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How to Bypass Carriers Apple-Style

By Rudolf van der Berg Nov. 20, 2010, 2:00pm PDT [27 Comments](#)

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Last month, GigaOM posted the news that [Apple is working with SIM card manufacturer Gemalto](#) to cut out the carriers. A new embedded SIM card from Gemalto would allow the loading of the operator-specific data onto the SIM after the phone was purchase. This week, there was [news of the GSMA working](#) to allow this type of SIM and of a [potential war between Apple and European carriers](#) over this. I've [researched this type of SIM](#) for the equivalent of the U.S. Federal Communications Commission in The Netherlands as a solution to overcome business problems of large-scale, Machine-to-Machine (M2M) users. In itself, M2M is worth an article, but this one focuses on what Apple could do.

If I had to advise Apple, it wouldn't be to use a fancy SIM card that can be remotely changed, but instead to use an Apple-proprietary SIM card that contains no changeable data and is fully controlled by Apple. Then, the consumer could buy access to mobile networks throughout the world either through post-paid or pre-paid options offered by Apple. Apple would manage the subscriptions and

authenticate the users on the correct networks. The user could switch mobile networks but have all of it managed by Apple.

To understand the extent to which Apple could change the industry for its own — and its customers' — benefit, it's necessary to understand the difference between a solution in which Apple uses carrier data and one in which Apple uses its own data on the SIM. To be clear, this is for data only as voice tends to have more regulatory oversight.

The SIM Is the Root of All M2M Evil

Apart from being a small, weirdly shaped, smart card, a SIM card is the cornerstone of mobile connectivity and security. For instance, it holds information for the device to connect to the right gateways and servers. There are two datapoints on the SIM that are unchangeable and highly critical:

- the unique International Mobile Subscriber Identity (IMSI) number and,
- cryptographic keys and parameters unique to that SIM and the mobile network it belongs to.

The first six digits of an IMSI identify the mobile network. A radio network will check these first six digits, then redirect the traffic of the device to the correct switches and authentication centers. From a network's point of view, it's irrelevant if the device is roaming internationally or not; all the network cares about is whether or not those first six digits are from a carrier that has a contract. The keys and parameters are so secret that often only the company that makes the SIM, like Gemalto, knows them, and the company stores them on the mobile network's authentication center. To ensure the security of the network, the IMSI and keys generally can't be changed on the SIM. All other information can generally be changed.

Just being able to change the IMSI and the keys leaves the customer still fully in the arms of the carrier. Apple might get a fee every time an iPhone user changes operator via the iTunes store, but a game changer it isn't. It's not even unique. Almost every company that works on wireless networks has a solution to remotely update SIM cards and to be able to change or add networks on the SIM.

The international standardization organisation 3GPP even looked into several possible solutions to guarantee security and to allow remote updates of the IMSI and keys on the SIM. On Thursday, in an about-face, the GSM Association decided to look at ways to change mobile operators without physically changing the SIM cards. The GSMA represents almost every 2G/3G/4G network in the world by now and therefore, carries a lot of weight in decisions of what is and isn't possible.

How to Really Change the Game

An alternative Apple could look for is to get its own IMSI-numbers and crypto-keys to effectively make every iPhone/iPad user a roaming user on any network. This is the solution I researched for the government of The Netherlands in the context of M2M communication. Using this solution, a consumer would choose a network from the iTunes store and would have a contract for a day, a week, a month or a year. The device would know what network to log onto because of the mobile network codes transmitted by antennas.

Instead of using its own systems to verify whether the customer is allowed to connect, the SIM would need to ask Apple. This would give Apple full control over what networks the customer can access and at what price. Here are some ideas of what Apple could do if it used Apple-proprietary SIM cards with Apple IMSI numbers:

1. It could sell competitive roaming deals to its customers. International roaming is horribly expensive for telephony and even more so for data. If Apple would connect with these networks directly, the networks wouldn't know whether or not the customer was from France, the UK, or Zimbabwe. All it would see is an Apple IMSI. The first six digits would direct the device to Apple, which could then offer its customer a data roaming deal at prices as low as local rates. Customers could buy data roaming for an hour, six hours, a day or a year and operators could compete for their patronage. Apple would guarantee the payments and collect these through iTunes. It would pay the carrier after the customer has made use of the service.
2. Apple could sell failover services for use if one network fails. If Apple had contracts with multiple networks in a country, it could sell customers a failover service that would allow them to make use of other networks when there is either no coverage or a network failure. Again, because Apple controls the SIM, it controls who has access to what network.
3. Apple could sell seamless Wi-Fi roaming on Starbucks or FON-operated Wi-Fi networks. The identification and authorization offered by the SIM works everywhere, on every network. It can also be used on Wi-Fi networks. Instead of having to press the "I accept" button, or enter payment details, connecting to Wi-Fi becomes seamless. The Wi-Fi network would receive the SIM credentials, verify with Apple if the SIM is authorized, then open up the network to the device.

All these options scream of Apple bypassing carriers, who would be relegated to dumb pipe status.

How to Make This Possible?

In order to be able to do this, Apple would need to go through a series of steps:

1. Apple would need to get hold of an IMSI number range. Effectively, it would need a six-digit carrier code, also known as the Mobile Country Code + Mobile Networks Code, to be able to make the full 15 digits that an IMSI consists of. For this, it would need to go to the ITU, Study Group 2 in Geneva to get a global code, or it could go to a national regulator in most countries to get one in those countries. Its biggest problem would be to convince regulators that it fits the law of that country. Most countries' laws specify that only public networks have access to IMSIs. Apple offers its device publicly to any users, so it probably fits the bill.
2. Apple would need to contract someone to either deliver and/or operate an Authentication Center/Home Location Register. This box tracks which network a device has registered on. This is necessary so that incoming calls are sent the correct way. It also authenticates the device every time it wants to make use of a network. This is rather trivial work, and could be had from a number of service providers.
3. Apple would need to negotiate access to networks on a global scale. Tourists want to use their iPad in Timbuktu if they so please. This isn't as simple as getting a roaming deal. Unfortunately, roaming is usually limited to those that already have a spectrum license (and are a member of the GSMA). Most roaming agreements require a form of reciprocity, and Apple can't deliver this. There are ways around this, for instance, by becoming a mobile operator on a small Pacific island, or by being very convincing, because in reality the reciprocity demand isn't necessary.

If Apple did this, it would revolutionize telecommunications. It might kill extortionate mobile roaming rates and replace them with competitive rates. It would open a clear path for others to follow. Built into every MacBook and iPad, Apple would be able to deliver the Holy Grail that every laptop manufacturer is after: a device that can get access to the 'Net everywhere in the world.

Rudolf van der Berg is a Management Consultant at Logica Business Consulting in The Netherlands. He blogs about his work on <http://internetthought.blogspot.com>

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27 Comments

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1. [Reply](#)
Otto [Saturday, November 20 2010](#)

This is all nice and all, but what would be the incentive for any operator in the world to allow this? Just having iPhone to sell means nothing if you can not sell minutes and data as well. On the other hand, consumer would be in perpetual roaming and there is no way that roaming prices would be lower than non-roaming prices. Also, if I'm not mistaken, transfer wifi-3g is already possible on T-Mobile network in US (for select phones or planned for "near" future in other cases).



2. [Reply](#)

Tim [Saturday, November 20 2010](#)

If this happens only with Apple devices, it won't make a difference since Apple products are used by only a small number of people



3. [Reply](#)

RattyUK [Saturday, November 20 2010](#)

@Tim

“If this happens only with Apple devices, it won't make a difference since Apple products are used by only a small number of people”

Yes, Tim, Apple are only adding new users at say 14.1 million a quarter. That's a small number indeed.



◦ [Reply](#)

Tim [Saturday, November 20 2010](#)

By the end of 2009, the number of mobile cellular subscriptions worldwide reached approximately 4.6 billion. Yes, RattyUK, Apple are only adding new users at say 14.1 million a quarter. That's a small, small, small number indeed, absolutely miniscule



■ *RattyUK* [Sunday, November 21 2010](#)

4.6 billion Smartphones? How silly of me. Apple are insignificant then you have opened my eyes.

Or could it be that you just went for a really high number by including every stupid little phone to prove your empty point?

14.1 million units of a high end phone is something any other manufacturer would be desperate for.



■ *Tim* [Sunday, November 21 2010](#)

Most SIM cards are used in featurephones. Since only the few Apple phones used by fickle fashionistas will have embedded SIM cards, Apple will be ignored.

Anyway, Apple's marketshare is decreasing, as more and more people are choosing instead to get better phones. Apple, after a brief time in the spotlight, is well on its way back to being ignored, a place it knows very well.



4. [Reply](#)
sranzha [Saturday, November 20 2010](#)

“If I had to advise Apple, it wouldn't be to use a fancy SIM card that can be remotely changed, but instead to use an Apple-proprietary SIM card that contains no changeable data and is fully controlled by Apple”

If this ever happens – you can bet i am giving up my iphone 4 and any other iphone is out of question. I already hate i have only option to get apps and i cannot side load my app unless i void my warranty – its not just sw warranty its the whole warranty – so if i unlock my phone to slide load the apps and my display fails after a while – then its out of warranty since i unlocked it...giving more power to such a evil company is unthinkable...



5. [Reply](#)
Mukesh Aggarwal [Saturday, November 20 2010](#)

Am I the only one who like the current 'evil' SIM cards ?
I can swap them out on my unlocked phone when I travel and be not at mercy of carriers ?
For me, having apple control even SIM cards would just make apple one of the carriers. What difference will it make if verizon or att or apple controls the subscription ?



6. [Reply](#)
Seat2d [Saturday, November 20 2010](#)

I guess the telcos will have no problem with this so long as Apple plays on a level playing field – i.e. operates under regulatory constraints. For example each telco has to keep records for legal intercept – bet Apple have no plans here.



7. [Reply](#)
rudolf [Sunday, November 21 2010](#)

Clarification: This probably works best with data-only devices, like macbooks, iPads and iPods. Phones are often under a different set of regulations. The way it would work best, is if Apple had a contract with multiple networks in a country. This would allow for competition between the networks. The user would arrive in a country and select the best deal available for his needs. Apple would then open access to the network chosen and that network gets paid.



8. [Reply](#)

[Best iPhone Apps Sunday, November 21 2010](#)

Thank you for another great article. Where else could anyone get that kind of information in such a [perfect](#) way of writing? I have a presentation next week, and I am on the look for such information.



9. [Reply](#)

[@Tkanet Sunday, November 21 2010](#)

Rudolf, great article.

I think this “Global, Multi-Carrier MVNO” will happen anyway...just because in more and more saturated markets, carriers will need to battle even for the duration of call (or for a day or week) to win the highest value subscribers. Here are key signals to this trend

- Mobile Number Portability already allows riding among carriers while keeping the same MSISDN. SoftSIM is another, simpler way to make that ride much easier.
- Most carriers hated the idea of MVNOs just 5 years ago, thinking they will disrupt them. Over time, they discovered more MVNOs was further ways to run after specials segments they could not target by themselves. Today, carriers are happy with 20 MVNOs, opening more and more their Networks (Big Retailers even have their own rating engines).
- RIM is a sort of global MVNO in data. They negotiated the blackberry’s data offers with hundred of carriers (along with a central NOC) ... thus avoiding mad roaming data plans.
- Amazon’s kindle provides the same. You can download Kindle’s books via 3G from various countries...via the 3G SIM included in the Kindle. Amazon manages the global bill, centrally. SoftSIM is a piece in “global, Multi-Carriers MVNO” the puzzle. Missing today:
- Incentive for the carriers to accept them (apart from a threat of being sidelined by Apple and missing a potential big train...).
- Benefits for subscribers (against the “risk” of being locked with Apple vs. Carrier)?

Back in 2005, we designed an airtime trading system where a set global, multi-carrier MVNOs would sign various types of contracts: Low Cost (cheapest call, all time), High Value (best network, lowest drop calls rate, highest voice quality,), Best Data (best available bandwidth any time, best relevant technology – 3G/LTE....) ...and a back end system would be swapping and connecting to the subscriber’s SoftSIM to the best available carriers automatically.

In general, a subscriber is covered by 3 to 4 wireless signals any time.... so there is some unused capacity that can be traded easily, and automatically. I see this a good driver for carriers.



o [Reply](#)

[Mark Vletter Sunday, November 21 2010](#)

@Otto

You make it sound like they have a choice. Data is getting cheaper, fonera is growing and growing (and Google – the Mobile OS guys, and Skype – something with internet telephony, must be smiling). It might be the only thing they can do.

@RattyUK @Tim

Even the Apple people think that Android (read Google) will be the dominant player, so while Apple is working on it, i think Google is going to be the bigger player, having Google Voice and being a “Fon Friend”.

@Tkanet – “Mobile Number Portability”

Why go mobile if you can go VoIP (especially with Wifi, 4G roaming). You can have an 085-number (in the Netherlands) which are already used for roaming VoIP users. You would not have to buy the “expensive” 4G data Kb’s.



10.

[Reply](#)

Ksamb [Sunday, November 21 2010](#)

Great article – thanks! Although I don’t see the big deal whether one buys a (soft) sim from Apple (or whoever – why can’t Vodafone or ATT etc do this?), I do see the value of innovation in this area. If that’s what this sparks, then bring it on!



11.

[Reply](#)

Rudolf van der Berg [Monday, November 22 2010](#)

Many of the questions (apart from the general Apple bashing) focus on why Telco’s should allow this. For one thing, because they already do today. At any given moment several hundred companies have such a deal with a telco. It’s called roaming. Bhutan Telecom can get access for its customers. All I’m proposing is that a smart metering company or a consumer electronics company can have similar access to the network.

I would even go as far as saying that if companies do not get this access, there is an anti-trust issue going on. Why would Bhutan Telecom be allowed access and not Apple? MVNO’s are no different than roaming access companies.

I am naive enough to believe than in many places in the world the vision I have can be delivered by competition between market operators. There is room for competition and there are many innovations on the horizon. Being able to access 3G networks without a subscription on a consumer device is currently more or less unheard off. The model presented here could deliver that and with that a new revenue stream for mobile operators. Though the big 10 mobile operators of the world, may be against it, there are 800 operators in the world, some of which may not object to making money at the expense of their competitors.

Furthermore regulators should push this as they are getting a more competitive market back. There will not just be 3 or 4 carriers per market where people can sign up to. It will be a much more vibrant market through the various types of MVNO’s that will develop. Some handset makers may want to create a huge vertical and take control of everything, Apple comes to mind. Others may just use this to give their customers the greatest freedom possible, thereby creating a mobile hippy heaven. The Google Android-types with sandals come to mind here.

Why use your own SIMs and not just OTA updates? Well, it’s much the same as the difference between using a your own car and using a taxi. Over the air updates only work in a small scale, with all the basics still determined by the carrier. Having your own SIM would mean full

freedom. the MVNO doesn't own the road, but it can determine how it wants to get from A to B.



12. [Reply](#)
[Freddie](#) [Monday, November 22 2010](#)

Yes, roaming fees are ridiculous. However, a scheme like this would only leave me in the hands of the device manufacturer instead of the operator. Today, if I don't like the operator, I can switch to another by replacing the SIM-card. If all the power is with the device-manufacturer and I don't like them, I'll have to buy another device... I don't see that as an improvement.



13. [Reply](#)
[Maarten Ectors](#) [Monday, November 22 2010](#)

I linked to your article and wrote about what operators should be doing to defend themselves from new competitors attacking their assets: <http://telruptive.com/2010/11/22/my-telecom-assets-are-under-attack-what-should-i-do/>



14. [Reply](#)
[Pontus Berg](#) [Monday, November 22 2010](#)

I had extensive discussions on this topic on several mailinglists.

You are right but also wrong; Formally and technically you are right, even tough HLR and AUC would be small pieces needed, you and need an MSC (or MSC Server + Mediagateway), SGSN, billingsystem, international rateplans, GRX connection, international carrier, C7/SS7 provider and so on. They would need to bild an entire mobile operator, save the roll out of ones own network.

Commercially you are going a bit astray.

Apple would need a commercial relation with one or two operators in every country. It would have every flavour of an international roaming agreement but you are assuming the commercial terms and conditions would be totally different. So you are assuming that the deal Apple would get would be vastly different from what AT&T, T-mobile or Vodafone would get in the same situation?

Is this unique and new? Hell no! Unisource Mobile was founded with the intention of doing something similar and this was in the second half of the 90ies. And reasons you didn't hear of it? Well, that it went down in flames, that's why



- [Reply](#)
[@tkanet](#) [Monday, November 22 2010](#)

Not sure why do you need all the core network.

I'd say a good rating engine and account management system is largely enough.

Connected to local carriers call control nodes (formally SCPs).

You can still delegate the most tasks (call control, routing etc ...) to the local carrier, typically when they keep the SCP layer. I am assuming that SIM swapping happens in real time ...

No need for central MSC, xGSN



15. [Reply](#)

Anonymous [Monday, November 22 2010](#)

All this is nice and dandy if Apple can bring down the price of the device or have some sort of payment / installment plan to make the idevices more affordable. If I remember right, when Apple first released iPhones back in 2007, the initial sales figures were dismal because of the full price purchase required. Only when Apple / AT&T began offering subsidies on the devices, did the sales pick up. I wonder how Apple bypassing the carriers to sell the devices will impact sales (especially given that most NA users are used to low upfront cost on their devices)...

I realize that a small segment of Apple users are willing / able to buy at full price and the bigger market would require some form of convenient pricing..



16. [Reply](#)

Vinay [Monday, November 22 2010](#)

Unless Apple brings down the device price or offers some form of subsidy / installment payment plan, this won't affect the sales much.. Remember 2007 when Apple first released iPhone, the sales figures were disappointing.. Only when AT&T offered subsidized devices, did the sales pick up.. So it will be interesting to see how carriers dial up the benefits of subsidies to retain users..



17. [Reply](#)

Tim [Monday, November 22 2010](#)

You are mixing M2M/Telematics and Connected Devices as iPhone in the same article. This is very different.

First of all global services for M2M has been available for a long time, provided by a number of players. No need for multiple SIM, one solution is out there and on the market for many, many customers, Kindle is a good example.

The moment you allow the user (or Amazon for example) to change the carrier in a local network is the moment you will lose all warranty and liability connected to the service provided. Since large scale deployments as for example ; Kindle, BMW, Daimler etc requires warranties and QnS from their supplier they will not be able to get that with a "soft" SIM.

The next important thing for M2M clients is a M2M platform and Q&S related to that platform

and services, a soft SIM would allow a low cost, low end network, that is it. Soft SIM might be something for the consumer and low end products but will never be a option for the telematic services like eCall, FleetManaget etc that requires some kind of quality.

For consumer devices as iPhone it is of course possible but the customer will most likely be directed to apple with any questions related to his mobile if he has any problems. Most likely even network related questions. Operators will the moment you connect a soft SIM to the network, tie it to a minimum period of usage since it is cost related the fact that you put a new SIM on the network.

Pontus Berg is also correct, it will create a very complexed commercial setup and Apple will take away a LARGE portion of for example Vodafones, Tmobiles and ATnTs revenues. Good for all of us with lower prices but price is not everything and within Telematics you must see the whole picture.

Sure, lower prices is always good but that means fewer jobs at these companies and everything is connected.....



- [Reply](#)
[Rudolf van der Berg Tuesday, November 23 2010](#)

@Tim sorry, but you got to work harder to spread Fear Uncertainty and Doubt.

First of all there is no difference between M2M and a telephone from the networks point of view. Both are devices that use the network. The network doesn't know if it's a person or a computer who's communicating.

There is no such thing as global services for M2M. Yes you can get a contract that offers roaming in 200 countries. But that's completely different than getting service in all those countries. The M2M users contract is with the home network. There is no obligation for the other networks to play nice. They only have a roaming contract with the operator, not a specific M2M contract with the M2M user.

The comments about quality and softSIMs are so messed up they don't warrant any reaction. There is a reason why the GSMA is working on embedded SIMs. They are necessary and can deliver equivalent quality from normal SIMs

The point about the carriers not being able to deliver good quality with lower costs is completely beside the point. Nowhere do I argue that it is necessary for carriers to lower their prices. What I argue is that there will be competition. Good competition leads to better quality and a better balance between price and quality



18. [Reply](#)
[Joe Biron Monday, November 22 2010](#)

Let's talk about connected products. I'm interested in how an embedded SIM changes the game there. From a form factor perspective, the microSIM is already pretty small. Telenor has already rolled out the eSIM (also from Gimalto <http://social.telematicsupdate.com/content/telenor-connexion-deploys-esim>). But if a product manufacturer embeds an unaccessible SIM, it follows that the same manufacturer, or their

partners, are responsible for brokering the mobile activation with the chosen carrier. So now the consumer is at the mercy of the manufacturer and their partnerships with carriers. So with a standard SIM and an “unlocked” product, I can easily pop out one SIM and pop in another. I do not need anyone’s permission or mobile update server.

It also seems to me that MVNOs are a good solution to this “problem”. Some other commenters mentioned the infrastructure and business processes needed to provide the function of an MO – and it is substantial. MVNOs have this infrastructure + relationships with big carriers to provide seamless coverage.

The embedded, mobile-activated (which is a misnomer because activation is nothing more than a flag set on the customer’s record back at the MO’s database) SIM seems like a solution in search of a problem.

There are over 750 GSMA-listed mobile operators in the world. Hardly a monopoly. I believe the MJs provide value that, if commoditized, only pushes the responsibility of those functions to folks less capable of delivering them (Apple).

More interesting to me is what you are going to do with that fancy connectivity once you have it.



19. [Reply](#)
Tim [Tuesday, November 23 2010](#)

I will try to embed my response:

First of all there is no difference between M2M and a telephone from the networks point of view. Both are devices that use the network. The network doesn’t know if it’s a person or a computer who’s communicating.

Wrong, it is a big difference but you are correct that the network does not know what kind of device it is. A M2M behavior is controlled by the application and not a human. It is predicable (depending on application) and coordinated. For example if you have 10 000 units in UK that connects at the same time, same second you will have a network problem. A human behavior is different. M2M behavior needs to be controlled to not mess up the networks.

There is no such thing as global services for M2M. Yes you can get a contract that offers roaming in 200 countries. But that’s completely different than getting service in all those countries. The M2M users contract is with the home network. There is no obligation for the other networks to play nice. They only have a roaming contract with the operator, not a specific M2M contract with the M2M user.

No MNO covers the world with own networks, it will never happen. Using multiple networks is the only way. But I agree, the contract is with the home network as of today.

If you do local provisioning, TMobile in the UK, Vodafone in Germany and so on, who is your supplier, who will you call when you have a problem with the solution? And trust me you will have problems.

The comments about quality and softSIMs are so messed up they don’t warrant any reaction. There is a reason why the GSMA is working on embedded SIMs. They are necessary and can deliver equivalent quality from normal SIMs.

Please explain how you see a MNO taking the same warranty for a product that they have not

complete control over. A SIM is owned by the MNO all the way, a product produced by a third party with just your networks code on will not get the same warranty from a MNO for sure. Yes there is a need for embedded SIMs but it will be very different in terms of what you get from your MNO.

The point about the carriers not being able to deliver good quality with lower costs is completely beside the point. Nowhere do I argue that it is necessary for carriers to lower their prices. What I argue is that there will be competition. Good competition leads to better quality and a better balance between price and quality.

Agree.

My point is that we will see different solutions on the market, “soft” SIMs for embedded consumer device, simple M2M devices for the mass market etc and MNO SIMs, soldered SIMs for companies that requires a totally different solution and ownership/control of their solution. Same as many solutions on the market today.



20.

[Reply](#)

Kn [Friday, November 26 2010](#)

From your blog.

“BTW I think Steve should talk to me.”

Looks like you are touting for business. Some points.

1) This would give Apple full control over what networks the customer can access and at what price. So you replace an Operator with a company known for charging higher prices and restrictive practices.

What will happen is Apple will cut deals that offer it the most money not which are best for its customers who will be tied to what Apple is offering. What about Networks who do not cut a deal, you are excluded from them. A SIM card is agnostic you can stick in any SIM into your unlocked device as long as it can roam on the operator frequency.

2) Billing through iTunes will be an extra cost the customer will have to pay. Apple will add their transaction costs to any operator billing cost. You will pay twice for billing whether or not you realise that.

3) With a Sim the user has control. In this scenario the user has no control – all control is with Apple.

4) If the Operator does not know where the SIM is from then the only option would be to a) price daily or weekly contract very high as the assumption would be these are the people likely to be roaming. So the overall effect on prices will be little.

5) The article is back to front. How many people use roaming and what fraction of operator revenues come from roaming? As to your normal day to day use what is the benefit of Apple as the service provider?

6) Making operators dumb pipes will inevitably lead to consolidation and less options and inevitably to one powerful operator so prices will mostly likely rise in the long run. Wiht the current oligopolist competition in the current markets we are seeing price falls but with what your propose you will see consolidation and price rises.



21.

[Reply](#)*kn* [Friday, November 26 2010](#)

There will not just be 3 or 4 carriers per market where people can sign up to. It will be a much more vibrant market through the various types of MVNO's that will develop

Ok here is where I start to laugh. There are usually 3 or 4 physical networks in a country – ie masts towers etc. The operators own these. Now an MVNO comes along – sure it can buy in bulk but its basing its MO as lower cost. MVNO's have largely been unsuccessful as they have to use an operators network who will not cut themselves out of the market. The MVNO that beat operator pricing either dont last for long or like in the UK with Tesco they can use it as a loss leader.

Also operators dont mind MVNO as they try to chase the lower end of the market. Yet Apple is the antithesis of being at the lower end.

[2 Trackbacks](#)

1. [Apple to Revolutionize Cell Phone Service with New SIM Card? - Teamspeed.com November 22, 2010](#)[Tracked on](#)

[...] [...]

2. [Apple SIM Soap Opera to Play Out on M2M and SmartGrid: Tech News « November 23, 2010](#)[Tracked on](#)

[...] suspect the carriers will continue to fight Apple in the embedded SIM war, but over the long term, it's likely to be a losing battle. Other handset makers will see the [...]



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Foursquare, Groupon and others will double the deals and change the way we shop this Black Friday.



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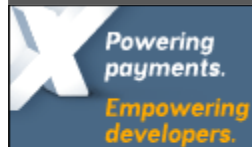
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