

Public industry analysis #6 2014

### Taking back the initiative

# How operators use Wi-Fi to strengthen existing business



Wi-Fi has become a tool in the operator toolbox. In this analysis – our third on the subject – we show how telcos, cellcos and cablecos use Wi-Fi to strengthen existing business. It's a mixture of hotspots, homespots and new business models.

Time is right for operators to include Wi-Fi into a combined connectivity experience for customers – a carrier-grade experience. This analysis contains the best practices and the motivation you need.

#### **Operator archetypes (when it comes to Wi-Fi)**

Take a look at Figure 1 and identify the four highlighted operator archetypes 1, 2, 3 and 4.



Figure 1. Operators categorised based on the way they use Wi-Fi

### Incumbent integrated operators

Most of these operators built their network of Wi-Fi **hotspots** years back to be able to offer a public standalone Wi-Fi service – typically focused on satisfying a connectivity need in locations deemed important for a travelling business user.

After some time, operators realised that the same hotspots could be used to offload mobile data traffic originating from devices like smartphones. They then took one step upwards in Figure 1 – to a **dual purpose Wi-Fi**. Free access<sup>1</sup> to Wi-Fi hotspots was introduced to add value to mobile users on more

<sup>&</sup>lt;sup>1</sup> Albeit under a Wi-Fi usage allowance

premium plans (and to differentiate from competition without Wi-Fi). But login procedures were initially the same as for one-time users and, in addition, not suited for small screens, so offloading levels were therefore low.

Through new functionality like EAP-SIM, progressive operators could remove the need for mobile users to login to Wi-Fi. This increased the offloading ratio – but it also simplified the transition to a **network neutral monetisation** where also offloaded Mbytes carried over Wi-Fi could count against a customer's mobile data allowance. In contrast to not charge for offloaded traffic, this incentivises operators to expand the network of Wi-Fi hotspots.

**Glieh O** One of the most ambitious hotspot-based Wi-Fi programs outlined by an integrated incumbent is that of **KT** (with brand name olleh) in Korea. At the end of 2013, KT had 114000 Wi-Fi zones (which each can have multiple access points) in Korea to complement a very dense 4G LTE network with wideband LTE-A on more than 100000 carriers. Through faster backbone, app as well as network support, **Wi-Fi and LTE-A will work together** to deliver throughput which neither LTE nor Wi-Fi could deliver on its own.



Figure 2. KT's GiGA Path

The timing to communicate this and other elements of KT's **GiGAtopia** vision – starting May 2014 – was likely not coincidental. Several times during the last years, Korean operators were found to subsidise handsets beyond the levels accepted by the KCC (Korea Communications Commission). Even though the KCC each time punished operators with temporary sales bans, Korean operators fell back into overbidding



each other in subsidy. A new law – effective 1 October 2014 – sets a subsidy ceiling<sup>2</sup> for newer handset models. Korean operators can now be fined **3% of annual revenues** if exceeding it.

In this situation, KT, who in Q2 2014 used **31%** of mobile revenues on marketing<sup>3</sup>, had to find other means to differentiate. Under the headline "**from subsidy to services**", KT introduced a set of initiatives<sup>4</sup> with **GiGA WiFi** as one cornerstone in their new differentiation. To complement it, KT (as well as its competitors) works with venue partners and is developing platforms for ad-based monetisation of Wi-Fi.

If leaving Korea, some integrated incumbent operators have separately boosted the number of Wi-Fi spots through **homespots**, thereby moving into the upper half of the highlighted (red) square in Figure 1. A homespot is created by letting the router at the customer premise transmit two SSIDs – one private and one public. Originally positioned as "community Wi-Fi" based on voluntary participation, operators have today – almost without exceptions – changed the model to **opt-out**, i.e. every single customer has to actively ask *not* to be included.

Few integrated incumbents have voluntarily gone for homespots. Instead, it's been a defensive reaction to disruptive homespot introductions by cablecos 3 or non-cable challengers 2. **Orange** France, **Proximus** and **KPN** are such examples. Since rollout started later, incumbents tend to have a lower number of homespots than the first-movers. **Fon** has a good market share among integrated incumbent operators – likely because it is seen to save time.

The transition into the homespot dominated domain continues: **Deutsche Telekom** group are taking first steps in several markets, most importantly in Germany. Also **Telstra** in Australia is about to go for homespots.

<sup>&</sup>lt;sup>2</sup> Set for 6 months at a time within the 180-260 EUR range – so still quite high

<sup>&</sup>lt;sup>3</sup> In essence handset subsidy

<sup>&</sup>lt;sup>4</sup> Also an early upgrade plan, a family proposition and a loyalty program

### 2 Non-cable challengers

As Figure 1 shows, this operator archetype can be exemplified by **Free** and **SFR** in France and by **KDDI** in Japan. Wi-Fi has the purpose to **offload mobile data**, not to form a stand-alone service. Consequently, there is less need to provide Wi-Fi coverage everywhere; the primary focus is instead to complement the mobile network with cost-efficient **homespots**.



**SFR**'s message in Figure 3 is that you as a *mobile* user will be automatically connected (using EAP-SIM) to SFR's Wi-Fi when it's available. They are not trying to sell Wi-Fi as such. Of 4 million spots, 2000 are hotspots, the rest are homespots.







For **Free**, who disrupted the French triple-play market first and the mobile market later, Wi-Fi homespots were instrumental for their mobile launch:

- Free's mobile network was small and couldn't match the coverage of competitors
- The **national roaming** agreement with Orange was expensive but necessary to compensate for the lack of coverage
- To be successful, Free wanted to include much more data in customer allowances



Figure 4. Free's Wi-Fi message

By using EAP-SIM to offload mobile data to their Wi-Fi homespots, Free could produce **more data at lower cost** and **expand the impression of network coverage** – without having to pay Orange for more traffic than necessary. This was important since it can be assumed that Free's cost to carry a Mbyte on the Orange network was higher than Free's associated revenue.

**KDDI** in Japan (with the mobile brand name **au**) is a forerunner in using Wi-Fi to offload data from mobile networks. The Japanese work culture of long working days combined with after-work activities with colleagues leads to very late traffic peaks in residential areas. The usual busy hour is between 11 pm and midnight. The upper part of Figure 5 shows how KDDI has addressed this load challenge: By deploying more than 3 million Wi-Fi homespots.



Figure 5. KDDI's two offloading solutions

The **Home Spot Cube** used for this purpose (see Figure 6) is arguably the cutest Wi-Fi router around. Since several years, KDDI has given this router to their mobile customers – to connect over any broadband connection at home. Press the button – and the Home Spot Cube will carry the data traffic to and from your *au* mobile devices.





Figure 6. au Wi-Fi Home Spot Cube

The initiative has been successful for KDDI. Figure 7 shows how the peak offloading ratio has developed in residential areas – to reach **57%** in March 2014. KDDI's target was 50% so it's natural that the growth rate has slowed down.





Figure 7. Share of mobile data traffic offloaded to Wi-Fi in residential areas at peak hour

Like any good idea, it can be borrowed and improved upon. We'll touch upon what T-Mobile USA has done a bit later in this analysis.

Let's go back to Figure 5. In addition to the homespot-driven offloading in residential areas, KDDI has – in contrast to e.g. Free and SFR – also deployed a **large-scale network of Wi-Fi hotspots**: 240000 in March 2014. These are located so that they can offload mobile data in business districts – where busy hour is mid-day.

### 3 Cablecos

Even if the homespot concept has been taken to market by non-cable challengers 2 in certain markets like France, the usual first-mover is the **cableco**, see Figure 1.

The bread-and-butter business of cablecos is their TV offers which typically come as packs containing more than the customer actually wants. Streamed content, provided by over-the-top players like Netflix, Hulu, HBO and Amazon, but also catch-up TV in general represent a threat to the traditional cableco business model. To respond – but also to leverage their good fixed networks and household reach – many cablecos have effectively transformed into fixed broadband operators. Yet, most cablecos experience a **slow decline in customer numbers**<sup>5</sup>.

In order to be able to offer **converged quad-play**, many cablecos have started to offer mobile products. Since few of them have mobile spectrum, most cablecos are MVNOs. This means that their margin within mobile is significantly lower than within their traditional business.

In markets like the **Netherlands** and **Belgium**, mobile data usage is exceptionally low even though the smartphone penetration is high. The primary reason is the high effective cost per Mbyte<sup>6</sup>.

With cable connectivity to about 90% of households, Dutch and Belgian cablecos saw the opportunity to follow a **disruptive agenda on Wi-Fi**. Through Wi-Fi homespots, cablecos like **Telenet**, **Ziggo** and **UPC** could let their users in millions of households access free Wi-Fi without much additional cost for themselves as operators. It has not only hurt the cellular operators by stealing "their" traffic, it has also led to an **increased customer loyalty** for the cablecos.



In Telenet's case, it's likely also a major explanation to why they have been able to grow mobile base so rapidly, see Figure 8.

<sup>&</sup>lt;sup>5</sup> Partly offset by increasing the number of products – RGUs – per customer

<sup>&</sup>lt;sup>6</sup> tefficient will issue a new analysis – based on 1H 2014 data – in December. In the meantime, read Mobile data usage: Global top list



Figure 8. Telenet's Wi-Fi initiatives aligned with reported cable churn and subscription bases

Telenet has enabled more than 1,1 million homespots in its coverage areas in Flanders, but also built more than 1500 hotspots. Through their cross-use agreement with fellow cableco VOO (who operates in Wallonia), Telenet customers can also access an expanding number of VOO homespots (currently about 250000).

Until now, cablecos refrained from charging extra for the possibility to use Wi-Fi like this. But 24 November, Telenet communicated a 1,99 or 2,99 EUR **price increase** for basic cable connectivity (effective 25 January 2015). Noticeably, Telenet in part motivates this with their currently on-going EAP rollout:

"In addition, via the recently launched EAP technology all Telenet internet customers have seamless access to the 1.2 million hotspots and homespots, allowing them to drastically reduce their mobile data usage."

Even without EAP, the usage of Telenet's homespots has been high. Figure 9 show the latest reported outof-home data traffic distribution of Telenet.





Figure 9. Out-of-home data traffic distribution of Telenet customers Q4 2013

The left circle shows the *total* Wi-Fi and mobile data usage distribution. 80% of out-of-home traffic is carried by homespots, 3% by hotspots and 17% by mobile. Since not all Telenet customers are mobile customers of Telenet, the mobile part is unproportionally small. But the right circle shows how the out-of-home traffic distributes for Telenet's *own* mobile customers: 40% over homespots, 1% over hotspots and 59% over mobile. Telenet, in other words, **offloads 41% of mobile data traffic to Wi-Fi** – without EAP (since it wasn't available when Figure 9 was reported). As an MVNO, high offloading is important for profitability.

Going to the Netherlands, **Liberty Global** (who also owns Telenet) recently received regulatory approval to buy the rest of the largest Dutch cableco, **Ziggo**, and integrate it with **UPC**, thereby creating one Liberty Global owned national cableco.

Neither Ziggo nor UPC have so far been very keen on mobile<sup>7</sup> – but the combined cableco will have an impressive Wi-Fi footprint of **1,7 million homespots** in the Netherlands – accompanied by several hundred hotspots. Ziggo has more than 500 hotspots, many as part of city Wi-Fi partnerships like e.g. in The Hague. Such Wi-Fi networks are certainly sufficient to disrupt the Dutch wireless market. To compare, incumbent **KPN**, with close to 3 million fixed broadband customers, reported 500000 homespots.



We also need to mention **Comcast**. Their plan is to enable 8 million US homespots in 2014. Their total customer base is close to 27 million, so it might continue beyond that. US legislation prevents Comcast to act within mobile, but similarly to its European colleagues, Comcast's initiative can increase the customer loyalty of

Comcast customers and affect mobile data traffic (and thereby revenues) of cellcos negatively.

So far, Comcast's telco competitors **AT&T** and **Verizon** haven't responded even though they also could enable homespots in millions of homes and businesses across USA.

Comcast is also partnering with fellow US cablecos, to cross-use Wi-Fi homespots nationally. Even more interesting is the recent <u>announcement</u> that Comcast and Liberty Global will connect their respective Wi-Fi homespot networks **across the Atlantic**. This agreement is a start of a potentially disruptive trend for the **roaming** revenues of mobile operators. And with Wi-Fi calling, it doesn't have to be disruptive just for data.

<sup>&</sup>lt;sup>7</sup> Ziggo had 116000 mobile customers in September; UPC just 2000 but launched a full MVNO setup in October

### **4** Mobile-only, yet Wi-Fi

Now to the last identified archetype in Figure 1: Since mobile-only operators don't have any fixed broadband connectivity to households, homespots haven't really been seen as an option. (We'll come to T-Mobile USA in a little while).

Many mobile-only operators have in the past looked at Wi-Fi as something the cat dragged in – at least in cases where their own spectrum holding was deemed sufficient. There is one issue with this thinking: A minority of all wireless devices can connect via cellular networks – **but they can all connect over Wi-Fi**. Saying no to Wi-Fi means saying no to a large chunk of the wireless connectivity business. Sure, all smartphones support tethering and, sure, people can buy MiFi devices, but in honesty, it isn't a solution understood and used by a majority of customers.

The global trend – e.g. when it comes to tablets and wearables – is also that the proportion of devices manufactured *without* the possibility for cellular connectivity increases. It's a matter of cost and complexity.

Another trend is that **customer preference for Wi-Fi** is intact even when on devices which *can* use cellular – and that this is true even *after* wide-scale adoption of 4G LTE. The latest US smartphone usage <u>stats</u> from Mobidia, see Figure 10, show that 4G LTE users averagely use more data – but that the *proportion* used over mobile networks hasn't changed overall: For iOS smartphones it goes up from 18% to 21% - but for Android smartphones it goes down from 33% to 27%.



### Figure 10. Mobidia's usage stats for 4G LTE users (left bars) vs 3G users (right bars) for iOS and Android smartphones respectively in USA Q3 2014

Since US operators have some of the larger 4G LTE networks in the world – Verizon covers 97% of population, AT&T 95%, Sprint 83% and T-Mobile 80% – these stats are representative for what the future will look like in the European countries that are behind in 4G LTE rollout.

So let's get back to Figure 1 and understand what **NTT docomo** and **China Mobile** does.

döcomo In spite of a massive rollout of 80000 4G LTE base stations (alongside around 100000 3G base stations), **docomo** has 150000 Wi-Fi hotspots in Japan. These serve a dual purpose: They enable a public Wi-Fi service, but the main use today is to offload mobile data. [When still just a public Wi-Fi service 2012, the number of hotspots was as low as 8400].

As early as January 2012, docomo improved the ease of use by providing an Android app<sup>8</sup> which a docomo user simply can tap on to connect over Wi-Fi, see Figure 11.



Figure 11. docomo's first Wi-Fi connection app

Unlike KDDI, docomo doesn't indicate how much traffic they actually offload to Wi-Fi.



Now to the largest operator in the world: **China Mobile**. Figures like 790 million mobile subscribers, 1,8 million base stations and 198000 employees leave everyone else in the dust. But China Mobile – a mobile-only operator – also has

#### 4,4 million Wi-Fi hotspots.

Also China Mobile have a dual purpose Wi-Fi network – but it's clear from China Mobile's reporting that the Wi-Fi stand-alone service is not the real reason to why they've built such a large Wi-Fi network: Only **2,7%** of China Mobile's data traffic revenues 1H 2014 were originating from stand-alone Wi-Fi.

The Wi-Fi rollout has instead been done to complement mobile. Here we need to understand some of the restrictions China Mobile operates under: Their 3G network is based on the Chinese TD-SCDMA standard. The prime competitor to China Mobile, **China Unicom**, has been allowed to use WCDMA and has a much higher market share in 3G. 68% of China Mobile's customers are still on GSM.

To compensate, China Mobile has invested in **supplementing the mobile data experience with Wi-Fi**. **66%** of the data traffic volume in 1H 2014 was carried over Wi-Fi. Assuming that the Wi-Fi stand-alone service (given its low revenue) stands for only a small proportion of this, it makes China Mobile the number one offloader in the world.

<sup>&</sup>lt;sup>8</sup> Docomo didn't start to sell iPhones until September 2013



Figure 12 shows that China Mobile's expansion of the number of Wi-Fi access points (...) slowed down since 2H 2013, though. The Wi-Fi traffic growth (---) slowed down significantly. What happened?

Figure 12. Development of China Mobile's cellular and Wi-Fi infrastructure numbers - and data revenues

In December 2013, **China Mobile launched 4G LTE**. This isn't the same 4G LTE as most of the world use, but instead TD-LTE. This time, though, a larger part of the industry is behind this standard which might be the reason to why China Mobile has held up its Wi-Fi rollout. Figure 12 also shows that the launch of TD-LTE led to a significant growth in the total number of base stations in China Mobile's networks (...). In addition, it shows a **strong increase in total cellular data traffic** (---).

Future will show if China Mobile actually gave up on Wi-Fi after having built a network of 4,4 million hotspots. So far, there are just 14 million TD-LTE users on China Mobile's network – less than 2% of total.

It's fair to say that the applicability of China Mobile's results is limited outside of China. But the numbers are stunning.



#### **Benchmarking Wi-Fi deployments**

After having defined the operator archetypes, let's compare hotspot and homespot numbers for reporting operators globally. The information is the latest available in November 2014 – but since these numbers are reported only from time to time, the actual situation might have developed. No numbers are in any case older than from December 2013.

Figure 13 compares the number of reported Wi-Fi **hotspots** for 26 operators globally.



Figure 13. Reported hotspot numbers<sup>9</sup>

We've already touched on the unique position of China Mobile. The largest Wi-Fi hotspot deployments are in **China, Japan and Korea**. Japanese and Korean operators have the world's densest 4G LTE networks, yet they stay fully committed to Wi-Fi.

The largest western deployments are in France (**Orange**) and in the US (**AT&T**). Note that two **Hong Kong** operators – in spite of the small land mass in Hong Kong – have Wi-Fi networks with about 15000 Wi-Fi hotspots each.

Let's go to Figure 14 and compare Wi-Fi homespot deployments.

<sup>&</sup>lt;sup>9</sup> The Softbank number might include homespots



Figure 14. Reported homespot numbers<sup>10</sup>

Whereas Asia dominated the hotspot ranking, Europe and US dominate the homespot ranking. **BT**, without a mobile network<sup>11</sup> continues to have the highest number, followed by **SFR** and **Orange** France.

**Comcast** has indicated that they aim to have 8 million homespots by end of 2014 and will thus likely pass BT before year end.

<sup>&</sup>lt;sup>10</sup> Some operators, like e.g. BT, only provide a total hotspot+homespot number. In these cases, the total has been treated as a homespot number knowing that homespots anyhow significantly outnumber hotspots.

 $<sup>^{\</sup>rm 11}$  Still; but BT is now in talks with O2 and EE on a possible acquisition



#### What's a homespot worth?

It's obvious that the value of an additional homespot isn't the same as the value of an additional hotspot:

- The homespot is located where the customer **lives** not necessarily where there's demand
- It will cover public areas **from inside** the premises of a customer
- The **throughput** offered by a homespot will be limited by the speed of the fixed connection and the capability of the router and can depend on if the private channel is used or not

But when the homespots come in millions, it compensates. And that's likely why operators who have embraced homespots are so happy to talk about *how many* there are – it gives a **perception** of something really differentiating.

But there have also been end-user challenges<sup>12</sup> associated with the use of homespots:

- In certain cases, Wi-Fi devices belonging to the household **connects over the public SSID** (in some situations even asking for login credentials) rather than the household's private SSID
- While out and about, mobile users are offloaded from a good quality mobile connection to **worse** quality Wi-Fi
- The end-user's terminal sticks to Wi-Fi even though quality is poor
- While walking or driving, a mobile device is **ping-ponged** in between the mobile network and Wi-Fi even though Wi-Fi coverage is sporadic
- "Handovers" between Wi-Fi spots are **slow** and handovers between home- and hotspots might not even be supported
- The **battery** of a mobile device is drained faster

The last five issues are related to the general interworking between mobile and Wi-Fi and not specific to homespots. However, the spotty coverage that homespots offer in public areas makes the situation worse than with regular hotspots.

When end-users experience issues like this, there is a risk that they **disable operator Wi-Fi** in their mobile devices. What's worse, they might even **opt-out** from the homespot "community" since they feel it has no value for them. If they do, their home router becomes non-public – something homespot-reliant operators certainly must avoid. Since there are solutions to most of the described end-user challenges, we propose that they are studied, tested and implemented.

We now touched upon the biggest operator risk with homespots: The business model is based on **end-user consent**. One mistake can potentially lead to thousands of homespots disappearing (when customers optout) – especially if media find the topic interesting. A **security flaw** will likely be most intimidating for endusers, but the sense of an **intrusion in customer rights** might also be sufficient.



After trials, the **TDC**-owned cableco **YouSee** launched its homespot service – the first in Denmark – nationwide in March 2014. The initial ambition was to reach 250000

<sup>&</sup>lt;sup>12</sup> In part, these can be solved by Hotspot 2.0, ANDSF and other functionality (like disabling 802.11b rates) currently improved upon



homespots through an opt-out model. But YouSee had to close it again in the end of the same month since a few out-of-home users reported that they could get access to resources in the private network of the homespot they were logged into.



Figure 15. YouSee's WiFi Spot

Even though this security glitch affected only a minority of users, it proved difficult for YouSee to handle. At the time of writing (November 2014), the service is still not back even though the closing was said to be temporary.



In a large campaign in May 2014, the Australian incumbent **Telstra** declared the ambition to create "one of world's largest Wi-Fi networks". And it will be open for anyone, not just Telstra customers:

"Our aim is to offer Australians – irrespective of whether they are Telstra customers or not – access to two million Wi-Fi hotspots across the nation within five years."

The first 150 hotspots were switched on 19 November. By Christmas 2014, Telstra will have about 1000 payphones acting as hotspots. The longer-term plan is to have **8000 hotspots**.

The two million figure? It's Telstra's estimation of how many **homespots** they will be able to enable until 2019. But Telstra does something different compared to how homespots have been used so far – since Telstra's homespots will be part of a fully public Wi-Fi network. Telstra also says that:

 Non Telstra customers and Telstra customers who have not joined the Wi-Fi community will be able to connect to Fon-enabled Telstra Wi-Fi hotspots for a small charge using day passes.



This means that the home routers of Telstra customers having joined the Wi-Fi community of Telstra are monetised twice: First the household pays for the broadband connection<sup>13</sup> – and then Telstra uses it as a vehicle to carry also fully external Wi-Fi traffic and earn additional revenue.

8 October 2014, 8.03pm BST

Customers to provide the hotspots in Telstra's new Wi-Fi plan

Directly monetising homespots can be perceived as an intrusion in customer rights. By selecting this approach, operators test the limit of customers' willingness to take part.

The homespot concept is a great application of Wi-Fi, but as an industry we should realise that it's in everyone's best interest to make sure it's safe and that boundaries of customer rights aren't tested. Using the word "community"

#### 4 Concerns About Comcast's Xfinity Wi-Fi **Hotspot Rollout**

BY SAMARA LYNN JUNE 11, 2014 03:20PM EST P 15 COMMENTS Comcast's Xfinity Wi-Fi hotspot rollout has sparked concerns. Some are ludicrous but some are very legitimate.

to describe opt-out setups which are 100% commercial isn't recommended.

Broken trust doesn't have to originate from a mistake done by you; a mistake done by one of your competitors can cause knock-on effects also for you if the issue hits media.

Are you hosting a BT hot spot? 🗒 09/03/2013 BY MICHELLE 🛛 📃 13 COMMENTS

<sup>&</sup>lt;sup>13</sup> And for the electricity consumption of the router even when it only carries external traffic

#### Other operator cases

There are a few additional operator Wi-Fi cases which don't fully fit into the described four operator archetypes – but still are very interesting. In this last section, we'll cover three.

#### O2 and EE

The two largest mobile operators in the UK are both addressing **venue** owners with **managed Wi-Fi** propositions. Their approaches are different, though.



Figure 16. O2 Wifi vs. Public WiFi from EE

**O2** was first into Wi-Fi, building a fully public Wi-Fi network in central London which was made available in time for the London Olympics 2012. The possibility for O2's mobile customers to use BT Wifi ended a year later, in July 2013. O2's customers have since been granted the possibility to use Virgin Media's Wi-Fi covering London Underground.

In addition, O2 developed a managed service proposition for venue owners. The actual business model (and the options within) is unclear, but it appears as if a basic version – under the **O2 Wifi** brand and with limited analytics – could be free for venue owners. If so, O2's motivation might well be branded access to sites – albeit only for Wi-Fi – in areas where traditional site acquisition would be costly.

O2 has several public references like Costa and McDonalds.

**EE** doesn't have a Wi-Fi network of their own<sup>14</sup>, but EE's mobile customers can still use BT Wifi (the hotspot part of it) and Virgin Media's Wi-Fi in London Underground.

Early 2014, EE communicated that they've moved into managed Wi-Fi. In contrast to O2, it is **white label** Wi-Fi. This means that the service is provided under the brand of the venue owner, not EE.

EE's largest public reference is the national supermarket chain ASDA.

Also fixed incumbent **BT** is now active in venue Wi-Fi space, having made an agreement with Tesco – who previously had O2 as provider.

UK is one example of how operators find new adjacent business models built around Wi-Fi. Operators in other markets are also into managed Wi-Fi.

#### Singtel

E

E

As described in operator archetype **1**, integrated operators have often given free Wi-Fi hotspot access<sup>15</sup> to mobile customers on more premium plans. Without money coming in, little has been done to improve that Wi-Fi network.

**SingTel** In August 2014, Singtel in Singapore replaced their previous mobile plans with "Combo Plans". **Wi-Fi was now included** in all but the most basic Combo plan. Due to the inclusion of Wi-Fi, Singtel **raised the monthly price** with 3 SGD [1,8 EUR]. In other words, Wi-Fi costs.



Figure 17. Singtel's Combo Plans visualised

<sup>&</sup>lt;sup>14</sup> T-Mobile branded hotspots existed earlier

<sup>&</sup>lt;sup>15</sup> Often limited by a separate Wi-Fi allowance



One might argue that lifting ARPU through a mandatory inclusion of Wi-Fi is risky. Singtel, however, gave a Wi-Fi rollout commitment at the same time: Until March 2016, they will **expand the number of Wi-Fi hotspots** in Singapore from 100 to 2000. To give customers more value until that Wi-Fi network is larger, Singtel gives all Combo customers **unlimited Wi-Fi until 31 July 2015**. After this date, the allowance will be 2 GB per month.

Even though a combined mobile+Wi-Fi allowance would have been more elegant, Singtel is still showing a way to monetise Wi-Fi (and finance Wi-Fi rollout) for mobile operators. According to Singtel, the market reaction on the Combo plans has been positive.

#### T-Mobile USA

T-Mobile communicated a well-orchestrated set of initiatives – all Wi-Fi-related – at one go:

- Wi-Fi calling (without the need of any app) made available
- Call handover between Wi-Fi and cellular (VoLTE) made available
  - $\circ$   $\,$  T-Mobile was the first US operator to launch VoLTE nationwide
- From that day on, T-Mobile only sold smartphones supporting Wi-Fi calling
  Existing T-Mobile customers could join the JUMP! early upgrade program retroactively
  - Free in-flight texting on US flights with Gogo Wi-Fi
- **Personal CellSpot** a Wi-Fi router to the home given<sup>18</sup> to any T-Mobile postpaid customer



Figure 18. One of T-Mobile's Wi-Fi messages

<sup>&</sup>lt;sup>16</sup> Actually a feature coming with iOS 8, but that's perhaps not how it was perceived

<sup>&</sup>lt;sup>17</sup> And EE from the UK, but at the time of writing (Nov 2014), EE has not provided more detail

<sup>&</sup>lt;sup>18</sup> Against a deposit



The Personal CellSpot is of course interesting. You just read about the Home Spot Cube of KDDI and the concept it the same: The mobile customer gets a router which can be connected to any fixed broadband connection at home. This router will now **extend the coverage** in the home and thereby improve the quality for the end-user. It will also offload traffic from the mobile network of the operator.

Comparing the looks of T-Mobile's Personal CellSpot (Figure 19) with the Home Spot Cube of KDDI (Figure 6), suggests that T-Mobile is much more into the coverage extension than KDDI. The Personal CellSpot is a powerful router which becomes critical for the service experience – not a nice-to-have-but-non-critical mini-router which assists in offloading data.



Figure 19. T-Mobile's Personal CellSpot

In a market where challenger operators like T-Mobile and Sprint are known to be behind on cellular network rollout and where lack of good network coverage is a prime reason to churn, the Personal CellSpot becomes an important element in T-Mobile's ability to **keep customers loyal**. It doesn't come without sacrifice: T-Mobile loses money when giving Personal CellSpots to customers. They also help their competitors who can offer fixed broadband since the Personal CellSpot needs such a connection – something T-Mobile doesn't sell. Yet they do it.

But T-Mobile didn't start until Wi-Fi calling became available – which again shows that for T-Mobile, **Wi-Fi is an in-building coverage solution**, not an offload solution. It just takes care of that part as well.

We believe that T-Mobile is a perfect example of how a **combined experience of Wi-Fi and cellular** can be created.



#### Conclusion

It's time to move beyond the Wi-Fi vs. 4G LTE discussion.

End-users love what they can do with data and their consumption of data increases.

Also in the traditional operator world, we have to realise that **customers prefer Wi-Fi** – even on mobile devices. They prefer it even though Wi-Fi can be **any-grade** – with unpredictable quality, with security and privacy risks, with logins, terms & conditions, ads and marketing messages. It hurts noting that 4G LTE is used as filler when it's **carrier-grade** – with predictable quality and safety and without logins or ads.

It's time for operators to take back the initiative and include Wi-Fi into a **combined**, **carrier-grade**, **connectivity experience** for customers. If you do, it will set you apart from a world of Wi-Fi disruptors.

### tefficient

International telco efficiency specialist providing operators and suppliers with analysis, benchmarks and consulting. Expertise in quad-play, data monetisation methods, customer loyalty, acquisition vs. retention balancing, Wi-Fi business models (incl. offload and homespots) and methods for higher margin equipment sales.

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