

LiMo Foundation



LiMo Practicals: Pointers For Developers

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www.limofoundation.org

Welcome to the Battlefield!



Your Cell Phone Is *Not* Your Desktop System.

Apple Mac Pro



- Gigahertz
- Gigabytes
- 30 inches
- 120 keys

Nokia N95



- Megahertz
- Megabytes
- 3 inches
- 12 keys



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It's Sorta the One You *Used* to Have, Though...

Power Mac G4 Tower



- 350 MHz
- 64MB RAM
- 6GB Disk
- Ethernet
(10 Mbps)
- \$2,500
- (monitor *not* included)

Nokia N95



- 330 MHz
- 128MB** RAM
- 8GB** “Disk”
- WiFi
(54 Mbps)
- Bluetooth**
- GPS**
- GSM/WCDMA**
- \$625**
- (includes monitor!)

...but at a quarter of the cost!

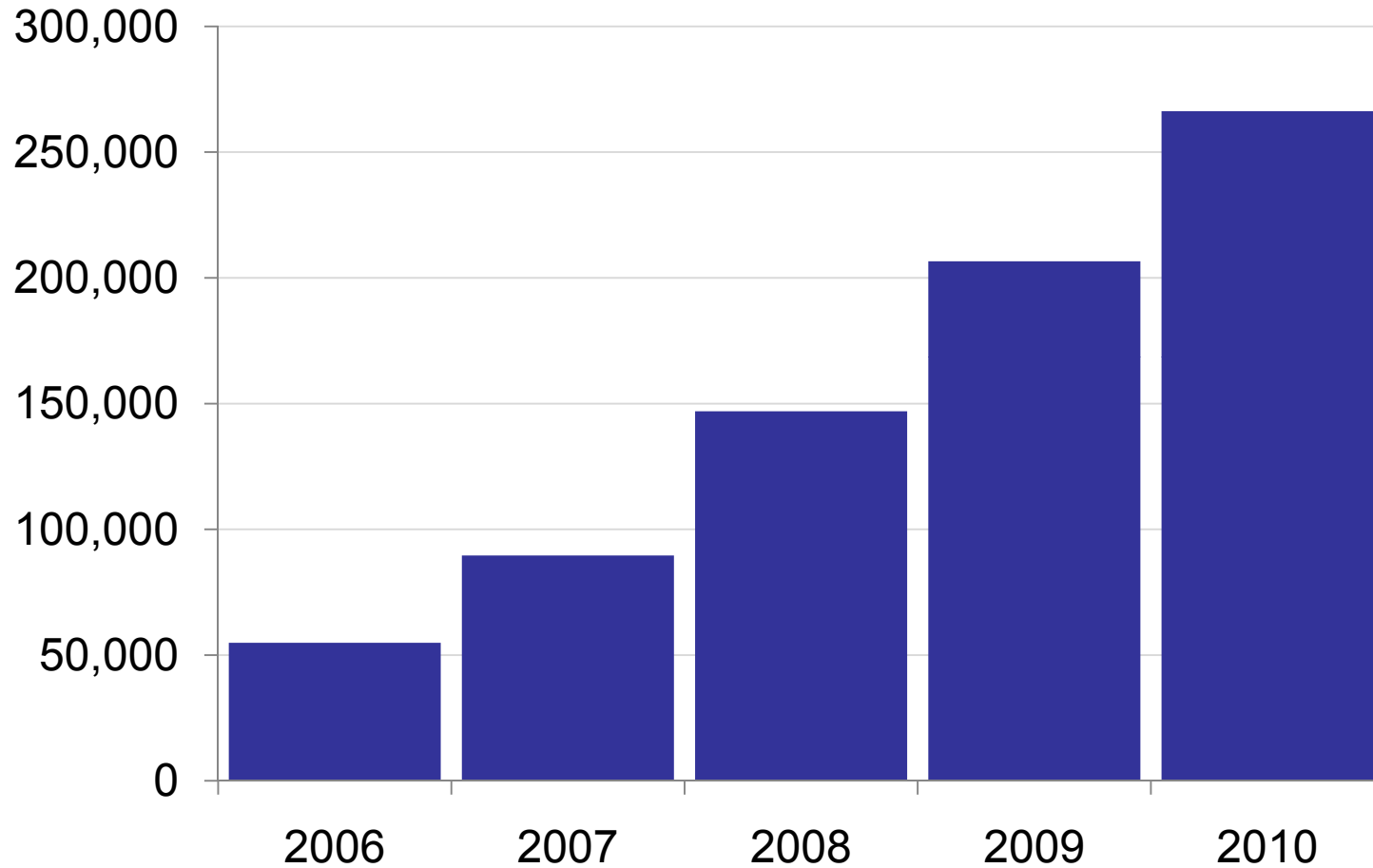


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Smart Phone Shipments Are Growing

Total Smart Phone Shipments (000 units)



Source: In-Stat, 2006

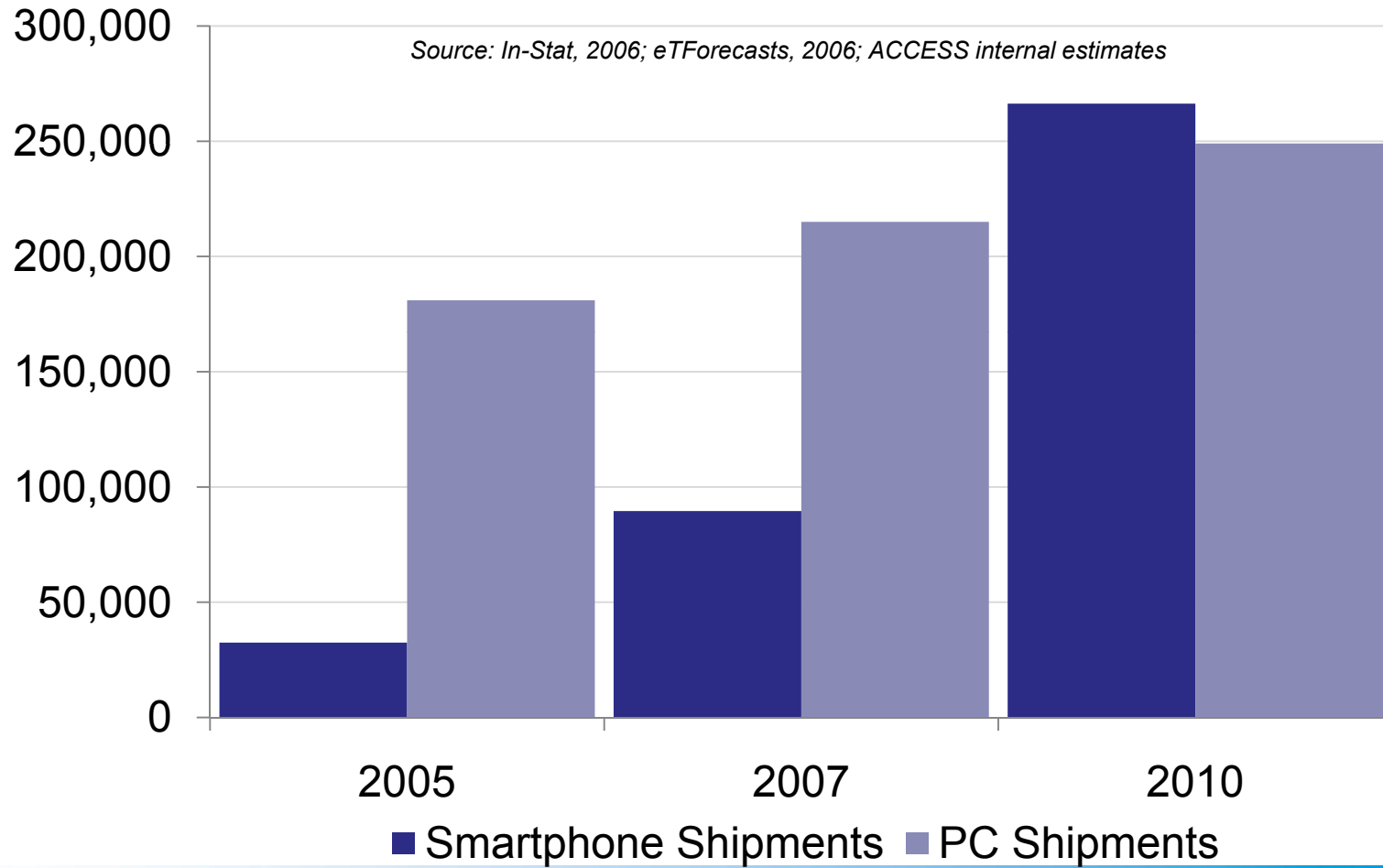


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Mobile Growth is Outpacing the Desktop

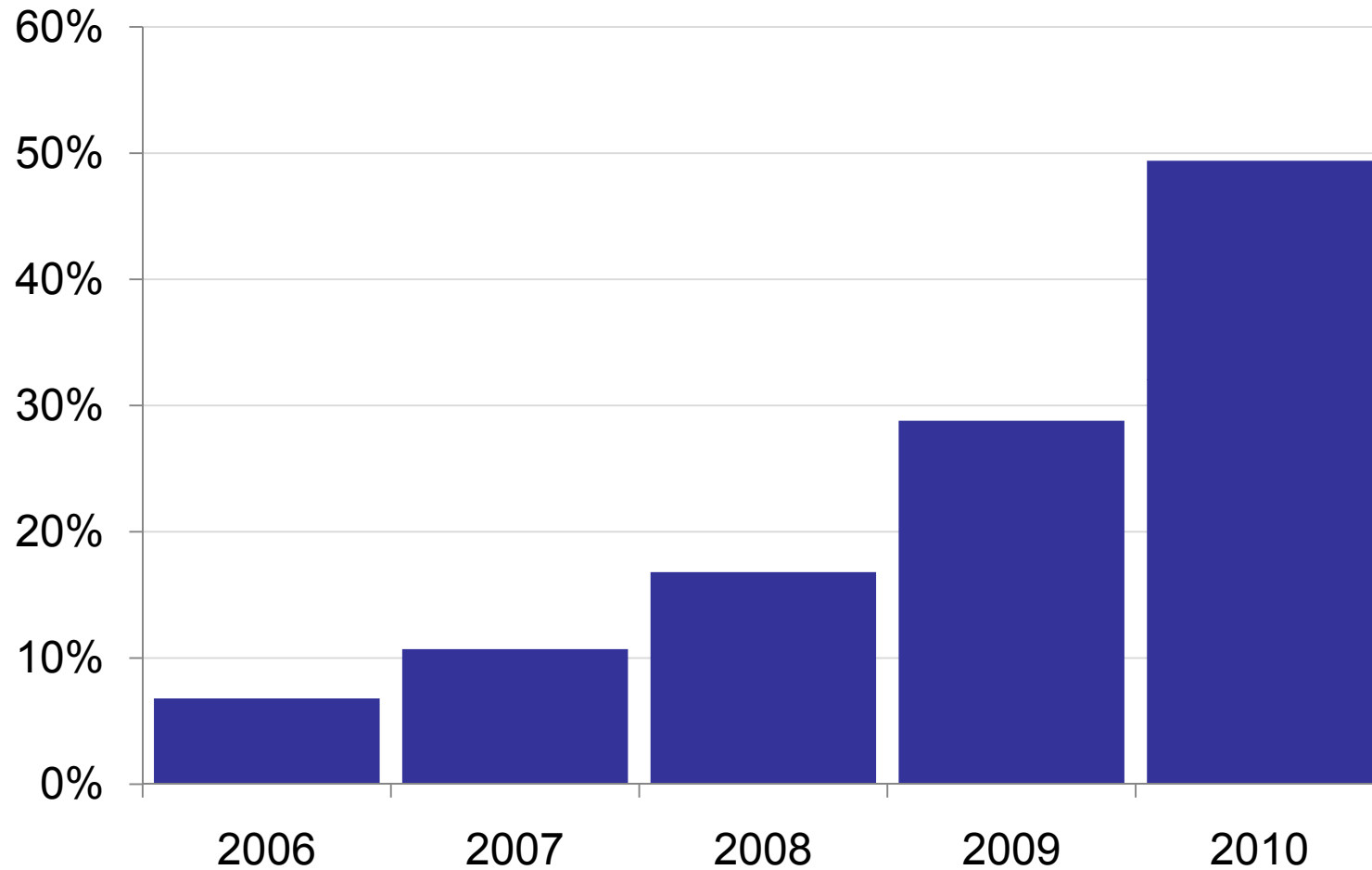
Smart Phone v. PC Shipments (000 units)



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Linux Will Take an Increasing Share



Source: Canalsys, 2006



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What is the LiMo Foundation?

- ❑ A non-profit consortium of industry leaders working together within a balanced and transparent governance model—with heritage and expertise deeply entrenched within mobile
- ❑ Founded at the beginning of 2007—rapid growth from 6 to 50+ participating member companies
- ❑ Directly involved in the real business of delivering next-generation handsets, applications and services—*NOT* a standards body
- ❑ Totally focused on “middleware”—avoiding business model conflict by not competing above the “value line” with UI or content offerings
- ❑ Pioneering Collaborative Source Strategy—reconciles cooperation and consistency *within* the platform with competition *upon* the platform



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The LiMo Foundation's Mission



Delivery of a consistent and competitive global handset OS
within which the collaborative benefits of shared cost and
innovation are realised and *upon which* diverse
commercially-driven differentiation freely thrives



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Global Leadership and Market Access

LiMo operator members manage in excess of half a billion subscribers
LiMo device-manufacturing members shipped 200 million phones in 2007.

Founding Members



Core Members



Global Industry Participation

Associate Members



A Foundation of Open Source

- ❑ The LiMo platform is based on mainstream open source code and projects
 - ❑ Linux kernel
 - ❑ “GNOME Mobile” technologies: GTK+, Gstreamer, D-bus, BlueZ, ODBC/SQLite, etc.
 - ❑ Webkit



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A Focus on “Middleware”

- ❑ LiMo members work to “fill the gaps” in the basic open source platform needed to create mobile devices:
 - ❑ Telephony, messaging, device management, etc.
- ❑ After-market content, including applications, can be freely developed and marketed
- ❑ Carriers and device manufacturers specify user experience, etc., above the “value line”

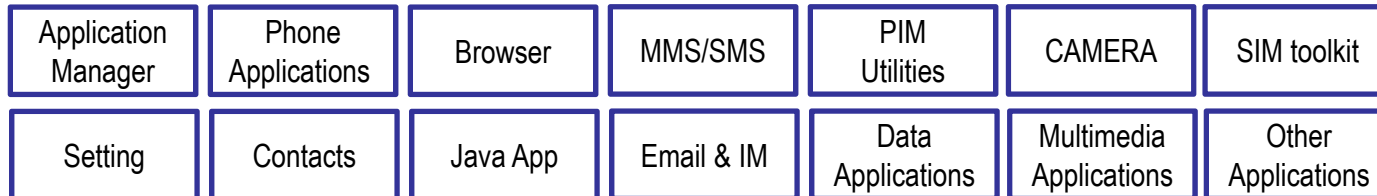


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LiMo Middleware Platform Components

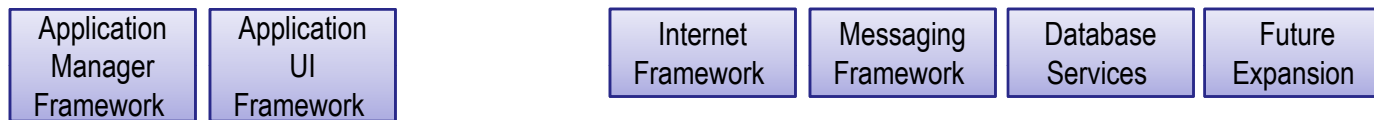
Application Layer



Application Manager & UI API

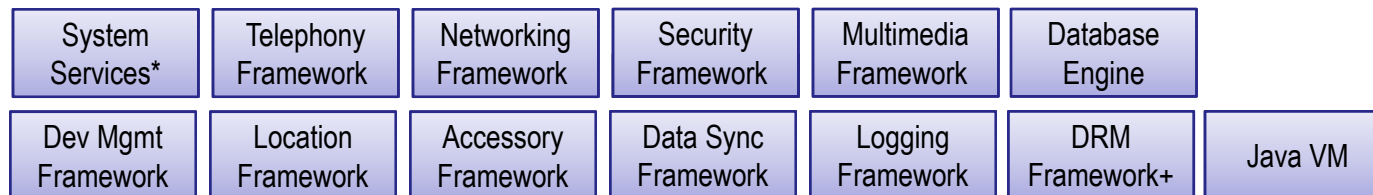
Application Engine API

Application/UI framework & Application Engine Layer



Terminal Service API

Middleware Layer



Kernel Layer

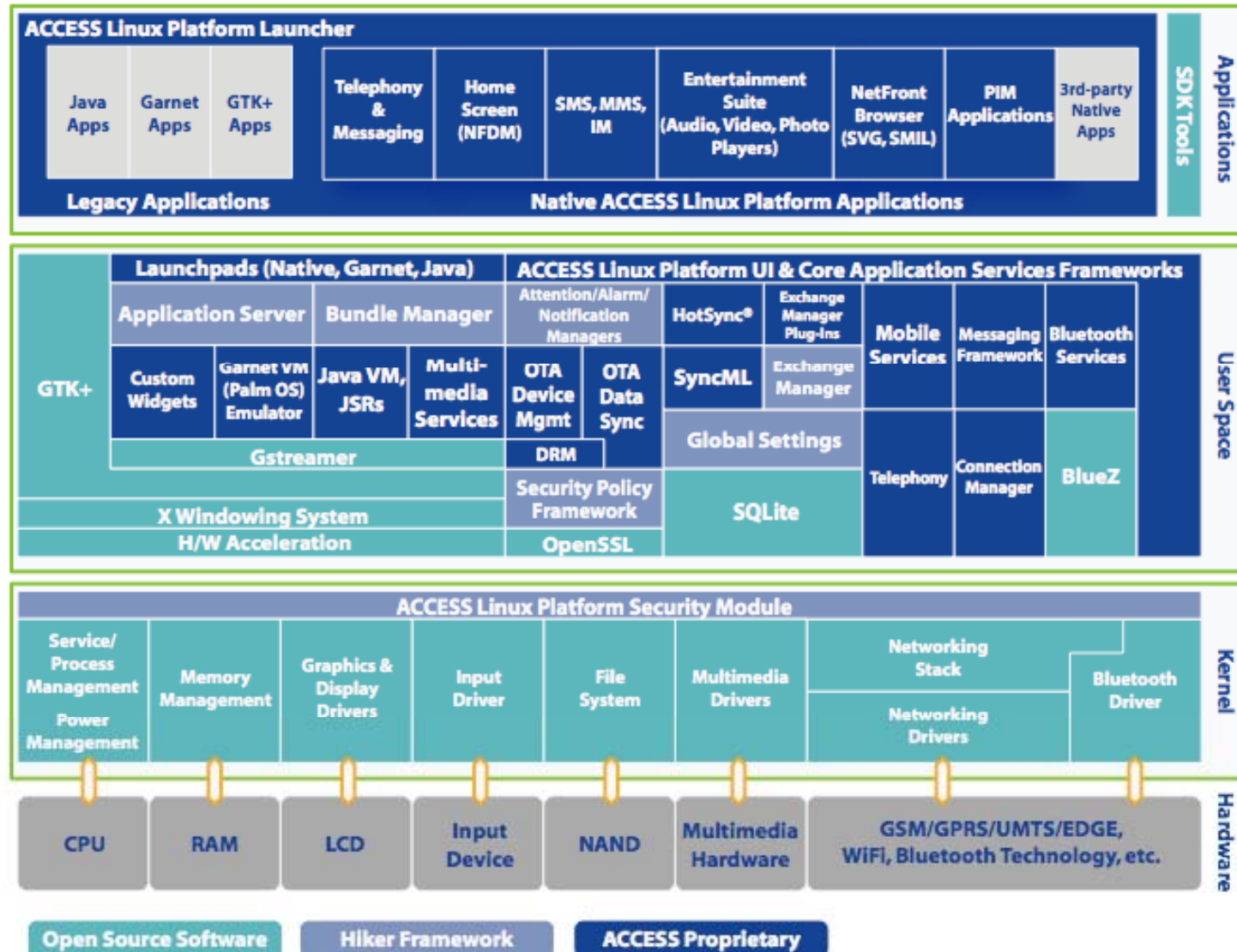


LiMo-Distribution









Member Contribution

- Frameworks and Services are contributed by LiMo members through Collaborative Source development model
- Contributions will be phased across three releases to ensure sustainable growth, revisions and implementations

The ACCESS Linux Platform™



LiMo handsets already with consumers

Motorola		MOTO U9, MOTO Z6w, MOTOROKR Z6, RAZR2 V8, RAZR2 V8 Luxury Edition and MOTOROKR E8
LG Electronics		LG LiMo Phone (Prototype)
NEC		N905iu, N705i, FOMA N905i and FOMA N705iu from NEC
Panasonic		P905i, P905iTV, P705i and P705iμ
Samsung		SGH-i800
Azingo/Broadcom		Reference 3G Handset Design ("Martini")
Aplix		Opal (Reference Design)
Purple Labs		Purple Magic (Reference Design)

Collaborative Source Strategy

- ❑ The LiMo Platform is a combination of member contributions and Open Source technologies—costs and results are shared
- ❑ Mutual patent non-assertion enables contributions to be made safely into the platform and patent royalties to be offset
- ❑ Fragmentation is managed through sharing of fixes and optimizations—continual quality and performance enhancement
- ❑ Competition based upon the common platform is empowered
- ❑ Developers will benefit from broad deployment



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What's in it for developers?

- ❑ The LiMo Platform is based on well-known, widely-used, community-based open source software
 - ❑ GTK+, Gstreamer, B-Bus, BlueZ, SQLite, etc.
- ❑ The development environment is open and uses (for the most part) standard APIs and programming practices
- ❑ Developers set their own business terms
- ❑ Developer participation is unencumbered
 - ❑ Barriers to entry are small
- ❑ Mainstream open source will have the broadest reach



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Who's "Open"?



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Comparing the Options

	Apple iPhone	Android	LiMo Platform
Community-based Open Source Software?	No ❖ OS x Embedded + Quartz	Someday, maybe ❖ Linux + Daivik VM + "SDL" + Android middleware ❖ To be released when phones ship (2009?)	Yes! ❖ Linux + GTK, Gstreamer, BlueZ, etc.
Open Platform?	No	No Architecture is unusual, to say the very least	Yes!
Open Development Environment?	In part ❖ Objective C only. Apple controls distribution.	Not so far ❖ Java-only, object-oriented model.	Yes! ❖ C, C++, Java, web widgets, etc. Multiple execution environments.
Open APIs, Format and Protocols?	No	Take 'em or leave 'em Still undergoing significant change	Yes!
Open for Business?	Only just, for \$99 plus 30% of revenues	Not yet	Yes!



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How to Get Started?

- ❑ LiMo “Release 1” APIs are documented at
 - ❑ <http://www.limofoundation.org/en/technical-documents.html>
- ❑ LiMo-compatible SDKs will be coming out in the next several months (ACCESS will be providing the native SDK)
 - ❑ Preliminary SDKs are available now: <http://accessdevnet.com>
 - ❑ Standard GTK+ applications should “just run”...
 - ❑ Much customization will be picked up automatically via “theming”, etc.
- ❑ Participate in the “GNOME Mobile” discussion
 - ❑ mobile-devel-list@gnome.org



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Conclusions

- ❑ LiMo represents a unique collaboration between commercial and community interests
 - ❑ Community delivers the core platform
 - ❑ LiMo members fill the gaps to complete a mobile-ready offering
- ❑ Open source-based systems are the clear growth path in mobile
- ❑ Devices are coming out on the market
 - ❑ development tools from LiMo members as well
- ❑ The mobile open source space represents an unprecedented opportunity for developers



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THANK YOU!



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