

How to make the impossible mission possible?

February 26, 2019

Two roads diverge in the triathlon track

- Xiaomi today as a regional and marketing innovator faces an uphill battle against Huawei, a global and technology innovator. Yet Xiaomi's user base, Internet root and brand loyalty are its key strength. As Internet-Of-Things (IOT) taking root, the battle ground will shift to Xiaomi's favour;
- We suggest Xiaomi to focus on two areas to enhance its valuation: (1) developing Internet content, (2) spending on R&D. Both require a healthy cash flow, which makes margin and profitability improvement imperative;
- Given Xiaomi's near-term challenges as a global company, we rate the stock a HOLD with a TP of HK\$14.55. Xiaomi's brand, *Mi*, stands for Mission Impossible.

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Xiaomi Inc. (HK: 1810)

Making the impossible mission possible

- We initiate Xiaomi with a HOLD rating and TP of HK\$14.55 because we believe Xiaomi still need to hone its skills as either a technology champion like Huawei, or a platform+content powerhouse like Tencent, or both;
- Xiaomi's near-term challenge is to achieve greater profitability so that it can further build up Internet services and play in the technology top league;
- Global expansion and content are opportunities. Reasonable valuation is plus.

Becoming Huawei or Tencent will unleash Xiaomi's value

Xiaomi is not only a technology company, it is also a brand, demographic, channel and investment company. Its product strategy as a cutting-edge partner of the smartphone's Android-ARM ecosystem is solid and its company strategy of acquiring users first and monetizing them later is sound. However, these are not enough. Xiaomi needs to go further because it is competing globally.

Low ASP and margin hinder global competitiveness

The flip side of selling globally is also competing globally. Low average selling prices (ASP) and margin are results of Xiaomi's product and company strategy and therefore not easily fixable, but have hindered Xiaomi's competitiveness. Company is starting to address these issues but it will not be fixed overnight.

Leveraging capital markets to compete against Huawei

Access to public capital market is a key advantage of Xiaomi against Huawei and Oppo. Xiaomi should leverage transparency, acquisition currency and capital raising capabilities from its public market status.

2019 will be a transitional year for Xiaomi

For Xiaomi, 2019 is more likely a crossroad than a valuation floor. While *Mi 9* showed strong execution, overstretching in supply chain, employee retention, product details and organization ability need to be addressed.

Mission possible, but still a work in progress

Xiaomi is now trading at 4% of Apple and 8% of Alibaba's market caps, yet its free cash flow is only 1% of Apple, 5% of Alibaba and 6% of Huawei. We believe user loyalty and monetization certainty determine valuation multiples.

Summary financial data

Highlights	2016A	2017A	2018E	2019E	2020E
Revenues (RMB mn)	68,434	114,625	178,699	228,315	282,370
Non-IFRS operating profit (RMB)	2,070	6,467	8,065	9,287	15,956
Non-IFRS EPADS (RMB)	0.14	0.51	0.43	0.45	0.72
IFRS EPS (HKD)	0.06	(5.26)	0.63	0.36	0.66
EBITDA margin	3.4%	6.0%	4.8%	4.4%	6.1%
P/E (non-IFRS)	75.2	20.1	23.6	22.6	14.1
Free cash flow yield (%)	6.1%	(3.4%)	8.8%	3.5%	4.9%
EV/EBITDA (%)	44.5	16.1	24.9	26.2	15.8

Source: Bloomberg, Blue Lotus (as of Feb 26, 2019)

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Blue Lotus Capital Advisors Limited

All prices are those current at the end of the previous trading session unless otherwise indicated. Prices are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Bloomberg, Blue Lotus Capital Advisors Limited and subject companies. Consensus forward estimates are used in analysis. Past performance is not indicative of future results. Investors should consider this report as only a single factor in making their investment decision.

BUY

HOLD

SELL

Target Price: HK\$ 14.55	Current Price: HK\$ 12.20
RIC: (HK:1810)	BBG: 1810 HK
Market cap (HK\$ mn)	291,500
Average daily volume (HK\$ mn)	678
Shares out/float (mn)	17,204/4,360

Source: Bloomberg, Blue Lotus (as of Feb 26, 2019)

Key Changes

	New	Old	Diff
BLRI Recommendation	HOLD	NA	NA
BLRI Target Price	HK\$ 14.55	NA	NA
2018E EPADS (RMB)	0.43	NA	NA
2019E EPADS (RMB)	0.45	NA	NA
2020E EPADS (RMB)	0.72	NA	NA

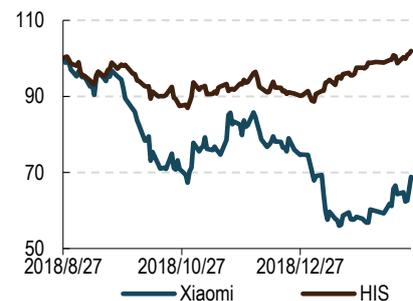
Source: Blue Lotus (as of Feb 26, 2019)

BLRI vs. The Street

No. of Bloomberg Recommendations	29
Target price vs. Bloomberg mean	1.93%
1-year-fwd EPS vs. Bloomberg mean	(7.79%)
Bloomberg recommendation	4.10

Source: Bloomberg Recommendation, Blue Lotus (1=SELL,5=BUY) (as of Feb 26, 2019)

Price performance and volume data



Source: Bloomberg, Blue Lotus (as of Feb 26, 2019)

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Xiaomi Inc.: Financial Summary

Fiscal year ends-31-Aug

Exhibit 1. Income statement

(RMB mn)	2017A	2018E	2019E
Net revenues	114,625	178,699	228,315
Cost of revenues	(99,471)	(157,209)	(201,477)
Gross profit	15,154	21,490	26,837
R&D cost	(3,151)	(5,662)	(8,377)
SG&A cost	(6,448)	(20,064)	(11,922)
Operating profit IFRS	5,555	(4,236)	6,538
Share based compensation	(909)	(12,296)	(2,740)
Operating profit non-IFRS	6,467	8,065	9,287
Finance income (cost)	27	186	400
Other income/cost	449	865	1,142
Pre-tax profit	(41,829)	11,146	7,342
Income tax	(2,060)	(469)	367
Net income IFRS	(43,889)	10,678	7,709
Net income-non IFRS	4,955	8,590	11,196
Number of ADS, diluted	9,758	19,886	24,880
Gross margin	13.2%	12.0%	11.8%
Operating margin, non-IFRS	4.8%	(2.4%)	2.9%
Net margin, non-IFRS	4.3%	4.8%	4.9%

Source: Xiaomi Inc., Blue lotus(as of Feb 26, 2019)

Exhibit 2. Balance sheet

(RMB mn)	2017A	2018E	2019E
Cash and cash equivalent	11,563	49,999	55,404
Short term investment	5,288	5,665	6,068
Receivable	13,614	15,796	18,241
Prepayments	11,394	12,577	16,118
Total current assets	61,139	111,828	134,969
Intangible assets	2,274	3,694	4,929
Equity investment	20,568	23,568	27,009
Property and equipment	1,731	2,178	2,623
Prepayments and others	11,394	12,577	16,118
Total assets	89,870	145,681	174,124
Trade payables	34,003	49,777	59,316
Other payables and accruals	4,224	6,585	8,414
Borrowings	3,551	3,551	3,551
Total current liabilities	47,133	68,262	81,946
Deferred income tax liabilities	1,019	1,589	2,030
Warranty provision	191	298	380
Convertible redeemable preferred shares	161,451	0	0
Long term borrowings	7,251	7,251	7,251
Total liabilities	217,080	77,399	91,607
Total equity	-127,210	68,281	82,517
Total liabilities and equity	89,870	145,680	174,125

Source: Xiaomi Inc., Blue lotus(as of Feb 26, 2019)

Company Description

Xiaomi Corporation is the world's 4th largest smartphone maker by volume, capturing a market share of 8.7% in 2018, according to IDC. Company also makes smart TV's, home appliances and other IOT consumer products, through both in-house production and partnerships. "Mi" stands for *Mobile Internet*, as well as *Mission Impossible*.

Industry View

We expect shipment of China's smartphone industry to decline (11)% in 2019, after declining (5)% in 2018 and then grow 8.5% in 2020. We expect shipment of smartphones for the rest of the world to grow 4% in 2019, after growing 3% in 2018 and then grow 4% in 2020. Overall, we expect the volume CAGR for worldwide smartphone shipment to be 3.2% from 2018-2023.

Exhibit 3. Cash flow statement

(RMB mn)	2017A	2018E	2019E
Pretax profit, IFRS	(41,829)	11,146	7,342
Adjusted for			
Share based compensation	909	12,296	2,740
Depreciation	166	129	240
Amortization	194	361	568
Changes in			
Account receivable	(9,926)	(2,182)	(2,445)
Prepayments	(6,646)	(1,183)	(3,541)
Payables	18,773	18,136	11,366
Cash from operations	(943)	20,174	11,286
Capex	(2,414)	(2,305)	(2,488)
Purchase of LT investments	(6,508)	(2,829)	(3,253)
Purchase of ST investments	(1,770)	(377)	(404)
Cash from investing	(10,756)	(5,264)	(5,881)
Issuance of company shares	45,649	(161,451)	0
Proceeds from IPO	0	23,525	0
Cash from financing	52,510	23,525	0
Change in cash	40,811	38,436	5,405
Cash at beginning	9,230	11,563	49,999
Effects of exchange rate changes	(208)	0	0
Cash at end	11,563	49,999	55,404

Source: Xiaomi Inc., Blue lotus(as of Feb 26, 2019)

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Recent Reports

Feb 25th, 2019: [Weibo (WB US, HOLD, TP US\$70) Target Price Change]: **Going through the reinforced period**

Feb 22nd, 2019: [Vipshop (VIPS US, HOLD, TP US\$7.5) Target Price Change]: **1P to 3P shift is a slipping slope**

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Feb 1th, 2019: [OneSmart (ONE US, HOLD, TP US\$9.4) F1Q19 Review]: **Juren can turn into a long-term growth driver**

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Jan 30th, 2019: [Yixin (2858 HK, HOLD, TP HK\$2) Target Price Change]: **Transitional year in weak market**

Jan 28th, 2019: [58.com (WUBA US, BUY, TP US\$79) C4Q18 Preview]: **Pricing power is still the main theme**

Jan 25th, 2019: [TAL (TAL US, BUY, TP US\$32) Target Price Change]: **Slow online adoption creates dilemma**

Investment Cases at a Glance

Why is it not a BUY

- **Market has overreacted to Mi 9's launch:** While *Mi 9* is clearly competitive against an overpriced Galaxy S10, it doesn't solve Xiaomi's margin problem, which is now acute in its business model. Supply constraints and quality issues are uncertainties ahead, but are related to Xiaomi's low margin;
- **Xiaomi needs to achieve good sales, not just sales.** Good sales mean sales with a healthy average selling price (ASP) and gross margin so that supply chain and channel partners can benefit from Xiaomi's success. Not being able to do so has led to most of Xiaomi's problems, ranging from quality issues, capacity shortages, employee turnovers and high retail breakeven points;
- **Xiaomi's R&D resource is stretched because it has to cover a wide terrain:** Going for high-end requires great attention to details and perfect user experience. Xiaomi has more non-smartphone engineers than smartphone engineers because Xiaomi must help its ecosystem partners to develop products. We find Xiaomi engineer to be underpaid comparing to competitors;
- **Xiaomi must spend and invest to catch up with Huawei and Oppo/Vivo/OnePlus:** For the smartphone industry, we believe 2019 will be a year of execution instead of innovation. Most players will focus on mitigating their product weaknesses and avoid mistakes. Under this environment Xiaomi must spend and invest to catch up, which will hurt its near-term profitability;
- **Competition against Apple, Samsung and Huawei will be tough:** Three is already too many for an industry entering a late technology cycle. The PC industry has fewer than three approaching the end of its life. We do believe, however, that mobile's Android-ARM platform is more accommodative than PC's Window-Intel platform. We should see more diversity and innovation in mobile, leading to more players. But it doesn't mean life will be easy;
- **Xiaomi's product and business strategies are not unique:** Competitors can branch out in the low end to compete against Xiaomi's product strategy, of which Huawei and Vivo already did. Competitors can also copy Xiaomi's business strategy of software, service and content monetization, of which Oppo already did and Huawei will follow. It is time for Xiaomi to deepen its product and business entry barriers or competitors will deepen theirs;
- **Xiaomi's Internet service monetization is high by hardware standard:** If Xiaomi sticks to a platform model, its monetization level is already high comparing to global peers. But if Xiaomi goes into content, its monetization level is still low;
- **New retail is constrained by gross margin and ASP:** Despite success of Mi Home, reliance on third party distributor and offline channel has intensified. On a unit floor area basis, Xiaomi's low ASP and gross margin form a sonic barrier

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Jan 25th, 2019: [Ctrip (CTRP US, BUY, TP US\$40) C4Q18 Preview]: **Weak quarter with margin pressure**

Jan 25th, 2019: [Blue Lotus Sector Update]: C4Q18: **Consumer resilience is positive for the sector**

Jan 25th, 2019: [OneSmart (ONE US, HOLD, TP US\$9.4) F1Q19 Preview]: **Expansion leads to temporary margin erosion**

Jan 24th, 2019: [Blue Lotus Sector Update]: **C4Q18: A temporary spring has arrived**

Jan 23th, 2019: [New Oriental (EDU US, BUY, TP US\$82) Target Price Change]: **Ample reason to be optimistic**

Jan 22nd, 2019: [Bright Scholar (BEDU US, BUY, TP US\$14) F1Q19 Review]: **Utilization improvement is a positive sign**

Jan 22nd, 2019: [Blue Lotus Data Tracker]: **Research Chart Book January 2019**

Jan 14th, 2019: [Autohome (ATHM US, HOLD, TP US\$73) Company Update]: **Home, not sweet home**

Jan 9th, 2019: [Blue Lotus Sector Update]: **Prelude of big news**

Dec 28th, 2018: [Blue Lotus Sector Update]: **Regulation nearing its end...BUY TAL and EDU**

Dec 25th, 2018: [Blue Lotus Sector Update]: **November delivery: Pricing strategy change underway**

of profitability. Despite Mi Home's many benefits to Xiaomi franchise and ecosystem, Mi Home must make money for itself and more;

- **Valuation is high on financial matrices:** From price-to-sales, price-to-earnings and free cash flow yield perspective, Xiaomi is expensive comparing to hardware companies, but is reasonable against consumer electronics (mostly A-share), fast retailing and Internet platforms.

Why is it not a SELL

- **Xiaomi's product strategy is solid and workable:** Xiaomi's smartphone product strategy is to pack the latest technology into flagship phones and sell at competitive price. As long as competitors continuing to sell flagship phones with a premium, Xiaomi's strategy will always work;
- **Xiaomi's business strategy is sustainable and sound:** Xiaomi's business strategy is to use low cost hardware and cloud service to loop in users and use Internet-based software, service and content to monetize them. This strategy should work, and can work better if Xiaomi goes beyond distributing content;
- **Xiaomi's Internet service monetization is low by Internet standard:** If Xiaomi develops its own content, its monetization level is still low comparing to global Internet peers;
- **Xiaomi's global expansion still has low hanging fruits:** Xiaomi's entry into Russia, Latin America and Africa and continuing penetration into India, Indonesia and Europe should drive growth under Xiaomi's current level of competitiveness;
- **IOT category expansion still has low hanging fruits:** Xiaomi and its ecosystem typically do better in new IOT hardware and "black electronics" than "white electronics". Xiaomi has great potential in consumer wearables and smart TV;
- **No replacement competition at this time:** Xiaomi is not only a technology company, it is also a life style, design philosophy, demographic, international and investment company. As a whole, Xiaomi is unique;
- **Valuation on per use basis has a lot of room:** From a market cap per user perspective, Xiaomi is much cheaper than Apple and cheaper than most Internet names. Xiaomi is also cheaper than consumer electronics and fast retailing companies, but many of these companies trade on the frothy A-share market.

What are the key catalysts for the next 3-6 months

- **Xiaomi's smartphone growth in India will slow (-):** In 2018, India's smartphone market grew 14% YoY (*Source: IDC*) and Xiaomi's market share increased from 21% to 29%. We expect India's smartphone market to grow 12% YoY in 2019 but Xiaomi's market share to increase to 32%. Xiaomi's unit volume growth will slow from 59% YoY in 2018 to 24% in 2019;
- **Profit margin will be under pressure (-):** With *Mi 9* showing the trending of sacrificing margin for market share, Xiaomi's hardware margin will be under

pressure throughout 2019. Competition against Huawei and Oppo will likely raise R&D cost as percentage of revenues;

- **Global growth will still be robust in the near term (+):** New geographic entries (Russia and Africa), continuing penetration of feature phone markets (India, Indonesia and Bangladesh) and expansion in new categories (TV and wearables) should provide strong base line growth. We expect international revenues to reach 50% by 2020.

Where can we be wrong?

- **Reliance on Qualcomm's chipset could pose key supplier risk (-):** Xiaomi and Oppo/Vivo/OnePlus rely on Qualcomm's chipset in their phones, a risk not shared by Apple, Huawei and Samsung. In 2015, Qualcomm's *Snapdragon 810* chipsets caused overheating problems for HTC and LG phones due to insufficient development time under the 64-bit architecture;

What can change our view?

- **Material acquisition into content (+):** Xiaomi's valuation is expensive from a financial perspective. It is not expensive from a user base perspective. To ensure the user base is fully monetized, Xiaomi needs to do more, one of which is owning exclusive content;
- **Major breakthroughs in overseas markets and business models (+):** We believe Xiaomi's biggest opportunities lie in its lead in smart TV and in selected markets like India. For example, Xiaomi can buy an online video company in India to strengthen its TV business. Outside of existing international markets, the United States represent a white space that will be difficult to crack. Xiaomi's presences in Russia, Latin America and Africa are still low.

Operating Metrics

Exhibit 4. Quarterly revenue table

(RMB mn)	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18E
Net revenues	34,099	35,116	34,412	45,236	50,846	48,206
Cost of revenues	(28,898)	(31,474)	(30,111)	(39,584)	(44,269)	(43,245)
Gross profit	5,201	3,642	4,301	5,652	6,577	4,960
R&D cost	(805)	(1,034)	(1,104)	(1,364)	(1,534)	(1,660)
SG&A cost	(1,744)	(2,365)	(1,868)	(12,533)	(2,770)	(2,894)
Operating profit IFRS	2,653	243	1,329	(8,244)	2,273	406
Share based compensation	(252)	(339)	(488)	(10,527)	(702)	(578)
Operating profit non-IFRS	2,905	582	1,818	2,283	2,977	987
Finance income (cost)	18	16	18	(32)	100	100
Other income/cost	328	6	256	254	57	241
Pre-tax profit	(10,265)	(12,702)	(6,689)	14,908	2,364	563
Income tax	(729)	(360)	(338)	(276)	117	28
Net income IFRS	(10,994)	(13,062)	(7,027)	14,633	2,481	591
Net income-non IFRS	2,523	245	1,754	2,229	3,251	1,357
Number of ADS, diluted	9,758	9,758	9,758	20,926	24,355	24,505
Gross margin	15.3%	10.4%	12.5%	12.5%	12.9%	10.3%
Operating margin, non-IFRS	8.5%	1.7%	5.3%	5.0%	5.9%	2.0%
Net margin, non-IFRS	7.4%	0.7%	5.1%	4.9%	6.4%	2.8%
Operation						
No. of smartphone unit sold (mn)	27.6	28.5	28.4	32.0	33.3	30.3
China	15.7	15.9	13.2	14.5	14.0	13.0
Rest of the world	11.9	12.6	15.2	17.5	19.3	17.3
China market share	13.7%	13.9%	15.1%	13.8%	13.6%	12.6%
Smartphone ASP (RMB)	932	823	818	952	1,051	906
Number of TV unit sold(mn)	0.67	1.20	1.50	1.70	2.00	3.00
TV ASP (RMB)	1,881	1,804	1,438	1,720	1,691	1,712
MIUI MAU	157	171	190	207	224	239
Internet revenue per MAU	16.3	17.0	17.0	19.1	21.1	20.9
Advertising revenue	9.75	9.40	9.86	12.1	14.3	13.3
Online game	3.72	4.28	4.06	3.40	2.91	3.36
Internet finance and e-commerce	2.82	3.27	3.09	3.64	3.90	4.21

Source: Xiaomi, Blue Lotus (as of Feb 26, 2019)

Contents

Xiaomi Inc. (HK: 1810)	2
Making the impossible mission possible	2
Xiaomi Inc.: Financial Summary	3
Investment Cases at a Glance	4
Operating Metrics	7
How much money can Xiaomi make on <i>Mi 9</i> ?	10
Xiaomi is not only a hardware company	12
Is Xiaomi's loss of market share really that important?	12
Is developing software and service easier than winning hardware?	12
Then why should Xiaomi be focusing on hardware?	13
How does Xiaomi's smartphone business do?	15
What can Xiaomi do now to improve its smartphone business?	20
Xiaomi can win, but only after a long battle	25
Xiaomi's resources are spread very thin	25
Xiaomi's long-term priority should turn its weakness into strength	26
Xiaomi has chance to further turn capital market to its advantage	30
Quality is a self-fulfilling prophecy	34
Mi Home is the right move but still ahead of its time	35
Global and TV are major opportunities	37
India smartphone shipment will slow but future promise is intact	37
Indian TV market could be a major driver	38
Indonesia smartphone and TV markets are 1/4 of India's	39
Other global market can give Xiaomi decent growth	39
Valuation is tough to argue for a high case	42
Financial valuation and user matrix valuation differ	42
To get higher valuation, Xiaomi needs to get into content	43
SOTP of SEC shows competitive landscape changes valuations	43
Ecosystem ownership adds HK\$1.04/share to DCF	44

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Annual Income Statement	46
Annual Cash Flow Statement	48

How much money can Xiaomi make on *Mi 9*?

Xiaomi's introduction of *Mi 9* on February 22nd, 2019 received wide-spread attention and applause from the industry and the stock market. *Mi 9* is an important product that will carry Xiaomi to the mid-end price bracket. It is also a milestone product after Xiaomi officially separated *Redmi* (low end) from *Mi* (mid-end) and *MIX* (high end). We believe that *Mi 9*, if ramped up in volume, can be a serious contender for the top spot in market shares. However, we believe *Mi 9* is likely damaging on Xiaomi's profit margin. It also shares too many key components with Samsung *Galaxy S10*, which can work against its smooth volume ramp up. Exhibit 5 compares *Mi 9* with *Galaxy S10*, which is about to retail at 80% higher price. Comparing the main specs of the two we can see that while *S10* wins in screen resolution, ultrasonic finger print technology and lightweight, *Mi 9* wins in camera pixels and screen-to-body ratio. Another meaningful comparison is made against Huawei's *Honor V20* (released C4Q18), which retails at the same price of *Mi 9*. Both featured 48MP SONY IMX586 and 128GB of NAND memory, but *V20* had a lower cost IPS-LCD screen, had no ultra-wide-angle lens and used an in-house app processor one generation earlier than *Mi 9*'s. We estimate *V20*'s bill of materials (BOM) will be US\$60-80 cheaper than *Mi 9*.

Samsung Galaxy S10 is about to retail at 80% higher price than *Xiaomi Mi 9*, yet is not a clear win in features. Huawei *Honor V20* is one generation behind *Mi 9*, but retailing at the same price.

Exhibit 5. Xiaomi's *Mi 9* vs. Samsung's *Galaxy S10*

	Mi 9 @RMB2,999	Galaxy S10 @US\$899
Display and glass	6.39" Samsung AMOLED, 2340x1080, 403 PPI Gorilla 6	6.1" Samsung Dynamic AMOLED, 3040x1440, 550 PPI, Gorilla 6
Apps processor	Snapdragon 855	Snapdragon 855
Camera module	Three rear cameras, 48MP SONY IMX586 (main), 12MP Samsung S5K3M5 (portrait), 16MP IMX481 (ultra-wide angle lens), One front camera, 20MP	Three rear cameras, 12MP SONY IMX 345 (main), 12MP (portrait), 16MP (ultra-wide angle lens), One front camera, 10MP
Authentication	Face ID, in-screen finger print	Face ID, Ultrasonic finger print
Battery	3300mA	3400mA
DRAM	8GB	8GB
NAND	128GB	128GB
Other	NFC, wireless charging, 4K recording	NFC, wireless charging, 4K recording
Screen to body	91%	88%
Weight (g)	173	157

Source: Xiaomi, Samsung, Blue Lotus (as of Feb 26, 2019)

Exhibit 6. BOM of Samsung and Apple's flagships

	Samsung Galaxy S9+	Apple iPhone X
Display and glass	US\$84	US\$110
Back cover	US\$25	US\$61
Camera module	US\$45	US\$52
App processor	US\$67	US\$28 *
RF/PA/Frontend	US\$19	US\$35
Power management	US\$9	US\$14
Authentication module	US\$6	NM
Memory (64GB+6GB)	US\$57	US\$33
Battery	US\$5	US\$6
Others	US\$44	US\$17
Box packaging	US\$16	US\$12
Total bill of materials	US\$376	US\$368
Release date	C1Q18	C4Q17
Unsubsidized retail price (US\$)	US\$840	US\$999
Retail price (RMB)	CN¥5,628	CN¥6,693

Source: IHS Markit, Blue Lotus (as of Feb 26, 2019). *Apple uses its own Bionic chipset

However, Xiaomi's win doesn't come cheap. In the previous tear down studies, IHS Markit found Apple and Samsung's flagship models, at the time of release, typically had a BOM of close to US\$370. This is not withstanding the fact that *Mi 9*'s 48 megapixel (MP) main camera using SONY's IMX586 is the highest pixel main camera on the market today. Xiaomi's China president said on Weibo that *Mi 9*'s camera module alone cost more than an entry level *Redmi*, which we estimate to be RMB550 (US\$82) assuming a gross margin of 5%. This is also significantly higher than *S9* and *iPhone X*'s camera module at the time of their release (Exhibit 6). We believe Xiaomi might make up a little on memory costs due to NAND/DRAM oversupply situation right now, but we estimate *Mi 9*'s BOM cannot be below US\$400.

We estimate Mi 9 is priced close to zero gross margin.

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Assuming a production and passive component cost of US\$25, VAT tax of zero, channel margin of zero and fulfilment cost of 1% of ASP, royalty fee of US\$5 and warranty expense of 2% of ASP, we estimate *Mi 9*'s cost of goods sold to be US\$443, or RMB2,974, leaving a gross margin of only 0.8%.

We believe *Mi 9* will be on limited production until component costs trending down over time so that Xiaomi can return *Mi 9*'s gross margin to a normal level. In that case, competitor models (Huawei *Honor V20*, *Nova 4*, Oppo *IQOO*) may not cut prices in the near term. The impact of *Mi 9* will also be limited.

We believe Mi 9 will be on limited production until component cost falling to a level that volume production can be meaningful.

Xiaomi is not only a hardware company

Xiaomi, by design, is not a hardware company. Its stated strategy is to use low cost hardware and cloud service to loop in users and use Internet services to monetize them. In practice, this is also how Xiaomi operated. However, this strategy has two risks: (1) competitors may also beef up their Internet service offerings, (2) customer concentration in the low end will eventually restrain and limit Xiaomi's monetization. Therefore, Xiaomi must actively pursue market share in all segments.

Xiaomi has spread its resources across many different sectors. Its stated goal is to be a triathlon (hardware, software and Internet) company.

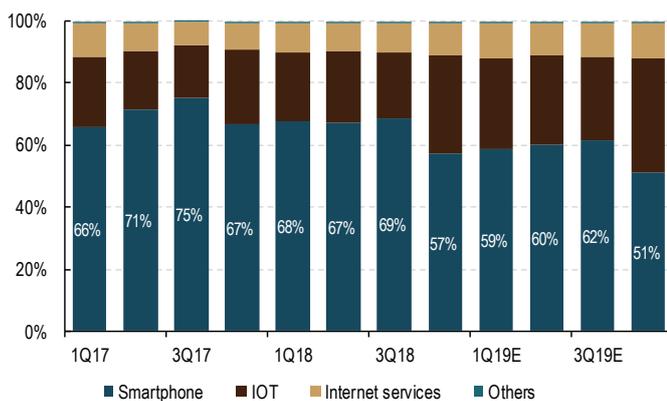
Is Xiaomi's loss of market share really that important?

Yes and no. While Huawei and Oppo/Vivo are focused smartphone or hardware companies, Xiaomi is not. It is true that Huawei had overwhelming R&D advantages. Huawei Consumer division also has highly profitable European business that can act as a cash cow. Huawei has strong telco carrier ties to bring up volume. Oppo/Vivo has many years of collaborative supply chain relationship and rural channel structure at its back, and a flexible corporate culture that has incubated three successful organizations: Oppo, Vivo and OnePlus. But Xiaomi also has its own strength. Huawei and Oppo/Vivo's success do not mean Xiaomi's failure.

Xiaomi, Huawei and Oppo/Vivo are different animals. Each can be successful to a certain degree.

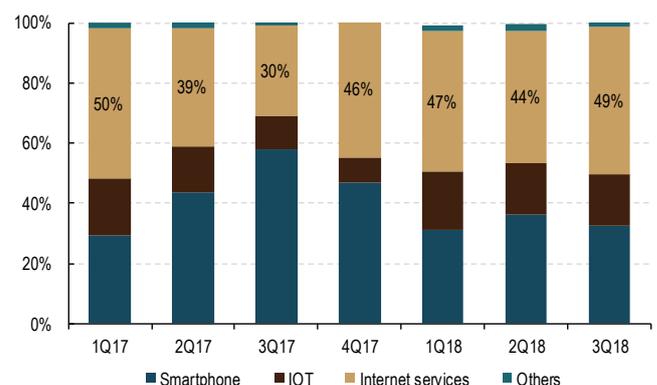
As charts below shows, smartphone's revenue contribution in Xiaomi has been replaced by IOT products starting C2Q18 (Exhibit 7). Internet services has been contributing 1/3 to 1/2 of the gross profits (Exhibit 8).

Exhibit 7. Xiaomi's revenue composition



Source: Xiaomi, Blue Lotus (as of Feb 26, 2019)

Exhibit 8. Xiaomi's gross profit composition



Source: Xiaomi, Blue Lotus (as of Feb 26, 2019)

Is developing software and service easier than winning hardware?

Yes and no. Software and services can be easy add-ons, but they also require deep expertise to do it well.

Take Tencent's (700 HK, BUY, HK\$372) game business as an example. Tencent's traffic platform certainly makes its game business look like an add-on. But Tencent game also stands on its own because Tencent has developed its own game content. Such development skills won acquisition targets like Epic and Supercell. A pure distribution platform will not do the job.

Xiaomi's software and services monetization level is short-term constrained. But in the long run, providing both platform and content isn't impossible.

So far there hasn't been a successful example in which a company excels in both hardware and software/services worldwide. In C3Q18, software/services contributed to 9.3% of revenues and 49% of gross profits of Xiaomi (Exhibit 8), below Apple's 15% in revenues but above its 21% in gross profit. Xiaomi certainly has room to derive more revenues from Internet/Services than today.

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As shown below (Exhibit 9), Xiaomi's advertising revenue per MAU in C3Q18 has approached half of Apple's levels, which suggests its short-term potential for monetization has reached a plateau, in our view. Further, Apple's monetization level has approached that of Facebook, which to us does sound like already an anomaly. But taking a long-term view, Xiaomi's monetization level comparing to Internet companies is still very low. Further, if we break out Tencent's advertising from its games, we can see its advertising monetization is similar to Xiaomi's but its game monetization is 6x of Xiaomi's level.

Exhibit 9. Xiaomi's and others' monetization level by quarter (RMB and USD)

(million)	Xiaomi ads	Xiaomi games	Apple	Facebook	Twitter	Google Ads	Google Alphabet	Tencent ads	Tencent games	Baidu	Weibo
Services revenue	¥3,229	¥1,529	US\$9,981	US\$13,727	US\$758	US\$33,594	US\$146	¥16,247	¥44,049	¥20,085	US\$409
MAU (mn)	224.4	224.4	1,400	2,271	326	2,200	2,200	1,083	1,083	463	446
ARPU(US\$)	US\$2.12	US\$1.01	US\$7.13	US\$6.04	US\$2.33	US\$15.27	US\$0.07	US\$2.23	US\$6.06	US\$6.47	US\$0.92
ARPU(RMB)	¥14.3	¥6.8	¥47.9	¥40.6	¥15.6	¥102.5	¥0.45	¥15.0	¥40.7	¥43.4	¥6.16

Source: Xiaomi, Apple, Facebook, Twitter, Tencent, Google, Baidu, Weibo, Blue Lotus (as of Feb 26, 2019)

Deep monetization calls for entry into content provision

As hardware companies, Xiaomi and Apple's basic monetization means for software and services is platform-based revenue sharing. But the increase in revenue sharing ratio negatively impacts user experience. To achieve higher level of monetization, platform companies can directly develop customer-oriented apps, like online game, in Tencent's case, and autonomous driving, like Google's case. Certainly, platform competing against content partners is a taboo. But once Tencent and Google overcame the initial hurdle and become top in their new fields, industry generally obliges. A platform company with a sizable presence in content enjoys sizable monopoly profits .

In C3Q18, Google generated US\$33.6advertising revenues on MAU of approximately 2.2bn people (mostly Android users), giving it a revenue per MAU of US\$15.3, which we may use as a proxy for monopolistic monetization on PC and smartphones for advertising. Google's Other Bets revenues were still small, mostly direct consumer-facing, but holding Google's future. Similarly, Tencent's advertising revenue per MAU was a modest RMB15, which we consider it to be China's equivalent of Google. However, Tencent's game revenue per MAU reached RMB41, giving Tencent a total of RMB45.7/MAU. Xiaomi's ads revenue per MAU was RMB14.3 in C3Q18, which was already close to Tencent. But its game revenue per MAU was only 1/6 of Tencent's.

Entry into direct monetization involves much deeper resource and execution commitment. But it also why the market awarded Amazon, Tencent and Alibaba for their renewed multiple expansions, i.e., acquiring competency outside one's comfort zone. Xiaomi's game revenue smaller than its advertising revenue is an indication to us that its game business hasn't been properly managed.

Then why should Xiaomi be focusing on hardware?

Xiaomi's premise of success doesn't rest on its hardware revenues, but it doesn't mean loss of smartphone market share is acceptable. Why?

Up till now, Xiaomi's Internet revenues are still low-hanging fruits

First, competitors aren't sitting idle. To our understanding, Oppo's Internet-related revenue has reached ~RMB8bn in 2017 and ~RMB14bn in 2018, or 85% of Xiaomi's level.

A platform company with also a sizable presence in content will enjoy sizable monopoly profits through unparalleled profit margins

If Xiaomi engages in direct monetization, its software and service monetization level can still go much higher, in our view.

Game business is Xiaomi's soft spot.

Up till now, Xiaomi's Internet revenues are still low-hanging fruits that competitors can easily achieve.

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Currently Xiaomi derives its Internet services revenue mainly from advertising, mobile games and Internet finance. Xiaomi cannot yet be said to enjoy strong competitive advantage in these three segments. Competitors with similar user base can achieve Xiaomi's scale for Internet services easily.

Exhibit 10. Xiaomi ads format

	App Distribution	Performance ads	Brand ads
Location	Mi store, Xiaomi apps	News and information apps	Xiaomi Video, Xiaomi TV, and other xiaomi apps
Format	Boutique list ads, home page banner ads, essentials apps recommendation ads	Feeds ads	Full screen ads, pre-movie ads, and others

Source: Xiaomi, Blue Lotus (as of Feb 26, 2019)

Exhibit 11. Xiaomi Finance and P2P lenders, C3Q18

	Xiaomi Finance	AntFin Huabei	AntFin Jiebei	PPDai	Qudian	Lexin
Agg. loan out. (RMB bn)	8.0	120	210	22	15	26
Avg. loan amount (K Rmn)	4	0.7	3K	3.4	1.4	4.9
Avg. loan tenor (mo.)	8.8	6	9	9	7	13.6
Avg. ann. lending rate (%)	16	12	15	30	33	23

Source: Xiaomi, Alibaba, PPDai, Qudian, Lexin, Blue Lotus (as of Feb 26, 2019)

- **Advertising in China top 10:** Xiaomi's 2018 advertising revenue of RMB10.8bn roughly translates to a revenue market share of 2.2% (Source: iResearch), versus market leader Alibaba's (BABA US, BUY, US\$183) 28%, Baidu's (BIDU US, BUY, US\$238) 17% and ByteDance's ~10%. Main sources of advertising include (1) tools and launchers, (2) white label apps like Mi appstore, Mi browser and Mi media players, (3) revenue shares with partner apps like iQiyi (IQ US, NR), Yidian, China Literature (772 HK, NR), etc. (Exhibit 10);
- **Game in China top 20:** Xiaomi's 2018 mobile game revenue of RMB2.9bn roughly translates to a revenue market share of 1.4% (Source: Joynews), comparing to market leader Tencent's 49%, NetEase's (NTES US, BUY, US\$288) 19% and Perfect World's (002624 CH, NR) 3.9%;
- **Internet Finance in China top 20:** Xiaomi's 2018 Internet Finance revenue of RMB3.2bn roughly translates to a revenue market share of 0.5% (Source: Blue Lotus), placing it behind Ant Financial (AntFin), WeBank (2017 revenue RMB6.7bn on loan balance of RMB48bn) and a number of P2P lenders (Exhibit 11);

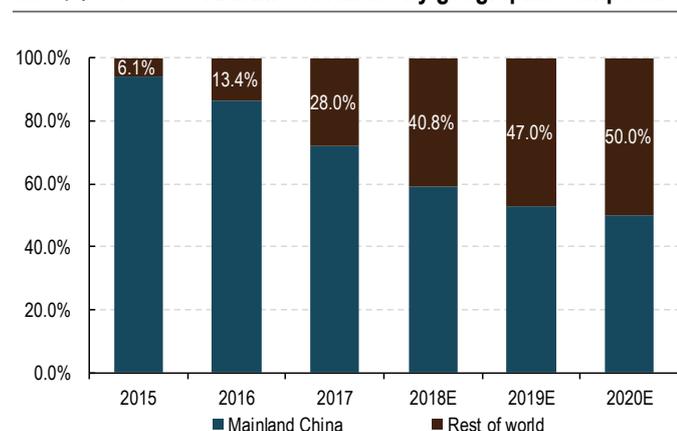
Xiaomi's significance is that no Chinese Internet companies other than ByteDance has reached such high revenue contribution from outside of China.

But to compete effectively overseas as a monetization platform Xiaomi still needs to grow its user base by ~5x to be close to Facebook, Google and Apple.

International can expand Xiaomi's Internet service market in the future

International markets for Internet services are 3-5x bigger than the domestic market, according to iResearch.

Exhibit 12. Xiaomi's revenues by geographic composition



Source: Xiaomi, Blue Lotus (as of Feb 26, 2019)

Exhibit 13. Xiaomi smartphone price and contribution

Segment	Models	Prices (RMB)	2015	2016	2017	1Q17	1Q18
Composition							
High-end	MIX	>3K	0.0%	0.1%	1.5%	1.2%	1.7%
Mid-end	Xiaomi	1-3K	23.7%	24.0%	17.8%	17.7%	20.6%
Low-end	Redmi	<1K	76.3%	75.8%	80.7%	81.1%	77.6%
Units sold (mn)							
High-end	MIX	>3K	0.0	0.0	1.4	0.2	0.5
Mid-end	Xiaomi	1-3K	15.7	13.3	16.2	2.3	5.9
Low-end	Redmi	<1K	50.7	42.0	73.8	10.6	22.1

Source: IDC, Blue Lotus (as of Feb 26, 2019)

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Xiaomi's revenue contribution from outside of China will likely reach 40% in 2018. We estimate it will break 50% by 2020 (Exhibit 12). This has never been achieved by previous generation of Chinese Internet companies. Monetization outside of China has been common place in China, mostly relying on overseas platforms like Facebook and Google. According to Exhibit 9, Xiaomi's global user base is still small comparing to Apple, Facebook and Google. In order to function itself as a monetization platform for others we estimate Xiaomi needs to enlarge its user base by at least 3-5 times. Most of this expansion must happen in overseas.

For Xiaomi to realize its goal of monetizing through software and Internet services, it must capture the mid-end.

Expanding into mid-end is a near term priority

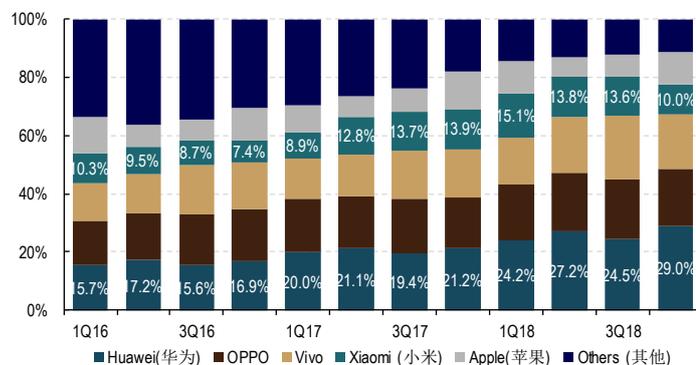
As Exhibit 13 shows, Xiaomi's comeback in 2016 was mainly achieved through volume growth in *Redmi*. High end *MIX* only contributed 1.5% of Xiaomi's shipment in 2017 and 1.7% in 1Q18. Concentration of Xiaomi user in the low-end defeats its strategic goal of monetizing users base through software and Internet services. Therefore, even though low end is the fastest way to achieve market share and installed base, Xiaomi cannot give up on mid-and high-end, especially the mid-end, not to mention (1) many low-end student users eventually graduating to the mid-end, and (2) many cross-usage exists among family members and secondary phones.

In January, 2019, Xiaomi officially announced the separation of the *Redmi* brand. Now Xiaomi (the corporate brand) will operate under three product brands: *MIX* for the high end (>RMB3,500), *Mi* for the mid-end (RMB1,500-3,500) and *Redmi* for the low-end (<RMB1,500). We cannot rule out further brand creations as the smartphone industry in the late 4G era is an era of segmentation, like what happened in the late stage of 2G and 3G. Competitors are rolling out new brands, too. Game smartphone is a popular idea because Qualcomm, Xiaomi's bigger supplier, holds significant advantage over Apple, Huawei, Samsung and MTK in GPU's.

Segmentation of the smartphone market in China is getting a little crowded.

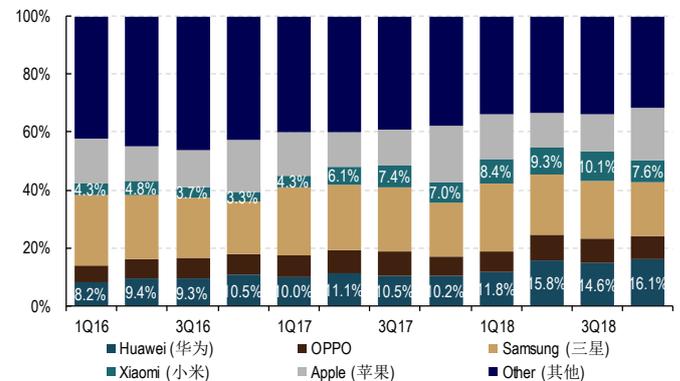
We believe Xiaomi made a strategic mistake for not separating *Redmi* and *MIX* out early enough. By now competitor's segmentation effort has borne fruit while Xiaomi is just starting. We believe Xiaomi's quest for establishing itself in mid-to-high end will take longer than what the market expects.

Exhibit 14. Chinese market share of smartphones



Source: IDC, Blue Lotus (as of Feb 26, 2019)

Exhibit 15. Global market share of smartphones



Source: IDC, Blue Lotus (as of Feb 26, 2019)

How does Xiaomi's smartphone business do?

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As of C4Q18, Xiaomi's global market share stood at 7.6%, about half of Huawei's 16.1% (Exhibit 15). In China, Xiaomi's market share stood at 10%, about 1/3 of Huawei's 29% (Exhibit 14). In China, the combined unit share of Oppo and Vivo reached 39%, surpassing even Huawei. Oppo and Vivo are extremely successful in the mid-end price bracket. They do not use the latest Qualcomm chips but achieve respectable sell through and price point through product positioning, design details, stable quality and channel marketing.

Xiaomi's market share has been predominantly in the low end

The launch of *Mi 8* in C2Q18 successfully enlarged Xiaomi's mid-end contribution, in our view. However, due to product quality issues, Xiaomi 8 sales volume deteriorated, forcing it to cut prices to the RMB2K range by the end of 2018. Now, Xiaomi is about to launch *Mi 9* in C2Q19. We are cautiously optimistic for *Mi 9* to support ASP expansion in C2Q19 but we are not optimistic it will continue.

Why? Because we believe 2019 will be an unexciting year for the smartphone industry. Market share will be played out on execution, not on innovation. After Apple made product strategy mistakes in pricing, RF chipset and photo-taking, Apple reacted by cutting prices, which we believe will hurt the market share of everyone, including Xiaomi. However, globally, smartphone's moving to higher price point is a clear trend (Exhibit 17), suggesting users buying for the second phone usually are willing to pay a little premium. Xiaomi can benefit from this trend.

Huawei and Oppo's rises were due to focus on photo-taking and battery

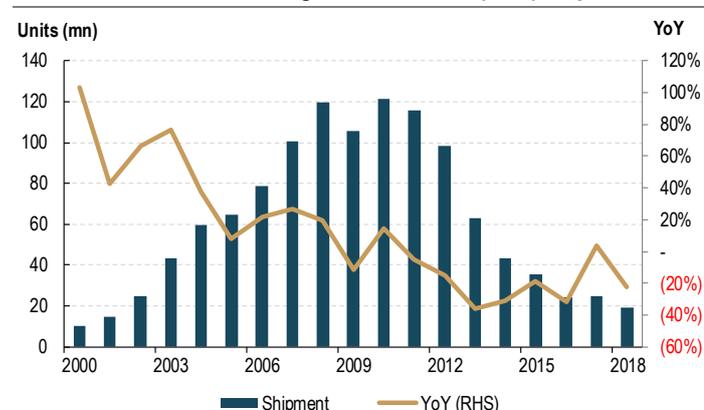
Exhibit 18 compared the key parameters and selling points of top selling high-end phones in China. It shows that Huawei's rise to fame was mainly attributable to its early focus on photo processing technology. It first rolled out triple camera (2 rear and 1 front) in C2Q16, a feature not followed by Samsung until a year later in *Galaxy Note 8*. Huawei continued to bet on photo-taking by shipping quad camera (3 rear and 1 front) in *Mate 20* in C3Q18, a feature followed in *Mi 9*. It is rumored that Huawei's *Mate 30*, due in 2H19, might feature quint camera. Huawei uses algorithms to overlay photos taken by different cameras to produce more robust, reflex-like quality photos.

Oppo, Vivo and OnePlus are three companies span out from the same organization.

We believe Mi 9 will follow Mi 8's trend, benefiting Xiaomi's ASP for only 1-2 quarters.

Price cut by Apple will hurt everyone in the Android camp.

Exhibit 16. Global digital still camera (DSC) shipment



Source: CIPA (as of Feb 26, 2019)

Exhibit 17. Global unit market share by price segment

	Global	China	Emerging market
2017			
Low-end (<RMB1,300)	48%	40%	65%
Mid-end (RMB1,300-3,000)	31%	47%	26%
High-end (>RMB3,000)	21%	13%	13%
2016			
Low-end	53%	48%	69%
Mid-end	28%	41%	22%
High-end	20%	11%	11%
2015			
Low-end	54%	57%	68%
Mid-end	23%	28%	21%
High-end	23%	15%	12%

Source: IDC, Blue Lotus (as of Feb 26, 2019)

Photo processing is an important consumer demand, thanks to the proliferation of social media. The content of social media has evolved from text/graph to photos and now to short videos, calling for smartphones to providing this capability.

Huawei benefits from the continuous shrinking of the digital camera industry.

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Exhibit 18. Key parameter and selling points of flagship models from Apple, Samsung and Huawei

	2016				2017				2018				
	Samsung S7	Huawei P9	Huawei Mate 9	iPhone 7	Huawei P10	Samsung S8	Huawei Mate 10 Pro	Samsung Note 8	iPhone X	Huawei P20	Samsung S9	Huawei Mate 20	Samsung Note 9
Display size (in)	5.1	5.2	5.9	4.7	5.1	5.8	5.9	6.3	5.8	5.8	5.8	6.5	6.4
Resolution (pixel)	1440x2560	1080x1920	1080x1921	750x1334	1080x1921	1440x2960	1440x2560	1440x2960	1125x2436	1080x2244	1440x2960	1080x2244	1440x2960
Screen	S. AMOLED	IPS LCD	IPS LCD	IPS LCD	IPS LCD	S. AMOLED	IPS LCD	S. AMOLED	OLED	IPS LCD	S. AMOLED	IPC LCD	S. AMOLED
Glass	Gorilla 3	Gorilla 3	Gorilla 3	Gorilla 4	Gorilla 5	Gorilla 5	Gorilla 5	Gorilla 5	Gorilla 6	Gorilla 5	Gorilla 5	Gorilla 6	Gorilla 5
Camera	2	3	3	2	3	2	3	3	3	3	2	4	3
Flash	Single LED0	Dual LED	Dual LED	Quad LED	Dual LED	Single LED	Dual LED	LED	Quad LED	Dual LED	Single LED	Single LED	LED
Main camera aperture	1.7	2.2	2.2	1.8	2.2	1.7	1.6	1.7	1.8	1.8	2.4	1.8	2.4
System chip	Snapdragon 820	HiSilicon Kirin 955	HiSilicon Kirin 960	Apple A10	HiSilicon Kirin 960	Snapdragon 835	HiSilicon Kirin 970	Snapdragon 835	Apple A11	HiSilicon Kirin 970	Snapdragon 845	HiSilicon Kirin 980	Snapdragon 845
Battery (mA)	3,000	3,000	4,000	1,960	3,200	3,000	4,000	3,300	2,716	3,400	3,000	4,000	4,000
OS UI	Samsung Touchwiz	Huawei Emotion 4.1	Huawei Emotion 4.1	iOS 11	Huawei Emotion 5.1	Samsung Experience 8.1	Huawei Emotion 8.0	Samsung Experience 8.1	iOS 11	Huawei Emotion 8.0	Samsung Experience 9.0	Huawei Emotion 9.0.0	Samsung Experience 9.5
Mobile payment	Samsung Pay	-	-	Apple Pay	Huawei Pay	Samsung Pay	Huawei Pay	Samsung Pay	Apple Pay	Huawei Pay	Samsung Pay	Huawei Pay	Samsung Pay
Key selling points	- Quad-edge curved display - High resolution AMOLED	- Leika camera - Dual rear camera	- Leika camera - Dual rear camera	None	- AI image processing - Double-edge curved display - Diamond carving case - Ultra-fast battery charging	Iris scanner	AI enabled NPU Quad-edge curved display	Stylus	- Bazel-less display* - AI processing Bionic - Face ID - Animoji	- Bazel-less display - Slow motion recording - Progressive colouring case	- Slow motion recording; - Bazel display*	- Huawei Supercharge - Triple rear camera	- Slow motion recording - AR Moji

Source: Phone Arena, Blue Lotus (as of Feb 26, 2019). *Bazel-less display means different things for Apple, Samsung, Xiaomi, Huawei and Oppo

Global shipment of digital still camera (DSC) had a precipitous fall in 2013, the year Apple rolled out iPhone 5 (Exhibit 16). In the following years, high-end interchangeable lens reflex cameras started to fall following the low-end build-in-lens cameras. From the peak of 121mn units in 2010, DSC has fallen >100mn units in shipment, showing the speed of its being completely taken over by the smartphones, step by step, from low-end to high-end.

Besides photo taking, new advances in the past three years include: (1) battery life, in which Huawei phones have been persistently 1000mA higher than Samsung's and Apple's; (2) screen technology, in which Huawei has been persistently behind Samsung in using AMOLED; (3) authentication technology (finger print, iris scan and facial recognition), in which Huawei has been about one year behind Apple and Samsung.

Oppo and Vivo focused on photo taking and battery life even earlier than Huawei. Photo-taking has been Oppo's a focus as early as 2012 in its now-discontinued *U-series*. Oppo's early photo-taking technology has mostly been software driven but later has converged to the hardware solutions adopted by Huawei and Apple. Another Oppo innovation is its patented fast battery charging technology (VOOC), first appeared in *Oppo Find 7* in C1Q14. Huawei caught up four years later in *Mate 20*. Apple and Samsung started adopting battery fast charging only in *iPhone 8* (2017) and *Galaxy S8* (2017), three years after Oppo and one year after Huawei.

Smartphone has entered late-stage product cycle but differs from PC

In late stage PC competition, Wintel Alliance dominated the market share. This led to two consequences: (1) the whole market upgrades in tandem with the product release cycle of Intel and Microsoft, benefiting big players like Dell and Lenovo at the expense of smaller players, who cannot engage in product development early enough, (2) the whole market tied up to the monopolistic power of Wintel Alliance, with little regard for consumer value. The PC gets faster and faster, but with less and less improvement on consumer value. This situation lasted for many years until Steve Jobs changed the game by focusing *MacBook* on product weight and battery life.

In late stage smartphone competition, big players like Xiaomi also benefits from early engagement with Qualcomm's development programs. But the so-called AA Alliance (ARM-Android) is more benign than Wintel. A key difference is ARM doesn't design chips and Qualcomm doesn't fabricate chips. This critical difference removes the possibility for IDM's like Intel to monopolize the industry through fabrication technology. Another key difference is Google doesn't make software applications, so that it also removes the possibility for OS's like Microsoft to monopolize the industry through bundling application with the OS. Today, Apple, Huawei, Qualcomm fabricate their chips in TSMC. There are also many flavors of Android.

It is this similarity and dissimilarity that also produce the two value-for-money in the smartphone industry. One is the value for the latest novelty, focusing on what one can do with the smartphone, which unlike PC, is still expanding boundaries. The other is value for stacking hardware, focusing on what one gets for the latest technology marvel. Xiaomi has been marketed on the second value proposition while Oppo/Vivo and Huawei have been focusing on the first. All smartphone makers are practicing tight hardware/software integration to try to deliver what-else-can-you-do. Apple, Huawei and Samsung, by having their own chips and screens, have more liberty than others to achieve this goal.

Apple and Samsung made product mistakes in 2015-16

[See the last page of the report for important disclosures](#)

Photo-taking and efficient battery management are two consumer values pioneered by Oppo with special appeal to the social-oriented young people.

Today, Apple, Huawei and Qualcomm fabricate their chips in TSMC's fabs. There are also many flavors of Android.

There are two value-for-money here. One is value for the latest novelty. The other one is value for stacking hardware.

Retrospectively, Apple and Samsung made mistakes in 2015-16. Innovation made by these two market leaders in these two years focused on: (1) aesthetic, mechanical and form factor improvements (e.g. quad-edge curved display and high screen-to-body ratios); (2) business phone necessities (e.g. facial recognition); (3) IOT connectivity features (e.g. iWatch, Airpod, etc.); (4) premature technology marvels (e.g. wireless battery charging and voice assistants), (5) other people's cakes (e.g. mobile payment). Apple and Samsung overlooked the basic features of a phone, which are getting online, making phone calls and taking photos. It is perhaps not a coincident that Samsung had the 2.5mn *Galaxy Note 7* battery recall in 2016 and Apple had the 4G modem fiasco with Intel. We believe Samsung and Apple made these mistakes because they are complacent to believe the innovation phase of smartphone industry was behind them and PC-style competition was about to rule. But instead, innovation continued to be rapid, and with AI playing an increasingly role to automate tasks previously performed by hand, the transition from smartphone to IOT device is seeing the twilight.

Apple and Samsung missed the young generation's photo taking need and have been focusing on aesthetic, connectivity and trivial technology wonders since 2015.

Exhibit 19. Key parameter and selling points of Xiaomi's flagship models

	2016		2017		2018	
	Mi Max	Mix	Mi 6	Mix 2	Mi 8	Mix3
Display size (in)	6.4	6.4	5.2	6.0	6.2	6.4
Resolution (pixel)	1080x1920	1080x2040	1080x1920	1080x2160	1080x2240	1080x2340
Screen	IPS LCD	IPS LCD	IPS LCD	IPS LCD	AMOLED	Super AMOLED
Glass	Gorilla 4	Gorilla 4	Gorilla 4	Gorilla 4	Gorilla 4	Gorilla 4
Camera	2	2	3	2	3	3
Flash	Dual LED	Dual LED	Dual LED	Dual LED	Dual LED	Dual LED
Main camera aperture	2.0	2.0	1.8	2.0	1.8	1.8
System chip	Snapdragon 652	Snapdragon 821	Snapdragon 834	Snapdragon 835	Snapdragon 844	Snapdragon 845
Battery (mA)	4,850	4,400	3,350	3,400	3,400	3,200
OS UI	MIUI 7	MIUI 8	MIUI 8	MIUI 9	MIUI 9	MIUI 10
Mobile payment	-	Mi Pay	Mi pay	Mi Pay	Mi Pay	Mi Pay
Key selling points	Big screen	Screen-to-body ratio >80%	Quad-edge curved display	- Ceramic case; - Bazel-less display	Facial recognition	None

Source: Phone Arena, Blue Lotus (2019/02/07)

Exhibit 19 shows the basic features of Xiaomi's flagship phones in 2016-18. We believe Xiaomi missed the critical time window of 2015-16 to develop differentiable technologies away from Apple and Samsung. Xiaomi was one year behind Apple and Samsung in releasing quad-edge curved displays and facial recognitions, three years behind Samsung to have Super AMOLED screens with 1080 x 2340 resolution (first available on Samsung Galaxy S6 in 2015). But Xiaomi was also one year later than Huawei and Oppo in having three camera settings. Xiaomi did not develop its own battery management technology even today. Xiaomi's first attempt to catch up with iPhone is its *Mix* product in 2016, in which Xiaomi tried to preempt Apple in screen-body-ratio ahead of iPhone X's release. Xiaomi borrowed a design from a Sharp smartphone to achieve this goal but in our view, screen to body ratio was never an important competitive advantage.

Xiaomi's R&D focus has been following Samsung, which was a mistake. Samsung's R&D has been targeting Apple, which was also a mistake.

Aesthetic, mechanical and form factor improvements have been common place in 2G and 3G phone as well. It is not a digital technology improvement.

In 2018, Apple, Samsung and Xiaomi woke up to the new competitive landscape. In 2019, they started to catch up in photo-taking and battery. Huawei didn't rest still, either. In terms of bezel-less display, Huawei and Samsung introduced tear-drop notch, Oppo introduced motorized camera, all of which were better than *iPhone X*'s wide notch and *Xiaomi Mix*'s camera-at-the-bottom approach. In 2019, teardrop or slim notch will likely become mainstream (Exhibit 20 and 21). Quad-camera will become a standard with some form of AI assisted image processing. Fast charging is becoming commonplace with Qualcomm, MTK, Apple, Samsung, Huawei and Oppo/Vivo/OnePlus all have their own proprietary technologies. In terms of authentication methods, facial recognition, iris scanner, in-screen finger print will replace backside finger print as users with small palm sizes cannot reach the backside finger print scanner while holding the phone in one hand. Oppo adopted in-screen finger print first after Apple abandoned the technology for face recognition.

In 2019 we believe most smartphone makers will play catchups against each other.

Exhibit 20. Teardrop notch camera hole adopted by Huawei, Samsung, Oppo and Vivo



Source: Vivo, Blue Lotus (as of Feb 26, 2019)

Exhibit 21. Samsung S9's thin, curved bezel makes it better looking than iPhone X yet still holds a camera hole



Source: Samsung, Blue Lotus (as of Feb 26, 2019)

What can Xiaomi do now to improve its smartphone business?

In 2019, at the onset of 5G technology, what is Xiaomi's opportunities to improve its smartphone position? We believe 2019 is a year of transition. Xiaomi's first priority is to make no mistakes, in supply chain, in quality, in channel strategy and in operations. Because of Xiaomi's life style appeal, we believe Xiaomi's upgrade in brand image will happen, albeit gradually.

Huawei and Samsung will battle for No.1 position in global market share

In 2019, the most exciting technology innovation will come from Huawei and Samsung in foldable and 5G phones. Samsung, LG, Sharp, SONY and China's BOE (000725 CH, NR) all can offer flexible AMOLED screens. Besides the technology marvel effect, phone makers must demonstrate to consumers that it will actually make sense to ditch an iPad for an Android tablet, which so far hasn't been very successful. We believe the high probability even is that consumers will wait for a flexible screen iPad.

Huawei's flexible AMOLED screen is likely coming from China-based BOE.

Camera will continue to be an important differentiator with rumors about iPhone 11, (likely due C4Q19) adopting a quad-camera setting similar to Huawei *Mate 20*, but with Huawei's *Mate 30* (likely due 2H19) likely moving to quint-camera.

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Competition is likely fierce in 2019 due to feature convergence

Our currently estimate for volume availability of *Mi 9* is April to May. This will make *Mi 9* compete heads on with Samsung *Galaxy S10*, Huawei *P30*, *Honor 11* and *Mate 30* and Oppo *R19* (Exhibit 22). All these phones have similar features. Bezel-less display will be available on all models, as well as in screen finger print and Time-of-Flight (TOF) camera. All will have four to five cameras in total. When iPhone 11 is announced in September, it will likely share the same features.

Since most features have already shown in marketplace, timing and execution will be key to achieve good sell through and price margin in 2019.

Exhibit 22. Likely competition to Xiaomi flagship in C1H19

	Xiaomi Mi 9	Huawei P30	Huawei Mate 30	Huawei Honor 11	Samsung Galaxy S10	Oppo R19
Likely available	C2Q19	C1Q19	C2H19	C1Q19	C1Q19	C2Q19
Display size (in)	6.39	6.4	7.0	6.0	6.1	6.4
Resolution (pixel)	1080x2340	1440x2880	3840x2160	1440x2560	1440x3040	1080x2340
Screen	AMOLED	OLED	OLED	IPS LCD	D. AMOLED	S. AMOLED
Camera	4	4	5	4	4	5
Flash	Single LED	Dual LED	Dual LED	Dual LED	Single LED	Single LED
System chip	Snapdragon 855	HiSilicon Kirin 980	HiSilicon Kirin 1020	HiSilicon Kirin 980	Snapdragon 855	Snapdragon 855
Battery (mA)	3,300	4,100	4,200	4,000	3,400	3,700
Price (RMB)	2,999-3,999	3,800-3,900	4,200-4,500	2,600-2,900	5,400-5,600	2,900-3,000
Key selling points	- In screen finger print; -TOF camera	- In screen finger print; - TOF camera;	- Quint camera; - TOF camera	-HiSilicon Kirin 980; -3 cameras	- In screen finger print; - TOF camera	- Bezel-less display

Source: Xiaomi, Huawei, Samsung, Oppo, Blue Lotus (as of Feb 26, 2019)

Xiaomi's top 2019 priority should be to ensure stability in the supply chain

Xiaomi's supply chain partners accept low pricing in exchange for large and predictable volumes. In 2015, Xiaomi's supply chain experienced disruptions, leading to *Mi 5* release delaying to C1Q16. Xiaomi successfully overcame the challenge in 2016 by opening the India market, but the root cause for Xiaomi's supply chain disruption is still there. Exhibit 23 shows Xiaomi's supply chain diagram. As we can see Xiaomi shares supply chain with most Android/Qualcomm-based manufacturers.

Xiaomi's supply chain is incentivized by volume. If volume cannot meet target, supply chain stability will be at risk.

Given *Mi 9* sharing many key components with *Galaxy S10*, it is important for Xiaomi to secure enough supply to safeguard availability. As such we are conservative in estimating Xiaomi's 2019 volume and ASP growth.

What's next after photo-taking? Social video might be the next killer app

Overall, 2019 will be a year of slow innovations. We feel software and services will drive the space more than hardware features. Multimedia will still be the driving force in 2019 and beyond. Here are some ideas.

Multimedia is still the most prevalently used mobile data capability on smartphones and is moving from photo to video.

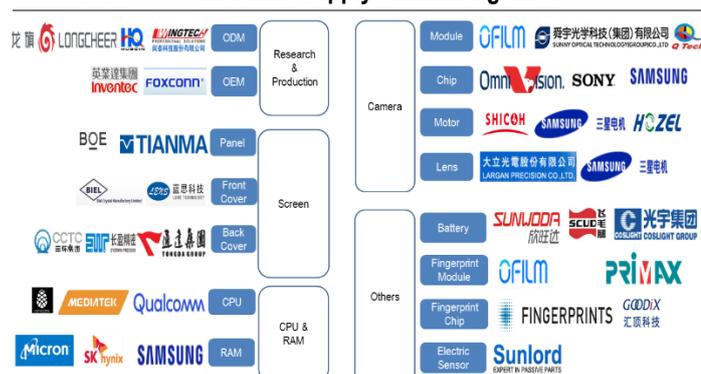
- **Video:** From the angle of mobile Internet evolution, 2018 is the first year of social video, with ByteDance's *Douyin (TikTok)* becoming a global phenomenon. *Douyin* MAU surpassed 500mn in July 2018 and likely approaching 1bn in C1Q19, versus Weixin's (WeChat) 1.08bn as reported by Tencent in C3Q18. Multimedia capability is still the most prevalently used mobile data capability on smartphones. However, editing video requires a far greater level of sophistication and training than editing photos. Video fundamentally differs from photographing in storytelling, an art taught in colleges, not on streets. This makes video editing more of a software and Internet service than a hardware undertaking, in our view. Not surprisingly, AI can probably play a think-out-of-the-box role in video editing. Let us provide two examples:

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- **AI Music Matching:** Recently, Weixin/WeChat launched its social video product called *Time Capsule* (时刻视频) to compete against *Douyin* (Tiktok). Time Capsule's biggest differentiation is an AI-enabled background music matching mechanism for uploaded videos. We estimate Time Capture's MAU has reached 350mn in C1Q19;
- **AI Portrait Colouring:** Leveraging AI, Huawei *Mate 20* can already colour the character differently from its surroundings (Exhibit 24). *Mate 20* can colour a video, too. Search "AI Portrait Colour" can find a list of such videos on Youtube. After cannibalizing digital still cameras smartphone is about to cannibalizing digital camcorders. Social video platforms provide the arena for AI-enabled mobile camcorders.

Automatic music matching and AI portrait coloring will make everyone a movie director.

Exhibit 23. Xiaomi's supply chain in a glance



Source: Xiaomi, Blue Lotus (as of Feb 26, 2019)

Exhibit 24. Huawei's AI Portrait Colouring Photos



Source: Google (as of Feb 26, 2019)

- **Music hardware:** Apple's AirPods, launched in C4Q16, achieved great commercial success, with shipment likely reaching 26-28mn in 2018. From one end, AirPods is a great success story on multiple fronts: (1) Apple invented a new market called True Wireless Stereo (TWS), in which stereo sound signals are delivered to two ear-pieces via Bluetooth simultaneously. Traditional Bluetooth earphones only connect with one ear; (2) Apple acquired Beats for US\$3bn in 2014 to familiarize itself with audio technology; (3) Apple developed a customized chipset called W1 for AirPods to deliver flawless user experience in Bluetooth connectivity and power consumption. AirPods and iWatch are peripherals that greatly expand Apple's user base, readying Apple for continued growth at the time of eventual market saturation.

Apple and Xiaomi have been focusing on growing user bases through peripheral products like AirPods, iWatch and Mi Band. Without killer application behind, these victories can be easily lost.

However, competition is also very quick to catch up. Huawei launched its *FreeBuds* TWS earphone in C1Q18 with good consumer reviews. Qualcomm is rolling out its True Wireless Stereo Plus based on technology it acquired from Cambridge Silicon Radio (CSR) in 2015. Oppo already launched a TWS earphone using a strip down version of Qualcomm's CSR chipset in C2Q18. Huawei, in particular, has been selling a smartwatch that can double as a one-ear Bluetooth earphone since C1Q14 and is now in its 5th generation (*Talkband B5*). Huawei's *FreeBuds* TWS earphone use Bluetooth chip from China-based Bestechnic. Bestechnic also lists Xiaomi, 1More and Lenovo as its customers. Samsung's *ICON X* TWS earphone uses Bluetooth chips from Broadcom and ON Semiconductor.

Xiaomi lacks a credible entry in TWS earphone despite having promising voice assistant product like Xiaoai AI speaker.

As we can see, earphone is difficult to differentiate unless it is connected as a gateway to voice commands, functioning similar to AI speakers like Amazon's Echo. Viewing from this angle,

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Apple's success in AirPods is far less spectacular. Without killer applications behind, user bases achieved can be easily lost, especially if the user base was achieved via low price:

- **Workflow and voice assistant:** Workflow function is an OS-based capability appearing on iOS and Android in recent quarters. For iOS it was the *shortcuts* function and for Android it was screen recording. Both *shortcut* and screen recording can combine manual operations into set instructions to be activated under certain conditions. Similar time saving functions also exist as voice assistants (*Shortcut* also exist under iPhone's voice assistant *Siri*), using voice to replace manual smartphone operations. Xiaomi's *Xiaoai* platform uses a smart speaker to interact with smartphone and other smart appliances. The backend technology of *Xiaoai* platform is from a subsidiary of the Xiaomi affiliated Cheetah Mobile (CMCM US, NR) and Chinese voice recognition startup AISpeech (思必驰). *Xiaoai* competes against Baidu's *Xiaodu* (小度), JD's *DingDong* (叮咚), Alibaba's *Tmall Genie* (天猫精灵) and Tencent's *TingTing* (听听), to name a few. Huawei also launched its own smart speaker product called *Cube*. So far *Xiaoai* leads the AI speaker market with 30mn active users. Total connected smart devices reached 132mn, according to Xiaomi, which we believe also leads Huawei;
- **AR/VR/TV:** 5G will bring meaningful change to the landscape of Augment Reality (AR) and Virtual Reality (VR), thanks to 5G's ultra-low latency. Huawei already has a VR product line, together with other IOT products like laptops, smart watches, smart speakers, smart routers, etc. It is rumoured that Huawei will enter the smart TV market in 2019, especially given Huawei has collaborated extensively with BOE on a number of screen products. If so, it will round out its competition against Xiaomi in a full product spectra.

Xiaomi leads Huawei in smart speaker market and in connected active devices.

Xiaomi and Huawei are head-to-head in TV and AR/VR market. We believe Huawei might have an edge.

Does Xiaomi educate the market for Huawei, then? No.

With the above analysis, it does invite the question of whether Xiaomi lacks core technology and therefore serves to educate the market for Huawei. However, we think such conclusion is oversimplified. Besides the fact that Xiaomi has competencies outside of technology, Xiaomi also excels in certain niche technologies and has early mover advantage in some products.

Lacking core technology is Xiaomi's Achilles' Heel but it doesn't prevent Xiaomi from leveraging its other strengths to compete.

For example, in smart speaker Xiaomi does have core technology through its affiliated Cheetah Mobile and moved ahead with a developer ecosystem that rivals even Amazon Alexa, a technology Huawei's *Cube* uses. The technology lead is not yet substantial but is a lead.

Another example is Xiaomi's early mover advantage in smart TV. Xiaomi fortified this advantage by investing in China's Netflix, iQiyi (IQ US, NR). It is not clear whether Xiaomi can repeat this strategy in India and elsewhere to avoid falling into a spec war against Huawei in international markets, but without a content partner, Huawei's smart TV initiative can be short lived.

Xiaomi also connects devices in its ecosystem better than Huawei. As of C3Q18, Xiaomi connects 132mn devices worldwide, excluding smartphones and laptops. If we assume Xiaomi's smartphone user base is equal to two years of shipment it will add 216mn, roughly equal to MIUI's MAU. This will roughly equal to 1/3 of Apple, which had around 1.4 bn active iOS users worldwide as of C4Q18 (Source: Apple).

Technology lead in certain markets, early mover advantage in others and connected device count are three areas Xiaomi leads Huawei.

Xiaomi is a life style company and many others

Xiaomi rose on China's Generation Z, those born after 1990's, a generation with strong convictions and biases. The early Mi-Fans, short for Xiaomi's fans, resonate with the values Xiaomi stand for, which is hard working, openness and being an underdog. For those Mi-Fans entering working force

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and starting families, Xiaomi products also offer the best value for their money, offering core functions well but without losing trendiness.

Therefore, **Xiaomi is a life style company**. So is Apple. But not Huawei, Oppo and Samsung. Xiaomi and Apple share certain product design philosophies. For example, Cliff Kuang of Fast Company summarizes six pillars of Steve Jobs' design philosophy: (1) Craftmanship; (2) Empathy; (3) Focus; (4) Impute; (5) Friendliness; (6) Simplicity relatable to the past. While we can argue not all these six traits are applicable to China and Xiaomi, Xiaomi does try to practice some of Jobs' design philosophy teachings. **Xiaomi's products are easily identifiable visually**.

Further, we believe Xiaomi is also a **demographic company**. Xiaomi consumers feel they share the same dream, emotions and struggle as Xiaomi, and can put these feelings into a purchase action because the functionality and price also meet their requirements and budgets. To this end, Xiaomi is a brand pioneer and trend setter while Huawei and Samsung are technology companies with consumer product as outlets for their inventions. Last, but not the least, Xiaomi is a **channel** company, an **international** company and an **investment** company. Xiaomi pioneered the online sales channel and moved to the offline specialty store format for its ecosystem partners. Xiaomi has the highest contribution of revenues from overseas among its Chinese competitors, surpassing even Huawei's consumer business (but below Huawei as a whole). These said, however, Huawei and Oppo are quickly moving into these competencies. **We say Xiaomi is copiable in each individual competency but is uncopiable as whole**.

Besides technology, Xiaomi is also a life style, design philosophy, demographic, online/offline, international and investment company.

Xiaomi can win, but only after a long battle

Before Internet-of-Things (IOT) becomes widely adopted, Xiaomi must compete in the smartphone market, which is quickly saturating. Xiaomi as a regional and segment innovator must now face Huawei, a global and technology innovator. Oppo, who is also a regional and segment innovator, is a strong competitor. Xiaomi is fighting, however, an asymmetrical war because Xiaomi is stretched over a very broad terrain. But as IOT starting to take root, the battle ground might gradually shift to Xiaomi's favor.

Xiaomi's resources are spread very thin

As we outlined, Xiaomi is a technology company, but is also a life style, design philosophy, demographic, channel innovation, international and investment company. Xiaomi makes a wide range of 3C and consumer electronics products, including smartphones, smart TV's, laptops, AI speakers and smart routers. It invests and collaborates with companies that produces air purifiers, air conditioners, smart watches, smart vacuum cleaners, water purifiers, suitcases, rice cookers, laser projectors, washing machines, refrigerators, drones, personal transporters, etc. Xiaomi is building an ecosystem of smart hardware partners that leverages the connectivity feature of 5G. But connecting these 3C and consumer electronics devices hasn't been a necessity. Xiaomi calls itself a "life style" company. Its chairman compares Xiaomi to Costco, who changed the way American consumers shop. It shows that Xiaomi is trying to define its core competencies, which in our view have evolved over time. But one thing remains clear, Xiaomi is spreading itself thin on a very broad terrain.

Xiaomi engineers are likely undercompensated and overworked

According to Xiaomi's prospectus, as of C1Q18, Xiaomi had 1,292 total employees in smartphones, 955 in ecosystem, 455 in smart TV's and 700 in AI and cloud. Non-smartphone R&D employees outnumbered smartphone R&D employees 1.6:1.

Total R&D employee was 7,137 in C3Q18 (44% of total). This compares to Huawei's R&D staff numbering ~80K (45% of total) according to its annual report. In 2017 Huawei spent RMB90bn in R&D (14.5% of revenue), comparing to Xiaomi's RMB3.2bn.

We suspect that Xiaomi's engineers are not only undercompensated against Huawei, but also undercompensated comparing to industry (Exhibit 25). According to our estimate, average monthly cash compensation for Xiaomi engineers was likely RMB26.8K (US\$4.5K). Including share-based compensation, it rises to RMB49.5K. The cash component of the compensation declined in absolute numbers YoY in C1Q18, according to our estimate. This is below average salary compensation in the hardware industry.

According to our industry check, Oppo and Vivo have a much smaller R&D workforce but almost 100% are dedicated to smartphone development. We estimate the combined engineer working force of Oppo and Vivo was around 4,500 at the end of 2018. The combined market share of Oppo, Vivo and OnePlus were 2x of Xiaomi in 2018, with greater profit margins. This led to the cash compensation of Oppo, Vivo and OnePlus R&D engineers to be much higher than Xiaomi engineers.

The dilemma is, how can Xiaomi consistently development better products than its competitors if it pays less to its supply chain partners and its R&D engineers?

Xiaomi is stretching its resources thin while its competitors are focusing only on telecommunication or on smartphones.

Xiaomi has more non-smartphone R&D engineers than smartphone R&D engineers.

Huawei's R&D expense was 30x and R&D headcount was 10x of Xiaomi's.

We estimate the combined workforce of R&D engineers to be ~4,500 in Oppo, most of which are dedicated to smartphone development.

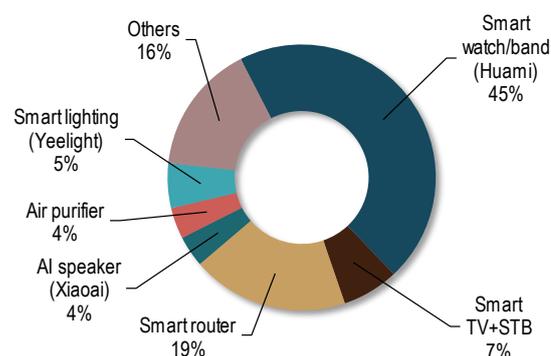
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Exhibit 25. Xiaomi R&D compensation estimate

(RMB)	2015	2016	2017	1Q17	1Q18
R&D expense (RMB mn)	1,512	2,104	3,151	605	1,104
Among: compensation related	1,023	1,443	2,240	451	799
Less: share based compensation	(691)	(871)	(909)	(136)	(488)
Assume: % goes to R&D	75%	75%	75%	75%	75%
R&D employee, end of period (K)	1.90	2.87	4.34	3.56	5.38
Compensation incl. SBC/month (RMB K)	45.0	42.0	43.0	42.2	49.5
Compensation excl. SBC/ month (RMB K)	22.2	23.0	29.9	32.7	26.8

Source: Xiaomi, Blue Lotus (as of Feb 26, 2019)

Exhibit 26. Xiaomi connected devices, C3Q18



Source: Xiaomi, Blue Lotus (as of Feb 26, 2019). Total=132mn

Xiaomi ecosystem competes for resource at a time of market segmentation

As smartphone industry evolving from early to late stage, market increasingly segments, which happened in the late stages of 2G and 3G markets as well. In these late stages, innovation slows down and lead brands start to focus on peripheral functions and niche features such as form factors, aesthetic designs and cross-sector experiments. This calls for brute-force R&D investment into product segmentation, making smaller players more painful than large ones.

Apple is the first victim of this market segmentation. Apple releases new products once a year, usually in September. This product release cycle is clearly not suitable for the fast segmenting and evolving market. To counter the less-defined market demand, the incumbent usually broadens product lines to ensure coverage. Nokia and Samsung did so in the late stage of 2G and 3G markets, respectively, flooding the market with thousands of SKU's of phones. Huawei is copying this strategy now. This will make narrow product line companies very painful, in our view. Xiaomi must grow in scale, quicken its development cycle and spread R&D investment over a broader base to stay competitive. The internal competition for engineering resources will put strain on Xiaomi's organization.

Xiaomi's long-term priority should turn its weakness into strength

We acknowledge that due to various resource constraints and market stages, there is very little Xiaomi can do in the near term other than not making basic mistakes. But in the long run, we endorse Xiaomi's market positioning as a connected IOT solution provider.

Huawei and Oppo will eventually converge to Xiaomi's way

Xiaomi's business strategy is ahead of its time, opening itself to competitors to attack. But if Xiaomi can persist, the battle will increasingly shift to Xiaomi's ground. What does Xiaomi's business strategy differ from others?

- **Acquire user base first, monetize them later.** This is from the Internet playbook. In this regard we categorize Xiaomi to be more similar to JD.com (JD US, BUY, US\$30) than to Tencent (700 HK, BUY, HK\$372). For Xiaomi, hardware is a vehicle to acquire users. Xiaomi sacrifices profit margin on hardware to make itself hard to match in value-for-money, similar to JD.com sacrifices profit margin in general merchandise to make itself hard to match in basic shopping needs. Both try to monetize users at a later stage through other means, whether in-house or third party, like Amazon did with AWS. Comparing to pure Internet names like Tencent,

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In the early stage of each hardware innovation, driving feature for the product is highly uniform. In the late stage when market starting to segment, driving feature is diverse.

There is very little Xiaomi can do in the near term other than executing well and avoiding mistakes.

Four criteria of an Internet platform: (1) basic, (2) free, (3) low cost and (4) monetizable. Xiaomi and JD have (1) and (4).

Alibaba, Baidu and Bytedance, Xiaomi and JD's traffic acquisition method is of higher cost, more complicated but is a basic service and monetizable. If competitors do not have better way of acquiring users, the Xiaomi/JD/Amazon approach can work;

- **Add connectivity layer to each product.** Huawei and Oppo do not compete in so many different products and evangelize the vision of IOT like Xiaomi does. The question is do connected products offer real consumer value? The answer in the short term is no but in the long term is likely yes. So Huawei and Oppo will eventually also face the issue of resource dilution;
- **Form ecosystem by recruiting progressive innovators to change their respective industries.** The history of information technology is a history of digitalization. The advent of 3G digitalized communication. 3G to 4G increased speed and 4G to 5G reduced latency. The advent of computer digitalized computing, down to handheld devices popularizing the client, up to servers and cloud centralizing the resource. The advent of disk drives digitalized storage. With all information digitalized Apple kicked off the trend of connecting information from hardware to hardware. Xiaomi's ecosystem approach can add a connectivity layer to the hardware of ecosystem partners, with knowhow of making the hardware still resting with the partner. This approach is more practical than learning the know-how of making the hardware itself. Globally the Xiaomi ecosystem is far ahead of others, including Apple;
- **Use one-size-fits-all in each product category.** Xiaomi has pioneered a business model of one-size-fits-all to make its wide product line manageable under stressed engineering conditions. This necessarily means Xiaomi is outgunned in the battle of smartphone but it doesn't mean Xiaomi is losing the war of IOT. Xiaomi's strategy of combining low price, few SKU, simplicity, self-service and online sales is aimed at casting a net as wide as possible and fight a proxy war in each segment with ecosystem partners. To make it happen Xiaomi must succeed in establishing itself as a life style, design philosophy, demographic, channel innovating and international company. Xiaomi's key audience evolves from tech enthusiasts to Generation Z to white collar young families;
- **Leveraging capital to drive change.** Venture investment is an integral part of the Xiaomi model. Exhibit 27 lists the name of major Xiaomi subsidiaries and their focused product categories. Competitor might envy Xiaomi's strategic footprint in so many different categories but we must ask ourselves what drives these entrepreneurs into accepting Xiaomi's investment and what drives these limited partners (LP) into giving money to Xiaomi? **Apparently, Xiaomi provides value to these partners.** These values are what we outlined: **Technology assistance, identifiable consumer base (life style, design philosophy and demographic), channel assistance and globalization assistance.** While Huawei and Oppo can probably also help in technology, channel and globalization, they do not provide such a clearly identifiable customer base because they are not life style, design philosophy and demographic companies. Needless to say, another reason Xiaomi can leverage capital better than competitors is because of Xiaomi's chairman being willing to step forward to act as a beacon of accountability (personal marketing). Neither Huawei nor Oppo's CEO are willing to take this role.

Huawei and Oppo will also face the issue of resource dilution when they move to IOT appliances.

Using investments, Xiaomi has recruited a group of progressive industry executives in each of the IOT fields to form the Xiaomi ecosystem.

Xiaomi is outgunned in the smartphone battle but it doesn't mean it is losing the war of IOT.

Xiaomi did so well in investing because Xiaomi (1) provides value to its partners, and (2) chairman is willing to step forward for accountability.

How many active users are contributed by Xiaomi ecosystem partners?

Xiaomi announced it connected 132mn devices, excluding smartphones and laptops, as of C3Q18. We estimate about 45% was from Huami (HMI US, NR) and 19% was from *Xiaomi* smart router. *Xiaomi* smart TV and set top boxes contributed 7% and *Yeelight* smart lighting contributed 6% (Exhibit 26). We estimate ecosystem partners likely contributed 2/3 of Xiaomi's IOT connected devices with Xiaomi itself contributing 1/3. However, given Xiaomi's controlling stake in most ecosystem partners, supplier risk is very small.

Judging from disclosed information so far, Xiaomi holds significant stake in most ecosystem suppliers, minimizing supplier risk.

Exhibit 27. Key Xiaomi subsidiaries and ecosystem partners

Company name	Chinese name	Xiaomi and related shares	Main product	Ticker/Status	Revenues (RMB mn)		
					2017	2018E	2019E
1More	万魔声学	25.8%	Headphones	Private	630	NA	NA
Chunmi	纯米	38.9%	Smart rice cooker	Private	NA	NA	NA
Huami	华米	30.1%	Smart watch	HMI US	2,049	3,567	4,659
Chingmi	青米	28.3%	Power strip	Private	NA	NA	NA
Lumi	绿米	27.8%	Power switch	Private	NA	NA	NA
Ninebot	Ninebot	21.6%	Personal transporter	Private	NA	NA	NA
Roborock	石头科技	12.8%	Smart vacuum cleaner	Private	NA	NA	NA
Runmi	润米	9.4%	Suitcase and bags	Private	NA	NA	NA
SmartMi	智米	70%	Air purifier	Private	NA	NA	NA
Viomi	云米	33%	Water purifiers	VIOT US	873	2,465	4,866
Xunkids	小寻科技	27%	Children's smart watch	Private	NA	NA	NA
Xiaoyi	小蚁科技	NA	Sports camera	Private	NA	NA	NA
Zimi	紫米	49%	Power bank	Private	NA	NA	NA

Source: Xiaomi, Huami, Viomi, Bloomberg, Blue Lotus (as of Feb 26, 2019)

Xiaomi ecosystem achieved selected success in early stage of IOT categories

As shown in Exhibit 26 new IOT hardware contributed most of Xiaomi's IOT connected devices. The same is also true for Apple as we estimate iWatch and AirPod contributed the majority of iOS installed base. For developed markets like US, novel consumer devices have a better chance of being adopted.

However, to make IOT work, it must become more and more relevant to human's lives. New IOT hardware like smart watch, waist bands and voice-assistant/AI-speaker typically achieves consumer value through individual connectivity. But in the family and public settings their function is already fulfilled by traditional hardware, which becomes a totally different matter to replace.

In the traditional hardware which typically functions for a group of people instead of an individual, "black electronics" are quickly digitalizing while "white electronics" digitalize at a slower pace. Black electronics (because they are typically black in exterior) are audio and video equipment that typically deal with virtual consumption. White electronics (because they are typically white in exterior) are mechanical and chemical equipment that typically deal with physical consumption. Digitalization can only monitor and control its functions.

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Exhibit 28 shows the market size of air conditioner, refrigerator, washing machines and TV sets. Exhibit 29-31 show the market share of these markets.

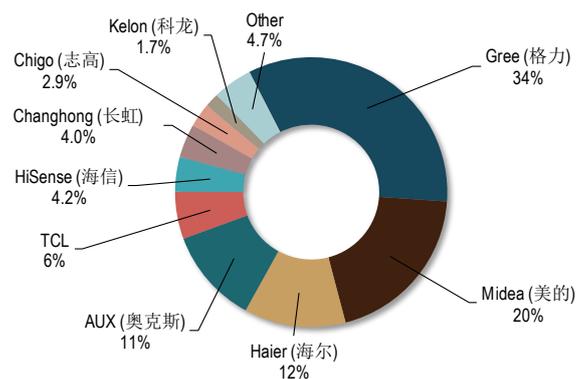
As we can see the concentrations of these four major home appliance markets are quite high. In air conditioners, *Gree* has ~1/3 of market share and top three vendors has ~65% unit market share (Exhibit 29). We believe *Gree*'s top market share has to do with both its product and its channel infrastructure, as air conditioners requiring in-site installation while refrigerator, washing machine and television generally do not. In these three markets, overseas brands have higher market shares. Nevertheless, top three vendors occupy 55% and 66% of unit market shares in refrigerators and washing machines (Exhibit 30 and 31).

Exhibit 28. China key home appliance shipments

(mn units)	2016	2017	2018E	2019E	2020E	2021E
Air conditioner	80.6	118.3	114.5	112.9	117.7	121.5
Home use	60.5	88.8	85.8	84.7	88.3	91.1
Commercial use	20.2	29.6	28.6	28.2	29.4	30.4
Refrigerator	121.5	119.9	122.7	120.3	123.3	128.4
Domestic	74.2	75.1	78.4	79.4	83.3	88.0
Export	47.3	44.8	44.3	40.9	40.0	40.4
Washing machine	59.5	64.1	80.7	78.5	81.1	84.0
Domestic	41.1	44.1	59.8	56.6	58.0	59.8
Export	18.4	19.9	20.9	22.0	23.1	24.2
TV sets	135.2	133.9	149.4	159.8	171.6	181.6
Domestic	55.9	53.4	53.5	52.4	53.5	54.0
Export	79.4	80.4	95.9	107.4	118.2	127.6

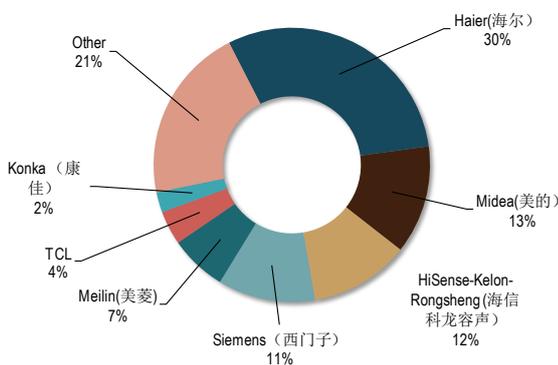
Source: WIND, Blue Lotus (as of Feb 26, 2019)

Exhibit 29. Air conditioner unit market share, 1H18



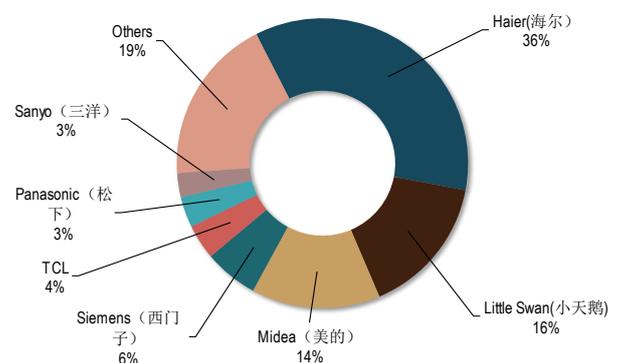
Source: WIND, Blue Lotus (as of Feb 26, 2019)

Exhibit 30. Domestic refrigerator unit market share, 1H18



Source: WIND, Blue Lotus (as of Feb 26, 2019). Domestic only

Exhibit 31. Domestic washing machine unit share, 1H18



Source: WIND, Blue Lotus (as of Feb 26, 2019). Domestic only

Based on our observations, the more Xiaomi ecosystem departs from the smartphone supply chain, from Xiaomi's life style positioning and into the "white electronics" territory, the more concentrated the industry, the more likely Xiaomi's effort will fail. Manufacturing economy of scale is usually the competitive advantage of Chinese domestic vendors against domestic competitors. Channel infrastructure and local design are usually their competitive advantage against foreign competitors. These competitive barriers also apply to Xiaomi.

If Xiaomi cannot achieve scale advantage over its competitors, its life style selling point only works to a certain degree.

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Xiaomi has chance to further turn capital market to its advantage

In our view, Xiaomi has already leveraged venture capital well. Xiaomi chairman Lei Jun formed Shunwei Ventures with ex-GIC executive Koh Tuck Lye in 2011 and since then Shunwei has invested >200 companies with eight IPO's in 2018 alone. However, in terms of secondary markets, Xiaomi shares haven't performed very well. IPO'ed at HK\$17/share, it is now trading significantly below IPO price.

Now facing competition with global players like Huawei and Oppo, we believe Xiaomi should leverage capital markets as one of its competitive advantages. The key, in our view, is to position itself as challenger and comparable to Huawei and Apple. A challenger doesn't mean Xiaomi must play Huawei or Apple's game. A challenger means Xiaomi also has its own set of strengths.

When JD.com came to the capital market in 2014, it lost RMB(5.0)bn, followed by a bigger loss in 2015 of RMB(6.3)bn. Yet JD today is still trading meaningfully above its IPO price, despite rival Pinduoduo losing similar magnitude of money. JD and PDD's losses are real cash losses, not fair value revaluation or share-based rewards. At the time and now, JD.com and PDD also never made a profit, unlike Xiaomi which was profitable in 2016 on the operating level.

The reason JD and PDD can be valued as lofty levels is because they are competitors to Alibaba. Today, we believe Huawei is no less a global player than Alibaba. In 2017 Huawei generated an operating cash flow of RMB96bn (*Source: Huawei annual report, KPMG*), comparing to Xiaomi's pro forma operating cash flow of RMB5.9bn, Alibaba's RMB125bn and Apple's US\$64bn.

Xiaomi must demonstrate its business scalability as a global tech leader

In our view, public market's evaluation of Xiaomi will not change with Xiaomi's financial numbers, but will change with what Xiaomi as a company wants to become. Huawei and Apple are global companies in technology and life style. Xiaomi is still a regional company in these two aspects. To move up the value chain, Xiaomi must demonstrate its business can be scalable to global scale.

Currently, the biggest evidence against this scalability is technology prowess.

Over the past several years, smartphone technology continues to evolve. In 2019, despite the global market for smartphones reaching a saturation point, technology innovation is still rapid, making the situation meaningfully different from the late stage of the PC market, in our view. Mobility, form factor, battery power, AI and computing power continue to innovate at a very rapid phase.

If Xiaomi is not able to differentiate by technology, it will lose one of the most important attributes for differentiation.

Exhibit 32 shows the competition among Qualcomm, Apple, Samsung and Huawei in smartphone's core semiconductors (SOC), which we saw clearly acceleration after Huawei's participation. We notice that historically Samsung had tried both to develop its own SOC (System-On-A-Chip) and operating systems, only to see mixed success. With a bigger home market and a more focused R&D team, with the help of mistakes made by Apple and Samsung, Huawei is trying to do differently, in our view.

Apple, Qualcomm, Huawei and Samsung release their high-end chipsets (SOC) approximately once a year, typically taking advantage of the latest foundry technology. Qualcomm and Samsung typically release in C1Q, and Apple and Huawei in C3Q. However, thanks to Qualcomm's technology lead, its processor usually ties or outperforms Huawei's released six months later. Certainly, Qualcomm needs to maintain such a lead so that its vendor partners have sufficient time

If Xiaomi cannot convince the capital market it is a worthy challenger to Huawei and Apple, its share price cannot go up, in our opinion.

How can make Xiaomi more scalable worldwide?

Developing application processor is beyond the reach of Xiaomi, but Qualcomm should still stay among the front.

Qualcomm still maintains meaningful lead.

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to test and develop. But thanks to close collaboration, key partners like Xiaomi can often co-develop with Qualcomm so as to roll out products in tandem with Qualcomm chips. *Mi 9*, for example, is releasing as the first smartphone using Snapdragon 855 in C1Q-C2Q19 time frame.

Qualcomm is able to release its product earlier but not substantially earlier than its competitors because everyone uses ARM's technology in CPU. The difference is Apple and Qualcomm obtained structural licenses to design chips using ARM's instruction sets while Huawei only obtained an IP license to use ARM own core processor (*Cortex*). Samsung is somewhere in between. On the GPU side, Apple has been designing its own GPU with IP licensed from a British company called Imagination Technology until A10 (C3Q16), after which Apple developed its own GPU IP. Everyone else license from ARM. Again, Qualcomm uses a structural license to design its own *Adreno* while Huawei and Samsung use ARM's GPU (*Mali*) directly.

Cortex and Mali are ARM-designed IP cores. Snapdragon and Adreno are Qualcomm designed CPU and GPU using ARM instruction sets.

Exhibit 32. Application SOC of Qualcomm (Snapdragon), Huawei (Kirin), Apple and Samsung (Exynos)

	Product	Process	Core	CPU Clock	GPU	CPU score	GPU score	Total Score
3Q19E	Kirin 1020	7nm	9	2.9 GHz	Mali-G76 MP12	NA	NA	NA
3Q19E	Apple A13	7nm	8	2.9 GHz	Apple-designed 6 core	NA	NA	NA
1Q19	Exynos 9820	8nm	8	2.9 GHz	Mali-G76 MP12	NA	NA	NA
1Q19	Snapdragon 855	7nm	8	2.8 GHz	Adreno™ 640	130,364	154,679	285,043
3Q18	Kirin 980	7nm	8	2.6 GHz	Mali-G76 MP10	118,247	116,124	234,371
3Q18	Apple A12	7nm	8	2.5 GHz	Apple-designed 4 core	NA	NA	NA
1Q18	Exynos 9810	10nm	8	2.9 GHz	Mali-G72	108,774	105,712	214,486
1Q18	Snapdragon 845	10nm	8	2.8 GHz	Adreno™ 630	117,017	142,158	259,175
3Q17	Kirin 970	10nm	8	2.8 GHz	Mali-G72 MP12	81,292	105,712	187,004
3Q17	Apple A11	10nm	6	2.4 GHz	Apple-designed 3 core	NA	NA	NA
1Q17	Exynos 8895	10nm	8	3.0 GHz	Mali-G71	93,970	104,188	198,158
1Q17	Snapdragon 835	10nm	8	2.5 GHz	Adreno™ 540	90,220	92,943	183,163
3Q16	Kirin 960	16nm	8	2.5 GHz	Mali G71MP8	86,484	82,644	169,128
3Q16	Apple A10	16nm	4	2.3 GHz	Proprietary GPU	NA	NA	NA
1Q16	Exynos 8890	14nm	8	2.6 GHz	Mali-T880 MP12	NA	NA	NA
1Q16	Snapdragon 821	14 nm	4	2.4 GHz	Adreno™ 530 GPU	86,478	82,018	168,496

Source: Qualcomm, HiSilicon, Samsung, Wiki, CPU and GPU score from Ludashi (note scores are specific to phone models), Blue Lotus (as of Feb 26, 2019)

Multiple years of investment might be needed to enhance Xiaomi's standing

We believe to invest in smartphone semiconductor is already too late for Xiaomi. Instead Xiaomi should start investing in AI semiconductors in hope of future usage in IOT devices. Semiconductor capability takes many years to develop, but catching up with a volume produced device category is a proven way to accelerate this capability (Exhibit 34).

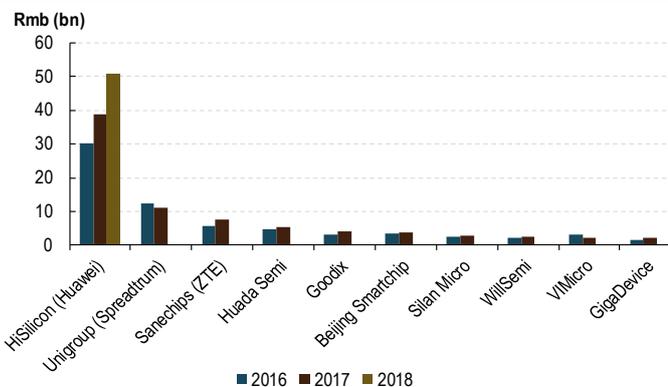
Huawei is probably the 5th largest fabless semiconductor company in the world.

Huawei's development of its semiconductor subsidiary, HiSilicon (海思), offers a point of reference. First established in 1991, HiSilicon lost money for many years until Huawei's leadership in TD-LTE helped it to turnaround. In 2017, IC Insights ranked Huawei as the 7th largest fabless semiconductor company in the world if including the in-house revenues. Trendforce estimates HiSilicon's 2017 revenue to be RMB38.7bn, growing 28% YoY and contributed ~20% of China's total IC industry revenues. If we apply Huawei's smartphone unit volume growth of 34% (Source: IDC) and an estimated ASP decline of (2.5)%, HiSilicon's 2018 revenue could be in the neighborhood of RMB50.3bn (US\$7.5bn). This will place HiSilicon ahead of Advance Micro Devices (AMD US, NR) and possibly ahead of Apple as the 5th largest fabless IC company in the world (Exhibit 33).

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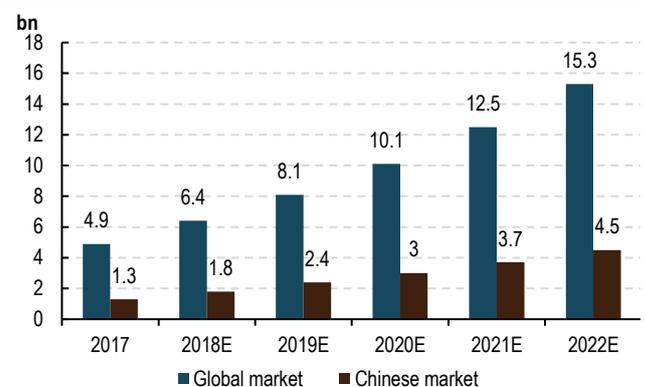
Certainly it doesn't mean Xiaomi will not capitulate to a top position if Xiaomi uses its own chips. But to be able to compete step-by-step against Apple and Qualcomm in smartphone's core semiconductor and gradually reduces the reliance on Qualcomm is a big achievement of HiSilicon. Xiaomi made a brief stint in trying to develop its own core semiconductor and failed.

Exhibit 33. China fabless design firm revenue



Source: Trendforce, Blue Lotus (as of Feb 26, 2019)

Exhibit 34. Market sizing of IOT appliances (volume)



Source: Xiaomi, Blue Lotus (as of Feb 26, 2019)

Currently Shunwei Ventures made some investment into peripheral chip startups like Southchip, maker of power management IC's. But overall Xiaomi's semiconductor investment is very limited.

Risk of reliance on Qualcomm exists but not as big as the PC days

How likely is Qualcomm to fall behind Apple, Huawei or Samsung in providing the most state of art SOC design for smartphones? Very unlikely, in our view.

With every smartphone player converging to the ARM architecture, the chance to greatly deviate from the mean has gotten slim, in our view. The AA (ARM-Android) Alliance of the mobile era is different from the Wintel (Windows and Intel) Alliance in that (1) ARM does not get involved in semiconductor manufacturing like Intel did and (2) Android does not get involved in application development like Microsoft did. This makes differentiation by semiconductor process and application bundling less likely and therefore is a healthier industry structure than PC. Semiconductor companies can focus on design and application developers can focus on development. It is for this reason that we believe, despite smartphone unit shipment reaching a saturation point, innovation still happens in a rapid pace.

This makes design flaw as the only chance things can go wrong with Qualcomm, which can still happen. But with process migration removed as a source for failure Qualcomm's supplier risk is greatly reduced, until a viable competition emerging for TSMC (TSM US, NR).

In C2Q18, Chinese government vetoed Qualcomm's bid to buy NXP, which if happened, will broaden Qualcomm's product portfolio to incorporate more chips into its SOC. Broadcom tried to bid for Qualcomm in hope for doing the same for its IOT produce portfolio but was vetoed by the US government. With ARM now owned by Softbank the global landscape for semiconductor does appear to be relatively open. Outside of applicator processor and RF modem there are many wireless semiconductor expertise scattering around in US and Japanese semiconductor companies like Broadcom (BRCM US, NR), Murata (6981 JP NR), Skyworks (SWKS US, NR) and Qorvo (QRVO US, NR).

Xiaomi, Shunwei and Lei Jun are underinvested in semiconductors, in our view.

Smartphone is more innovative than PC at similar stages.

Risk of quality failure by Qualcomm is greatly reduced because everyone outsources to TSMC now.

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Huawei's trouble with US might be Xiaomi's opportunity

Currently, Huawei smartphone is not sold in the US. But can Xiaomi's benefit from Huawei's trouble?

Yes, it can. OnePlus, Oppo's high-end sister company, already ranked 5th for phone selling above US\$500, after Apple, Samsung, Google and LG. OnePlus also achieved No.1 market share in high-end (>US\$500) smartphone market in India. However, to do so requires Xiaomi to complete overhaul its product marketing strategy. This transition is likely to take 1-2 years. The US smartphone market is highly competitive, with Apple alone taking near 40% market share and Samsung and LG together account for another 40% (Source: Counterpoint). The US market is also dominated by the telco channel, with 85% of smartphone users owning a locked phone (Source: NPDP). This is very different from Xiaomi's channel strategy of selling through e-commerce and specialty stores to prepaid subscribers. Currently we do not factor in any estimates for Xiaomi in the US market because we believe to spread itself over such a wide market vying to such a small market share in unlocked phones is likely to be uneconomical.

Another possibility that Xiaomi to benefit from Huawei's geopolitical trouble is to buy content in a major market. We suggest Xiaomi to look into India's online video market. Xiaomi already invested in Chinese online video leader iQiyi. It can do the same with an India one.

We believe Xiaomi should get involved in India's online video market. It can revamp Xiaomi's prospects in smart TV.

85% mobile users in the US have a subsidized plan from the telco's, making their phone choice dependent on the carrier.

Near-perfection is a prerequisite for high end user experience

In January 10, 2019, Xiaomi announced the spinoff of *Redmi* (红米), its low-end smartphone brand. Xiaomi's strategy is to separate *Redmi*'s value-for-money brand image from the main *Mi* brand so as to give *Mi* a mainstream positioning. We believe this transition is very strategic and important. A mainstream *Mi* and a high-end *MIX* can give Xiaomi healthy average-selling price (ASP) to enhance profitability, so as to benefit long term investment in R&D, supply chain and channel relationships. Mainstream and high-end product lines can complement Xiaomi's existing user-based go-to-market strategy, leading to broader capture of users.

In our view, high-end smartphone doesn't mean high bill-of-materials (BOM). Instead, it means near-perfection user experience, hence the high profit margin. This means being attentive to details and consistent in quality control. In the past Xiaomi smartphones are often faulted with lacking a soft touch of user friendliness. It relies on the brute force of value-for-money of cutting-edge hardware to attract buyers, adding stacking of features that can be clearly defined and outlined.

China Mobile's Terminal Research Institute has been publishing a mobile terminal quality report since 1H16. We pick the top three smartphones in each report and compiled a table as shown below (Exhibit 35).

As we can see **Xiaomi did, over time, improve in quality feedbacks**. It achieved four top-three rankings in 2H18, same as 1H17. But three out of 1H17's top Xiaomi models were low-end *Redmi*'s while three out of 1H18's top Xiaomi models were mid-end models. Xiaomi still doesn't have, and never had a single top-three entry in the high-end (>RMB3-3.5K, or US\$500) category.

High-end smartphone doesn't necessarily mean high bill-of-materials (BOM). Instead, it means good user experience, which requires a lot of attention to details.

Xiaomi's phone quality improved over time.

In 2H18, China Mobile moving up the report's price bracket by RMB500. We believe this slightly benefited Xiaomi because it shifts Huawei and Samsung's flagship models upward from Xiaomi's. But judging from Mi 8's performance in 1H18, Xiaomi's improvement in quality is also obvious. Despite lack an entry in the high-end category, Xiaomi captured more top three spots in mid-end than Huawei and Oppo in 2H18.

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Quality is a self-fulfilling prophecy

Going forward it is important for Xiaomi to break the mid-end price bracket because without a healthy profit margin, Xiaomi cannot entice supply chain partners to look after Xiaomi's product quality. It also cannot entice channel partners to promote Xiaomi product. Xiaomi has earned itself a reputation as a relentless cost cutter in the supply chain. This reputation doesn't hurt Xiaomi in the online channel, but it does in the offline. Partners only continue to work with Xiaomi because it helps them fill the manufacturing capacities and cover the retail rents.

If Xiaomi cannot share enough profit with its supply chain, partners will eventually revolt, or place Xiaomi orders in low priority.

Exhibit 35. Top smartphone models from 2016-18

	1H16	2H16	1H17	2H17	1H18	2H18	
>RMB3K	Samsung S7	Huawei Mate 9	Huawei P10	Huawei Mate 10 Pro	Huawei P20 Pro	>RMB3.5K	Huawei Mate 20
	Samsung S7 Edge	Apple iPhone 7 Plus	Samsung S8+	Samsung Note 8	Huawei P20		Huawei Honor Magic 2
	Huawei P9	Apple iPhone 7	Huawei P10 Plus	Apple iPhone X	Samsung S9+		Samsung Note 9
RMB2-3K	Huawei Mate 8	Huawei G9 Plus	Huawei Honor V9	Oppo R11S	Huawei Honor 10	RMB2.5-3.5K	Xiaomi Mix 3
	Huawei Honor V8	Huawei Nova	Oppo R9S	Oppo R11	Xiaomi Mi 8		Oppo R17
	Oppo R7s Plus	Oppo R9S	Xiaomi Mi 6	Huawei Honor 9	Oppo R15		Xiaomi Mi 8
RMB1-2K	Samsung J7	Huawei Honor Enjoy 6X	Huawei Nova	Huawei Honor Enjoy 7X	Huawei Nova 3e	RMB1.5-2.5K	Huawei Nova 3i
	Huawei G9	Huawei G9 Youth	Huawei Honor 8	Samsung C8	Huawei Honor Enjoy 8+		Xiaomi Mi 8SE
	Samsung J5	Samsung On7	Huawei Enjoy 7+	Oppo A77	Oppo A3		Oppo K1
<RMB1K	Huawei Honor 5C	Huawei Honor Enjoy 5A	Xiaomi Redmi 4A	Xiaomi Redmi 5A	Xiaomi Redmi 5+	<RMB1.5K	Huawei Honor 8X
	Samsung On5	Xiaomi Redmi 3X	Xiaomi Redmi 4	Huawei Honor Enjoy 6A	Huawei Honor Enjoy 7C		Xiaomi Mi 8 Youth
	Meizu Meilan3	Huawei Honor Enjoy 5A	Xiaomi Redmi Note 4X	Huawei Honor V9 Play	Huawei Honor Enjoy 7A		Huawei Enjoy 9 Plus
Total positions							
Huawei	5	7	6	5	7	5	
Samsung	5	1	1	2	1	1	
Oppo	1	1	1	3	2	2	
Xiaomi	0	1	4	1	2	4	
Apple	0	2	0	1	0	0	
Meizu	1	0	0	0	0	0	
High end							
Huawei	1	1	2	1	2	2	
Samsung	2	0	1	1	1	1	
Apple	0	2	0	1	0	0	
Mid end							
Huawei	3	4	4	2	3	1	
Oppo	1	1	1	3	2	2	
Xiaomi	0	0	1	0	1	3	
Samsung	2	1	0	1	0	0	
Low end							
Huawei	1	2	0	2	2	2	
Xiaomi	0	1	3	1	1	1	
Samsung	1	0	0	0	0	0	
Meizu	1	0	0	0	0	0	

Source: China Mobile Terminal Research Institute (as of Feb 26, 2019)

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Both Huawei and Oppo/Vivo have cash cows in their business. Huawei's cash cow is its European smartphone business. Globally Huawei has aimed at Samsung to compete in market share and profitability, not to mention Huawei will be able to subsidize from its network equipment business. Oppo/Vivo's cash cows are their mid-end price points, coupled with a channel infrastructure in the low tier cities, giving it healthy profit margin to share with supply chain and channel partners. With smartphone industry increasingly segment at the late stage of the cycle, consumers need help in figuring out the labyrinth of features and functions. Xiaomi's distributor market shares also increased over time, from 2015's 31% to 2016's 55% to 2017's 67% (Source: *Xiaomi Prospectus*). In C1Q18, distributor contribution to revenue stayed high at 66%. Increasing contribution from Xiaomi's self-operated offline retail store Mi Home was mainly achieved at the expense of Xiaomi's self-operated on-line retail store (Tmall, Youpin and Mi Store).

Xiaomi's online direct sales has stagnated while offline direct sales picked up.

Mi Home is the right move but still ahead of its time

Mi Home is a unique Xiaomi channel that is difficult to match by competitors. It best leveraged Xiaomi's life style aspect and brand aspect. However, currently Mi Home's share gain offline is also accompanied by Mi store's share loss online. We believe this is not a healthy situation.

Xiaomi's online direct sales declined in 2016 and grew only 13% in 2017.

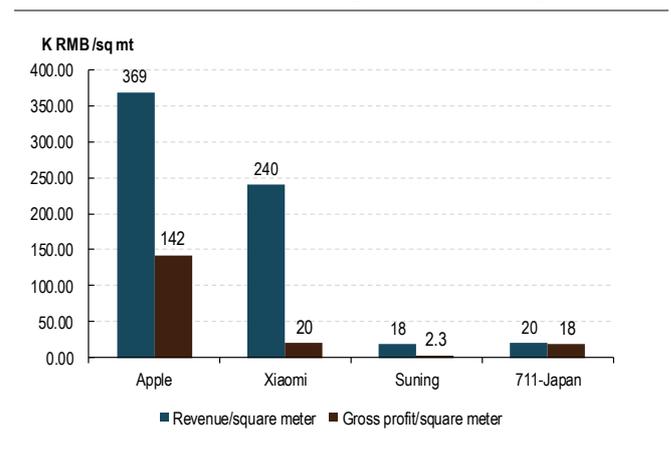
As Exhibit 36 shows, Xiaomi's sales from third party distributors, both online and offline, has continued to rise, now staying at 2/3 of Xiaomi's revenues, reversing from <1/3 in 2015. Part of the reason for this rise was due to revenues from international markets but the absolute revenue amount from the online channel was also lackluster in growth, even declining in 2016.

Exhibit 36. Xiaomi hardware revenue channel contribution

(RMB bn)	2015	2016	2017	C1Q18
Direct	43.4	27.6	34.6	10.6
Online (Mi Store, Tmall, Youpin)	43.0	25.9	29.2	8.1
Offline (Mi Home)	0.4	1.7	5.4	2.5
Third party	19.0	33.7	69.4	20.3
Online (JD, Sunning, Flipkart)	11.0	20.1	38.4	9.6
Offline (Telco's, global distributors)	8.0	13.5	30.9	10.7
Total	62.4	61.2	104.0	30.9
Direct	70%	45%	33%	34%
Online	69%	42%	28%	26%
Offline	0.6%	2.7%	5.2%	8.2%
Third party	30%	55%	67%	66%
Online	18%	33%	37%	31%
Offline	13%	22%	30%	35%

Source: Xiaomi, Blue Lotus (as of Feb 26, 2019)

Exhibit 37. Revenue and gross profit per square meter



Source: Xiaomi, Apple, Suning, 711, Blue Lotus (as of Feb 26, 2019)

Xiaomi's online sales growth mostly went to third party

We don't think Mi Home's growth is achieved at the expense of Mi Store. Instead, the revenue decline in online sales in 2016 went to third party, both online and offline. As shown in Exhibit 36, online and offline sales of third-party distributors were both very robust, outpacing the overall growth. This suggests to us that Xiaomi has been relying third party distribution to meet sales targets.

Xiaomi's online sales is dominated by Tmall and JD.com. Worse, 18-20% of sales happened during two shopping festivals under deep price discounts.

According to Tmall, Xiaomi sold RMB1.25, 1.29 and 2.46bn worth of products during 11.11 shopping festival for 2015-17, representing 2.3%, 2.8% and 3.6% of Xiaomi's annual online sales (direct+third party). If we assume the JD platform to be similar to Tmall in 11.11 sales, and JD's

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6.18 shopping festival to be on par with Tmall's 11.11, then **close to 15-16% of Xiaomi online sales happened during festivals**. If we remove international sales, then close to 18-20% of domestic online sales happened during the two major shopping festivals in China, with deep price discounts.

This situation is a drain on Xiaomi's ASP and profitability, in our view. But this situation was also a must if Xiaomi was to meet sales targets. If these sales targets were achieved with good customer retention, then Xiaomi can eventually monetize these users through Internet services. But if quality issues harm Xiaomi's reputation and customer retention, then eventually the time window that Xiaomi can monetize these users will be greatly curtailed.

Mi Home is a worthwhile effort to beef up Xiaomi's quality perception

We believe Mi Home is a worthwhile effort to wrestle the control of distribution channel back from third party distributors. Smartphone makers face dominant channel downstream in both online and offline, a situation that is unlikely to change in the near term. Then specialty offline store makes sense.

But Mi Home cannot breakeven if ASP and gross margin don't improve

Xiaomi stated that in 2017 Mi Home has the second highest sales per floor area in the world at RMB240K/sq. m²/year (Source: *Xiaomi Prospectus*). However, using a full year hardware gross margin of 8.8% in 2017, Xiaomi's gross profit per floor area was only RMB21K/ sq. m²/year, or RMB1.8K/ sq. m²/mo., or RMB60/ sq. m²/mo. This is roughly the rent level of premium, but not top, retail locations in 1st tier cities (Shanghai, Beijing and Shenzhen). This means Mi Home can barely cover rent in these cities.

We expect Xiaomi's gross margin to decline to 6.1% in 2018, which means Mi Home's gross profit per floor area can further decline if sales per floor area doesn't improve from 2017. For sales of ecosystem products, Xiaomi has an even lower gross margin to spare because half of the gross margin typically goes to ecosystem partners.

In our view, it is gross profit, not revenue, per floor area that determines the profitability of offline retail stores like Mi Home (Exhibit 37). Our calculation doesn't factor in expenses like utility, man power, local fees and duties and headquarters overhead, which will make profitability even worse for Mi Home.

Advertising cannot be the only reason to have an offline presence

Although Apple Store's sales per floor area was only 54% higher than Xiaomi, its gross profit per floor area was 7.1x of Xiaomi's, making Apple Store able to afford most prime retail locations in the world.

That said, currently Mi Home's economic doesn't appear to be losing a lot of money. Xiaomi doesn't need to open Mi Home in prime shopping locations like Apple. It can open in young neighborhood and suburb shopping malls, with rent level in the range of RMB20-40/ sq. m²/mo. without losing Xiaomi's brand statue.

Needless to say, Mi Home also serves the purpose of advertising. No only is Mi Home a force of outdoor advertising, it also provides user education, post-sales service, product trial functions, etc.. The existence of Mi Home should help online direct sales as users should order replacement, repeat and peripheral purchases on line. The existence of Mi Home, numbering 499 as of C3Q18, is also a positive force for showcasing the quality improvement of Xiaomi phones. But we believe all these

Mi Home serves to advertise products from Xiaomi and ecosystem partners. It also serves as a commitment to quality improvement, in our view.

We believe Mi Home is slightly losing money right now.

Mi Home is a great product, but its success still hinges Xiaomi improves on ASP and gross margin.

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reasons cannot defeat the fact that Mi Home must breakeven by its own right in order to advance the above agendas for Xiaomi.

Lastly, to improve Mi Home profitability, ASP and gross margin of Xiaomi’s ecosystem partners must also improve. Most of Xiaomi ecosystem partner products have lower ASP than smartphones.

Global and TV are major opportunities

Global expansion of 4G smartphones still have ample opportunity despite slowdown of the industry. Countries like India, Indonesia, Bangladesh and African countries still have sizable feature phone users. Affordability is hindering smartphone adoptions there. Xiaomi typically works well in countries with 4G telecom buildouts but without carrier subsidies. This will drive mobile subscribers to skip their country’s backward distribution channel to buy phones online. Besides this, we also see opportunities for Xiaomi to expand in the TV market both in geographic, product and business model terms. We suggest Xiaomi to buy online video content platform in content-rich countries like India.

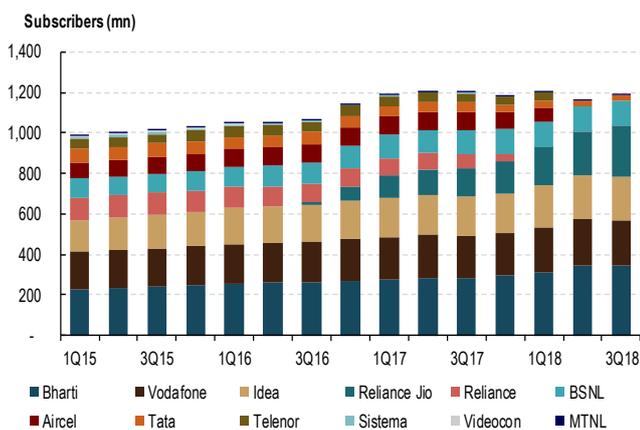
India smartphone shipment will slow but future promise is intact

According to IDC, India shipped 142mn smartphones in 2018, growing 14% from 2017. While this growth rate is far from spectacular, considering the India market is still half dominated by feature phones. The reason smartphone growth is slow is because of affordability. But Reliance Jio, a new comer formed only in 2010, launched 4G service with very attractive price packages and data plans in C3Q16. Its market shares quickly rose from only 1.5% in C3Q16 to 21% in C3Q18. Xiaomi’s value-for-money proposition perfectly matched the rapid rise of 4G subscribers by Reliance Jio from C3Q17 onward (Exhibit 38 and 39).

India smartphone market has a slow pickup due to affordability but has a very long run way ahead.

As a result of Reliance Jio’s price war, India’s telco carrier market consolidated from 12 players in C1Q15 to 6 players in C3Q18. Top five players took 97% of market shares in C3Q18, up from 79% before Reliance Jio’s market entry. Because India’s mobile subscribers are predominately prepaid, telco’s do not subsidize phones. This makes online sales channel account for 1/3 of total smartphone shipped in India, according to Counterpoint Research. Local e-commerce site Flipkart and Amazon India were responsible for >80% of online sales. Xiaomi was responsible for half of the online sales through its own Mi Store, Flipkart and Amazon India.

Exhibit 38. India telecom subscriber market share



Source: India Telecom Authority (as of Feb 26, 2019)

Exhibit 39. India smartphone shipments



Source: IDC (as of Feb 26, 2019)

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But Xiaomi's India smartphone shipment is bound to slow

In 2018, Xiaomi shipped 41mn smartphones in India, or 60% of its shipments outside of China and 1/3 total, growing 59% YoY and capturing a full year market share of 29% in India, up almost 10 ppts from a year ago (*Source: IDC*). We believe this is very high and unlikely to go higher. If the overall market is growing at only low double digits, then Xiaomi's volume growth in 2019 cannot match that of 2018.

Online sales via third party distribution channel is vulnerable to price wars.

Further, if Xiaomi is responsible for half of the online smartphone sales and online sales accounted for 1/3 of total, then about 60% of Xiaomi's India shipments were made online in 2018, mainly through Flipkart and Amazon India. Flipkart and Amazon India accounted for 84% of online sales of smartphones in India, according to Counterpoint Research. **This makes Xiaomi vulnerable to competitors' price competition**, in our view, in India.

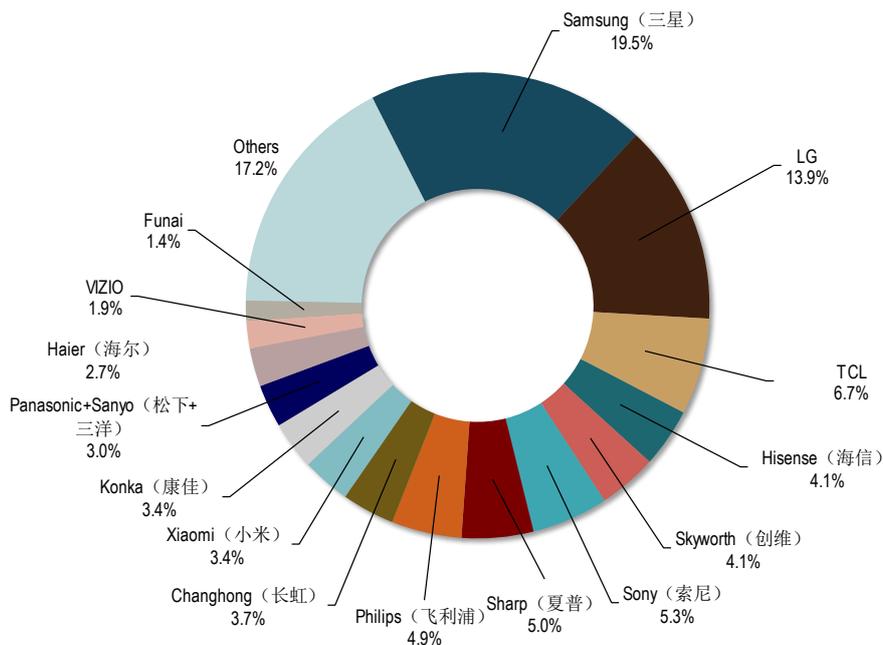
Huawei, noticeably, was NOT in the top five in India's smartphone market. The combined market share of Oppo and Vivo was also significant, holding constant at 17%. Samsung's market share declined from 25% to 22%.

Wearable market is still very early in India

In our view, one sign of affordability as the main hurdle of market development of India is the level of wearable shipments. In C3Q18, total shipment of wearables in India was only 897K, according to IDC, of which Xiaomi held a 41% share. However, this shipment of 368K was only 3% of Xiaomi's smartphone shipment in India while the overall Xiaomi's wearable shipment ratio to smartphone shipment was 25% (Huami shipped 8.2mn in C3Q18). Wearable will soon facing growth bottlenecks in India as well.

Wearable market is very small in India because of affordability.

Exhibit 40. Global unit market share of TV sets, 1H18, total=94mn



Source: IHS Markit, Sigmaintell, Blue Lotus (as of Feb 26, 2019)

Indian TV market could be a major driver

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In C3Q18, Xiaomi generated RMB10.8bn worth of IOT revenues, of which RMB4.2bn was smart TV and laptops and the rest were ecosystem partner products. Within this RMB4.2bn we estimate laptop contributed 20% with ASP ~RMB4,000 while smart TV contributed 80% with ASP ~RMB1,700. This roughly worked out a quarterly TV shipment of 2mn. For the whole of 2018, we estimate Xiaomi shipped 8.2mn smart TV's, up from 2.4mn in 2017. This will roughly put Xiaomi's market share in the global smart TV market at ~3%, behind Samsung, LG, TCL, HiSense, Skyworth, SONY, Sharp, Philips and Changhong as the 10th in the world (Exhibit 40).

Counting TV sets is not the accurate means to calculate market share because **many consumers use set top box combining with regular TV to get the same experience of a smart TV**. What sets smart TV apart is tight bundling with TV content. Some consumers accept this combination while others don't, preferring the freedom of choosing their own set top boxes. This is why despite the transition of TV sets to digital, traditional TV manufacturers still hold a dominant market share.

In China, Xiaomi set top box and Tmall Genie are two of the leading brands. From vendor's point of view, smart TV achieves better user stickiness than regular-TV-plus-set-top-box combination. In C4Q14, Xiaomi invested in China's leading online video site iQiyi. iQiyi content has since been bundled with Xiaomi smart TV.

The proliferation of online video content and the convergence of terrestrial, cable, IPTV and Internet video content is conducive for new market entrants like Xiaomi. But to differentiate against regular-TV-plus-set-top-box combinations, Xiaomi should incorporate more content. Otherwise Xiaomi's competency on TV will be built on screen quality, of which Xiaomi will never be a match for the makers of the screens, like Samsung, LG and BOE.

We estimate among Xiaomi's 1H18 shipment of 3.2mn smart TV sets, about 0.5mn was shipped in India. We estimate this ratio rise to 25% in C3Q18. For the full year 2018, we estimate ~25% of Xiaomi's smart TV sets, or 2mn, were shipped in India. We estimate India's TV market size to be around 50mn a year, growing at double digits. For Xiaomi to continue grow much beyond its global market share, it needs to bundle content like it does with iQiyi in China, in our view.

Indonesia smartphone and TV markets are 1/4 of India's

Indonesia's population is about 20% of India's. This means its smartphone and TV markets are also smaller. In C3Q18, smartphone shipment was 8.6mn, about 24% of India's and 8.3% of China's in the same quarter. Indonesia is similar to India in that 94% of mobile subscribers are prepaid (India: 92%. Source: GSMA). However, smartphone penetration is ahead of India's. According to GSMA Intelligence, 84% of mobile subscribers use smartphones comparing to India's 55%. Total mobile connections were 132% of population, comparing to 79% for India and 107% for China. Therefore, what holds smartphone growth back in Indonesia is saturation, not affordability.

For the first three quarters of 2018, Indonesia smartphone shipment grew 14% YoY (Exhibit 41). Xiaomi rapidly gained market share from C1Q18 onwards, thanks to the introduction of low-cost Redmi phones.

Other global market can give Xiaomi decent growth

We estimate Xiaomi shipped 8.2mn smart TV sets in 2018, up from 2.4mn in 2017, of which 2mn was shipped in India.

Through bundling with content, smart TV achieves better user stickiness than regular-TV-plus-set-top-box combination.

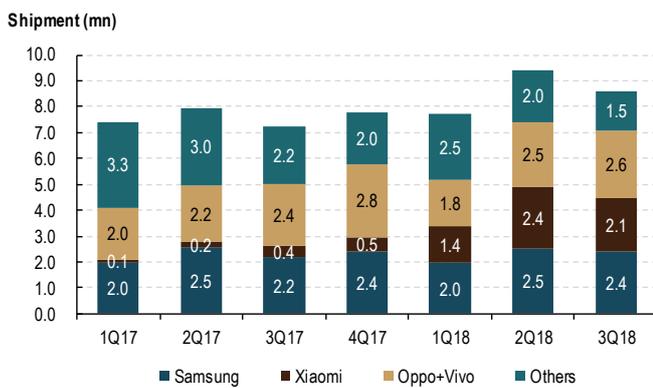
Set top box has low replacement barrier.

Xiaomi's product strategy of latest technology at cut throat price wins in India and Indonesia.

The European market shipped 196mn smartphones in 2018, of which 128mn were shipped from Western Europe and 68mn in Eastern Europe (Source: Canalis), comparing to 398mn for China, 142mn for India, 35mn for Indonesia and 1.41bn worldwide. Within Western Europe, countries like Spain, Portugal and Greece can also buy Xiaomi phones. Countries with high prepaid subscriber ratios, like Russia, Ukraine and Greece can be good markets for Xiaomi to break into (Exhibit 42). Overall, Huawei's success in Europe was more pronounced than Xiaomi because of Huawei's presence in the Western European market (Exhibit 43).

Russia's population is about half of Indonesia's.

Exhibit 41. Indonesia smartphone shipments



Source: IDC (as of Feb 26, 2019)

Exhibit 42. Statistics in selected European countries

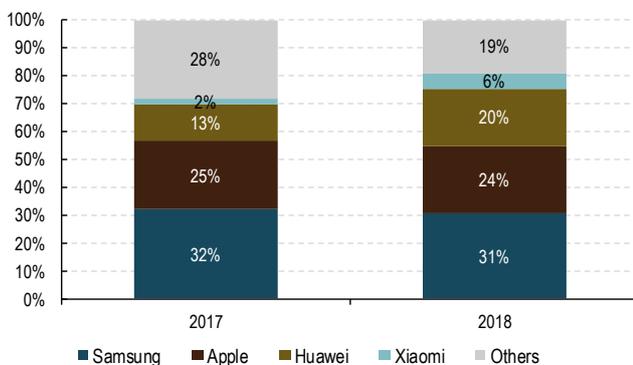
	Population (mn)	Mobile subscriber (mn)	Smartphone as mobile	Prepaid ratio
Russia	143.9	248.2	74%	77%
Spain	46.4	54.1	84%	21%
Ukraine	43.9	62.6	64%	90%
Poland	38.1	50.6	81%	31%
Romania	19.5	27.0	73%	48%
Greece	11.1	16.2	75%	70%
Portugal	10.3	15.6	86%	54%
Czech Republic	10.6	14.8	71%	33%
Hungary	9.7	11.3	69%	34%
Belarus	9.4	11.8	62%	52%
Serbia	8.7	8.7	73%	38%

Source: GSMA Intelligence (as of Feb 26, 2019)

Transsion has ~40% market share in Africa and has also a presence in India.

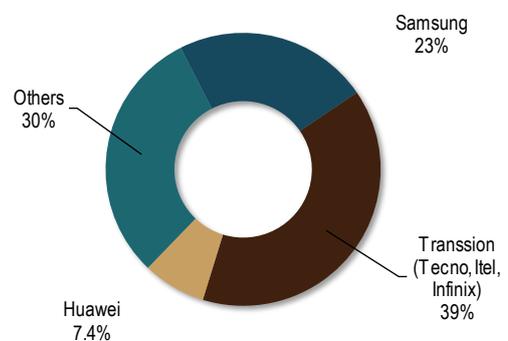
Outside of Europe, Mid-East and Africa is roughly half the market size of Europe in terms of smartphone shipments with Mid-East and Africa splitting roughly half and half. In Africa, Chinese manufacturer Transsion (传音控股) holds a dominant market share with three brands: Tecno, Itel and Infinix (Exhibit 44). Transsion also captured 4.5% unit share in India and had a top three market share in Bangladesh in 2018, according to IDC.

Exhibit 43. Smartphone market share change in Europe



Source: Canalis (as of Feb 26, 2019)

Exhibit 44. Smartphone market share in Africa, 1Q18



Source: Canalis (as of Feb 26, 2019)

Looking at Xiaomi's Chinese competitors, we can see opportunities for cross entry. Huawei has entered Russia, Europe, Latin America, Africa markets but does not have meaningful market share

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in Indonesia and India. Oppo/Vivo have entered Indonesia and India but do not have meaningful market share in Russia, Europe, Latin America and Africa. Xiaomi has entered Europe, Indonesia and India but does have meaningful market share yet in Russia, Africa and Latin America.

With Samsung continuing to lose differentiation, Chinese smartphone vendors are gaining on Samsung. Samsung's new flagship *Galaxy S10*, released in February 2019, contained similar features to Xiaomi *Mi 9* but is selling 2-3x higher in price.

Valuation is tough to argue for a high case

Xiaomi's valuation depends on investor's viewing angles. We acknowledge that Xiaomi is probably not another IT hardware company, but it is also not a brand or Internet company, yet. Comparing to Apple, which trades cheap on profit but expensive on users, Xiaomi's argument for higher valuation rests on it to demonstrate it can make more money out of its user base. This means either Xiaomi can enjoy its user base longer or it can soon monetize it more. At this point, neither of these two paths sounds certain.

Apple's low valuation makes Xiaomi's valuation unlikely to be compared to brands and Internet platforms.

Financial valuation and user matrix valuation differ

Xiaomi currently trades at 2019-20 PE of 23x and 14x, reflecting our view that Xiaomi's profit outlook will be challenging in the near term. This, comparing to global peers in Hardware and Home Electronics is expensive, to Retail and Internet is reasonable (Exhibit 45).

Exhibit 45. Comp table of Xiaomi against global Hardware, Home Electronics, Retail and Internet names

Ticker	Price (Local)	Mkt Cap (US\$m)	PE (BLRI)			PEG	PS (BLRI)		EV/EBITDA (BLRI)		
			2018E	2019E	2020E		2019E	2020E	2019E	2020E	
Xiaomi Corp	1810 HK Equity	12	37,873	29.6	22.8	13.9	0.8	1.1	0.9	18.6	11.0
Global hardware											
Lenovo Group Ltd	992 HK Equity	7.0	10,533	(78.0)	18.6	14.2	1.2	0.2	0.2	7.3	6.5
Apple Inc	AAPL US Equity	173	815,602	13.7	15.1	14.4	4.6	3.2	3.1	9.1	8.7
Sony Corp	6758 JP Equity	5,382	61,803	13.9	8.8	11.8	(1.2)	0.8	0.8	4.9	5.0
Samsung Electronics	005930 KS Equity	47,200	251,386	6.4	9.3	7.9	0.9	1.2	1.1	3.2	2.9
ZTE Corp	763 HK Equity	25	18,055	(20.6)	29.9	21.0	1.1	1.2	1.1	13.8	10.8
HTC Corp	2498 TT Equity	38	1,005	2.2	(4.6)	(7.3)	NM	1.3	0.8	2.0	3.6
LG Electronics Inc	066570 KS Equity	70,500	10,308	9.3	8.6	6.8	0.4	0.2	0.2	4.3	3.9
Sector			1,201,748	10.7	13.6	12.8	3.3	2.5	2.4	7.6	7.2
Global home electronics											
Midea Group Co Ltd	000333 CH Equity	47	46,677	15.2	13.6	12.0	3.2	1.1	1.0	10.6	9.3
Qingdao Haier Co	600690 CH Equity	16	15,231	13.2	11.9	10.5	1.8	0.5	0.5	7.9	6.9
Gree Electric App.	000651 CH Equity	45	40,560	9.8	9.3	8.7	(0.5)	1.4	1.2	6.1	5.6
TCL Corp	000100 CH Equity	3	6,889	13.0	11.3	9.5	0.6	0.3	0.3	10.8	11.6
Whirlpool Corp	WHR US Equity	146	9,254	(50.6)	10.1	9.1	2.1	0.5	0.5	7.3	7.0
Koninklijke Philips	PHG US Equity	39	36,501	28.4	20.0	16.9	1.2	1.7	1.6	9.3	8.4
Siemens AG	SIE GR Equity	96	92,343	14.0	14.6	12.7	1.3	0.9	0.9	9.1	8.4
Sector			247,456	13.2	13.9	12.2	1.4	1.1	1.0	8.8	8.1
Global retail											
Amazon.com Inc	AMZN US Equity	1,633	802,134	79.6	44.5	31.7	1.4	2.9	2.5	19.3	15.0
Alibaba Group	BABA US Equity	177	458,609	47.3	35.3	27.0	1.2	8.2	6.0	26.1	20.5
Costco Wholesale	COST US Equity	216	95,274	30.4	27.8	25.8	3.4	0.6	0.6	15.0	13.9
Hennes & Mauritz	HMB SS Equity	140	24,815	18.3	18.5	17.2	3.3	1.0	1.0	9.0	8.4
Industria de Dis. Txt	ITX SM Equity	26	90,238	23.6	22.8	21.0	2.5	3.0	2.8	13.1	12.1
Fast Retailing Co	9983 JT Equity	51,520	49,380	35.3	32.8	28.7	2.6	2.4	2.2	16.1	14.1
Sector			1,536,647	61.4	38.9	29.2	1.6	4.5	3.5	20.5	16.3
China Internet											
Tencent Holdings Ltd	700 HK Equity	345	418,993	46.0	36.7	30.4	1.5	9.0	7.0	20.7	18.0
Alibaba Group	BABA US Equity	177	458,609	47.3	35.3	27.0	1.2	8.2	6.0	26.1	20.5
Baidu Inc	BIDU US Equity	167	58,269	14	17.9	13.8	0.7	3.3	2.8	97.3	70.8
JD.com Inc	JD US Equity	26	37,544	112.2	53.6	28.6	0.8	0.5	0.4	36.1	19.4
Sector			987,410	48	36.1	28.1	1.3	8.1	6.1	28.2	22.3

Source: Bloomberg, Blue Lotus (as of Feb 26, 2019)

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This, therefore, invites an important question on Xiaomi. Is Xiaomi a hardware or a home electronics company? Xiaomi can trade at higher multiples if Xiaomi is a brand company. However, Apple as a brand company is still trading at low multiple on financial numbers but high multiple on user count. Should Xiaomi follow Apple's financial multiple or user multiple?

From a user base perspective, Apple is also a Xiaomi valuation cap.

To get higher valuation, Xiaomi needs to get into content

A key argument for Apple, and Xiaomi, to be undervalued is their user base assets. In this regard Apple already claimed a global user base of 1.4bn, of which the majority are iWatch and AirPods users. As of C3Q18, Xiaomi had an IOT connected device of 132mn and an MIUI MAU of 224mn, adding up to a total active user base of 356mn. Within this 356mn, the IOT connected device base is likely overstated (Huami's own app has much lower MAU than its accumulative shipment) while the MIUI MAU is likely understated, in our view.

On the other hand, a key argument against Apple, and Xiaomi, to be undervalued is the competitive threat faced by Apple due to Huawei's competition. If Apple and Xiaomi's barrier can be so easily challenged by Huawei, how can it trade at the same multiple as famed consumer brands? Exhibit 46 compares Xiaomi's Enterprise Value (EV) per active user. For Internet companies we use MAU. We can see despite Apple makes a lot of profit, its EV/user is actually very high. This means Apple makes a lot of money from a relatively narrow base. For Internet companies with less user stickiness, like Baidu and with monetization bottlenecks, like Weibo, EV/user tends to be lower. This reinforced our view that for Xiaomi to enhance its EV/user it should follow Tencent's example and get into content provision. To say Xiaomi is undervalued or overvalued lack concrete evidence.

Tencent gets into content provision hence it has a higher EV/user because its EV can be divided into platform-derived and content-derived.

Exhibit 46. Global unit market share of TV sets, 1H18, total=94mn

(US\$ mn)	Xiaomi	Apple	Facebook	Google	Tencent	Baidu	Weibo
Enterprise value	US\$38,560	US\$908,591	US\$462,032	US\$777,923	US\$423,114	US\$66,448	US\$15,441
Equity	US\$36,951	US\$815,602	US\$462,032	US\$773,914	US\$417,197	US\$58,269	US\$15,279
LT Debt	US\$1,609	US\$92,989	US\$0	US\$4,012	US\$5,916	US\$8,179	US\$132
Total user base (mn)	356	1,400	2,271	2,200	1,083	463	446
EV/user	US\$108	US\$649	US\$203	US\$354	US\$391	US\$144	US\$35

Source: Bloomberg, Xiaomi, Apple, Facebook, Google, Tencent, Baidu and Weibo, Blue Lotus (as of Feb 26, 2019)

SOTP of SEC shows Xiaomi is not cheap

We believe Samsung Electronics' (SEC) Consumer division offers a good proxy for Xiaomi. We use Samsung market capitalization less the net cash (cash-preferred-debt) and less the market capitalization of its DRAM, NAND, LSI and Display business to arrive its valuation of the Consumer business (telecom+consumer electronics). We use Micron Technology (MU US, NR), Western Digital (WDC US, NR), MediaTek (2454 TW, NR), LG Display (034220 KS, NR)+ BOE Technology (000725 CH, NR) as proxies for DRAM, NAND, LSI and Display.

We use price-to-sales and price-to-EBIT as two valuation matrices. The result shows SEC's Consumer business is valued unfavorably at this moment at only 0.58x and 0.55x of its 2019-20 sales. If valued at price-to-EBIT, SEC's Consumer business is valued at negative values.

In addition to progress made in core semiconductors, Huawei's rise in smartphone is also coincident with BOE's rise in the display industry, which distorted the SOTP comparison.

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The result is distorted by the fluctuation of the Display business due to the upheavals happening in the industry. LG Display is experiencing losses and losing market share to competitor BOE Technology, which is trading at lofty valuations with a heavy debt load (debt to equity ratio 81%) from state banks. Huawei is working closely with BOE in a range of projects. This makes the residual value of the Consumer business fluctuating with an average of US\$20bn and a standard deviation of US\$56bn. The calculated value of Samsung's Display business also fluctuates with an average US\$67bn with a standard deviation of US\$43bn.

Xiaomi is trading at higher multiples than SEC's Consumer Division average but lower than average plus one standard deviation.

If we use average plus one standard deviation, then Samsung's Consumer Division will be trading at 0.66x and 0.64x 2019-20 sales (ex-cash) and 7.6x and 7.6x 2019-20 non-GAAP operating profit (ex-cash). Apparently, this is higher than Xiaomi's current 0.88x and 0.72x of 2019-20 sales and lower than Xiaomi's current 22x and 13x 2019-20 non-IFRS operating profit.

Exhibit 47. Comp table of Xiaomi against global Hardware, Home Electronics, Retail and Internet names

(US\$ bn)	Sales			Operating profit			Comp.	Comparable P/S		Comparable P/EBIT		Samsung SOTP by sales		Samsung SOTP by EBIT		Avg.	Stdev
	2018	2019E	2020E	2018	2019E	2020E		2019E	2020E	2019E	2020E	2019E	2020E	2019E	2020E		
DRAM	43.2	33.2	33.3	29.5	20.1	18.9	Micron	1.80	1.81	4.15	4.31	59.8	60.3	83.3	81.3	71.2	12.9
NAND	21.3	14.7	16.4	8.7	2.1	1.8	WDC	1.26	1.27	9.39	8.97	18.5	20.8	19.5	16.0	18.7	2.0
Other LSI	12.4	12.0	13.1	1.5	1.2	1.7	MTK	1.05	0.98	12.3	9.9	12.6	12.9	15.3	16.9	14.4	2.1
Display	28.9	30.8	32.9	2.3	2.4	3.8	LG D/BOE	1.09	0.98	50.1	21.8	33.4	32.3	120.8	81.9	67.1	42.6
Consumer	111.4	115.4	118.6	10.9	10.1	10.1		0.58	0.55	(4.7)	(0.5)	67.2	65.4	(47.3)	(4.6)	20.2	56.0
Total	217.3	206.0	214.4	52.5	35.7	36.0						192	192	192	192	192	

Source: Bloomberg, Blue Lotus (as of Feb 26, 2019)

Ecosystem ownership adds HK\$1.04/share to DCF

Our DCF valuation is HK\$14.55, of which net cash is HK\$2.33 and investments adds 1.04/share.

Xiaomi's investment takes several forms: (1) investment by Xiaomo Corporations, (2) investment by Shunwei Ventures, of which Xiaomi is an LP, (3) investment held by chairman Lei Jun and his executives (Exhibit 48). Returns on (2) and (3) will be remitted to Xiaomi as an LP profit share but we do not count them in our DCF model. If we do, then roughly (2)+(3)=(1) so that Xiaomi's realizable profit from (2) and (3) is ~20% profit share of the LP portion of Xiaomi less the management fee for Shunwei Ventures. We believe it should be negligible. Xiaomi's DCF valuation is shown in Exhibit 49.

Exhibit 48. Xiaomi's direct investment valuation @RMB21.7bn

Company name	Product	Xiaomi holding	Xiaomi related party*	Company value (RMB mn)
21Vianet	Internet infrastructure service	2.5%	8.5%	167
YI Technology	Sports camera	8.2%	-	498
Huami	Smartwatch	14.6%	15.5%	948
Andon Health	Personal healthcare equipment	20.0%	-	504
Kingsoft Cloud	Internet infrastructure service	16.6%	-	2,676
LANMI Holdings	Bluetooth headset	17.1%	19.1%	51
Lvmi International	Power switch	12.5%	15.3%	106
Ninebot Limited	Personal transporter	11.2%	10.4%	750
SMARTMI International	Air purifier	35.7%	30.6%	2,880
Viomi Technology	Water purifiers, home appliances	16.9%	17.8%	747
Westhouse Holdings	Game developer	2.9%	-	290
Xunlei Limited	Internet infrastructure service	28.0%	11.2%	470
Zimi International	Power bank	20.1%	21.2%	1,356
Beijing IQ Technology	Robot	13.6%	13.6%	68
Beijing Dynamic Future	Power strip	16.2%	12.1%	65
Beijing Roborock Tech.	Smart vacuum cleaner	11.8%	1.0%	119
Imilab Technology	Smart camera, Smart lock, remote control	35.0%	-	70
Chunmi Technology	Internet kitchen appliances	18.0%	20.9%	180
Runmi Technology	Suitcase and bags	9.4%	-	75
Xiaoxun Technology	Children smart watch	13.5%	13.5%	46
1More	Headphones	17.9%	7.9%	609
Riodmi Technology	Car air purifier and wireless vacuum	18.6%	-	37
iQIYI, Inc	Online video	0.08%	-	8,979
Xiaomi investment (RMB mn)				21,690

Source: Bloomberg, Xiaomi, Blue Lotus (as of Feb 26, 2019). Xiaomi related party usually is Shunwei Ventures, Lei Jun and other executives.

Exhibit 49. Xiaomi DCF

Year to Dec (RMB mn)	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	Terminal
Group revenue	228,315	282,370	347,870	419,465	496,145	581,080	666,615	747,710	810,960	856,474	856,474
EBIT	9,287	15,956	12,769	7,900	4,167	7,739	15,805	25,888	39,775	46,077	46,077
NOPAT	9,282	15,948	12,763	7,890	4,162	7,730	15,765	25,824	39,676	45,962	45,962
Capex, net and acquisitions	(2,339)	(2,350)	(2,202)	(2,302)	(2,747)	(3,232)	(3,743)	(4,243)	(4,676)	(5,002)	(5,002)
Depreciation & amortization	808	1,183	1,610	2,030	2,534	3,157	3,916	4,757	5,723	6,805	6,805
Change in working capital	(3,602)	(7,257)	(9,707)	5,423	7,226	9,203	10,503	10,981	9,302	7,266	7,266
Free operating CF (FoCF)	4,149	7,524	2,463	13,041	11,175	16,858	26,440	37,318	50,024	55,031	55,031
Leverages	Current	Target									
Debt as a % of EV	3.4%	0%									
WACC	14.1%	14.5%									
NPV of FoCF	248,879	235,375									
+ Net cash (debt), current	47,209										
+/- Other items	21,690			Risk-free rate	3.5%						
= Equity value	317,777	304,274		Cost of debt (pre-tax)	8.5%						
/ Number of shares	24,505			Terminal growth	4.50%						
= NPV per share (US\$)	15.19	14.55		RMB=	1.1715	HKD					

Source: Xiaomi, Blue Lotus (as of Feb 26, 2019)

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Annual Income Statement

Fiscal year ends-31-December

Exhibit 50. Annual income statement (Report Currency: RMB)

(RMB mn)	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Net revenues	66,811	68,434	114,625	178,699	228,315	282,370	347,870	419,465
Cost of revenues	(64,111)	(61,185)	(99,471)	(157,209)	(201,477)	(243,887)	(296,206)	(352,584)
Gross profit	2,700	7,249	15,154	21,490	26,837	38,483	51,664	66,881
R&D cost	(1,512)	(2,104)	(3,151)	(5,662)	(8,377)	(11,769)	(15,369)	(19,581)
SG&A cost	(2,679)	(3,949)	(6,448)	(20,064)	(11,922)	(14,155)	(16,395)	(18,511)
Operating profit IFRS	(1,491)	1,196	5,555	(4,236)	6,538	12,559	19,899	28,789
Share based compensation	(691)	(871)	(909)	(12,296)	(2,740)	(3,388)	(4,174)	(5,034)
Operating profit non-IFRS	(797)	2,070	6,467	8,065	9,287	15,956	12,769	7,900
Finance income (cost)	(86)	(86)	27	186	400	400	241	403
Other income/cost	522	540	449	865	1,142	1,412	870	524
Pre-tax profit	(7,473)	1,176	(41,829)	11,146	7,342	13,633	20,641	29,532
Income tax	(155)	(684)	(2,060)	(469)	367	682	(1,032)	(3,691)
Net income IFRS	(7,628)	492	(43,889)	10,678	7,709	14,315	19,609	25,840
Net income-non IFRS	(895)	1,312	4,955	8,590	11,196	18,450	24,161	31,068
Number of ADS, diluted	9,678	9,682	9,758	19,886	24,880	25,480	25,980	26,480
Gross margin	4.0%	10.6%	13.2%	12.0%	11.8%	13.6%	14.9%	15.9%
Operating margin, non-IFRS	(2.2%)	1.7%	4.8%	(2.4%)	2.9%	4.4%	5.7%	6.9%
Net margin, non-IFRS	(1.3%)	1.9%	4.3%	4.8%	4.9%	6.5%	6.9%	7.4%

Source: Xiaomi, Blue lotus(as of Feb 26, 2019)

See the last page of the report for important disclosures

Annual Balance Sheet

Fiscal year ends-31-December

Exhibit 51. Annual Balance Sheet (Report Currency: RMB)

(RMB mn)	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Cash and cash equivalent	8,394	9,230	11,563	49,999	55,404	64,210	76,603	109,980
Short term investment	2,419	3,518	5,288	5,665	6,068	6,502	6,966	7,464
Receivable	1,572	3,688	13,614	15,796	18,241	20,993	24,206	27,710
Prepayments	3,119	4,748	11,394	12,577	16,118	19,511	23,696	28,207
Total current assets	24,954	30,637	61,139	111,828	134,969	163,522	192,746	243,648
Intangible assets	554	1,120	2,274	3,694	4,929	5,807	6,166	6,228
Equity investment	10,120	14,202	20,568	23,568	27,009	30,956	35,486	40,684
Property and equipment	290	848	1,731	2,178	2,623	3,073	3,503	3,928
Prepayments and others	3,119	4,748	11,394	12,577	16,118	19,511	23,696	28,207
Total assets	39,138	50,766	89,870	145,681	174,124	208,158	242,964	299,846
Trade payables	14,226	17,578	34,003	49,777	59,316	66,838	68,038	84,553
Other payables and accruals	1,275	1,876	4,224	6,585	8,414	10,405	12,819	15,458
Borrowings	0	3,769	3,551	3,551	3,551	3,551	3,551	3,551
Total current liabilities	16,465	26,064	47,133	68,262	81,946	93,986	100,660	123,158
Deferred income tax liabilities	104	458	1,019	1,589	2,030	2,510	3,093	3,729
Warranty provision	12	102	191	298	380	471	580	699
Convertible redeemable preferred shares	105,933	115,802	161,451	0	0	0	0	0
Long term borrowings	3,247	390	7,251	7,251	7,251	7,251	7,251	7,251
Total liabilities	125,776	142,824	217,080	77,399	91,607	104,218	111,583	134,837
Total equity	(86,638)	(92,058)	(127,210)	68,281	82,517	103,941	131,382	165,008
Total liabilities and equity	39,138	50,766	89,870	145,681	174,124	208,158	242,964	299,846

Source: Xiaomi, Blue lotus(as of Feb 26, 2019)

See the last page of the report for important disclosures

Annual Cash Flow Statement

Fiscal year ends-31-December

Exhibit 52. Annual Cash Flow Statement (Report Currency: RMB)

(RMB mn)	2015	2016	2017	2018E	2019E	2020E	2021E	2022E
Pre-tax profit, IFRS	(7,473)	1,176	(41,829)	11,146	7,342	13,633	20,641	29,532
Adjusted for								
Share based compensation	691	871	909	12,296	2,740	3,388	4,174	5,034
Depreciation	142	140	166	129	240	396	614	833
Amortization	64	100	194	361	568	786	996	1,197
Changes in								
Account receivable	(1,572)	(2,116)	(9,926)	(2,182)	(2,445)	(2,752)	(3,213)	(3,504)
Prepayments	(3,119)	(1,629)	(6,646)	(1,183)	(3,541)	(3,393)	(4,186)	(4,510)
Payables	15,501	3,953	18,773	18,136	11,366	9,514	3,614	19,153
Cash from operations	1,460	7,397	(943)	20,174	11,286	15,210	19,256	41,013
Capex	(403)	(1,400)	(2,414)	(2,305)	(2,488)	(2,512)	(2,399)	(2,517)
Purchase of LT investments	(8,391)	(3,958)	(6,508)	(2,829)	(3,253)	(3,741)	(4,302)	(4,947)
Purchase of ST investments	(2,419)	(1,099)	(1,770)	(377)	(404)	(433)	(464)	(498)
Cash from investing	(12,085)	(7,226)	(10,756)	(5,264)	(5,881)	(6,404)	(6,863)	(7,637)
Issuance of company shares	105,933	9,869	45,649	(161,451)	-	-	-	-
Proceeds from IPO	-	-	-	23,525	-	-	-	-
Cash from financing	109,180	7,012	52,510	23,525	-	-	-	-
Change in cash	98,555	7,183	40,811	38,436	5,405	8,806	12,393	33,377
Cash at beginning	0	8,394	9,230	11,563	49,999	55,404	64,210	76,603
Effects of exchange rate	289	112	(208)	-	-	-	-	-
Cash at end	8,394	9,230	11,563	49,999	55,404	64,210	76,603	109,980

Source: Xiaomi, Blue lotus(as of Feb 26, 2019)

See the last page of the report for important disclosures

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Equity rating allocation as of 26 February , 2019

Buy	59%	Hold	28%	Sell	13%
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