



Service Identification and Classification for Personal Wellbeing Management

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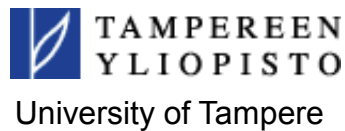
Content

1. Backgrounds of MyWellbeing project
2. Starting point, basis for work, object (architecture and interoperability)
3. Architectural aspects for personal wellbeing management solutions
4. Candidates for service standardization
5. Interfacing considerations (specific standards and interfaces for the connection of different types of services)

Backgrounds

▶ MyWellbeing

- Project in Finland
- Time frame 3/2008 – 3/2010
- The consortium of the project is executed by multilateral cooperation (6 research groups, 5 vendors, 4 service providers)
- Funded by the National Technology Agency Tekes and the consortium



Kuopio University Hospital



Backgrounds - focus, starting points

- ▶ FOCUS ON THE CITIZEN THROUGHOUT THE PROJECT
 - Citizen at the heart of services
 - Customer-oriented approach -> citizen-oriented approach

- ▶ The main focus and starting point of the Wellbeing project is a citizen using different kinds of services both electronically and in the real world
- ▶ At first the focus will be on applications concerning health care and welfare (later other areas; insurance, taxation, and day care for children, housing)
- ▶ The target groups of the project are families having a baby and retiring employees
- ▶ From a citizen's point of view it is essential
 - To understand the ways different service providers can support and improve an individual's goals
 - What an individual can do him/herself

Backgrounds – Concept of “Coper”

▶ Concept of “Coper”

- Coper = A digital aid for personal wellbeing management
- Coper designed to help citizens cope with the services they use (use them more efficiently, direct information where it is needed)
- With Coper it is possible to coordinate the activities of different service providers (private, public, third sector), help collaboration between citizen and service provider
- Various virtual communities and social networks have risen to a more prominent status as a source of information and an aid in the decision-making processes of citizens
- Platform independence and service provider interchangeability is needed in order for the citizen to be able to select the most suitable service options
- Multi channel approach: personal computers, mobile phones, internet portals, hybrid

▶ Concept, not product or implemented service

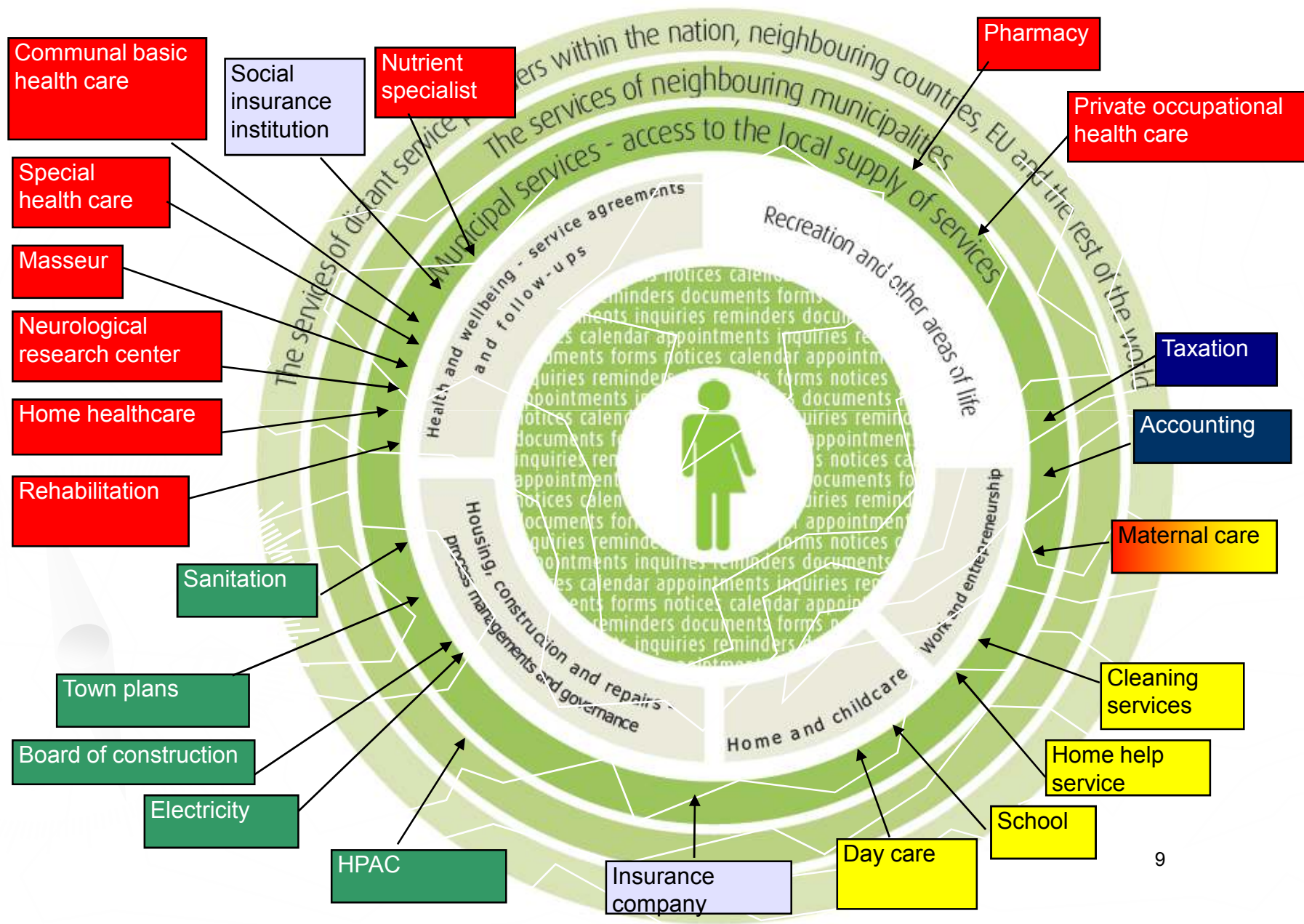
Backgrounds – phases of project

▶ Three phases:

- 1 eBiography: The present state
 - ▶ The gathering of available (health care) data from relevant service providers
- 2 eHealth: The context, understandability, decision making
 - ▶ Conversion of health care documents into meaningful and understandable assemblages
 - ▶ Creation of a personal means for supporting decision making in health care and wellbeing.
- 3 eLifecontrol: Service providing
 - ▶ The supplement of official data with self made information
 - ▶ Use of data entities in service relations
 - ▶ Change focus from the past to the present and the future

Backgrounds – Dual model

- ▶ Dual model
 - ▶ Information is stored in the service providers' professional systems as before - the citizen or customer already has the right to receive a copy of each service document or documentation of the provided welfare service.
 - ▶ From citizen perspective, personal wellbeing management decouples the citizen from health / wellness service provision and avoids several obstacles related to welfare service providers
 - Combining the data and information of different service providers is inconvenient/impossible/illegal between service providers
 - ▶ This basic concept can be extended to cover personal health records, many different service domains (healthcare, insurance, social services etc.), interactive eServices and community and knowledge linkages



Architecture and interoperability group

- ▶ Goal to develop the service network and its architecture in a way that enables business endeavors for different kinds of service providers using different kinds of service platforms
- ▶ Focus on the architectural aspects of personal wellbeing management solutions
- ▶ Related work in the project discusses services and their classification on organizational-, citizen-, professional- level and related business models
- ▶ Other groups: 2 case groups, concept creation, infrastructure, coordination

Starting points (architecture and interoperability)

- ▶ The traditional architecture development is initiated from organizational standpoint.
- ▶ WellBeing project is strict in using the analysis of citizen needs and activities as a starting point for the development of personal wellbeing management solutions, SOA services and business models
 - Citizen at the heart of services
 - Customer-oriented approach -> citizen-oriented approach
- ▶ Dual model
- ▶ Concept of Coper -> focusing on the architecture concept of holistic tool for personal wellbeing management
- ▶ Multichannel (stand-alone PC-based, device-based, Internet Portal, hybrid)

Basis for work (architecture and interoperability)

- ▶ Literature (articles, reviews of PHR products/solutions, specifications..)
 - PHR-solutions closest to the idea of Coper
- ▶ Documented experience from citizen eService development projects (in Finland, in Europe, internationally)
- ▶ Results from several workshops with the project participants (9 workshop in total, 4 related to the implementation)
 - Requirements, needs, main interests
 - Needs direct from citizen not formally specified yet!!!

Object of work (architecture and interoperability)

- ▶ Specify general view of the needed architecture to develop personal wellbeing management solutions
- ▶ Identify SOA services needed
- ▶ Select candidates for service standardization
- ▶ Implementation/integration (interfacing) considerations of various services

Acrhitectural aspects – identification of services

- ▶ Service definition in this presentation (in our work so far)
 - The service as a part of architecture is understood as a software component or application service which can be realized in software

- ▶ Welfare services offered to the citizen can be reflected in several of the identified SOA services.

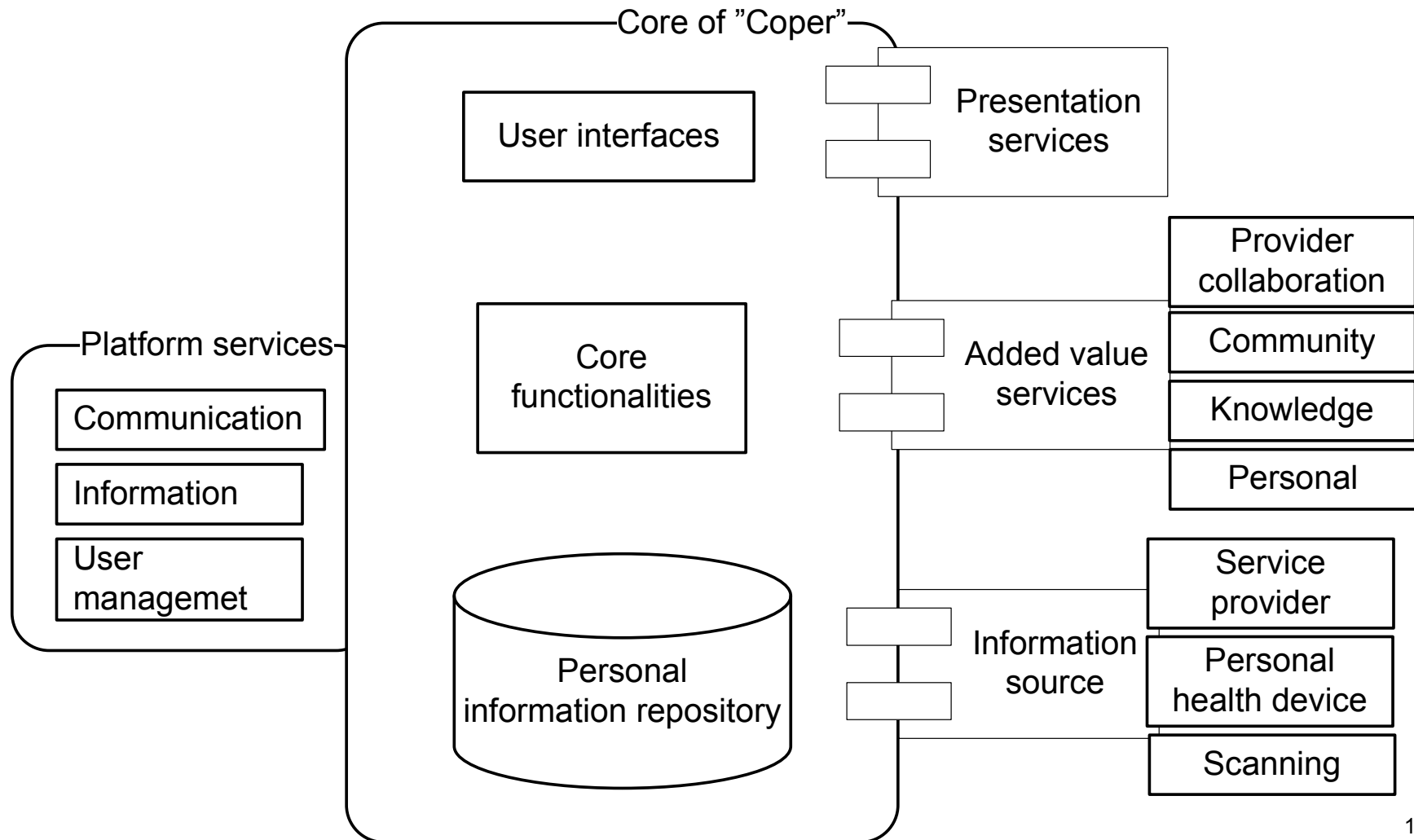
- ▶ Inputs from workshops, citizen eService development projects, PHR reviews -> over 60 identified services

- ▶ In addition
 - Acrhitecture of “Coper”
 - Other needed generic services also taken into consideration

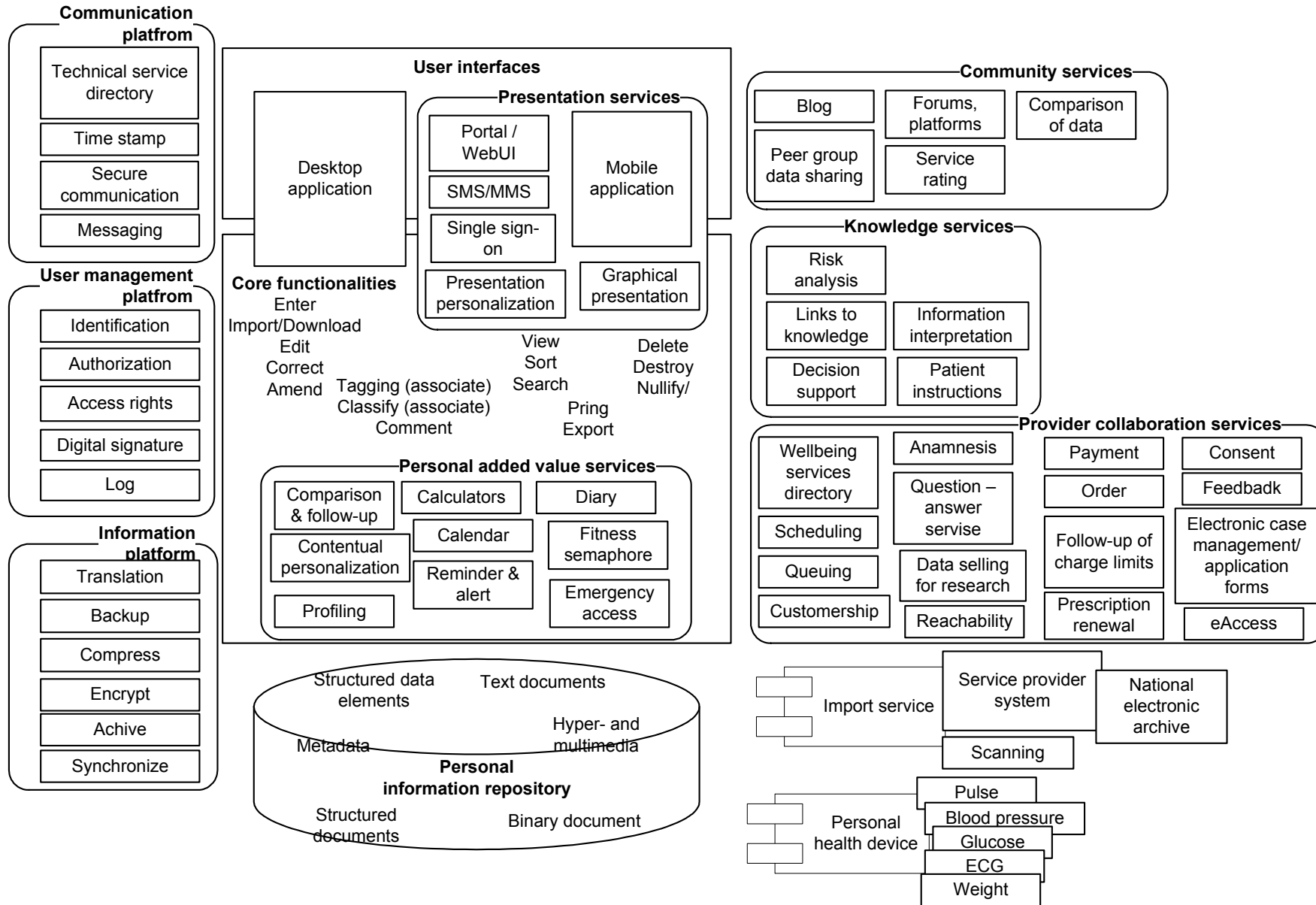
Architectural aspects – classification of services

- ▶ Over 60 identified services -> need for positioning and classification
- ▶ SOA services are positioned and classified into basic types which share many functional, platform, information or interactivity requirements.
- ▶ SOA service types
 - Presentation
 - Platform
 - ▶ information, communication and user management services.
 - Information source
 - Added value
 - ▶ personal, community, knowledge and provider collaboration services.
- ▶ Identified services are positioned using this classification 15

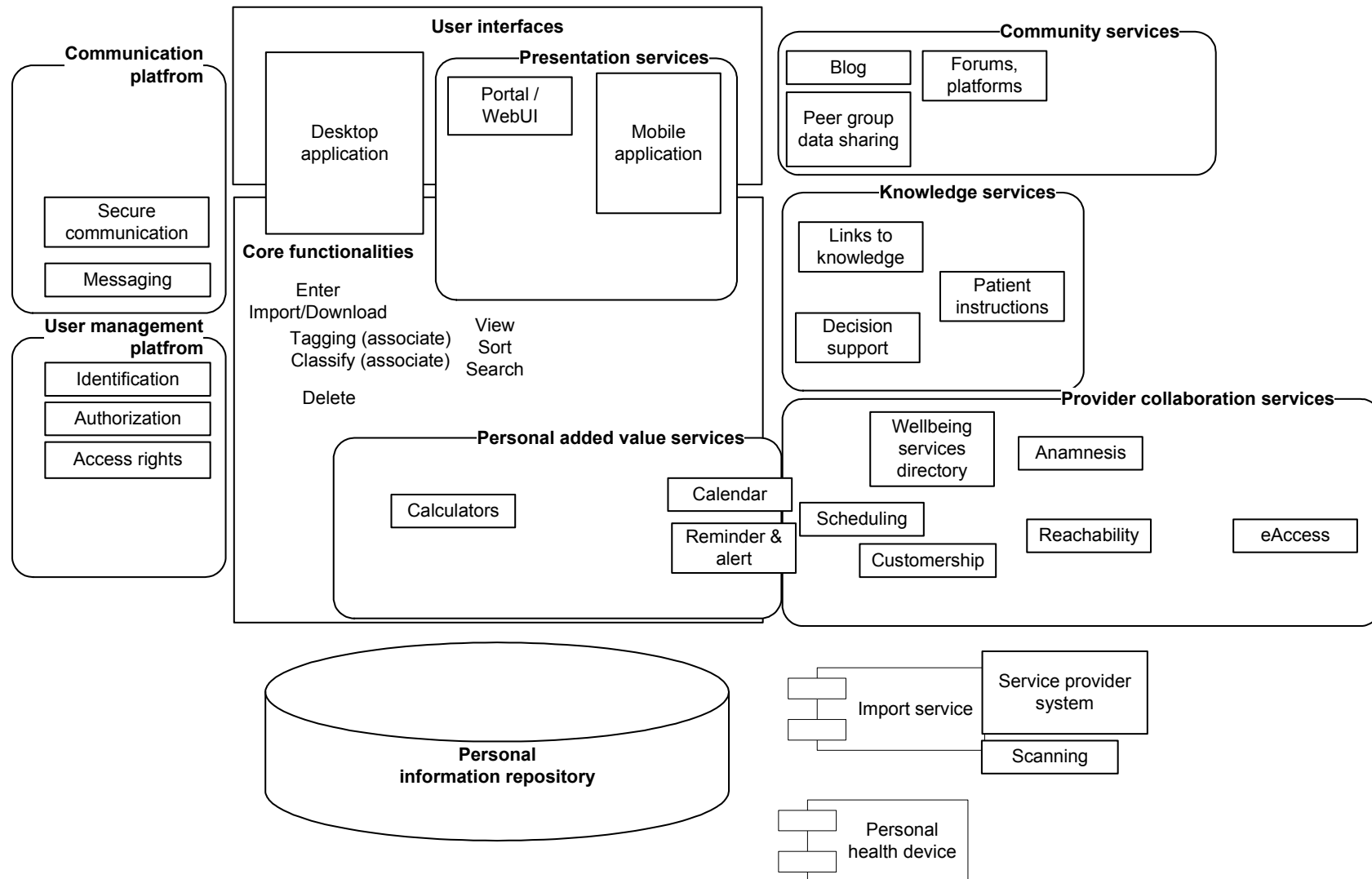
General view of the architecture and SOA services



Identified services



Services already exist/plans (from participants)

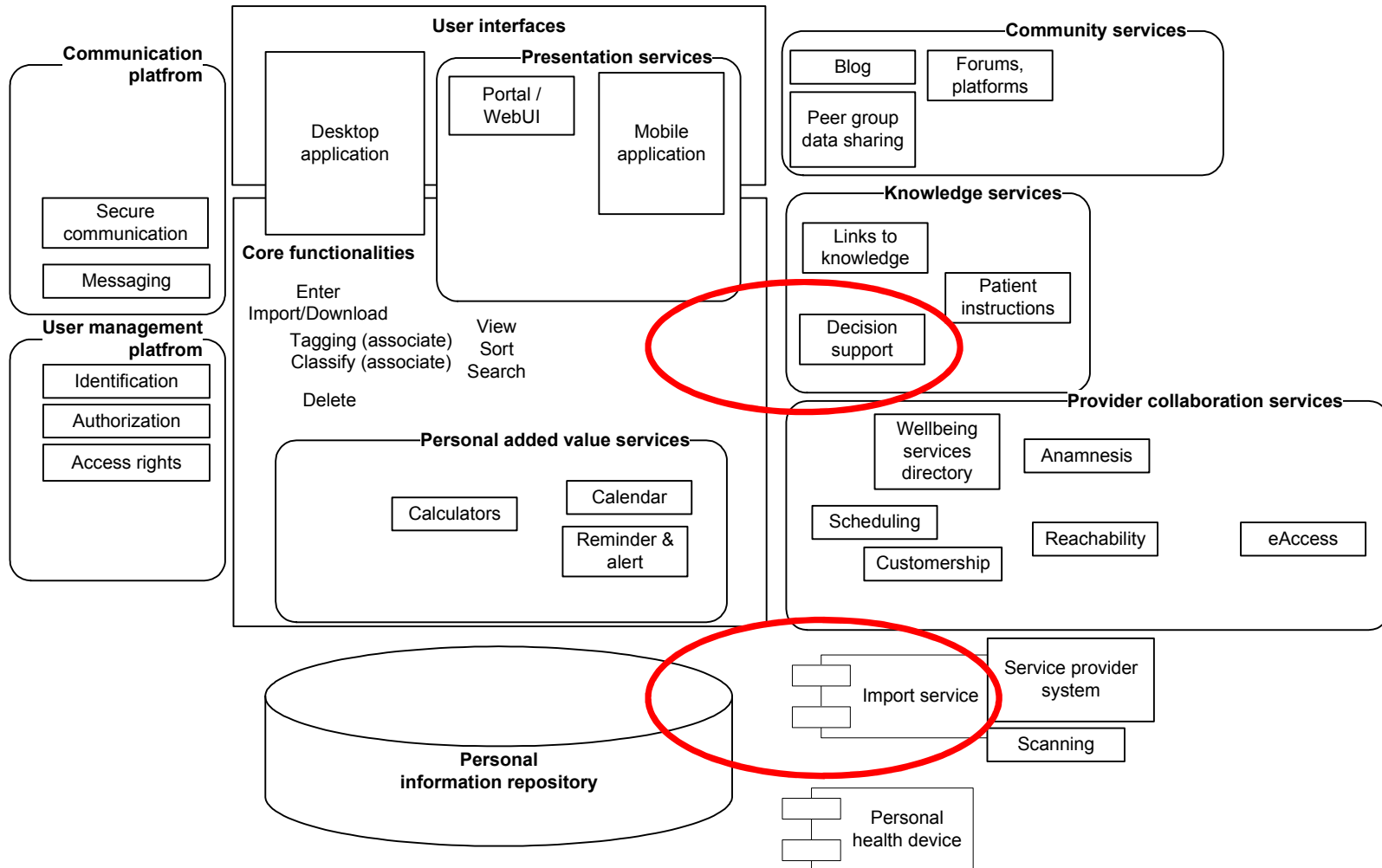


Candidates for service standardization

- ▶ Import/export service (data exchange between citizen system and service provider system)
- ▶ Decision support services
- ▶ Welfare services directory services
- ▶ Provider collaboration services (scheduling, reminders, anamnesis..)
- ▶ How to mediate data to the special services/components (nutrition calculators etc.)
- ▶ Links to the community services (blogs, forums, peer group data sharing)
- ▶ How to utilize generic platform services (identification, secure communication, messaging etc) in implementation of wellbeing management solutions

Interface considerations - examples

- ▶ Import service
- ▶ Decision support service



Import service

- ▶ Data exchange between citizen system and service provider system
 - At first PUSH-approach:
 - ▶ system of service provider (e.g. EHR) sends data to the system of citizen
 - Next step PULL-approach:
 - ▶ citizen can use his/her system to request data from service provider
 - Assumption/standpoint
 - ▶ Data has to be in structured form
 - ▶ Use of solutions already used by vendors in other national projects

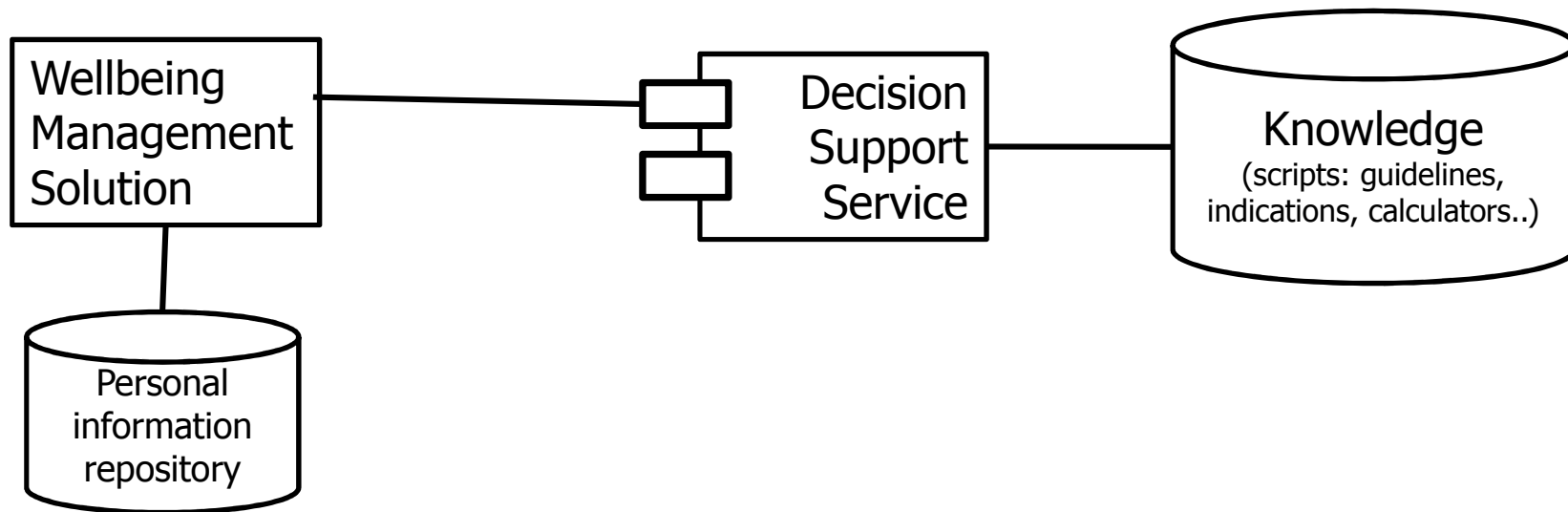
Import service – Interface options

- ▶ Data content specifications
 - Continuity of Care Record (CCR)/Google CCR
 - Continuity of Care Document (CCD)
 - Localized CDA R2 documents
 - Own CDA R2 structures
 - Own specifications (own data contents, own structures)
- ▶ Data transmission
 - HL7 V3 Medical Records + HL7 V3 Web Service profile
 - Own Web Services specifications

Decision support service

- ▶ Decision support combines medical knowledge with individual patient data.
- ▶ Now patient-specific guidance and reminders are provided for physicians and other health care professionals
- ▶ But could be provided for citizen also
- ▶ Patient data comes from wellbeing management solution of citizen

Decision support - architecture

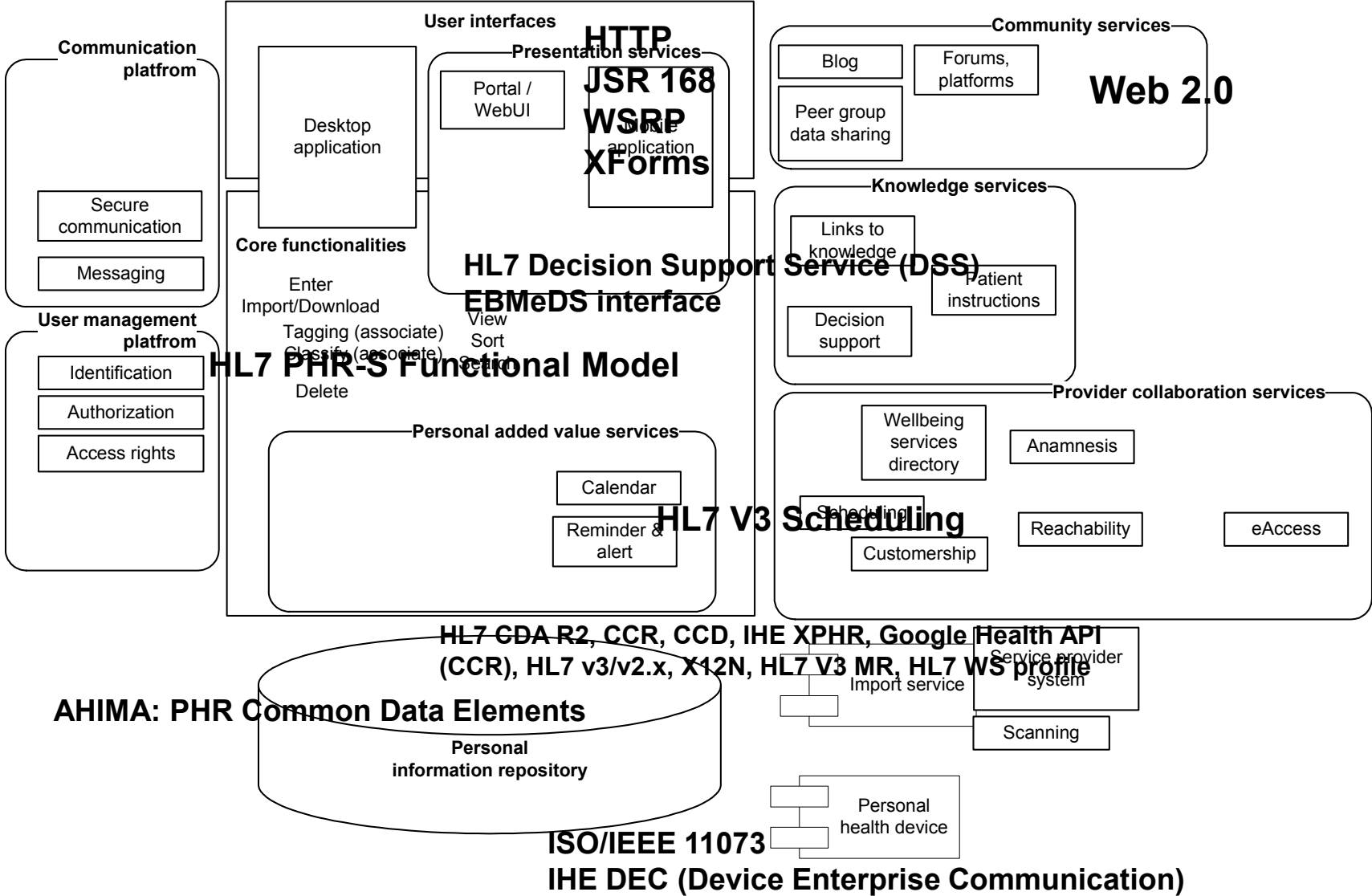


- ▶ Data has to be in structured form (-> official data received from service provider, no manipulation (?))
- ▶ Simple request-response paradigm

Decision support – Interface options

- ▶ EBMeDS (Evidence-Based Medicine electronic Decision Support) interface
 - Web services + specified data content (not CDA, but data content same)
 - -> interface specs already specified
 - Implementation of decision support service exists
- ▶ EBMeDS with localized CDA
- ▶ HL7/HSSP Decision Support Service specification

Standards



Thank you!