market like India? Did Apple have the pricing power<sup>11</sup> to charge more than three times the cost of the iPhone in the Indian market? How could Apple grow its revenues and profits in one of the world's fastest growing smartphone markets?

### GLOBAL MARKET FOR SMARTPHONES

The global market for smartphones was experiencing a slowdown in 2016, with growth predicted to drop to 7 per cent from the 14.4 per cent rate experienced in FY 2015.<sup>12</sup> The reasons for this slowdown included a saturation in the mature, developed markets of North America, Western Europe, Japan, and the Asia Pacific, with a penetration of 90 per cent achieved in these markets.<sup>13</sup> At the same time, the replacement demand in these markets was weak, with even premium consumers choosing to postpone upgrades and extend the lifecycle of their existing phones to 2.5 years.<sup>14</sup>

In 2016, the Chinese economy—one of the world’s largest smartphone markets—slowed down considerably from its double-digit growth figures in the previous three decades. Chinese gross domestic product grew at 6.7 per cent in each of the first three quarters of 2016–17, which was the slowest growth rate in China in seven years.<sup>15</sup> China, with a strong middle class of more than 100 million, offered significant opportunities for iPhones when Apple entered the country in 2009.<sup>16</sup> However, Chinese smartphone sales plateaued in 2015<sup>17</sup> and declined by 5 per cent year-on-year in Q1 of 2016.<sup>18</sup>

Despite this decline in the smartphone market, domestic Chinese manufacturers of premium Android-based phones used value pricing to grow their market shares in China. Two companies that grew their market shares significantly were OPPO Electronics Corp. and Vivo, both owned by Guangzhou-based BBK Electronics Corporation Ltd. (BBK). Well-designed phones using the latest technology such as AMOLED screens,<sup>19</sup> advanced camera technology, and hi-fi audio components, but priced below iPhones, helped the two companies capture market share not only in China but also in India and Southeast Asia. The promotional strategy included aggressive advertising campaigns using celebrities for marketing and offline sales channels to reach prospective customers. The phones were targeted mainly at Tier 2 cities and rural areas.<sup>20</sup> BBK also manufactured and sold a third smartphone under the brand name OnePlus, comprising phones with attractive designs and 90 per cent of the features of top phones like Samsung, at half the price.<sup>21</sup>

The rise in the combined market share of Oppo and Vivo to about 31.6 per cent in 2016 in China—the world’s largest smartphone market in terms of sales—had a negative effect on Apple’s market share in China. Apple’s share was reduced to 9.6 per cent in 2016 compared to 13.6 per cent in 2015.<sup>22</sup> More importantly, iPhone revenues from China—Apple’s key and fastest growing market—were down 26 per cent in Q1 of 2016.<sup>23</sup>

In addition, Apple was facing significant intellectual property challenges in China. In May 2016, a Beijing court ruled that a small Chinese manufacturer, Xintong Tiandi Technology, could continue to use the brand name “iPhone” on a variety of leather mobile accessories, including phone cases and wallets. The Chinese manufacturer had registered its trademark in China in 2007 about two years before Apple started selling its iconic brand in China and held the trademark in China to sell these products. Apple had tried to prevent the use of the iPhone brand name since 2012 but failed.<sup>24</sup> In June 2016, to add to Apple’s woes in China, Shenzhen-based company, Shenzhen Baili Marketing Services Co., claimed that Apple copied the look of its 100C smartphone. Consequently, a local court ordered Apple to stop selling the iPhone 6 and iPhone 6 Plus in Beijing.<sup>25</sup>

## INDIA’S MARKET FOR SMARTPHONES

In 2016, India had 20 per cent of all mobile phone subscribers in the world and was expected to be the fastest-growing market for mobiles until 2020.<sup>26</sup> Most of the growth in the mobile market was expected to be in the smartphone segment, with India predicted to be one of the major growth markets for smartphones.<sup>27</sup> In Q1 of 2016, it was predicted that by 2017 India would overtake the United States to become the second-largest smartphone market behind China.<sup>28</sup> India was also expected to grow five times faster than China in its demand for smartphones.<sup>29</sup>

In 2016, the Indian market for smartphones resembled the Chinese smartphone market five to six years earlier, during its growth phase. The shipment to India in 2015 of 104 million smartphones was comparable to the shipment to China in 2011 of 92 million smartphones. A market survey found that 4 per cent of Indians owned a smartphone in January 2016, compared to the 4.6 per cent of Chinese consumers who

owned an iPhone in 2009.<sup>30</sup> Apple grew its market share of \$400-plus smartphones in China from 30 per cent in 2010 to 74 per cent in 2015. It was predicted that India could be the next China for Apple.<sup>31</sup>

### **Drivers of the Smartphone Market in India**

India appeared to be on the cusp of a smartphone revolution led by several factors.

#### *Large Proportion of Non-Users*

Of the overall Indian population of 1.324 billion in 2016, the number of mobile phone users was estimated to be 650 million. Of these, only about 300 million owned smartphones. These figures meant there was a large proportion of Indians who did not own a smartphone.<sup>32</sup>

#### *Large Youth Population*

India, with its large population of youth and people in the working age groups, posed lucrative options for smartphone manufacturers. The 2011 census put the proportion of India's youth (15–24 years) at 19.1 per cent of the total population.<sup>33</sup> Around 41 per cent of India's population was in the less-than-20 age group, while half of India's population was in the 20–59 age group.<sup>34</sup>

#### *Internet Use in India*

Smartphones provided a point of entry to the internet, the use of which was growing in India. In September 2016, 31 per cent of the Indian population—an estimated 420 million—were internet users. Looking at internet penetration in a disaggregated manner, almost 60 per cent of India's urban population were internet users, while internet penetration in rural India was only 17 per cent of the 906 million rural population.<sup>35</sup> Thus, there was a potential of approximately 750 million users in rural India who could be transformed into Internet users.

Indians, across all demographics, preferred smartphones over devices such as desktops or laptops to access the internet. In fact, 77 per cent of urban users and 92 per cent of rural users relied on their mobiles for internet access. Urban consumers used the internet for email, online communication, and social networking, while rural Indians used it primarily to access online entertainment. The increased use of the internet in urban India for casual use, rather than official purposes, was likely to drive increased smartphone use. Rural India, where penetration of desktops and laptops was historically low, was also expected to further adopt mobiles for internet use.<sup>36</sup>

#### *Increasing Growth in the Market for Apps and Gaming*

In 2016, India's mobile application (app) market grew faster than the U.S. app market. The United States was the long-standing market leader in mobile apps and ranked first in terms of Google Play downloads. Indians downloaded over 6 billion Android-based apps in 2016, for 71 per cent growth over 2015.<sup>37</sup> The growth in app downloads around the world over the same period was much lower, at only 15 per cent.<sup>38</sup>

Globally, a smartphone user was found to use about 30 apps per month. India, Brazil, and China ranked as the three top users of apps, based on monthly usage patterns.<sup>39</sup> Indians, despite the high data costs and poor connectivity, not only downloaded the most apps in 2016 but also spent the maximum time on their Android devices. An average Indian user spent about 155 minutes per day on apps.<sup>40</sup> Further, in 2016, Indians spent the maximum time (145 billion hours) on their Android devices, leaving the Brazilians in second spot at 110 billion hours. However, most of the downloaded apps were Android-based. India did not feature in the top 10 countries in the world for iOS downloads or time spent on iPhones.<sup>41</sup>

The video streaming app Netflix topped the revenue-generating apps, followed by the online dating app Tinder and the professional networking app LinkedIn.<sup>42</sup> From July to December 2016, the total time spent by Indians on the top 10 video streaming apps, including Hotstar and Netflix on Android phones, increased by 600 per cent, compared to July to December 2015.<sup>43</sup>

The mobile gaming industry was another big driver for app downloads and revenues. The \$200 million mobile gaming market in India in 2016 was expected to grow to \$3 billion by 2019. In 2016, the CEO of a top gaming company commented on the growth of India's gaming industry: "Mobile gaming has taken off in India with 2.5 billion game downloads over the last 12 months. Of the 20 apps that are downloaded by smartphone users within the first month of purchase, five are games."<sup>44</sup>

## Features of the Indian Smartphone Market

### *Challenging and Growing Competition*

The barriers to entry in the Indian smartphone market were low. Small players who could differentiate themselves on price or non-price features had a good chance to grow. The Indian smartphone market consisted of more than 100 brands, with stiff competition among them.<sup>45</sup> From January to March 2016, Samsung was the top player in the market, with a 29 per cent market share; Micromax Informatics Limited (Micromax), with a 17 per cent market share, was second. Other players included Intex Technologies Ltd. (Intex), Lava International Limited, and Lenovo Group Limited, with 10 per cent, 6.8 per cent, and 5 per cent market shares, respectively.<sup>46</sup> Apple, with a 1.9 per cent market share, was not even among the top five.<sup>47</sup>

By June 2016, Chinese smartphone brands—including OPPO, Vivo, and Gionee—had gained significant market share in India through aggressive marketing and retail strategies. These strategies included 5–6 per cent higher margin payouts to retailers than other mainstream brands, and higher payments to stores for display space and branding. These Chinese brands made significant investments in product service and offered a cheaper product price for comparable quality, which had a positive impact on their revenues. Thus, the April–June quarter of 2016 witnessed a growth of 42 per cent for OPPO, 201 per cent for Vivo, and 99 per cent for Gionee. Meanwhile, during the quarter ending June 2016, Samsung's share slipped to 25.6 per cent, Micromax's share slipped to 14.1 per cent, and Intex's share slipped to 8.5 per cent.<sup>48</sup>

### *Languages and Smartphone Adoption*

One major challenge to the growth in smartphone adoption was that most phones sold in India came with English-language operating system software. It was true that with 125 million English speakers, India was second only to the United States as an English-speaking nation. However, only one in every 10 Indians considered English as their first, second, or third language. India was a nation with over 1,600 dialects in

30 languages, spoken by more than a million native speakers each. The Indian constitution recognized 22 languages as official Indian languages. It was these local language speakers who represented the present and future of both internet use and smartphone adoption in India.<sup>49</sup>

A KPMG-Google report pointed out that Indian language internet users grew from 42 million in 2011 to 234 million in 2016. The number of English internet users, on the other hand, was only 175 million in 2016. Indian language internet users were likely to grow at a compound annual growth rate (CAGR) of 18 per cent to reach 536 million in 2021, as opposed to a 3 per cent CAGR in English users. Further, nine out of 10 new internet users in India in the next five years were likely to be Indian language users.<sup>50</sup>

The report found that nearly 70 per cent of Indians, including both urban and rural Indians, considered local language digital content more reliable than English content. Most Indian language internet users preferred Hindi, the national language of India. However, by 2021, only 38 per cent of the Indian language internet user base was likely to be Hindi-speaking. The remaining percentage would comprise internet users using multiple Indian local regional languages such as Marathi, Bengali, Tamil, and Telugu.<sup>51</sup>

The report also pointed out that apps and web categories—including payments, government services, news, and classifieds—were expected to grow at a CAGR of 26–34 per cent between 2016 to 2021, as local language integration improved. Of the shoppers who preferred traditional offline channels, 50 per cent were willing to shift online if provided with an end-to-end Indian language experience.<sup>52</sup> Indian companies like Indus OS were using this opportunity to create operating systems in multiple Indian languages. These systems were being used by top Indian brands such as Micromax.<sup>53</sup>

#### *Low Per Capita Income and High Price Sensitivity of Indians*

The average annual per capita income in India in 2016, at \$1,570.00, was far lower than China's \$6,894.50 per capita income.<sup>54</sup> Indians were price sensitive, with a high price elasticity of demand.<sup>55</sup> This price sensitivity was partly cultural. People were less willing to spend on expensive phones because of their desire to switch phones regularly, given the wear and tear associated with the pollution and humidity in India. Such price sensitivity would impact the price that could be charged through the price elasticity of demand.<sup>56</sup>

The average price of an iPhone in India in 2016 was \$612. In contrast, the average price of a Samsung phone—the market leader—was \$173, and Micromax was \$86. According to an analyst, 86.5 per cent of all smartphones shipped to India in 2015 retailed for under \$200.<sup>57</sup> Apple's competitors offered better functionality at lower prices.

#### *Low Internet Penetration and Limited Availability of LTE and 4G<sup>58</sup>*

India was characterized by low internet penetration and the limited availability of LTE and/or 4G technology.<sup>59</sup> In 2016, over 66 per cent of the 1.3 billion population did not have access to the internet. The challenge for mobile devices connecting to the internet was the lack of real-time connectivity. This lack of connectivity could be attributed to the lack of power needed to charge mobiles frequently, together with the high price of mobile data and lack of quality service.<sup>60</sup> Because of these issues, customers were reluctant to buy premium smartphones.

*Preference for Android Phones*

The Indian smartphone market was largely a market for Android phones. In Q2 of 2016, Androids accounted for 97 per cent of the Indian smartphone operating system market share, compared to Apple iOS's share of 2.4 per cent and 0.5 per cent for others. The comparable shares in Q2 of 2015 were 90 per cent Android, 5.5 per cent Apple iOS, and 4.5 per cent others. This change in the market share was also reflected in the Indian smartphone operating system shipments between Q2 of 2015 and Q2 of 2016. Thus, Android smartphone shipments to India grew 28 per cent annually to reach a figure of 29.8 million in Q2 of 2016, compared to a 35 per cent fall in Apple iOS shipments to 0.8 million in Q2 of 2016.<sup>61</sup>

The Android dominance was explained by an analyst: "Android dominates the India smartphone market and looks unbeatable right now, due to its deep portfolio of hardware partners, extensive distribution channels, and a wide range of low-cost apps like Gmail."<sup>62</sup>

*Smartphone Brand Awareness and Satisfaction*

Brand awareness and satisfaction were the key factors affecting purchases in a growing market. A brand awareness survey of 2,626 smartphone buyers in India by Morgan Stanley in April 2016 revealed that nearly half of the respondents were unfamiliar with the Apple brand. Out of 12 smartphone companies in India, Apple ranked 10th in brand awareness, just ahead of Motorola Mobility and HTC Corporation.<sup>63</sup> Such brand awareness was to be distinguished from brand satisfaction for a product. The latter would affect the purchase intentions of smartphones and be critical in a market with low smartphone penetration and high potential for growth. Globally, camera quality, screen size, and resolution were the key purchase drivers. However, smartphone sellers in India needed to understand whether these drivers were indeed the critical factors affecting brand satisfaction in a country like India.

*Policies Affecting Smartphones*

The Indian government's "Make in India" campaign, launched in 2014, was aimed at encouraging national and multinational companies to manufacture their products in India, and to transform India into a global design and manufacturing hub.<sup>64</sup> The government sought to boost the indigenous manufacture of mobile handsets, including smartphones. In the Union Budget 2015–16, it imposed a 12.5 per cent countervailing duty on mobile phone imports, while fixing a 1.0 per cent excise duty on domestic mobile manufacturers without an input tax credit (or 12.5 per cent with an input tax credit<sup>65</sup>). Such a differential excise duty was aimed at providing a level playing field to domestic mobile manufacturers—who faced stiff price competition from imported mobile components or finished goods players—and to encourage the assembly, programming, testing, and packaging of mobile phones in India.

As a result of such policies, there was a sharp increase in mobile manufacturing facilities in India, to almost 50, with a combined production output of 180 million units in 2016. Simultaneously, the value of handset manufacturing in India grew almost three times between 2014–15 and 2015–16.

Locally manufactured mobile phones in India grew their market share from 14 per cent in 2014 to 67 per cent in 2016, at the cost of imported mobile phones. This market share was estimated to reach 96 per cent by 2020.<sup>66</sup>

One policy initiative that was likely to clash with the smartphone makers' mission/vision statements, especially that of Apple, was the Aadhar initiative. The initiative was introduced in July 2016 as mandatory under the *Aadhar Act, 2016*.<sup>67</sup> It sought to assign every registered Indian citizen a unique identification number, called Aadhar, based on the collection of biometric information—including fingerprints and iris scans. Increasingly, access to various government services such as subsidies, health care, education, opening a bank account, and possessing a mobile phone was to be linked to the allotment of an Aadhar number.

The government wanted smartphone makers to create devices for the domestic market that supported iris-based authentication technology. Samsung had integrated such technology into its smartphone sold in India—the Galaxy Tab Iris. However, the stance of U.S. technology companies regarding the government demands was not as positive. Apple, in particular, had a clear stance on customer privacy issues. It demonstrated this stance in February 2016 when it refused to build a universal backdoor to the iPhone, despite federal law enforcement requests to do so.<sup>68</sup> Thus, in July 2016, when the Unique Identification Authority of India, the statutory authority administering Aadhar, called a meeting with top smartphone makers to discuss developing Aadhar-compliant devices, Apple did not attend the meeting.<sup>69</sup>

### IPHONE: PRICING AND COSTS

In January 2007, Apple's CEO at the time, Steve Jobs, announced the iPhone launch. It was available in two models—a 4 gigabyte (GB) model and an 8 GB model, priced at \$499 and \$599 respectively. The iPhone combined “a revolutionary mobile phone, a widescreen iPod® with touch controls, and a breakthrough Internet communications device with desktop-class email, web browsing, searching and maps—into one small and lightweight handheld device.”<sup>70</sup> It completely redefined what users could do on their mobile phones.<sup>71</sup> From 2007 on, Apple launched a new version of the iPhone annually (see Exhibit 1). The iPhone 7, the latest model, was launched in September 2016 by Apple's CEO, Tim Cook, Jobs' successor.

Technology firms such as iSuppli and IHS Markit regularly calculated the teardown costs of the iPhone by actually tearing down a newly launched phone into its component parts and estimating the cost of each component, based on the manufacturer and the volume. Such estimates did not represent the actual costs borne by Apple. However, since Apple still had the power to negotiate costs with each manufacturer, they were considered fairly reliable estimates of the phones' overall manufacturing costs.<sup>72</sup> The costs did not include Apple's expenses on shipping, advertising and marketing, software research and development, and patent licensing.<sup>73</sup>

The pricing and teardown costs were available for the various iPhone models starting in 2007 (see Exhibit 2). The incorporation of different materials and components in different models accounted for differences in the bill of material costs for the iPhones. Together with the assembly costs, they represented the manufacturing costs per unit.

### *Apple's Overheads*

Apple's overhead expenses had been going up over the years, even as its revenues and profits increased (see Exhibit 3). Apple's advertising expenses amounted to \$467 million in 2007, \$486 million in 2008, and \$501 million in 2009. After 2010, advertising expenses exploded, with Apple reaching the \$1 billion mark on advertising spending in 2012.<sup>74</sup> In 2015, Apple increased its global advertising spend by about 50 per cent, to 1.8 billion.<sup>75</sup> In 2016, Apple stopped disclosing its advertising expenses. It chose to state in its annual report, “Advertising costs are expensed as incurred and included in selling, general and

administrative (SG&A) expenses”.<sup>76</sup> However, the advertising spending as a proportion of revenue continuously declined from 2008 up to 2014, before it increased in 2015.<sup>77</sup> It was not only the company’s advertising costs that went up; Apple’s SG&A expenses also increased (see Exhibit 3).

Apple had also been ramping up its spending on research and development (R & D) over the years. Analysts estimated that Apple’s R & D spending increased from \$4.77 billion in 2013 to \$10.39 billion in 2016. Such spending was expected to increase to \$12 billion in 2017 (see Exhibit 3).<sup>78</sup> The increase in R & D spending happened even as revenues from the iPhone business slid 18 per cent year-over-year to \$32.9 billion in the quarter ending March 2016. With iPad and Mac sales also falling, Apple’s overall revenue was down 13 per cent year-over-year in the same quarter. Analysts suggested that Apple was incurring increased R & D spending with a view to coming up with a new product to complement the iPhone as its “main growth engine.”<sup>79</sup> However, there was no clarity as to what the R & D spending was intended for.<sup>80</sup>

### *iPhone Pricing*

Apple followed a premium pricing strategy for the iPhone. The premiums were higher—not just for higher memory configurations, but also for the larger “phablet-sized” displays introduced in 2014. Thus, the 16 GB iPhone 6 Plus, introduced in 2014, was priced at \$100 more than the iPhone 6, although the cost difference per unit between the two worked out to only \$19.50.

In September 2016, Apple launched the iPhone 7 and iPhone 7 Plus. The 32 GB iPhone 7 incorporated components costing \$219.80. Together with \$5 of assembly costs, the overall cost of the iPhone 7, which was priced at \$649 in the United States, worked out to \$224.80. Part of the higher material costs could be attributed to the higher 32 GB storage as the base level, costing \$16.40 per iPhone sold. Other costs contributing to the increased material cost included the chip, estimated at \$26.90; the display, estimated at \$43; and the device’s two cameras, at approximately \$19.90 per phone.<sup>81</sup>

There were global disparities in iPhone prices, with consumers in most countries having to pay far more than the price of an iPhone in the United States. As explained by an analyst, such price differentials depended on “exchange rates, import taxes, regional taxes and, in some cases, even seemingly unconnected rules like private copying levies.”<sup>82</sup>

Apple planned to launch the iPhone 7 and iPhone 7 Plus in India on October 7, 2016. It announced the price of its base model (the 32 GB version) at ₹60,000, which (at an exchange rate of ₹66.62 per US\$1 in October 2016) worked out to over \$900 per unit for the base model.<sup>83</sup> A study by research and advisory firm Gartner Inc. indicated that the average selling price of a smartphone in India was \$120 or less.<sup>84</sup> The top 20 cheapest Android phones in India in 2016 cost anywhere from ₹1,749 (for the Swipe Konnect 3) to ₹2,999 (for the Karbonn A1 Plus Champ).<sup>85</sup>

## **APPLE’S PROFITS**

By 2016, Apple’s revenues, net profits, and net margins had all fallen (see Exhibit 4). A large part of this decline could be attributed to the fall in iPhone sales and revenue (see Exhibit 5). The year-on-year growth rates of both iPhone revenue and units sold had also fallen dramatically (see Exhibit 6).

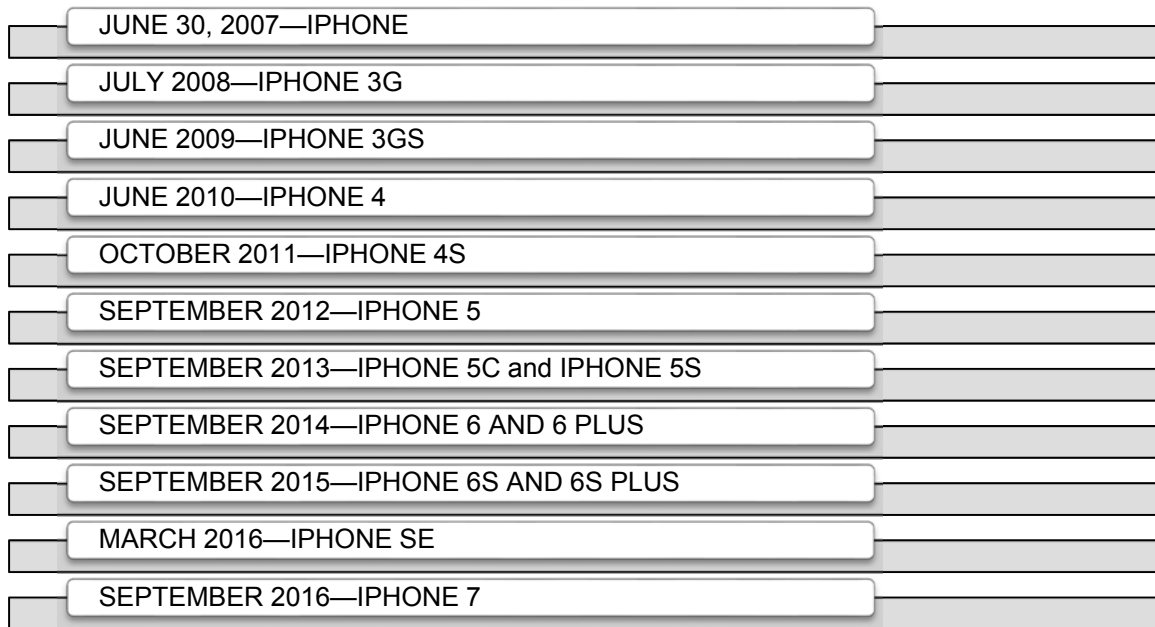
Yet, in 2016, while the total operating profits of the global smartphone industry stood at \$53.7 billion, Apple’s operating profits alone amounted to \$45.7 billion—79.2 per cent of global smartphone profits. In



comparison, Samsung posted an operating profit of \$8.3 billion—14.6 per cent of global profits. Samsung's operating profit margin was 11.6 per cent, compared to Apple's operating profit margin of 32.4 per cent. Compared to Apple, Chinese smartphone makers experienced lower profitability, despite growing market shares. The share of Huawei Technologies, Co., Ltd., OPPO, and Vivo in 2016 in global profits were 1.6 per cent, 1.5 per cent, and 1.3 per cent, respectively.<sup>86</sup>

Analysts believed that the global smartphone market, while experiencing a low annual growth rate of only 2.5 per cent in 2016, would increase by 3 per cent to 1.5 billion units in 2017, buoyed by growth in emerging markets.<sup>87</sup> However, of the 1.5 billion units of smartphones expected to be sold in 2017, 85 per cent were expected to be Android powered.<sup>88</sup> Cook was aware that in Q2 of 2016, iPhone revenue from China—Apple's key and fastest growing market—were down 26 per cent year-on-year.<sup>89</sup> Meanwhile, iPhone sales in the price-sensitive Indian market had dipped by 33 per cent year-on-year.<sup>90</sup> This drop was against a 28 per cent annual growth in Android phone sales in India, from 23.2 million units in Q2 of 2015 to 29.8 million units in Q2 of 2016, with the Android market share increasing from 90 per cent to 97 per cent over the period. Correspondingly, Apple's smartphone market share in India almost halved from 4.5 per cent to 2.4 per cent between Q2 of 2015 and Q2 of 2016.<sup>91</sup> Yet, Cook was hopeful that India would prove to be “another giant market” for the iPhone.<sup>92</sup>

Would India bite into a relatively expensive Apple? Did Apple have the monopoly power to charge a price more than three times the cost of manufacturing the iPhone? What pricing strategy would Apple need to use in India for its iPhones to maximize its revenues and profits?

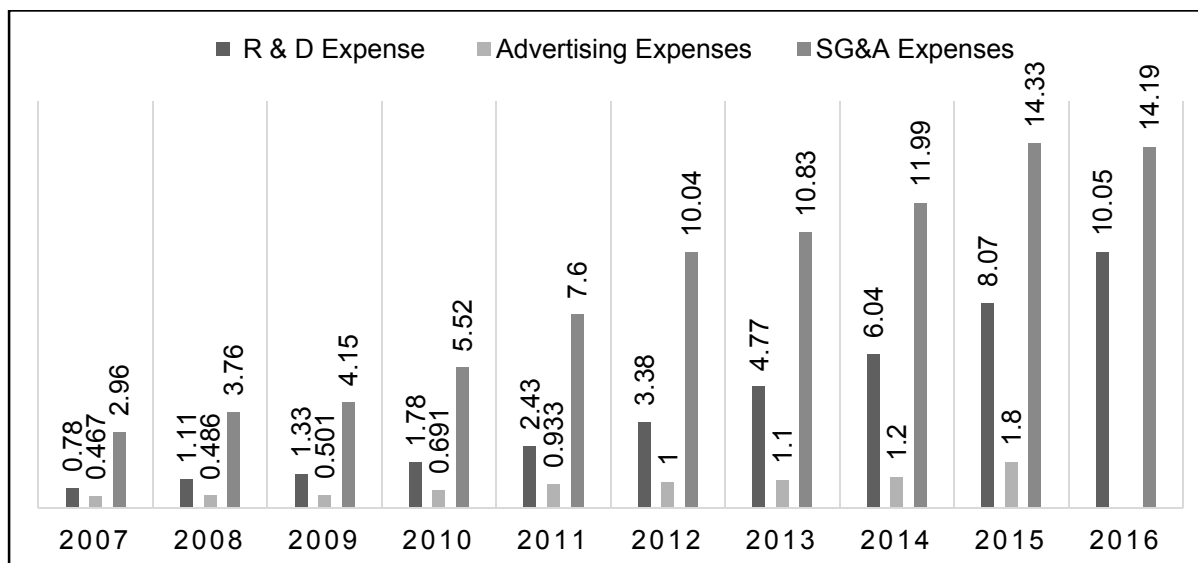
**EXHIBIT 1: TIMELINE OF IPHONE MODELS**

Source: Created by the author based on Dan Graham, "History of the iPhone 2007–2017," T3, September 7, 2016, accessed August 2, 2017, [www.t3.com/features/a-brief-history-of-the-iphone](http://www.t3.com/features/a-brief-history-of-the-iphone).

**EXHIBIT 2: IPHONE PRICING AND TEARDOWN COSTS (IN US\$)**

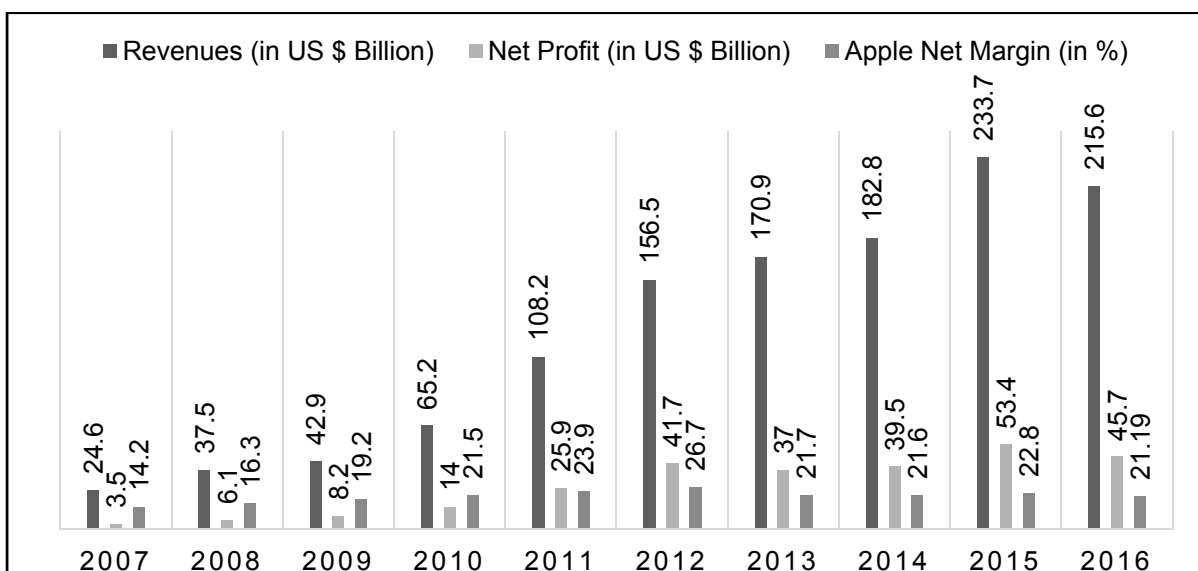
Year	Model	Full Price (Price/Unit in \$)	Bill of Material (BOM) Cost (\$/Unit)	Assembly Cost (\$/Unit)	Total BOM + Assembly Cost Per Unit (\$/Unit)
2007	iPhone 4 GB	499	200.00	7.00	207.00
	iPhone 8 GB	599	220.00	7.00	227.00
2008	iPhone 3G 8 GB	599	174.33	6.50	180.83
2009	iPhone 3 GS 16 GB	599	172.46	6.50	178.96
2010	iPhone 4 16 GB	599	187.51	8.00	195.51
2011	iPhone 4S 16 GB	649	188.00	8.00	196.00
	iPhone 4S 32 GB	749	207.00	8.00	215.00
	iPhone 4S 64 GB	849	245.00	8.00	254.00
2012	iPhone 5 16 GB	649	199.00	8.00	207.00
	iPhone 5 32 GB	749	201.00	8.00	209.00
	iPhone 5 64 GB	849	222.00	8.00	230.00
2013	iPhone 5S 16 GB	649	190.70	8.00	198.70
	iPhone 5S 32 GB	749	200.10	8.00	208.10
	iPhone 5S 64 GB	849	210.30	8.00	218.30
2014	iPhone 6 16 GB	649	196.10	4.50	200.60
	iPhone 6 Plus 16 GB	749	215.60	4.50	220.10
2015	iPhone 6S 16 GB	650	211.50	4.50	216.00
	iPhone 6S Plus 16 GB	749	231.50	4.50	236.00
2016	iPhone SE 16 GB	399	NA	NA	160.00
	iPhone SE 64 GB	499	NA	NA	170.00
	iPhone 7 32 GB	649	219.80	5.00	224.80

Source: Created by the author based on: Michael Arrington, "That \$599 iPhone Costs \$220 to Make," Tech Crunch, July 2, 2007, accessed July 7, 2017, <https://techcrunch.com/2007/07/02/that-599-iphone-costs-220-to-make/>; Sean Fallon, "iSuppli Official Estimate: The iPhone 3G Build Price is \$174.33," Gizmodo, July 15, 2008, accessed July 21, 2017, <http://gizmodo.com/5025546/isuppli-official-estimate-the-iphone-3g-build-price-is-17433>; Josh Ong, "iPhone 4S Breakdown Estimates Same \$188 Cost as iPhone 4," Appleinsider, October 19, 2011, accessed June 23, 2017, [http://appleinsider.com/articles/11/10/19/iphone\\_4s\\_breakdown\\_estimates\\_same\\_188\\_cost\\_as\\_iphone\\_4](http://appleinsider.com/articles/11/10/19/iphone_4s_breakdown_estimates_same_188_cost_as_iphone_4); Erica Ogg, "iPhone 4 Teardown Reveals \$188 Cost to Build," C Net, June 28, 2010, accessed July 23, 2017, [www.cnet.com/news/iphone-4-teardown-reveals-188-cost-to-build/](http://www.cnet.com/news/iphone-4-teardown-reveals-188-cost-to-build/); IHS Markit, "iPhone 3G S Carries \$178.96 BOM and Manufacturing Cost, iSuppli Teardown Reveals," press release, accessed July 23, 2017, <https://technology.ih.com/389273/iphone-3g-s-carries-17896-bom-and-manufacturing-cost-isuppli-teardown-reveals>; Joshua Topolsky, "AT&T Announces iPhone 3G Pricing Plans," Engadget, July 1, 2008, accessed July 17, 2017, [www.engadget.com/2008/07/01/atandt-announces-iphone-3g-pricing-plans/](http://www.engadget.com/2008/07/01/atandt-announces-iphone-3g-pricing-plans/); Wilson Rothman, "Real Cost of iPhone 3GS: About \$218 More than You Think," Gizmodo, June 8, 2009, accessed July 1, 2017, <http://gizmodo.com/5283568/real-cost-of-iphone-3gs-about-218-more-than-you-think>; IHS Markit, "iPhone 4 Carries Bill of Materials of \$187.51, According to iSuppli," press release, June 28, 2010, accessed July 5, 2017, <https://technology.ih.com/388916/iphone-4-carries-bill-of-materials-of-18751-according-to-isuppli>.

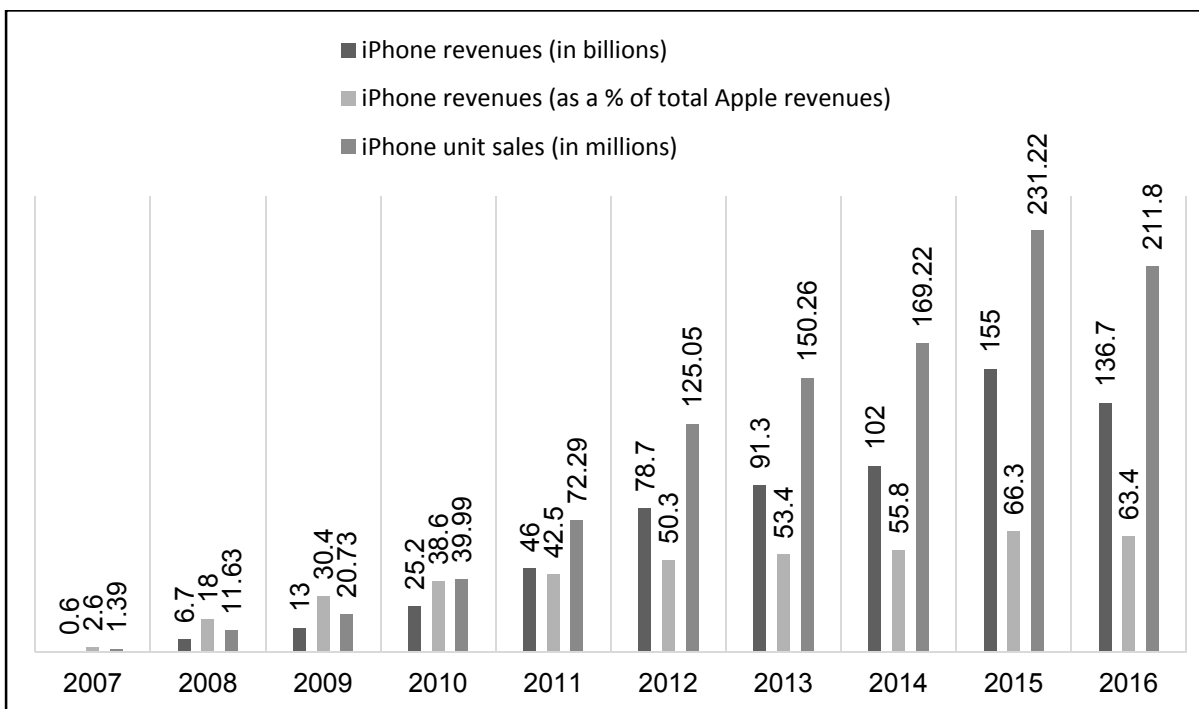
**EXHIBIT 3: APPLE'S OVERHEAD EXPENSES (IN US\$ BILLION), 2007–2016**

Note: The SG&A expenses refer to selling, general, and administrative expenses, and include advertising expenses.

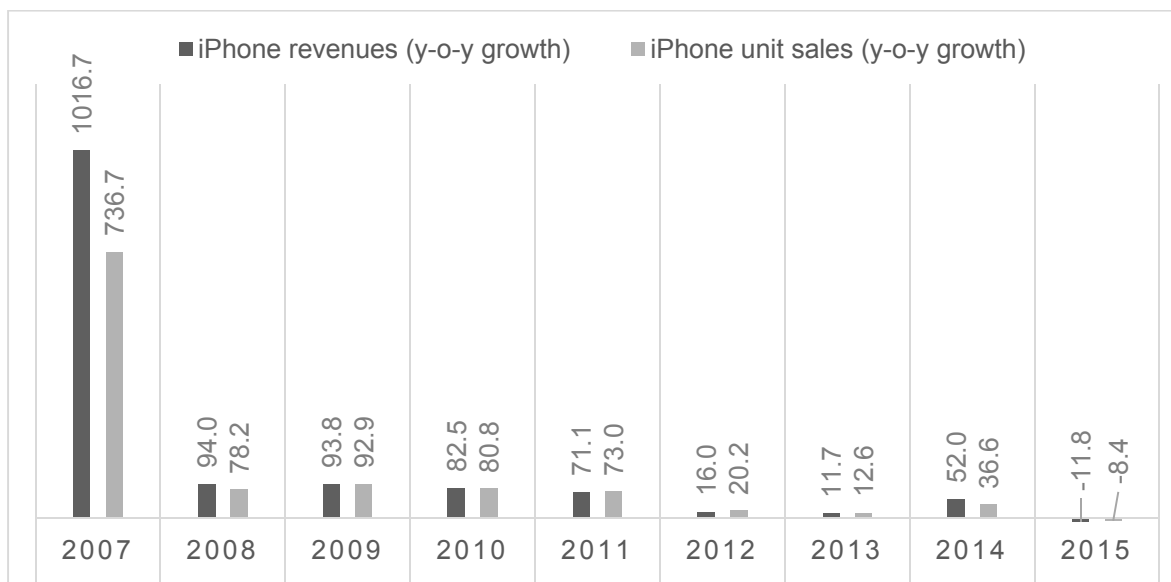
Source: Created by the author based on: Erik Sherman, "Apple's Ad Budget Hits \$1 Billion," CBS News, January 7, 2013, accessed July 26, 2017, [www.cbsnews.com/news/apples-ad-budget-hits-1-billion/](http://www.cbsnews.com/news/apples-ad-budget-hits-1-billion/); Gideon Spanier, "Apple Ad Spend Rises 50% to Record \$1.8 Billion," Campaign US, October 30, 2015, accessed July 12, 2017, [www.campaignlive.com/article/apple-ad-spend-rises-50-record-18-billion/1370742](http://www.campaignlive.com/article/apple-ad-spend-rises-50-record-18-billion/1370742); Lara O' Reilly, "Apple Mysteriously Stopped Disclosing How Much It Spends on Ads," Business Insider, November 24, 2016, accessed July 23, 2017, [www.businessinsider.in/Apple-mysteriously-stopped-disclosing-how-much-it-spends-on-ads/articleshow/55603459.cms](http://www.businessinsider.in/Apple-mysteriously-stopped-disclosing-how-much-it-spends-on-ads/articleshow/55603459.cms); "Apple Inc.," MarketWatch, accessed July 12, 2017, [www.marketwatch.com/investing/stock/aapl/financials](http://www.marketwatch.com/investing/stock/aapl/financials).

**EXHIBIT 4: APPLE'S REVENUES, NET PROFITS, AND NET MARGINS**

Source: Created by the author based on: Jitender Miglani, "Apple Revenues and Profits 2000 to 2015: Pre- and Post- iPhone," R&P Research, January 4, 2016, accessed July 29, 2017, <https://revenuesandprofits.com/apple-revenues-and-profits-2000-to-2015-pre-and-post-iphone/>; Rupert Neate, "Apple's Annual Profits Fall for First Time in 15 Years As iPhone Sales Decline," Guardian, October 25, 2016, [www.theguardian.com/technology/2016/oct/25/apple-profits-sales-decline-2016-iphone-7](http://www.theguardian.com/technology/2016/oct/25/apple-profits-sales-decline-2016-iphone-7); "Apple Inc.," Stock Analysis on Net, accessed July 29, 2017, [www.stock-analysis-on.net/NASDAQ/Company/Apple-Inc/Ratios/Profitability#Net-Profit-Margin](http://www.stock-analysis-on.net/NASDAQ/Company/Apple-Inc/Ratios/Profitability#Net-Profit-Margin).

**EXHIBIT 5: IPHONE REVENUE AND UNIT SALES**

Source: Created by the author based on: "Financial Information: 10-K Annual Report," Apple Inc. Investor Relations, accessed July 29, 2017, <http://investor.apple.com/financials.cfm>; Jitender Miglani; "Apple Revenues and Profits 2000 to 2015: Pre- and Post-iPhone," R&P Research, January 4, 2016, accessed July 29, 2017, <https://revenuesandprofits.com/apple-revenues-and-profits-2000-to-2015-pre-and-post-iphone/>.

**EXHIBIT 6: IPHONE REVENUE AND UNIT SALES YEAR-ON-YEAR (Y-O-Y) GROWTH**

Source: Created by the author based on "Financial Information: 10-K Annual Report," Apple Inc. Investor Relations, accessed July 29, 2017, <http://investor.apple.com/financials.cfm>.

## ENDNOTES

<sup>1</sup> This case has been written on the basis of published sources only. Consequently, the interpretation and perspectives presented in the case are not necessarily those of Apple Inc. or any of its employees.

<sup>2</sup> "Apple Introduces iPhone 7 and iPhone 7 Plus, the Best, the Most Advanced iPhone Ever," Apple Newsroom, September 7, 2016, accessed July 2, 2017, <https://www.apple.com/newsroom/2016/09/apple-introduces-iphone-7-iphone-7-plus/>.

<sup>3</sup> Alicia Adamczyk, "The iPhone 7 Costs You 3x More than It Costs Apple to Make," *Money*, September 26, 2016, accessed July 5, 2017, <http://time.com/money/4508221/iphone-7-mark-up-profit-margins/>.

<sup>4</sup> Elad Natanson, "2016: A Pivotal Year for the Smartphone Industry," *Forbes*, September 12, 2016, accessed July 2, 2017, <https://www.forbes.com/sites/eladnatanson/2016/09/12/2016-a-pivot/>.

<sup>5</sup> Chance Miller, "Latest Gartner Data Shows Apple Edge Out Samsung in Market Share During Q4 2016," 9To5Mac, February 15, 2017, accessed July 12, 2017, <https://9to5mac.com/2017/02/15/samsung-loses-market-share-to-apple-in-q4-2016/>.

<sup>6</sup> Ibid.

<sup>7</sup> Hope King, "Tim Cook Visits India for the First Time as Apple CEO," CNN Tech, May 18, 2016, accessed October 30, 2017, <http://money.cnn.com/2016/05/17/technology/tim-cook-india/index.html>; Thomas K. Thomas, "Apple Poised for Big Steps in India," *Hindu*, August 8, 2017, accessed October 31, 2017, [www.thehindu.com/sci-tech/technology/apple-poised-for-big-steps-in-india-tim-cook/article19452491.ece](http://www.thehindu.com/sci-tech/technology/apple-poised-for-big-steps-in-india-tim-cook/article19452491.ece).

<sup>8</sup> ₹ = INR = Indian rupee; US\$1 = ₹66.62 on October 7, 2016.

<sup>9</sup> All currency amounts are in US\$ unless otherwise specified.

<sup>10</sup> "Apple iPhone 7, iPhone 7 Plus to Launch in India on October 7, Price Starts at Rs 60,000," Gadgets Now, September 8, 2016, accessed November 5, 2017, <https://www.gadgetsnow.com/tech-news/Apple-iPhone-7-iPhone-7-Plus-to-launch-in-India-on-October-7-price-starts-at-Rs-60000/articleshow/54162947.cms>.

<sup>11</sup> Pricing power is what constitutes a firm's monopoly power in an imperfectly competitive market. Monopoly power refers to the extent to which a firm can charge a profit-maximizing price that is greater than its marginal cost of production. A measure of such monopoly power is the Lerner index of monopoly power, given by  $L = (P - MC) \div P = -1 \div E_d$ , where  $P$  = price,  $MC$  = marginal cost, and  $E_d$  = elasticity of demand facing the firm. The larger the value of  $L$ , the greater is the degree of monopoly power. The value of  $L$  lies between 0 and 1. For a perfectly competitive firm, since price equals the marginal cost,  $L = 0$ ; on the other hand, when  $MC = 0$  and the firm enjoys pure monopoly,  $L = 1$ . There are three factors that determine a firm's elasticity of demand and hence emerge as sources of monopoly power: the elasticity of market demand, the number of firms in the market, and the interaction among firms. Robert S. Pindyck, Daniel L. Rubinfeld, and Prem L. Mehta, *Microeconomics*, 7th edition (New Delhi: Pearson, 2012), Chapter 9, 305–306.

<sup>12</sup> Natanson, op. cit.

<sup>13</sup> "Gartner Says Worldwide Smartphone Sales to Slow in 2016," Gartner Newsroom, June 7, 2016, accessed July 21, 2017, [www.gartner.com/newsroom/id/3339019](http://www.gartner.com/newsroom/id/3339019).

<sup>14</sup> Gartner Newsroom, op. cit.

<sup>15</sup> PTI, "World Worried over China's Economic Slowdown," *Hindu*, April 18, 2016, accessed July 21, 2017, [www.thehindu.com/business/Economy/World-worried-over-China-s-economic-slowdown/article14242411.ece](http://www.thehindu.com/business/Economy/World-worried-over-China-s-economic-slowdown/article14242411.ece); "China's Economy Grows 6.7% in 2016," BBC News, January 20, 2017, accessed July 5, 2017, [www.bbc.com/news/business-38686568](http://www.bbc.com/news/business-38686568).

<sup>16</sup> Josh Horwitz, "Now Comes the Hard Part for Apple in China," Quartz, April 26, 2016, accessed July 22, 2017, <https://qz.com/670460/now-comes-the-hard-part-for-apple-in-china/>.

<sup>17</sup> Ibid.

<sup>18</sup> Natanson, op. cit.

<sup>19</sup> AMOLED refers to active-matrix organic light-emitting diode. AMOLED screens are different from LCD displays. Robert Triggs, "AMOLED vs LCD: Differences Explained," Android Authority, February 8, 2016, accessed July 22, 2017, [www.androidauthority.com/amoled-vs-lcd-differences-572859/](http://www.androidauthority.com/amoled-vs-lcd-differences-572859/).

<sup>20</sup> Jon Russell, "Oppo Topped China's Smartphone Market in 2016, as Apple Recorded First Annual Decline," *Tech Crunch*, February 5, 2017, accessed July 2, 2017, <https://techcrunch.com/2017/02/05/oppo-topped-chinas-smartphone-market-in-2016/>; Natanson, op. cit.

<sup>21</sup> Natanson, op. cit.; Luis D., "Did You Know—Smartphone Makers OnePlus, Oppo, and Vivo Are All Owned by the Same Company," PhoneArena, June 21, 2016, accessed July 3, 2017, [https://www.phonearena.com/news/Did-you-know---smartphone-makers-OnePlus-Oppo-and-Vivo-are-all-owned-by-the-same-company\\_id82439](https://www.phonearena.com/news/Did-you-know---smartphone-makers-OnePlus-Oppo-and-Vivo-are-all-owned-by-the-same-company_id82439).

<sup>22</sup> Russell, op. cit.

<sup>23</sup> Natanson, op. cit. In Q3 2016, China was displaced as Apple's second largest market in the world by Europe. Alison Griswold, "China Already Lost Its Title as Apple's Second-Biggest Market," Quartz, July 26, 2016, accessed July 5, 2017, <https://qz.com/742760/china-already-lost-its-title-as-apples-second-biggest-market/>.

<sup>24</sup> Sophia Yan and Serena Dong, "Apple Loses 'iPhone' Wallets Lawsuit in China," CNN Tech, May 4, 2016, accessed July 7, 2017, <http://money.cnn.com/2016/05/04/technology/apple-trademark-lawsuit-china/>.

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- <sup>28</sup> Alice Truong, “India Could Be Apple’s Next China,” Quartz, April 24, 2016, accessed June 30, 2017, <https://qz.com/668505/india-could-be-apples-next-china/>.
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- <sup>35</sup> IMAI & Kantar IMRB Report, *Internet in India—2016*, March 2017, accessed November 1, 2017, <http://bestmediainfo.com/wp-content/uploads/2017/03/Internet-in-India-2016.pdf>.
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- <sup>37</sup> However, with Apple capturing less than 3 per cent of the Indian smartphone market, India did not feature in the top 10 countries for iOS downloads or time spent on the devices. Ananya Bhattacharya, “More Android Apps Are downloaded in India than Anywhere Else in the world,” Quartz, January 17, 2017, accessed November 4, 2017, <https://qz.com/886985/india-logged-the-most-android-app-downloads-and-usage-in-2016/>.
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- <sup>39</sup> Ibid.
- <sup>40</sup> Mohul Ghosh, “App Stats: Indians Are 5th Biggest User Base of Apps; Globally 1 Trillion Hours of App Usage Recorded in 2016,” Trak.in, May 4, 2017, accessed November 4, 2017, <http://trak.in/tags/business/2017/05/04/indian-mobile-app-usage-statistics/>.
- <sup>41</sup> Bhattacharya, op. cit.
- <sup>42</sup> Choudhary, op. cit.
- <sup>43</sup> Ibid.
- <sup>44</sup> Mobile Ecosystem Forum, op. cit.
- <sup>45</sup> Iyengar, op. cit.
- <sup>46</sup> Gulveen Aulakh and Writankar Mukherjee, “Oppo, Vivo & Gionee Gain Significant Market Share at the Cost of Samsung, Micromax & Intex,” *Economic Times*, August 5, 2016, accessed July 23, 2017, <http://economictimes.indiatimes.com/tech/hardware/oppo-vivo-gionee-gain-significant-market-share-at-the-cost-of-samsung-micromax-intex/articleshow/53549573.cms>.
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- <sup>49</sup> Leo Mirani, “Why Language Is the Key to Winning India’s Mobile Market,” Quartz, February 26, 2013, accessed November 4, 2017, <https://qz.com/56259/language-is-the-key-to-winning-indias-mobile-market/>. One out of four Indians, in fact, can neither read nor write.
- <sup>50</sup> A Study by KPMG in India and Google, *Indian Languages—Defining India’s Internet*, April 2017, accessed November 4, 2017, <https://assets.kpmg.com/content/dam/kpmg/in/pdf/2017/04/Indian-languages-Defining-Indias-Internet.pdf>.
- <sup>51</sup> Ibid.
- <sup>52</sup> Ananya Bhattacharya, “India’s Internet Users Have More Faith in Content That’s Not in English,” Quartz, May 2, 2017, accessed November 1, 2017, <https://qz.com/972844/indias-internet-users-have-more-faith-in-content-thats-not-in-english-study-says/>.
- <sup>53</sup> Iyengar, op. cit.
- <sup>54</sup> Horwitz, op. cit.; “China GDP Per Capita,” Trading Economics, accessed November 1, 2017, <https://tradingeconomics.com/china/gdp-per-capita>.
- <sup>55</sup> Price elasticity of demand refers to the responsiveness of the quantity demanded of a commodity to a change in its price, all other things remaining constant. A high price elasticity (value > 1) means that any increase in the price of the commodity will lead to a more than proportionate fall in the quantity demanded of the commodity, all other things remaining the same.
- <sup>56</sup> The rule of thumb for pricing is  $P = MC \div [1 + (1 \div E_d)]$ . Thus, the price that can be charged depends on the elasticity of demand faced by the firm. Three key factors determine a firm’s elasticity of demand and hence emerge as the source of monopoly power: the elasticity of market demand, the number of firms in the market, and the interaction among firms. The elasticity of market demand limits the potential monopoly power of individual firms since a firm’s  $E_d$  will always be greater than

the elasticity of market demand. The more firms, the greater the closeness of substitutes available and hence the more elastic the firm's demand. Finally, the keener the competition among existing firms and the more aggressive the pricing strategies, the more elastic the firm demand is and the lower the firm's monopoly power. Students can also revise the concept of elasticity of demand, which refers to the responsiveness of quantity demanded of a commodity to changes in its price. Elasticity of demand, as calculated using the Arc method, is given by  $E_d = [(Q_2 - Q_1) \div (P_2 - P_1)] \div [(P_1 + P_2) \div (Q_1 + Q_2)]$ . Pindyck, Rubinfeld, and Mehta, op. cit.

<sup>57</sup> Mody, op. cit.

<sup>58</sup> LTE stands for long-term evolution and refers to the path followed to achieve 4G speeds. Unlike 4G technology, which adheres to a set of speed and connection standards, the regulating body ITU-R decided that LTE, the name given to the technology used in pursuit of those standards, could be labelled 4G if it provided a substantial improvement over the 3G technology. Brad Bourque, "What's the Difference between 4G and LTE?" Digital Trends, April 5, 2017, accessed July 23, 2017, <https://www.digitaltrends.com/mobile/4g-vs-lte/>.

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<sup>63</sup> Truong, op. cit.

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<sup>69</sup> Harriet Taylor, "How India Is Shaping the Global Smartphone Market," CNBC, September 21, 2016, accessed November 5, 2017, <https://www.cnbc.com/2016/09/21/how-india-is-shaping-the-global-smartphone-market.html>.

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<sup>71</sup> Ibid.

<sup>72</sup> However, Apple itself derided the credibility of such analyses involving third party bill-of-material costs. In fact, Apple's chief financial officer, when asked about the cost structure of the iPhone 4, stated, "Let me begin by suggesting that you don't put a lot of credence in these third-party reports that you see. It's always amazing to me the cost categories and the components that never seem to make it into the reports." Josh Ong, "iPhone 4S Breakdown Estimates Same \$188 Cost as iPhone 4," Appleinsider, October 19, 2011, accessed June 23, 2017, [http://appleinsider.com/articles/11/10/19/iphone\\_4s\\_breakdown\\_estimates\\_same\\_188\\_cost\\_as\\_iphone\\_4](http://appleinsider.com/articles/11/10/19/iphone_4s_breakdown_estimates_same_188_cost_as_iphone_4).

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<sup>76</sup> Companies can show their advertising spends as merged with the selling, general, and administrative expenses figure. Most companies prefer not to share advertising spend data with competitors. Lara O' Reilly, "Apple Mysteriously Stopped Disclosing How Much It Spends on Ads," Business Insider, November 24, 2016, accessed July 23, 2017, [www.businessinsider.in/Apple-mysteriously-stopped-disclosing-how-much-it-spends-on-ads/articleshow/55603459.cms](http://www.businessinsider.in/Apple-mysteriously-stopped-disclosing-how-much-it-spends-on-ads/articleshow/55603459.cms).

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