Done Wireless is now

MGINE TECHNOLOGIES

Marjo Sjöberg
Telecom Forum 22.11.2000

MGINE TECHNOLOGIES

Outline

1. Mgine Technologies

2. Location based products and services

3. Personalization products and services

mGINE TECHNOLOGIES

Mgine Technologies Story

Companies/ technologies

April 2000

October 2000

N-Nets

Personalization/
neural networks

Net Beacon

Personalization/
social filtering

Done Wireless
•Personalization
•Wireless services

Axentor

Systems integration

NAG M&W

Strategy consulting

Regio

Positioning

Mgine Technologies

•Personalization
•Positioning
•Systems integration
•Consulting

mGinE TECHNOLOGIES
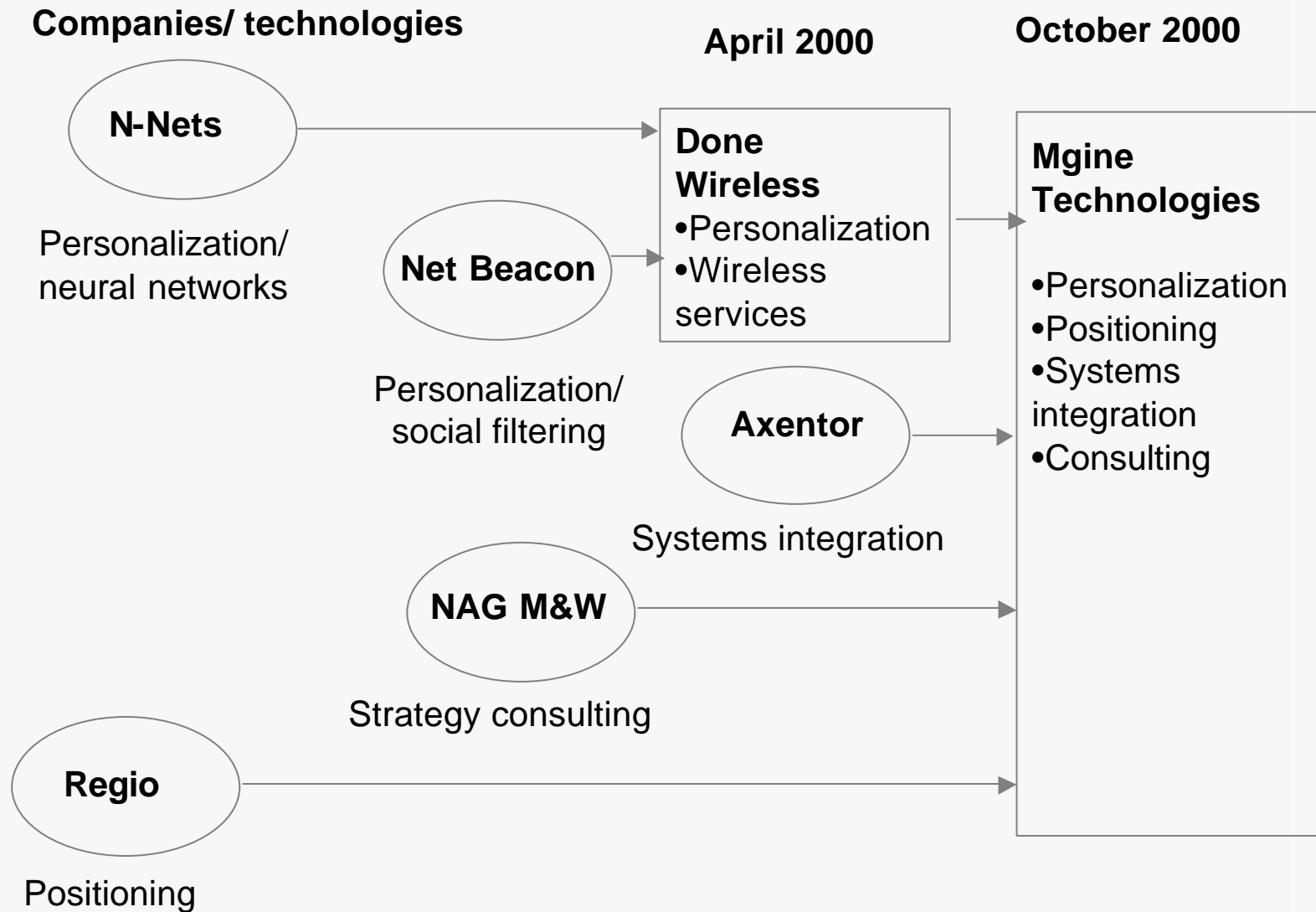
Mgine Technologies overview

- Software company focusing on personalization and positioning software platforms
- We provide systems integration and consulting that support end-to-end implementation of our software
- Number of employees around 60
  - 50 in Helsinki
  - 10 in Tartu, Estonia

"Mgine Technologies will be the world's leading provider of wireless personalised and location-sensitive software and related services."

mGINE TECHNOLOGIES

Positioning & Personalization
Huge Market Potential

"Over the next five years, wireless location services will generate more than **81,9 billion USD** for the European operators in the top 12 European markets."
Source: Strategis Group, March 2000

"Personalization pays off: personalization increases e-commerce site income 52 % during first year"
Source: Jupiter Communications

"40 % of all commercial www services will provide personalized services by year 2001"
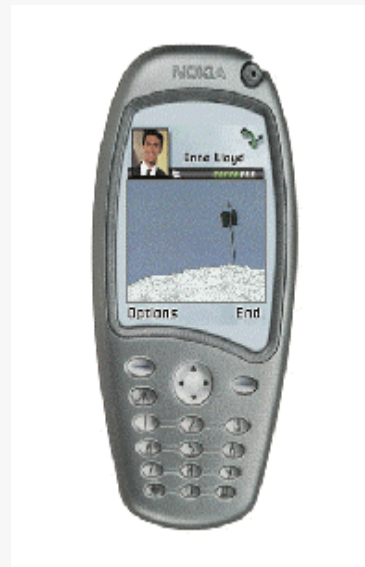Source: Gartner Group

mGINE TECHNOLOGIES

Mobile environment and web radically different

Personal

- User is in control
- Mobile phone is the key to personalized set of services

Mobile

- Able to communicate wherever, whenever
- People will carry phone wherever, whenever
- Platform for localized services

Usable
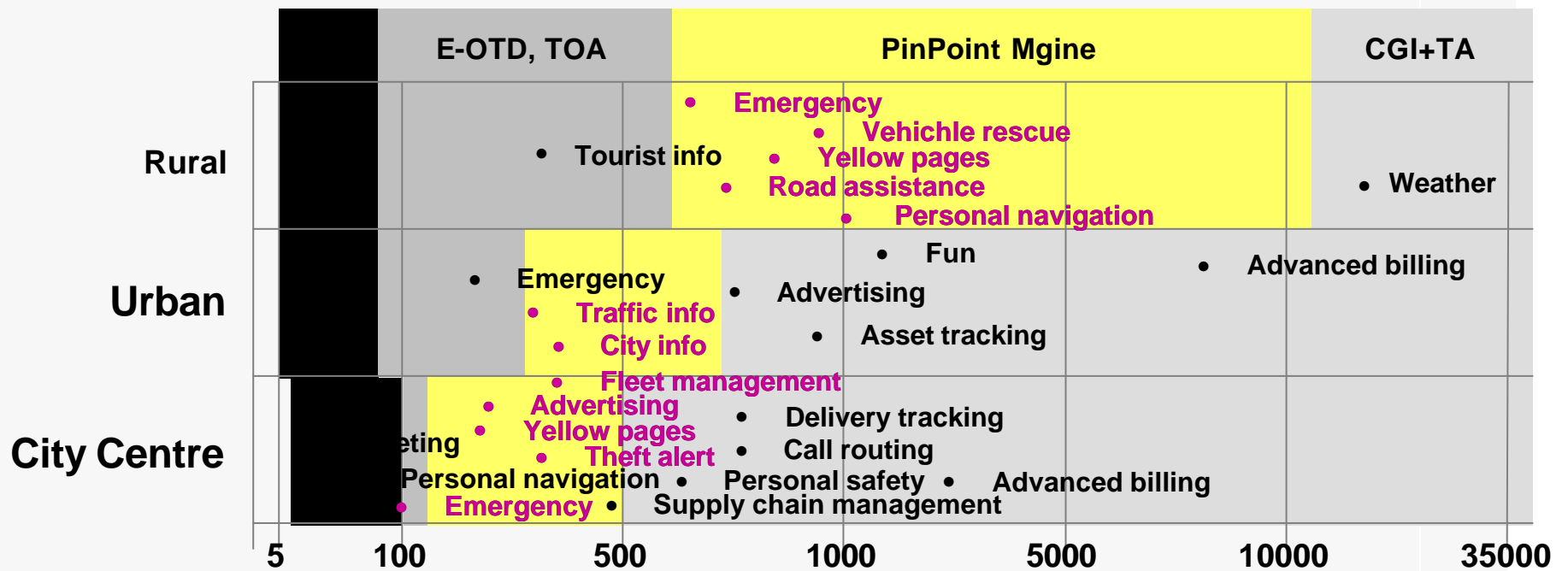
- Ready to use in seconds
- Easy-to-use services
- Quality of functions and user interface

Trusted

- Mobile phone is a platform for secure applications
- **Transaction capability**
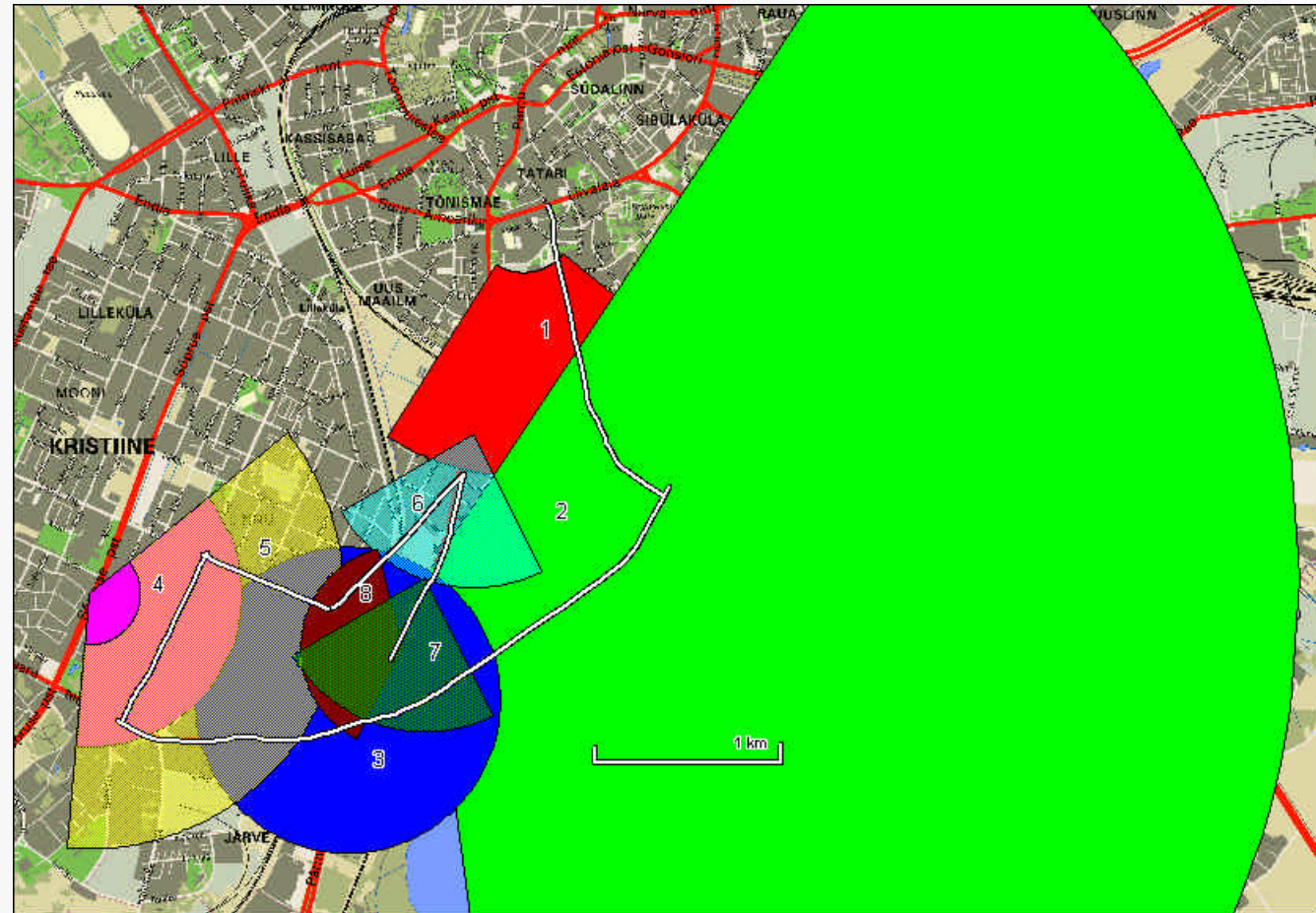
MGINE TECHNOLOGIES

Outline

1. Mgine Technologies
2. Location based products and services
3. Personalization products and services

MGINE TECHNOLOGIES
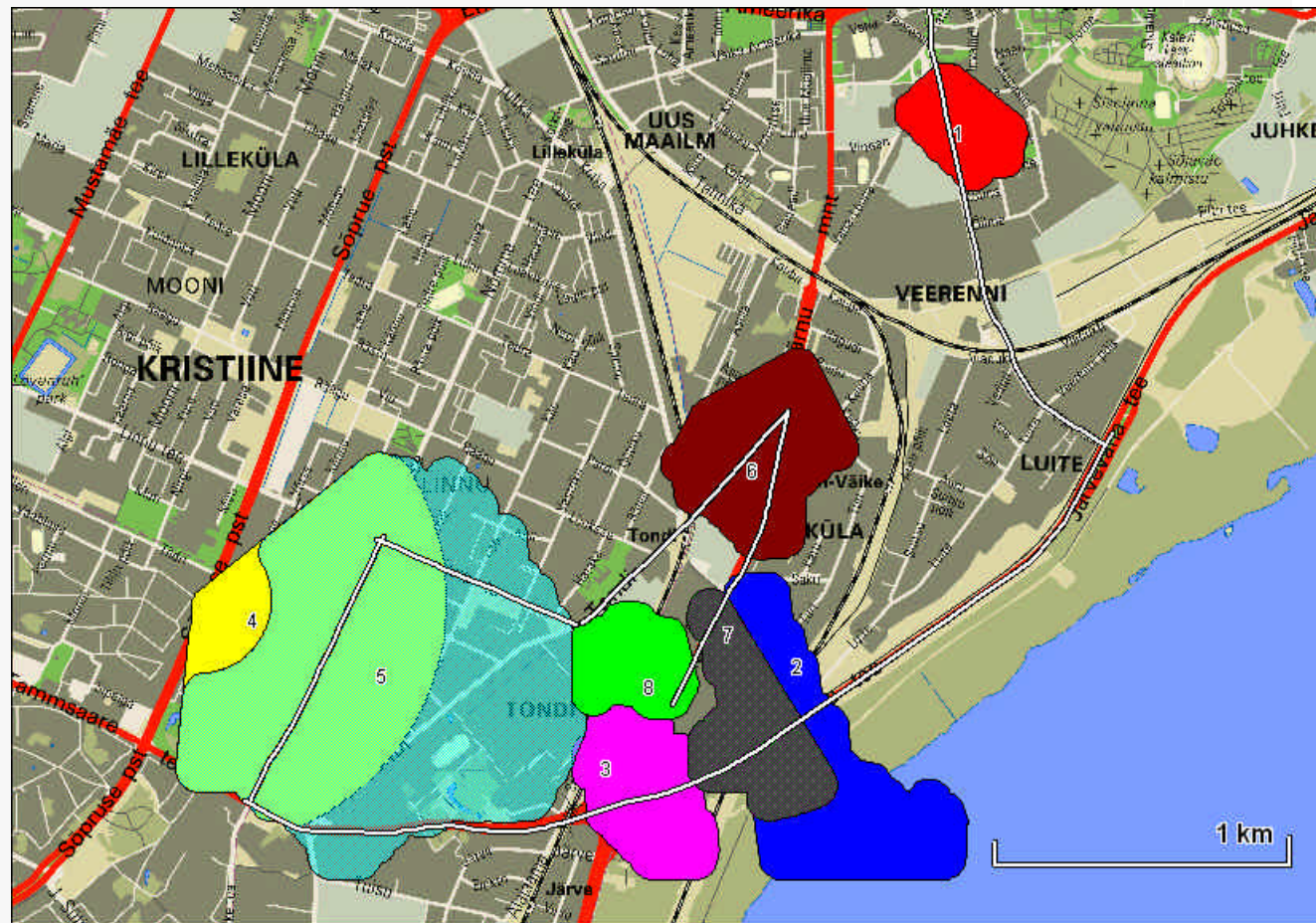
Minimum position accuracy required by service types

	E-OTD, TOA	PinPoint Mgine	CGI+TA
Rural	• Tourist info	• Emergency • Vehichle rescue • Yellow pages • Road assistance • Personal navigation	• Weather
Urban	• Emergency • Traffic info • City info	• Fun • Advertising • Asset tracking	• Advanced billing
City Centre	• Fleet management • Advertising • Yellow pages • Theft alert ...eting Personal navigation • Emergency	• Delivery tracking • Call routing • Personal safety • Advanced billing • Supply chain management	

| 5 | 100 | 500 | 1000 | 5000 | 10000 | 35000 |

Pinpoint Mgine Cellplan

Raw data

Pinpoint Mgine Cellplan

With cellplan

mGINE TECHNOLOGIES

Pinpoint Mgine
Repetitive positioning

Location

Mgine result

mGINE TECHNOLOGIES
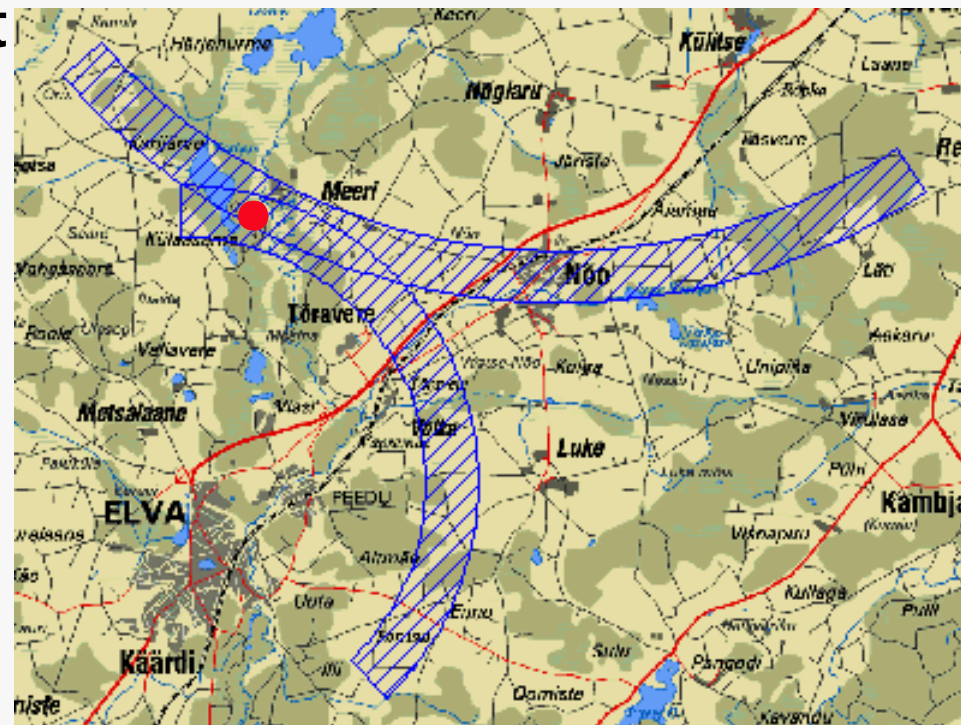
Pinpoint Mgine
Geography awareness

Raw data
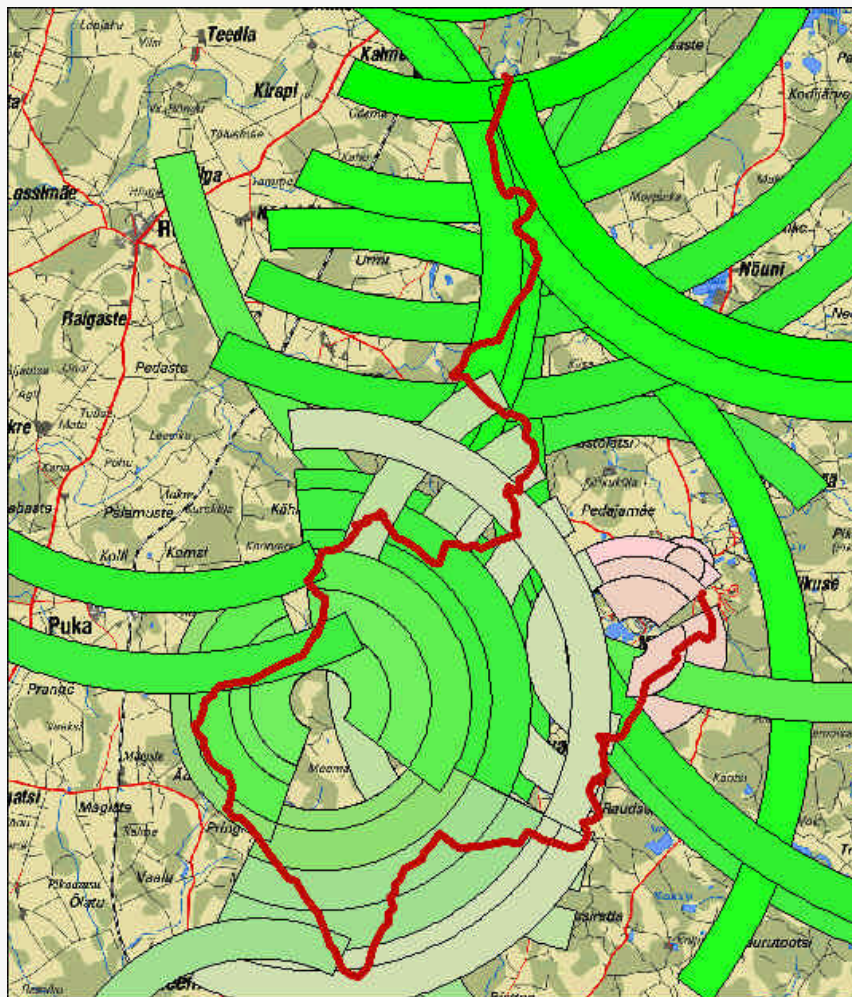
Mgine positioning experiences

- Ready-to-launch applications and application hosting
  - Estonian Rescue Board 112-system
    - In addition to MPS also integration of existing systems, positioning fixed network phones, GIS queries, delivering spatial database
  - www.locategsm.com
    - "I am here!" and other services since June 2000 over HTML and WAP (yellow pages etc.)
    - Fun and edutainment
  - Locate Friend
    - positioning part of EMT portal
  - Asset tracking
    - Anti-theft and car remote control (Ericsson, KG Knutsson)
  - Desktop-based dispatcher applications (like 112)
- Applications tested in real life
  - In EMT network
  - With Estonian customers
  - GPRS testsite

MGINE TECHNOLOGIES

Outline

1. Mgine Technologies

2. Location based products and services

3. Personalization products and services

MGINE TECHNOLOGIES

What is personalization?

Tailoring of Internet or mobile services for user based on:

- User profiles
- Technical requirements (device, transfer rate, …)
- Situation (time, role, location, ...)

User profiles can be based on:

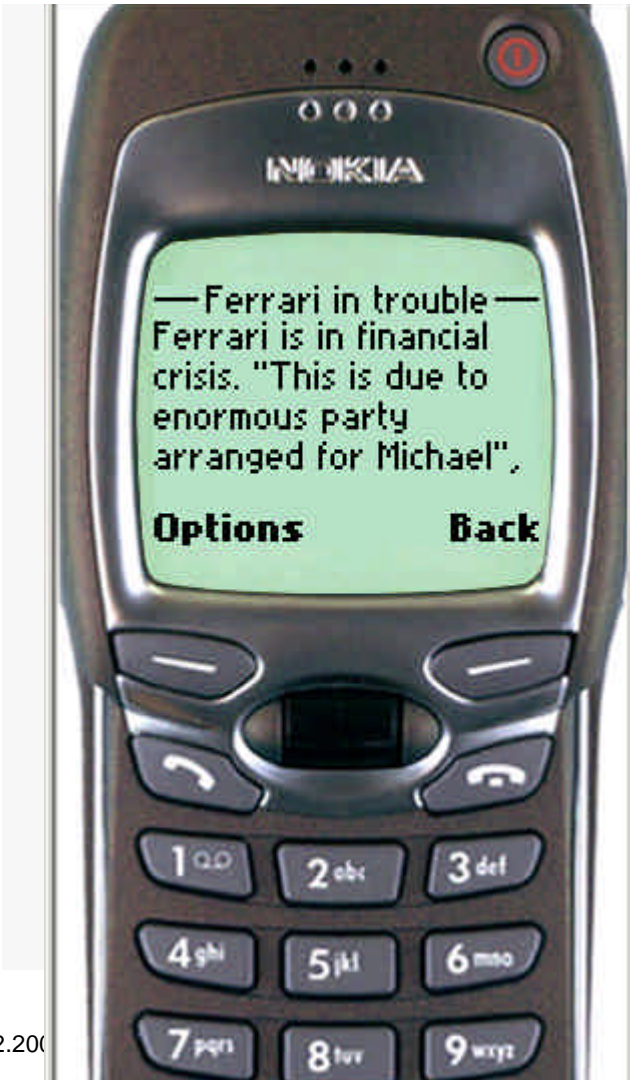- User Feedback
    - Explicit
    - Implicit
- Usage history
    - Voice call usage
    - Clickstream
    - SMS, services …
- Configurations by user
    - Demographic information
    - Lifestyle & values
    - Service selections

MGINE TECHNOLOGIES

Why is personalization important in mobile services?

- Small display – will stay small
  - Only relevant information should be shown
  - Relevant information should be shown first
  - every click is counted
- Advertaising carefully
  - users less irritated if advertsements targeted
  - subscription to push
- Low bandwidth
  - not all information can be sent to mobile
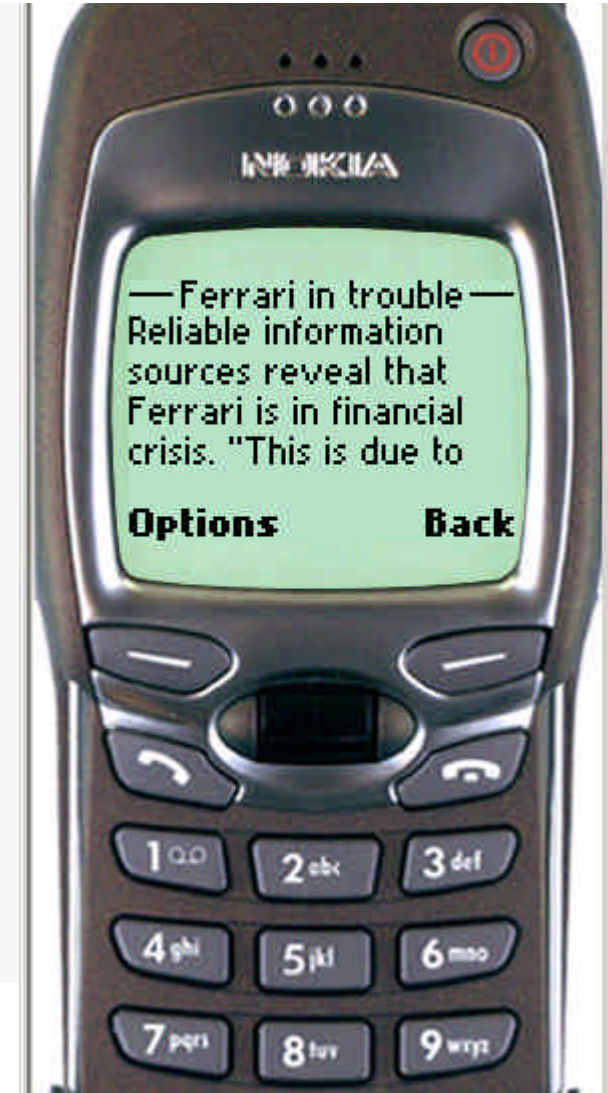- Context of usage
  - location can be taken into account

mGINE TECHNOLOGIES

Example presentation of personalized content

Traditional news service

Personalized news service

14 clicks
vs
2 clicks

—Ferrari in trouble—
Ferrari is in financial
crisis. "This is due to
enormous party
arranged for Michael",

Options   Back

—Ferrari in trouble—
Reliable information
sources reveal that
Ferrari is in financial
crisis. "This is due to

Options   Back

4.12.200

Target of personalization

- Content
    - Selecting or prioritizing suitable content
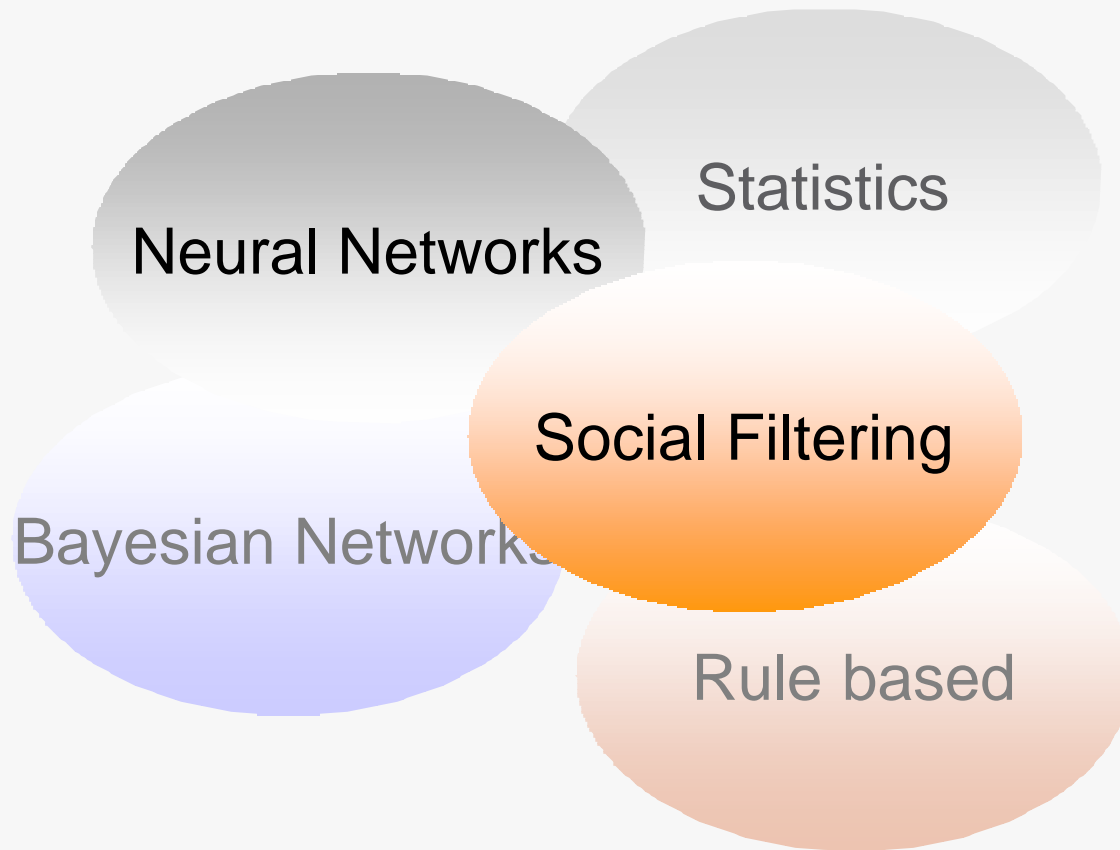   - Principles: Social filtering, content based filtering, hybrid solutions

- Layout
    - Device dependent
    - Fonts, colors, etc.
- Functionalities
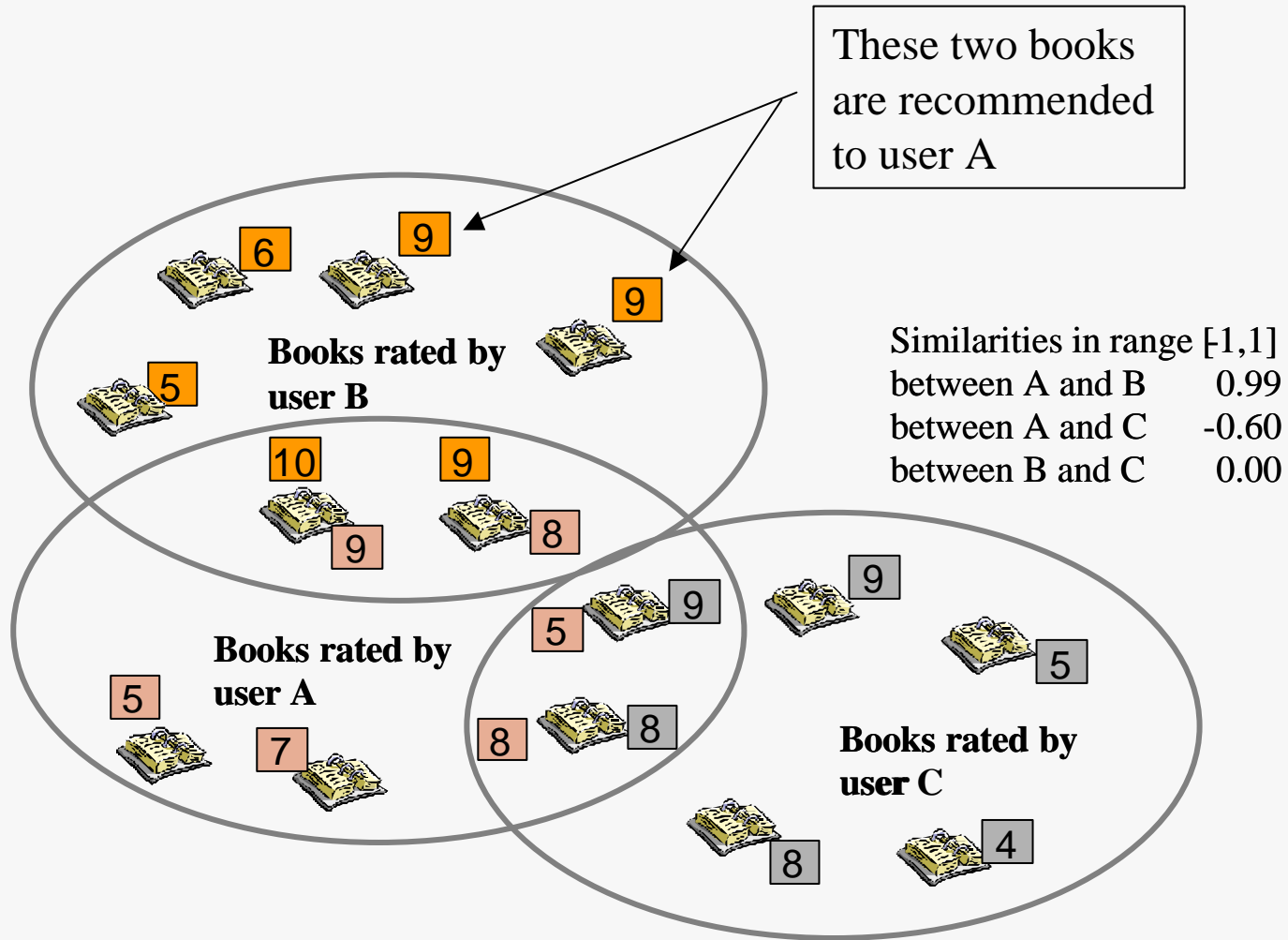   - Functionalities offered by a service
    - Menus
    - etc.

Content based prediction vs. collaborative methods

- Content based prediction (Similar objects)

    - If the service is able to follow *what kind of* objects each user has been interested in *similar* objects can be recommended
    - Some information of the objects' features are needed
    - Can recommend new objects that no one has rated yet
    - Does not need other users' profiles

- Collaborative methods (Similar other users)

    - Each user can be offered new objects that *similar users* have liked.
    - Relies on people's opinions, does not use any features of the objects
    - Immaterial values can be taken into account and the service can offer positive surprises.

mGINE TECHNOLOGIES

Personalization technologies

Statistics

Neural Networks

Social Filtering

Bayesian Networks

Rule based

Social filtering example

These two books are recommended to user A

Books rated by user B

6   9   9   5

Similarities in range [-1,1]
between A and B   0.99
between A and C   -0.60
between B and C   0.00

10   9   9   8

Books rated by user A
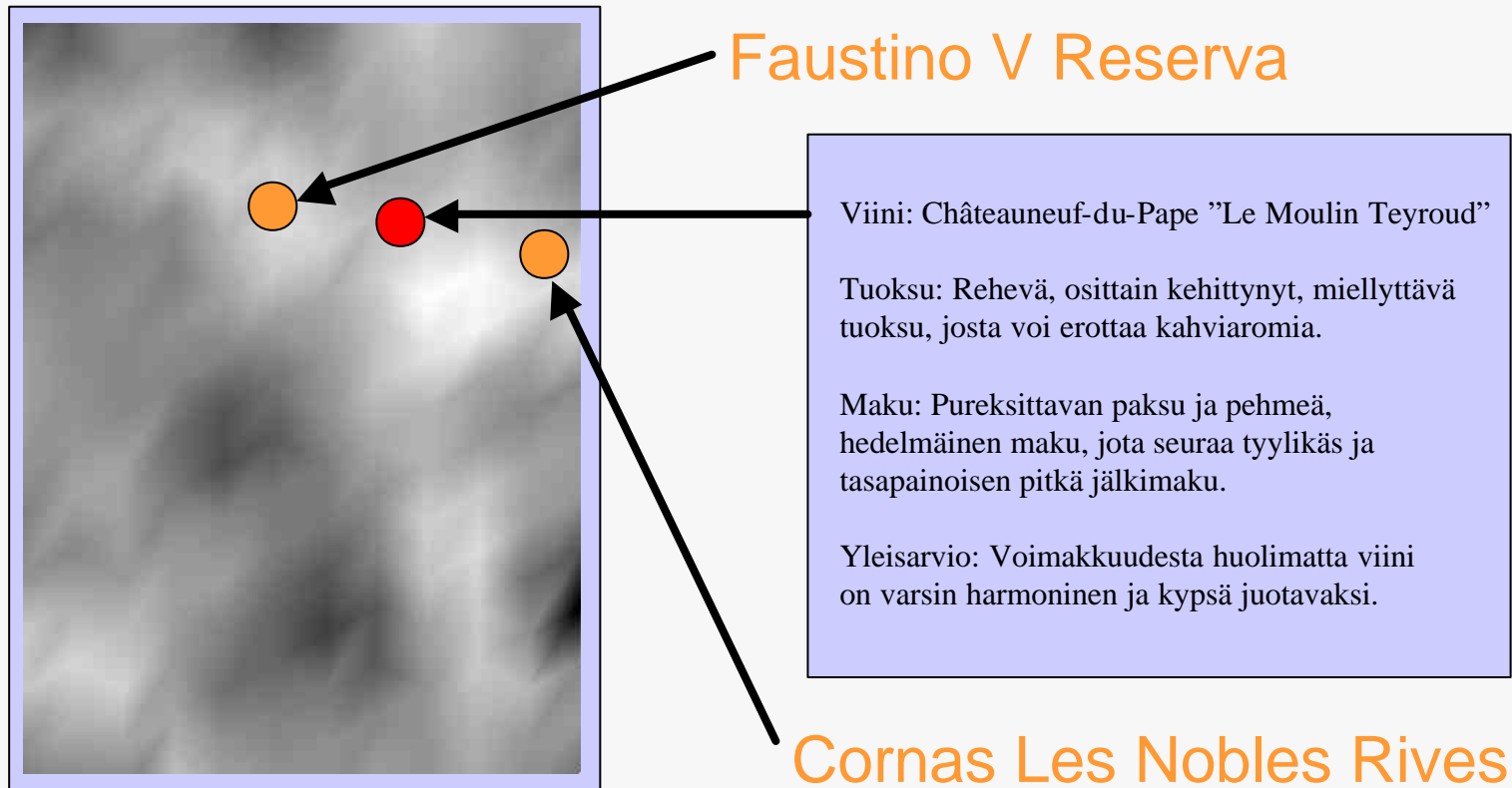
5   7

5   9   9   5

8   8

Books rated by user C

8   4

mGINE TECHNOLOGIES

Personalization case: Viinitupa

- Viinitupa is internet community for wine enthusiasts
- Sonera plaza service
- Personalized:
    - Recommendations
    - Like-minded users
    - E-mail
    - Personal notes about wines
    - Personal wine lists
    - Personal homepage
- Personalization techniques used:
    - Collaborative filtering
   - Rules based matching

Personalized by Dimension Engine

mGIE TECHNOLOGIES

Putting wines on a Self-Organizing Map

Faustino V Reserva

Viini: Châteauneuf-du-Pape "Le Moulin Teyroud"

Tuoksu: Rehevä, osittain kehittynyt, miellyttävä tuoksu, josta voi erottaa kahviaromia.

Maku: Pureksittavan paksu ja pehmeä, hedelmäinen maku, jota seuraa tyylikäs ja tasapainoisen pitkä jälkimaku.

Yleisarvio: Voimakkuudesta huolimatta viini on varsin harmoninen ja kypsä juotavaksi.

Cornas Les Nobles Rives
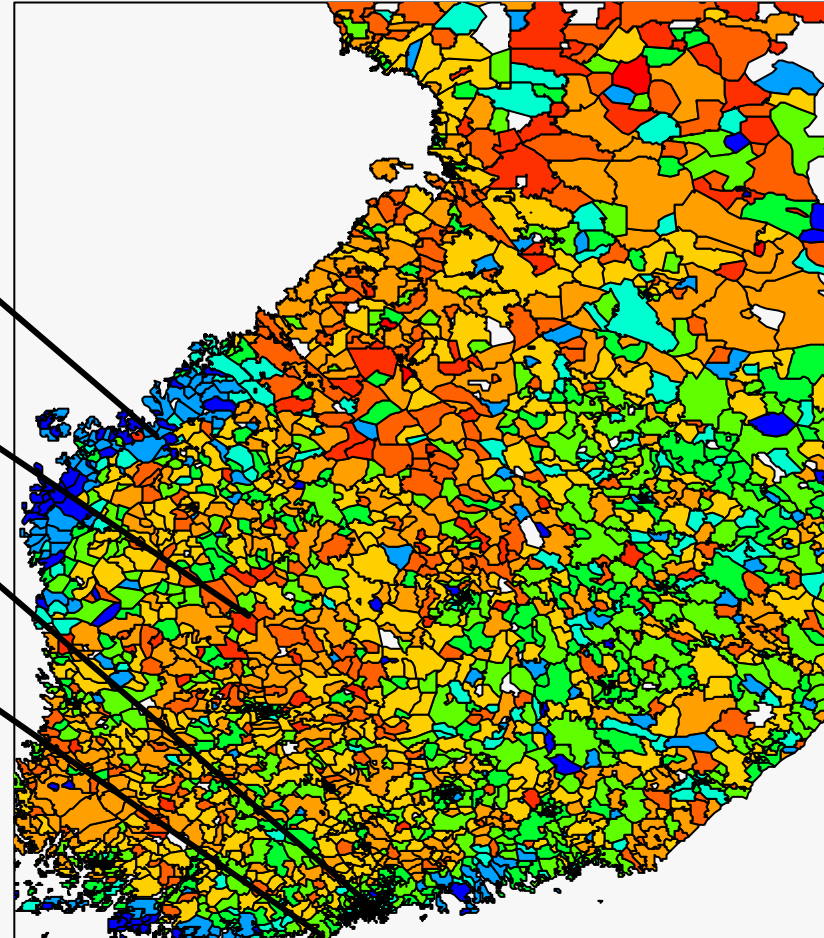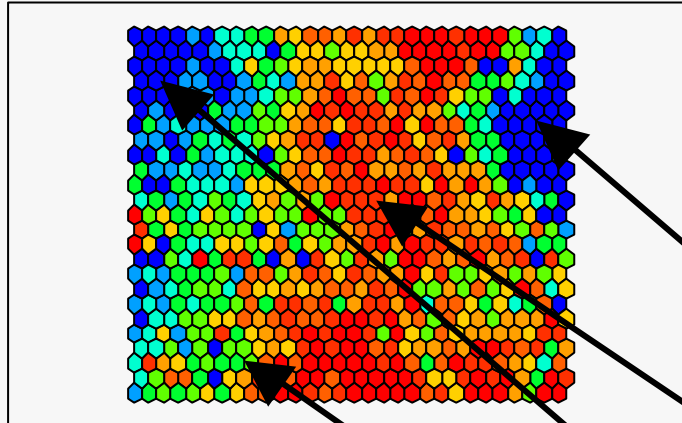
mGINE TECHNOLOGIES

The Customer Map

- Similar customers are near each other on the map; very different customers are far apart
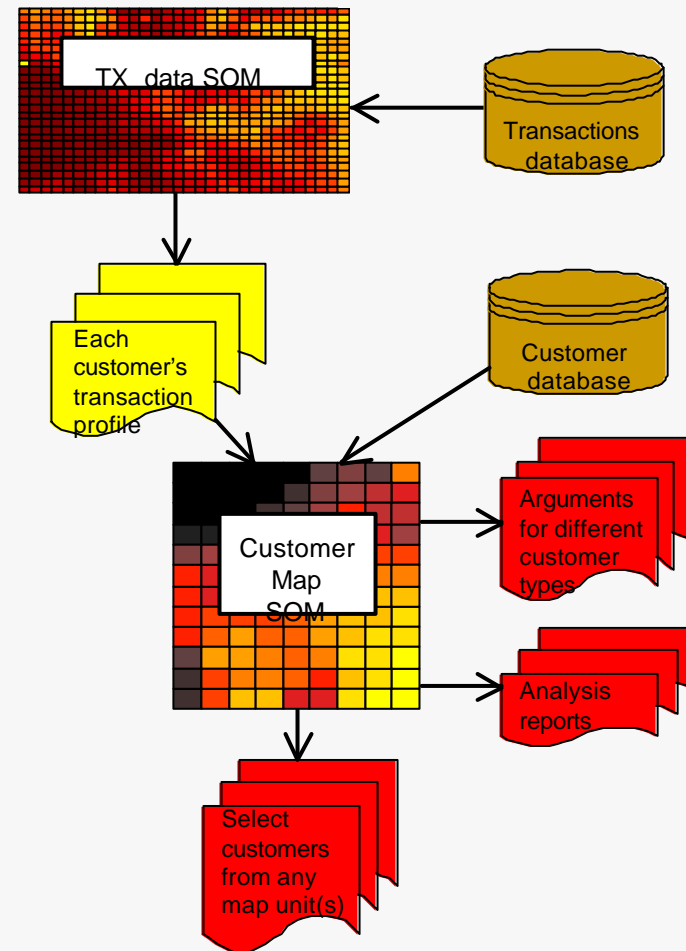- Based on the Self-Organizing Map (SOM) neural network model
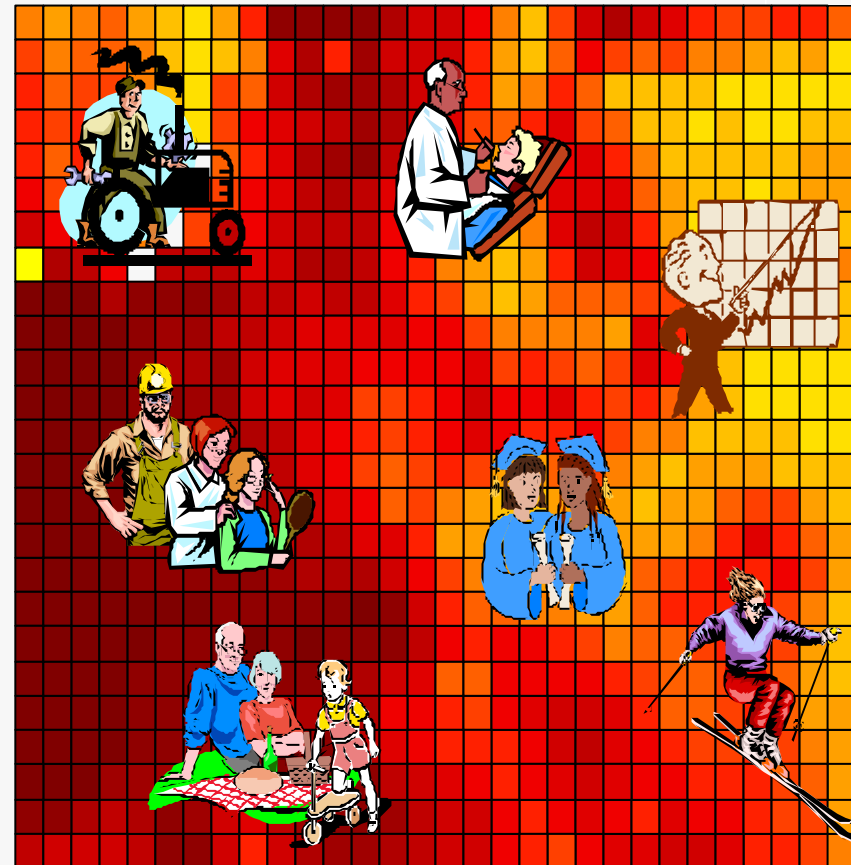
Customer Map based on postal codes

The gain chart

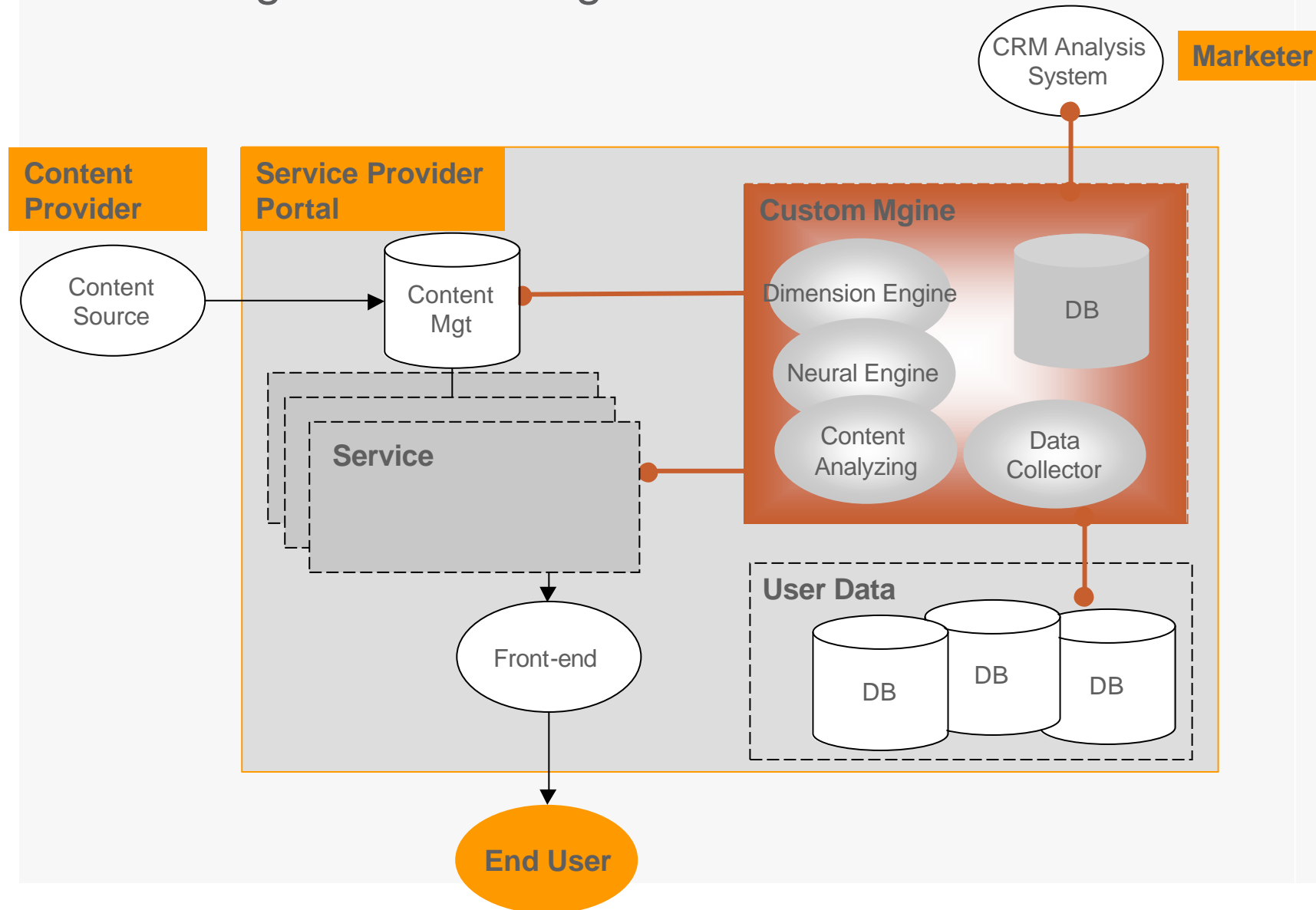Model   Average

mGINE TECHNOLOGIES
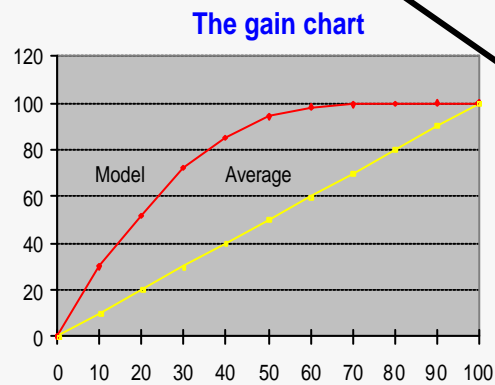
Customer Map based on transaction data

- Steps in building the model:
  1. Train an SOM for the transaction data – calls, SMS's, clickstream, payments...
  2. Find each customer's profile on the transaction SOM
  3. Add other customer data to customer transaction profile data, train another SOM – the customer map
  4. Create bank of arguments for different customer groups; analyze these groups in detail

TX data SOM

Transactions database

Each customer's transaction profile

Customer database

Customer Map SOM

Arguments for different customer types

Analysis reports

Select customers from any map unit(s)

mGINE TECHNOLOGIES

Positioning of Custom Mgine
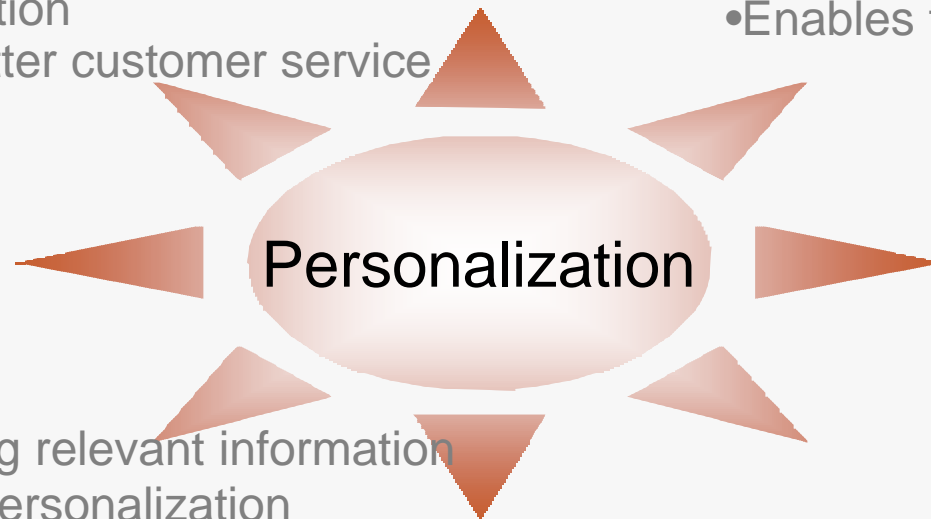
mGINE TECHNOLOGIES

Benefits of content personalization

Service Provider
- Creating customer commitment
- Lively service via adaptive personalization
- Enables better customer service

Marketer
- User segmentation
- Understanding user behaviour
- Enables targeted advertising

Personalization

End user
- Discovering relevant information
- Adaptive personalization
- Reliable individual utilization of communities' opinions
- New experiences

Content Provider
- Content targeting
- Information about users

mGINE TECHNOLOGIES

Summary

- Positioning expected to be the major driver in mobile services within next few years
- Personalization expected to be key element in mobile services of the future
- Huge potential in combining positioning and personalization

Imagination is more important than knowledge

-A. Einstein

mGINE TECHNOLOGIES