Oulu *Capital of Northern Scandinavia*

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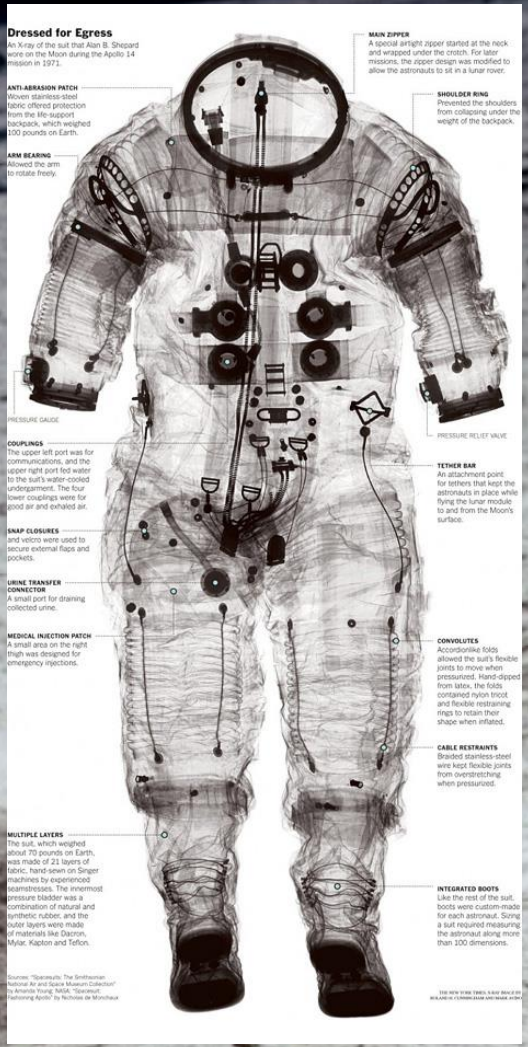
www.oulu.com

Grand Challenge USA



Grand Challenge Norway

Grand Challenge Finland

Oulu Track Record in Wireless

2011 WIFIUS – High Capacity NextGen Cognitive Radio Solution
2010 World's First Fully 'Open' Mobile Device Powered by Moblin
2010 Linux Phone launch
2009 World 1st Cloud based mobile security services
2008 World 1st pedestrian navigation phone
2007 Launch of mobile Wimax test network
2005 The world’s 1st public NFC user
2004 The world’s 1st commercial Edge high-speed network
2003 Europe’s 1st free urban area WLAN network
2002 The world's 1st WCDMA (3GPP) telephone call
2002 The world's 1st security OTA-services for Mobile phones
2001 The world's 1st security products for Mobile phones
1996 The world’s 1st WCDMA telephone call
1993 Modern menu-driven user interface style for mobile phone
1992 The 1st contactless fare collection system for public transportation
1991 The world's 1st GSM telephone call
1991 The world's 1st GSM base station
1982 Europe’s largest science park
1981 The world's 1st NMT network

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More Than 100 Wireless Devices

- Oulu ICT ecosystem has designed and developed more than one hundred mobile phone models.
  - more than 1 billion sold devices
  - Nokia's ecosystem has enabled the growth
- More than 7 companies can develop and design wireless handsets from scratch to market ready product.

Nokia Solutions and Networks - NSN

Every 95 seconds one NSN designed cellular network base station is installed

R&D and mass production skills

Complete Product Creation – Quality

Product Definition

- Market and cosumer research
- Business analysis
- Innovation, concepting and validation
- Technology selection and prototyping
- Industrial design
- Cost structure and value chain analysis
- User experience

System Design

- HW & SW architecture
- Interfaces and connectivity
- Performance analysis
- Mechanics design
- UI/UX design
- Interoperability

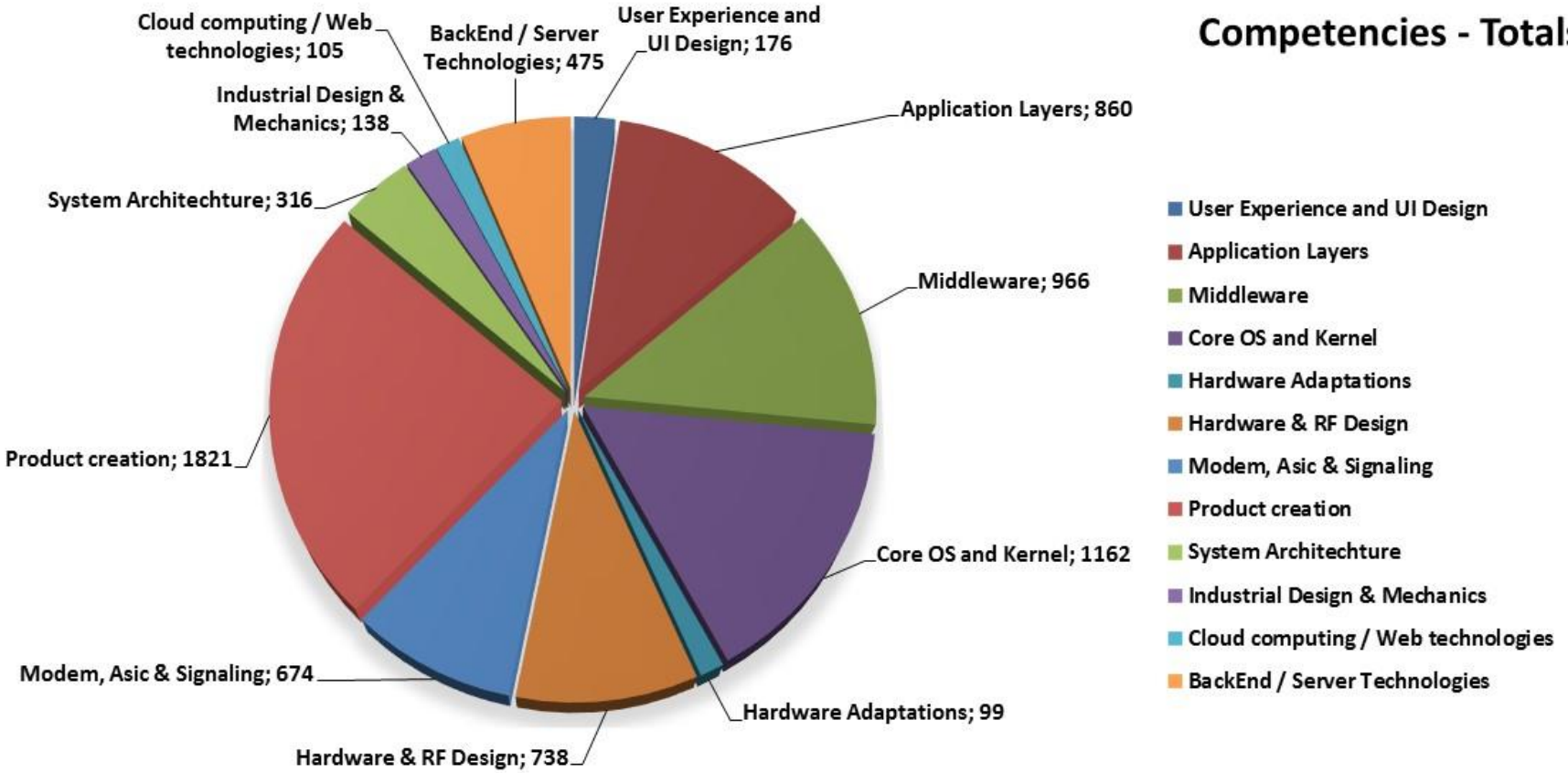
Development

- Product program and projects management
- HW development
- SW development
- UI/UX
- Mechanics
- Manufacturability verification
- Product validation and testing
- Sourcing and logistics chain
- Production ramp-up
- Ecosystem ramp-up

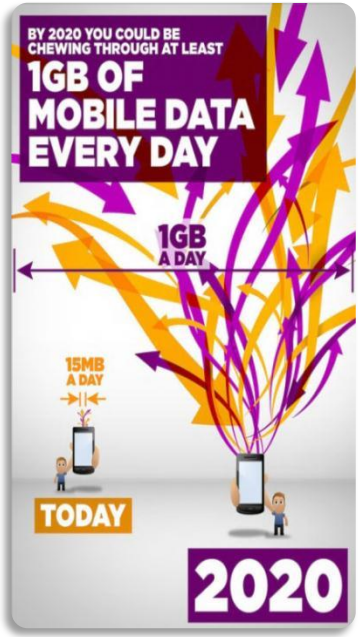
Go-To-Market and Sales

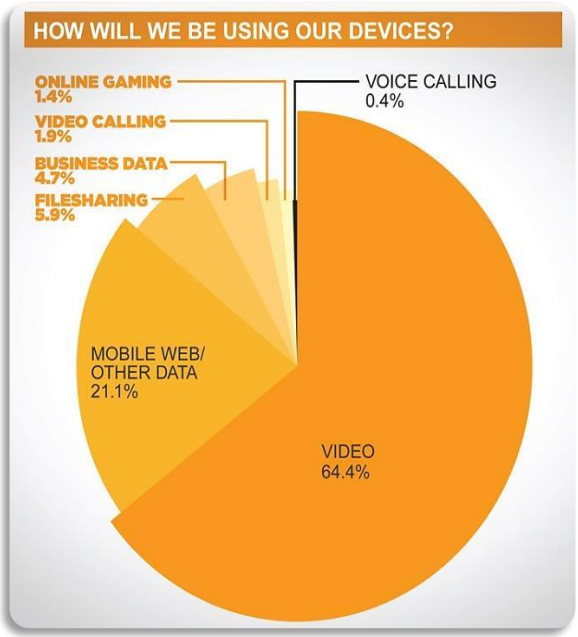
- Global market entry strategy
- Global Business Development
- Global support and warranty operations
- Product quality improvements
- Developer Support
- Customer Support
- Product updates
- Market expanding – Product variants

7530 Oulu ICT R&D experts categorized



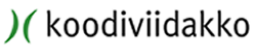
5G Network development already on-going





Leading Global ICT Brands in Oulu

Future Success Stories by SMEs



Ibis Luxury Watch- developed by Creoir

Adidas SmartRun, developed and designed by Elektrobit

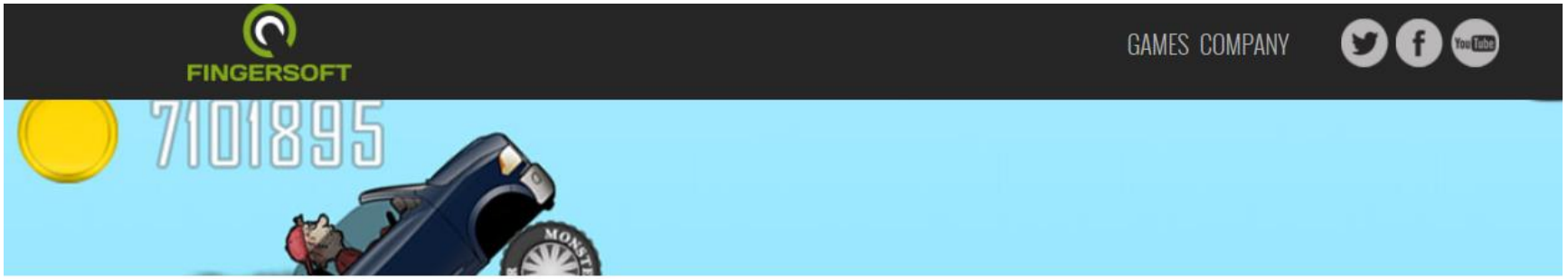
Mendor Blood Glucose meter, developed and designed by Lewel Group

Digital Locking with zero power - iLOQ

Rugged Windows Tablet Inari by AavaMobile

Heart Rate Monitors - Polar

Hill Climb Racing by Fingersoft - more than 160M downloads



HILL CLIMB RACING

A very addictive and fun hill climb driving game. Complete levels and gain bonuses from tricks to upgrade your car.

ANDROID APP ON Google play

Available on the iPhone App Store

Download from Windows Phone Store

Download from Windows Store

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Seven Habits of Highly Successful Business Innovation Ecosystems (William Aulet MIT)

A regional business innovation ecosystem needs seven well-functioning components to be successful:

1. Infrastructure including roads, telephones, Internet access, and legal, accounting and other professional services

2. Funding sources, such as lines of credit or equity.

3. Invention, emerging from individuals, universities.

4. Corporate R&D centers, and other sources; demand for its products.

5. Culture that celebrates entrepreneurship and accepts the risks involved.

6. Skilled, well-educated labor pool of entrepreneurs.

7. Supportive government that provides innovation-friendly regulations, tax incentives, bankruptcy laws, and other policies.

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Generation of 300 StartUp -companies

During year 2013 Oulu based startup-companies reached about 40 million euros investments.

One of funders, **Northern Startup Fund,** is a venture capital fund managed by Butterfly Ventures that invests into early stage startups as the first asymmetric fund in Finland.

Asymmetry means that the public investor, which benefits also in a form of tax income, lowers the risk of a private investor by offering a possibility for returning the invested capital and profit share before the public investor.

From the private investors' point of view this improves the risk – return expectation ratio significantly.

The public investors in the Northern Startup Funds are the City of Oulu and the European Regional Development Fund (the Northern Ostrobothnia Centre for Economic Development, the European Union).

THE TIMES
Technology

Global co-ordination is the ultimate prisoner's dilemma
Philip Aldrick's Economic Insight

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Frozen assets: Finland's start-ups pitch for cash from a hole in the ice

Nic Fildes Technology & Communications Editor in Oulu
Last updated at 12:01AM, February 8 2014

1 of 6

TimesBusiness @TimesBusiness · 10. helmikuuta
If you missed it: Finland's start-ups pitch for cash from a hole in the ice (pics @henriluoma) thetim.es/1IUf8MP pic.twitter.com/tVkeKYFkTO

19 4

Behind the story:

'It feels like pins and needles under the skin'

The Finns were amazed when I said I'd have a go at ice swimming. But it made sense to them when I said I was...
Published at February 8 2014

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From Research to Business

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Core Innovation Environments and LivingLabs

OULUHEALTH	PrintoCent	Arctic Smart City
Developing innovative solutions and products in collaboration with Oulu university hospital and companies for life science sector.	Developing and manufacturing environment for researchers to design prototype for printed intelligence products.	SmartCity development environment offers premises for research, development, testing and launching for new innovations for smart living.

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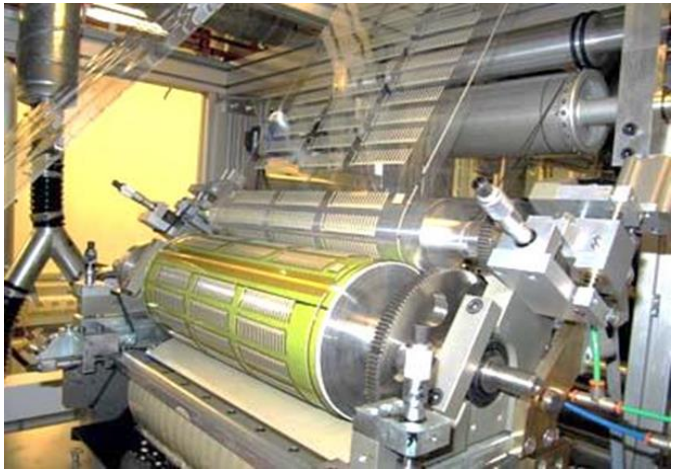
PrintoCent Pilot Factory



Laboratory infrastructure

- Table-top printers
- Research and development
- Proof of concept demonstrators

R2R up-scaling

- Room-sized R2R lines
- Transfer from lab to R2R
- Process development

R2R pilot manufacturing

- Hall-sized R2R pilot lines
- Towards pilot manufacturing
- Towards market trials

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OuluHealth

Forerunner in Smart Health

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OuluHealth Ecosystem services

World class lab services
- Product testing
- Certification management
- Simulation facilities, 3D cave
- Technology healthcare center

Innovation and research services
- Oulu Innovation Alliance (Oullabs)
- CHT innovation centre
- Centre for Wireless Communications

Marketing, networks & matchmaking

Investment services

Market participation services

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Unique Business Scene is the Key For Success

The ecosystem in Oulu covers the whole chain of creating wireless products and systems from the design to the production

Elements of Smart City in Oulu

- Strong education and research by University
- Innovation Centers for R&D between science and business
- Spearheading companies
- Wide StartUp –generation
- Pre-active city (politicans and office holders) with long term strategical activities
- Bridges to global markets if you don´t have internal demand
- Invest in –capability
- Everyday collaboration wiht key actors in ecosystem

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SuperWeek in Oulu 9-13.5.2014

Oulu, City of 240 000 people

- 400+ ICT companies
- 15 000 high-tech jobs
- 7500+ R&D experts
- 200 eHealth companies
- 300 start-up companies
- 16 000 students in University of Oulu
- 8000 students in Oulu University of Applied Sciences


Oulu Capital
of Northern
Scandinavia
The most intelligent
city in Europe
2012 & 2013
Intelligent Community
Forum (ICF)
OULU

Thank You!

Janne Mustonen

Key Account Director / ICT

BusinessOulu

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