From transceivers to IoT

DNB TMT Conference, August 22 2017

Svenn-Tore Larsen, CEO Nordic Semiconductor ASA
Nordic Semiconductor at a glance

- Fabless semiconductor IoT company
- Low power wireless connectivity and embedded processing
- Bluetooth® low energy / ANT / 2.4GHz RF
- Market leader in Bluetooth® low energy
- > 2 billion wireless ICs shipped since 2002
- Low power cellular IoT development in Finland

Key Facts:
- Founded in 1982, HQ in Norway
- > 580 employees
- R&D in Norway, Finland, Poland and US
- Publicly Listed: OBX:NOD
- Key partners: TSMC, AMKOR, ASE
A perspective on the last 5 years

from wire replacement to

Internet-of-things

from transceivers to

System-on-Chips
Nordic transformed into an IoT company

Leadership in Bluetooth low energy

- The driving technology for low power short-range IoT
- Technology and market leader
- > 100MUSD business in 2016

Connecting things to the internet

- Smarter things and services
- Incredible breadth of applications

Built a large and diversified customer base

- Close to tripled our base customers vs. since 2012
- A key characteristic of IoT
- The emergence of non-consumer
Transceivers to System-on-Chips

nRF24L01 Transceiver
(180nm CMOS)

Complexity

80X

nRF52840 SoC
(55nm CMOS)

Application and Wireless Connectivity
SoC integration and solutions - key to success

Nordic solution stack

- Application
  - Application software and tools
  - Embedded processing
- Wireless connectivity
  - Protocol stack software
  - Radio and baseband processing

Delivering more value to our customers
- Wireless connectivity + application
- Single chip SoC for power, size and cost
- Robust Bluetooth ASP from 0 to 100MU/y

Competitive differentiation
- Leadership position on integration and overall solution including software and tools
- System level power consumption and performance

Driving market growth and diversification
- Easy-to-use and complete solution
- Lowering barriers of adoption
- Enabling new application
Our goals moving forward

Growth and expansion in low power short-range IoT

- Building on our leading position in Bluetooth low energy
- Selected and strategic expansion
- Value add to our customers
- Expanding our addressable market

Build a leading position in low power cellular IoT

- Leverage our strategic investment since 2015
- Leverage synergies with short range - technology and market
- Establish a second growth vehicle

Continue with value add integration and solutions

- SoC, software and tools
- Short-range and cellular IOT
- Increase our value offering per design socket
- Competitive differentiation
Market outlook – Bluetooth low energy

Bluetooth low energy
IC market 2017 - 2020

30 to 45% 3-year CAGR
- Growth in existing verticals
- New verticals/applications
- Fast paced and innovative
- Emergence of non-consumer

Diversification in types of ICs
- High-end SoCs
- Mainstream SoCs
- Baseline SoCs
- Network processors

Source: Nordic management and industry reports
Market outlook – low power cellular IoT

LTE-M / NB-IoT
IC market 2017 - 2020

Driving use cases
- Remote monitoring
- Predictive & remote maintenance
- Remote operations
- Internet connectivity

100%+ 3-year CAGR
- 2G/3G replacement
- Growth in existing applications
- Emergence of new applications

Source: Nordic management and industry reports
Uniquely positioned in fast growing markets

Lower ASP

Higher ASP

CAGR 2017 - 2020

-10%
-20%
10%
20%
30%
40%
> 100%

Bluetooth® low energy
(Including multi-protocol 2.4GHz/802.15.4)
- 1 billion units
#1 position

Proprietary 2.4GHz RF
- 300 million units
#1 position

Low power Cellular IoT
(LTE-M and NB-IoT)
- 100 million units
Market entry H2 2017

Diversification
Consumer
Industrial
Enterprise
Automotive
Healthcare
Smart City
Agriculture
Utilities

Source: Nordic management and industry reports
Last 5 years

- Transformed into a leading IoT company
- Transceivers to highly integrated SoC solutions
- Achieved leadership in Bluetooth low energy
- Strategic investment in low power Cellular IoT

Next 5 years

- Continued investments for growth
- Growth and expansion in Bluetooth / short-range IoT
- Build a leading position in low power cellular IoT
From wireless to IoT

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