NB-IoT – Competitive Situation and Customer Experiences

2018-09-20

RDVELHO

We Design a More Intelligent World


5G
MILLISECONDS
4G/5G
GIGABYTES
NB
IoT
SQUARE METERS

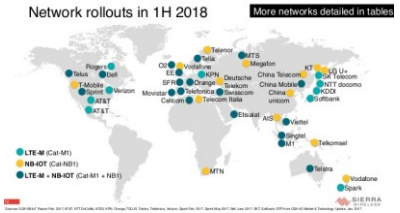
NB-IoT

Signal Strength

Life-cycle Cost

Licensed Spectrum

Long Battery Life



Global Coverage

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MAKING IOT EASY

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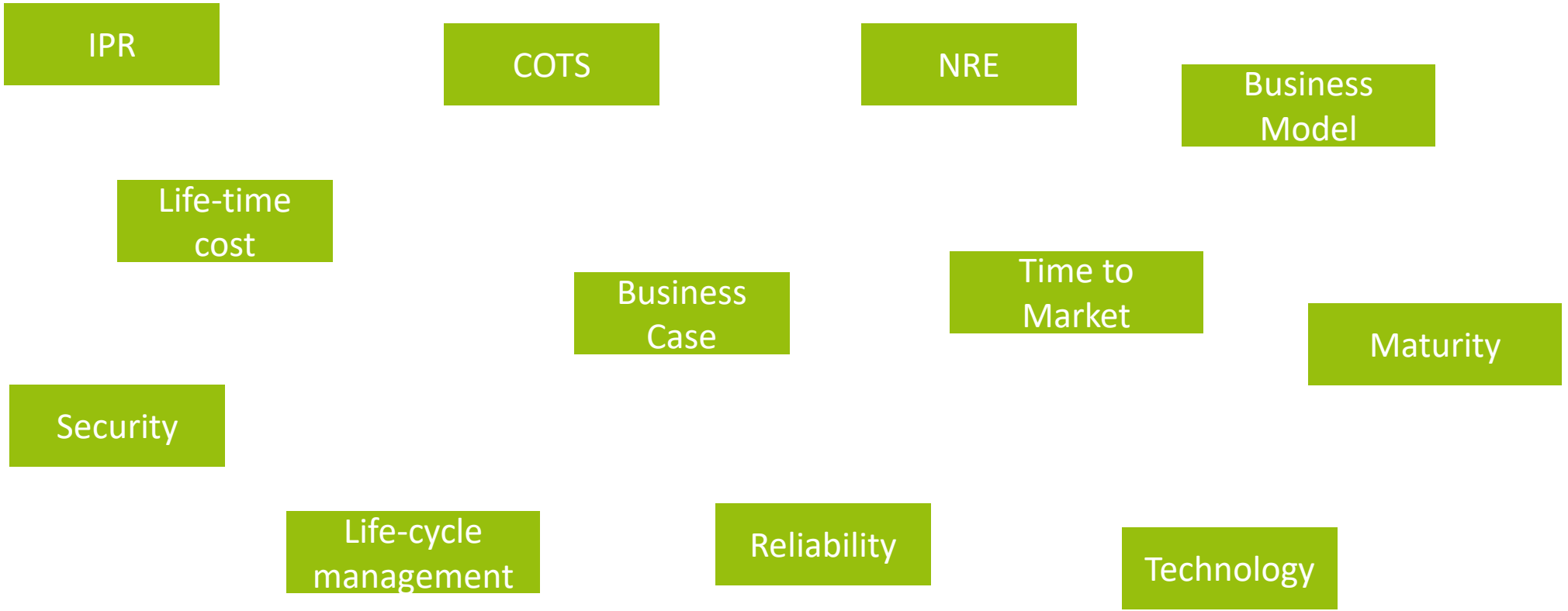
Competitive situation



Case Konecranes

- “The utilization rate of a crane is important information for us. We are also interested in temperature and vibration. These are useful when planning maintenance, for example. In addition, a sensor can be adjusted to transmit data on fault situations,”
- “We believe that NB-IoT is a globally functional technology with a reasonable cost level and excellent coverage,” says Matti Kemppainen, Director, Research and Innovation at Konecranes Plc

Case Posti

- "With a billion addressed mail items each year, this information conserves the environment and saves costs. For instance, if the time needed to process each item sent via Posti would take just a second longer than today, annual expenses would increase by 13 million euros. If we are able to save even 30 seconds of working time on unnecessary letterbox visits, the total benefit is significant," says Sami Reponen, Chief Process Officer at Posti.

Case Oulun Energia

- ”We have more than 10 000 targets and 1000 kilometers of pipeline. It would be highly beneficial for us to follow the conditions of network in real time.”, says Kimmo Alatulkkila, Director, Heat Services and Maintenance at Oulun Energia

Case Delete

- ”We will verify the applicability of NB-IoT in predictive maintenance. During the pilot there will be also new sensor development for different applications”, says Markku Salminen, Development and HSEQ Director at Delete Group Oy

Thank You!

Technology comparison

INSIGHTS TO THE NB IOT TECHNOLOGY

- End to End Security
- Deep Indoor Coverage
- 3GPP Standard
- Quality of Service
- Mass Connected Devices
- Low Power Consumption
- Low Data Rates
- Low Hardware Costs

LPWA TECHNOLOGY COMPARISON TABLE

	NB-IoT Telia	LoRa	sigfox
Spectrum & Capacity	Licensed; LTE In-band and Guard Band; Very high capacity	Unlicensed; Potential capacity issues	Unlicensed; Potential capacity issues
Interference immunity	Very high	Low, prone to congestion	Low, prone to congestion
Frequency Band	800/900 MHz	868/915 MHz ISM	868/915 MHz ISM
Technology Standard	Open & 3GPP backed	Closed specification	Closed specification
Network standard	Open	Open	Proprietary
Radio standard	Open	Proprietary	Open
Signal Bandwidth	180 KHz	125 KHz	0.1 KHz
Max Data Rate	Up to 250 Kbps Uplink 22 Kbps Downlink	Up to 50 Kbps Uplink	Up to 100 bps Uplink
Bidirectional data	Yes	Yes, very limited	No
Latency	30 ms	1-10 s	1-30 s
Payload	unlimited	256 bytes	12 bytes upstream, 8 bytes downstream

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LPWA TECHNOLOGY COMPARISON TABLE

	NB-IoT Telia	LoRa	sigfox
Device battery lifetime	very low power consumption and hence extends battery life to 10 years	10 years	10 years
Device variety	High	Medium	Low
Possibility to upgrade device firmware	Yes	No	No
Average connectivity price per device per month	1 €	1 €	1 €
Average module price	Under 5 € (target by 3GPP)	5 - 10 €	4 – 8 €
Vendor dependency	No lock-in	Yes, only Semtech-approved vendors	Semi-proprietary
Coverage	22 Km in urban areas	2 to 5 Km in urban areas	3 to 10 Km in urban areas
Service quality	Controlled	Uncontrolled	Uncontrolled
Footprint	Nationwide full LTE networks	Deployed locally (often city-by-city)	Deployed locally (often city-by-city)

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