

Pervasive Technologies: Access to Knowledge in the Market Place

The Centre for Internet and Society
cis-india.org

Research Question

- What policy additions/modifications [IP or otherwise] are necessary to protect sub-100 dollar pervasive technologies in India and across the world?
- Policy at national and international level.
Examination of hardware, software and content layers of these devices.

[Almost no progress yet on software, movies, games]

Methodology

- Content: Music [Expert Interviews] – Amba Kak
- Hardware [Reverse Engineering and Patent Searches] – Jadine Lannon, Amarjit Singh and Rohan George
- Hardware: Patent Pool Valuation Methodology [Literature Review] - Vikrant Narayan Vasudeva, [Case Study of TD-SCDMA], Nehaa Chaudari, [Social Network Modelling] – Dr. Hans Varghese Mathews
- Hardware: Royalty Caps – Apurba Kundu [Legal analysis of GATT compliance of previous RBI policy]

Under the supervision of Policy Director for Internet Governance and Access to Knowledge – Pranesh Prakash.

India: royalty and license fees (M\$)

Payments:

1991	2006	2007	2008	2009	2010
49.5	845.9	1,159.8	1,528.8	1,860.2	2,437.5

Receipts:

1991	2006	2007	2008	2009	2010
0.6	13.4	30.6	27.2	38.1	59.5

Price points for the song 'Gangnam Style' by Psy (Global hit, 2012)

	India		USA
	MRP (USD)	CPP MRP	MRP (USD)
CD single	1.38		8.78
Online Streaming	0		0
Online Downloads	0.11		1.29
Bundled download apps	0 (for a year) 1.8/month		1.29 10/month
Mobile Downloads	0.018		-
Mobile Chip	0.018		-
Pirate price	0-0.018		0

to the number of computers and to the Premises for the Term as mentioned overleaf. This licence is issued pursuant to and placing reliance on the written Application submitted by the Licencee.

3. EXCLUSIONS, LIMITATIONS AND RESTRICTIONS:

Following rights or content are NOT part of this Licence and are EXCLUDED:

- (a) Music videos/audio-visual recordings or images, Ringtones "onophonic, Polyphonic, True Tones and any derivatives or variations of the Sound Recordings (Licenced works)
- (b) Side-loading is restricted only to individual mobile handsets of wal-in retail end-users and excludes any intermediaries or corporates or institution or body or shop or commercial or business establishment or telephone company or government body or bulk/volume deals
- (c) Any Works or sound recordings not expressly licenced herein
- (d) Communicating the Licenced Works to public by way of public performance, broadcasting, cable transmission or in any other manner.
- (e) Make or authorize or permit any other person to make any recording of the licenced works
- (f) Side-loading onto memory cards in anticipation of demand i. e. before receiving the oeder from individual retail walk-in customer.
- (g) Right to modify, mix, remix, change, edit, reproduce or re-create or perform or distribute or manipulate sounds of the Licenced works in any manner whatsoever.
- (h) Licencee agrees not to solicit business or orders or conduct the side-loading activity from/at any other premise, except the one mentioned overleaf.
- (i) All rights which are owned and/or controlled-by MMX and which have not been specifically and expressly granted herein are expressly reserved by MMX.

4. LICENCE FEES:

- (a) In consideration of this Licence, the Licencee shall promptly pay to MMX the applicable Licence fee as charged by MMX or as mentioned in the Application Form, which amount has already

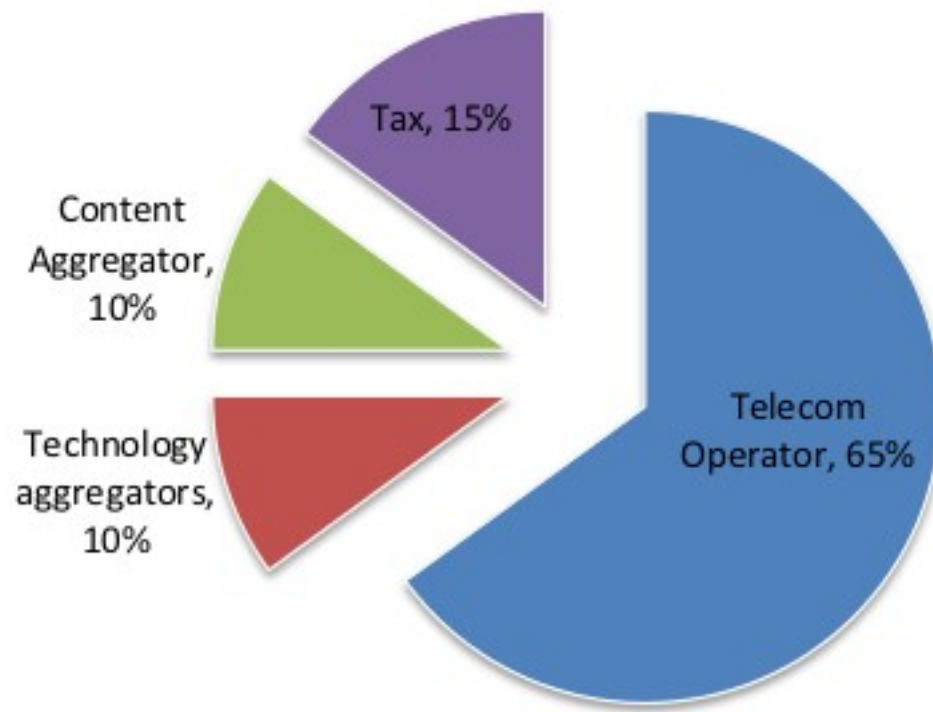


Figure 3: Revenue split in the VAS ecosystem¹⁵

Initial findings

- Nothing to fix here ...please keep moving.
- Flat fee licensing for streaming, downloads and side-loading.
- Telecom regulation necessary to mitigate large scale fraud by intermediaries.

Device 001: The Classroom in a Box

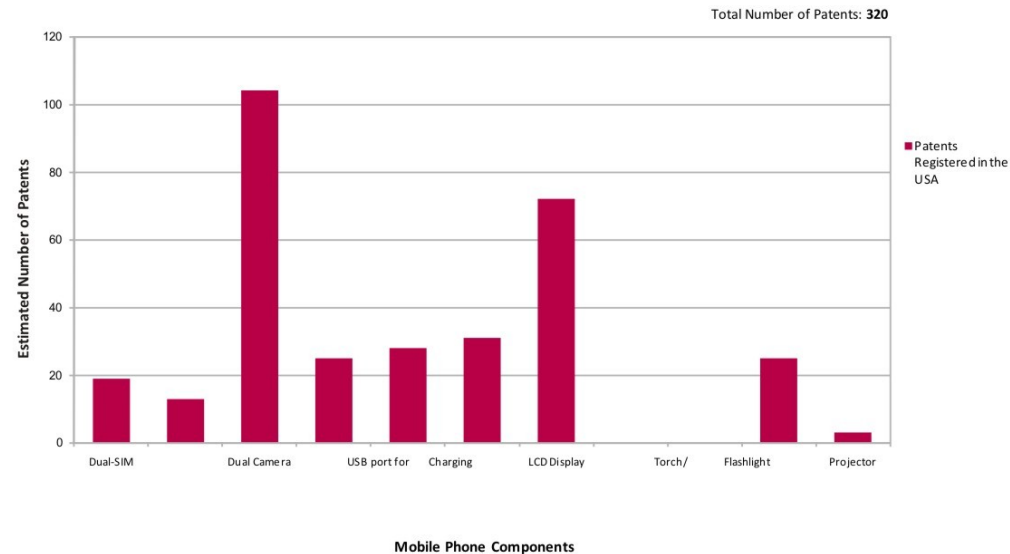
Price: **Rs. 6,300 / \$ 113**



Key Features
 Pico-Projector
 Analog TV Receiver
 MS Office Document Viewer

Estimated Number of Essential Patents
 Registered at the United States Patent and Trademark Office

001 Specifications							
General	SIM	Capacity	2	Multimedia	FM radio	Yes	
		Standby	Dual		Audio recorder	Yes	
	Battery	Type	Lithium-Ion		Analog TV	Yes	
		Model	SPB-01		Audio	mp3, aac, m4a, wav, mid, amr,	
		mAh	1200		Images	jpeg/jpg, bmp, gif, png	
	Ports	Charging	Yes, to USB		Video	mp4, 3gp, avi, flv, mpg, rm	
		Audio Jack	No		Other	txt, pdf, docx, doc, ppt, pptx, xls,xlsx	
	Network	2G	Yes		Camera	Primary	Still images Yes Video recording Yes
		3G	No			Mega-pixels	3.2
		SIM1/SIM2	GSM/GSM		Secondary	No	
	Data	GPRS	Yes	Messaging	SMS	Yes	
		EDGE	Yes		MMS	Yes	
		Bluetooth	Yes		Email	Yes	
		WLAN (WiFi)	No	Games	Puzzle, Ibiboo		
		WAP	Yes	Browser	Opera Mini		
		Java	Yes	Social Media and communication	Facebook, Nimbuzz, Yahoo!		
		Exchange via USB Connection	Yes	Applications	Other	MS Office document viewer, Naukri.com, Wapedia, ZengaTV, Mobile tracker, Snaptu	
			Yes		Other	Touchscreen	No
		Memory	Internal	87.7 MB		Antenna	Yes
			External	MicroSD, up to 16 GB		Torch	No
Languages	Interface	English	Other	Analog TV receiver, Pico-Projector			
	Keyboards	English					



Device 002: The Supercharger

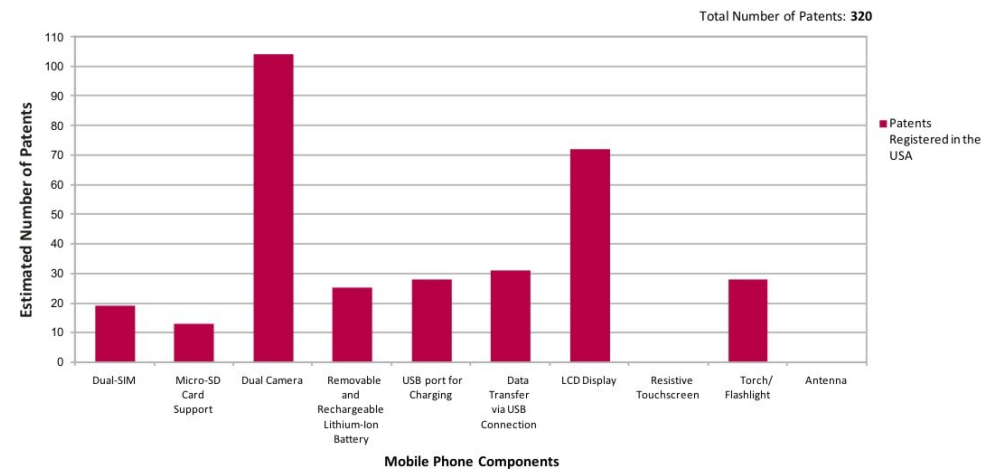
Price: Rs. 2,499.00 / \$45.00



Key Features
Solar Panel
Hindi Keyboard

002 Specifications								
General	SIM	Capacity	2	Multimedia	FM radio	Yes		
		Standby	Dual		Audio recorder	Yes		
	Battery	Type	Lithium-ion		Analog TV	No		
		Model	n/a		Audio	.mp3, .wav, .mid, .amr, .aac,		
	Ports	mAh	1000		Images	.jpeg/.jpg, .bmp, .gif, .png		
		Charging	microUSB-B to USB		Video	.mp4, .3gp, .avi		
	Network	Audio Jack	Yes, 3.5 mm		Other	.mnp, .txt		
		2G	Yes		Features	Camera	Primary	Still images
	3G	No	Video recording				Yes	
	SIM1/SIM2	GSM/GSM	Mega-pixels			0.3		
	Data	GPRS	Yes			Messaging	SMS	Yes
		EDGE	No				MMS	Yes
		Bluetooth	Yes			Email	No	
		WLAN (WiFi)	No			Games	F1 Racing, Hungree Birds	
		WAP	Yes			Browser	n/a	
	Java	Yes	Applications			Social Media and Communication	n/a	
	Memory	Exchange via USB	Yes			Other	Mi Apps	
		Connection	Yes		Touchscreen	No		
Languages	Internal	1.6 MB	Antenna	No				
	External	MicroSD, up to 4 GB	Torch	Yes				
	Interface	English, Hindi	Other	Solar Panel				
	Keyboards	English, Hindi						

Estimated Number of Essential Patents Registered at the United States Patent and Trademark Office



Device 003: The Networker

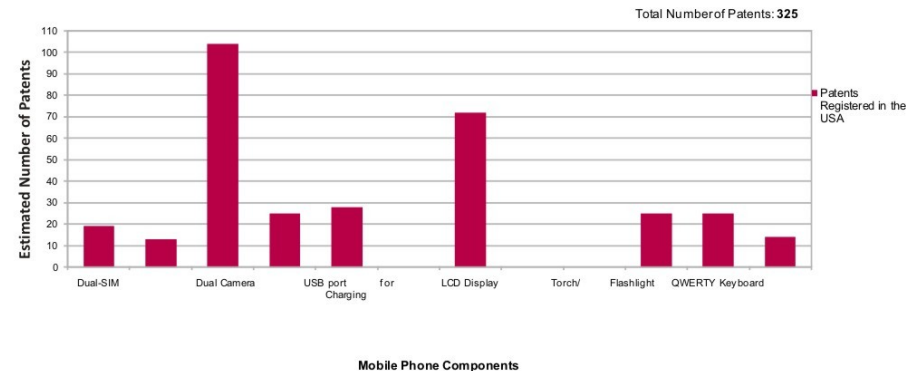
Price: **Rs. 1,250.00 / \$22.00**



Key Features
 Wi-Fi
 Optical Trackpad
 Secondary Forward-facing Camera
 Support for 8 Languages

003 Specifications								
General	SIM	Capacity	2	Multimedia	FM radio	Yes		
		Standby	Dual		Audio recorder	Yes		
	Battery	Type	Lithium-ion		Analog TV	Yes		
		Model	BL-4U		Audio	.mp3, .m4a, .mid, .amr, .wav, .aac		
		mAh	1000		Images	.jpeg/.jpg, .gif, .bmp, .png		
	Ports	Charging	1) miniUSB-AB to USB 2) Nokia Standard 2.0 to USB		Video	.3gp, .mp4, .avi, .mpg		
		Audio Jack	Yes, 2.5 mm		Other	.txt		
	Network	2G	Yes		Camera	Primary	Still images	Yes
		3G	No				Video recording	Yes
		SIM1/SIM2	GSM/GSM			Mega-pixels	1.2	
	Data	GPRS	Yes	Secondary		Still images	Yes	
		EDGE	No		Video recording	Yes		
		Bluetooth	Yes	Mega-pixels	0.3			
		WLAN	Yes	Messaging	SMS	Yes		
		(Wi-Fi)	Yes		MMS	Yes		
		WAP	Yes		Email	Yes		
		Memory	Exchange via USB Connection	No	Applications	Games	Puzzle	
	Internal		87.6 MB	Browser		n/a		
	External		MicroSD, up to 8 GB	Social Media and Communication		eBuddy, Nimbuzz, Facebook		
	Languages	Interface	English, French, Spanish, Portuguese, Bahasa Indonesian, Arabic, Farsi, Hindi		Other	Schedule FM recorder, Melody Composer		
Keyboards			English, French, Spanish, Portuguese, Bahasa Indonesian, Arabic, Farsi, Hindi			Touchscreen	No	
		Antenna	Yes	Torch	No			
Other		Optical Trackpad						

Estimated Number of Essential Patents Registered at the United States Patent and Trademark Office



Device 004: The Linguist

Price: **Rs. 2,250.00 / \$40.00**



Key Features

Android-like OS

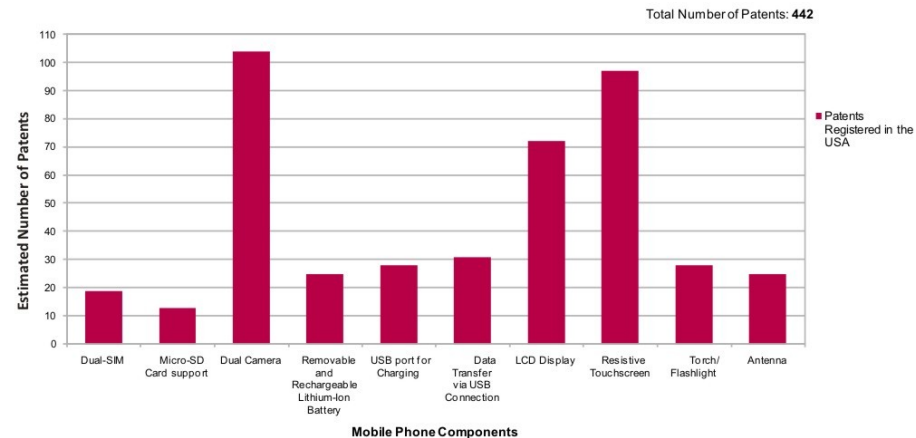
Support for 14 Languages

Secondary Forward-facing Camera

Large Number of Pre-loaded Apps

004 Specifications				
General	SIM	Capacity	2	
		Standby	Dual	
	Battery	Type	Lithium-ion	
		Model	BL-4U	
		mAh	2500	
	Ports	Charging	microUSB-B to USB	
		Audio Jack	Yes, 3.5 mm	
	Network	2G	Yes	
		3G	No	
		SIM1/SIM2	GSM/GSM	
		GPRS	Yes	
	Data	EDGE	No	
		Bluetooth	Yes	
		WLAN (WIFI)	No	
		WAP	Yes	
		Java	Yes	
		Exchange via USB Connection	Yes	
	Memory	Internal	1.256 GB	
		External	MicroSD, up to 8 GB	
	Languages	Interface	English, Mandarin Chinese, Arabic, French, Hindi, Bahasa Indonesian, Portuguese, Russian, Vietnamese, Farsi, Tamil, Bengali, Urdu, Thai	
Keyboards		English, Mandarin Chinese, Arabic, French, Hindi, Bahasa Indonesian, Portuguese, Russian, Vietnamese, Farsi, Tamil, Bengali, Urdu, Thai		
Multimedia	FM radio	Yes		
		Audio recorder	Yes	
		Analog TV	No	
		Audio	.mp3, .wav, .m4a, .aac, .amr, .mid	
		Images	.jpeg/.jpg, .bmp, .png, .gif	
		Video	.3gp, .mp4, .avi, .flv	
		Other	.txt, .mvp	
	Camera	Primary	Still images	Yes
			Video recording	Yes
			Mega-pixels	3.1
		Secondary	Still images	Yes
			Video recording	Yes
			Mega-pixels	3.1
	Messaging	SMS	Yes	
MMS		Yes		
Email		No		
Applications	Games	Sokoban, Gold Miner, Keep Moving, Lights Off, Up-Skirt, Blow Up-Skirt, Plants vs. Zombies, Fishing Joy, FlyBird 2, Bubble Bust, Gods Must Be Crazy, Cluck It, Chess, Angry Birds, Fruit Ninja, Talking Tom Cat, Gemstone		
	Browser	n/a		
	Social Media and Communication	Skybuddy, Facebook, Twitter, Face Talk, MSN, Yahoo! Messenger		
	Other	Search Phone Contents, Photo Editor, Answering Machine		
Features	Touchscreen	Yes, resistive		
		Antenna	Yes	
	Torch	Yes		
	Other	n/a		

Estimated Number of Essential Patents Registered at the United States Patent and Trademark Office



Device 005: TV on the Go

Price: **Rs. 1,450.00/ \$26.00**



Key Features

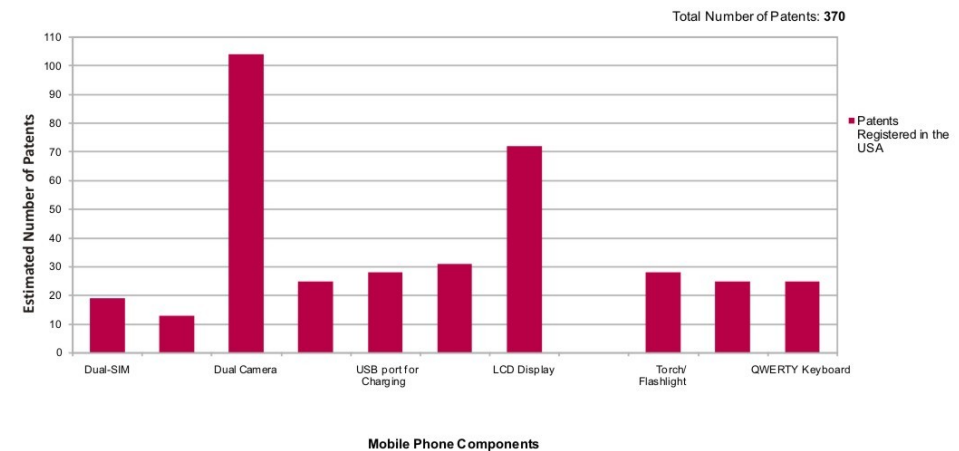
Analog TV receiver

Arabic Keyboard

Secondary Forward-facing Camera

005 Specifications					
General	SIM	Capacity	2		
		Standby	Dual		
	Battery	Type	Lithium-ion		
		Model	BP-6MT		
	Ports	Charging	Yes, to USB		
		Audio Jack	Yes, 3.5 mm		
	Network	2G	Yes		
		3G	No		
		SIM1/SIM2	GSM/GSM		
	Data	GPRS	Yes		
		EDGE	No		
		Bluetooth	Yes		
		WLAN (WiFi)	No		
		WAP	Yes		
		Java	Yes		
		Exchange via USB Connection	Yes		
	Memory	Internal	105 KB		
		External	MicroSD, up to 8 GB		
	Languages	Interface	English, Tamil, Arabic, Hindi		
		Keyboards	English, Tamil, Arabic, Hindi		
		Multimedia	FM radio	Yes	
			Audio recorder	Yes	
			Analog TV	Yes	
			Audio	.mp3, .mid, .aac, .wav	
			Images	.jpeg/.jpg, .gif, .bmp	
			Video	.mp4, 3gp, .avi, .mpg	
	Other		.txt		
	Camera		Primary	Still images	Yes
			Video recording	Yes	
	Secondary		Mega-pixels	0.3	
		Still images	Yes		
	Video recording	Video recording	Yes		
		Mega-pixels	0.3		
	Messaging	SMS	Yes		
		MMS	Yes		
		Email	No		
	Applications	Games	Magic Sushi		
		Browser	n/a		
		Social Media and Communication	Facebook, Twitter, Nimbuzz, Yahoo!, MSN, eBuddy		
	Other	Other	n/a		
		Touchscreen	No		
		Antenna	Yes		
		Torch	Yes		
	Other	n/a			

Estimated Number of Essential Patents Registered at the United States Patent and Trademark Office



Device 006: The Spy

Price: Rs. 1,680.00 / \$30.00

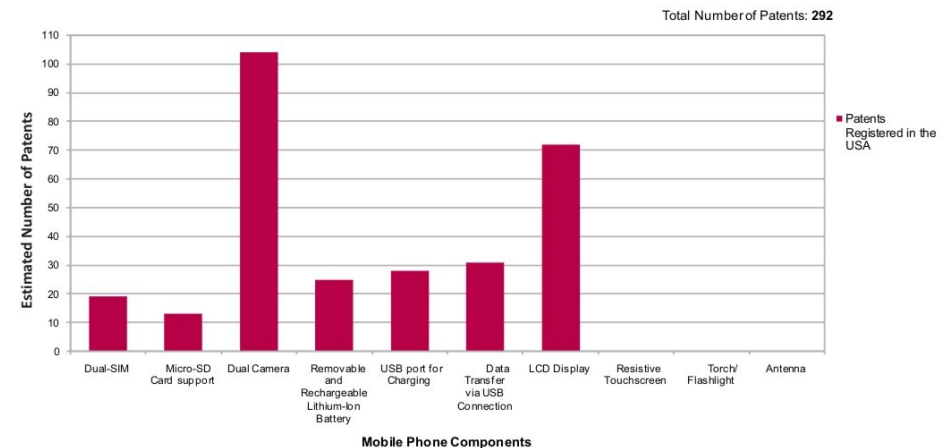


Key Features

Secondary "Spy" Camera
Ability to behave as a
modem via USB connection

006 Specifications								
General	SIM	Capacity	2	Multimedia	FM radio	Yes		
		Standby	Dual		Audio recorder	Yes		
	Battery	Type	Lithium-ion		Analog TV	No		
		Model	KB-SE		Audio	mp3, _mid, _amr, _m4a, _wav, _aac		
		mAh	1800		Images	jpeg/jpg, _gif, _bmp, _png		
	Ports	Charging	microUSB-B to USB		Video	mp4, _3gp, _avi, _divx, _mov		
		Audio Jack	Yes, 3.5 mm		Other	.txt		
	Network	2G	Yes		Camera	Primary	Still Images	Yes
		3G	No				Video recording	Yes
		SIM1/SIM2	GSM/GSM			Mega-pixels	1.3	
		GPRS	Yes			Still images	Yes	
	Data	EDGE	No		Secondary	Video recording	Yes	
		Bluetooth	Yes			Mega-pixels	1.3	
		WLAN (WiFi)	No		Messaging	SMS	Yes	
		WAP	Yes			MMS	Yes	
		Java	No		Email	No		
		Exchange via USB Connection	Yes		Applications	Games	Sokoban, Tetris	
	Memory	Internal	245 KB			Browser	n/a	
		External	MicroSD, up to 8 GB		Social Media and Communication	Facebook, Yahoo!		
	Languages	Interface	English, Hindi		Other	King Movies		
Keyboards				English, Hindi		Touchscreen	No	
		Antenna	No					
Torch		No						
Other	Spy Camera, Laser light, can behave as a modem for a networked device with a USB COM port							

Estimated Number of Essential Patents Registered at the United States Patent and Trademark Office



Device 007: The Semi-Smartphone

Price: **Rs. 2,150.00 / \$39.00**

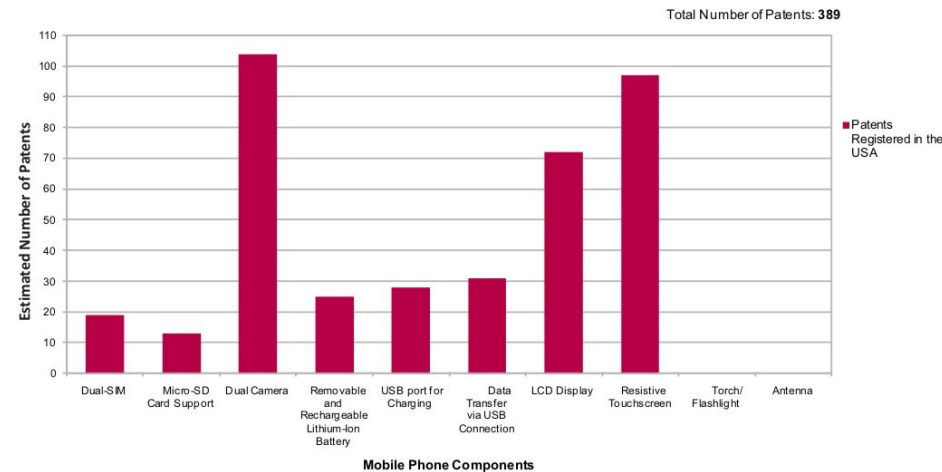


Key Features

- Android-like OS (maybe MIUI)
- USB Tethering
- Push Email

007 Specifications				
General	SIM	Capacity	2	
		Standby	Dual	
	Battery	Type	Lithium-ion	
		Model	BL-9F	
	Ports	mAh	4500	
		Charging	Nokia Standard 2.0 to USB	
	Network	Audio Jack	Yes, 3.5 mm	
		USB	miniUSB-AB to USB	
	Data	2G	Yes	
		3G	No	
	Memory	SIM1/SIM2	GSM/GSM	
		Internal	49.93 MB	
	Languages	External	MicroSD	
		Interface	English, French, Arabic, Urdu, Hindi	
	Multimedia	Keyboards	English, French, Arabic, Urdu, Hindi	
		FM radio	Yes	
	Features	Audio recorder	Yes	
		Analog TV	No	
	Camera	Audio	.mp3, .m4a, .mid, .wav, .aac, .amr	
		Images	.jpeg/.jpg, .gif, .bmp, .png	
Messaging	Video	.mp4, .3gp, .mpg, .avi, .flv		
	Other	.mnp		
Applications	Primary	Still images	Yes	
	Secondary	Video recording	Yes	
Games		Mega-pixels	2.1	
	Still images	Yes		
Social Media and Communication	Video recording	Yes		
	Mega-pixels	0.3		
Other	SMS	Yes		
	MMS	Yes		
Touchscreen	Email	Yes		
	Games	Talking Tom Cat, Plants vs. Zombies, Angry Birds, Fruit Ninja, Egypt Password, Girl Slot Machine, Gold Miner, Happy Egg, Happy War, Kind Combat III, Need For Speed, Parkour, Tear Dress, Catch Fishies, Jungle Zuma		
Antenna	Browser	Opera Mini		
	Social Media and Communication	Skybuddy, Facebook, Twitter, Yahoo! Messenger, Face Talk, MSN		
Torch	Other	3D Cool Shot, King Movies, Google Search		
	Touchscreen	Yes, resistive		
Other	Antenna	No		
	Torch	No		
Stylus	Other	Stylus		

Estimated Number of Essential Patents Registered at the United States Patent and Trademark Office



Device 008: The Trendy

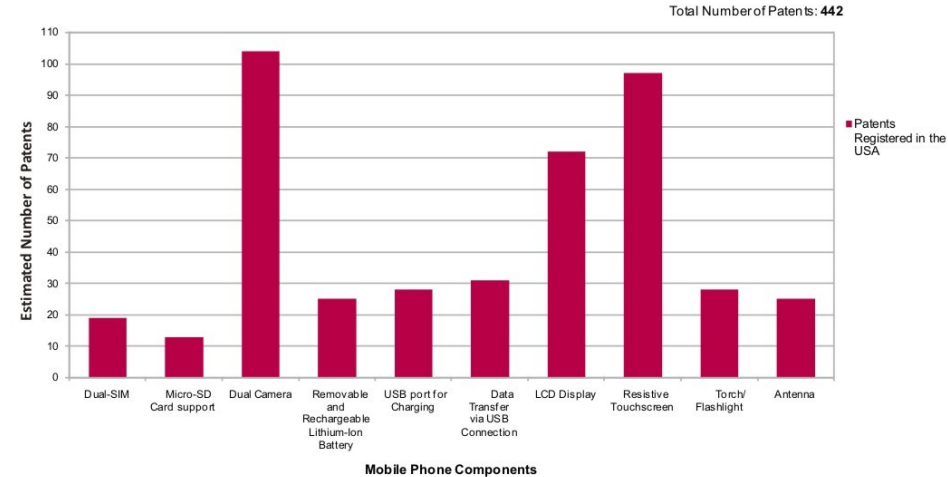
Price: Rs. 2,350.00 / \$42.00



Key Features
Android-like OS
Support for 9 languages

008 Specifications								
General	SIM	Capacity	2	Multimedia	FM radio	Yes		
		Standby	Dual		Audio recorder	Yes		
	Battery	Type	Lithium-ion		Analog TV	No		
		Model	BL-4U		Audio	mp3, wav, m4a, aac, amr, mid		
		mAh	2500		Images	jpeg/jpg, .bmp, .gif, .png		
	Ports	Charging	microUSB-B to USB		Video	mp4, .flv, .avi, .3gp		
		Audio Jack	Yes, 3.5 mm		Other	.txt		
	Network	2G	Yes		Camera	Primary	Still images	Yes
		3G	No				Video recording	Yes
		SIM1/SIM2	GSM/GSM				Mega-pixels	1.9
	Data	GPRS	Yes			Secondary	Still images	Yes
		EDGE	No				Video recording	Yes
		Bluetooth	Yes				Mega-pixels	1.9
		WLAN (WiFi)	No		Messaging	SMS	Yes	
	WAP	Yes	MMS			Yes		
	Memory	Exchange via USB Connection	Yes		Applications	Email	No	
			Internal			799.5 KB	Games	Angry Birds, Talking Tom Cat, Up-Skirt, Tear Clothing, Sokoban
		External	MicroSD			Browser	n/a	
	Languages	Interface	English, French, Arabic, Urdu, Hindi, Russian, Farsi, Turkish, Bengali		Other	Social Media and Communication	Skybuddy, Facebook, Twitter, Yahoo! Messenger, Face Talk, MSN	
			Keyboards			English, French, Arabic, Urdu, Hindi, Russian, Farsi, Turkish, Bengali	Other	King Movies, Search Phone Contents, SIM Tool Kit
				Touchscreen		Yes, resistive		
			Antenna	Yes				
			Torch	Yes				
			Other	n/a				

Estimated Number of Essential Patents Registered at the United States Patent and Trademark Office



Device 009: The Boombox

Price: Rs. 1,420.00 / \$26.00

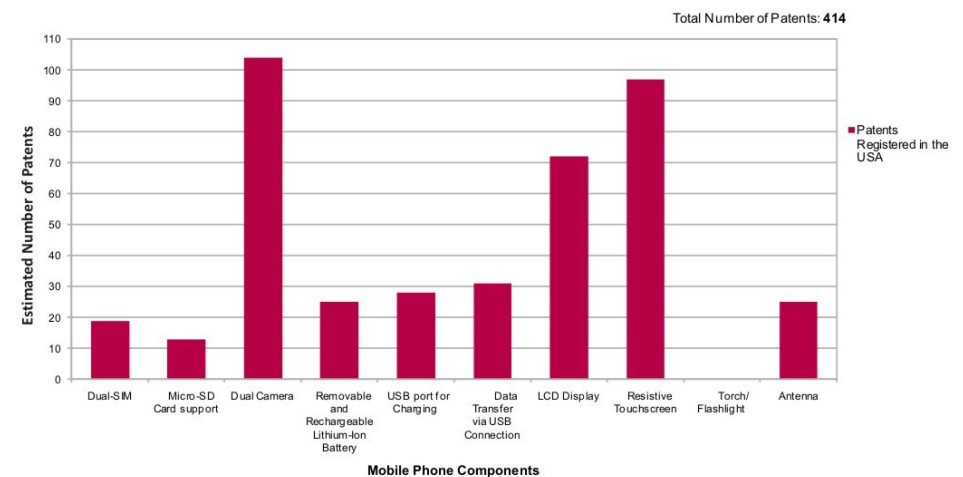


Key Features

Huge built-in speaker
Android-like OS

009 Specifications				
General	SIM	Capacity	2	
		Standby	Dual	
	Battery	Type	Lithium-ion	
		Model	BP-4L	
	Ports	mAh	1200	
		Charging	1) microUSB-B to USB 2) Nokia Standard 2.0 to USB	
		Audio Jack	Yes, 3.5 mm	
	Network	2G	Yes	
		3G	No	
	Data	SIM1/SIM2	GSM/GSM	
		GPRS	Yes	
		EDGE	Yes	
		Bluetooth	Yes	
		WLAN (WiFi)	No	
		WAP	Yes	
		Java	No	
	Memory	Exchange via USB Connection	Yes	
		Internal	294.5 KB	
	Languages	External	MicroSD	
		Interface	English, Hindi, Urdu	
Keyboards		English, Hindi, Urdu		
Multimedia	FM radio	Yes		
		Audio recorder	Yes	
	Analog TV	No		
		Audio	.mp3, .amr, .wav, .aac, .mid	
		Images	.jpeg/.jpg, .bmp, .gif, .png	
		Video	.mp4, .kmv, .avi, .3gp, .mpg	
	Camera	Other	.txt	
		Primary	Still images	Yes
			Video recording	Yes
	Secondary	Mega-pixels	1.9	
Messaging	SMS	Yes		
	MMS	Yes		
	Email	No		
Applications	Games	Angry Birds, Talking Tom Cat, Up-Skirt, Fruit Ninja, Eagle Flight		
	Browser	Opera Mini		
	Social Media and Communication	Facebook, Twitter, Face Talk, Yahoo!, MSN		
	Other	Android App Store, Wallpaper		
Other	Touchscreen	Yes, resistive		
	Antenna	Yes		
	Torch	No		
Other	Torch	No		
	Other	Large Speakers, Stylus		

Estimated Number of Essential Patents Registered at the United States Patent and Trademark Office



Device 010: 3D

Price: Rs. 1,440.00 / \$26.00



Key Features

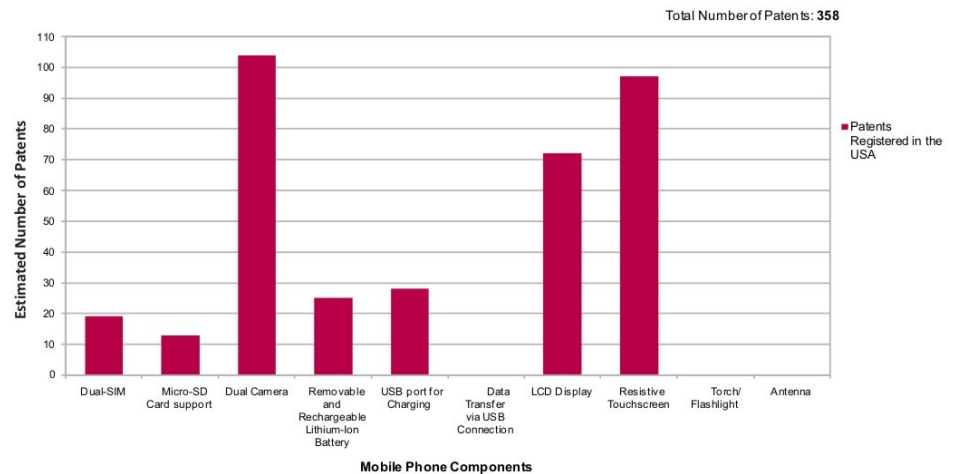
Android-like OS

Pre-loaded Stereoscopic (3D) videos

Support for 13 languages

010 Specifications				
General	SIM	Capacity	2	
		Standby	Dual	
	Battery	Type	Lithium-ion	
		Model	BP-4L	
		mAh	1600	
	Ports	Charging	1) mini USB-AB to USB 2) Nokia Standard 2.0 to USB	
		Audio Jack	Yes, 3.5 mm	
	Network	2G	Yes	
		3G	No	
		SIM1/SIM2	GSM/GSM	
Data	GPRS	Yes		
	EDGE	Yes		
	Bluetooth	Yes		
	WLAN (WiFi)	No		
Memory	Internal	1.256 GB		
		MicroSD, up to 8 GB		
	External	English, Arabic, French, Hindi, Bahasa Indonesian, Bahasa Melayu, Russian, Vietnamese, Farsi, Bengali, Tamil, Burmese, Telugu		
		Keyboards		
Multimedia	FM radio	Yes		
		Audio recorder		
	Analog TV	No		
		Audio Images		
		Video		
		Other		
		.txt		
	Camera	Primary	Still images	Yes
			Video recording	Yes
		Mega-pixels	3.1	
Secondary	No			
Messaging	SMS	Yes		
	MMS	Yes		
	Email	No		
Applications	Games	Sokoban, Fruit Ninja, Angry Birds, Brian Lara 2012 Cricket, Crazy Racing, talking Tom Cat, Blow Up-Skirt, Tear Clothes, Fishing Joy, Cut the Rope, Gold Miner, Keep Moving, Lights Off, Thunder Dragon Flights, Gemstone		
	Browser	n/a		
	Social Media and Communication	Facebook, Twitter, Face Talk, Yahoo! Messenger, MSN		
	Other	King Movies, SIM Tool Kit		
Features	Touchscreen	Yes, resistive		
	Antenna	No		
	Torch	No		
Other	Other			
	Stylus			

Estimated Number of Essential Patents Registered at the United States Patent and Trademark Office



Device 011: The Mighty Mini

Price: **Rs. 750.00 / \$14.00**

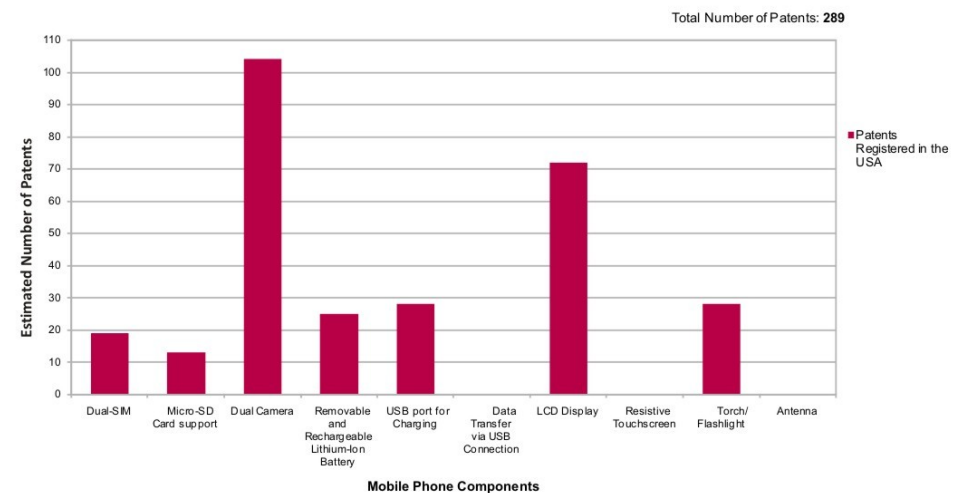


Key Features

Dual GSM SIM support
Best bang-for-your-buck
for a basic mobile phone

011 Specifications								
General	SIM	Capacity	2	Multimedia	FM radio	Yes		
		Standby	Dual		Audio recorder	Yes		
	Battery	Type	Lithium-ion		Analog TV	No		
		Model	BL-4C		Audio	.mp3, .m4a, .wav, .mid, .aac		
		mAh	1200		Images	jpeg/jpg, .bmp, .gif		
	Ports	Charging	1) miniUSB-AB to USB 2) Nokia Standard 2.0 to USB		Video	.mp4		
		Audio Jack	No		Other	n/a		
	Network	2G	Yes		Camera	Primary	Still images	Yes
		3G	No			Video recording	Yes	
		SIM1/SIM2	GSM/GSM		Secondary	No	Mega-pixels	0.3
	Data	GPRS	Yes		Messaging	SMS	Yes	
		EDGE	No			MMS	Yes	
		Bluetooth	Yes		Email	No		
		WLAN (WiFi)	No		Games	Sokoban		
		WAP	Yes		Browser	n/a		
		Java	No		Social Media and Communication	n/a		
	Memory	Internal	n/a		Applications	Other	King Movies	
		External	MicroSD			Touchscreen	No	
	Languages	Interface	English, Urdu, Hindi		Other	Antenna	No	
		Keyboards	English, Urdu, Hindi			Torch	Yes	
				Other	Large speaker			

Estimated Number of Essential Patents Registered at the United States Patent and Trademark Office



Device 012: The Pianist

Price: Rs. 1,550.00 / \$28.00



Key Features

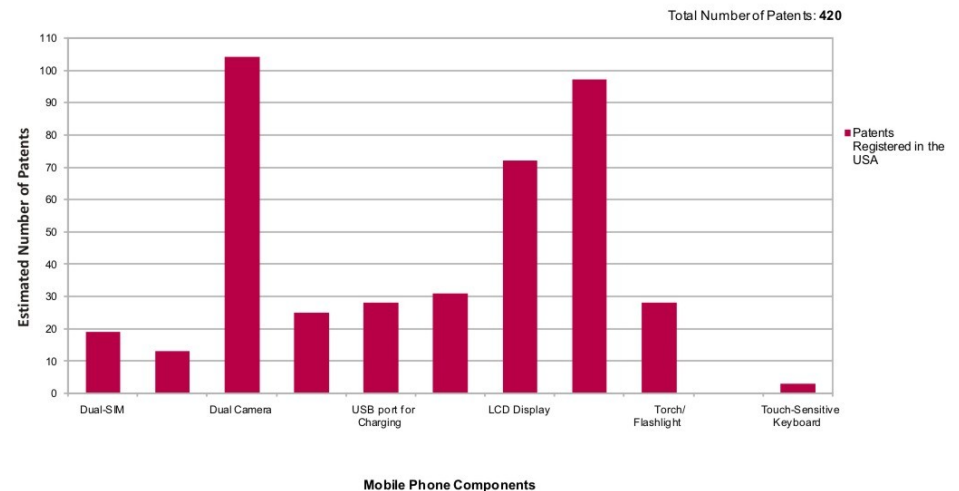
Touch piano

Two charging ports

Support for a multitude of audio, video and image formats

012 Specifications								
General	SIM	Capacity	2	Multimedia	FM radio	Yes		
		Standby	Dual		Audio recorder	Yes		
	Battery	Type	Lithium-ion		Analog TV	No		
		Model	BL-4D		Audio	.mp3, .wav, .mid, .amr		
		mAh	2000		Images	jpeg/jpg, .gif, .bmp		
	Ports	Charging	1) microUSB-B to USB 2) Nokia Standard 2.0 to USB		Video	.mp4, .3gp, .avi, .mpg		
		Audio Jack	Yes, 3.5 mm		Other	.txt		
	Network	2G	Yes		Camera	Primary	Still images	Yes
		3G	No			Video recording	Yes	
		SIM1/SIM2	GSM/GSM		Secondary	Mega-pixels	0.3	
	Data	GPRS	Yes		Messaging	SMS	Yes	
		EDGE	No			MMS	Yes	
		Bluetooth	Yes			Email	No	
		WLAN (WiFi)	No		Games	Magic Sushi		
		WAP	Yes		Browser	n/a		
		Java	No		Social Media and Communication	Facebook, Twitter, Nimbuzz, eBuddy, MSN, Yahoo!		
	Memory	Internal	45 KB		Applications	Other	n/a	
		External	MicroSD			Touchscreen	Yes, resistive	
	Languages	Interface	English, Hindi, Urdu, Tamil		Other	Antenna	No	
		Keyboards	English, Hindi, Urdu, Tamil			Torch	Yes	
			Other	Touch Piano Keyboard				

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Device 013: The Indian Experience

Price: **Rs. 2,100.00 / \$38.00**

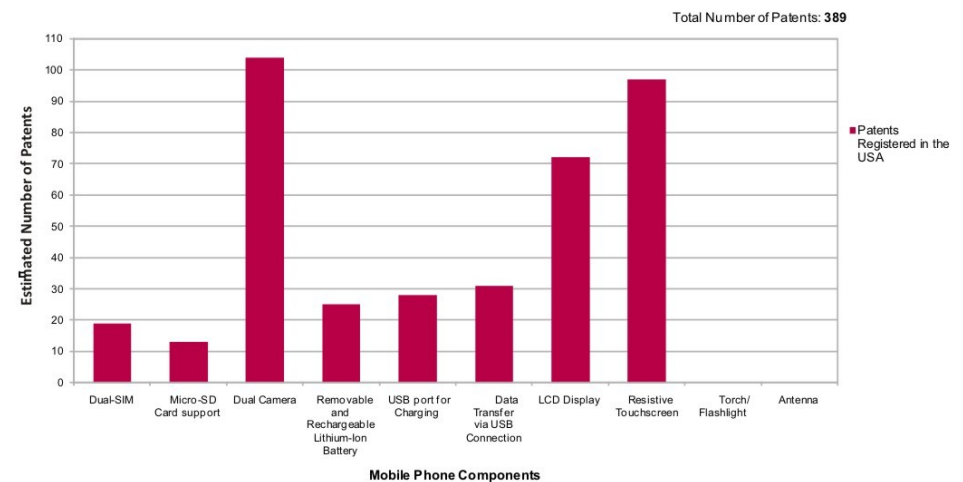


Key Features

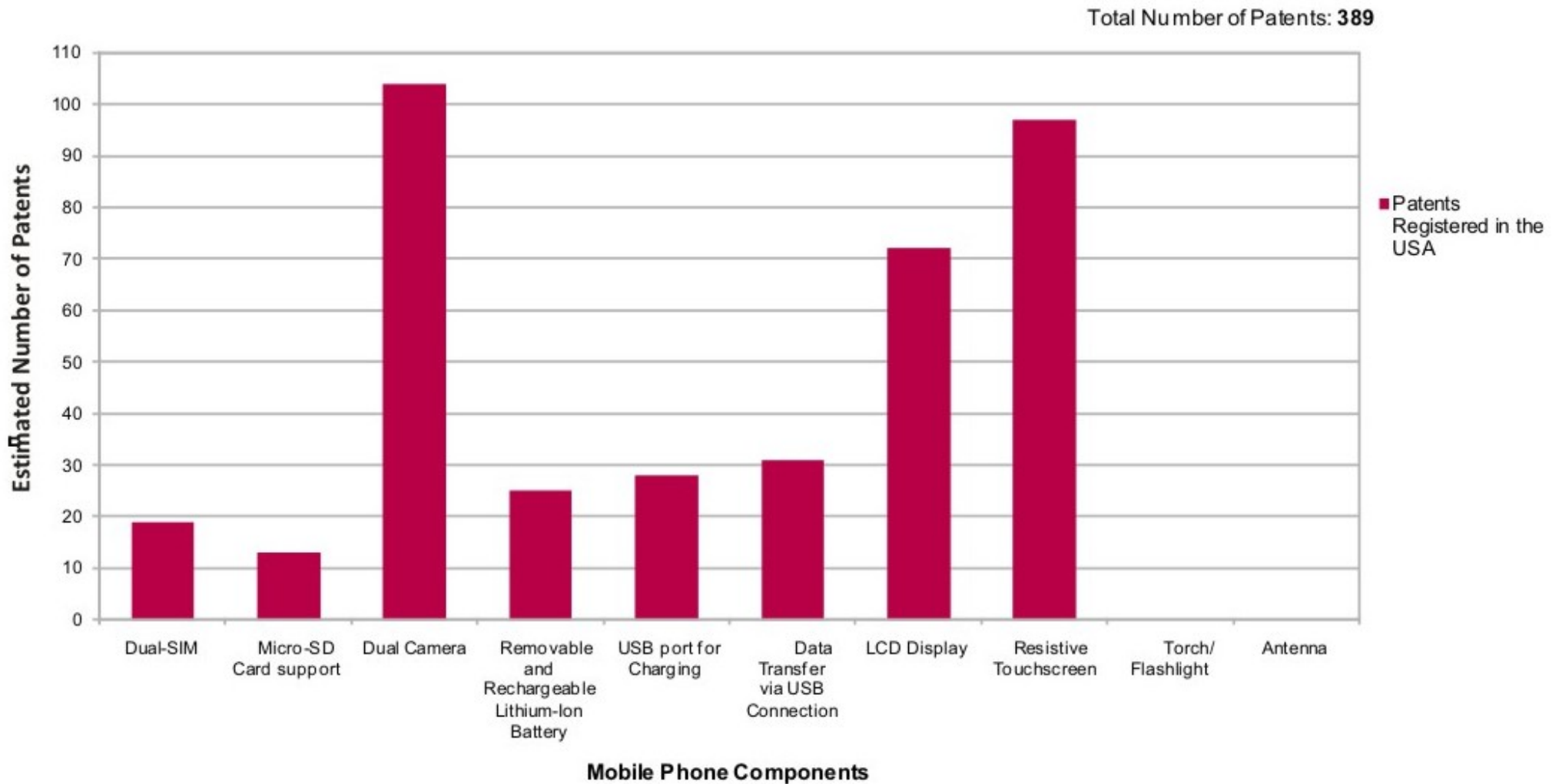
India-specific content
Proprietary App Store

013 Specifications							
General	SIM	Capacity	2	Multimedia	FM radio	Yes	
		Standby	Dual		Audio recorder	Yes	
	Battery	Type	Lithium-ion		Analog TV	No	
		Model	BLV-3		Audio	.mp3, .mid, .amr, .aac, .wav	
	Ports	mAh	1000		Images	jpeg, jpg, .bmp, .png, .gif	
		Charging	microUSB-B to USB		Video	.mp4, 3gp, .flv, .avi	
	Network	Audio Jack	Yes, 3.5 mm		Other	.txt, .vxp, .mvp	
		2G	Yes		Camera	Primary	Still images Yes Video recording Yes Mega-pixels 1.3
	3G	No	Secondary			No	
	Features	SIM1/SIM2	GSM/GSM		Messaging	SMS	Yes
			EDGE	No		MMS	Yes
		Data	Bluetooth	Yes	Applications	Email	No
			WLAN (WiFi)	No			Games
		Memory	WAP	Yes	Free	Talking Tom Cat, Angry Birds	
			Internal	88 KB	Browser	n/a	
		Languages	Exchange via USB Connection	Yes	Social Media and Communication	Facetalk, Twitter, Skype, MSN, Yahoo! Messenger	
			Interface	English	Other	Hungama Video, Hungama Movies, Hungama Music, Light Stick, Phone Location, Proprietary App store, Answering Machine, SIM Toolkit	
		Other	Keyboards	English, Hindi, Tamil	Touchscreen	Yes, resistive	
			Antenna	No	Antenna	No	
		Torch	No	Torch	No		
	Other	PC Suite	Other	PC Suite			

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013 Specifications

General	SIM	Capacity	2	Multimedia	FM radio	Yes		
		Standby	Dual		Audio recorder	Yes		
	Battery	Type	Lithium-ion		Analog TV	No		
		Model	BLV-3		Audio	.mp3, .mid, .amr, .aac, .wav		
		mAh	1000		Images	.jpeg/.jpg, .bmp, .png, .gif		
	Ports	Charging	microUSB-B to USB		Video	.mp4, 3gp, .flv, .avi		
		Audio Jack	Yes, 3.5 mm		Other	.txt, .vxp, .mrp		
	Network	2G	Yes	Camera	Primary	Still images	Yes	
		3G	No			Video recording	Yes	
		SIM1/SIM2	GSM/GSM		Mega-pixels	1.3		
	Data	GPRS	Yes	Secondary	No			
		EDGE	No		Messaging	SMS	Yes	
		Bluetooth	Yes	MMS		Yes		
		WLAN (WiFi)	No	Email		No		
		WAP	Yes	Features	Games	Paid	Mobile Fortune, Blackjack, Haha Up, Tap Tap Tap, Video Poke, 8 Water	
			Java			No	Free	Talking Tom Cat, Angry Birds
	Exchange via USB Connection		Yes		Applications	Browser	n/a	
			Social Media and Communication	Facetalk, Twitter, Skype, MSN, Yahoo! Messenger				
	Memory	Internal	88 KB	Other	Hungama Video, Hungama Movies, Hungama Music, Light Stick, Phone Location, Proprietary App store, Answering Machine, SIM Toolkit			
		External	MicroSD, up to 8 GB		Other	Touchscreen	Yes, resistive	
	Languages	Interface	English	Antenna		No		
		Keyboards	English, Hindi, Tamil	Torch		No		
				Other		PC Suite		

Initial findings - I

- Apple, Samsung, Sony, Hwang, NEC, STE, Fuji, MediaTek, etc.
- Rechargeable and removable lithium-ion battery – 25 (LTO pool owned by Hydro-Quebec and Technifin)
- Dual SIM – 19
- LCD display – 72
- 3 (maybe another 4) phones appear to use X chipsets. X is paying MPEG, GPRS and Bluetooth royalties.

Initial findings - II

- Royalty cap in India has been lifted. In China it is being considered. Compliance of royalty caps with international law has to be investigated.
- Voluntary pooling and voluntary licensing is not reducing uncertainty for manufacturers. For ex. LTE
- Pools have to be at the level of the product and not the standard.
- Prima facie there is need for the sub-100\$ Patent Pool

We need your help!
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