Patent Valuation

Contents

Patent valuation for a Communication firm

XXXXXX

The major claim of XXXXXX is that of a multimode communication device -- It is a device that allows a phone or device to have more than one network e.g. Apple i-Phone has both Wi-Fi & Mobile capabilities. Similarly some new phones even claim both GSM & CDMA capabilties.

The Application is a continuity of Patent No. XXXXXXX which essential talks about supporting voice communication via packet network.

The Patent is in turn a continuity of Patent No. XXXXXXX which covers communication network system which supports the transmission of both voice and Data.

The patent is in turn a continuity of Patent No. XXXXXXX which in essence is a wireless communication network supporting the trasmission of voice and Data inside a premises.

The filing date of Patent No XXXXXX is Oct Xth 19XX, that means that if granted XXXXX will have a period till Oct XXth 20XX. [USPTO PAIR]

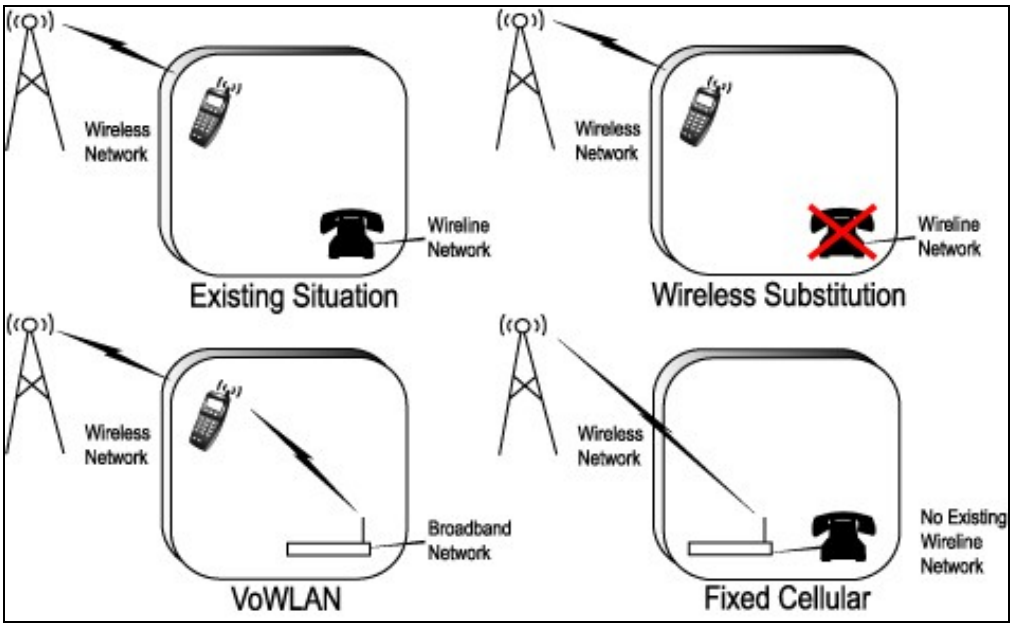
***UPDATE - The USPTO has granted the application with a project patent No. XXXXX to be issued on XXth May 20XX, and they have issued an extension of 1686 Days (4 yr and 225 Days) i.e. till XXth May 20XX (est.)**

Fixed Mobile Convergence

Fixed Mobile Convergence is a service in which the same handset has access to services through a fixed network in addition to a wireless network. The same handset can be used in the home and office and also send and receive cellular calls when traveling in the wider world.

FMC suffered early on from too many technical approaches and too few standards. A number of operators conducted trials but hesitated to commit to full deployment. Fortunately, that period is behind us. Standards have been established and the industry seems to have coalesced around the dual mode WiFi/cellular approach. Operator trials have been replaced by new product announcements and large scale deployments have begun?at least in the consumer segment.

FMC can be accomplished in a variety of ways. Figure I-1 compares three of the most common FMC configurations in consumer homes with the existing scenario: Wireless substitution, Voice over Wireless Local Area Network (VoWLAN), and Fixed Cellular.[Insight Research]



Dual-mode FMC: This form of fixed mobile convergence relies upon dual-mode phones (i.e., mobile cellular and Wi-Fi) and phone-based clients to enable users to seamlessly roam between a wireless LAN (WLAN) and a cellular network. Examples include Agito's RoamAnywhere, and DiVitas' Mobile Unified Communication [Search Mobile Computing]

Dual Mode Phones

A dual-mode phone is a telephone which uses more than one technique for sending and receiving voice and data. This could be for wireless mobile phones or for wired phones.

There are three types of dual mode phones: 1. Network Compatibility : Mobile phones containing two types of cellular radios for voice and data. These phones include combination of GSM and CDMA technology

2. Cellular and Non-cellular Radios : Mobile phones containing both cellular and non-cellular radios used for voice and data communication.

3. Wired Phones : Wired phones with VoIP and POTS technology. These phones can be used for making VoIP calls and also used for phones on the circuit switch network [Wikipedia - Article on Dual Mode Mobile]

We will limit our analyses to the second type,

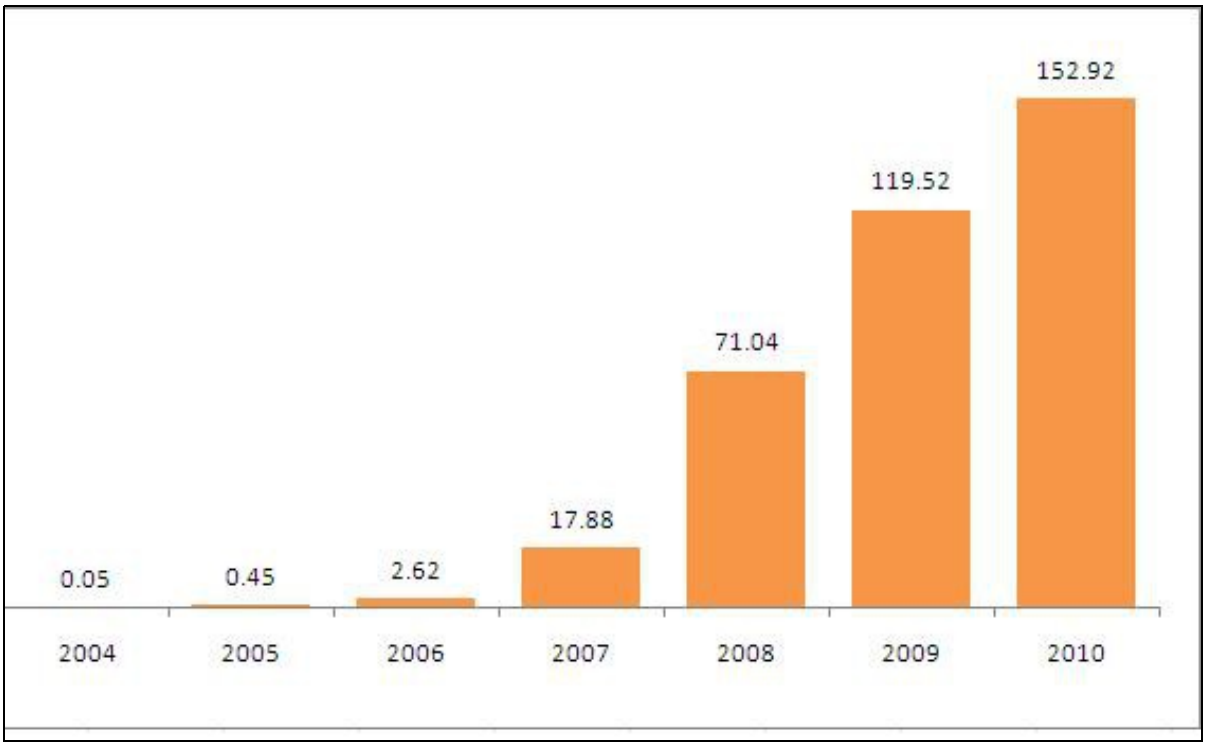
Why add Wi-Fi to cell phones?

- Carriers:
  - ◊ Network offload
  - ◊ Increase coverage without build-out
- Businesses:
  - ◊ Reduce bills
  - ◊ Increase reach of corporate phone system
  - ◊ Bring cellular devices under control of IT dept.
- Consumers:
  - ◊ Usable browser
  - ◊ Better coverage at home
  - ◊ More service options [Stanford, Michael's presentation on Application Development for Dual Mode Phones]

Market

- Market size estimates vary ? roughly 200 million Wi-Fi enabled phones to be sold in 2010.
  - Mainly smartphones
  - Dwarfs estimates for Wi-Fi only phones

Shipment of Dual Mode Phones Worldwide



- Figures in Millions[Stanford, Michael's presentation on Application Development for Dual Mode Phones]

Analysis

As indicated by [Espacenet] all the forms in which the patent has been published are restricted to US, thus for the same reason, we shall restrict our analysis to the US too.

Forecast for US Market

Assumptions (Possible Points of Failures)

- The rate growth of the growth of Dual Mode market remains same for 2014
- The forecasts made by [Techcrunch] are fit.

*** UPDATE: The patent is now valid till 12th May 2020 (extension by USPTO) thus these valuations need to be extended till 2020.**

Year	% of Wifi Enabled Phones	Number of Mobile Phone Subscribers (In Millions)	Number of Wifi Enabled Phones (In Millions)	Growth Rate	Change in Growth Rate
2008	8.20%	228.2	18.7124		

2009	11.50%	235	27.025	44.42295	
2010	16%	242	38.72	43.27475	-2.58471
2011	21.30%	247.4	52.6962	36.09556	-16.5898
2012	25.90%	251.5	65.1385	23.61138	-34.5865
2013	29%	255.4	74.066	13.70541	-41.9542
2014			84.21705068	7.955415	-41.9542
2015			90.91686658	4.617784	

Calculation of Value of IP

Assumptions

- Discount Rate taken as 10% as given by [Wikihealth] for xxxx
- The diffusion of innovation is independent of the price of the multimode IC

Case I:

Year	Number of Wifi Enabled Phones (In Millions)	Price of Device	Market Size (In Millions)	Discounted Present Values (USD Mn)
2010	38.72	10	387.2	387.2
2011	52.6962	10	526.962	479.0563636
2012	65.1385	10	651.385	538.3347107
2013	74.066	10	740.66	556.4688204
2014	84.21705068	10	842.1705068	575.2137879
2015	90.91686658	10	909.1686658	564.5222109
			PV of Revenues	3100.795894

Case II:

Year	Number of Wifi Enabled Phones (In Millions)	Price of Device	Market Size (In Millions)	Discounted Present Values (USD Mn)
2010	38.72	15	580.8	580.8
2011	52.6962	15	790.443	718.5845455
2012	65.1385	15	977.0775	807.5020661
2013	74.066	15	1110.99	834.7032307
2014	84.21705068	15	1263.25576	862.8206818
2015	90.91686658	15	1363.752999	846.7833163
			PV of Revenues	4651.19384

Case III:

Year	Number of Wifi Enabled Phones (In Millions)	Price of Device	Market Size (In Millions)	Discounted Present Values (USD Mn)
2010	38.72	20	774.4	774.4
2011	52.6962	20	1053.924	958.1127273
2012	65.1385	20	1302.77	1076.669421
2013	74.066	20	1481.32	1112.937641
2014	84.21705068	20	1684.341014	1150.427576
2015	90.91686658	20	1818.337332	1129.044422
			PV of Revenues	6201.591787

Logic for Pricing The device claims include

- a first receiver and transmitter for communicating via a first wireless communication network;
- a second receiver and transmitter for communicating via a second wireless communication network; and
- at least one processor communicatively coupled to the first receiver and transmitter and the second receiver and transmitter, [Espacenet]

And taking Iphone 3GS's components' pricing, the device can replace following

- Samsung Application Processor (Price: $14.46)
- Infineon Baseband Processor (Price: $13.00) (Not sure if this is replaceable)
- Broadcom Bluetooth/FM/WLAN (Price: $5.95)
- Infineon RF Transreceiver (Price: $2.25) [iSuppli]

Royalty Rate: 7% (Telecom) [Royalty Rate Market Structure]

IP Valuation Case I: $217 Mn (Approx.) Case II: $325.5 Mn (Approx.) Case III: $434 Mn (Approx)

If Priced as $40 (when it can replace base band processor too and performs better) then the valuation = $838 Mn

Net Present Value of IP = Value - Licensing & Other Costs

- UPDATE: The patent is now valid till XXth May 20XX (extension by USPTO) thus these valuations need to be extended till 20XX. The same applies for all family members of the patent.