
Smartphones 2010: Time for Operators to Take an End-to-End View

Northstream White Paper

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Executive Summary

About this Paper

- This white paper provides Northstream's views on the importance of smartphones for the mobile operator business.
- Our analysis is made from an operator viewpoint, but is equally relevant for decision makers at other stakeholders such as device vendors, application developers or service platform vendors.

Highlights

- During the last six years, smartphones have developed into one of the most lucrative segments of the mobile phone industry. Shipment volumes have increased dramatically, and so has the number of competing vendors, operating systems and consumer applications.
- Smartphones are expected to become one of the main internet access channels within the next few years. Their platform openness makes it possible for consumers to use third party services that bypass the operators' service and billing platforms. This is just one of the reasons why even operators with no own device strategy or service development must consider the impact of smartphones on their business.
- Northstream recommends analyzing this impact in an end-to-end approach, embracing four key operator assets: Network capabilities, user data management, service & tariff strategy, and device portfolio.
- Every operator should perform its own analysis of the opportunities and risks in the smartphone business. The different operating systems can be compared using various criteria, such as market share, user experience, or the level of potential operator influence.

Smartphones – From Geek Products to Mass Market Terminals

Rather than just phones with advanced capabilities of running third party applications, today's smartphones are mobile internet stations with a constantly widening choice of custom-made online applications and hardware features.

Figure 1 shows how different today's market is compared to six years ago: In 2004, only 4% of mobile phones sold were smartphones, while this share is expected to increase to 27% in 2010. These perspectives attract a growing number of players, not only handset vendors but also operators, laptop vendors and online service providers.

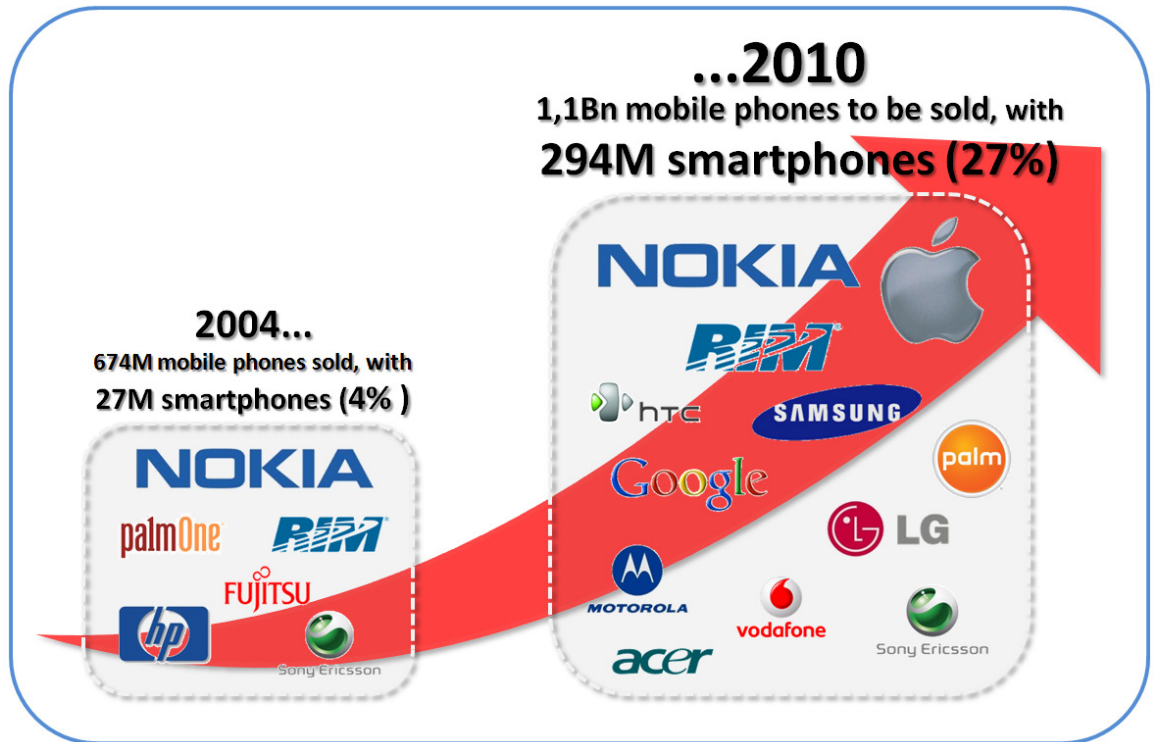


Figure 1: Development of the Global Smartphone Business 2004 - 2010.
Sources: Northstream, ARC Group, Canals, Gartner and Informa

In the future, we expect the market to further widen, taking share from the lower-positioned feature phone segment. Vendors will provide more segmented portfolios of feature-rich connected devices, optimized for online services (IP communication, imaging, media streaming, navigation etc.), but also supporting local connectivity with consumer equipment such as game consoles, television sets or in-car multimedia. In addition, corporate users can expect better integration of business software such as Enterprise Resource Planning.

Device vendors are attracted by the smartphone market not just because of the volume growth: Smartphones provide better differentiation potential than simpler phones, and they can be sold at higher profit, provided that scale effects are exploited, operator partnerships are in place and consumers accept premium prices. The performance of Apple illustrates this: According to Strategy Analytics, Apple yielded \$1.6 bn operating profit on sales of seven million iPhones in Q3 2009; a profit of over \$228 per device.

This shows the market's potential for scale effects even when there are many competing operating systems. Platform fragmentation is however an issue, as discussed in Northstream's 2009 white paper titled "Software Platforms for Mobile Devices", and continues to challenge developers, operators and handset vendors. But especially companies in the latter group often have little interest in agreeing on common platforms as it would reduce their potential for product differentiation.

With a growing number of vendors and platforms, operators need to understand which companies set the pace, what their focus is and how this relates to the operator's own strategy.

Over the last few years, North American companies have created an impressive lead, spearheaded by Apple and its iPhone. But also Google, RIM, Palm and Motorola are key smartphone players, albeit with different business objectives: In Google's strategy, the mobile

device is one of the access methods enabling its advertising-centric business model.

For RIM and Palm, increasing the penetration of their own OS is critical in order to remain market players with differentiation and attract developers. Motorola focuses on hardware, industrial design and user experience based on Google's Android OS as an enabler of its recovery as a mobile phone vendor.

Asian vendors remain key contestants especially for operators looking for customized devices. Manufacturers like HTC, LG and Samsung are looking to match the iPhone experience through faster processors, smoother user interfaces and a broad choice of consumer applications and form factors.

Chinese vendors like Huawei fuel the competition by betting on Android as a web-centric mobile OS. This enables operators to offer own-branded touchscreen devices as an alternative to branded smartphones sold at a premium price.

From Device Sales to an End-to-End Service Perspective

The expectations on how smartphones will change consumer habits are great: According to a Gartner study, mobile phones will overtake PCs as the most common internet access device by 2013. But already today, the volume of handset-based internet usage is massive: The success of mobile application stores, the consumer uptake of mobile data plans and the rapid usage growth of the Opera Mini browser serve as evidence for this trend.

Consumer demand for specific smartphones may leave operators with no option but to offer them to keep their handset portfolio attractive. But even then, it is important to understand the impact of promoting certain devices, vendors and developers, the applicable options and their consequences.

Not only is there a large number of vendors and operating systems to choose from, but also a wide array of use cases to monetize: Operators can promote specific devices, tariffs and third party applications; or commission bespoke mobile service clients under a dedicated brand – the latter illustrated through an on-device-portal application in Figure 2.



Figure 2: Screenshot of a Mobile On-Device Portal Client; Image courtesy of Ikivo AB

In Northstream's view, the question of how operators should position themselves in the smartphone business should not just be seen from a device viewpoint: Instead, an end-to-end perspective is needed, reflecting the growing impact of mobile devices on different parts of the operator business.

We regard **network capabilities** as the first relevant area: The expectation of cellular networks carrying a growing share of internet usage does not only impact capacity planning, but also areas like policy management, network security or the migration to All-IP networks.

User Data Management (UDM) is the second core operator capability, and is related to the previous area due to its roots in the operator core network. Operators can utilize UDM capabilities in order to provide personalized services to smartphone users; thereby increasing ARPU or at least improving customer retention. Further potential lies in user data such as location and device capabilities which can be monetized internally or for third party services.

The operator's **service & tariff strategy** is the third area impacted by the rise of smartphones: For the first time, many operators can tailor applications and tariffs to specific mobile devices. This provides an upsell potential both towards higher priced devices, but also higher value tariffs and applications.

The fourth and final of the key operator capabilities is the **device strategy**. This and the resulting portfolio will include smartphones to a growing extent, addressing various customer segments, use cases, brands and price ranges.

In summary, these areas all impact the end-to-end user experience and thus also the operator KPIs, as Figure 3 illustrates.

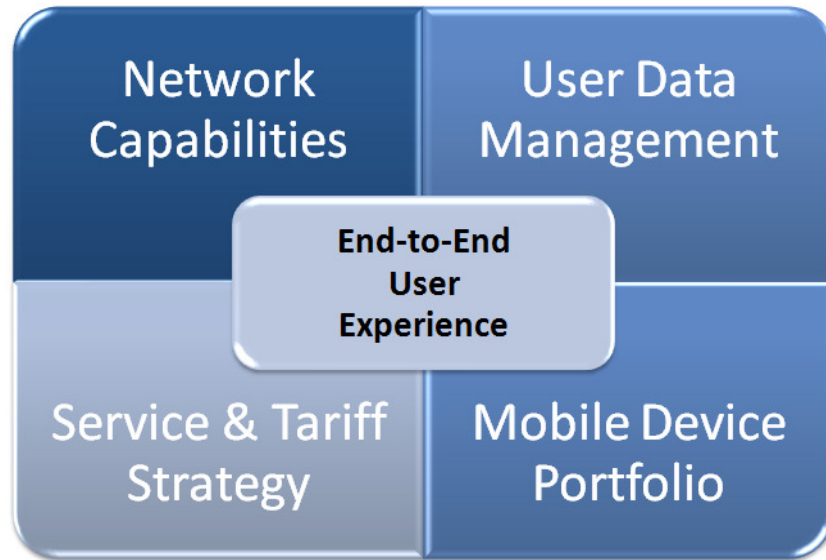


Figure 3: Device Strategies as Part of the Operator's Key Capabilities

Opportunities and Risks in the Smartphone Business

When addressing these matters, how to gauge the entailed opportunities and risks? A first area of potential gain lies in higher sales of mobile data subscriptions. Such contracts represent a welcome addition for operators not only for the ARPU growth but also because of higher profitability compared to data packages targeted at laptop users.

Going further, operators can engage themselves into service delivery by launching own-branded services. Examples include location-based services, mobile messaging for consumers and SOHO customers, co-branded media streaming services, online address books or data backup.

The mobile part of such services is more easily delivered to smartphones than to regular mobiles, as the smartphones' openness enables the distribution of rich custom-made applications even after device production. In addition to mobile services, operators can use smartphones as part of other propositions, such as fixed-line replacement, home entertainment, customer self service or web service authentication.

An additional upside exists as part of the above-discussed device strategy when coupled with the service offering: An attractive handset portfolio

supports the operator ambition of acquiring higher ARPU subscribers.

Potential downsides of promoting smartphones exist as well: Sales of data tariffs may grow, but profitability can be impacted if traffic grows beyond expectations, or traffic-heavy third party services become popular.

The cost for application development is another aspect influencing service profitability: The more operators become involved into service development, the more they need to consider the "state of the art" in user experience. Achieving a similar quality as embedded smartphone applications deliver may be unprofitable, unless the number of supported platforms is limited.

The different smartphone OS vary in their degree of openness. However, if there is a party controlling application delivery, it is usually not the operator but a platform vendor operating the application store. Some devices may offer even less operator control as they allow users to install applications from foreign sources without the need for digital signatures.

Operators should hence compare the opportunities and risks of the different platforms' openness: Promoting them without an own service proposition and without network policy management in place increases the chances of

subscribers using third party services that are not endorsed by the operator, such as VoIP or media streaming services. Figure 4 summarizes the

above considerations and provides an overview of the main opportunities and risks that we see for operators in the smartphone business.

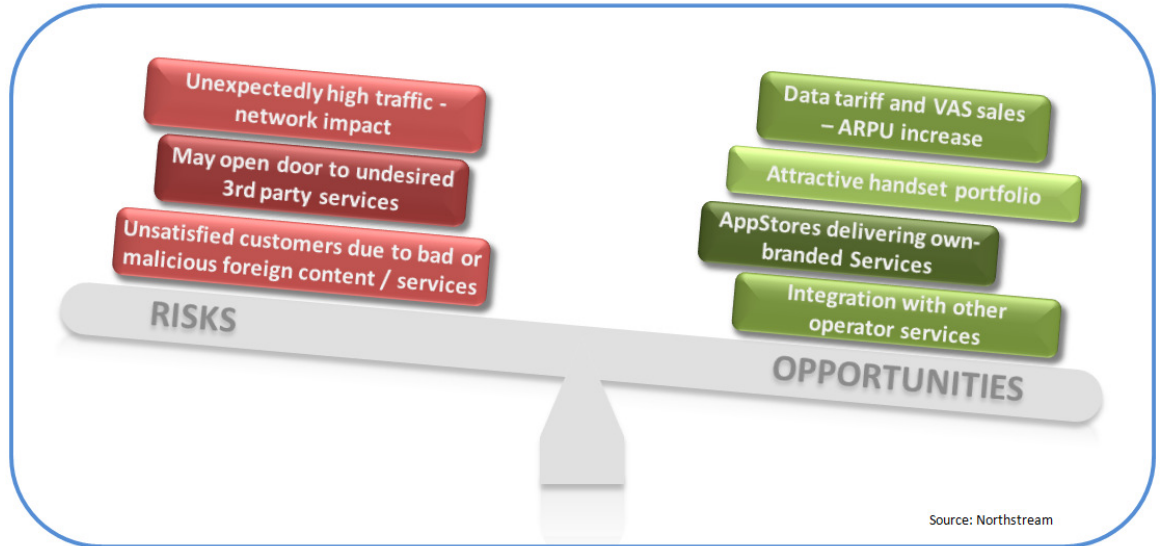


Figure 4: Operator Opportunities and Risks in the Smartphone Business

Irrespective of the risks, smartphones have become so important for the delivery of digital consumer services that mobile operators cannot ignore them if their goal is to secure revenues outside the pressurized voice and SMS business.

Operator Smartphone Strategies: Three Key Options

The previous chapters showed the relevance of smartphones for the operator business. Even those operators with little involvement in service development or device sourcing should develop a strategy for how to deal with the opportunities and challenges related to smartphones. But what are the available options?

We see three main strategies that operators can choose from. **Strategy 1** involves the sales of smartphones that have proven popular in the market. The promotion of device-related services is restricted to data access tariffs, while the operator refrains from offering value-added services or applications. This strategy supports the development of the operator towards a streamlined access provider carrying data and also voice services that increasingly come from third parties.

Strategy 2 aims at monetizing smartphones through partners that provide tailored mobile services and applications. Third party services are bundled and promoted in the hope of higher uptake of operator data tariffs and service packages. Operator network APIs can be part of

this strategy, as strategic partners can improve the service quality through direct access to network features and subscriber data. As a result of this strategy, operators can widen their position in the value chain with limited investments.

A high level of involvement in service delivery leads to **strategy 3** which focuses on operator-branded propositions. These can be delivered through customized handsets providing rich IP communication, media streaming, m-commerce or navigation. The choice of delivery channels can include PCs as large-screen devices with unique service rendering characteristics e.g. for video streaming or personal photo collections. This strategy provides highest differentiation potential, especially for Tier 1 operators, but comes with larger investments and risks.

Main Contenders on the Mobile OS Market

Irrespective of the chosen strategy, operators should track the development of the different smartphone operating systems, and which services they are particularly suitable for.

The relevance of each OS can be evaluated using different criteria. As a result of our analysis, we have chosen two criteria that we believe are most relevant for mobile operators: Market share and level of potential platform control.

Figure 5 below categorizes the world's major smartphone OS accordingly.

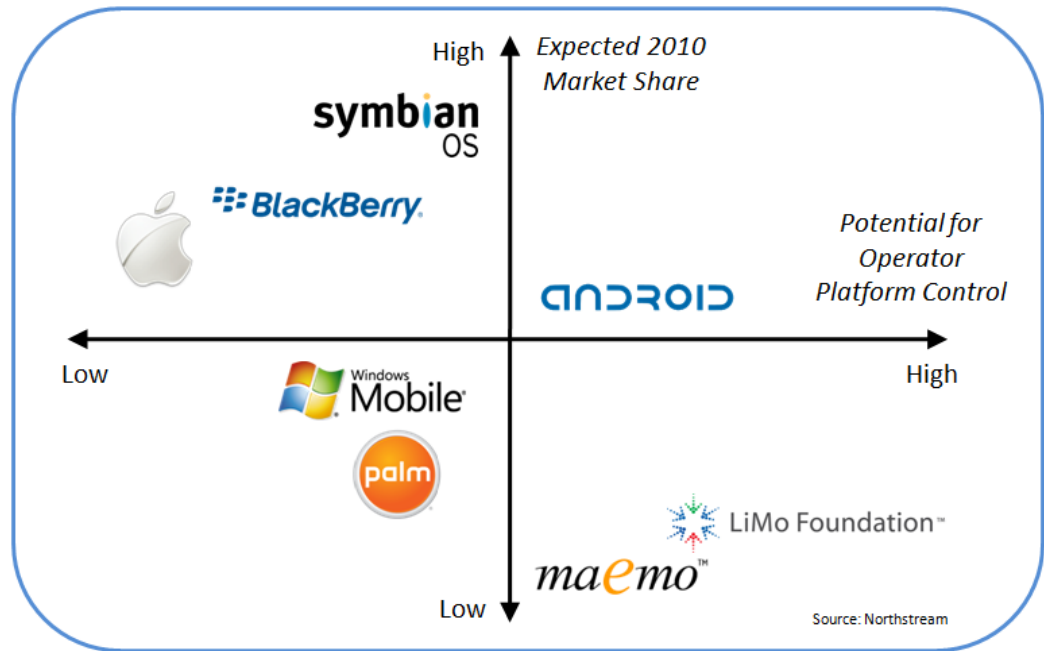


Figure 5: Categorization of Smartphone OS from an Operator Viewpoint

Operators should analyze criteria like those used in our graph with respect to their market and service strategy: The market share of a particular OS measured is important because application developers focus their efforts on those OS with most traction in the market, provided that they can achieve a certain user experience with acceptable efforts.

The level of control that operators can exert on the service delivery includes the potential for hardware and software customization through the device vendor, as well as the delivery of services through an application store, which may be exclusively managed by the OS vendor.

Operators with higher involvement into service delivery must ensure that their device strategy follows suit as part of an end-to-end approach. Devices from the right hand side of the graph should then be part of the portfolio.

For operators that do not intend to invest in service development, the level of platform control becomes less important. But even then, the threat of third parties offering services directly to mobile subscribers is an issue that must be considered, and may lead to a change of strategy once the uptake of such services reaches a certain level.

These considerations illustrate that the integration of device aspects into the service and network

strategies is becoming more important for operators. Understanding the smartphone market is a key fundament of all of these strategies – operators can no longer afford to leave this only to handset vendors, but should instead drive their own ambitions as part of an end-to-end view on digital services.

About Northstream

Northstream is a management consulting firm providing business and technology advice to the global telecom and media industries. We help our clients through independent and tailor-made analyses, advice, problem-solving and support. Our work is based on a well-balanced combination of innovation, industry best practices and in-house methodologies.

Clients across the world include mobile operators, network and device suppliers, application providers, investment banks, regulators and industry fora. Contact us to learn more about how we can work together to ensure your success smartphone business.

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