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# Xiaomi's Global Patent Status



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## 1. Analysis Background and Method

- IT equipment manufacturing corporation, Xiaomi, also known as China's Apple, is growing significantly.<sup>1</sup>
  - In 2014, Xiaomi sold 61.12 million smartphones in just 5 years of its founding and ranked third in the world market following Samsung and Apple.
  - Other than smartphones, Xiaomi is also introducing innovative products compatible with smartphones such as supplementary batteries, smart scales, earphones and various wearable devices, and they are recognized for sophisticated designs and a high cost-effectiveness.
- However, as unfavorable conditions overlap with China's recent economy slowdown, smartphone market saturation, increased patent cost burden, limited demands, as well as domestic and foreign patent litigation, "Xiaomi crisis rumor" is being speculated.
  - With Chinese economy entering into mid-speed growth state and smartphone market hitting saturation point, Xiaomi's sales only reached about 77 million devices in 2015, not really measuring up to its expectation.<sup>2</sup>
  - In 2015, Xiaomi lost patent dispute with Ericsson in India, and continued to have patent related disputes with domestic companies, ZTE and Huawei.
- Xiaomi is becoming more aggressive in strengthening patent competitiveness, and it is said to exceed ten thousand patent applications by 2016.<sup>3</sup>

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<sup>1</sup> Maeil Business Newspaper, 'Mi Power Bank' Xiaomi establishes electronics industry, aim at IoT leader, 2015.08.10

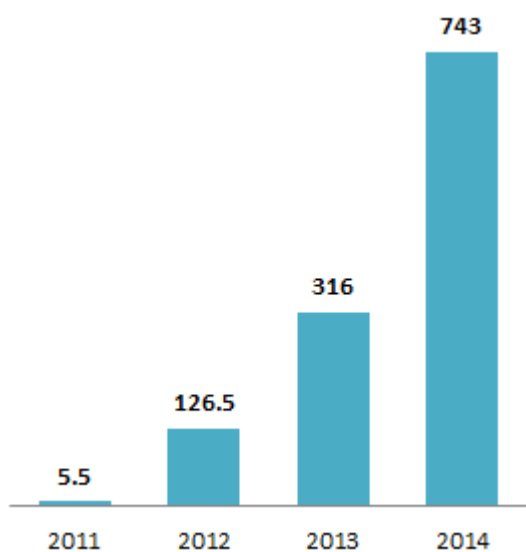
<sup>2</sup> Maeil Business Newspaper, Xiaomi speeding up success, truly becoming a 'Mi Power Bank'?, 2016.01.11

<sup>3</sup> Financial News, Xiaomi "Preparing for Patent Dispute... becoming an important figure in electronics industry, 2015.12.11

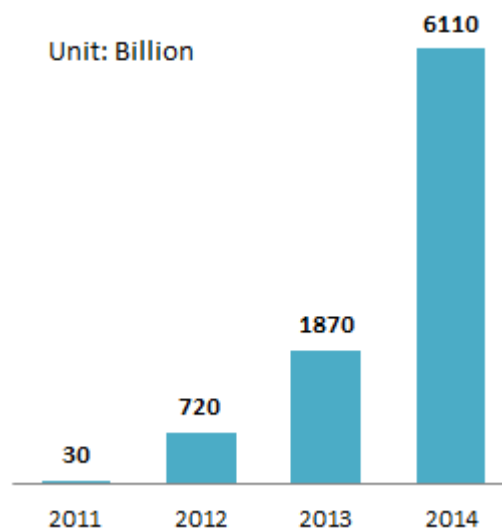
- This report will examine global patent application trend of rapidly growing Chinese IT company, Xiaomi, using WIPS Global.
  - The analysis was carried out based on the patents that exclude unrelated noise data.
  - WIPS Global was used for search DB to examine the patent application status of Xiaomi, which based on the search results from 2010 of its founding to 2015 by year, patent family and technology field.

## 2. Xiaomi's Current Company Status

- Xiaomi is a company founded by Lei Jun and other former Google and Microsoft technicians in 2010, which began as a software oriented developer established upon MIUI, the company's own Operating System based on Android OS.<sup>4</sup>
- Compared to the previous year, Xiaomi's 2014 sales revenue increased 135% with the total of 74.3 billion Yuan (about 1.6 trillion won) and Xiaomi manufactured smartphone sales increased 226% selling 61.1 million devices in 2014, establishing \$45 billion worth enterprise in 5 years of its founding.<sup>5</sup>
  - Unlike existing smartphone companies that make profit through smartphone sales, Xiaomi's strategy took on the strategy to first focus on selling affordable smartphones, considering it as the company's content sales platform, then making profit through software contents and peripherals sales.



[Xiaomi's Sales Status]



[Xiaomi's smartphone sales progress]

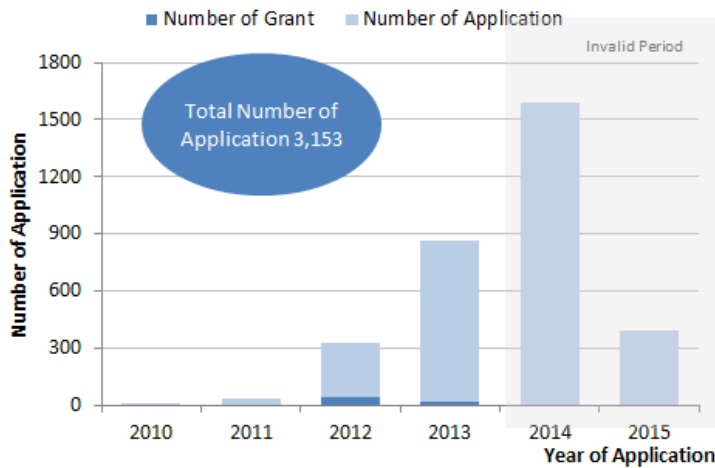
Reference: Xiaomi analysis: Discussing Success Equation of Chinese Market Strategy (Sino-Square)

<sup>4</sup> Eugene FN, China's Xiaomi advances!! Analysis on the rapid growth of Chinese smartphone companies and Xiaomi's competitiveness 2014.08.05

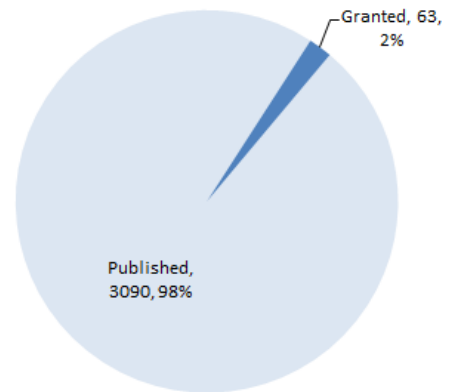
<sup>5</sup> SinoSquare, Xiaomi Analysis: Equation for successful Chinese market strategy, 2014.12.

### 3. Xiaomi's Global Patent Trend Analysis

- Xiaomi has filed total of 3,153 patent applications since 2010 showing a steady increase every year, but only 63 applications, 2% of the total number of applications, were registered patents.

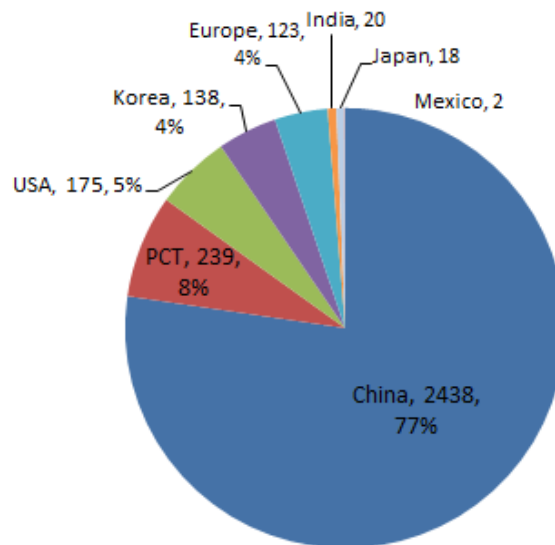


[Patent Trend by Year]



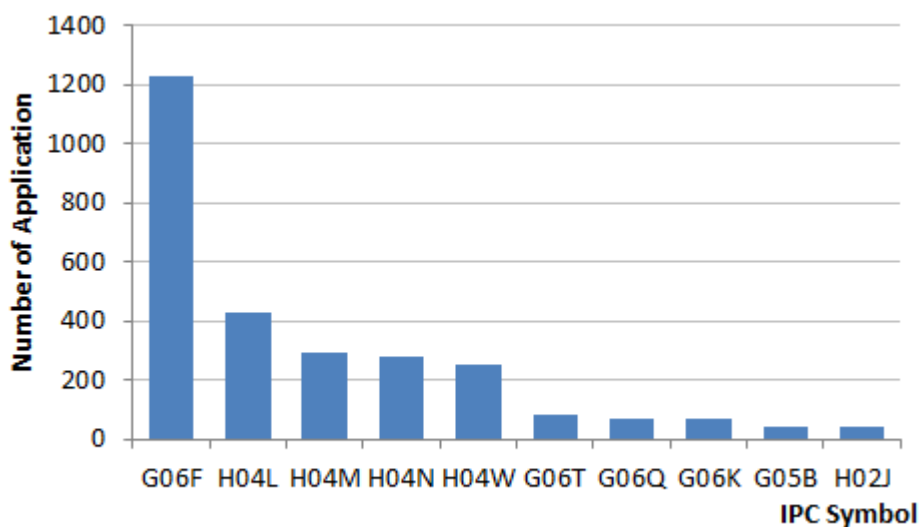
[Percentage of Registered Patents]

- Examining Xiaomi's patent application percentage by individual countries, 2,438 patents amounting to 77% was applied in China, followed by PCT, the United States, South Korea, Europe, and India, in sequence.

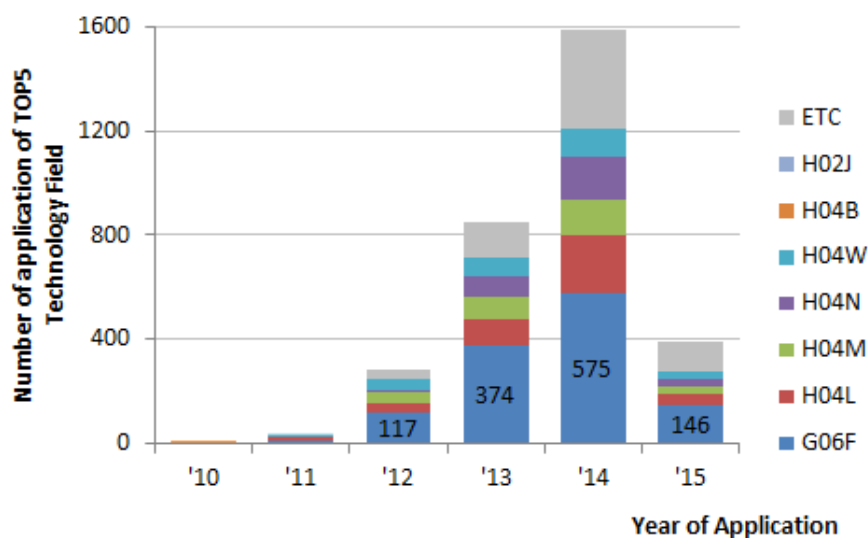


[Percentage of Patents by Individual Countries]

- Looking into the status of major technology field by IPC, ELECTRICAL DIGITAL DATA PROCESSING (G06F), TRANSMISSION OF DIGITAL INFORMATION (H04L), TELEPHONIC COMMUNICATION (H04M), PICTORIAL COMMUNICATION (H04N), and WIRELESS COMMUNICATIONS NETWORKS (H04W) appears to have higher application activities.
  - Major technologies applied by Xiaomi are from ELECTRICAL DIGITAL DATA PROCESSING (G06F) and TRANSMISSION OF DIGITAL INFORMATION (H04L) to smartphones as well as sensor, wireless communication and low power consuming functions used for wearable devices.
  - Examining the top five technology fields by year, the study shows a consistent application activity since the company's foundation in ELECTRICAL DIGITAL DATA PROCESSING (G06F), and a recent rapid growth in TRANSMISSION OF DIGITAL INFORMATION (H04L).



[Major Application Status by IPC Technology Field]



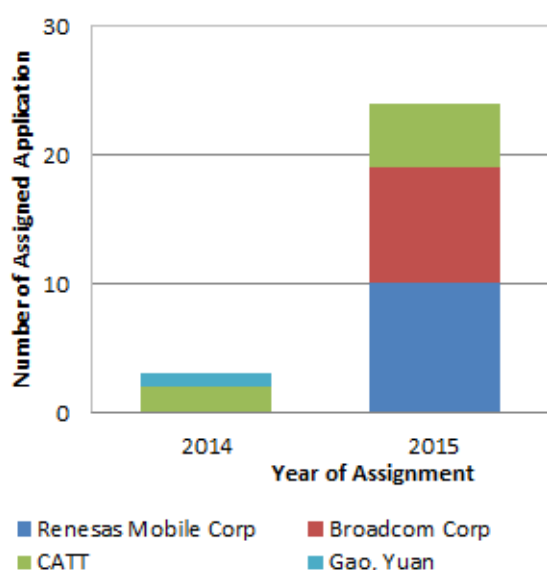
[Top 5 Major Technology Field Status by Year]

**[Patent Status by IPC Technology Classification]**

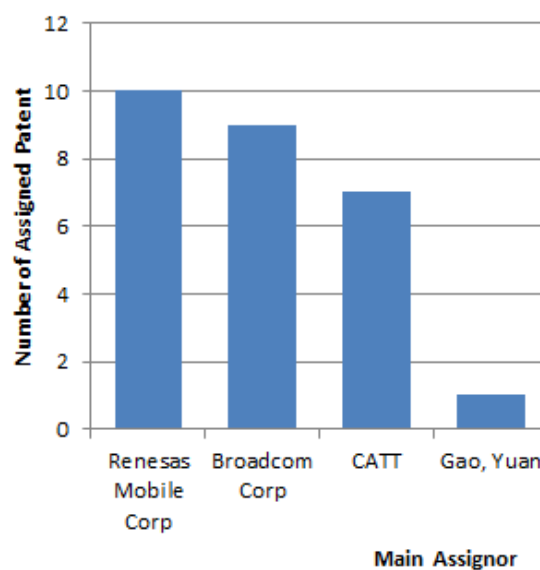
IPC Code	IPC Code Description	Number of Application	%
G06F	ELECTRICAL DIGITAL DATA PROCESSING	1225	38%
H04L	TRANSMISSION OF DIGITAL INFORMATION	425	13%
H04M	TELEPHONIC COMMUNICATION	294	9%
H04N	PICTORIAL COMMUNICATION; Ex) TELEVISION	281	8%
H04W	WIRELESS COMMUNICATIONS NETWORKS	254	8%
G06T	IMAGE DATA PROCESSING OR GENERATION, IN GENERAL	82	3%
G06Q	DATA PROCESSING SYSTEMS OR METHODS, SPECIALLY ADAPTED FOR ADMINISTRATIVE, COMMERCIAL, FINANCIAL, MANAGERIAL, SUPERVISORY OR FORECASTING PURPOSES	71	2%
G06K	RECOGNITION OF DATA; PRESENTATION OF DATA; RECORD CARRIERS; HANDLING RECORD CARRIERS	69	2%
G05B	CONTROL OR REGULATING SYSTEMS IN GENERAL; FUNCTIONAL ELEMENTS OF SUCH SYSTEMS; MONITORING OR TESTING ARRANGMENTS FOR SUCH SYSTEMS OR ELEMENTS	42	1%
H02J	CIRCUIT ARRANGEMENTS OR SYSTEMS FOR	42	1%

	SUPPLYING OR DISTRIBUTING ELECTRIC POWER; SYSTEMS FOR STORING ELECTRIC ENERGY		
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- Looking into the number of patents Xiaomi acquired in the United States and South Korea, 40 patent acquisitions were found in 2014 and 2015.
  - Xiaomi's acquisition activity began in 2014, acquiring 36 patents by 2015.
- Three major 3 companies that sold patents over to Xiaomi were Renesas Mobile, Broadcom<sup>6</sup>, and the China Academy of Telecommunication Technology (CATT).
  - Renesas Mobile is a Japanese semiconductor manufacturing subsidiary company of Renesas Electronics that was established after acquiring Nokia's communication parts business; it is a company that produces large-scale integrations with data calculation and processing function.<sup>7</sup>



[Patent Transfer Status by Year]



[Major Assignee]

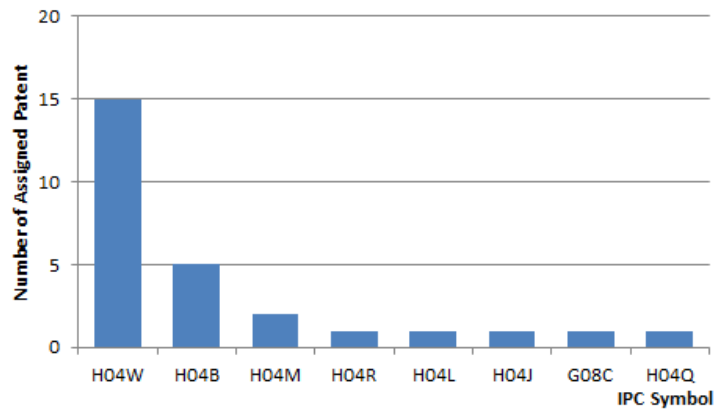
- 55% of patents that Xiaomi acquired was WIRELESS COMMUNICATIONS NETWORKS (H04W) related technologies; the others were TRANSMISSION (H04B), and TELEPHONIC COMMUNICATION (H04M).

<sup>6</sup> US company that sells integrated circuit for broadband communication

<sup>7</sup> Edaily, Japanese Renesas, inquiring system LSI business sector sale, 2013.03.13



- A careful observation show that acquired patents were technology patents mainly used for IoT and wearable devices.



- H04W: Wireless communications networks
- H04B: Transmission
- H04M: Telephonic communication
- G08C: Transmission systems for measured values, control or similar signals
- H04L: Transmission of Digital Informaion
- H04Q: Selecting
- H04R: Loudspeakers, microphones
- H04J: Multiplex communication

[Main IPC symbol of Assigned Patent]

## 4. Summary

- Xiaomi applied 3,153 patents from 2010, the first year of establishment, to 2015; among these, only 63 cases, 2% of the entire application, were registered.
  - A large difference in the number of patent application and registration is probably due to the duration of time required for patent registration process since Xiaomi began putting in the effort for patent applications fairly recently, but also cannot leave out the possibility of numerous patent rejections.
  - Looking at the applied patents by technology field, Xiaomi has been applying a great number of ELECTRICAL DIGITAL DATA PROCESSING (G06F) related patents and IPC technology patents used in other smartphone, IoT, and wearable devices that fall under G and H classification.
- The application ratio of individual countries, which reveals the degree of global market advancement, shows that Xiaomi applied 77% of patents in China.
  - Based on the number of shipments, Xiaomi is considered a world's leading company; but with most of the sales occurring in China's domestic market and an insignificant number of patent activities in the United States, Japan and Korea, which is still considered the largest smartphone market, the company's future market expansion will not be so smooth.
- Xiaomi's patent acquisition status show that the company has acquired 27 technology patents such as WIRELESS COMMUNICATIONS NETWORKS (H04W), TRANSMISSION (H04B), and TELEPHONIC COMMUNICATION (H04M) from communication companies like Renesas Mobile, Broadcom in the recent 2 years period (2014, 2015).
  - As Xiaomi is a company that grew in short period of time, efforts in the international patent acquisitions were expected but there was no record of patent acquisition prior to 2014.

- Being caught up with patent disputes recently, consideration of aggressive licensing movement is expected henceforth.
  - Going through the patent dispute crisis for using Qualcomm's completed chip set.<sup>8</sup>
  
- Strengthening patent portfolio is critical for Xiaomi to ultimately pursue for market expansion as a global enterprise.
  - With the characteristic of Xiaomi's a low-price high-volume marketing strategy, weakened price competitiveness due to the increased license and production cost will most likely lead to a drop in sales volume.
  
  - Some argue that since Xiaomi's competitiveness is not in a smartphone industry but in a mobile centered smart home industry that controls various electronic products, the growth will continue; however, securing patents must take priority in order to overcome their weakness in technology and proceed with sales in the major international markets.

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<sup>8</sup> Asia Economy, Xiaomi's monster phone 'Mi5' price revealed... not a cheap phone, 2015.12.16