

Hi, my name is René Heuven. Many might know me as a Symbian trainer. If not, I am running a small company called Inmote. This stands for INto MOBILE TEchnology. This a small, but very high expertise company which builds currently solely on Symbian OS technology. We are 4 persons. And execute customer projects in the Netherlands and Germany. Training goes globally. For 2010 we target 300K. For 2011 we will go multi platform (Nokia platforms including MeeGo and Qt plus Android) and target at minimum 450K and will grow hopefully towards 6 – 8 persons. Plans for 2011 are not yet fully finalized.

What I like to do with you today is to have a look at Symbian OS and discuss the endless opportunities this mobile OS offers compared to other mobile OSes and how to make money by programming for Symbian OS.

Symbian OS – open source



- Eclipse license
- Access to all source code
- Device creation
- App / mobile service creation

- Open source advantages

- Open source drawbacks
 - Time to develop an application is difficult to estimate due to huge amounts of code with unknown quality.

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First of all Symbian OS is open source. So this gives you access to all source code which means you can easily evaluate if your mobile application or service is feasible and how you can deeply integrate it with existing services.

Example: we created a low dialer application as a customer project. To make a call the end user does not need to start a special application, but just make the call as normal in the Idle screen. The application intercept the outgoing call, hangs up and initiates a new call to a gateway. All this happens without the need for the user to do any special action – he just continues making phone calls as he is used to – only now he pays less.

This deep integration would not be possible on Android, iPhone or BlackBerry.

Symbian OS provides all the required tools for application development. And Symbian OS provides all the required tools to develop your own devices including a way to make phone calls (using AT commands to a modem). See the Wild Duck project where they use a Beagle Board plus GSM modem extension board.

Now the open source situation might change due to the announcement by Nokia this Monday. However, Nokia stays committed to Symbian OS and has announced a direct and open model to work with partners – so that means us – 3rd party development companies. And Nokia will focus – and has a drive to win the market. So these changes might not turn out bad at all for developers.

Competition – Android?



Global Smart Phone Market Share in Q2 2010
(Shipments in Millions of Units)

Q2 '10 Rank	Unit Shipments	Q1 '10 Unit Shipments	Q2 '10 Unit Shipments	Q1 '10 Market Share	Q2 '10 Market Share	Q2 '10 Sequential Percentage Growth
1	Nokia	21.5	24.0	38.5%	39.7%	11.6%
2	RIM	10.5	11.2	18.8%	18.5%	7.0%
3	Apple	8.8	8.4	15.7%	13.9%	-4.0%
4	HTC	3.0	4.9	5.3%	8.0%	63.1%
5	Samsung	1.8	2.8	3.2%	4.6%	55.6%
6	Motorola	2.4	2.7	4.3%	4.5%	12.5%
7	Sony Ericsson	1.3	1.5	2.3%	2.5%	15.4%
8	Sharp	0.7	1.1	1.3%	1.8%	48.7%
9	Panasonic	0.9	0.7	1.6%	1.2%	-22.2%
10	NEC	0.8	0.6	1.4%	1.0%	-21.3%
11	Palm	1.0	0.5	1.7%	0.8%	-50.0%
	Others	3.2	2.1	5.8%	3.4%	-36.1%
	Total	55.8	60.4	100%	100%	8.2%

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Despite often negative press on Symbian OS this operating system keeps taking the lead as confirmed by multiple market data research organizations. Figures in this table from iSupply show Nokia has increased his market share in the global smart phone market from Q1 2010 into Q2 2010 with 1.2% to 39.7%. This is almost 40%! Two times as much as RIM Blackberry – three times as much as Apple! If we add HTC, Samsung, Motorola and Sony Ericsson together (19.6%) and interpret these are all Android (which is not the case) then Symbian OS still outnumbers these by a factor of two.

The Nokia share must come from S60. Maemo is not selling for Nokia. We talk here about smartphones only – so S40 is not included. Note Apple is losing ground. Android is growing rapidly. But the market share of Symbian OS is stable and high!

Inmote currently is a Symbian OS only company. Due to rapid growth of Android it makes sense to add this operating system into the portfolio, but we could skip iPhone (also because we would face a huge competition with other app developers for iPhone).

Very important note: These figures represent shipments in Q2 2010. Conclusion: Every time a competitor phone is sold, two Symbian OS phone are sold. So the installed base for Symbian OS keeps widening compared to its competition!

Market volume – installed base



- ❑ Largest installed base for Symbian OS
 - ❑ Apps are purchased by people that have a phone, not people that still have to get a phone to run your app!!!
 - ❑ You can sell more apps in a mainstream market as in early adopter market.
- ❑ Installed base will keep growing, because Symbian OS offers choice to consumer:
 - ❑ Symbian OS still selling twice as much as nearest competitor!
 - ❑ Phones available in different form factors
 - ❑ Touch
 - ❑ Keypad
 - ❑ Phones available at different price points
- ❑ Backed by Nokia (how could you loose?) and many operators (Board: AT&T, NTT DoCoMo, Vodafone)



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Symbian OS is a platform which will be there to stay in the market place.

<http://www.gartner.com/it/page.jsp?id=1434613> – 10 September 2010:

Gartner expects that Symbian and Android together will account for 59.8 percent of the total worldwide mobile OS market by 2014, split almost equally--Symbian with 30.2 percent, and Android with 29.6 percent.

Gartner thinks Symbian will still lead the mobile market in 2014 due to "Nokia's volume and the push into more mass-market price points." Android's success can be attributed to "communication service providers' marketing and vendor support," Gartner said.

Read more: http://news.cnet.com/8301-13506_3-20016052-17.html#ixzz14otlPR00

<http://www.idc.com/about/viewpressrelease.jsp?containerId=prUS22486010§ionId=null&elementId=null&pageType=SYNOPSIS> – 7 September 2010:

IDC says that Android OS will take the second spot behind Symbian in 2014. Android's worldwide market share will be 24.6 percent, compared to Symbian's 32.9 percent.

Nokia expects to sell 50 million Symbian³ phones. I was at a Qt Workshop on Monday and Nokia Benelux told us there is 2 million Symbian OS smartphones around in the Netherlands. This generates 30.000 Ovi store downloads per day – only in the Netherlands!

Distribution & revenues models



- Ovi Store
- Horizon
- Other stores
- Viral
- Operator support
- Direct (Traditional)
- Open Signed
- ROM embedded
- Memory card
- Trial
- Per use
- Subscription
- IMEI or IMSI restricted
- Direct sales (license)
- Revenue share
- Loan
- Contracting
- Advertising

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Symbian OS does not restrict you how you sell your applications! There is the Ovi store, but there is many alternatives available. You decide yourself what is the best option to make money – use the Ovi store for reach to the consumer market or try to close a deal with an operator or larger business customer directly.

Applications can be distributed through Ovi Store, downloadable through a web link in SMS, pre-installed in ROM or on memory card. How you distribute and sell is mainly up to you – same applies to the marketing effort – using Symbian OS you can just apply common sense marketing rules – segment, approach, convince the customer of the USPs and close the deal.

Fun is competition is still reasonable low. Symbian OS programming is considered difficult. There is only a limited amount of companies programming for Symbian OS. Qt will ease the job. So people who make an entrance now can have an early mover advantage. Nokia has to win back the high market and they need us – the developers – so partner and benefit from the market reach that Nokia has.

Technology

- ❑ Mature software stack
- ❑ Software architecture allows many “plugins”
- ❑ Software architecture allows eclipsing of ROM components
- ❑ Development based on C/C++
 - ❑ Performance!!!
 - ❑ Open C/C++ allow code sharing with other platforms
 - ❑ Low level access to hardware (device drivers)
- ❑ Now Qt cross-platform development
 - ❑ Faster UI development!!!
 - ❑ Sharing code for mobiles on Mac, Linux, PC desktops
- ❑ Symbian OS has no limitations for app / service development!



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On Android you will be using Java for development. Also using the NDK you will not be able to run all C/C++ code on Android!. There is not a lot of performance problems on Android, but Java limits you in the set of available APIs, hence on the level of integration of your app with the operating system.

In Symbian OS you can write plugins and device drivers. And you can install them on end user devices!

Project recommendations



- ❑ Identify technical risks as early as possible in the project.
 - ❑ Put most talented developers on these tasks.
- ❑ Start with a proof of concept!
- ❑ Use iterative development approach during the project with intermediate internal customer releases (1 per week max).
- ❑ Intermediate releases use a developer certificate with IMEI from Inmote and it's customer.
 - ❑ Archive all binaries for easy resigning if more IMEIs are added to the certificate
- ❑ Submit application early to Symbian Signed to test what problems will occur.
- ❑ Plan how to deploy updates to the end users.



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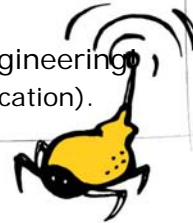
Note that a survey performed by Vision Mobile showed the total development time per application is actually faster as for iPhone (Mobile Developer Economics 2010 Report FINAL.pdf) for novice (=beginner) Symbian OS developers.

Certification of your application



- ❑ Need publisher ID from TrustCenter (200 USD/yr)
- ❑ Avoid Certified Signed (150 euro) if possible
 - ❑ Use Express Signed (10 euro)
 - ❑ Open Signed for small user groups **SYMBIAN SIGNED**
 - ❑ More flexible if updates are needed
- ❑ Plan time for Symbian Certified Signed
 - ❑ 1st round: 1 – 3 weeks turn around
 - ❑ Subsequent rounds: 1 week turn around
- ❑ Signing provides no protection against software piracy!
 - ❑ Protect by own license module or DRM
- ❑ Signing provides no protection against reverse engineering!
 - ❑ Protect by own secure installer (encryption or obfuscation).

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Sample app – IPTrace

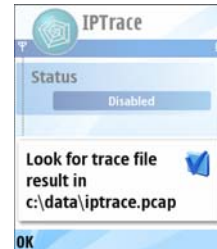


- Development costs 2 – 4 weeks = 8000 e.
- Marketing costs time (write about IPTrace)
- Signing costs 2x 150e.

- Application life time estimated: 3 years.

- Direct Sales 3000e / yr.
- Ovi Store 1500 downloads?

- Spin off business
 - VPN clients
 - Web filter project
 - Analysis of mobile internet performance & usage



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IPTrace is a small application we developed at Inmote. It allows you to make a Ethereal/Wireshark trace file on the phone. This will log all incoming and outgoing TCP/IP traffic. Very useful for analyzing performance and problems with web services. It is a spin off from a customer project we executed for Series 60 2nd Edition.

Determine a break even point for your application and estimate the risk that you will not meet the break even point.

Deciding whether you will create a certain application or service will also depend on already existing skills and assets you have in your company and what other market opportunities you can get your hands on.

Note that pay on a hourly basis almost always is more beneficial as a fixed price project or product licensing. This may change as companies grow.

Sample app – social media

- ❑ Development costs 25 weeks – 50k
- ❑ Marketing costs 15k
- ❑ Signing costs not significant
- ❑ Reusable SW components 5 weeks – 10k

- ❑ Application life time estimated: 1 year
 - ❑ Needs continuous development

- ❑ Ovi Store 10.000 downloads?
- ❑ Direct sales to a social media company or operator – 75k per deal?



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All scenarios show there is a high risk by going through Ovi Store as a business model. You have to invest a lot of time upfront with the risk of being overtaken by competitor or being hit by a disappointing number of downloads.

Summary



- ❑ **Open source + volume + mature technology = business opportunity.**
- ❑ Reuse of software components possible at DLL level!
- ❑ Our business model is contracting; products are spin off.
- ❑ Additional sources for help:
 - ❑ Forum Nokia
 - ❑ Symbian Foundation Wiki & Forums
 - ❑ Training (Inmote ;)
 - ❑ Books & Booklets

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Think carefully what assets your company has – translate competences and skills built from previous projects into technology components which you can re-use and turn into products for a different context. **Making money is about leverage of existing skills and assets.**

Inmote uses professional services (contracting) as it's basis. In 2011 we will try to turn into a product / services mix. For services we look at operator business and enterprise solutions.

Example: 1) we developed secure sync of mail, contacts, and agenda in a customer project. This allows us to easily develop own products that sync non secure. The knowledge allows us to sync databases in general using SyncML which can be used in a mobile sales application. 2) we developed a social media application in a customer project. For this we needed a HTTP engine and JSON parser. We can now use this knowledge to create other social media applications which we can sell through Ovi Store.