A Maemo Client for Web services of a Trading Business System

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Problem Description

Demo C++ application: Mobile client for Trade Business System (TBS)

Platforms:

- Maemo 4 (Diablo 4.1)
- Maemo 5 (Fremantle)

Functionality:

- Customer Orders and Sales
- Business reports
- Synchronizing with TBS Date Base

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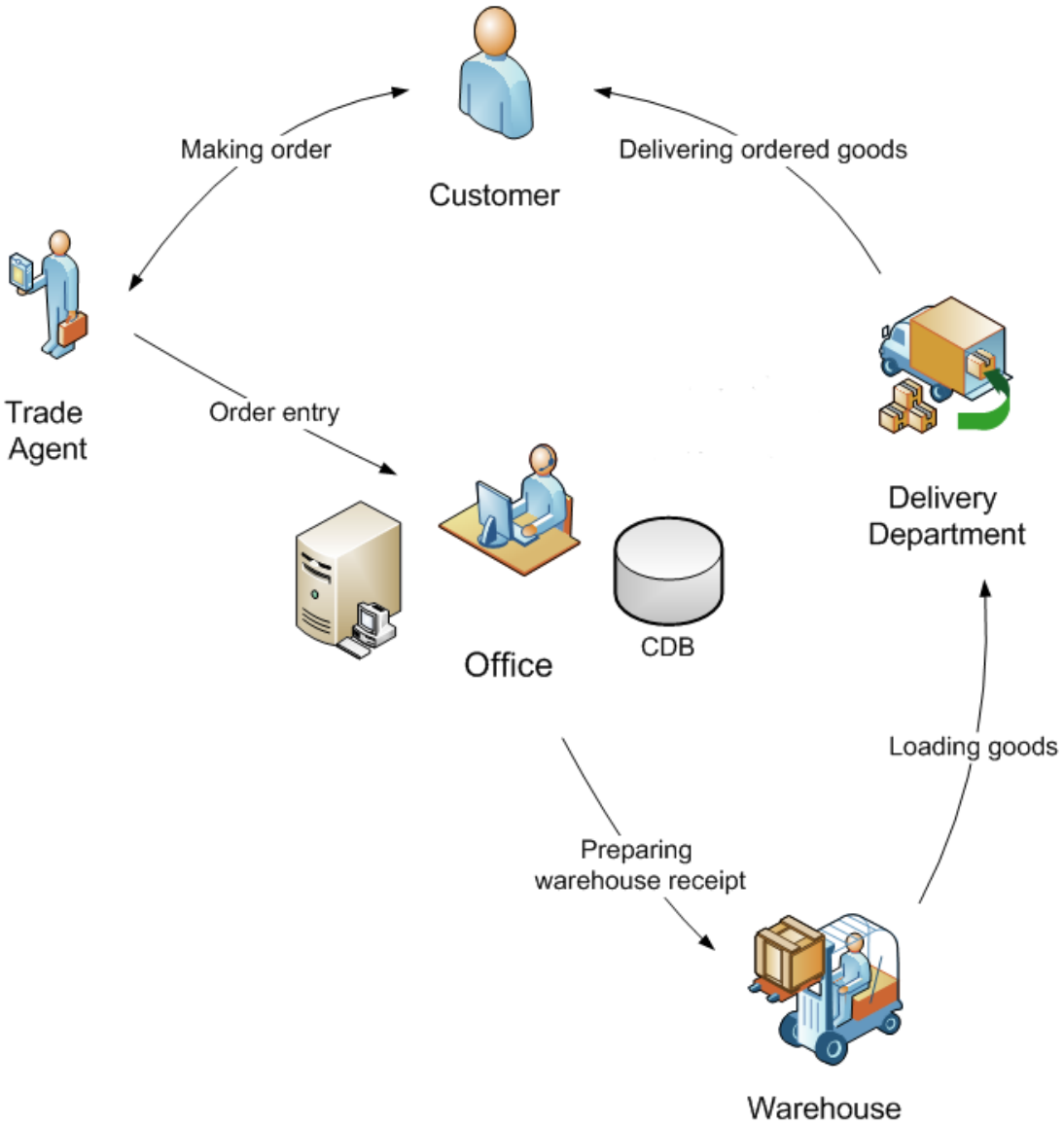
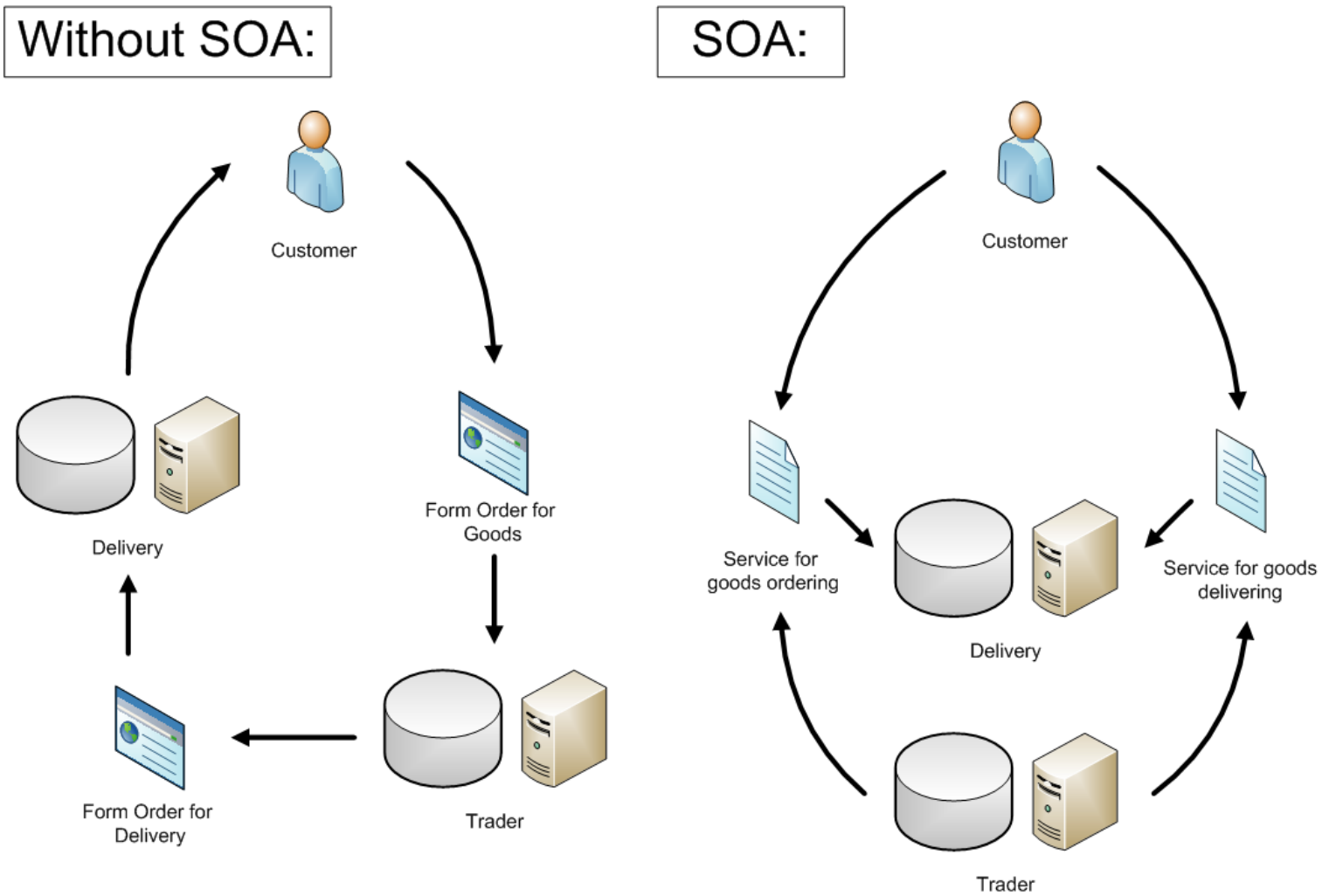
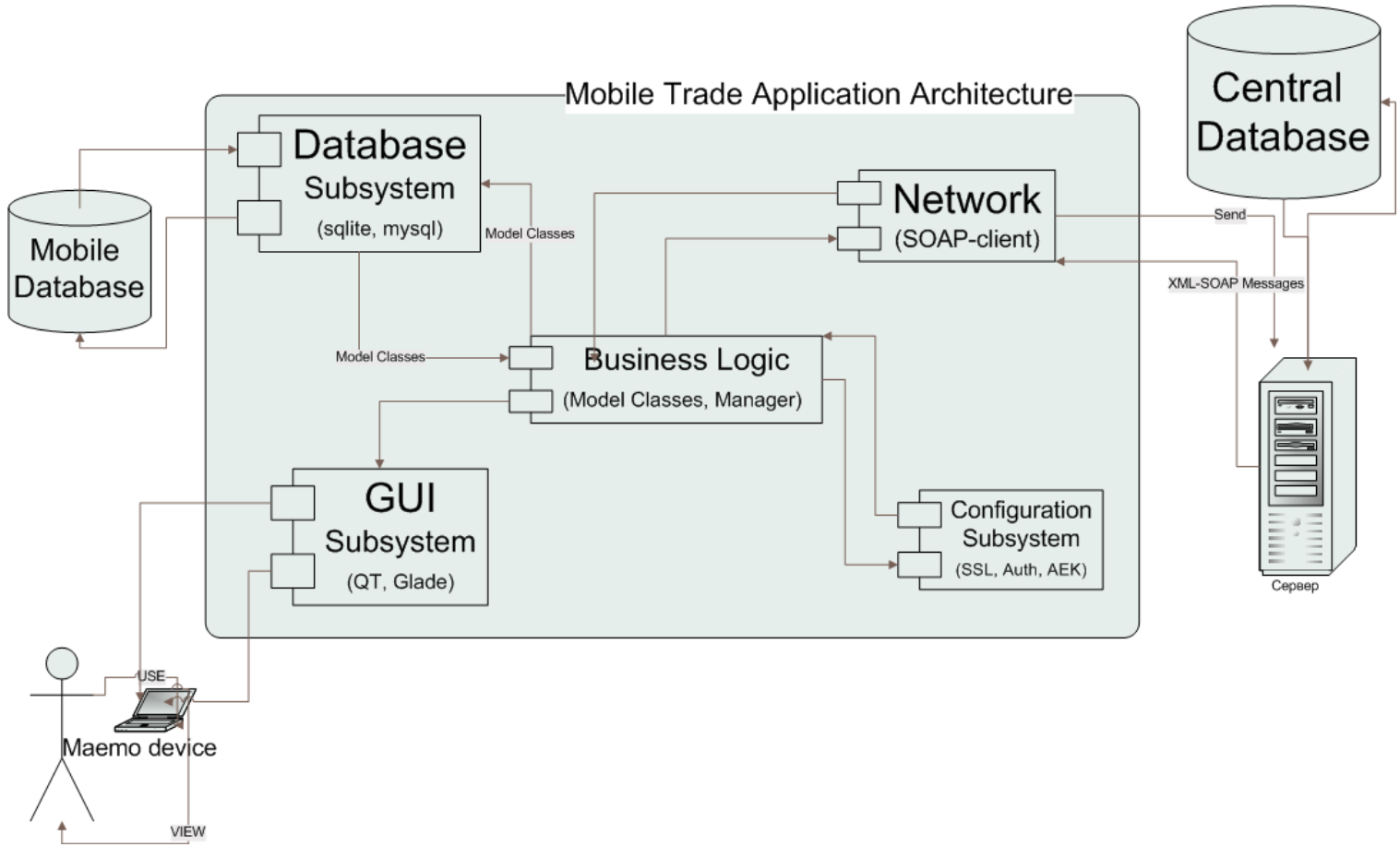
Mobile Trading Scheme



Service Oriented Architecture for TBS



Architecture



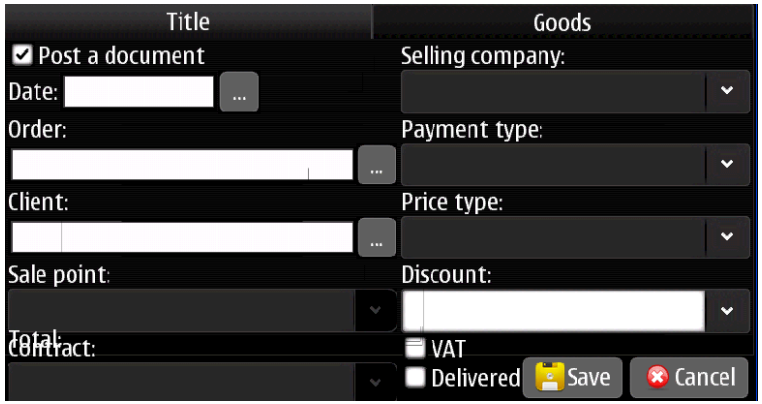
Application scenarios

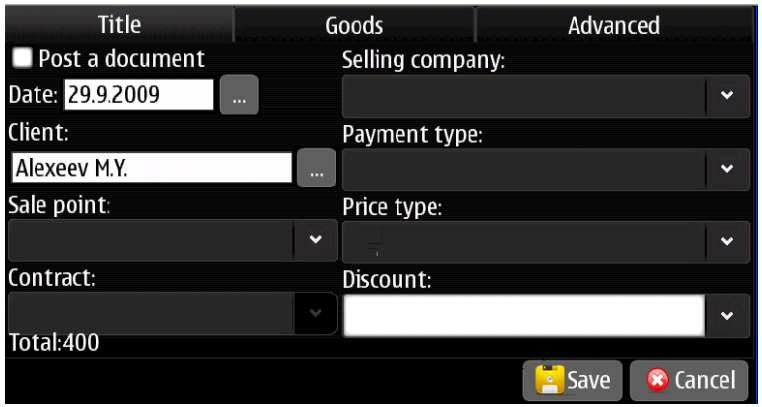
Business:

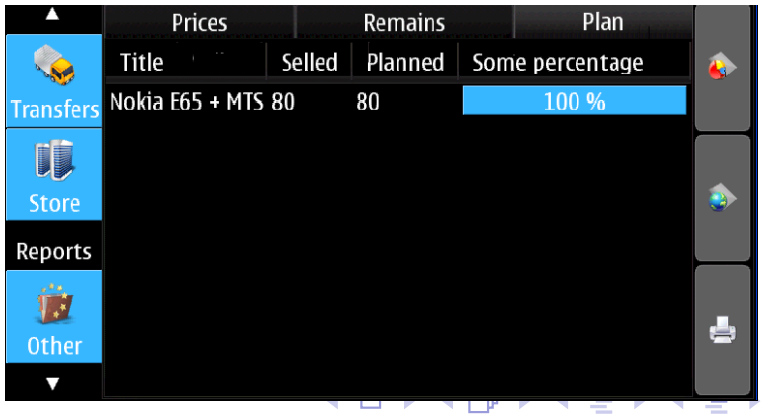
- Customer orders
- Customer sales
- Reports

Support:

- Authentication
- Configuration settings for web-services of TBSes
- Synchronization with TBSes

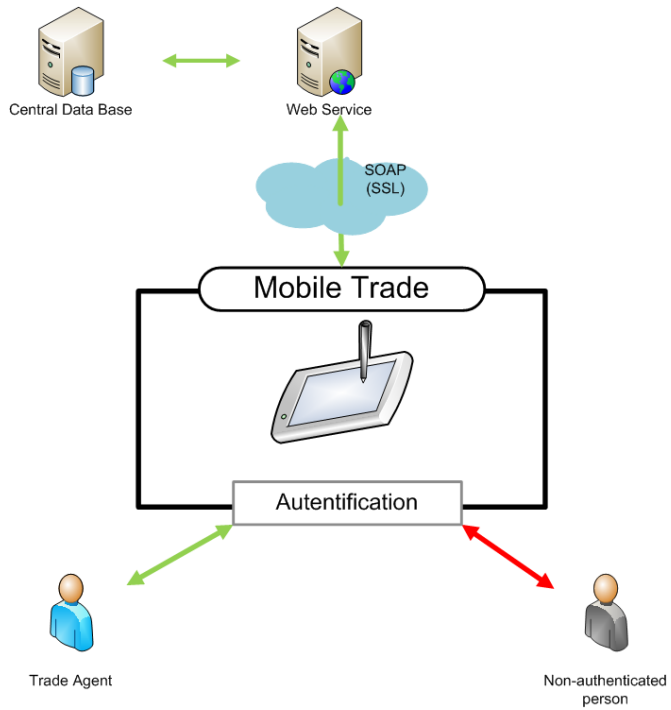






Security levels

1. Web services: restriction on access to information
2. Using SSL when transferring business data
3. Using AES (Advanced Encryption Standard) with 128 bit key



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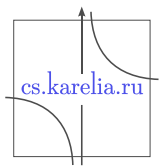
Application advantages

General advantages:

- Increasing efficiency of mobile trade agents
- Increasing sales
- Improving company image

The main differences with existing analogues:

- Using SOA technologies and Web-services mechanism
- Cross-platform development
- Our application is open source
- Using "finger-touch"interface

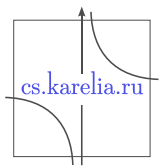


Maemo 4:

- C++ (using Maemo plugin Eclipse)
- SQLite for mobile DB
- CSoap library for web-services: SOAP, SSL, etc.
- GUI: glade

Maemo 5:

- **No 3rd party components, only Qt!**
- C++ (using Qt Creator)
- Architecture: Domain Driven Design
- SQLite - standard DB for Qt
- Qt:Network for web-services
- Qt Creator for producing GUI



Human metrics and schedule

Initial iteration: Summer School “Developing applications at Maemo 4”. First place and prize — Nokia N810. (Semenov Igor)

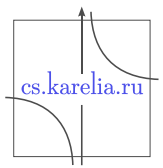
Next iterations (forming student team):

First Iteration (February. - May 2009)

	Igor	Pavel	Denis	Ekaterina	**Total**
Design	5	13		17	**35**
Meetings	47	39	45	23	**154**
Coding	25	17	27		**69**
Administration	50	18		2	**70**
Reading Documentation	55	36	19	20	**130**
Technical Support	45	18	45	8	**116**
Total	**227**	**141**	**136**	**70**	**574**

Second Iteration (July - September 2009)

	Igor	Pavel	Denis	Ekaterina	**Total**
Design	63	84	15	145	**307**
Meetings	51	20	40	20	**131**
Coding		228	94		**322**
Administration	18	3		10	**31**
Reading Documentation		15	53	17	**85**
Technical Support		2			**2**
Total	**132**	**352**	**202**	**192**	**878**



Team

- Dmitry G. Korzun, project leader and instructor

- Igor Semenov, M.Sc. Student, technical manager

- Ekaterina Zabolotskih, M.Sc. Student

- Denis Zabirohin, 3rd year student

- Pavel Andrianov, 4th year student

- Ingmar Bergmann, 5th year student

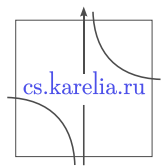
Code

Maemo 4 (GTK)

- Overall
  - Spent hours : 830
  - LOC : 10200
- LOC per Module:
  - GUI : 6370
  - Data base : 1030
  - Network interaction : 650
  - Business logic : 2550
- Tests:
  - System tests: 12
  - GUI Checklist

Maemo 5 (Qt)

- Overall
  - Spent hours : 410
  - LOC : 2717
- LOC per Module:
  - GUI : 1352
  - Data base : 853
  - Network interaction : 512
  - Business logic : n/a
- Tests:
  - Unit tests : 21
  - GUI Checklist



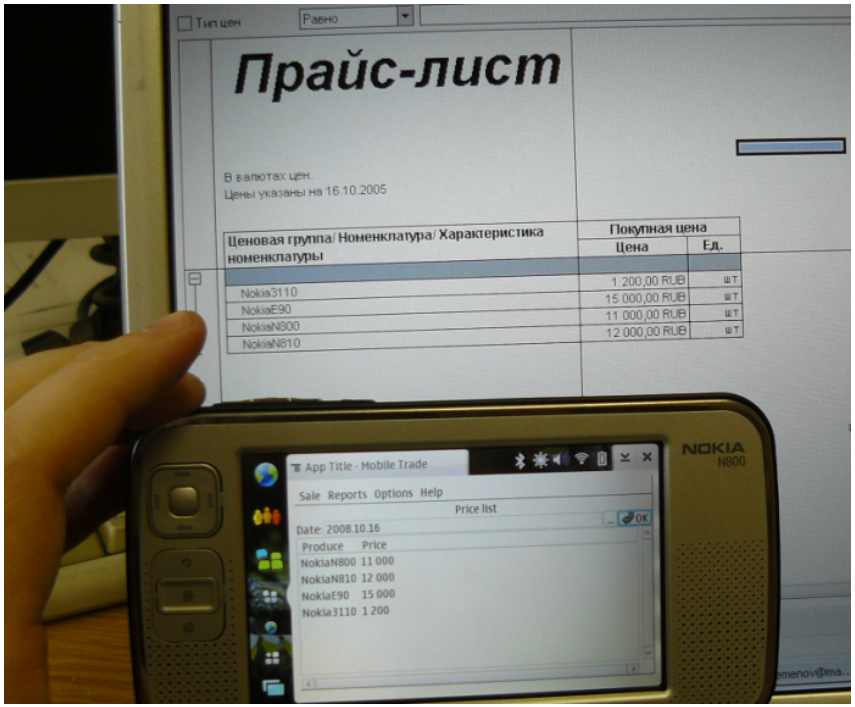
Results

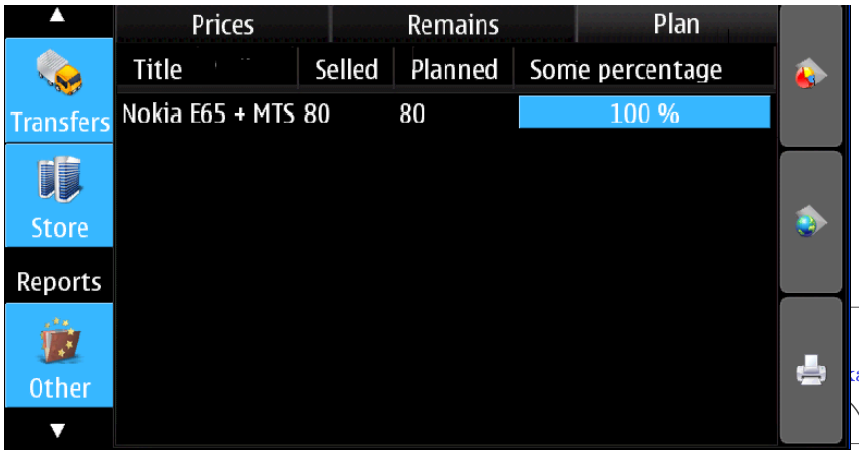
Implementations:

- Nokia N810
- Maemo 5 (emulator)
- Qt-implementation in progress (emulator)

Further directions:

- Finalizing Qt implementation
- Testing on Nokia N900
- Experimenting with our approach
- Security





Thank you!

See video about our application, please.

http://maemo.cs.karelia.ru/wiki/Maemo-Business