Project Results

Speeding change in large companies
Scaling-up agile development technology for embedded systems software

The FLEXI project resulted in major improvements in productivity for embedded systems software development across large enterprises. Some 58 trials of the agile approach demonstrated concrete impacts on production innovation, reduction in lead times for new products and cutting integration time in major software development projects.

Few industrial or consumer products can now function without software. Agile offers a particularly flexible approach for embedded software by promoting development iterations throughout the project life cycle. This approach was demonstrated successfully at the team level in the earlier ITEA AGILE project, where it obtained radical improvements in productivity and time to market.

SCALING UP FOR LARGE ORGANISATIONS
FLEXI applied the agile approach to improve performance in embedded software development across large, multi-site enterprises. Problems that had to be overcome included:
- Multi-product synchronisation and cultural variations between sites and locations in large, multi-site, distributed development environments;
- Value-chain management in a global production landscape;
- Enabling and managing innovation;
- Tool support;
- Contracting; and
- Clashes between research and business operations.

The ITEA 2 project scaled up agile techniques to very large domains with hundreds or thousands of people involved. Those involved appreciated the ability to reduce reaction time using new organisational structures that permit feedback on new ideas in minutes or days rather than weeks or months. A survey of a 1,000 people indicated that they highly rated the agile approach as it easier to change directions and it is more transparent.

FOCUS ON THREE WORK AREAS
FLEXI focused on three areas: market-shaping innovation; product portfolio management; and large-scale agile production. The result is a ‘hyper-performing’ organisation which offers a high level of agility in decision-making processes and in its ability to respond to market needs.

A major outcome is the ‘agile positioning system’ – a strategic and practical tool to assess and analyse how agile a company is and what it can do to improve its situation. This is being taken further in other

The FLEXI project resulted in major improvements in productivity for embedded systems software development across large enterprises. Some 58 trials of the agile approach demonstrated concrete impacts on production innovation, reduction in lead times for new products and cutting integration time in major software development projects.

Few industrial or consumer products can now function without software. Agile offers a particularly flexible approach for embedded software by promoting development iterations throughout the project life cycle. This approach was demonstrated successfully at the team level in the earlier ITEA AGILE project, where it obtained radical improvements in productivity and time to market.

SCALING UP FOR LARGE ORGANISATIONS
FLEXI applied the agile approach to improve performance in embedded software development across large, multi-site enterprises. Problems that had to be overcome included:
- Multi-product synchronisation and cultural variations between sites and locations in large, multi-site, distributed development environments;
- Value-chain management in a global production landscape;
- Enabling and managing innovation;
- Tool support;
- Contracting; and
- Clashes between research and business operations.

The ITEA 2 project scaled up agile techniques to very large domains with hundreds or thousands of people involved. Those involved appreciated the ability to reduce reaction time using new organisational structures that permit feedback on new ideas in minutes or days rather than weeks or months. A survey of a 1,000 people indicated that they highly rated the agile approach as it easier to change directions and it is more transparent.

FOCUS ON THREE WORK AREAS
FLEXI focused on three areas: market-shaping innovation; product portfolio management; and large-scale agile production. The result is a ‘hyper-performing’ organisation which offers a high level of agility in decision-making processes and in its ability to respond to market needs.

A major outcome is the ‘agile positioning system’ – a strategic and practical tool to assess and analyse how agile a company is and what it can do to improve its situation. This is being taken further in other
Major project outcomes

**DISSEMINATION**
- 249 papers (including conference presentations)
- 2 books, 3 PhD theses
- 20 seminars and workshops
- 7 keynote talks at major software conferences
- 5 international conferences (XP08, XP09, ProfES09, ScanAgile08,09)

**EXPLOITATION**
- 58 trials with impact data
- 7 new products / tools including:
  - Product Backlog Management (Reaktor)
  - PLUM (ESI)
  - Releasious (Sirris)
- Several new services – e.g.:
  - Agile Positioning System (VTT)
  - Innovation Enablement Framework (TUT)
  - Product Management Framework (Sirris)
- Several new methods for companies’ internal use – e.g., 77% of 5000 Nokia Siemens Network’s developers want to continue to use new methods

**STANDARDISATION**
- Influence on 2 standards: IEEE 1648, ISO SC7

**SPIN-OFFS**
- 2 spin-off companies: Invicor (FI) (www.invicor.com) and Yoso Services (FI) (www.yoso.fi)