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NOKIA TECHNOLOGY STRATEGY

Technology underpins and drives all Nokia's business strategies, ultimately enabling the company's growth

Nokia's use of technology is a key contributor to the company's overall business goals. The right technology strategy provides revenue through differentiation, brings cost advantage and a favorable supply environment. It gives access to the right technologies at the right time, helps shape the future competitive landscape and encourages innovation through openness to benefit consumers.

Nokia aims for technology leadership in all device categories developing the most rewarding consumer experiences that allow people to connect to what matters to them. Success in technology also plays a significant role in enhancing brand reputation: the Nokia N95, the company's latest Nokia Nseries flagship product, is a recent example of how technology leadership builds value.

A major focus of Nokia's technology strategy is to give our customers choice and simplicity – keys to delivering the best user experiences. The company strives for an open technology approach that will encourage and support innovation in the industry, enable fast adoption of new technologies and advance healthy competition.

It is vital to make the right technology choices. Nokia's guiding principle is whether people will use the technology in their everyday lives to connect and share with others. Technologies need to be easy to use, seamless, interconnected and easily integrated. To ensure that new technologies meet people's needs, Nokia conducts consumer research and studies the ways in which people interact with mobile devices and use technology. This 'very human approach to technology' enables Nokia to bring new products and services to market at the right time and in the right way.

The choice of the technologies Nokia offers is strongly rooted in this understanding of customer needs and aspirations, leading to the best user experience and widest choice. As an example, in mobile TV, Nokia offers end-to-end solutions to deliver content-streaming via cellular on-demand or downloaded, using vodcasts over WLAN or broadcast live with DVB-H.

Nokia's business is supported by five technology priority areas – device technology leadership, smart connectivity; leading web evolution; user experience leadership; and providing the preferred innovation platform. These priorities are fundamental to the company to enable Nokia's growth and to meet consumer demand. Though not exclusive, they reflect Nokia's core strengths representing areas that are crucial for maintaining success and growth in the future.

There are numerous examples of how Nokia is applying these priority areas to deliver value on a day to day basis to create leading products that set it apart from the competition. The rapid rise in digital convergence and the breakthroughs in areas such as power management, materials, mechanics, camera, optics and electronics mean that today's smartphones can support several features of single-product categories on one device – combining for example, phone, camera, music player, video, computer games, and GPS. Nokia's technology focus drives and enables this increasing multi-functionality.

In addition to products for consumers, one key focus is on the enterprise sector and the Eseries range that offers complete mobile office solutions from devices optimized for business use to firewalls to

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mobile email solutions. All are designed to make business more effective and productive through more efficient use of mobile technologies.

Nokia is also active in standardization organizations and a strong advocate of open standards because of the opportunities they create for innovation, interoperability and new business benefiting ultimately the whole industry and, most importantly, the consumers.

Nokia has a strong track record in delivering technology market firsts. Examples include: world's first GSM call was made with a Nokia mobile phone, the first dual-mode tri-band handset for WCDMA and GSM/EDGE networks globally (Nokia 6630); the first Wi-Fi certified mobile device (both cellular and WLAN networks, Nokia 9500 Communicator); the first commercial DVB-H device (Nokia N92); the first commercial service management solution for DVB-H (Mobile Broadcast rel 3.0).

How Nokia implements technology to drive value to support its business, the industry and consumers

Revenue through differentiation

Technology leadership is key to making sure that Nokia's products differentiate from the competition by their superior quality and leading edge performance. Differentiation can be brought about in many ways, e.g.: the best power management, thermal durability and charging times; better sound and image processing and quality in cameras; the best selection of radio connections; superior materials, device ergonomics and user interfaces.

Cost advantage and supply evolution

Comparative cost advantage due to large volumes is key in all areas of Nokia's business and especially important when bringing new technologies to emerging markets where device cost is a deciding factor. With lower costs, the company sustains higher margins, and can offer consumers more for the same cost. Nokia also works to ensure that technology supply evolves in ways that allow the company to achieve maximum value.

Access to technology

Nokia aims to ensure access to the best technologies for its products and services with a full product portfolio in all markets. Competitive advantage can be achieved with the right decisions of what technologies to develop in-house, which to develop in partnership and which to purchase outside.

Shaping the future competitive landscape

Nokia strives for an advantageous market position through IPR creation, standardization, and horizontal software licensing.

Open platform for innovation

Technology and business innovation is increasingly driven by small, nimble companies - and consumers. Nokia's technology approach and architecture management aims to create platforms that enable these "third parties" to bring their ideas to mobile devices and eventually develop profitable

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business producing high-value products, applications and services. In the future, platforms supporting application development with standard web technologies will significantly increase the amount of companies and people who are able to innovate for mobile devices.

Nokia's technology priorities

Smart Connectivity

Smart Connectivity offers the ultimate connection management in a device by switching between different radio connection types seamlessly based on the user's settings to select the best network available for coverage, cost, connection speed or any other factor.

Nokia is the leading mobile device manufacturer for bringing multiple mobile radio connections to a single device. It will continue its technology lead to provide competitive radios that are easy-to-use, offering impressive connection quality. The company will also sustain its innovation in multiradio technologies such as UMA, VoIP/WLAN, and mobile TV to create new business opportunities for its industry partners.

Nokia's multiradio device portfolio includes the widest choice of wireless technology combinations in attractive packages – for example, the Nokia N95 with six radios including HSDPA, WLAN and GPS.

Lead Web Evolution

Nokia wants consumers to enjoy every Internet experience that is available on a PC with their mobile devices. Additionally, those experiences will be enhanced with information about the consumer's location and context as well as the convenience of mobility, permanent availability, and familiarity of a personal device. Nokia was the first to introduce desktop-like full Internet browsing to mobile devices with the Web browser for S60 in 2006, available in 27 in S60 devices sold today.

Mobility will very much drive the next wave of the Internet, by bringing new interactivity, location information, and richer personal contexts: a good example is integrating location information to calendar or contact information on the device to offer place relevant services to the consumer. Nokia will take an industry leadership role in defining and implementing these new flavors, bringing the technology enablers and services for the best Internet experience on the move.

User Experience Leadership

Nokia is committed to continuous improvement of the basics of device operation, such as power management and software performance, as well as developing new ways for users to interact with devices. The aim is to surprise with simplicity - hiding the growing complexity of technology to bring a smooth user experience.

Nokia will continue to bring out innovations in user interfaces that will, as they have in the past, define how people interact with mobile devices. Widespread Nokia innovations in this area include the key

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lock, different profiles for general, meeting, outdoor and silent use, personalized ring tones and device covers, and the central navikey to navigate the device menu.

Become Industry Preferred Innovation Platform

Nokia's strategy is to increase the value of its devices and the competitiveness of its software platforms by offering the widest availability of digital content and services for consumers, provided by Nokia together with the industry's best and largest developer community.

Success in the fast innovation pace of the Internet age is dependent on the openness of companies to allow external developers to innovate and build sustainable businesses on top of open platforms that provide exciting applications and experiences. Nokia will enable this innovation with consistent architecture which protects developers' investments in software codes and skills. The company is committed to making software access easy for developers, and will implement consistent and well-documented APIs to become the industry-preferred innovation platform.

Nokia provides extensive technology support for developers through its online community, Forum Nokia.

Future markets

The mobile device market will continue to expand. The GSM Association has predicted that 90% of the global population will have mobile radio coverage by 2010, with 4 billion people connected (*Nokia estimate, November 2006*), forming the largest content distribution channel in the world.

The growth in universal connectivity, and digital convergence, will encourage extensive innovation from mobile device manufacturers, developers, and consumers, with enhanced Internet functionality, increased usage, and higher specifications on low-end products.

Nokia will continue to deploy technology to offer and anticipate what customers most want, optimizing value and focusing on digital convergence opportunities to provide enhanced experiences for consumers.