Higher returns through focused growth

Capital Markets Day 2016

Marc Rouanne
Chief Innovation and Operating Officer
Nokia is a benchmark in integration

1. Massive Scale Access
2. Converged Edge Cloud
3. Smart Network Fabric
4. Universal Adaptive Core
5. Programmable Network OS
6. Augmented Cognition Systems
7. Digital Value Platforms
8. Dynamic Data Security
Nokia Business System: The key to strong execution

- Investment optimization
- Performance management
- Continuous improvement
- Talent management

- Strategy and financial planning
- Business performance management
- Transformation
- Quality, expert networking and knowledge management

- Innovation investment
- Integration
- End-to-end M&A
Nokia Business System: the key to integration success

Why are we successful?

- We have the right tools.
- We learn from mistakes.
- We run integration and transformation in parallel.

- We engage customers and focus on quality.
- We industrialize the best practices.
- We have executives who have done it successfully.
Nokia Business System: the key to transformation management

Transformation target cascading by

- Integration and Transformation Board
- Location Strategy Board
- Lab Council
- Quality Board

Color Books are the execution engine
We set P&L impacting targets on books and track them

**Quality**: consistent 20% decrease in new customer defect reports from 2012 to 2015 (YoY in Mobile Networks)

**Pricing analytics and control mechanisms**: substantial positive impact on Ultra Broadband Networks bottom line (year to date)
Further increasing operational efficiency

<table>
<thead>
<tr>
<th></th>
<th>Net Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nokia digitalization</td>
</tr>
<tr>
<td>2.</td>
<td>Industrialization of best practices</td>
</tr>
<tr>
<td>3.</td>
<td>Sales efficiency and enhanced capabilities</td>
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<tr>
<td>4.</td>
<td>Global operations automation</td>
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<tr>
<td>5.</td>
<td>Global services excellence</td>
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<tr>
<td>6.</td>
<td>R&amp;D efficiency</td>
</tr>
<tr>
<td>7.</td>
<td>Site strategy</td>
</tr>
<tr>
<td>8.</td>
<td>Centralization and harmonization of processes and tools in corporate functions</td>
</tr>
</tbody>
</table>
# Expanding transformation across Nokia

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional and Service Profitability Improvement</td>
<td>Implement best practices across the business groups.</td>
<td>Net Sales, Gross Margin, OPEX</td>
</tr>
<tr>
<td>Total Cost of Ownership</td>
<td>Reduce the TCO in line with company’s revenues.</td>
<td>Gross Margin, OPEX</td>
</tr>
<tr>
<td>Supply Chain and Procurement</td>
<td>Improve supply chain efficiency and unify the value chain.</td>
<td>Gross Margin, OPEX</td>
</tr>
<tr>
<td>Services</td>
<td>Further automation and centralization.</td>
<td>OPEX</td>
</tr>
<tr>
<td>Lab Virtualization</td>
<td>Create economies of scale and volume.</td>
<td>OPEX</td>
</tr>
<tr>
<td>Site Strategy</td>
<td>Enhanced flexibility, innovation, proximity to customers, attractiveness to talents.</td>
<td>OPEX</td>
</tr>
</tbody>
</table>
Nokia is on track to reach net savings of EUR 1.2bn by 2018

Split of gross savings 2018 by type of cost

- **OPEX**
  - Internal headcount
  - Indirect spend
  - Subcontracting
  - Real estate
  - Hardware costs

- **COS**
  - Corporate Functions
  - Other Networks business groups
  - Mobile Networks

Split of gross savings 2018 by organization

- **2018**
  - Mobile Networks
  - Corporate Functions
  - Other Networks business groups
Nokia Business System: the key to people management

Workforce planning by:

- Headcount Steering Board

Grooming future leaders

Promoting high performance

Knowledge and competence development

Job rotation

Defragmented teams

Employer of choice
Nokia Business System: built to drive value across Nokia

1. Massive Scale Access
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8. Dynamic Data Security
Megatrends in the digital transformation of society and industry

<table>
<thead>
<tr>
<th>Network, Compute &amp; Storage</th>
<th>Augmented Intelligence</th>
<th>Internet of Things</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Massive scale access</td>
<td>• Programmable network</td>
<td>• Universal adaptive core</td>
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<td>• Dynamic data security</td>
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<tr>
<td>Human and Machine Interaction</td>
<td>Social &amp; Trust Economics</td>
<td>Digitalization &amp; Ecosystems</td>
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<tr>
<td></td>
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<td>• Digital value platforms</td>
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<td>• Dynamic data security</td>
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</table>
The Future X Network

Bell Labs Future X architecture outlining the network evolution

1. Massive Scale Access
   - Humans & Machines

2. Converged Edge Cloud
   - Software-defined, end-to-end

3. Smart Network Fabric
   - Access agnostic converged core
   - Dynamic, decomposed network functions

4. Universal Adaptive Core
   - Programmable Network OS
   - Access agnostic converged core
   - SDN, NFV, Common data layer

5. Augmented Cognition Systems
   - Programmable Network OS
   - Analytics, Machine learning
   - Open APIs

6. Digital Value Platforms
   - Universal Adaptive Core
   - ANP, CSP, ICP, Vertical apps

7. Dynamic Data Security
   - Augmented Cognition Systems
   - Bell Labs Future X architecture
   - New trust framework
   - Ecosystem sharing
   - Mass edge monitoring

8. Investment
   - Innovation investment
   - Performance management
   - Continuous improvement
   - Talent management

### Key Features
- Investment optimization
- Performance management
- Continuous improvement
- Talent management
- Innovation investment
- Performance management
- Continuous improvement
- Talent management
End to end portfolio drives capability to:

- Ride different investment waves in line with our strategy
- Capture maximum return on investment
- Invest in disruptive innovation for the future market attractiveness

Multiple portfolio segments

<table>
<thead>
<tr>
<th>Optimized R&amp;D Investments in 2017</th>
<th>Revenue</th>
<th>Market maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Massive Scale Access</td>
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</table>

- 4.5/4.9/5 G seamless solutions
- 10G copper, cable, fiber
- Optimized cloud infra & services
- Virtualized telco cloud solutions
- Terabit transport
- High performance virtual routing
- Shared data layer
- Converged adaptive core
- Seamless DC & WAN SDN
- Cloud/NFV orchestration & operations
- Augmented network & user analytics
- Self-learning & optimizing networks
- Advanced VR & digital health technologies
- Any device management
- Advanced device & network security solutions
Future top-line drivers

- Building a software business at scale
- Expand to secure revenue in attractive adjacencies
- Anything as a service (XaaS)
- Cross selling
- Digital business ecosystems
Future bottom line enhancers

- Digital supply and delivery chain
- Cloud-based tools throughout our operations
- IoT and robotics to our production lines
- Automation in service delivery
- Use of common software foundations
- Development for operations (DevOps)
- Automated sales

Digitalizing Nokia

Cloud based tools for employees

Cloud and edge cloud for labs

Connected workplace

Low latency labs

Investment in data centers and telco cloud centers
Integration has been a success, and we have a deep and systematic business system to deliver our EUR 1.2bn of cost savings.

We are seeing the benefits of our portfolio scope which allows to address the megatrends, that require converged massive scale fixed and wireless or combined Optics and IP.

We use our own technology and knowledge to digitalize, and as a result, become more cost competitive and address new focused opportunities for growth.
It should be noted that Nokia and its business are exposed to various risks and uncertainties, and certain statements herein that are not historical facts are forward-looking statements, including, without limitation, those regarding future business and the financial performance of Nokia and its industry and statements preceded by “believe,” “expect,” “anticipate,” “foresee,” “sees,” “target,” “estimate,” “designed,” “aim,” “plans,” “intends,” “focus,” “continue,” “will” or similar expressions. These statements are based on management's best assumptions and beliefs in light of the information currently available to it. Because they involve risks and uncertainties, actual results may differ materially from the results that we currently expect. Factors, including risks and uncertainties that could cause such differences can be both external, such as general, economic and industry conditions, as well as internal operating factors. We have identified these in more detail on pages 69 to 87 of Nokia's annual report on Form 20-F for the year ended December 31, 2015 under “Operating and Financial Review and Prospects—Risk Factors”, our other filings with the U.S. Securities and Exchange Commission and in our interim report issued on May 10, 2016, our half year financial report issued on August 4, 2016, our interim report issued on October 27, 2016 and our stock exchange release covering our Capital Market Day issued on November 15, 2016. Other unknown or unpredictable factors or underlying assumptions subsequently proven to be incorrect could cause actual results to differ materially from those in the forward-looking statements. Nokia does not undertake any obligation to publicly update or revise forward-looking statements, whether as a result of new information, future events or otherwise, except to the extent legally required.

In addition to information on our reported IFRS results, we provide certain information on a non-IFRS, or underlying business performance, basis. Non-IFRS results exclude costs related to the Alcatel-Lucent transaction and related integration, goodwill impairment charges, intangible asset amortization and purchase price related items, restructuring related costs, and certain other items that may not be indicative of Nokia's underlying business performance. We believe that our non-IFRS financial measures provide meaningful supplemental information to both management and investors regarding Nokia’s underlying business performance by excluding the aforementioned items that may not be indicative of Nokia’s business operating results. These non-IFRS financial measures should not be viewed in isolation or as substitutes to the equivalent IFRS measure(s), but should be used in conjunction with the most directly comparable IFRS measure(s) in the reported results. A detailed explanation of the content of the non-IFRS information and a reconciliation between the non-IFRS and the reported information for historical periods can be found in Nokia’s respective results reports. Please see our issued interim reports for more information on our results and financial performance for the indicated periods as well as our operating and reporting structure.

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