NokiaSiemens and Agile Development
by Petri Haapio
JAOO 2008

reaktor *innovations*

© Petri Haapio 2008

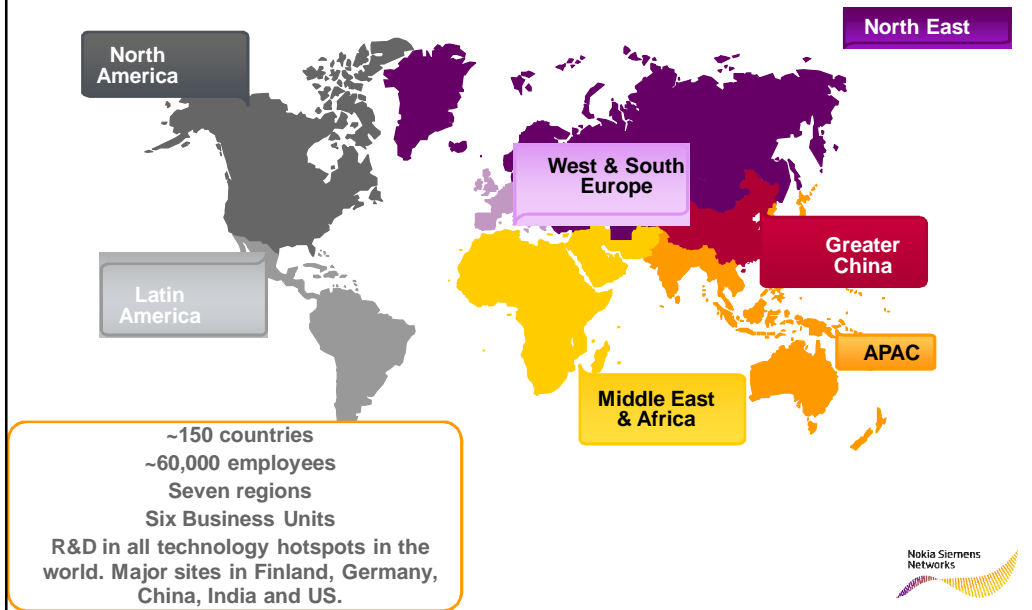Nokia Siemens Networks

---

DISCLAIMER!

This presentation is based on my views and my opinion. This is not the view of the company and also others have experienced the same time in a different way :)

reaktor *innovations*
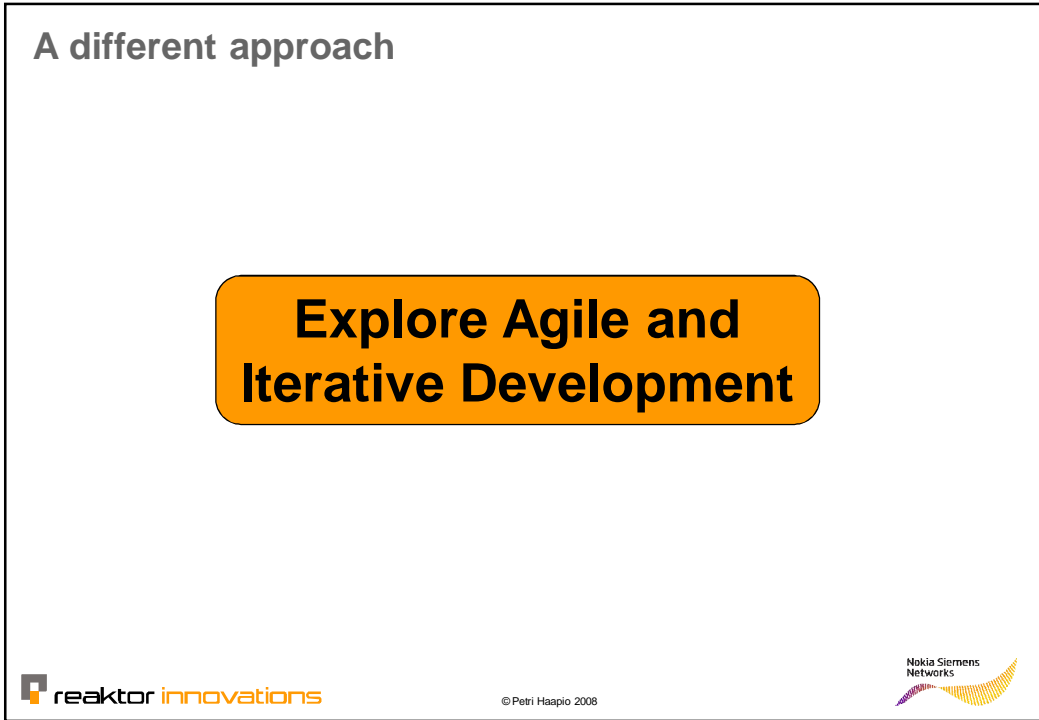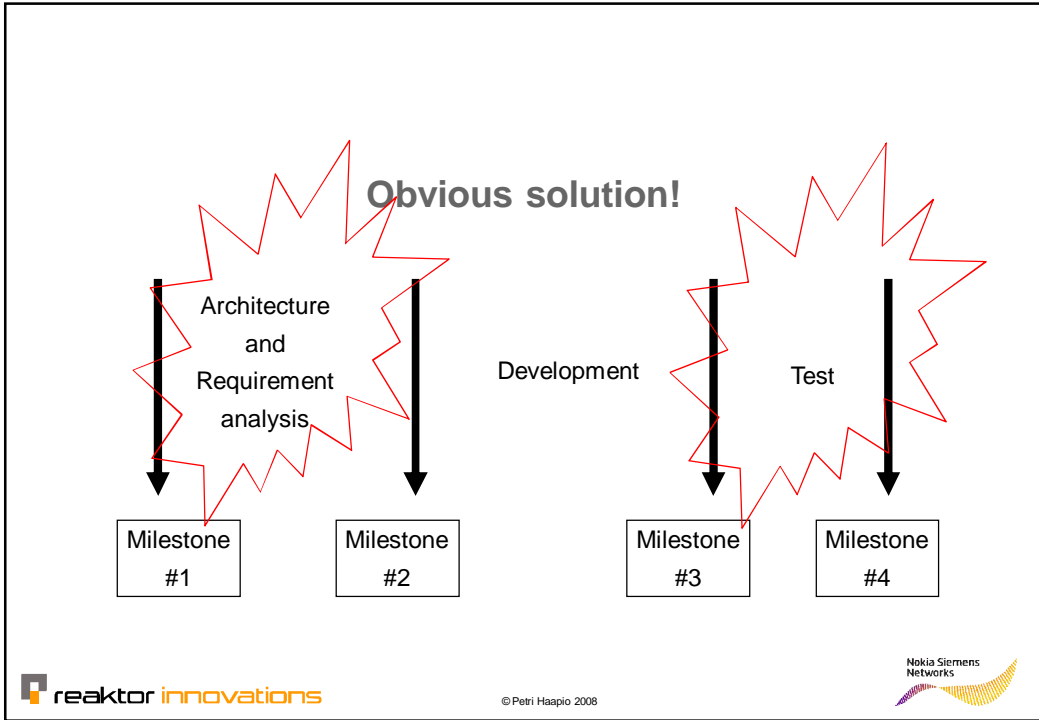
© Petri Haapio 2008

Nokia Siemens Networks

NSN

North America

North East

West & South Europe

Latin America

Greater China

APAC

Middle East & Africa

~150 countries
~60,000 employees
Seven regions
Six Business Units
R&D in all technology hotspots in the world. Major sites in Finland, Germany, China, India and US.

Nokia Siemens Networks

Year 2004

Release cycle 2 years

Most important features not implemented in time

Requirements churn during a project >35%

Many faults found in testing… and by customer.

Project success rate … unknown

reaktor innovations

© Petri Haapio 2008

Nokia Siemens Networks

Obvious solution!

Architecture and Requirement analysis

Development

Test

Milestone #1

Milestone #2

Milestone #3

Milestone #4

reaktor innovations

© Petri Haapio 2008

Nokia Siemens Networks

A different approach

Explore Agile and Iterative Development

reaktor innovations

© Petri Haapio 2008

Nokia Siemens Networks

Result:

Flexible R&D

Make R&D more flexible.
By introducing,
Agile and iterative development
To Nokia Networks

reaktor *innovations*

© Petri Haapio 2008

Nokia Siemens Networks

The search

Where in Networks did people experimented with Agile?

reaktor *innovations*

© Petri Haapio 2008

Nokia Siemens Networks

The Nokia Test (called so by Jeff)

You know when you are not doing iterative development when:
- Iterations are longer than 2-4 weeks.
- Team tries to complete specification before programming.
- An iteration does not include testing.
- Iteration does not produce workable code.
- Detailed (task level) plan are accurate estimates are expected at the beginning of a project.
- The sprint plan doesn't reflect what the team is doing.

You know when you are not doing agile development when:
- There is little co-operation within the team.
- Design and code is produced in individual effort.
- Progress is measures by hours spend or documents created instead of working code.
- Builds are done once every three weeks.

reaktor innovations   © Petri Haapio 2008   Nokia Siemens Networks

Introductions

reaktor innovations   © Petri Haapio 2008   Nokia Siemens Networks

Suddenly

Share information, be open!

AgileNet Blog

Flexible R&D blog

Flexible R&D programs list

Newsgroups   T-Shirt

Scrum Master mailing list

Reports & presentations

Newsletter

Agile Wiki   Product Owner Mailing list

AgileNokia wiki

Open Space Gathering

Continuous Integration Wiki

Flexible Company Team

What do we do?

Give and arrange training

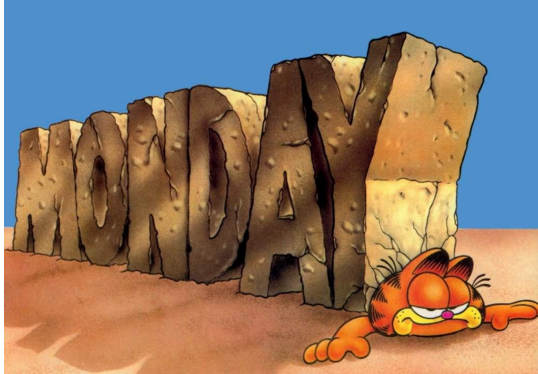Facilitation

Organize Gatherings

Create Communities

Coaching

Project Support

Monday Morning

MONDAY

Result:

Agile evangelists…

Timeboxes and reflections

How to work within timeboxes?

Hot to learn and improve?

reaktor innovations

Nokia Siemens Networks

Requirement and modeling workshops

How to split the features?

How to model?

reaktor innovations

© Petri Haapio 2008

Nokia Siemens Networks

TDD and refactoring

TnsdlUnit

Tnsdl Eclipse plugin

CppUTest

reaktor innovations
© Petri Haapio 2008
Nokia Siemens Networks

ATDD & Test Automation

www.Robot Framework.org

reaktor innovations
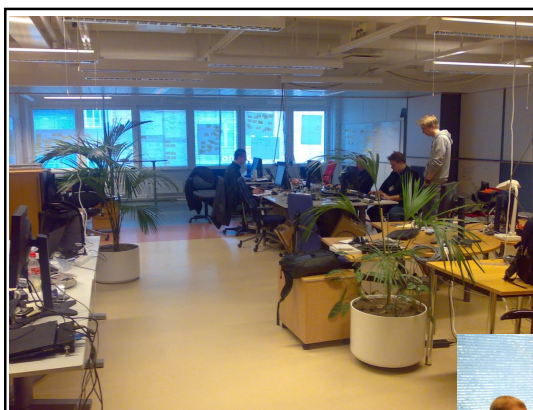© Petri Haapio 2008
Nokia Siemens Networks

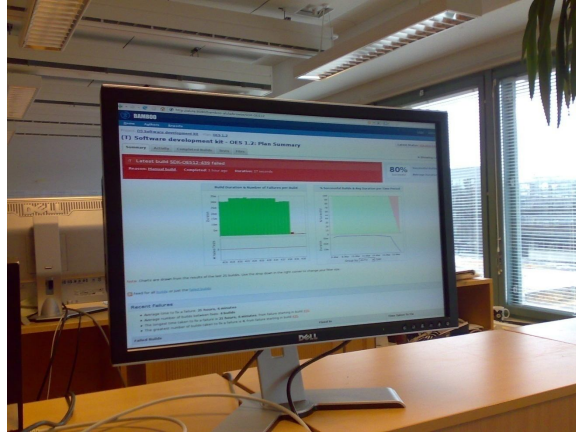## Office Layout

reaktor innovations

© Petri Haapio 2008

Nokia Siemens Networks

reaktor innovations

Visualizations

Metrics

"Number and origin of the content changes"

"Hit ratio of content estimation"

Data from NPM

Metrics	Result	Target
Time to Market (E1-E5)	*LE 9.5 months*	10 months
E4 slippage	+ 29 %	+/- 30%
Number and origin of the content changes (added/deleted features)	9 / 6	
Hit ratio of E1 content estimation (% of E1 content in E4)	10%	
Hit ratio of product decisions (% of features used by customer, estimation at E4)	100%	100%

reaktor innovations

Nokia Siemens Networks

Other Impediments

"Operational Mode"

"Organizational Blueprint"

"Financial Systems"

reaktor innovations

© Petri Haapio 2008

Nokia Siemens Networks

Leadership & Management Culture

Empowerment

Command and Control

© Petri Haapio 2008

Nokia Siemens Networks

Processes & Tools

Are they important?

Do we have to care?

© Petri Haapio 2008

Nokia Siemens Networks

History & Current State

History

Project "Flexible R&D" started in beginning 2005.
Result:
- April 2005:   4 projects
- July 2005;   6 projects
- December 2005:   9 projects
- March 2006:   13 projects
- November 2006   17 projects
- January 2007   21 projects
- August 2007   40+ projects

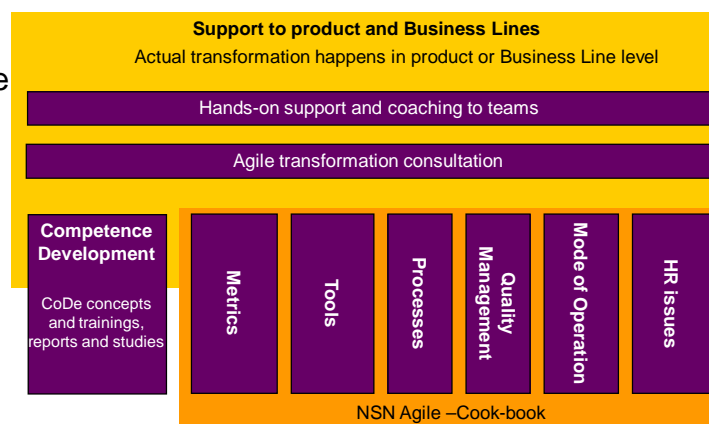Renamed to Flexible Company in March 2007

Currently in Nokia Siemens Networks

- About ¼ of NSN Product development is either piloting or using Agile development practices
- Products range from:
  - Environments: Java   Traditional
  - Size: 10   ⟷   500
  - Development sites: 1   5
  - Product phase: New   Legacy

- The largest product which is slowly moving to agile development is about 500 people, legacy product, embedded SW, multi-site and collaborated
- Several training and coaching solutions
  - 750 CSM's, 3500 participated in Introduction to Agile and Lean

reaktor innovations

© Petri Haapio 2008

Nokia Siemens Networks

Agile transformation in NSN

- Each Business Unit or Product (Line) decides if and when to do the transformation
  - No enforcement, let the teams choose what practices to use!

- Centralized support for Agile and Lean development

Support to product and Business Lines
Actual transformation happens in product or Business Line level

Hands-on support and coaching to teams

Agile transformation consultation

Competence Development

CoDe concepts and trainings, reports and studies

Metrics

Tools

Processes

Quality Management

Mode of Operation

HR issues

NSN Agile –Cook-book

reaktor innovations

© Petri Haapio 2008

Nokia Siemens Networks

Lessons Learned

Nokia Siemens Networks

Guiding principles

Focus on value and people creating it

Only give support, no organizational enforcement

Balance top-down and bottom-up

Evolving and participative knowledge creation

Build trust and communities

reaktor innovations

Nokia Siemens Networks

Guiding principles

- Don't do agile, be agile
  - It's all about mindset, values and principles

- There is no single Agile method or practice that would be sufficient as such, so we combine Agile practices to NSN processes
- Teams combine different Agile practices and take gradually more new practices into use

- **The two "musts" (a.k.a. where to start)**
  - **Short iterations   ->   Quick feedback**
  - **Retrospectives   ->   Inspect and adapt!**

reaktor *innovations*   © Petri Haapio 2008   Nokia Siemens Networks

---

Core Agile practices, which emerged in NSN

- Time-boxed short iterations

- Prioritized product backlog

- Continuous integration

- Self-organized, cross-functional feature teams

- Inspect and adapt

- Core set of practices for agile transformation
  - the basics in place
  - create the framework for continuous improvement towards increased agility and flexibility.
- These practices alone are not enough!

reaktor *innovations*   © Petri Haapio 2008   Nokia Siemens Networks

Exec level involvment

"Our business environment is forcing us to increase flexibility and responsiveness of product development. Moving more towards Agile and Iterative development methods are key ways of doing that.

This is also a good way to aim for Lean working methods and removing the waste from development (e.g. unimportant features being developed, many handovers during development, too heavy processes, waiting for decisions or approval).

The transformation starts in Product Management and R&D, but does not end there; we have to look at the whole chain from customer to development to delivery to customer.

There are no ready made solutions, this transformation is about learning together and working towards it!

I would strongly encourage you to learn about Agile and think how you could benefit from it in your own work. "

reaktor innovations

Nokia Siemens Networks