# Virtual Centre of Excellence in Mobile and Personal Communications
# -Mobile VCE-
## CORE 4 Research Area: 'Instant Knowledge'
### (A Secure Autonomous Business Collaboration Service)

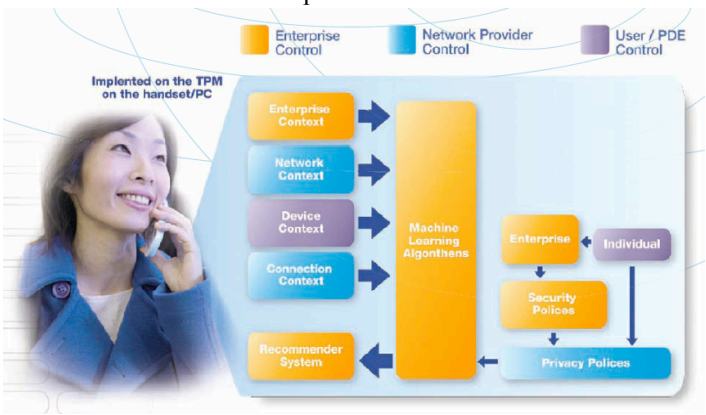
## The Opportunity

The Smartphone, Netbook and Mobile Internet Device *are changing* the device landscape, but their new capabilities *will enable* forward-thinking operators to offer new genres of service, which Instant Knowledge seeks to exemplify.

Large organizations suffer from too much unusable information. The Instant Knowledge service will enable the busy employee to rapidly 'find a man who can', the company expert to answer a specialized question, or to create ad hoc teams to address urgent customer needs.

Our personal devices contain and process our calendar and contacts, our phone calls and emails. Instant Knowledge will allow such data to be harnessed, to deliver real value to the telecom operators' corporate customers. For such services to become reality requires an enterprise-grade and policy-driven architecture, designed from the outset to deliver appropriate security and privacy.

- **Secure Policy-Based Platform**
  Privacy and trust research underpins system development, requiring threat models, security analysis, and collaborative protocol design. Whilst data filtering schemes can be used to protect privacy while retaining the ability to query a large data set, distribution of the data across low power, partially-trusted, devices raises new challenges. Security, privacy and trust must be policy driven, to integrate evolving enterprise, telecom operator and individual user needs.



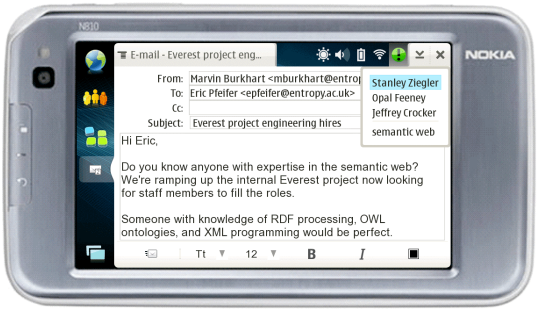

## Technical Approach

The Instant Knowledge research programme is based on solid academic foundations, but aims at demonstrating a commercialisable service.
The technology base is as follows:

- **Autonomous Personal Networking**
  Information harvesting, interpersonal network building, and the associated security and privacy requirements – aka secure social networking. Techniques to extract comms metadata, an ontology to describe and share this information, protocols to establish the personal network and to share information, a method to pro-actively grow the network, and guidelines to ensure usability
- **Proactive Distributed Recommendation**
  Distributed algorithms to support a machine learning, context-based, recommender engine, for use within the user's personal network. Within a wireless network, with so many contributing personal devices, a distributed recommender approach is needed - something not previously been studied in an information-limited context such as this.

## Demonstration & Commercialisation

A **Business User Group**, with representatives of large corporate customers and the operational business units of the telecom provider companies, is supporting the research team with non-technical end-user advice, to ensure a viable service with maximum commercial potential.




*IK Service on one of the Demonstrator Devices*

Practical feasibility is being demonstrated using a Linux-based platform, using Nokia N810 devices with 3G & WiFi access, but with service portability to other devices and platforms in mind. Business User Group involvement is helping guide the demonstrator implementation from both service and end-user acceptance perspectives.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