

Selvakumar, Ekambar et al.

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## How can mobile music streaming service take of in India, China und Indonesia? Analysis of drivers and obstacles

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# *How can Mobile Music Streaming Service Take off in India, China and Indonesia?*

*Analysis of Drivers and Obstacles*

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# I. INTRODUCTION

The mobile-broadband technology has made the mobile Internet access become faster and reliable enough to carry high quality and bandwidth demand services. According to Allot, the major part of this mobile data usage comes from the multimedia streaming services<sup>1</sup>. The mobile data usage grew up to 77 %, occupied by multimedia streaming, in contrast to fixed broadband where the file sharing service dominated. It was also reported that the digital music business increased 8 % globally, as the result of the growth in subscription, download purchasing and expansion of the business across the countries<sup>2</sup>.

Moreover, there are currently 5 emerging developing markets called as the BRICI (Brazil, Russia, India, China, Indonesia) that are predicted to add more 1.2 billion Internet users by 2015, from total 2.4 million Internet users today<sup>3</sup>. Among them, India, China and Indonesia, as some of the world most populated countries, are emerging markets in Asia. In these countries, the potential user demand for mobile music streaming service is huge, as the result of factors such as increasing smart phone penetration, auguring aggressive 3G take-up and high mobile Internet usage<sup>4</sup>. However, there is still gap between technology innovations and real access to customer in these markets.

In the diffusion theory, barriers analyze is an important way to explain the accessibility and finding the solutions [1]. According to the data mentioned above and in line with the big progress of 3G-network deployment across these countries, there are opportunities to show up for music streaming service as profitable business. Thus, in order to bring the innovation this technology closer to customers, the feasible business model needs to be found. However, the strategy used has to be selectively, targeted to specific service and market, as having a clear understanding. It is definitely an important part to find the value that can be catch up in the new business opportunity. The challenges in delivering new type of service could exist in technical, cognitive, economical, social and political aspect.

Considering the technical, economic and social contexts, two research questions discussed in this paper are given below:

1. *“What are the potential drivers and obstacles of Mobile Music Streaming Service business in India, China and Indonesia?”*
2. *“What are the similarities and differences aspects in delivering Mobile Music Streaming Service in India, China and Indonesia?”*

# II. METHODOLOGY

In order to answer those questions above, we focus on two key phases, the data collection and analysis. The data collection phase will be done to get a detailed idea of the targeted markets, as well as the current business models of mobile music streaming service in other countries (pre-market study). The consumer characteristic, government’s strategy related to the mobile Internet industry, as well as Mobile Network Operators’ (MNOs) and Over-The-Top (OTT) music service providers’ existing strategy are valuable data related to this research. This is done by conducting interviews and secondary resources (mainly market reports).

This work is part of the on going research “Business Models for Mobile-broadband Media Services” and is done simultaneously to the 3 focus countries. Three authors are from those countries, and will do in depth study to their own home country: Selvakumar to India, Huang to China, and Aidi to Indonesia. Until this document is submitted, 3 interviews have been done in China, of which 2 are MNOs, and the other one is Internet Company. Moreover, 8 interviews have also been done in India, while the interviews in Indonesia covers representative from 2 MNOs, Telecom regulatory body, as well as local media content service provider.

After the data collection of market acceptance, government strategy and market actors, the analysis of drivers and obstacles, similarities and differences should be conducted in consideration of technical, cognitive,

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<sup>1</sup> Allot Communications, “Global Mobile-broadband Traffic Report,” ALLT., Geneva, Rep. D261013 Rev 6, Feb. 2011.

<sup>2</sup> International Federation of the Phonographic Industry, “Digital Music Report 2012”. IFPI., Jan. 2012.

<sup>3</sup> M. Aguiar et al., “The Internet’s New Billion,” BCG., Boston, MA., Sept. 2010, and International Telecommunication Union. (2011). “ICT Facts and Figures”.

<sup>4</sup> M. Meeker et al., “The Mobile Internet Report,” Morgan Stanley, Dec. 15, 2010.

economical and social issues. Methlie and Iden [2] have constructed theoretical framework for categorization of and obstacles of services on next generation networks, including media services. The framework consist 3 general factors, which are internal firm, Market structure and General environmental.

Moreover, for the internal firm factor analysis, we will focus for the Business model, and use the framework by Chesbrough and Rosenbloom (2002), as it mediates between technology and economic values [3]. This model is able to construct the input from technical aspects relating the social aspects as output, by constituting all the six components as function. Meanwhile, in order to describe and analyze the actors and the contexts of their relationship, we need to do cross analysis, by combining the Value network analysis part in Chesbrough and Rosenbloom model with the ARA model proposed by Håkansson and Snehota (1989) [4][5]. This adaptation can be found in PhD thesis done by Markendahl [6]. We spread the analysis of the market structure and general environmental factors from the framework at [2] into 4 chapters: pre-study of the world wide market, and target markets study that covers mobile telecoms, digital music and mobile user landscape, both in India, China and Indonesia. Then using these data, we present the benchmark of the drivers and obstacles between these countries in the last chapter.

### **III. PRE MARKET STUDY IN SWEDEN**

Spotify is digital music service that was founded in Sweden and commercially released in 2008. Spotify actually does not offer new type of business in the music industry, as there are already lots of music retail and music service provider that also have the same main offers. However, Spotify has final touches apart from those main offers that make it successful than its competitors, both from the subscriber point of view as well as the features it able to offer. In order to legalize its business, Spotify mainly does not just make deal with actors in the Music Industry, but also has several strategic alliances to build channels on delivering its service closer to the user, range with the actors in the Consumer electronic, and Internet as well as Telecom industry. Its alliance with one of the Telecom industry actor, Telia Sonera is discussed as below.

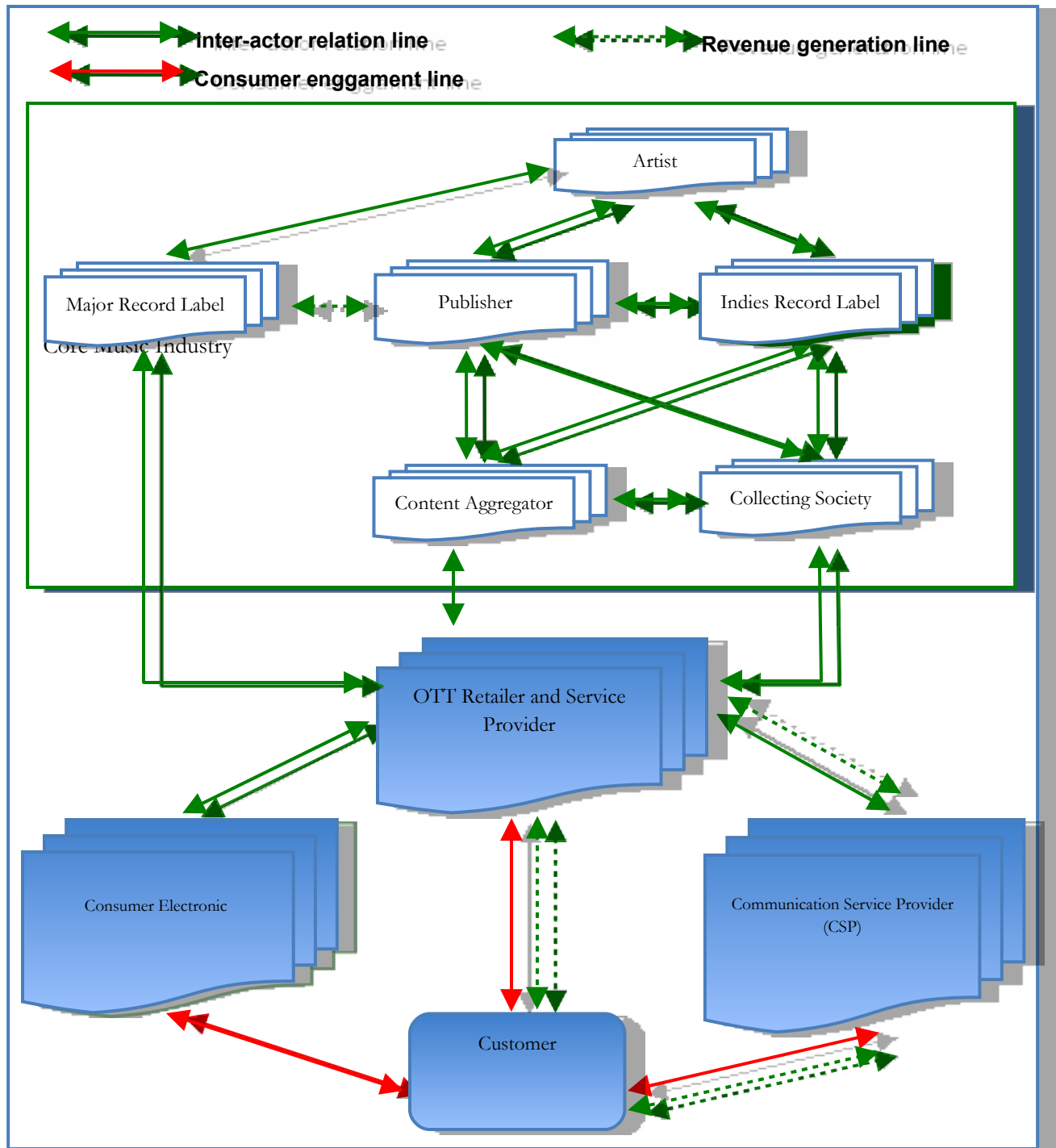
#### **Spotify – TeliaSonera alliance**

Spotify started its first agreement with TeliaSonera in Sweden in 2009 which was 2-years exclusive cooperation that makes TeliaSonera as sole exclusive operator in Sweden to use Spotify brand within its own products branding and marketing<sup>5</sup>. They boarded their agreement to Finnish market in 2010, and then renewed it in 2011 for the next 2-years forward. This relation enables “Spotify Premium” plan to be bundled with TeliaSonera’s mobile, broadband, as well as IP TV service<sup>6</sup>. There is no exact addressable market mentioned in the campaign marketing, however Spotify type of service mostly suit the young customer, means this offers will also have strong attraction to the first-time broadband and TV subscribers. Moreover, as the offer covers range of products using the same Spotify account, it opens possibility to both parties to expand their market and tight the bond with their customer. The ARA analysis of these mobile music businesses is shown in Figure 1 below:

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<sup>5</sup> “Telia and Spotify sign exclusive cooperation agreement”, available at <http://www.spotify.com/se/about-us/press/telia-and-spotify-sign-exclusive-cooperation-agreement/>

<sup>6</sup> “Spotify premieres on TVs in Sweden and Finland”, available at <http://www.spotify.com/se/blog/archives/2010/06/10/telia-tv/>



**Figure 1.** ARA analysis of Spotify partnerships in digital mobile music businesses (Author's analysis)

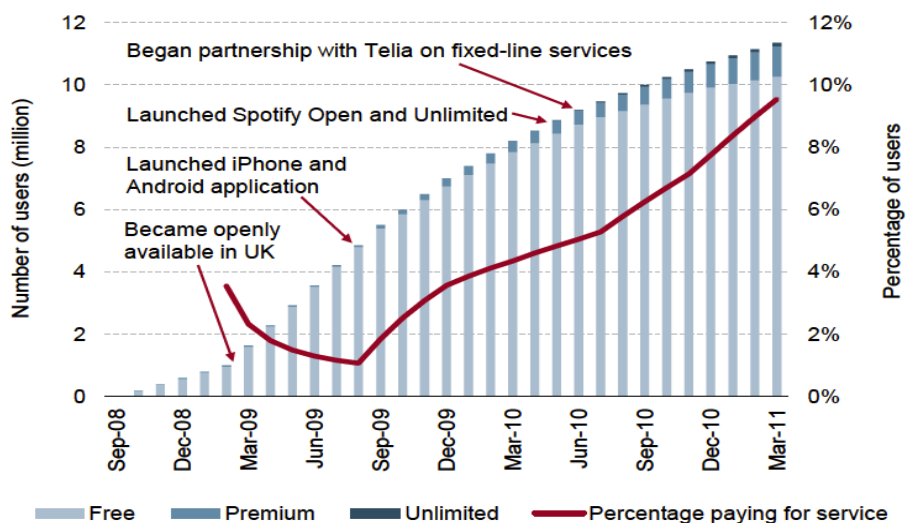
**Value Exchange**

Spotify considers Telecom operator mainly as a strategic partner. In Spotify's perspective, Telecom operators are over established in Europe. Telecom operator was looking out for new differentiated services. In contrast, Spotify was keen on converting freemium to premium customers. So, it was looking out for somebody to sponsor

for free trial. Spotify's bundles were tied up with Telia's tariffs. Telecom operator usually distributes these bundles in volume. It is Spotify who invests in Telecom operator by lowering their margins. But it started reaching the people more and the number of freemium to premium subscribers start increasing.

The expansion strategies that Spotify resembles are mainly targeted to the **early adopter** user, which potentially drive benefits in more in long-term engagement. Although there is no detail information of the distribution of Spotify subscriber per country-based, Spotify reports to currently have total 10 million registered users, where 3 million are using paid-subscriptions (15 % conversion rate worldwide<sup>Error: Reference source not found</sup>), which is far away compare to other Internet players, and impressive to secure cash flow. It makes it as the largest paid-based Streaming-core music provider worldwide, as well as the second largest source of digital music revenue for Music industry in Europe.

This is actually the core aim behind the "Freemium" revenue generation model: to attract large customers with free offering before migrate them to the paid subscription using features bundling differentiation. For this type of business, getting balance amount of free-based user vs. paid-based user is vital to ensuring sustainability. In Spotify case, the introducing of mobile device feature, along with time-access limit, similar-track limit, offline access, etc were some key factors that significantly boost its paid-subscriptions user<sup>7</sup>. This boost is shown in Figure 2.



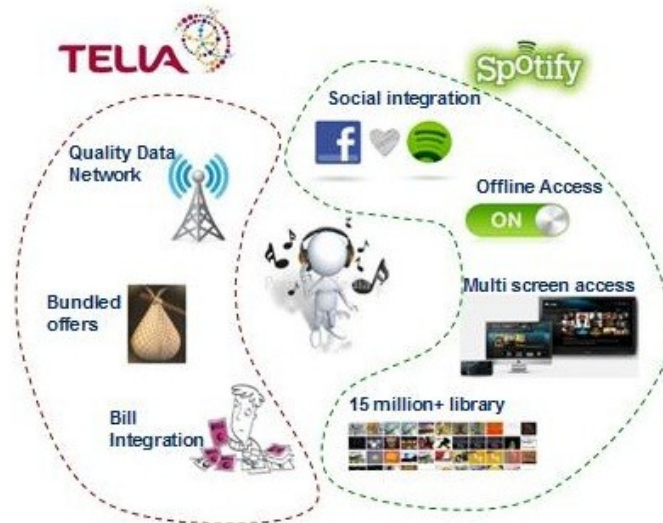
**Figure 2.** Spotify's user base by service type in Europe, Sept. 2008 – March 2011  
(Source: Analysis Mason, 2011)

### Music and Telecoms

In cultural point of view, music and Telecom operator does not fit together as a success. Several Telecom operators that tried to unlock the Music business through telecom ecosystem, even TeliaSonera previously has launched its own music service, "**Telia Musikbutiken**", but failed on gaining the market<sup>8</sup>. Thus, Telecom operator started considering music as one of their normal differentiated VAS or product and this started reaching the people. In the competitive strategy, TeliaSonera has to made step toward differentiation among prominent competitors in broadband and especially in the IP TV product, as its position in these markets is not as strong as in its Mobile product and the significant competition both in Sweden in Finland pushes the price down as well as the ARPU. In the Nordic market itself, TeliaSonera main competitor also has launched the similar service, which is Telenor and WiMP relation, started in Norway and going toward Sweden.

<sup>7</sup> \_ (2011, March). "Spotify shows that mobility is key to successful 'freemium' services". [Online]. Available at: [http://www.analysismason.com/Research/Content/Comments/RDMB0\\_RDMY0\\_Spotify\\_freemium\\_strategy\\_Mar2011/](http://www.analysismason.com/Research/Content/Comments/RDMB0_RDMY0_Spotify_freemium_strategy_Mar2011/)

<sup>8</sup> "Frågor och svar för Musikbutiken", available at [http://www.telia.se/privat/produkter\\_tjanster/noje/musik/musikbutiken/faq](http://www.telia.se/privat/produkter_tjanster/noje/musik/musikbutiken/faq)



**Figure 3.** Spotify – TeliaSonera value exchange  
(Author's analysis)

Moreover, the Revenue sharing model is not officially stated, but it is confirmed TeliaSonera takes some part of the slice, and leaves the rest to Spotify to be splinted with the Music industry actors<sup>9</sup>. So, there is no direct arrangement between TeliaSonera and the Music industry, although it is confirmed that TeliaSonera involved in bargaining discussions to help on releasing the product to the market under the agreement model. TeliaSonera able to offer this free “Spotify premium” access during promotion early months with no “Hard cap” policy, as there is also specific discount arrangement, as result of exclusive relation with Spotify. These are the offers that the competitors could not afford and they are also not allowed to use any Spotify brand included in their own packages in Sweden and Finland as well. By using this agreement, TeliaSonera has built at least **3 Strategic objectives**: opportunity to reduce the churn rate, up-selling subscription to higher value packages, and result on stable or increasing ARPU.

In the Spotify side, its relation with TeliaSonera is proved to significantly increase its own customer base. And more importantly it drives these customers directly into higher-value based subscription (“Spotify premium”), which is still the core business among Spotify revenue stream. Moreover, at the time when the agreement was launched, Spotify was still young brand and small market segment. Thus, partnering with TeliaSonera, the incumbent would definitely leverage this, as well as helping Spotify toward bargaining position with the Music industry actors, who are taking more control over the business ecosystem. It is reported that during the first term of agreement, Spotify subscriptions through TeliaSonera has **increased by ~ 300 %**, acquired up to ~ 25 % of “Spotify Premium” in Sweden. This is inline with IFPI report that there was substantial increasing in digital music sales in Sweden since the launched of these types of relation, as well as the implementation of law enforcement toward piracy (IPRED law)<sup>10</sup>.

#### **A simple technique turned out to be a huge hit**

Spotify works differently compare to other similar services as it relies on several way to make the music delivered seamlessly to the client (**median playback latency ~265 ms**), which is very important in real-time service Error: Reference source not found. Spotify uses TCP-based communication that guarantee each bit the media stream is correctly delivered and it is implemented using peer-assisted streaming per track (P2P) Error: Reference source not found. Different with the P2P streaming for the large data (e.g. Movie), where the main concern is more into the download strategy, in the P2P music streaming, the client typically access much more

<sup>9</sup> Information confirmed during the Interview with Lars – TeliaSonera, as well as corresponding to Arthur D. Little interviews and analysis mentioned “OTT strategies map worldwide – Telecom Operators’ OTT Strategies”, Ericsson

<sup>10</sup> “Statistic”, available at [http://www.ifpi.se/?page\\_id=221](http://www.ifpi.se/?page_id=221)



smaller and short data. Thus, Spotify's main concern to deliver the data seamlessly is more into **peer discovery strategy**. To accomplish this, It uses combination of 3 data sources: the CDN/core streaming servers, P2P and cache, where 8.8% data comes from servers, 35.8% from P2P, 55.4% from user local caches Error: Reference source not found.

Using this local caches technique, Spotify able to introduce "offline playlist mode" that turn into major value, especially in the mobile usage. This offline playlists is available only for premium customers. Spotify user can access their "streaming" music data without need to be connected to the Internet, as well as by connecting to wi-fi during their time in home. Once they are in travel or outside wi-fi, they can listen to this playlist without 3G connection. This had a huge welcome among the people as their 3G data is saved. The result of this is shown in the form of increase in freemium to premium subscribers. This feature also attracts the Telecom operator, e.g. Telia, as this feature help them to reduce the data traffic, while at the same time still keep the revenue flows trough the subscription fee (data service), as result of its partnership with Spotify.

### **Spotify's view about the asian markets**

Spotify always keep on analyzing for new markets worldwide to launch its service. Some of the criteria that Spotify considers as a basic for new markets expansion are:

- Internet, smartphone and facebook penetration.
- People's willingness to pay
- GDP's
- Telecom operator investments in the respective markets
- Piracy

When it comes to the problem of piracy, Spotify feels that it taught the people that it is easy to use Spotify than to use torrents. So if the people are willing to pay for music, piracy may not be a problem.

## **IV. INDIA'S MARKET**

### **4.1 Mobile Telecom**

The Indian market is one of the emerging markets in the world. Indian telecom market is dominated by mobile communication services. The Indian market is the second largest in the world with more than 900 million SIM cards and adds up to 20 million new subscribers per month. The total number of broadband connections is about 14 million in 2011 where mobile broadband constitutes about 3 million subscribers using 3G connection.

The primary reason for such a major explosion of mobile in India is due to the cheap availability of GSM handsets. The GSM handsets are available in India starting from the price 15 Euros [13]. There also dual SIM phones that are widely popular among Indian subscribers. This allows the people to use two different networks and make cheap calls and messages. Voice services and prepaid dominates in Indian market due to these cheap and dual SIM phones. The average revenue per user is around £2 = Rs. 140 per month. The price of call per minute is very cheap compared to Europe, £0.5 [14].

The Indian market is very fragmented, and the spectrum licenses that were awarded to MNOs in 22 regions known as circles. There would be around 10 -12 MNOs in each circle and most of these MNOs would get the licenses for all the circles. There also exists state owned MNOs but they are not among the MNOs who make maximum profit. After 2008, a number of new MNOs entered the market that leads to an intense competition and the result was the voice prices which were already low further decreased by 60% [10].

### **4.2 Mobile User**

In India, though the reports claims that the penetration of Smartphone keeps on increasing, it is a fact that still most of the people are biased towards feature phones. The MNOs claims that major portion of their revenue comes from feature phones and they admit that significant portion of their feature phone revenue comes from WAP portal. <sup>11</sup>

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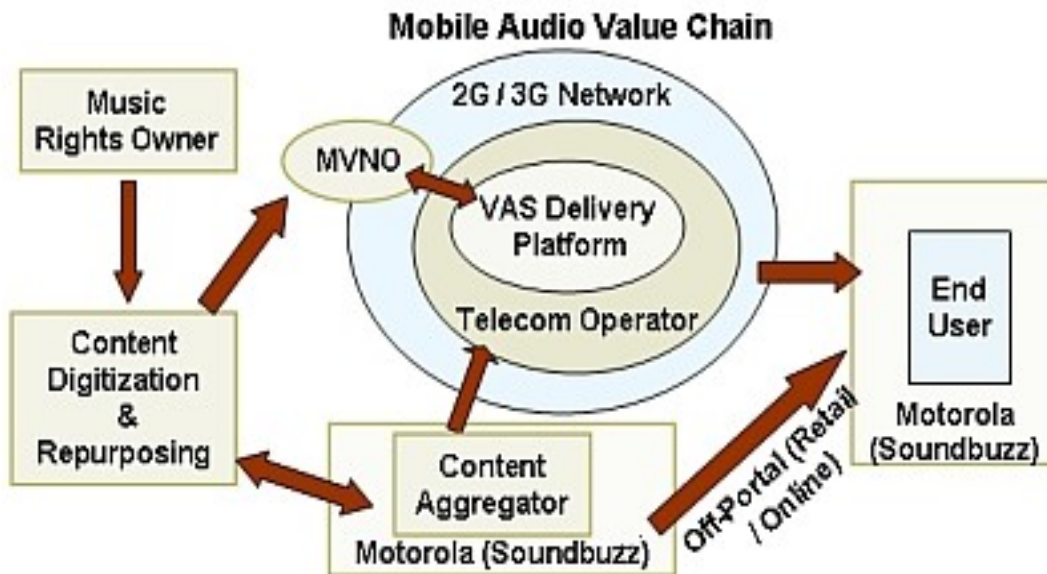
<sup>11</sup> Interview observation in India from the dominant operator Bharti Airtel

Still the mindset of the mobile users is inclined towards “download and play” model rather than streaming services. The MNOs who understood the customers closely agrees that the customers are patient enough to wait for 2 or 3 minutes for a song to get download whereas they are very much annoyed in the buffering in the middle of the song while streaming music <sup>12</sup>.

### 4.3 Mobile Music

The Indian market is already biased towards music industry even before the emergence of 3G and music streaming services. The Indian MNOs still generates a huge revenue from services such as Caller Ring Back Tone(CRBT), Music on call etc.,<sup>13</sup> After the emergence of 3G, similar services like Spotify were launched in India like SAAVN, Dhingana to name a few. These services allows the users to play in various devices such as PC’s, iphone, android etc., Separate apps are developed for ios and android. All these services are offered for free invariable of any device.<sup>14</sup> These platform providers are looking out for new business models to monetize their revenue growth and their subscriber base.

One of the business model options would be a collaborative business model like Telia - Spotify or others in the western market space. But a major problem about licensing issues here in India. There are two separate licenses for these above platform providers. 1) Internet license and 2) Mobile license. As long as these apps are played either in PC or Mobile (connected through wi-fi or 3G), it comes under Internet licensing. Whereas, if an operator comes in collaboration with these players and the apps are played through the operator’s network, this situation falls under mobile licensing. The major obstacle here is all the platform providers got the rights for Internet licensing and not for mobile licensing. The ARA analysis of these mobile music businesses in India is shown in Figure 4 below:



**Figure 4.** ARA analysis of the typical partnerships in India’s digital mobile music businesses (Author’s analysis)

<sup>12</sup> Evident from Bharti Airtel’s interview

<sup>13</sup> Observation from Interviews with Indian operators

<sup>14</sup> SAAVN free app. Available at <http://www.saavn.com/>

#### 4.4. Summary

- The MNOs already have a collaborated business model with the content providers like Hungama, T-series etc., This was mainly for services like CRBT (Caller Ring Back Tone), Music on call and also to download music through the MNOs networks
- Though there are emerging Spotify like platform providers, exists in the Indian market, the MNOs are worried for the collaboration because of the licensing issues
- ARPU for CRBT, Music on cal are decreasing, 3G uptake is not very much but is good so far
- Low penetration of smartphones, Lack of 3G roaming and high costs of 3G

## V. CHINA'S MARKET

### 5.1 Mobile Telecom

China, as the biggest developing country in the world with most population, has 939.501 millions mobile subscribers by Q311 (69.7% penetration)<sup>15</sup>. The total mobile subscriber takes a continuous growth with two drivers, which is because the MNOs keep extending their network coverage to untapped rural areas, the other is because the MNOs has invested a lot to upgrade their mobile network to the 3rd generation and been promoting its services, especially in urban market.

The number of 3G subscribers reached 200 million in Q4 2011 and accounted for 22 percent of the total.<sup>16</sup> Number of mobile Internet user reaches 430 million with market cap of 25.18 billion CNY.<sup>17</sup> More than half of mobile Internet users are still using 2.5G data service as GPRS. A fast growth of smart phone contributes to the growth of mobile Internet service, although the penetration of smart phone is still low at around 10 percent of the total base. The exact number of smart phone penetration is hard to calculate due to lots of black market devices in the market such as face iPhone with all the smart phone features.

There are 3 mobile MNOs in China, which are China Mobile, China Unicom and China Telecom. China mobile has the highest market share of 67.4%. "The operator continued to dominate the Chinese mobile market but its market share has been on a gradual long-term decline due to pressure from China Unicom and China Telecom."<sup>18</sup> China Unicom starts to operate on both fix and mobile networks after merging with China Network Communication Group in 2009. China Telecom, the previous fix line network operator, started to operate mobile network after taking CDMA network from China Unicom and 42 million CDMA users in 2009.

There are three 3G licenses with different mobile network technologies awarded to these three mobile operators. China mobile hold a license using home grown technology, TDS-CDMA. China Unicom use WCDMA, while China Telecom use CDMA-2000 on top of the CDMA 2G network. China Unicom are believed to have an advantage to take a lead on 3G service as the WCDMA handset is widely available and China Unicom are the first one to launch iPhone 3G package.

### 5.2 Mobile User

User behavior is under change taking more needs on mobility and media content. China has the most netizens in the world. Many Internet users use Internet everyday, and Internet has emotional connection with people. The Smart phone is opened spontaneously for mobile broadband, which happens usually when users are idle with no social occasion, such as waiting for the bus, sitting in the subway and taking break from work.

Mobility demand increases as users intend to use several services through the whole day, anytime when users are free. The first few services users will go to when they are boring on the bus are the ones they use on their computer on daily base. Although social network service takes most of the time people spend on mobile broadband, mobile music and video are among the basic needs of mobile broadband users.

The potential needs of mobile media content are huge in China, while the obstacles are perception of mobile broadband. The perception for mobile broadband is very different in China comparing with Europe. "The term

<sup>15</sup> Business Monitor International: China Telecommunication Report, 2012 Q1.

<sup>16</sup> Calum Dewar (2012), Wireless Intelligence: China approaches 1 billion mobile connections as 3G services gain traction

<sup>17</sup> Eguan Data(2012 Q1), [http://data.eguan.cn/yiguanshuju\\_131943.html](http://data.eguan.cn/yiguanshuju_131943.html)

<sup>18</sup> Business Monitor International: China Telecommunication Report, 2012 Q1.

'mobile broadband' raises the wrong association, as it is perceived as a synonym to mobile Internet. The word "mobile" is linked to the mobile phone and China Mobile rather than high speed Internet experience and anywhere internet" [11]. It takes time and resources to propose the value of mobile broadband to users of traditional mobile telephony service.

In the process of adoption of mobile broadband media service, cost of data consumption is a sensitive issue affecting consumer perception of mobile broadband. The mobile users in China mostly have the experience of surprising bills after using some new services from MNOs due to less regulated market than Europe, which makes new service hard to accept by users. Also 3G data cost is much higher than Europe and most of the traditional mobile internet users are only willing to pay \$2-3 to get less than 100MB per month to meet their browsing and instant message needs [12].

### 5.3 Mobile Music

Mobile music services in China are provided through two kinds of companies, Internet Company and Mobile Operators. There is quite a lot of free music streaming services from Internet companies. Most of the popular music streaming services have their apps on multiplatform includes iPhone, Android phone, iPad, etc. Smartphone and tablet users use the apps to stream music from Wi-Fi and 3G networks. Users pay for the connection and device, get free music apps for the service. MNOs also have its mobile music service platforms offering music streaming, ring back tone and single track download service with charge of service free and data fee.

Service fee is for the mobile music service and data free is for the data consumed by the service. As of content licensing, certain of services offered by internet company has legal content and pay limited licensing fee to labels, while some services are still using content from the search engine with no copyright clearance. While music used in operator' service are completely legal and has been authorized right of use by record labels. But MNOs do not pay licensing fee to record labels, instead it use an revenue sharing model, which means labels get paid of their music are downloaded or streamed.

The detail revenue sharing model will be discussed later on. In 2011, China mobile as the world's biggest operator in term of subscribers has 22 billion CNY revenue on its mobile music business increased 7.8% year on year<sup>19</sup>. Here this paper will use China mobile case to discuss the mobile operator's offer on mobile music. Previously China mobile develop its music service platform by cooperating with service providers, outsourcing the platform and concentrate on the business development. After several lawsuits took place on the management team of its Sichuan music base, it shows that the previous business model brings high finance and political risk.

Now China Mobile has abandoned the strategy of cooperation with SPs, instead China Mobile cooperate with labels and music content aggregators directly through its mobile music business unit in Sichuan. The content providers do not pay much attention to how China Mobile uses the music content to design the service model in detail. The negotiation between China Mobile and CP lies on the revenue sharing model. China mobile's music application called "Sui Sheng Ting", implemented with functions of streaming, downloading and setting ring backbone.

Moreover, the customer can choose either monthly subscriptions cost 5 RMB per month for unlimited streaming and limited downloading, or to pay on each downloaded song for 1-3 RMB<sup>20</sup>. The data consumption is free of charge under china mobile WAP access point. China mobile share the revenue of service charge with record labels on a 1:1 model. Labels get 50% of the service fee generated from the songs their provided to China Mobile. If users want to set their favorite song on "Sui Sheng Ting" platform as ring back tone, an extra monthly ring back tone "function fee" has to be paid, according to standard of each province branch company's charge standard.

The other two MNOs use similar service model and revenue model with China mobile. The core value that the MNO delivers in its mobile music service is the good mobile Internet network, legal music, and good costumer service. User resource is considered as the most valuable leverage of MNO when content providers trying to cooperate with them, followed with the billing capability. With many illegal music copies on the search

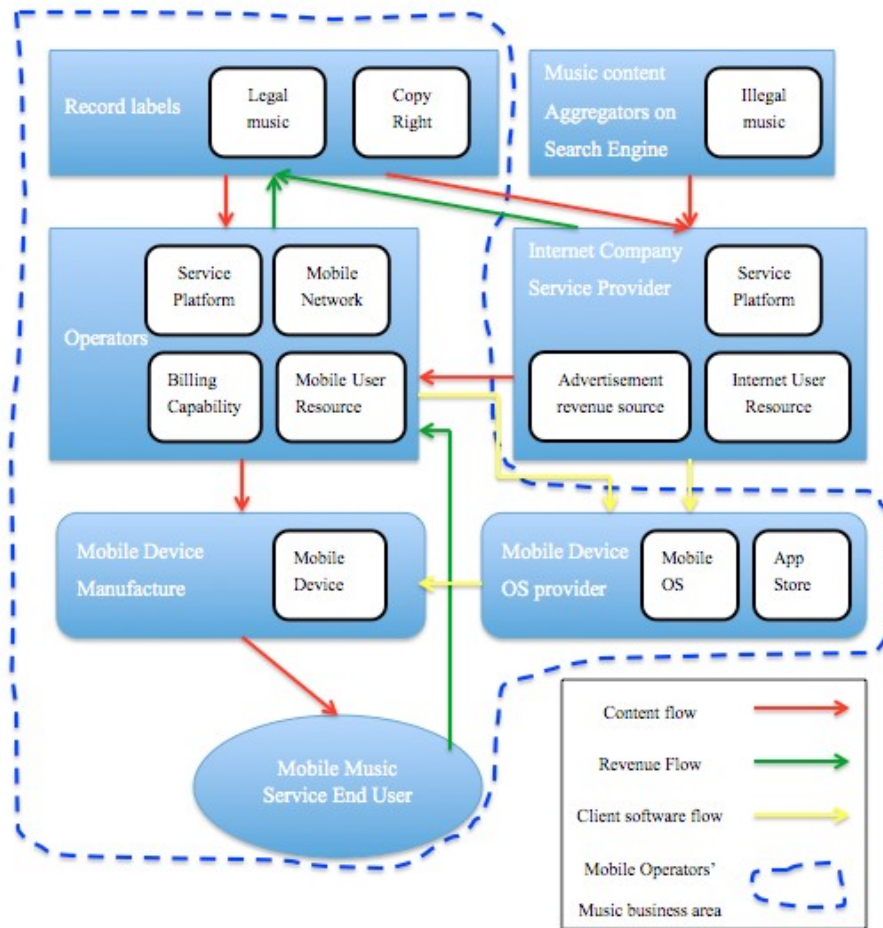
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<sup>19</sup> China Mobile 2011 Annual Report

<sup>20</sup> China Mobile mobile music portal, wm.10086.cn

engine and low protect power to music copyright in China, the ability to charge users for music service from operator has huge value the record labels. So MNOs in China have a strong negotiating power with labels, and dominant the music service value chain.

The MNOs consider the value of its BSS/OSS systems obvious to content providers, but still do not have an easy way to organize and explore it to facility mobile music business. Customized service with more costumer value might be possible if user data can be utilized to design service model. Another obstacle that operator develop its mobile music service is the competition of freemium services offered by Internet company. The freemium music apps provider have more flexibility than MNOs to source the content and use advertisement revenue model, which is easier to promote than subscription model. Again two kinds of mobile business models are identified in this paper, one is mobile operator’s offer with service charge, and the other one is freemium service from Internet Company. The ARA analysis of these mobile music businesses in China is shown in Figure 5 below:



**Figure 5.** ARA analysis of the typical partnerships in China’s digital mobile music businesses (Author’s analysis)

## 5.4 Summary

**Table 1.** Driver and obstacle factors in China's market

| Factors          |                           | Summary   |
|------------------|---------------------------|---|
| Internal Firm    | Business Model            | MNOs cooperate with content provider to develop its own service platform and share the end user content fee income with content provider. Internet company offer free music streaming service through apps and make profit through advertisement and other affiliate service.                     |
|                  | Resource and Capabilities | MNOs do not have problem to take the content from labels, cause the copyright protect is weak in China. Labels lies on MNOs to get their music paid rather than available on search engine for free. Operator abandons to cooperate with service providers because of finance and political risk. |
| Market Structure | Demand                    | Income is not equal to consuming power. Youth has very strong consuming power and big demand on smart phone and 3G based service. Music streaming and music offline listening on mobile device is increasing.   |
|                  | Supply                    | The price for 3G subscription are relatively high   |
|                  | Regulation                | Content surveillance is very strict. Content provider need license to put their content online.   |

## VI. INDONESIA'S MARKET

### 6.1 Mobile Telecom

Indonesia is classified to have low Internet penetration, as per March 2011 the Internet penetration only reached 14.3 %. This can be understood the fixed broadband is still infancy, and although there was certain increasing, the broadband development is in early development phase and the penetration remains low. The Ministry of Communication and Information (Kementrian Komunikasi dan Informatika) targets to achieve 50 million broadband users in 2015 to push Internet literacy in remote areas. The mobile penetration quickly moved and currently reaches 107% penetration with 260 million mobile subscriptions [9].

This still has considerable potential growth, as after 6 years of strong growth, the annual increasing of mobile subscriber was around 30%, up from just 65 million in 2007 and is predicted will reach 442 million in 2016. The market is competitively supported by 8 GSM-based and CDMA-based MNO, but 84% of the market share is occupied by Telkomsel, Indosat, XL Axiata and Hutchison. The ARPU shows decreasing trend and forecast to keep down in the future, due to high competition as well as the market is dominated by the large based of prepaid subscribers.

However, there are problem in the inferior infrastructure development that result on limited fixed-line infrastructure, due to geographic split of the archipelago territory and complex terrain. Thus, there is enormous opportunity for the MNO to boost the Internet access through mobile broadband. Although, 3G has been available in the country since more than 5 years, its uptake was low due to slow roll out of network, as there were approximately 16.3 million 3G subscribers at Q4 2011.

None less, currently there are 5 MNOs are offering HSPA networks (Telkomsel, Indosat, XL Axiata, Hutchinson, Axis), as well as other smaller MNOs over their CDMA-based, e.g Mobile-8 and Bakrie. The 3G penetration is expected to reach 10 % penetration by 2016, mainly driven by Blackberry service as well as success offering of Apple iPhones and iPads by Tekomsel, Indosat and Bakrie.

## 6.2 Mobile User

The mobile Internet is currently more preferred in Indonesia, which has reached 36% penetration rate in 2011, and most of the time is the only available access among Indonesians to connected to the Internet, thus predicted to increase to 67 % by 2015 [9]. This is also driven by the large adoption of mobile Internet as well as the existence of affordable smart phone in the market (Blackberry). The growth of the Smart-phone owner in the countries is predicted to increase by 6-22 % in the next year [15]. Thus, it can be said, it is because of the limited availability of the Internet through the fixed line that has made the market leaps toward the mobile access, and later, the mobile broadband.

Indonesia is one of markets where social network services are quite popular. Despite the relatively slow and expensive Internet connection, this country is currently as the 2nd largest and fastest growing Facebook's user in the world with 39 million active users [15], followed by large based users of Twitter and other local social websites, e.g. kaskus. It is supported by the culture among the Indonesian people for sharing and socializing, as what also can be seen since during the first social network era, e.g. Friendster, MySpace, etc.

Moreover, the MNOs are calculated to seeing the decreasing trend toward its blended ARPU, and address it due to the large based on prepaid customer as well as the expansion in the rural area that bring more low-value subscribers [9]. However, the research revealed that the income is less important than geographical area in explaining the gap in mobile broadband access in this country [16]. It means that the supply-side factors that relate to the infrastructure development has more influence, as the customers are actually have willingness to pay 20-50% more for better speed and quality, despite their geographical resident. Furthermore, the country is currently extremely dominated by young people, where more than 50 % of the population is younger than 30.

The data also shows the rapid growth of the middle-income class that means they are increasing individuals that are highly educated and has more tendencies to spend for more than basic needs, including entertainment [17]. This is supported by the fact the country's economy is growing fast and event quicker than its associate neighbors in the region. There is also prediction that the per capita IT spending would increase by 50 % over 2010-2014, and the telecom industry is also projected to growth by 6-8 % in 2012, due to the growth in needs for not just the data access, but also the services<sup>21</sup>.

## 6.3 Mobile Music

Media content and services have been initiated in Indonesia since 2006, in line with the 3G launching. Several players in the industry have offered media related contents such as music, video, game, ring tone and ring back-tone. Indonesia is one of few markets worldwide that still sees the personalized service, where 95 % of the market for digital music comes from this channel, mainly the ring-tone and ring back-tone.

The digital music piracy was reported reached twice than the legal market value, and this country is one of the countries that became IFPI's top priority due to high piracy, which reached 88% in 2006 [7][8]. The availability for download service is limited, not just because the 3G and PC penetration are still low, but also that piracy problem tackles the growth for the business. Apart from that, the players still does not see streaming service as provable business model yet, and the price competition is quite tight as well the blended ARPU keeps decreasing over several years [9].

Meanwhile, there is also low opportunity for Triple or Quadra play, which is often used by the Telecom operator in developed market to offer bundling with music streaming service, which means the music service is not mainly used to directly increasing the VAS revenue, but to decrease churn, increase the blended ARPU and acquire more market share. As same as the situation worldwide today, Indonesia market also sees the competition has been aggressive and the competition comes from any direction, either from the Network Access Provider (NAP), Mobile device / OS provider, and OTT Retailer / Service provider. Most of the delivery and revenue generation model used in these services are centralized to personalize contents and download-based service (DRM or Free-DRM à-la-carte), with few focus to streaming-based service.

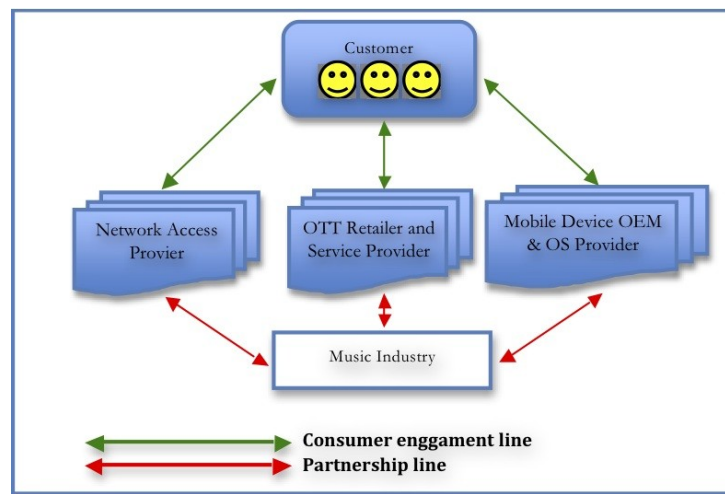
The relation with the Music industry that is used by players in Indonesia is typically direct (point-to-point) partnership, where these player delivered their own music service, which is typical business model that also can

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<sup>21</sup> "Indonesia's Cellular Industry Grows 6 - 8% in 2012", available at <http://en.indonesiainfincetoday.com/read/15483/Indonesias-Cellular-Industry-Grows-6-8-in-2012>

be seen in European market before the trend moves to bridge (point-to-multi points) partnership through OTT player, e.g. TeliaSonera - Spotify, Orange - Deezer, etc. Several examples of these services are Langit Musik (Telkomsel)<sup>22</sup>, Musikkamu (XL Axiata)<sup>23</sup>, Arena music (Indosat)<sup>24</sup>, Esia Musicbox (Bakrie Telekom)<sup>25</sup>, K-Music (Indosat Mega Media / IM2)<sup>26</sup>. There is also unique partnership done by Telkom Indonesia, one of the Fixed Telecom operator that set up Joint Venture (JV) with SK Telekom to deliver similar service as what has been done in South Korea (Melon)<sup>27</sup>.

There are currently also no prominent OTT players in the market yet, although several well known local as well as international parties have tried their attempt, e.g. KapanLagi, Kantong Musik (Jatis Mobile), as well as Nokia Music Store (Nokia), etc. Some of these players also focus their delivery platform to specific devices, such as BlackBerry as well as low-end mobile devices launched by the MNO (“HP Esia” phone) that is quite popular in this market [10]. The ARA analysis of these mobile music businesses in Indonesia is shown in Figure 6 below:



**Figure 6.** ARA analysis of the typical partnerships in Indonesia’s digital mobile music businesses (Author’s analysis)

## 6.4 Summary

**Table 2.** Driver and obstacle factors in Indonesia’s market

<sup>22</sup> “Telkomsel is Optimist in Digital Music Services”, available at <http://www.jakartaupdates.com/1257-03/telkomsel-is-optimist-in-digital-music-services> and “Telkomsel Pertimbangkan Akuisisi Penyedia Konten”, available at <http://www.tribunnews.com/2011/06/16/telkomsel-pertimbangkan-akuisisi-penyedia-konten>

<sup>23</sup> “XL Luncurkan Layanan Musikkamu”, available at <http://id.berita.yahoo.com/xl-luncurkan-layanan-musikkamu-114012052.html> and “Gandeng Musica Studio XL Rilis Musikkamu”, available at <http://id.berita.yahoo.com/gandeng-musica-studio-xl-rilis-musikkamu-155331610.html>

<sup>24</sup> “Indosat BlackBerry suguhkan arena music store”, available at <http://industri.kontan.co.id/news/indosat-blackberry-suguhkan-arena-music-store-1>

<sup>25</sup> “Esia Musicbox Helps Reduce Piracy”, available at [http://us.en.vivanews.com/news/read/108883-esia\\_musicbox\\_helps\\_reduce\\_piracy](http://us.en.vivanews.com/news/read/108883-esia_musicbox_helps_reduce_piracy)

<sup>26</sup> “IM2 Ingin Kongkow Jadi MySpace-nya Indonesia”, available at <http://inet.detik.com/read/2008/11/29/163803/1045194/398/im2-inginkan-kongkow-jadi-myspace-nya-indonesia>

<sup>27</sup> “SK Telecom and PT. Telekomunikasi team up to launch digital music content in Indonesia”, available at <http://www.rcwireless.com/asia/20110111/carriers/sk-telecom-and-pt-telekomunikasi-team-up-to-launch-digital-music-content-in-indonesia/> and “Telkom dan SK Telecom Luncurkan Toko Musik Online”, available at <http://tekno.kompas.com/read/2010/12/06/13171033/Telkom.dan.SK.Telecom.Luncurkan.Toko.Musik.Online>



| Factors          |                           | Summary   |
|------------------|---------------------------|---|
| Internal Firm    | Business Model            | The players focus to the personalized service (Ring back-tone activation and related media contents) and complement it with download-based service. It is done mainly using direct (point-to-point) partnership with the music industry. Thus, leading to “less sticky”, low variation of the contents, and high cost for maintenance and marketing.  |
|                  | Resource and Capabilities | No prominent OTT players in the market yet (local and international), thus the MNOs tend to deliver their own service with huge flexibility for customization, following the market demand situation. The MNOs have bargaining position toward the music industry not just due to the customer based (large dependency to internet trough mobile and low fix-line penetration), but also billing capability as the bank account penetration is less compare to developed market |
| Market Structure | Demand                    | Large based of customer in low ARPU and there is trend toward decreasing in blended ARPU.   |
|                  | Supply                    | The MNOs mainly compete and make differentiation trough price as result of price war in the market. The media consumption trough mobile network is mainly done trough VAS content, and the online services (download and streaming) are less focused.   |
|                  | Regulation                | Low law enforcement for digital piracy especially for media and this illegal market has reached twice legal market.   |

## VII. CONCLUSION

After analyze the telecom, digital mobile music business as well as the mobile user in India, China and Indonesia, we do the benchmark of driver and obstacle factors for Mobile Music streaming services between these countries, in term of firm and market structure point of view, adapted based on framework [2]. The three markets have all got the problems of piracy issue. This is the main obstacle of music streaming service development. The ad based revenue model might not support good quality service well. The ring back tone and downloading service are still taking the majority of the mobile operators’ music business revenue in the emergin market. High 3G data cost is another common obstacle among the three market, which directly strict the use of OTT service. Apart from the general problem of piracy, there are market specific problems like licensing issue for example.

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