

### 3D. Risk Factors

Set forth below is a description of risk factors that could affect Nokia. There may be, however, additional risks unknown to Nokia and other risks currently believed to be immaterial that could turn out to be material. These risks, either individually or together, could adversely affect our business, sales, profitability, results of operations, financial condition, market share, brand, reputation and share price from time to time. Unless otherwise indicated or the context otherwise provides, references in these risk factors to “Nokia”, “we”, “us” and “our” mean Nokia’s consolidated operating segments. Additional risks primarily related to Nokia Siemens Networks that could affect Nokia are detailed under the heading “Nokia Siemens Networks” below.

***Our success in the smartphone market depends on our ability to introduce and bring to market quantities of attractive, competitively priced Nokia products with Windows Phone that are positively differentiated from our competitors’ products, both outside and within the Windows Phone ecosystem, and receive broad market acceptance.***

The mobile communications industry continues to undergo significant changes. The growing significance of the Internet in communication has meant that the mobile telecommunications, computing, consumer electronics and Internet industries are increasingly converging to form a broader industry encompassing Internet-connected products of varying shapes and sizes. As a result, the market for smartphones has shifted from a device oriented strategy to a platform oriented strategy. Today, industry participants are creating competing ecosystems of mutually beneficial partnerships to combine hardware, software, services and an application environment to create high-quality differentiated smartphones. Certain smartphone platforms and their related ecosystems have gained significant momentum and market share, specifically Apple’s iOS platform and Google’s Android platform, and are continuing apace, with Android-based smartphones increasingly gaining market share at lower price points. In February 2011, we announced our partnership with Microsoft to bring together our respective complementary assets and expertise to build a new global mobile ecosystem for smartphones (the “Microsoft partnership”). Under the Microsoft partnership, formalized in April 2011, we are adopting, and are licensing from Microsoft, Windows Phone as our primary smartphone platform. Although Microsoft will continue to license Windows Phone to other mobile manufacturers, the Microsoft partnership allows us to customize the Windows Phone platform with a view to differentiating Nokia smartphones from those of our competitors that also use the Windows Phone platform. The first Nokia smartphones powered by Windows Phone were launched in October 2011 under the Lumia brand.

Our plans to introduce and bring to market quantities of attractive, competitively priced Nokia products with Windows Phone that receive broad market acceptance and are positively differentiated from competitors’ products, both outside and within the Windows Phone ecosystem are subject to certain risks and uncertainties, which could, either individually or together, significantly impair our ability to compete effectively in the smartphone market. If we are not successful in the smartphone market, our business would become more dependent on sales in the feature phone market, which is, especially at lower price points, an increasingly commoditized and intensely competitive market, with substantially lower growth potential, prices and profitability compared to the smartphone market. Recently, smartphones of other manufactures, particularly Android-based smartphones, are reaching lower price points, which is increasingly reducing the addressable market and lowering the price points for feature phones and may adversely affect our feature phone business.

The principal risks and uncertainties that could undermine the competitive position of our Nokia products with Windows Phone include the following:

- Our strategy for Nokia products with Windows Phone may not enable us to achieve in a timely manner the necessary scale, product breadth, geographical reach and localization to be sufficiently competitive in the smartphone market.

- The Windows Phone platform is a more recent addition to the market focused on high-end smartphones. While adoption is increasing and consumer awareness growing, it is still much less widely used than the Android and iOS platforms. As with any new platform, we may not succeed in developing it into a sufficiently attractive and competitive smartphone platform.
- The Windows Phone ecosystem may not attract developers who will contribute content and applications, thus making our Nokia products with Windows Phone less appealing to consumers.
- The Microsoft Windows Phone platform may not support the hardware configurations required to succeed in becoming a sufficiently price competitive platform and may limit our ability to develop a price competitive smartphone portfolio of products.
- We may not be able to introduce a compelling portfolio of Nokia products with Windows Phone that include new hardware and design innovations. Additionally, we may not be able to introduce functionalities such as location-based services and entertainment or otherwise customize our Nokia products with Windows Phone in order to positively differentiate our products from competitors' products, both outside and within the Windows Phone ecosystem.
- We may face delays in bringing our Nokia products with Windows Phone to various markets due to, for instance, manufacturing difficulties, delays in software and/or hardware development or product or sales package customization to accommodate various markets or operator requests.
- We may face issues in selecting, engaging or securing support from leading operators and retailers for the initial launches and sales ramp-up of our Nokia products with Windows Phone due to, for instance, inadequate sales incentives, training of sales personnel, marketing support and experience in generating interest for a new and relatively unfamiliar Windows Phone platform in an otherwise highly competitive market. Delayed or non-optimal initial launches and sales ramp-up could result in diminished support from leading operators and retailers and low consumer interest for subsequent launches of our Nokia products with Windows Phone and may also adversely affect our Nokia brand generally and sales of our other Nokia mobile products.
- Consumers may not prefer the Windows Phone user experience, interface or software functionality.
- We may not succeed in creating a high level of consumer interest for our Nokia products with Windows Phone, in converting interest for our Nokia products with Windows Phone to purchase decisions or in making the Nokia brand more desirable than brands of our competitors in smartphones.
- Microsoft may not be able to provide the software innovations and features we rely on for the Windows Phone operating system in a timely manner, if at all.
- Our competitors may provide incentives to operators, retailers or developers that may make it unattractive for them to support Nokia products with Windows Phone, or our competitors may use various technical and commercial means to make it unattractive for consumers that currently use another product to purchase Nokia products with Windows Phone.
- Our ongoing transition to the Windows Phone platform may prove to be too long to compete effectively in the smartphone market longer-term given the ongoing developments of other competing smartphone platforms.
- Our strategy for Nokia products with Windows Phone may erode our brand identity in markets where we are traditionally strong and may not enhance our brand identity in markets where we are weak. For example, our association with the Microsoft brand may not accelerate our access to a broader market in the United States.

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- In choosing to adopt Windows Phone as our primary smartphone platform, we may forgo more competitive alternatives achieving greater and faster acceptance in the smartphone market. If the benefits of the Microsoft partnership do not materialize as expected, more competitive alternatives may not be available to us in a timely manner, or at all.
- We manufacture mobile devices, but currently no other adjacent products, such as tablets, computers and other connected devices. As a result, Nokia products with Windows Phone may be a less compelling choice for consumers who wish to purchase multiple mobile products from the same manufacturer or with the same or compatible operating system in order to facilitate a smooth interaction among mobile products and electronic products of different types and screen sizes, such as mobile devices, tablets, computers and televisions.

***We may not be able to make Nokia products with Windows Phone a competitive choice for consumers unless, together with Microsoft, we successfully encourage and support a competitive and profitable global ecosystem for Windows Phone smartphones that achieves sufficient scale, value and attractiveness to all market participants.***

The emergence of ecosystems in and around the mobile device market for smartphones represents the broad convergence of the mobile communication, computing, consumer electronics and Internet industries. Different industry participants, such as hardware manufacturers, software providers, developers, publishers, entertainment providers, advertisers and ecommerce specialists, are forming increasingly large communities of mutually beneficial partnerships in order to bring their offerings to the market. At the heart of the major smartphone ecosystems is the operating system and the development platform upon which smartphones are based and services built. In February 2011, we announced our partnership with Microsoft and adopted Windows Phone as our primary smartphone platform designed to build a competitive global mobile ecosystem for our smartphones.

The creation of an ecosystem for Windows Phone smartphones that receives acceptance from contributing parties and reaches sufficient scale is critical to making our Nokia products with Windows Phone a competitive choice. If a successful Windows Phone ecosystem does not materialize in a timely manner, this would have a material adverse affect on sales of our Nokia products with Windows Phone and our profitability and otherwise significantly impair our ability to compete effectively in the smartphone market. The principal risks and challenges that could prevent the creation of a successful ecosystem for Nokia Windows Phones include the following:

- The Windows Phone platform may not achieve or retain broad or timely market acceptance or be preferred by ecosystem participants, mobile operators and consumers.
- If we are not successful in our partnership with Microsoft or the benefits of that partnership do not materialize as expected, we may have limited our options to build a competitive smartphone ecosystem with another partner or join another competitive smartphone ecosystem in a timely or economically profitable manner.
- We may not be able to develop and execute with speed sufficient quantities of high-quality differentiated Nokia products with Windows Phone in order to achieve the scale needed for a competitive global ecosystem.
- Applicable developer tools for the Windows Phone platform may not gain needed traction or acceptance in the market, may be introduced late, or when introduced, may not offer technologies that developers are willing to use.
- We may not be able to provide sufficient opportunities to innovate and customize on the Windows Phone platform in order to attract developers and other ecosystem participants seeking to differentiate their offerings on our smartphones from those of our competitors.

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- We may not succeed in rapidly expanding the Windows Phone platform and related ecosystem beyond its current use in high-end smartphones to more affordable smartphones, limiting the expansion of this ecosystem.
- Other competitive major smartphone ecosystems have advantages that may be difficult for us to overcome, such as first-mover advantage, momentum, engagement by developers, mobile operators and consumers and brand preference, and their advantages may become even greater before we complete our transition to the Windows Phone platform.
- We may not succeed in creating business models which provide value to all participants in the Windows Phone ecosystem, including ourselves.
- We may not be able to change our mode of working or culture sufficiently to collaborate effectively and efficiently both internally and externally with a large community of partners.
- We manufacture mobile devices, but currently no other adjacent products, such as tablets, computers and other connected devices. As a result, we may not be able to attract developers and other participants to the Windows Phone ecosystem if they do not have the opportunity to leverage their offerings across a wide range of different mobile and electronic products.
- Consumers may be reluctant to provide personal data to us as a result of our partnership with Microsoft, which would hamper the success of the Windows Phone ecosystem.
- The global ecosystem for the Windows Phone platform may not be flexible enough to allow local ecosystems to develop around and in connection with it. For instance, we and other participants in the Windows Phone ecosystem may not succeed in innovating and developing sufficiently locally relevant services, applications and content in a speedy and cost-efficient manner to attract and retain consumers in multiple markets with divergent local needs and preferences.
- There may be elements in the Windows Phone ecosystem that are not in other ecosystems we support, which may require additional resources and duplicative investments by us.

### ***We may experience further difficulties in having a competitive offering of Symbian devices and maintaining the economic viability of the Symbian smartphone platform during the transition to Windows Phone as our primary smartphone platform.***

Prior to the announcement of the Microsoft partnership in February 2011 and the adoption of Windows Phone as our primary smartphone platform, the Symbian operating system was our primary smartphone platform. Following the announcement of the Microsoft partnership, our strategy included the expectation to sell approximately 150 million more Symbian devices in the years to come. However, the demand for our Symbian devices began to deteriorate. The consequent decline in our Smart Devices net sales and profitability was a result of both a decline in our Symbian smartphone volume market share and pressure on pricing as competitors aggressively capitalized on our platform and product transition. Towards the end of 2011, the competitiveness of our Symbian devices continued to deteriorate as changing market conditions created increased pressure on Symbian, which further adversely affected our Smart Devices net sales, profitability, market share and brand perception. In certain markets, there has been an acceleration of the trend towards lower-priced smartphones with specifications that are different from Symbian's traditional strengths, which has contributed to a faster decline in our Symbian volumes than we anticipated. We expect this trend to continue in 2012.

To endeavor to maximize the value of our Symbian asset going forward, we expect to continue to ship Symbian devices in specific regions and distribution channels, as well as to continue to provide software support to our Symbian customers, through 2016. As a result of the changing market

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conditions, combined with our increased focus on Nokia products with Windows Phone, we believe we will sell fewer Symbian devices than previously anticipated.

We invested our own resources in developing Symbian until September 2011 when we concluded an agreement with Accenture to outsource the Symbian software development and support services. Our ability to have a competitive offering of Symbian devices and to maintain the economic viability of the Symbian smartphone platform during the transition to Windows Phone is subject to certain risks and uncertainties, which could, either individually or together, significantly impair our market share in smartphones, net sales and profitability. Those risks and uncertainties include the following:

- Increasingly, our mobile operator and distributor customers and consumers no longer see our Symbian smartphones as attractive during our transition to Windows Phone. Our mobile operator and distributor customers may choose not to promote and market some or all of our Symbian smartphones, or they may require financial incentives, such as significant price reductions, to do so. This is likely to result in additional losses of market share, which could be substantial, and which will not be offset at least in the near term by sales of our Nokia products with Windows Phone. We may not be able to regain our smartphone market share losses when quantities of Nokia products with Windows Phone do become widely commercially available.
- The current or former Symbian smartphone owners may choose not to purchase our Nokia products with Windows Phone.
- Applications, services and content developed by developers and other Symbian partners may rapidly decline or cease, which would diminish the viability of our Symbian smartphones and their attractiveness to our mobile operator and distributor customers and consumers, as well as limit the opportunity to transition compatible aspects of our Symbian development to the Windows Phone ecosystem.
- The lower than anticipated sales volumes of our Symbian smartphones resulted in the recognition of allowances in 2011 for excess component inventory and future purchase commitments related to Symbian, and we may need to recognize additional allowances in the future if our currently anticipated sales volumes deteriorate further.
- Our suppliers may reduce the availability of certain components for our Symbian smartphones or we may not be able to obtain certain or sufficient components for our Symbian smartphones at attractive prices resulting in increased costs that we may not be able to pass on to our customers.
- We may not be able to provide the necessary support for our employees working on Symbian related matters and business during the transition to Windows Phone.
- We may not be able to efficiently manage the phase-out over time of our investment in Symbian while maintaining accepted profitability of those products.
- Our strategic partnership with Accenture is subject to various risk and uncertainties, which may adversely affect our ability to have an attractive offering of Symbian devices and serve our Symbian customers. Accenture may not be able to provide new updates and functionalities to the Symbian platform that keep it sufficiently attractive and there may be delays in updates or new functionalities. Accenture may lose key personnel and skilled employees involved in the development of the Symbian platform causing quality issues or delays.
- Our strategic choices regarding our Symbian platform and market perceptions of the Symbian platform may have a negative effect on the attractiveness of our other mobile products and the Nokia brand.

***We may not be able to produce attractive and competitive feature phones, including devices with more smartphone-like features, in a timely and cost efficient manner with differentiated hardware, software, localized services and applications.***

The feature phone market, also referred to as the mobile phone market and a traditional area of strength for us, is undergoing significant changes. Today, a feature phone-specific ecosystem has emerged involving very low-cost components and manufacturing processes. Speed to market and attractive pricing are critical factors for success. In particular, the availability of complete mobile solutions chipsets and software from low-cost reference design chipset manufacturers has enabled the very rapid and low-cost production of feature phones by numerous manufacturers particularly in China and India, which are gaining significant market share in emerging markets, as well as bringing some locally relevant innovations to the market. Moreover, many mid-range to high-end feature phones increasingly offer access to the Internet and applications and provide more smartphone-like features and design, blurring the distinction between smartphones and feature phones. We are subject to intense competition over the entire spectrum we address through our Mobile Phones business unit. Recently, smartphones of other manufacturers, particularly Android-based smartphones, are reaching lower price points, which is increasingly reducing the addressable market and lowering the price points for feature phones.

Accordingly, we need to provide feature phones in a timely and cost-efficient manner with differentiated hardware, software, localized services and applications that attract new users and connect new and existing users to an affordable Internet and application experience. For higher-end feature phones in particular, the platform is a differentiating element with the addition of new functionalities and possibilities for customization and an improved user experience. If we are unable to produce competitive low-end and high-end feature phones and preserve our market share and profitability of our feature phones business, our business, results of operation and financial condition could be materially and adversely affected. Our ability to achieve this is subject to certain risks and uncertainties, including the following:

- We may not be able to leverage our traditional competitive strengths of scale in manufacturing and logistics, as well as in our marketing and sales channels for instance to increase the speed to market of our feature phones in a sufficiently cost-competitive manner, particularly with mobile operators and consumers requiring increasing customization to meet divergent local needs and preferences.
- The addressable market for feature phones may further reduce in size if the higher-end price points become dominated by more affordable smartphones, such as Android-based smartphones. In some regions, especially Europe and China, overall market demand for feature phones may decline further.
- The platforms that we deploy for our feature phones may not be sufficiently attractive, flexible and cost efficient for application developers and other partners to create a vibrant ecosystem for feature phones with increasingly smartphone-like features, such as Internet access and applications.
- We may need to make significant investments to further develop platforms for devices from our Mobile Phones business unit. There can be no assurances regarding consumer acceptance of such platform developments or that the development costs would result in a positive return on our investments.
- We may not succeed in innovating and developing sufficiently locally relevant services, applications and content in a speedy and cost-efficient manner to attract and retain consumers in multiple markets with divergent local needs and preferences.
- Management focus on the development and launches of our Nokia products with Windows Phone and the creation of a successful ecosystem for Windows Phone smartphones with Microsoft may result in less management focus on our feature phone business.

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- There may be elements in the feature phone ecosystems that are not in other ecosystems we support, such as the Windows Phone ecosystem, which may require additional resources and duplicative investments by us.
- Our strategic choices regarding our Symbian platform and market perceptions of the Symbian platform may have a negative effect on the attractiveness of our feature phones as consumers may confuse the Symbian platform with our feature phone platforms.

### ***We face intense competition in mobile products and in the digital map data and related location-based content and services markets.***

We experience intense competition in every aspect of our business and across all markets for our mobile products. Mobile device markets are segmented, diversified and increasingly commoditized. We face competition from a growing number of participants in different user segments, price points and geographical markets, as well as layers of the mobile product using different competitive means in each of them. In some of those layers, we may have more limited experience and scale than our competitors. This makes it more difficult and less cost-efficient for us to compete successfully with differentiated offerings across the whole mobile device market against more specialized competitors. It also limits our ability to leverage effectively our scale and other traditional strengths, such as our brand, hardware assets, manufacturing and logistics, distribution, strategic sourcing, research and development, intellectual property and increasingly design, to achieve significant advantages compared to our competitors. We have been historically more successful where our mobile devices are sold to consumers in open distribution through non-operator parties. The increase in markets with operator-driven distribution and business models where operator subsidies are prevalent may adversely affect our ability to compete effectively in those markets. We are recently seeing such developments taking place in markets where we have been traditionally strong, for instance in China. Additionally, our scale benefits may be adversely affected as new regional or operator requirements are introduced.

In the smartphone market, we face intense competition from traditional mobile device manufacturers and companies in related industries, such as Internet-based product and service providers, mobile operators, business device and solution providers and consumer electronics manufacturers. Some of those competitors are currently viewed as more attractive partners for application developers, content providers and other key industry participants, resulting in more robust global ecosystems and more appealing smartphones; have more experience, skills, speed of product development and execution, including software development, and scale in certain segments of the smartphone market; have a stronger market presence and brand recognition for their smartphones; have created different business models to tap into significant new sources of revenues, such as advertising and subscriptions; or generally have been able to adjust their business models and operations in an effective and timely manner to the developing smartphone and related ecosystem market requirements.

The availability and success of Google's Android platform has made entry and expansion in the smartphone market easier for a number of hardware manufacturers, which have chosen to join Android's ecosystem, especially at the mid-to-low range of the smartphone market. Additionally, this is increasingly reducing the addressable market and lowering the price points for feature phones. Product differentiation is more challenging, however, potentially leading to increased commoditization of Android-based devices with the resulting downward pressure on pricing. On the other hand, the significant momentum and market share gains of the global ecosystems around Apple's iOS platform and the Android platform have increased the competitive barriers to additional entrants looking to build a competing global smartphone ecosystem, for instance Nokia using the Windows Phone platform. At the same time, other ecosystems are being built which are attracting developers and consumers, and may result in fragmentation among ecosystem participants and the inability of new ecosystems to gain sufficient competitive scale.

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During the transition of our smartphones to the Windows Phone platform, our competitors have and will continue to endeavor to attract our current and future consumers, mobile operators and other customers to their smartphone offerings. Our competitors use aggressive business strategies in attracting and retaining customers while dissuading their switching to other products. If our competitors succeed in that endeavor, our smartphone market share could erode, which we may not be able to regain even when quantities of Nokia products with Windows Phone are widely commercially available.

In the feature phone market, an increasing number of our competitors, particularly recent entrants, have used, and we expect will continue to use, more aggressive pricing and marketing strategies, different design approaches and alternative technologies that consumers may prefer over our offering of feature phones. For example, certain industry participants bundle mobile device deals with their networks deals. Some competitors, with lower profitability expectations, have chosen to focus on building feature phones based on commercially available components, software and content, in some cases available at very low or no cost, which enable them to introduce their products much faster and at significantly lower cost to the consumer than we are able to do. Smartphones of other manufactures, particularly Android-based smartphones, are reaching lower price points which is increasingly reducing the addressable market and lowering the price points for feature phones and may adversely affect our feature phone business.

We are also seeing the emergence of various local mobile device manufacturers that are strong in a certain country or region, especially in emerging markets. Success of such competitors could adversely affect sales of our mobile devices in various countries such as China where we have been traditionally strong.

We also face competition from vendors of legitimate, as well as unlicensed and counterfeit, products with manufacturing facilities primarily centered around certain locations in Asia and other emerging markets. The entry barriers for these vendors are very low as they are able to take advantage of licensed and unlicensed commercially available free or low cost components, software and content. Our failure to provide low cost differentiated alternatives for consumers in a timely manner or to enforce our intellectual property rights adversely affects our ability to compete efficiently in the market for feature phones. Some of our competitors may also benefit from governmental support in their home countries and other measures that may have protectionist objectives. These factors could reduce the price competitiveness of our feature phones and have an adverse effect on our sales and profitability.

The growing significance of ecosystems has further reinforced the importance of product design as a means for differentiating offerings from others within the same or a different ecosystem. Additionally, together with the growth of cloud computing, where data and services are hosted by remote servers rather than on devices themselves, ecosystems are also leading some vendors to pursue a strategy of developing and providing devices and electronic products of different form factors and screen sizes, such as mobile devices, tablets and televisions and software which make them compatible and support their smooth interaction with one another. As consumers acquire different devices, some may choose to purchase products and services from only one ecosystem or vendor. If our competitors succeed in capturing markets where we are not currently present, this could erode our competitive position. For instance, we currently do not have tablets or other adjacent products in our mobile product portfolio, which may result in our inability to compete effectively in the tablet and developing multi-screen market segments in the future or forgoing those potential growth opportunities, and may also have an adverse effect on the desirability of our smartphones.

Consumers may be more reluctant to provide personal data to us, which would hamper our competitive position in terms of our current business models, or new business models, that rely on access to personal data. For instance, the possible inability to collect and utilize consumer behavioral data may prevent us from efficiently developing product and services, do efficient marketing, take actions to enable consumer retention and work efficiently with service developers.



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A key component of our current strategy is investment in future disruptive technologies, including investment in longer-term market exploration of next-generation devices, platforms and user experiences. Additionally, we continuously seek new business and monetization models. Certain of our competitors have significant resources to invest in market exploration and seek new monetization models or drive industry development and capture value in areas where we are not competitive. Those areas can be, for instance, monetization models linked to the use of large amounts of consumer data, large connected communities, home entertainment services and alternative payment mechanisms. We may not be able to invest our own resources to compete in these areas, which may in the future prove a competitive disadvantage for us. If we fail in these aspects of our strategy, we may not realize a return on our investments or may incur operating losses and impair our competitiveness for the longer-term.

With respect to digital map data and related location-based content, several global and local companies, as well as governmental and quasi-governmental agencies, are making more map data with improving coverage and content, and high quality, available free of charge or at lower prices. For example, our Location & Commerce business competes with Google which uses an advertising-based model allowing consumers and companies to use its map data and related services in their products free of charge to consumers. Google has continued to leverage Google Maps as a differentiator for Android bringing certain new features and functionality to that platform. Apple has also sought to strengthen its location assets and capabilities through targeted acquisitions and organic growth. Location & Commerce also competes with companies such as TomTom, which licenses its map data and where competition is focused on the quality of the map data and pricing, and Open Street Map, which is a community-generated open source map available to users free of charge. Aerial, satellite and other location-based imagery is also becoming increasingly available and competitors are offering location-based products and services with the map data to both business customers and consumers in order to differentiate their offerings. Those developments may encourage new market entrants, cause business customers to incorporate map data from sources other than our Location & Commerce business or reduce the demand for fee-based products and services which incorporate Location & Commerce map database. Accordingly, our Location & Commerce business must positively differentiate its digital map data and related location-based content from similar offerings by our competitors and create competitive business models for our customers.

***We may not be able to retain, motivate, develop and recruit appropriately skilled employees, which may hamper our ability to implement our strategies, particularly our current mobile products strategy and location-based services and commerce strategy, and we may not be able to effectively and smoothly implement the new operational structure for our businesses, achieve targeted efficiencies and reductions in operating expenses.***

We announced a new strategy, leadership team and operational structure for our Devices & Services business on February 2011 designed to focus on speed, results and accountability. In June 2011, we announced plans to create a new Location & Commerce business which combines NAVTEQ and our Devices & Services social location services operations, which became operational from October 1, 2011. The implementation of these strategies and changes in operational structure are expected to have a significant impact on our operations and personnel, including substantial reductions in personnel following the appropriate consultations. Additionally, reorganizations and restructurings result in cash outflows related to such activities, as well as restructuring charges and associated impairments. We have made announcements in 2011 and 2012 concerning planned personnel reductions, outsourcing, plans to align our site operations, plans to change our manufacturing operations and to reconfigure certain of our European and Americas manufacturing facilities and adjust our manufacturing capacity. Additionally, in November 2011 Nokia Siemens Networks announced plans for a strategic shift and restructuring targeted to maintain long-term competitiveness and improve profitability discussed below under risks primarily related to Nokia Siemens Networks.

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These strategies also involve changing our mode of working and culture to facilitate speed and agility in innovation, product development and aimed at increasing the efficiency of execution and bringing more accountability for achieving results. Organizational changes of this nature consume significant time, attention and resources of senior management and others within the organization, potentially diverting their attention from other aspects of our business. Additionally, when such changes are planned and implemented they may cause disruption and dissatisfaction among employees, as well as fatigue due to the cumulative effect of several other reorganizations in the past few years. As a result, employee motivation, morale and productivity may be reduced causing inefficiencies and other problems across the organization and leading to the loss of key personnel and the related costs associated in dealing with such matters. Moreover, our employees may be targeted by our competitors during the implementation of our strategies, and some employees may be more receptive to such offers leading to the loss of key personnel. These factors may have a more pronounced adverse affect due to the cumulative effect of the previous reorganizations. Should we fail to implement new operational structures effectively and smoothly and effect the changes in our mode of working and culture, the efficiency of our operations and performance may be affected, which could have a material adverse effect on our business and results of operations, particularly our profitability.

Our success is dependent on our ability to retain, motivate, develop through constant competence training, and recruit appropriately skilled employees with a comprehensive understanding of our current and future businesses, technologies, software and products. This is particularly important for the successful implementation of our mobile products strategy and the Microsoft partnership and our location-based services and commerce strategy where we need highly-skilled, innovative and solutions-oriented personnel with new capabilities. The potential impacts noted above of the operational changes being implemented throughout our organization, as well as the cumulative effect of several other reorganizations in the past few years, may make it more difficult to attract the new personnel we may need to implement our strategies successfully. We may need to adjust our compensation and benefits policies and take other measures to attract, retain and motivate skilled personnel. This will require significant time, attention and resources of senior management and others within the organization and may result in increased costs. We have encountered, and may encounter in the future, shortages of appropriately skilled personnel, which may hamper our ability to implement our strategies and materially harm our business and results of operations.

Relationships with worker representatives are generally managed at site level and most worker representative agreements have been in place for several years. Our inability to negotiate successfully with representatives or failures in our relationships with the representatives could result in strikes by the workers and/or increased operating costs as a result of higher wages or benefits paid to employees as the result of a strike or other industrial action. This may affect our ability to implement our planned reorganization and restructuring or increase the amount of associated time or cost. If our employees were to engage in a strike or other work stoppage, we could experience a significant disruption of operations and/or higher ongoing labor costs.

We are targeting to reduce our Devices & Services operating expenses by more than EUR 1 billion for the full year 2013, compared to the Devices & Services operating expenses of EUR 5.35 billion for the full year 2010, excluding special items and purchase price accounting related items. This reduction is expected to come from a variety of different sources and initiatives, including those noted above. We cannot guarantee that we will achieve or sustain the targeted benefits, which could result in further restructuring efforts. In addition, we cannot guarantee that the benefits, even if achieved, will be adequate to meet our long-term growth and profitability targets.

***Our strategy for our Location & Commerce business may not succeed if we are unable to maintain current sources of revenue, provide support for our Devices & Services business and create new sources of revenue from our location-based services and commerce assets.***

In June 2011, we announced plans to create a new Location & Commerce business which combines NAVTEQ and our Devices & Services social location services operations. The Location & Commerce business has been an operating and reportable segment from October 1, 2011. In addition to offering a broad portfolio of products and services for the wider Internet ecosystem, the Location & Commerce business is creating integrated social location offerings in support of our strategic goals in smartphones, including Nokia products with Windows Phone, as well as our efforts to connect the next billion people to the Internet and information.

Our strategy for our Location & Commerce business is subject to certain risks and uncertainties, which could, either individually or together, significantly impair our ability to compete effectively in the targeted markets and succeed in maintaining our current sources of revenue and support for our Devices & Services business or in creating new sources of revenue. Those risks and uncertainties include the following:

- The existing NAVTEQ customers may choose not to purchase, or purchase less, content or services from our Location & Commerce business.
- We may not be able to use our location-based assets to compete on a standalone basis or support the overall Nokia strategy.
- We may not be able to successfully integrate the operations or data from Nokia and NAVTEQ, for instance the consumer data and data we have collected on places and communities, and thus are unable to provide the targeted opportunities we plan to provide through the integration of such data.
- We may lose key personnel formerly working for NAVTEQ and Devices & Services social location services operations.
- We may not succeed in attracting strategic partners and developers to develop and support our ecosystem around our Location & Commerce offering, or provide services that are supported by relevant ecosystems.
- We may fail to attract business partners and merchants to our service offerings to them.
- The service offering we currently provide may not be competitive or another participant may provide a more competitive new offering in the future.
- The advertising and local commerce business opportunities we target may not grow as expected or have the possibilities for profitable business in line with our expectations.
- The Location & Commerce business may not succeed in creating integrated social location offerings in support of our strategic goals in smartphones, including Nokia products with Windows Phone, or support our efforts to connect the next billion people to the Internet and information, which would negatively affect our ability to offer compelling and differentiated mobile products.
- The Microsoft partnership business model to integrate our location-based assets, including Location & Commerce, with Microsoft's Bing search engine and adCenter advertising platform to form a local search and advertising capability that generates new sources of revenue for us may not materialize as expected, or at all.
- If our Location & Commerce business does not generate revenue as before or new sources of revenue for us do not materialize as expected, or at all, that business may not generate positive operating cash flow, and this or other factors may lead to the decrease in value of our location-based services and commerce assets and may result in further impairment charges.

- The organizational changes, including planned reductions and site closures and integration, consume significant time, attention and resources of senior management and others within the organization, potentially diverting their attention from other aspects of our business.

***Our partnership with Microsoft is subject to risks and uncertainties.***

Our partnership with Microsoft is subject to certain risks and uncertainties, which could, either individually or together, significantly impair our ability to compete effectively in the smartphone market. If that were to occur, our business would become more dependent on sales in the feature phone market, which is, especially at lower price points, an increasingly commoditized and intensely competitive market, with substantially lower growth potential and profitability compared to the smartphone market. A further change in smartphone strategy could be costly and further adversely affect our market share, competitiveness and profitability. Risks and uncertainties related to our partnership with Microsoft include the following:

- The agreements with Microsoft may include terms that prove unfavorable to us.
- We may not succeed in creating a profitable business model as we transition from our royalty-free smartphone platform to the royalty-based Windows Phone platform due to, among other things, our inability to offset our higher cost of sales resulting from our software royalty payments to Microsoft with new revenue sources and a reduction of our operating expenses, particularly our research and development expenses.
- We will need to continue to innovate and find additional ways to create patentable inventions and other intellectual property, particularly as we invest less than before into our own development under the Microsoft partnership. As a result, we may not be able to generate sufficient patentable inventions or other intellectual property to maintain, for example, the same size and/or quality patent portfolio as we have historically.
- We may not be able to change our mode of working or culture to enable us to work effectively and efficiently with Microsoft in order to realize the stated benefits of the partnership in a timely manner.
- The implementation and ongoing fostering and development of the Microsoft partnership will require significant time, attention and resources of our senior management and others within the organization potentially diverting their attention from other aspects of our business.
- The implementation and ongoing fostering and development of the Microsoft partnership may cause disruption and dissatisfaction among employees reducing their motivation, morale and productivity, causing inefficiencies and other problems across the organization and leading to the loss of key personnel and the related costs in dealing with such matters.
- We may not have or be able to recruit, retain and motivate appropriately skilled employees to implement successfully our strategies in relation to the Windows Phone platform and to work effectively and efficiently with Microsoft and the related ecosystem.
- New business models require access and sometimes possession of consumer data. If we do not have such access within our own control, this may hinder our ability to pursue such opportunities.
- We may be required or choose to share with Microsoft personal or consumer data that has been made available to us, which could increase the risk of loss, improper disclosure or leakage of such personal or consumer data or create negative perceptions about our ability to maintain the confidentiality of such data.
- New sources of revenue expected to be generated from the Microsoft partnership, such as leveraging the Microsoft advertising assets to build and achieve the required scale for a

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Nokia-based online advertising platform on our smartphones and increased monetization opportunities for us in services, may not materialize as expected, or at all.

- The implementation and ongoing fostering and development of the Microsoft partnership may cause dissatisfaction and adversely affect the terms on which we do business with our other partners, mobile operators, distributors and suppliers, or foreclose the ability to do business with new partners, mobile operators, distributors and suppliers.
- The assessment of our partnership with Microsoft and new strategy could cause lowered credit ratings of our short and long-term debt or their outlook from the credit rating agencies and, consequently, impair our ability to raise new financing or refinance our current borrowings and increase our interest costs associated with any new debt instruments.

***Our failure to keep momentum and increase our speed of innovation, product development and execution will impair our ability to bring new innovative and competitive mobile products and location-based or other services to the market in a timely manner.***

We need to identify and understand the key market trends and user segments to address consumers' expanding needs in order to bring new innovative and competitive mobile products and location-based or other services to market in a timely manner. We must follow, anticipate and be able to respond with speed to these key market trends, and actively create future trends in the market, through our product development processes. We also need to execute efficiently in creating and developing competitive products, and in bringing our products to market in a timely manner with compelling marketing messages that succeed in retaining and engaging our current, and attracting new, customers and consumers.

Our inability to innovate, develop and bring our mobile products and location-based or other services to market and delays in the ramp up of new product deliveries may result from a variety of factors, including failure to anticipate consumer trends and needs; insufficient and ineffective internal and external execution in our research and product development processes; an inability to secure necessary components or software assets from suppliers in sufficient quantities on a timely basis; or an inability to improve our time to market, including the introduction of innovations, through execution challenges in relation to our recently announced planned shift of most of our mobile device assembly to our manufacturing facilities in Asia where a majority of our suppliers are located. Additionally, the software complexity and integration of the hardware and software functionalities may cause unforeseen delays even close to the anticipated launch of the mobile product. We continue to be dependent on component providers, contract manufacturers, application developers and other partners, which can lead to additional challenges and delays that are largely outside of our control.

We operate in a fast paced and innovative industry. Our business may require significant investment to innovate and grow successfully. Such investments may include research and development, licensing arrangements, acquiring businesses and technologies, recruiting specialized expertise and partnering with third parties. Those investments may not, however, result in technologies, products or services that achieve or retain broad or timely market acceptance or are preferred by application developers, our customers and consumers. We have also made, and may make in the future, such investments through acquisitions. We may, however, fail to successfully complete planned acquisitions or integrate the acquired businesses or assets or retain and motivate their key employees.

Our ability to innovate and the need to increase the speed of our product development and execution are critical to the success of our current strategies, for instance the implementation of Windows Phone as our primary smartphone platform, product and service development for our Mobile Phones business unit and in bringing products and location-based or other services to market in a timely manner. In addition to the factors described above, delays in innovation, product development and execution may result from the added complexity of working in partnership with Microsoft to produce Nokia products

with Windows Phone. For example, we may not be successful in changing our mode of working to collaborate effectively and efficiently with Microsoft, or be able to develop the necessary infrastructure to manufacture Nokia products with Windows Phone, source the right chipsets and generally integrate the hardware and software that both we and Microsoft are contributing.

Failures or delays in understanding or anticipating market trends or delays in innovation, product development and execution may result in a suboptimal portfolio of mobile products and location-based or other services, gaps in certain price points or an uncompetitive offering. Our failure to deliver mobile products in a timely fashion to markets and in sufficient quantities not only may have a negative effect on our market share, net sales and profitability, but may also erode our brand through consumer disappointment. Moreover, our customers and consumers expect that the services and applications provided with and in connection with our mobile products are positively differentiated from our competitors' offerings, have the same or more capabilities than those of our competitors, function properly and are of high quality. If we fail in launching the services, have insufficient breadth of available applications or content, have inadequate or unsuccessful updates to them or there are other defects or quality issues with our mobile products, including the operating platform, software and user interface, this may cause consumer retention and engagement for our mobile products to deteriorate.

Additionally, we may not be able to ensure that our products, especially Nokia products with Windows Phone, will be offered and recommended to consumers at the point of sale, due to, for instance, inadequate sales incentives, training of sales personnel, marketing support, and experience in generating interest for a new and relatively unfamiliar Windows Phone smartphone in an otherwise highly competitive market. This could result in low sales and potentially delay ramp-up and give more momentum to competitors impacting the success of our smartphone strategy with Nokia products with Windows Phone.

***Our sales and profitability are dependent on the development of the mobile and communications industry, including location-based and other services industries, in numerous diverse markets, as well as on general economic conditions globally and regionally.***

Our sales and profitability are dependent on the development of the mobile and fixed communications industry in numerous diverse markets in terms of the number of new mobile subscribers, the number of existing subscribers who upgrade or replace their existing mobile devices and the number of active users of applications and services on our devices. In certain low penetration markets, in order to support a continued increase in mobile subscribers, we continue to be dependent on our own and mobile network operators' and distributors' ability to increase the sales volumes of lower cost mobile devices and on mobile network operators to offer affordable tariffs and tailored mobile network solutions designed for a low total cost of ownership. In highly penetrated markets, we are more dependent on our own and mobile network operators' ability to successfully introduce value-added products, such as smartphones that drive the upgrade and replacement of devices, as well as ownership of multiple devices. We are also dependent on developers' interest and success in creating value-added applications and other content in our products to achieve differentiation and additional consumer demand.

Our location-based and other services business is dependent on the development of a wide variety of products that use its data, the availability and functionality of such products and the rate at which consumers and businesses purchase those products. Nokia Siemens Networks is dependent on the pace of investments made by mobile network operators and service providers in network infrastructure and related services. If we and the other market participants are not successful in our attempts to increase subscriber numbers, stimulate increased usage or drive upgrade and replacement sales of mobile devices and develop and increase demand for value-added services, or if mobile network operators and service providers invest in the related infrastructure and services less than anticipated, our business and results of operations could be materially adversely affected.

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As we are a global company with sales in most countries of the world, our sales and profitability are dependent on general economic conditions globally and regionally. The traditional mobile communications industry has matured to varying degrees in different markets and, consequently, the industry is more vulnerable than before to the negative impacts of deteriorations in global economic conditions. Although the overall economic environment improved during 2010, in comparison to 2009, events in 2011 and recently involving the financial and credit markets of governments in both Europe and the United States are casting doubt on the impact and timing of a sustainable global recovery in the various markets where we do business. Indeed, the concerns regarding the ongoing European debt crisis discussed below, whether real or perceived, could result in a recession, prolonged economic slowdown or otherwise negatively affect the general health and stability of the economies in certain regions where we do business. The overall economic uncertainty is making it difficult to estimate for business planning purposes the impact and timing of changes in economic conditions in the various markets where we do business. In 2011, we also witnessed political unrest in various regions where we do business, which adversely affected our sales in those markets.

Continued uncertainty or deterioration in global economic conditions or a recurrence or escalation of political unrest may result in our current and potential customers and consumers postponing or reducing spending on our products. In addition, mobile network operators may reduce the device subsidies that they offer to the consumers or attempt to extend the periods of contracts that obligate the consumer to use a certain device and postpone or reduce investment in their network infrastructure and related services. The demand for digital map information and other location-based content by automotive and mobile device manufacturers may decline in relation to any further contraction of sales in the automotive and consumer electronics industry.

In addition, any further deterioration in the global or regional economic conditions may:

- Limit the availability of credit or raise the interest rates related to credit which may have a negative impact on the financial condition, and in particular on the purchasing ability, of some of our distributors, independent retailers and network operator customers and may also result in requests for extended payment terms, credit losses, insolvencies, limited ability to respond to demand or diminished sales channels available to us.
- Cause financial difficulties for our suppliers and collaborative partners which may result in their failure to perform as planned and, consequently, in delays in the delivery of our products.
- Increase volatility in exchange rates which may increase the costs of our products that we may not be able to pass on to our customers and result in significant competitive benefit to certain of our competitors that incur a material part of their costs in other currencies than we do; hamper our pricing; and increase our hedging costs and limit our ability to hedge our exchange rate exposure.
- Result in inefficiencies due to our deteriorated ability to appropriately forecast developments in our industry and plan our operations accordingly, delayed or insufficient investments in new market segments and failure to adjust our costs appropriately.
- Cause reductions in the future valuations of our investments and assets and result in impairment charges related to goodwill or other assets due to any significant underperformance relative to historical or projected future results by us or any part of our business or any significant changes in the manner of our use of acquired assets or the strategy for our overall business.
- Cause lowered credit ratings of our short- and long-term debt or their outlook from the credit rating agencies and, consequently, impair our ability to raise new financing or refinance our current borrowings and increase our interest costs associated with any new debt instruments.

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- Result in failures of derivative counterparties or other financial institutions which could have a negative impact on our treasury operations.
- Result in increased and/or more volatile taxes which could negatively impact our effective tax rate, including the possibility of new tax regulations, interpretations of regulations which are stricter or increased effort by governmental bodies seeking to receive taxes more aggressively.
- Impact our investment portfolio and other assets and result in impairment.

We are domiciled in Europe and our reporting currency is the euro. We face certain risks in relation to the concerns regarding the European debt crisis, market perceptions concerning the instability of the euro, the potential re-introduction of individual currencies within the eurozone, or the potential dissolution of the euro entirely. Should the euro dissolve entirely, the legal and contractual consequences for holders of euro-denominated obligations would be determined by laws in effect at such time. These potential developments, or market perceptions concerning these and related issues, could adversely affect the value of our euro-denominated assets and obligations. In addition, concerns over the effect of this financial crisis on financial institutions in Europe and globally could cause significant volatility and disruption to the global economy, which could adversely impact our financial results, as well as having an adverse impact on the capital markets generally, and more specifically on the ability of us and our customers, suppliers and lenders to finance their respective businesses, to access liquidity at acceptable financing costs, if at all, on the availability of supplies and materials and on the demand for our products. Full or partial dissolution of the euro would cause additional exchange rate risks related to dividends, foreign cash balances and investments. As the euro is our reporting currency, the dissolution of euro would result in increased costs to adjust our financial reporting and result in increased volatility in our reported results of operations and financial condition.

We currently believe our funding position to be sufficient to meet our operating and capital expenditures in the foreseeable future. However, adverse developments in the global financial markets could have a material adverse effect on our financial condition and results of operations. For a more detailed discussion of our liquidity and capital resources, see Item 5B. "Liquidity and Capital Resources" and Note 34 of our consolidated financial statements included in Item 18 of this annual report.

***Our products include numerous patented standardized or proprietary technologies on which we depend. Third parties may use without a license and unlawfully infringe our intellectual property or commence actions seeking to establish the invalidity of the intellectual property rights of these technologies. This may have a material adverse effect on our business and results of operations.***

Our products include numerous patented standardized or proprietary technologies on which we depend. Despite the steps that we have taken to protect our technology investment with intellectual property rights, we cannot be certain that any rights or pending applications will be granted or that the rights granted in connection with any future patents or other intellectual property rights will be sufficiently broad to protect our technology. Third parties may infringe our intellectual property relating to our proprietary technologies or by ignoring their obligation to seek a license under our standard essential patents.

Any patents or other intellectual property rights that are granted to us may be challenged, invalidated or circumvented, and any right granted under our patents may not provide competitive advantages for us. Other companies have commenced and may continue to commence actions seeking to establish the invalidity of our intellectual property, for example, patent rights. In the event that one or more of our patents are challenged, a court may invalidate the patent or determine that the patent is not



enforceable, which could harm our competitive position. Also, if any of our key patents are invalidated, or if the scope of the claims in any of these patents is limited by a court decision, we could be prevented from using such patents as a basis for product differentiation or from licensing the invalidated or limited portion of our intellectual property rights, or we could lose part of the leverage we have in terms of our own intellectual property rights portfolio. Even if such a patent challenge is not successful, it could be expensive and time-consuming, divert attention of our management and technical personnel from our business and harm our reputation. Any diminution of the protection that our own intellectual property rights enjoy could cause us to lose some of the benefits of our investments in research and development, which may have a negative effect on our business and results of operations. See Item 4B. "Business Overview—Devices & Services and Location & Commerce—Patents and Licenses" and "—Nokia Siemens Networks—Patents and Licenses" for a more detailed discussion of our intellectual property activities.

***Our ability to maintain and leverage our traditional strengths in the mobile product market may be impaired if we are unable to retain the loyalty of our mobile operator and distributor customers and consumers as a result of the implementation of our strategies or other factors.***

We have a number of competitive strengths that have historically contributed significantly to our sales and profitability. These include our scale, our differentiating brand, our world-class manufacturing and logistics system, the industry's largest distribution network and our strong relationships with our mobile operator and distributor customers. Going forward, these strengths are critical core competencies that we bring to the partnership with Microsoft and the implementation of our Windows Phone smartphone strategy. Our ability to maintain and leverage these strengths also continues to be important to our competitiveness in the feature phone market.

As discussed above, however, the Microsoft partnership and the adoption of Windows Phone as our primary smartphone platform are subject to certain risks and uncertainties. Several of those risks and uncertainties relate to whether our mobile operator and distributor customers and consumers will be satisfied with our current strategy and partnership with Microsoft going forward. If those risks materialize and mobile operator and distributor customers and consumers as a consequence reduce their support and purchases of our mobile products, this would reduce our market share and net sales and in turn may erode our scale, brand, manufacturing and logistics, distribution and customer relations. The erosion of those strengths would impair our competitiveness in the mobile products market and our ability to execute successfully our new strategy and to realize fully the expected benefits of the Microsoft partnership.

Also, as result of market developments, competitors' actions or other factors within or out of our control, we may not be able to maintain these competitive strengths that we have benefited from historically. It is also possible that such strengths or some of them become less relevant in the future or are replaced by other type of strengths required for future success in the mobile product market.

***If any of the companies we partner and collaborate with, including Microsoft and Accenture, were to fail to perform as planned or if we fail to achieve the collaboration or partnering arrangements needed to succeed, we may not be able to bring our mobile products or location-based or other services to market successfully or in a timely way.***

We are increasingly collaborating and partnering with third parties to develop technologies and products for our smartphones and feature phones. These arrangements involve the commitment by each party of various resources, including technology, research and development efforts, services and personnel. Today, mobile products are developed in an ecosystem of multiple partnerships with different industry participants where our ability to collaborate successfully with the right partners is critical to our success in creating and delivering mobile products that are preferred by our customers

and consumers. Although the objective of the collaborative and partnering arrangements is a mutually beneficial outcome for each party, our ability to introduce new mobile products that are commercially viable and meet our and our customers' and consumers' quality, safety, security and other standards successfully and on schedule could be hampered if, for example, any of the following risks were to materialize:

- We fail to engage the right partners or on terms that are beneficial to us.
- We are unable to collaborate and partner effectively with individual partners and simultaneously with multiple partners to execute and reach the targets set for the collaboration.
- The arrangements with the parties we work with do not develop as expected, including their performance, delivery and timing, or include terms which prove unfavorable to us.
- The technologies provided by the parties we work with are not sufficiently protected or infringe third parties' intellectual property rights in a way that we cannot foresee or prevent, or private information shared with partners is leaked.
- The technologies or products or services supplied by the parties we work with do not meet the required quality, safety, security and other standards or customer needs.
- Our own quality controls fail.
- The financial condition of our collaborative partners deteriorates which may result in underperformance by the collaborative partners or insolvency or closure of the business of such partners.
- Our increasing reliance on collaborative partnering for Nokia-branded or co-branded products may result in more variable quality due to our more limited control which may have a negative effect on our reputation and erode the value of the Nokia brand.

***If the limited number of suppliers we depend on fail to deliver sufficient quantities of fully functional products, components, sub-assemblies, software and services on favorable terms and in compliance with our supplier requirements, our ability to deliver our mobile products profitably, in line with quality requirements and on time could be materially adversely affected.***

Our manufacturing operations depend on obtaining sufficient quantities of fully functional products, components, sub-assemblies, software and services on a timely basis. Our principal supply requirements for our mobile products are for electronic components, mechanical components and software, which all have a wide range of applications in our products.

In some cases, a particular component may be available only from a limited number of suppliers or from a single supplier. In addition, our dependence on third-party suppliers has increased as a result of our strategic decisions to outsource certain activities, for example parts of our own chipset as well as wireless modems research and development, and to expand the use of commercially available chipsets and wireless modems. Suppliers may from time to time extend lead times, limit supplies, change their partner preferences, increase prices, have poor quality or be unable to increase supplies to meet increased demand due to capacity constraints or other factors, which could adversely affect our ability to deliver our mobile products on a timely basis. If we fail to anticipate customer demand properly, an over-supply or under-supply of components and production capacity could occur. In many cases, some of our competitors utilize the same contract manufacturers. If they have purchased capacity ahead of us, this could prevent us from acquiring the needed products, which could limit our ability to supply our customers or increase our costs. We also commit to certain capacity levels or component quantities which, if unused, will result in charges for unused capacity or scrapping costs. For example, in 2011 we recognized allowances for excess component inventory and future purchase

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commitments related to our Symbian devices, and may do so in the future. Additionally, with the increased bargaining power of other large manufacturers in the mobile device and electronics industry, we may not be able to achieve as favorable terms as in the past resulting in increased costs that we may not be able to pass on to our customers, as well as lapses in the availability of certain components, especially in situations of tight supply.

Moreover, a supplier may fail to meet our supplier requirements, such as, most notably, our and our customers' and consumers' product quality, safety, security and other standards. Consequently, some of our products may be unacceptable to us and our customers and consumers, or may fail to meet our quality controls. In case of issues affecting a product's safety or regulatory compliance, we may be subject to damages due to product liability, or defective products, components or services may need to be replaced or recalled. Also, some suppliers may not be compliant with local laws, including, among others, local labor laws. In addition, a component supplier may experience delays or disruption to its manufacturing processes or financial difficulties or even insolvency or closure of its business, in particular due to difficult economic conditions. Due to our high volumes, any of these events could delay our successful and timely delivery of products that meet our and our customers' and consumers' quality, safety, security and other requirements, or otherwise materially adversely affect our sales and results of operations or our reputation and brand value.

Possible consolidation among our suppliers could potentially result in larger suppliers with stronger bargaining power and limit the choice of alternative suppliers, which could lead to an increase in the cost, or limit the availability, of components that may materially adversely affect our sales and results of operations. The intensive competition among our suppliers and the resulting pressure on their profitability, as well as negative effects from shifts in demand for components and sub-assemblies, may result in the exit of certain suppliers from our industry and decrease the ability of some suppliers to invest in the innovation that is vital for our business. Our ability to source components efficiently and on terms favorable to us could also be adversely affected if component suppliers who also operate in the mobile device market choose to limit or cease the supply of components to other mobile device manufacturers, including us. Further, our dependence on a limited number of suppliers that require purchases in their home country foreign currency increases our exposure to fluctuations in the exchange rate between the euro, our reporting currency, and such foreign currency and, consequently, may increase our costs which we may not be able to pass on to our customers.

Many of the production sites of our suppliers are geographically concentrated, with a majority of our suppliers based in Asia. In the event that any of these geographic areas is affected by adverse conditions that disrupt production and/or deliveries from our suppliers, this could negatively affect our ability to deliver our products on a timely basis, which may materially adversely affect our business and results of operations.

***We may fail to manage our manufacturing, service creation and delivery as well as our logistics efficiently and without interruption, or fail to make timely and appropriate adjustments, or fail to ensure that our products meet our and our customers' and consumers' requirements and are delivered on time and in sufficient volumes.***

Our product manufacturing, service creation and delivery as well as our logistics are complex, require advanced and costly equipment and include outsourcing to third parties. These operations are continuously modified in an effort to improve efficiency and flexibility of our manufacturing, service creation and delivery as well as our logistics and to produce, create and distribute continuously changing volumes. We may experience difficulties in adapting our supply to meet the changing demand for our products, both ramping up and down production at our facilities as needed on a timely basis; maintaining an optimal inventory level; adopting new manufacturing processes; finding the most timely way to develop the best technical solutions for new products; managing the increasingly

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complex manufacturing process for our high-end products, particularly the software for those products; adapting our manufacturing processes for the requirements of the Windows Phone platform and the production of Nokia products with Windows Phone; or achieving manufacturing efficiency and flexibility, whether we manufacture our products and create our services ourselves or outsource to third parties. We may also face challenges in retooling our manufacturing processes to accommodate the production of devices in smaller lot sizes to customize devices to the specifications of certain mobile networks operators or to comply with regional technical standards. Further, we may experience challenges in having our services and related software fully operational at the time they are made available to customers and consumers, including issues related to localization of the services to numerous markets and to the integration of our services with, for example, billing systems of network operators.

We have from time to time outsourced manufacturing of certain products and components to adjust our production to demand fluctuations as well as to benefit from expertise others have in the production of certain mobile technologies. For certain of our mobile products we use contract manufacturers to produce the entire product, which is subject to certain risks involving, for example, the choice of contract manufacturers, the need to change our mode of operation to work effectively and efficiently with such manufacturers and otherwise manage the complexities of such relationships to ensure that the products meet all of the required specifications.

We may also experience challenges caused by third parties or other external difficulties in connection with our efforts to modify our operations to improve the efficiency and flexibility of our manufacturing, service creation and delivery as well as our logistics, including, but not limited to, strikes, purchasing boycotts, public harm to the Nokia brand and claims for compensation resulting from our decisions on where to locate and how to utilize our manufacturing facilities, including the assembly and customization of our devices and products. Such difficulties may result from, among other things, delays in adjusting or upgrading production at our facilities, delays in expanding production capacity, failure in our manufacturing, service creation and delivery as well as logistics processes, failures in the activities we have outsourced, and interruptions in the data communication systems that run our operations. Such failures or interruptions could result in our products not meeting our and our customers' and consumers' quality, safety, security and other requirements, or being delivered late or in insufficient or excess volumes compared to our own estimates or customer requirements, which could have a material adverse effect on our sales, results of operations, reputation and the value of the Nokia brand.

By the end of 2012, we expect that most of our mobile products will be manufactured and assembled in Asia primarily at our manufacturing facilities, as well as those of our contract manufacturers. As a result, if that region or certain countries in that region are affected by adverse conditions that disrupt production and/or deliveries from our facilities or those of our contract manufacturers, this could negatively affect our ability to deliver our products on a timely basis, which may materially adversely affect our business and results of operations.

***Any actual or even alleged defects or other quality, safety and security issues in our products, including the hardware, software and content used in our products, could have a material adverse effect on our sales, results of operations, reputation and the value of the Nokia brand.***

Our products are highly complex, and defects in their design, manufacture and associated hardware, software and content have occurred and may occur in the future. Due to the very high production volumes of many of our mobile products, even a single defect in their design, manufacture or associated hardware, software and content may have a material adverse effect on our business. Our smartphones, in particular, incorporate numerous functionalities, feature computer-like and consumer electronics-like hardware and are powered by sophisticated software. This complexity and the need for

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the seamless integration of the hardware, software and services elements and compatibility with other relevant technologies may also increase the risk of quality issues in our smartphones. Further, our mobile product portfolio is subject to continuous renewal which, particularly during periods of significant portfolio renewals, may increase the risk of quality issues related to our products, in particular in smartphones.

Defects and other quality issues may result from, among other things, failures in our own product and service creation and deliveries as well as manufacturing processes; failures of our suppliers to comply with our supplier requirements or failures in products and services created jointly with collaboration partners or other third parties where the development and manufacturing process is not fully in our control. Prior to shipment, quality issues may cause failures in ramping up the production of our products and shipping them to customers in a timely manner as well as related additional costs or even cancellation of orders by customers. After shipment, products may fail to meet marketing expectations set for them, may malfunction or may contain security vulnerabilities, and thus cause additional repair, product replacement, recall or warranty costs to us and harm our reputation. In case of issues affecting a product's safety, regulatory compliance including but not limited to privacy or security, we may be subject to damages due to product liability, and defective products, components or service offerings may need to be replaced or recalled. With respect to our services, quality issues may relate to the challenges in having the services fully operational at the time they are made available to our customers and consumers and maintaining them on an ongoing basis. The use of Location & Commerce's map data in our customers' products and services, including Nokia Maps in our mobile devices, involves a possibility of product liability claims and associated adverse publicity. Claims could be made by business customers if errors or defects result in a failure of their products or services, or by end-users of those products or services as a result of actual or perceived errors or defects in the map database. In addition, business customers may require us to correct defective data, which could be costly, or pay penalties if quality requirements or service level agreements are not satisfied.

We make provisions to cover our estimated warranty costs for our products. We believe that our provisions are appropriate, although the ultimate outcome may differ from the provided level which could have a positive or negative impact on our results of operations and financial condition.

Our mobile products and related accessories are also subject to counterfeiting activities in certain markets. Counterfeit products may erode our brand due to poor quality. Such activities may affect us disproportionately due to our brand recognition in various markets. Furthermore, our products are increasingly used together with hardware, software or service components that have been developed by third parties, whether or not we have authorized their use with our products. However, such components, such as batteries or software applications and content, may not be compatible with our products and may not meet our and our customers' and consumers' quality, safety, security or other standards. Additionally, certain components or layers that may be used with our products may enable them to be used for objectionable purposes, such as to transfer content that might be illegal, hateful or derogatory. The use of our products with incompatible or otherwise substandard hardware, software or software components, or for purposes that are inappropriate, is largely outside of our control and could harm the Nokia brand.

***Any cybersecurity breach or other factors leading to an actual or alleged loss, improper disclosure or leakage of any personal or consumer data collected by us or our partners or subcontractors, made available to us or stored in or through our products could have a material adverse effect on our sales, results of operations, reputation and value of the Nokia brand.***

Although we endeavor to develop products that meet the appropriate security standards, such as data protection, we or our products and online services and developer sites may be subject to breaches in our cybersecurity, including hacking, viruses, worms and other malicious software, unauthorized

modifications or illegal activities that may cause potential security risks and other harm to us, our customers or consumers and other end-users of our products. Cybersecurity concerns may affect us disproportionately due to our market position in mobile products, as hackers tend to focus their efforts on popular products. Due to the very high volumes of many of our mobile products, and the evolving nature of services and map data, such events or mere allegations of such events may have a material adverse effect on our business.

In connection with providing our products to our customers and consumers, certain customer feedback, information on consumer usage patterns and other personal and consumer data is collected and stored through our products, in particular with smartphones, either by the consumers or by us or our partners or subcontractors. Our developer sites may also require certain data to be provided by the developers. Loss, improper disclosure or leakage of any personal or consumer data collected by us or that is available to our partners or subcontractors, made available to us or stored in or through our products could result in liability to us and harm our reputation and brand. Moreover, if data held by a developer site is hacked or leaked, the developer may become unwilling to join or remain a part of our developer ecosystems. In addition, governmental authorities may use our products to access the personal data of individuals without our involvement, for example, through so-called lawful intercept capability of network infrastructure. Even perceptions that our products do not adequately protect personal or consumer data collected by us, made available to us or stored in or through our products or that they are being used by third parties to access personal or consumer data could impair our sales, results of operations, reputation and brand value.

***Our business and results of operations, particularly our profitability, may be materially adversely affected if we are not able to successfully manage the pricing of our products and costs related to our products and our operations.***

We need to introduce products in a cost-efficient and timely manner and manage proactively the costs and cost development related to our portfolio of products, including component sourcing, manufacturing, logistics and other operations. Historically, our market position and scale provided a significant cost advantage in many areas of our business, such as component sourcing, compared to our competitors, but our ability to leverage that advantage is now more limited. As well, we have benefited from the cost of components eroding more rapidly than the price erosion of our mobile products. Recently, however, component cost erosion has been generally slowing, a trend that adversely affected our profitability in 2010 and 2011, and may do so in the future. Currency fluctuations may also have an adverse impact on our ability to manage our costs relative to certain of our competitors who incur a material part of their costs in other currencies than we do. If we fail to maintain or improve our market position and scale compared to our competitors across the range of our products, as well as leverage our scale to the fullest extent, or if we are unable to develop or otherwise acquire software, applications and content cost competitively in comparison to our competitors, or if our costs increase relative to those of our competitors due to currency fluctuations, this could materially adversely affect our competitive position, business and results of operations, particularly our profitability.

We need to manage our operating expenses and other internal costs to maintain cost efficiency and competitive pricing of our products. Any failure by us to determine the appropriate prioritization of operating expenses and other costs, to identify and implement on a timely basis the appropriate measures to adjust our operating expenses and other costs accordingly, including the current measures to achieve targeted reductions in our operating expenses, or to maintain reductions could have a material adverse effect on our business, results of operations and financial condition. In particular, our profitability could be materially adversely affected as we transition from our royalty-free Symbian smartphone platform to the royalty-based Windows Phone platform if we are unable to offset our higher cost of sales resulting from our royalty payments to Microsoft with new revenue sources from the Microsoft partnership and a reduction in our operating expenses, particularly our research and development expenses.

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Our products are subject to price erosion, both naturally over their life cycle and as a result of various other factors, including increased price pressure. We have also in the past and may continue to increase the proportion of mobile products sold at lower prices to reach wider groups of consumers, particularly in our smartphones. Other factors that may adversely impact the selling price of our mobile devices include the extent to which consumers do not upgrade their mobile devices, postpone replacement or replace their current device with a lower-priced device and the extent to which our regional mix is weighted towards emerging markets where lower-priced products predominate. Moreover, some of our competitors may continue to reduce their prices resulting in significantly lower profit margins than is customary or sustainable on a long-term basis in this industry, which would lower the selling price of our devices if we chose for competitive reasons to lower our prices. Our inability to lower our costs at the same rate or faster than the price erosion of our mobile products could have a material adverse effect on our business and results of operations, particularly our profitability.

***Our net sales, costs and results of operations, as well as the US dollar value of our dividends and market price of our ADSs, are affected by exchange rate fluctuations, particularly between the euro, which is our reporting currency, and the US dollar, the Japanese yen and the Chinese yuan, as well as certain other currencies.***

We operate globally and are therefore exposed to foreign exchange risks in the form of both transaction risks and translation risks. Our policy is to monitor and hedge exchange rate exposure, and we manage our operations to mitigate, but not to eliminate, the impacts of exchange rate fluctuations. There can be no assurance, however, that our hedging activities will be successful in mitigating the impact of exchange rate fluctuations. In addition, significant volatility in the exchange rates may increase our hedging costs, as well as limit our ability to hedge our exchange rate exposure in particular against unfavorable movements in the exchange rates of certain emerging market currencies and could have an adverse effect on our results of operations, particularly our profitability. Further, exchange rate fluctuations may have an adverse effect on our net sales, costs and results of operations, as well as our competitive position. Exchange rate fluctuations may also make our pricing more difficult as our products may be re-routed by the distribution channels for sale to consumers in other geographic areas where sales can be made at more favorable exchange rates by those channels. Further, exchange rate fluctuations may also materially affect the US dollar value of any dividends or other distributions that are paid in euro as well as the market price of our ADSs. For a more detailed discussion of exchange risks, see Item 5A. "Operating Results—Certain Other Factors—Exchange Rates" and Note 34 of our consolidated financial statements included in Item 18 of this annual report.

***Our products include increasingly complex technologies, some of which have been developed by us or licensed to us by certain third parties. As a result, evaluating the rights related to the technologies we use or intend to use is more and more challenging, and we expect increasingly to face claims that we could have allegedly infringed third parties' intellectual property rights. The use of these technologies may also result in increased licensing costs for us, restrictions on our ability to use certain technologies in our products and/or costly and time-consuming litigation, which could have a material adverse effect on our business, results of operations and financial condition.***

Our products include increasingly complex technologies, some of which have been developed by us or licensed to us by certain third parties. As the amount of such proprietary technologies and the number of parties claiming intellectual property rights continues to increase, even within individual products, as the range of our products becomes more diversified and we enter new businesses, and as the complexity of the technology increases, the possibility of alleged infringement and related intellectual property claims against us continues to rise. The holders of patents and other intellectual property rights potentially relevant to our products may be unknown to us, may have different business models,

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may refuse to grant licenses to their proprietary rights, or may otherwise make it difficult for us to acquire a license on commercially acceptable terms. There may also be technologies licensed to and relied on by us that are subject to alleged infringement or other corresponding allegations or claims by others which could impair our ability to rely on such technologies. In addition, although we endeavor to ensure that companies that work with us possess appropriate intellectual property rights or licenses, we cannot fully avoid the risks of intellectual property rights infringement created by suppliers of components and various layers in our products, or by companies with which we work in cooperative research and development activities. Similarly, we and our customers may face claims of infringement in connection with our customers' use of our products and such claims may also influence consumer behavior.

In many aspects the business models for mobile services are not yet established. The lack of availability of licenses for copyrighted content, delayed negotiations, or restrictive licensing terms may have a material adverse effect on the cost or timing of content-related services offered by us, mobile network operators or third-party service providers, and may also indirectly affect the sales of our mobile devices.

Since all technology standards, including those we use and rely on, include some intellectual property rights, we cannot fully avoid risks of a claim for infringement of such rights due to our reliance on such standards. We believe that the number of third parties declaring their intellectual property to be relevant to these standards, for example, the standards related to so-called 3G and 4G mobile communication technologies, as well as other advanced mobile communications standards, is increasing, which may increase the likelihood that we will be subject to such claims in the future. As the number of market entrants and the complexity of technology increases, it remains likely that we will need to obtain licenses with respect to existing and new standards from other licensors. While we believe that any such intellectual property rights declared or actually found to be essential to a given standard carry with them an obligation to be licensed on fair, reasonable and non-discriminatory terms, not all intellectual property owners agree on the meaning of that obligation and thus costly and time-consuming litigation over such issues has resulted and may continue to result in the future. While the rules of many standard setting bodies, such as the European Telecommunication Standards Institute, or ETSI, often apply on a global basis, the enforcement of those rules may involve national courts, which means that there may be a risk of different interpretation of those rules.

From time to time, some existing patent licenses may expire or otherwise become subject to renegotiation. The inability to renew or finalize such arrangements or new licenses with acceptable commercial terms may result in costly and time-consuming litigation, and any adverse result in any such litigation may lead to restrictions on our ability to sell certain products and could result in payments that potentially could have a material adverse effect on our operating results and financial condition. These legal proceedings may continue to be expensive and time-consuming and divert the efforts of our management and technical personnel from our business, and, if decided against us, could result in restrictions on our ability to sell our products, require us to pay increased licensing fees, substantial judgments, settlements or other penalties and incur expenses that could have a material adverse effect on our business, results of operations and financial condition.

Our patent license agreements may not cover all the future businesses that we may enter; our existing businesses may not necessarily be covered by our patent license agreements if there are changes in our corporate structure or in companies under our control; or our newly-acquired businesses may already have patent license agreements with terms that differ from similar terms in our patent license agreements. This may result in increased costs, restrictions to use certain technologies or time-consuming and costly disputes whenever there are changes in our corporate structure or in companies under our control, or whenever we enter new businesses or acquire new businesses.

Nokia Siemens Networks has access to certain licenses through cross-licensing arrangements with its current shareholders, Nokia and Siemens. If there are changes to Nokia Siemens Networks' corporate



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structure which lead to a deconsolidation of Nokia Siemens Networks from Nokia, Nokia Siemens Networks may be unable to rely on some of its existing licenses. There can be no assurance that such licenses could be replaced on terms that are commercially acceptable.

We make accruals and provisions to cover our estimated total direct IPR costs for our products. The total direct IPR cost consists of actual payments to licensors, accrued expenses under existing agreements and provisions for potential liabilities. We believe that our accruals and provisions are appropriate for all technologies owned by others. The ultimate outcome, however, may differ from the provided level which could have a positive or negative impact on our results of operations and financial condition.

Any restrictions on our ability to sell our products due to expected or alleged infringements of third-party intellectual property rights and any intellectual property rights claims, regardless of merit, could result in material loss of profits, costly litigation, the payment of damages and other compensation, the diversion of the attention of our personnel, product shipment delays or the need for us to develop non-infringing technology or to enter into a licensing agreement. If licensing agreements were not available or are not available on commercially acceptable terms, we could be precluded from making and selling the affected products, or could face increased licensing costs. As new features are added to our products, we may need to acquire further licenses, including from new and sometimes unidentified owners of intellectual property. The cumulative costs of obtaining any necessary licenses are difficult to predict and may over time have a negative effect on our operating results. See Item 4B. "Business Overview—Devices & Services and Location & Commerce—Patents and Licenses" and "—Nokia Siemens Networks—Patents and Licenses" for a more detailed discussion of our intellectual property activities.

***Our sales derived from, and manufacturing facilities and assets located in, emerging market countries may be materially adversely affected by economic, regulatory, political or other developments in those countries or by other countries imposing regulations against imports to such countries.***

We generate sales from and have manufacturing facilities located in various emerging market countries. Sales from those countries represent a significant portion of our total sales and those countries represent a significant portion of any expected industry growth. By the end of 2012, we expect that most of our mobile products will be manufactured and assembled in emerging market countries, particularly in Asia. Accordingly, economic or political turmoil, military actions, labor unrest, public health and environmental issues or natural and man-made disasters in those countries could materially adversely affect the supply of mobile products and network infrastructure equipment manufactured in those countries, our sales and results of operations. In 2011, we witnessed political unrest in various markets where we do business, which adversely affected our sales in those markets, and any reoccurrence and escalation of such unrest could do so in the future.

Further, the economic conditions in emerging market countries may be more volatile than in developed countries and the purchasing power of our customers and consumers in those countries depends to a greater extent on the price development of basic commodities and currency fluctuations which may render our products too expensive to afford. Our business and investments in emerging market countries may also be subject to risks and uncertainties, including unfavorable or unpredictable taxation treatment, exchange controls, challenges in protecting our intellectual property rights, nationalization, inflation, currency fluctuations, or the absence of, or unexpected changes in, regulation as well as other unforeseeable operational risks. For example, Nokia Siemens Networks, as well as its competitors, were adversely affected in 2010 by the implementation of security clearance requirements in India which prevented the completion of product sales to customers, and could be similarly affected again in future periods, leading to ongoing uncertainty in that market. See Note 2 to our consolidated

financial statements included in Item 18 of this annual report for more detailed information on geographic location of net sales to external customers, segment assets and capital expenditures.

***Changes in various types of regulation, technical standards and trade policies as well as enforcement of such regulation and policies in countries around the world could have a material adverse effect on our business and results of operations.***

Our business is subject to direct and indirect regulation in each of the countries where we, the companies with which we work, and our customers do business. We develop many of our products based on existing regulations and technical standards, our interpretation of unfinished technical standards or there may be an absence of applicable regulations and standards. As a result, changes in various types of regulations, their application and trade policies applicable to current or new technologies or products may adversely affect our business and results of operations. For example, changes in regulation affecting the construction of base stations and other network infrastructure could adversely affect the timing and costs of new network construction or expansion and the commercial launch and ultimate commercial success of those networks. Export control, tariffs or other fees or levies imposed on our products and environmental, health, product safety and security, consumer protection and other regulations that adversely affect the export, import, pricing or costs of our products could also adversely affect our sales and results of operations. For example, copyright collecting societies in several member states of the EU as well as in several other countries claim that due to their capability to play and store copyrighted content, mobile devices should be subject to similar copyright levies that are charged for products such as compact disc, digital video disc or digital audio players. Any new or increased levies and duties could result in costs which lead to higher prices for our products, which may in turn impair their demand or decrease profitability if such costs cannot be passed to customers. In Brazil, consumer protection agencies are seeking to implement a requirement that certain mobile devices under warranty and claimed to be defective must be immediately replaced at the point of sale. If such measures are introduced, our costs in Brazil would increase. In addition, changes in various types of regulations or their application with respect to taxation or other fees collected by governments or governmental agencies may result in unexpected payments to be made by us, and in response to difficult global economic conditions there may be an increase in the aggressiveness of collecting such fees.

Our expansion into the provision of services, including the establishment of our Location & Commerce business, has resulted in a variety of new regulatory issues and subjects us to increased regulatory scrutiny. Moreover, our competitors have employed and will likely continue to employ significant resources to shape the legal and regulatory regimes in countries where we have significant operations. Legislators and regulators may make legal and regulatory changes or interpret and apply existing laws in ways that make our services less appealing to the end users, require us to incur substantial costs, change our business practices or prevent us from offering our services.

The impact of changes in or uncertainties related to regulation and trade policies could affect our business and results of operations adversely even though the specific regulations do not always directly apply to us or our products. In many parts of the world where we currently operate or seek to expand our business, local practices and customs may be contrary to our code of conduct and could violate anticorruption laws, including the US Foreign Corrupt Practices Act and the UK Bribery Act 2010. Our employees, or others who act on our behalf, could violate policies and procedures intended to promote compliance with anticorruption laws. Violations of these laws by our employees or others who act on our behalf, regardless of whether we participated in such acts or knew about such acts at certain levels of our organization, could subject us and our employees to criminal or civil enforcement actions, including fines or penalties, disgorgement of profits and suspension or disqualification from sales. Additionally, violations of law or allegations of violations may result in the loss of reputation and business. Detecting, investigating and resolving such situations may also result in significant costs,

including the need to engage external advisors, and consume significant time, attention and resources of our management. As a global company, we are subject to various legislative frameworks and jurisdictions that regulate fraud committed in the course of business operations and as such the extent and outcome of any proceedings is difficult to estimate. Further, our business and results of operations may be adversely affected by regulation and trade policies favoring the local industry participants as well as other measures with potentially protectionist objectives which host governments in different countries may take, particularly in response to difficult global economic conditions.

***We have operations in a number of countries and, as a result, face complex tax issues and could be obligated to pay additional taxes in various jurisdictions.***

We operate our business in a number of countries which involve different tax regimes and the application of rules related to taxation. Applicable taxes, VAT and social taxes for which we make provisions could increase significantly as a result of changes in applicable tax laws in the countries where we operate, the interpretation of those laws by local tax authorities or tax audits performed by local tax authorities. The impact of these factors is dependent on the types of revenue and mix of profit we generate in various countries; for instance, profits from sales of devices or services may have a different tax treatment. Tax losses recognized in deferred taxes are dependent on our ability to offset such tax losses against either other taxable income or future taxable income within the relevant tax jurisdiction. Tax losses recognized within deferred taxes are based on our assumptions for future taxable earnings and these may not occur as planned, which may cause the deferred tax asset to be reduced. There can be no assurances that an unexpected reduction in deferred tax assets will not occur. Any such reduction could have an adverse effect on us. Additionally, our earnings have been and may continue to be in the future unfavorably impacted by Nokia Siemens Networks taxes as no tax benefits are recognized for certain Nokia Siemens Networks deferred tax items. There may also be unforeseen tax expenses which may have an unfavorable impact on us. As a result and given the inherent unpredictable nature of taxation, there can be no assurance that the estimated long-term tax rate of Nokia will remain at current levels or that cash flows regarding taxes will be stable.

***Our operations rely on the efficient and uninterrupted operation of complex and centralized information technology systems and networks. If a system or network inefficiency, malfunction or disruption occurs, this could have a material adverse effect on our business and results of operations.***

Our operations rely on the efficient and uninterrupted operation of complex and centralized information technology systems and networks, which are integrated with those of third parties. All information technology systems are potentially vulnerable to damage, malfunction or interruption from a variety of sources. We pursue various measures in order to manage our risks related to system and network malfunction and disruptions, including the use of multiple suppliers and available information technology security. However, despite precautions taken by us, any malfunction or disruption of our current or future systems or networks such as an outage in a telecommunications network used by any of our information technology systems, or a breach of our cybersecurity, such as an attack by a virus or other event that leads to an unanticipated interruption or malfunction of our information technology systems or networks or data leakages, could have a material adverse effect on our brand image, business and results of operations. In addition, if we fail to successfully use our information technology systems and networks, our operational efficiency or competitiveness could be impaired which could have a material adverse effect on our business and results of operations. A disruption, for instance, in our mail, music and maps services, could cause significant discontent among users of our products resulting in claims or deterioration of our brand image.

***An unfavorable outcome of litigation could have a material adverse effect on our business, results of operations, financial condition and reputation.***

We are a party to lawsuits in the normal course of our business. Litigation can be expensive, lengthy and disruptive to normal business operations and divert the efforts of our management. Moreover, the results of complex legal proceedings are difficult to predict. An unfavorable resolution of a particular lawsuit could have a material adverse effect on our business, results of operations, financial condition and reputation.

We record provisions for pending litigation when we determine that an unfavorable outcome is probable and the amount of loss can be reasonably estimated. Due to the inherent uncertain nature of litigation, the ultimate outcome or actual cost of settlement may vary materially from estimates. We believe that our provisions for pending litigation are appropriate. The ultimate outcome, however, may differ from the provided level which could have a positive or negative impact on our results of operations and financial condition.

See Item 8A7. "Litigation" for a more detailed discussion about litigation that we are party to.

***Allegations of possible health risks from the electromagnetic fields generated by base stations and mobile devices, and the lawsuits and publicity relating to this matter, regardless of merit, could have a material adverse effect on our sales, results of operations, share price, reputation and brand value by leading consumers to reduce their use of mobile devices, by increasing difficulty in obtaining sites for base stations, by leading regulatory bodies to set arbitrary use restrictions and exposure limits, or by causing us to allocate additional monetary and personnel resources to these issues.***

There has been public speculation about possible health risks to individuals from exposure to electromagnetic fields from base stations and from the use of mobile devices. A substantial amount of scientific research conducted to date by various independent research bodies has indicated that these radio signals, at levels within the limits prescribed by safety standards set by, and recommendations of, public health authorities, present no adverse effect on human health. We cannot, however, be certain that future studies, irrespective of their scientific basis, will not suggest a link between electromagnetic fields and adverse health effects that could have a material adverse effect on our sales, results of operations, share price, reputation and brand value. Research into these issues is ongoing by government agencies, international health organizations and other scientific bodies in order to develop a better scientific and public understanding of these issues.

Over the past eleven years we have been involved in several class action matters alleging that Nokia and other manufacturers and cellular service providers failed to properly warn consumers of alleged potential adverse health effects and failed to include headsets with every handset to reduce the potential for alleged adverse health effects. All of those cases have been withdrawn or dismissed in relation to Nokia. In addition, Nokia and several other mobile device manufacturers and network operators were named in nine lawsuits by individual plaintiffs who allege that radio emissions from mobile devices caused or contributed to each plaintiff's brain tumor. A hearing on the admissibility of the plaintiffs' proffered general causation evidence will likely occur in the third quarter of 2013.

Although Nokia products are designed to meet all relevant safety standards and recommendations globally, we cannot guarantee we will not become subject to product liability claims or be held liable for such claims or be required to comply with future regulatory changes in this area that could have a material adverse effect on our business. Even a perceived risk of adverse health effects of mobile devices or base stations could have a material adverse effect on us through a reduction in sales of mobile devices or increased difficulty in obtaining sites for base stations, and could have a material adverse effect on our sales, results of operations, share price, reputation and brand value.

## **Nokia Siemens Networks**

In addition to the risks described above, the following are risks primarily related to Nokia Siemens Networks that could affect Nokia.

***Nokia Siemens Networks' new strategy to focus on mobile broadband and services and its restructuring plan designed to improve financial performance and competitiveness may not succeed in improving its overall competitiveness and profitability. Nokia Siemens Networks may be unable to execute the strategy effectively and in a timely manner, and it may be unable to otherwise continue to reduce operating expenses and other costs.***

In November 2011, Nokia Siemens Networks announced a new strategy, including changes to its organizational structure and an extensive global restructuring program, aimed at maintaining and developing Nokia Siemens Networks' position as one of the leaders in mobile broadband and services and improving its competitiveness and profitability. Planned changes include the introduction of a new business unit structure, the streamlining of certain central functions and a move to three customer operations sales clusters from two.

The plan includes a target to reduce Nokia Siemens Networks annualized operating expenses and production overheads, excluding special items and purchase price accounting related items, by EUR 1 billion by the end of 2013, compared to the end of 2011. Together with a range of productivity and efficiency measures, Nokia Siemens Networks has targeted headcount reductions intended to align the workforce with the company's new strategy. Nokia Siemens Networks will also target areas such as real estate, information technology, product and service procurement costs, overall general and administrative expenses, and a significant reduction of suppliers in order to further lower costs and improve quality.

As the communications market continues to undergo significant changes, Nokia Siemens Networks' strategy to focus on mobile broadband infrastructure and services is subject to risks and uncertainties, including:

- The market may develop in directions that leave Nokia Siemens Networks deficient in certain technologies and industry areas that impact its overall competitiveness.
- Certain customers who currently buy services and products from Nokia Siemens Networks that are not regarded as core may choose to turn to alternative vendors to maintain end-to-end service from their suppliers.
- Developing and implementing the new strategy and restructuring plan has consumed and will continue to consume significant time, attention, resources of management.
- Personnel reductions may result in reduced productivity and dissatisfaction and loss of morale among employees and lead to loss of key personnel. These factors may have a more pronounced adverse impact due to Nokia Siemens Networks' prior restructuring measures. Although Nokia Siemens Networks has not experienced strikes in the past, it may face labor unrest, strikes or work stoppages as a result of increased dissatisfaction among its employees resulting from the ongoing and past restructuring measures.
- There can be greater than expected difficulties from legal, regulatory or other matters that limit Nokia Siemens Networks' ability to implement the restructuring as planned or affecting the associated costs.
- If Nokia Siemens Networks fails to implement its new strategy and restructuring plan successfully or to otherwise reduce its operating expenses and other costs on an ongoing basis, its market share may decline which could result in the loss of scale benefits and reduce competitiveness and its financial performance may deteriorate.

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- The costs, cash outflows and charges related to the implementation of the new strategy and restructuring plan, including the planned personnel reductions, may be greater than currently estimated.
- Nokia Siemens Networks cannot guarantee that it will achieve or sustain the targeted benefits, which could result in further restructuring efforts. In addition, it cannot guarantee that the benefits, even if achieved, will be adequate to meet its long-term growth and profitability targets.

In addition, Nokia, Siemens and Nokia Siemens Networks have indicated that Nokia Siemens Networks is to become a more independent entity. There can be no assurances of the success of such intentions or the timing of such plans, nor can there be any assurance that the ownership of Nokia Siemens Networks will, or will not, change in the future or any new shareholder will provide any support to Nokia Siemens Networks.

***Nokia Siemens Networks' sales and profitability depend on its success in the mobile broadband infrastructure services market, a key focus area in its new strategy. Nokia Siemens Networks' may fail to effectively and profitably adapt its business and operations in a timely manner to the increasingly diverse service needs of its customers in that market.***

A key component of Nokia Siemens Networks' new strategy is the focus on the mobile broadband infrastructure services market, which it believes will be a key driver of sales and profitability. Nokia Siemens Networks' success in the services market is dependent on a number of factors, including adapting its policies and procedures to the additional emphasis on a services business model, recruiting and retaining skilled personnel, its ability to successfully develop market recognition of its business as a leading provider of software and service support in the mobile broadband infrastructure industry, and an ability to maintain efficient and low cost operations. Delays in implementing initiatives, further consolidation of Nokia Siemens Networks' customers, increased competition and other factors which Nokia Siemens Networks may not be able to anticipate may also affect its success in the services market.

If Nokia Siemens Networks is not successful in implementing its services business strategy and achieving the desired outcomes in a timely manner or if the mobile broadband services market fails to develop in the manner currently anticipated by Nokia Siemens Networks, its business will be more dependent on the traditional network systems product offering, which is increasingly characterized by equipment price erosion, maturing industry technology, intense price competition and non-recurring sales. If that occurs, and the current trends in the traditional network systems market continue, this could have a material adverse effect on our business, results of operations, particularly profitability, and financial condition.

***Competition in the mobile broadband infrastructure and related services market is intense. Nokia Siemens Networks' may be unable to maintain or improve its market position or respond successfully to changes in the competitive environment.***

The competitive environment in the mobile and fixed networks infrastructure and related services market continues to be intense and is characterized by equipment price erosion, a maturing of industry technology and intense price competition. Moreover, mobile network operators' cost reductions are reducing the amount of available business resulting in increased competition and pressure on pricing and profitability. Overall, participants in this market compete with each other on the basis of product offerings, technical capabilities, quality, service and price. Nokia Siemens Networks competes with companies that have larger scale and higher margins affording such companies more flexibility on pricing, while some competitors may have stronger customer finance possibilities due to internal policies or governmental support, for example in the form of trade guarantees, allowing them to offer products and services at very low prices or with attractive financing terms. Nokia Siemens Networks

also faces increasing competition from competitors from China, which endeavor to gain market share for instance by leveraging their low-cost advantage in tenders for customer contracts. Competition for new communication service provider customers as well as for new infrastructure deployments is particularly intense and focused on price. In addition, new competitors may enter the industry as a result of acquisitions or shifts in technology. If Nokia Siemens Networks cannot respond successfully to the competitive requirements in the mobile infrastructure and related services market, our business and results of operations, particularly profitability, may be materially adversely affected.

Nokia Siemens Networks seeks to increase sales in geographic markets in which price competition is less intense. If Nokia Siemens Networks is not successful in increasing its sales in those markets or the price competition in those markets intensifies, as a result of the entry into those markets of low cost competitors, price reductions by existing competitors or otherwise, our business, sales, results of operations, particularly profitability, and financial condition may be materially adversely affected.

***Nokia Siemens Networks' liquidity and its ability to meet its working capital requirements depend on access to available credit under Nokia Siemens Networks' credit facilities and other credit lines as well as cash at hand. If a significant number of those sources of liquidity were to be unavailable, or cannot be refinanced when they mature, this would have a material adverse effect on our business, results of operations and financial condition.***

To provide liquidity and meet its working capital requirements, Nokia Siemens Networks is party to certain credit facilities and has arranged for other committed and uncommitted credit lines. Nokia Siemens Networks' ability to draw upon those resources is dependent upon a variety of factors, including compliance with existing covenants, the absence of any event of default and, with respect to uncommitted credit lines, the lenders' perception of Nokia Siemens Networks' credit quality. The implementation of Nokia Siemens Networks new strategy and restructuring plan is expected to result in costs, cash outflows and charges. These will have a negative effect on Nokia Siemens Networks liquidity position and may be greater than currently estimated. The covenants under Nokia Siemens Networks' existing credit facilities require it, among other things, to maintain a leverage ratio below a predetermined threshold. Nokia Siemens Networks' ability to satisfy these and other existing covenants may be affected by events beyond its control and there can be no assurance that Nokia Siemens Networks will be able to comply with its existing covenants in the future. Any failure to comply with the covenants under any of Nokia Siemens Networks' existing credit facilities may constitute a default under its other credit facilities and credit lines and may require Nokia Siemens Networks to either obtain a waiver from its creditors, renegotiate its credit facilities, raise additional financing from existing or new shareholders or repay or refinance borrowings in order to avoid the consequences of a default. There can be no assurance that Nokia Siemens Networks would be able to obtain such a waiver, to renegotiate its credit facilities, to raise additional financing from existing or new shareholders or to repay or refinance its borrowings on terms that are acceptable to it, if at all.

In addition, any failure by Nokia Siemens Networks to comply with its existing covenants, any actual or perceived decline in Nokia Siemens Networks' business, results of operations or financial condition or other factors may result in a deterioration of lenders' perception of Nokia Siemens Networks' credit quality, which may negatively impact Nokia Siemens Networks' ability to renegotiate its credit facilities, refinance its borrowings or to draw upon its uncommitted credit lines. Although Nokia Siemens Networks believes it has sufficient resources to fund its operations, if a significant number of those sources of liquidity were to be unavailable, or cannot be refinanced when they mature, this could have a material adverse effect on our business, results of operations and financial condition.

Nokia Siemens Networks has historically received financial support in the form of additional capital from its shareholders Nokia and Siemens. Nokia and Siemens do not, however, guarantee Nokia Siemens Networks' current financial obligations. There is no assurance that Nokia Siemens Networks will receive similar or other financial support from its shareholders in the future.

***Nokia Siemens Networks' may fail to effectively and profitably invest in new competitive products, services, upgrades and technologies and bring them to market in a timely manner.***

The mobile infrastructure and related services market is characterized by rapidly changing technologies, frequent new solutions requirements and product feature introductions and evolving industry standards.

Nokia Siemens Networks' success depends to a significant extent on the timely and successful introduction of new products, services and upgrades of current products to comply with emerging industry standards and to address competing technological and product developments carried out by Nokia Siemens Networks' competitors. The research and development of new and innovative technologically-advanced products, including the introduction of new radio frequency technologies, as well as upgrades to current products and new generations of technologies, is a complex and uncertain process requiring high levels of innovation and investment, as well as accurate anticipation of technology and market trends. Nokia Siemens Networks may focus its resources on technologies that do not become widely accepted or ultimately prove not to be viable. Nokia Siemens Networks' net sales and operating results will depend to a significant extent on its ability (i) to maintain a product portfolio and service capability that is attractive to its customers; (ii) to enhance its existing products; (iii) to continue to introduce new products successfully and on a timely basis; and (iv) to develop new or enhance existing tools for its services offerings.

Nokia Siemens Networks' failure to effectively and profitably invest in new products, services, upgrades and technologies and bring them to market in a timely manner could result in a loss of net sales and market share and could have a material adverse effect on our results of operations, particularly profitability and financial condition.

Nokia Siemens Networks also depends on its customers' perception of its technological strengths and weaknesses. For instance, in its perceived lack of end-to-end capabilities in areas such as intellectual property transformation and of innovation capabilities and integration into the innovation ecosystem may be seen as weaknesses. Nokia Siemens Networks relatively small presence in the centers of innovation ecosystems in telecommunications may harm our perceived credibility in terms of innovation capability.

***Nokia Siemens Networks may be unable to execute successfully its strategy for the acquired Motorola Solutions wireless network infrastructure assets, including retaining existing customers of those acquired assets, cross-selling its products and services to customers of those acquired assets and otherwise realizing the expected synergies and benefits of the acquisition.***

In April 2011, Nokia Siemens Networks acquired the majority of the wireless network infrastructure assets of Motorola Solutions which expanded its operations by adding new products and services, new customer relationships and approximately 6 900 employees.

The integration of the acquired Motorola Solutions assets is now largely complete. However, there are certain risks related to realizing the expected synergies and benefits of the acquisition, including the following:

- Existing customers of the acquired Motorola Solutions assets may be reluctant, unwilling or unable to maintain their customer relationship with Nokia Siemens Networks.
- The markets for the acquired Motorola Solutions assets do not evolve as anticipated and the technologies acquired do not prove to be those needed to be successful in those markets.



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- Nokia Siemens Networks may not successfully access the existing markets of the acquired Motorola Solutions assets due to a lack of requisite capabilities, regulatory reasons or otherwise.
- Nokia Siemens Networks may not realize the expected expansion of its customer base or successfully cross-sell its products and services to customers of the acquired Motorola Solutions assets.
- Nokia Siemens Networks may lose key employees of the acquired Motorola Solutions assets.
- There may be delays in the full implementation of Nokia Siemens Networks policies, controls, procedures, information technology systems and other business processes with respect to the acquired Motorola Solutions assets.
- Unexpected contingent or undisclosed liabilities may have been acquired with the acquired Motorola Solutions assets and agreed indemnities may provide insufficient coverage against such liabilities.
- Impairments of goodwill as a result of the acquisition could arise.

***The networks infrastructure and related services business relies on a limited number of customers and large multi-year contracts. Unfavorable developments under such a contract or in relation to a major customer may have a material adverse effect on our business, results of operations and financial condition.***

Large multi-year contracts, which are typical in the networks infrastructure and related services business, include a risk that the timing of sales and results of operations associated with those contracts will differ from what was expected when the contracts were entered into. Moreover, such contracts often require the dedication of substantial amounts of working capital and other resources, which may negatively affect Nokia Siemens Networks' cash flow, particularly in the early stages of a contract, or may require Nokia Siemens Networks to sell products and services in the future that would otherwise be discontinued, thereby diverting resources from developing more profitable or strategically important products and services. Any non-performance by Nokia Siemens Networks under those contracts may have a material adverse effect on us because network operators have demanded and may continue to demand stringent contract undertakings, such as penalties for contract violations.

The networks infrastructure and related services business is also dependent on a limited number of customers and consolidation among those customers is continuing. In addition, network operators are increasingly entering into network sharing arrangements, which further reduce the number of networks available for Nokia Siemens Networks to service. As a result of this trend and the intense competition in the industry, Nokia Siemens Networks may be required to provide contract terms increasingly favorable to the customer to remain competitive. Any unfavorable developments in relation to or any change in the contract terms applicable to a major customer may have a material adverse effect on our business, results of operations and financial condition.

***Providing customer financing or extending payment terms to customers can be a competitive requirement in the networks infrastructure and related services business and may have a material adverse effect on our business, results of operations and financial condition.***

Communication service providers in some markets may require their suppliers, including Nokia Siemens Networks, to arrange, facilitate or provide financing in order to obtain sales or business. They may also require extended payment terms. In some cases, the amounts and duration of these financings and trade credits, and the associated impact on Nokia Siemens Networks' working capital, may be significant. In response to the tightened credit markets, requests for customer financing and extended payment terms have continued on the same level in terms of volume and scope since 2009.

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Recent turmoil in the financial markets may result in more customer financing requests. While the amount of financing Nokia Siemens Networks provided directly to its customers in 2011 remained at approximately the same level as in 2010, as a strategic market requirement Nokia Siemens Networks primarily arranged and facilitated, and plans to continue to arrange and facilitate, financing to a number of customers, typically supported by export credit or guarantee agencies. In the event that those agencies face future constraints in their ability or willingness to provide financing to Nokia Siemens Networks' customers, it could have a material adverse effect on our business. Nokia Siemens Networks has agreed to extended payment terms for a number of customers, and it will continue to do so. Extended payment terms may continue to result in a material aggregate amount of trade credits. Even when the associated risk is mitigated by the fact that the portfolio relates to a variety of customers, defaults in the aggregate could have a material adverse effect on us.

Nokia Siemens Networks cannot guarantee that it will be successful in arranging, facilitating or providing needed financing, including extended payment terms to customers, particularly in difficult financial market conditions. In addition, certain of Nokia Siemens Networks' competitors may have greater access to credit financing than Nokia Siemens Networks, which could adversely affect Nokia Siemens Networks' ability to compete successfully for business in the networks infrastructure and, indirectly, in the related services sectors. Nokia Siemens Networks' ability to manage its total customer finance and trade credit exposure depends on a number of factors, including its capital structure, market conditions affecting its customers, the level and terms of credit available to Nokia Siemens Networks and to its customers, the cooperation of export credit or guarantee agencies and its ability to mitigate exposure on acceptable terms. Nokia Siemens Networks may not be successful in managing the challenges associated with the customer financing and trade credit exposure that it may have from time to time. While defaults under financings, guarantees and trade credits to Nokia Siemens Networks' customers resulting in impairment charges and credit losses have not been a significant factor for us, these may increase in the future, and commercial banks may not continue to be able or willing to provide sufficiently long-term financing, even when backed by export credit agency guarantees, due to their own liquidity constraints. See Item 5B. "Liquidity and Capital Resources—Structured Finance," and Note 34(b) to our consolidated financial statements included in Item 18 of this annual report for a more detailed discussion of issues relating to customer financing, trade credits and related commercial credit risk.

Nokia Siemens Networks has used the sale of receivables to banks, other financial institutions or back to customers to improve its liquidity, and any significant change in the ability of Nokia Siemens Networks to continue this practice could impair its liquidity.

***Some of the Siemens carrier-related operations transferred to Nokia Siemens Networks have been and continue to be the subject of various criminal and other governmental investigations related to whether certain transactions and payments arranged by some current or former employees of Siemens were unlawful. As a result of those investigations, government authorities and others have taken and may take further actions against Siemens and/or its employees that may involve and affect the assets and employees transferred by Siemens to Nokia Siemens Networks, or there may be undetected additional violations that may have occurred prior to the transfer or violations that may have occurred after the transfer of such assets and employees.***

Public prosecutors and other government authorities in several jurisdictions have conducted and in some jurisdictions continue to conduct criminal and other investigations related to whether certain transactions and payments arranged by some current or former employees of Siemens relating to the carrier-related operations for fixed and mobile networks that were transferred to Nokia Siemens Networks were unlawful. These investigations are part of substantial transactions and payments involving Siemens' former Com business and other Siemens' business groups which remain under investigation.