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Mobile Music Business Models in Asia's Emerging Markets

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"MOBILE MUSIC BUSINESS MODELS IN ASIA'S EMERGING MARKETS"

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Abstract

In the telecom business, there has been a heavy competition from Internet, media and handset vendors companies. These over-the-top (OTT) players offer compiling telecom services, cause a transformation in the telecom business ecosystem, and the most challenging services posed here are media services. China, India and Indonesia, as world's emerging markets in Asia, are predicted to take the largest share in the global mobile traffic explosion by 2015. It is critical for mobile network operators (MNOs) in this region to explore strategy for mobile media services, as mobile broadband is likely preferred compared to fixed broadband.

In this paper, we analyze and compare mobile music business models used in these markets and structure the relation models between the key actors, using Actors, Relations and Business Activities (ARA) model. We present the economic models that are emerging, and an insight of why and how these multitudes actors are betting on currently. We found that the MNOs generally have a much stronger position compared to their counterparts in the developed markets, and the personalization services, like ring-back tone, are still a huge success. The actors tend to deliver the services by their own, rather than to collaborate in a horizontal business setting.

Keywords: *Actor cooperation, business models, digital music, emerging markets, media services, mobile broadband services*

1 Introduction

China, India and Indonesia, the biggest countries in the Asia Pacific region in terms of population and economy, are parts of the emerging markets called as the **BRICI** (Brazil, Russia, India, China, and Indonesia) countries (Aguiar et al., 2010). Fixed-line networks remain relatively undeveloped compared to mobile networks there (Morgan Stanley, 2009). Thus, mobile network operator (MNO) would likely to get a huge potential from the growing data demand, because mobile broadband (MBB) is likely preferable. One of the big things in MBB ecosystem comes from online (over-the-top/OTT) media services. Global mobile data traffic was reported to explode to 83 % in 2011, derived from smart phone and tablet devices boom (Allot Communications, 2011; Cisco, 2011), and Asia pacific region was predicted to take the largest share from this data explosion by 2015 (Cisco, 2011). But, MBB ecosystem also poses a challenge due of its different characteristics compared to the traditional telecom businesses.

The initial mobile data business models are not compatible with these emerging services (Blennerud, 2010). Here, the revenues typically grow in proportion with the bandwidth usage, capital and operational expenses, but independent from variations in the traffic growth (Mölleryd et al., 2010). In contrast, MBB service is a flat fee based, where the revenues are **decoupled** from traffic, capital and operational costs. As the network reaches capacity constraints, the existing revenue model will be insufficient to generate enough returns on investment (Li & Whalley, 2002). This may severely restrict MNO's growth potential in the long run, if it is handled only by cost cutting and optimization performance alone (Mölleryd et al., 2010). The change in the telecom business landscape has also been obvious: multitudes of new actors with different economic interests have introduced range of compiling OTT services (Arthur D. Little, 2010). The disadvantage of being a "*dump-pipe*" for MNO is high in this ecosystem, as these multimedia services demand higher network utilization.

Indeed, introducing new kinds of mobile value-added service (MVAS) is substantial to create differentiation and diversify MNO's business areas, in this rigorous competition (Harno, 2007). The emphasis of MNO's strategy for their MBB business should be beyond "stand alone" data offering, but instead it should also be fully integrated with the emerging contents and/or services that are delivered on top of it (Cisco, 2011). However, developing markets have a different environment from those developed markets. The telecom business also runs in a dynamic environment, although there are some similarities among particular user segments. There are differences in usage habit, law enforcement for piracy, broadband infrastructure development stage, etc (Aguiar et al., 2010). Thus, the analysis of strategies, to monetize the potentials and overcome the challenges above, has to be targeted to specific services and markets, as universal solutions would not be suitable. In order to evaluate the business models of mobile music, we answer the research questions below, with focus on these 3 markets:

1. *What are the services, delivery and revenue models that currently exist in mobile music?*
2. *Who are the actors involved in mobile music, and what are the relation models they use?*

This work is intended to be a basis in understanding and spur the thoughts to the media business in broadband ecosystem. Up until recently, the academic works in business models for digital music rather focus to the relationship between piracy and sales (Bourreau et al., 2008). These go to the isolated view, where this industry is seen as an independent ecosystem. To our knowledge, this work is therefore one of the first endeavors that explore both the economic models that are currently emerging in the digital music business, analyze the reactions from multitudes actors, and evaluate the prospects for telecom industry. By no means does it only seek a model that is ultimately dominant over others. It rather provides an early analysis of the emerging ones and insight of why and how the actors are betting on currently, especially in Asia's emerging markets. We do the analysis by considering different actors involved and seeing the music business as an ecosystem, where the telecom industry actors are part of it. This understanding is used to assess the potentials where the telecom industry actors can involve.

The rest of this work begins with the literatures review and academic background that have been done for business modeling. Utilizing this understanding, we present the data collection and analysis approaches used to explore mobile music business models in these 3 markets. In section 4, we present

the evolution and key data of the digital music industry, in order to understand how this industry works. In section 5, we analyze Spotify business model as a real case example of the emerging business models in the developed markets. Section 6, 7, and 8 provide the exploration of the current mobile music businesses in China, India and Indonesia respectively. And finally, we evaluate and compare business models used in each of these 3 countries in section 9. Section 10 briefly concludes the formulated findings and suggestions for follow-up research.

2 Business Modeling

There has been a plurality of approaches for business modeling, as there is no common consensus on how to define business model and it is often used to express different things (Zott et al., 2010; Osterwalder et al., 2005). Business model analysis is a young discipline and not self-evident in the literature of economics (Zott et al., 2010). Researches in this field can be classified into 3 levels that each might be also hierarchically linked: "*conceptual", "taxonomy"*, and "*instantiate"* (Osterwalder et al., 2005), shown in ***Figure 1***. The mainstream discussions are either done as "*product"*, "*marketing",* or *"actor and network"* centric (Osterwalder, 2004). In the "*conceptual"* layer, the discussions are focused to the definition and model aspects used to frame various real life business cases. It is the abstract layer that is designed to answer a business model definition, e.g. Timmers (1998), or meta-model framework, e.g. Osterwalder (2004). In the *"taxonomy*" layer, the works typically ranges from identifying particular aspects of real business cases to positioning them according to the common characteristics, e.g. Weill & Vitale (2001). The analysis style in "*instantiate"* layer is done using the "bottom-line" approach, where specific case study is discussed, e.g. Kraemer et al. (2000).

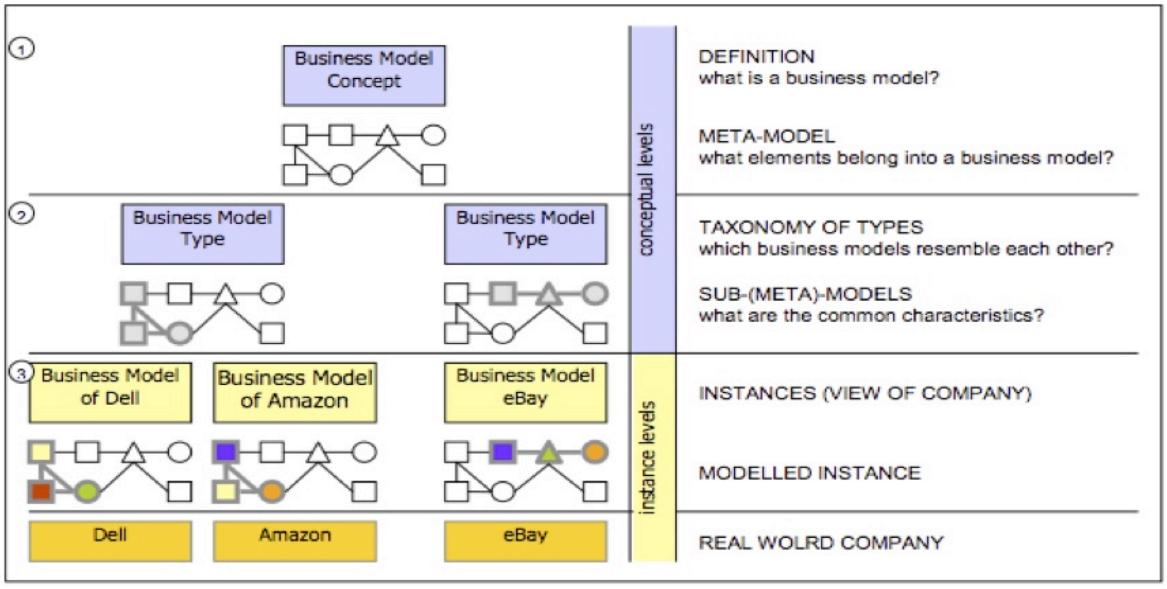


Figure 1 Business model concept hierarchy (Osterwalder et al., 2005)

There have been concerns raised that business model should also be seen as cross-companies collaboration. Focusing only on a single actor's (company) perspective is insufficiently suited to address business model that requires multi-actors collaboration (Håkansson & Snehota, 1989). The value chain concept has limitations in analyzing the emerging businesses in the context of the new economy. This happens because multitudes actor may involve in both vertical and horizontal collaboration with multiple entry and exit points in business constellation (Peppard & Rylander, 2006). Telecom industry also gets intricate, because actors from different sectors and with economic interests enter the ecosystem and roll out range of new compiling telecom services (Olla & Patel, 2002). In traditional voice era, the value chain was linear, where operator mostly controlled the main activities and dominated the wholesale (Sabat, 2002). As those services have started saturating (Maitland et al., 2002), this industry undergoes fragmentation and reconstruction, and business models emerge (Li & Whalley, 2002).

Data services are seen as the best way to recoup this, as it adds a number of new businesses (Maitland et al., 2002). However, it also disrupts linear value chain and requires actors with different resources to co-operate (Faber et al., 2003). This complexity is unsuited to be analyzed with the value chain concept alone (Whalley, 2002). Indeed, it makes sense to also see this ecosystem as a network of actors (Li & Whalley, 2002). Value network concept itself has been introduced since 1980's (Håkansson, 1987), as a way to analyze competitive business ecosystem, where actors involve in cultivating value in series of **inter-twined value chain** (Peppard & Rylander, 2006). The 'business ecosystem' is defined by Moore as "*an economic community supported by a foundation of interacting organizations and individuals—the organisms of the business world… Over time, they co-evolve their capabilities and roles, and tend to align themselves with the directions set by one or more central companies"* (Moore, 1993).

3 Methodologies

In this section we describe the data collection done, before we analyze business models for mobile media services in these 3 focus markets. The "Media" term is limited to the digital mobile music, and specific to the entertainment aspect. "Mobile" term relates to all types of mobile device and network required to access the service. Although we include the media services delivered on top of voice network, we mainly interested with those that utilize mobile broadband.

3.1 Data Collection

Apart of using recent evidences explored from range of the market analyses and reports, we have performed number of face-to-face interviews with the key players in Sweden, China, India, and Indonesia from May to June 2012. It covers experts from MNOs (TeliaSonera, China Mobile, China Unicom, TATA Teleservices, Airtel, Aircel, Telkomsel, Axis Telekom Indonesia), telecom regulator (BRTI-Indonesia), OTT media service providers (Spotify, Soho TV, Motorola), mobile content providers and aggregators (IDEA Mall, Hungama, Symbiotic info, New Solution Technology/Mobafone Indonesia). It was done to get an understanding and validate our findings about the current state of each of these 3 markets' landscape, the context of the involved actors' decision, and drivers and challenges of their strategy. Each session was ~1 hour, using semi-structured and open questions[1].

3.2 Data Analysis

Based on the different business model analysis point of views mentioned in section 2 previously, we perform the analysis in the "***taxonomy****"* and "***instantiate***" point of view (Osterwalder et al., 2005). Here, we use the data gathered from the interviews and market reports about mobile media businesses in these 3 focus markets. We first present key data from the global view of the music industry to understand how this industry works in section 4, and then we explore Spotify ecosystem in section 5, as a case study of the online media services business model done in the developed countries. Then, we explore how mobile music is provisioned in China, India and Indonesia, presented in section 6, 7, and 8 respectively. Finally, we compare the business models used, by putting focus to these elements below:

3.2.1 Value proposition and Revenue stream

In this work, we analyze different value propositions and revenue generations used in business models to roll out digital mobile media services. The main purpose is to answer the first question, by presenting it based on **service, delivery**, and **revenue** model. These are the typically elements in business model analysis in the "*conceptual*" layer, e.g. Chesbrough & Rosenbloom (2002); Osterwalder (2004); Morris et al. (2005). Value proposition is the articulated value delivered to the customer, while the revenue model is the ability to translate it into money (Chesbrough and Rosenbloom, 2002; Osterwalder, 2002). In the "*taxonomy*" layer, these elements are also a point of interest. Rappa (2001) classified business models of Internet companies based on these 2 elements into nine categories. Meanwhile, while Kallio

[1] Data from interviews in Sweden are presented as its transcript, while interviews in China, India, and Indonesia are presented as its transcript note (translated to English) due to the privacy and technical reasons.

(2004) specifically focused to wireless business, and defined it based on the revenue and user segments.

3.2.2 Value network

The focus here is to answer the second question, where we analyze the involved actors in the horizontal and vertical (*value chain*) constellation (Håkansson, 1987), their interaction patterns and distributed responsibilities. It is necessary to understand the complex structure of a market, as multitude of actors involve that each may play similar role in the chain. The constellations models in mobile services are first discussed in UMTS Forum (2002), Nikou and Bouwman (2012), Panagiotakis, et al that are based on the dominancy in user's ownership. Chen & Cheng (2010) identified service provider's strategies to establish MVAS using collaborative business model: with an open interface for content providers, working with content aggregator, gateway provider, or creating contents and deliver it directly to the user. We identify the implemented models in these 3 markets, and analyze underlining reasons of the involved actors, using ***Actors, Relations*** and ***Business roles*** (ARA) model (Markendahl, 2007).

4 The Realm of the Digital Music Industry

The digital music has caused revolution to the music industry. It was first triggered by the compact disk (CD) and then Napster's launching in 1999 that marked a shift from physical to online digital distribution era. Since 2004, there has been a consistent increase in the digital music revenue worldwide that makes its share for overall revenue keeps expanding (IFPI, 2012). By 2011, its share in overall music revenue has reached 32% in 2011, dwarfed all comparable creative industries, except game sector. More specifically, the revenue from online channels has been predicted to overtake the physical channel by 2015 (Pettey, 2011). The business models used in the digital music can be mapped into different combination of service, distribution, and revenue models, as shown in *Table 1* and Table 2.

Service model	Distribution model
Personalization	Ring tone (monophonic, polyphonic, real tone, user-generated tone), Ring-back tone / RBT, etc
Ownership	DRM/Free-DRM à-la-carte
Access	On-demand/live/radio streaming, etc
Integrated	Combination of 2-3 service models above

Table 1 Service and Distribution models in the digital music (Aidi, 2012)

Revenue model	Description
Retail	Users buy the music content, and it might be downloaded or stored in the digital locker
Subscription	Users pay in regular period of time to access (stream) /get (download) limited/unlimited music contents (based on amount of time or content)
Subsidized	User does not pay for the music content consumption and other revenue channels support the business, mainly the advertisement fee, either as voice, picture (banner), or placed at the intervals within content delivery

Table 2 Revenue models in the digital music (Aidi, 2012)

However, despite the dramatic changes in the landscape, the majority of actors inside this industry still fulfill their traditional roles (Hawley, 2010). To distribute music, the artist deals with the **record label** and **publisher**. Those whose role is as a songwriter mainly deal with publisher, e.g. for music composition, lyric sheet, etc, while a singer deals with label, e.g. for music recording. These 3 are the content owners who hold the copyright. The **collecting society** that mainly settles per country-based collects royalties, while the **aggregator** acts as a point of contact for distribution to multitude retailers/service providers. Following the technological advance and decreasing revenue in physical form, there are exceptions from default working above. Small publishers and labels might form horizontal relations with other actors to handle full tasks, while major labels that control ~ 75 % of the worldwide music market use to have a complete capability to fulfill these scoops (Hawley, 2010). They merge traditional publisher and label roles by forming an umbrella organization that consists of several

subsidiary companies. This makes them able to set up a compact all in one deal with the artists ("360-degree"/"multiple-rights" agreement). These actors and their typical relations are visualized in *Figure 2*.

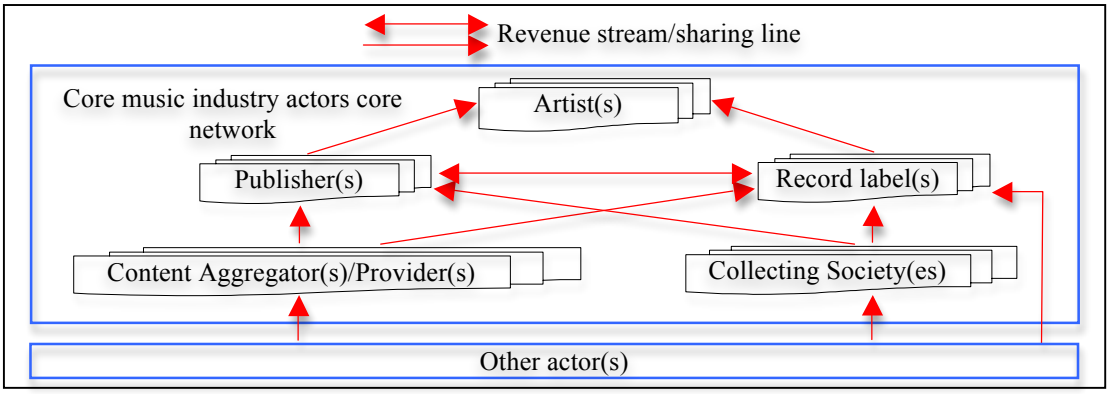


Figure 2 Typical Actors and relations in the music industry's core network (Aidi, 2012)

5 The "Spotify Ecosystem"

In this section, we present an "*instantiate*" point of view analysis to Spotify business model. Spotify is an OTT music service provider that was founded in Sweden and commercially released in 2008 and currently as one of world's most prominent OTT music players. In this following section, we get in deep into its value proposition and "cross-firm collaborations", where we mainly explore Spotify partnership with telecom industry actors (MNO).

5.1 Value Proposition and Revenue Models

Spotify actually does not offer new type of business in the music industry, as there is already numerous music retails and service providers that also have the same main offerings. However, It has final touches that make it more successful than its competitors do. Spotify both sell music as product (retail) and service, and is delivered as a downloaded client application with proprietary protocol and covers ~15 million licensed music contents globally (size and availability varies in each country). As convergence across devices is one of the major themes in the digital music business, Spotify application is also available in range of devices and it has device integration feature. Spotify system uses the TCP-based communication and prevents as much as possible the bottleneck from server and network, where the data might come from local cache, P2P and CDN/core streaming servers (Kreitz & Goldmann, 2011).

The revenue stream is built based on 2 models. First, the "***Freemium"*** model that is implemented to the streaming subscription using 3 pricing plans: subsided advertising-based ("Spotify Free") and subscription-based ("Spotify Unlimited" and "Spotify Premium"). Second, the "**Retail"** model that is implemented to the free-DRM à-la-carte download feature. Spotify's revenue is analyzed to come ~ 23 % from advertisements and ~ 77 % from paid-subscriptions that make it as **world's largest paid-based streaming music provider** and **Europe's second largest source of digital music revenue**. The introduction of mobile and offline access feature, etc are some of the key factors that significantly boost the paid-subscriptions. This is actually the core aim behind the "*Freemium"* model: to attract end-users with the free offering before migrating them to the paid subscription (Aidi, 2012).

5.2 Value Network: TeliaSonera-Spotify alliance

Spotify acquire the license to deliver music contents to end-user, from the record label, music publisher, collecting society, and/or aggregator, not with the artist. According to our interview with a source from Spotify, the licensing arrangements between Spotify and the content owners are not published, as it is part of the Non Disclosure Agreement (NDA). Spotify has alliance with customer electronics (CE), other OTT players, as well as telecom operators, as shown in *Figure 3*. At the time of writing, Spotify have worked with telecom operators, firstly with TeliaSonera since 2009, and then it expanded it with

Hutchison Whampoa (3UK) and KPN, and several MVNOs. This makes TeliaSonera as a sole exclusive operator in Sweden (and then Finland) to use Spotify brand within its products branding and marketing.

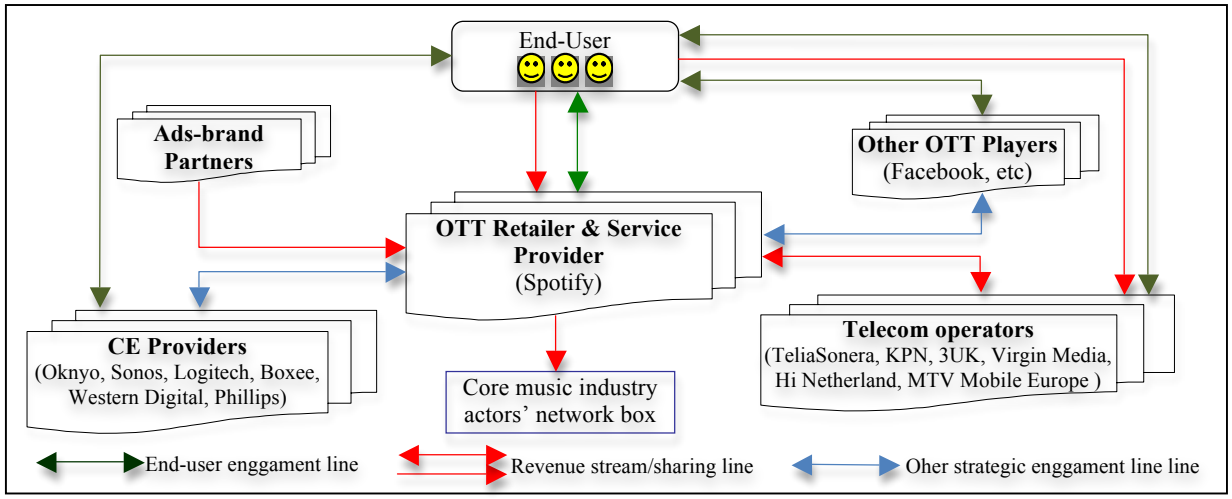


Figure 3 Key actors and relations in "Spotify acosystem" (Aidi, 2012)

They call this strategic alliance as a "***compiling service***" that is formed by bundling "Spotify Premium" with TeliaSonera's post-paid and pre-paid subscription plan. Spotify is mostly suit the young users segment, so this offering would also likely make a strong attraction to the first-time fixed broadband and IP TV subscribers. Thus, this offering is also integrated with TeliaSonera's fixed broadband, IP TV subscription, and handsets purchasing. It able to offers this because there is a **discount arrangement** with the music industry actors (content owners), due to exclusive agreement with Spotify. Our source at TeliaSonera stated that they have tried to unlock music business, but failed. Its main competitor has also launched similar service (Telenor-WiMP) and the competition pushes price and ARPU down.

Source from Spotify stated that there are "***cultural differences***" between telecom and music industry that makes direct collaboration between them does not work. This brings a need for a "***bridging actor***" that aggregates the objectives both parties. Both interview with TeliaSonera and Spotify confirmed that there is no direct agreement between TeliaSonera and the content owners, but TeliaSonera is involved in the discussions. The music actors' objective is to monetize the copyright works continuously in a scale based, while for the telecom operator are to reduce the churn, increase ARPU and expanse the market share. TeliaSonera gets small chunk in revenue sharing, although the biggest slice goes to the content owners. In Spotify's side, this alliance is proved to increase its user based and drives them directly to the higher value subscription. During the Interview with TeliaSonera, they mentioned TeliaSonera's propositions that were needed by Spotify, as a new OTT player, as below,

*"To get an end-to-end deliver to their service, they (Spotify) need a **good network**... What we have done in giving trust to a new company, it is enormous... Since we are **billing provider** for them, we charge our customer and get the money to them... This is a really good channel to have a continuous relation with customer, especially when they have problem when they do that with credit card".*

6 Mobile Music in China

The dominance of the young user segment in Chinese population and expansion of broadband network has triggered demand for digital music. However, Chinese censorship regulations and low law enforcement for music piracy have caused concern for major international players, (e.g. Google, Yahoo, Apple). Thus the prominent actors are mostly MNOs, local Internet service players (e.g. Tencent's QQ music, Kuwo Music), and few international mobile OEM and OS provider (e.g. Nokia's Yue Sui Xiang). Most of the popular services are **access**, **ownership**, and **personalization** models, and delivered as a downloadable client application, especially for Android and iOS-based devices. Although most of the MNOs may charge through **subscription** and **retail** revenue models (service fee, data fee, and

function fee), the major part of mobile media business revenue actually comes from advertisement (**subsidized** revenue model), supported by a huge Internet users based.

OTT players typically rely on the attractive free offering and some are launched mainly just as a side feature and to increase brand awareness to other main businesses, e.g. messengers, online game, etc. Meanwhile, the core values that the MNOs deliver lie in the network (quality and coverage), legal contents, easy payment channel (integrated billing and charging with mobile account), and customer service. Both typically roll out mobile music by working directly with the content owners, where the Internet service players pay the **licensing fee**, while the MNOs use the **revenue sharing**. China Mobile, for example, uses revenue sharing directly with the content owners on a "**50:50**" scheme. The interview with China Mobile mentioned as below:

"*China Mobile has **abandoned the strategy to cooperate** with service providers instead cooperates directly with labels and music content aggregators through its mobile music business unit in Sichuan. The content owners do not pays much attention on how we use the music content to design the service model in detail. The negotiation **focuses on the revenue sharing model**."*

As the copyright protection for music content is weak, it does not surprise that these actors have a good bargaining position with the content owners. They enjoy the advantages of negotiation in licensing because of the high piracy issue and general acceptance among people that music content is by default free. It is even not all contents provided by the legal OTT players come from legitimate content owners, as some may come from search engine with no clear copyright clearance. The possibility of cooperation between MNOs and Internet service players is few, as the isolated and different orientation in business models and the natural organization differences make the cooperation between them complicated.

7 Mobile Music in India

Mobile music business in India is not as fancy as in China though, because there is a lower mobile broadband penetration and heavily domination of the low cost mobile devices, as also stated in Interview with Airtel. Bihar is believed as the largest market for music and 70 % of the business is dominated by local movie contents (Social Science Research Council, 2011; Kohli-Khandekar, 2010). In this market, MNOs are the dominant players, followed by the Internet service players (e.g. Saavn, Dhingaana, Raaga, Grooveshark) and device OEM and OS providers (e.g. Samsung's Music Hub). The service models that typically delivered are the **personalization** service models (**RBT** activations, including the normal/shuffle RBT, Reverse RBT, social RBT, and **Music on Call**/MOC that is done by dialing to a specific toll free number), **ownership** service models through WAP portal, and **access** service models. These personalization services are huge popular in India and mainly monetized through **subscription** revenue model, and this is one of MNO's major revenue from VAS.

The MNOs roll out their services by working directly with the content providers (e.g. Indiagames, Hungama, T-series), and typically use "**70:30"/"60:40"** revenue sharing, where they get a larger share. The core value that the MNOs deliver mainly lies in customer based, network and payment channel. The OTT players that mainly rely on the access service model and typically used the downloadable client application, especially Java-based, Android, Blackberry devices, supported by subsidized revenue model. The ownership services do not really take off due to piracy issues and expensive data fee. Although there have been collaborative business model in the personalization services, there is few cooperation possibility between MNOs and Internet service players. Looking at the huge success of the personalization services, it does not surprise that the MNOs are not really interested to focus to those services, as there is a low smart phone penetration, network quality and coverage. Indian market is also dominated by the pre-paid subscribers, piracy issue (IFPI, 2006), and there is a low willingness to pay among people, as also stated in interview with Airtel.

8 Mobile Music in Indonesia

Indonesia is also a market that sees the **personalization** service models, especially ring-tone download and RBT activation, dominate the business. Although, the delivery models are not as fancy as in India,

these channels are still extremely profitable as 95% of the music industry revenue comes from it. MNOs are the prominent players, followed by the Internet service players and mobile OEM and OS providers. All these MNOs offer personalization services, using typically **retail** and **subscription** revenue model. The RBT customers are estimated to reach at least ~25% of each MNO's subscribers, and it can contribute to almost ~40% of VAS revenue. These personalization services are mainly delivered as WAB-based, SMS and USSD/UMB, though there are also downloadable client applications.

There have also been offerings using **ownership** and **access** service models though, both by MNOs (e.g. Telkomsel's Langit Musik, XL Axiata's Musikkamu, Indosat's Arena musik), OEM and OS provider (e.g. Nokia Music Store), and local Internet service players (e.g. KapanLagi). However, these service offering does not really take off yet, due to piracy issue and low law enforcement, lack of good network connectivity, and low willingness to pay. The illegal music market reported has passed 88% in 2006, reached twice than the legal market value (Business Insight, 2009). Interview with NST supported this data as mentioned in the statement below:

*"Music streaming and download business model might take some more time to take off in Indonesia. The RBT activation and ring tone download are the **cheapest and easiest way**, because there are huge **prepaid customer based**. And **customer habit** and **network capability** (bandwidth availability and coverage) for online media services is not ready yet."*

The MNOs and content providers typically work together to deliver, where **"60:40", "50:50"** or **"40:60"** revenue sharing are typically used that depends on the revenue generated, as mentioned in interview with source from NST. In the access and ownership services models, there has been a partnership as Joint Venture (JV), but majority of players typically deals directly with the content owners. Thus, there is no collaboration with Internet service players in online music provisioning yet. These MNO have a much better bargaining position in the ecosystem, and less issue to deliver their service directly to the end-users instead of collaborating with the OTT players. Their billing offers the easiest payment mechanism, because bank account penetration is low, covering less than ~20% of the population (IFC, 2010). Our source from Axis Telecom also stated that they do not see the OTT media players as significant thread yet, considering the bandwidth availability in Indonesia.

9 Business Models Analysis

Using the frameworks described in the previous section, we now proceed to the assessment to the business models used in the 3 markets being studied above, by focusing to the value proposition, revenue model and value network used by the key actors. The goal is to look and compare closely the entire business models of the involved actors in these 3 markets and determine the background of each actor's strategy: what motivation lies behind the chosen models and the implications for other entrants.

9.1 Value Propositions

According to the data discussed in previous sections, it is clear that the personalization services are still hugely popular in all of these 3 markets, either using retail or subscription revenue models. In India, it is not just the default RBT activation service that exists, but also shuffles RBT, Reverse RBT, social RBT, and the unique MOC service. In Indonesia, 95% of the music industry revenue comes from this, where each MNO is estimated to at least has ~25% subscribers using this service, and it contributes to ~ 40% MNO's VAS revenue. There is a high piracy issues low law enforcement and mobile broadband penetration, and extreme domination of the pre-paid based subscriptions. The personalization services are assessed to offer the simplest delivery, less related with the piracy issues, able to reach even the low-cost feature phone users, and compatible with micro payment using mobile account.

This last aspect is extremely important because bank account penetration is low. There have also been offerings of online music as well though, but there are not as popular as what we have found in the developed markets, due to high piracy issues as mentioned previously, low law enforcement and widespread opinion that music should be free or very cheap (low willingness to pay). In India, for example, these services only contribute less than 1% of MNO's revenue. The MNOs typically roll out

the **access** and **ownership** service models, and mostly charge users through **service fee** (retail based on time/data usage, subscription) and/or **data fee** (pay-as-you-go model). On the other hand, the typical service and distributed models used by the OTT players is mainly the **access** model, and subsidized by the **advertisement fee**, because there is a low willingness to pay and opportunity for online payment. Indeed, the major part of the revenue still comes **from the advertisement fee.**

9.2 Value Networks

According to the prior discussion above, we can map the actors and relationship models used in delivering those businesses in value network point of view. Major types of mobile VAS ecosystems according to the ownership of user can be grouped into ***Operator-centric*** and ***Non-Operator-centric*** (***service/content aggregator-centric, service/content provider-centric, device-centric***) (UMTS Forum, 2002; Nikou & Bouwman, 2012; Panagiotakis, et al). In the first model, the MNO takes the sole responsibility and risk of delivering the price, and control the price and marketing decision. As such, they typically get a larger portion of the revenue generated. On the other hand, the second model allows other player to be at the center and engage directly with user, where the MNO is fully bypassed (OTT) or contributes to small part by providing data transfer channel, billing, charging, etc. Each of these models gives more responsibility, power, and/or larger share of revenue to a particular actor.

In these 3 markets, the MNOs typically have a much stronger position in ecosystem, because they can provide the easiest charging route supported by the limited opportunity for online payment as bank account penetration is low and extreme domination of the pre-paid subscribers. The low blended ARPU and willingness to pay also significantly support this dominancy, because integrated billing through mobile account supports micro charging, without causing significant cost to the provider. Thus, it does not surprise that the players there tend to use the *Operator-centric* or *Non Operator-centric* models (typically done by the Internet players: service/content aggregator/provider, mobile device OS & OEM players), as in *Figure 4*. In Indonesia's mobile music business, typically "60:40", "50:50" to "40:60" used between MNO and content owners In India, "70:30" to "60:40" scheme, where MNO gets a larger share, while in China "50:50" scheme exist where MNOs keeps the "data fee" for itself.

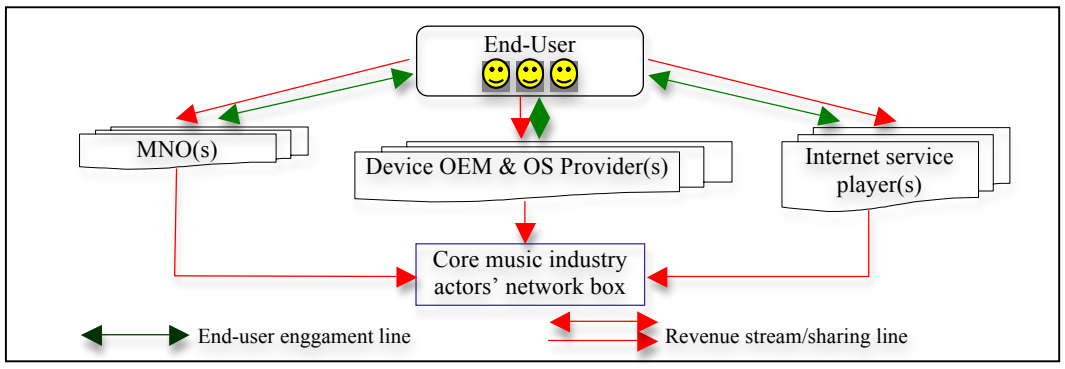


Figure 4 Key actors and relations in mobile music business ecosystem in China, India, and Indonesia

In other words, these players acquire the license directly from the content owners and deliver the service directly to user ("**Point-to-point**" model) (Aidi, 2012). On the other hand, in the developed countries, it has been common to see the collaboration model, where actors collaborate in the horizontal line, share responsibilities so each can focus to their core business and have equal bargaining position in alliance, but only central actor deals with the content owners ("**Point-to-multipoint**" model) (Aidi, 2012). Spotify-TeliaSonera above and range of other alliances' success cases are examples of this collaborative business model. This shows that partnering with the well-known OTT player is one of potential positions that the MNO can consider. The lines of reasoning of their partnership match with the 3 points as mentioned by Li & Whalley (2002) and Teece (1990), which are "learning and internationalization", "*co-specialization"* and "*cooption"* (*"co-opetition*") reason.

There have also been a few *collaborative* models in these markets though, but this is **still rarely used**. In the developed countries, broadband penetration has been taken off, and multitudes of actor have entered the market, so the price becomes competitive. The potential benefits and direct revenue from these businesses to MNO's total revenue might not be significant to justify the effort to deliver the service by its own, also considering that entertainment is not MNO's core business. But India, MNO's strong position makes them tends to require a large slice in the revenue sharing, so its partner is leaved with an insignificant part. Thus, some have transformed as an OTT players. In China, the collaboration model is assessed to potentially cause a higher financial and political risk. But, there is also dilemma for MNOs to deliver the services by its own and compete with OTT players' nimble culture.

10 Conclusion and Future Works

We noted on this work an interesting exploration, considering the speed at which significant shifts to several directions are constantly occurring, even in a short period and some might happen behind the scenes during the writing process. In this work, we have analyzed the mobile music business models used in China, India, and Indonesia. We do this by modeling the core of music industry business, and then review the situation in the developed countries, by taking Spotify as a case study. We explored the **service, delivery** and **revenue** models used in these 3 markets, **map the involved actors and structure their relation models** using ARA, and then compare it. We found the personalization services are still a huge success, in contrast with the developed markets where it never takes off (Escofet, 2012). In online business, advertising is the most important revenue source, mostly using access services (streaming) as delivery model. The key players tend to deliver the services independently, rather than collaborate in the horizontal line, as MNOs generally have a much dominant and bargaining power.

These are due to high dependency to mobile, low PC ownership, fixed broadband and bank account penetration in there. In addition, video is the key in mobile data explosion and video streaming was the largest service accessed worldwide that dominates the global bandwidth. It would be interesting to perform the business models analysis of the digital video in mobile broadband ecosystem, specifically to these markets. They are still lack in broadband speed and penetration compared to the developed markets, but there have been network expansions going on, supported by the strong economic growth in this region. The approaches used here can be further extended to micro-economic analysis (game theory), and/or technology diffusion assessment to the mobile users. This can be used to analyze and predict the future strategy forms and interaction models between the involved actors.

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