



Project Presentation



November 2013

FP7-ICT-2013-10
ICT-WP-2013.5.1





CARRE

cardiorenal comorbidity management
via empowerment and
shared informed decision:

- ↪ understanding nature of comorbidity
- ↪ informed estimation of disease progression
- ↪ personalized alerting, planning, education

FP7-ICT-2013-611140

consortium: 6 partners – 4 EU countries

duration: Nov 2013 – Oct 2016

budget: 3,210,470€

EC contribution: 2.573,755€

motivation

facts:

- ↪ ½ of all chronic patients present comorbidities
- ↪ only a few overall management guidelines exist
- ↪ patients receive fragmented, disease specific care

current research on comorbidities management suggests that **improved management** of comorbid patients may result via:

- ↪ educational and empowering interventions
- ↪ shared decision support

medical domain



chronic cardiorenal disease and comorbidities

- ↪ simultaneous (causal) dysfunction of **kidney** and **heart**
- ↪ **diabetes** and/or **hypertension** common underlying causes
- ↪ a number of other serious comorbidities often present
nephrogenic anemia, renal osteodystrophy, malnutrition,
blindness, neuropathy, severe atherosclerosis,
cardiovascular episodes, and eventually
end-stage renal disease and/or **heart failure**,
and **death**
- ↪ deterioration to end stage renal/heart disease is
life threatening, **irreversible** and **expensive** to manage



cardiorenal disease & comorbidities

some numbers...



- ↳ hypertension \Rightarrow 1/3 of adults (US 2008)
- ↳ diabetes \Rightarrow 8% of overall population
- ↳ chronic kidney disease \Rightarrow 9-16% of overall population
- ↳ 44% of chronic kidney disease is due to diabetes
- ↳ 86% of chronic kidney disease has at least 1 comorbidity
- ↳ most patients with chronic kidney disease develop cardiovascular disease
- chronic heart failure \Rightarrow 1-2% of total healthcare costs
- end-stage renal disease (dialysis) \Rightarrow >2% of total healthcare costs

Dr. D. O' Donoghue,
UK's National Clinical Director for Kidney Care (2008):

*“We can count the cost of kidney disease in financial terms, but the **impact on the lives** of patients as a result of late identification and diagnosis is **incalculable**.*

*In the UK, **dialysis** alone accounts for **2% of the total NHS budget (=150 billion €)** and this is projected to **double** over the next five years.*

*In comparison, the **cost** of implementing CKD **prevention strategies** can be **modest**”.*

<http://www.medicalnewstoday.com/releases/99428.php>

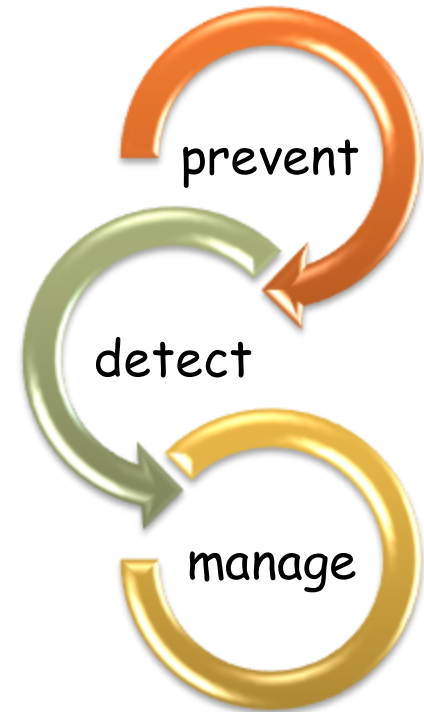
cardiorenal disease & comorbidities

of major importance

- early detection
- aggressive management
- preventive progression to end-stage cardiorenal disease

via

- lifestyle and diet management
- public health education
- monitoring and adherence to therapy
- integrated management of comorbidities



CARRE approach



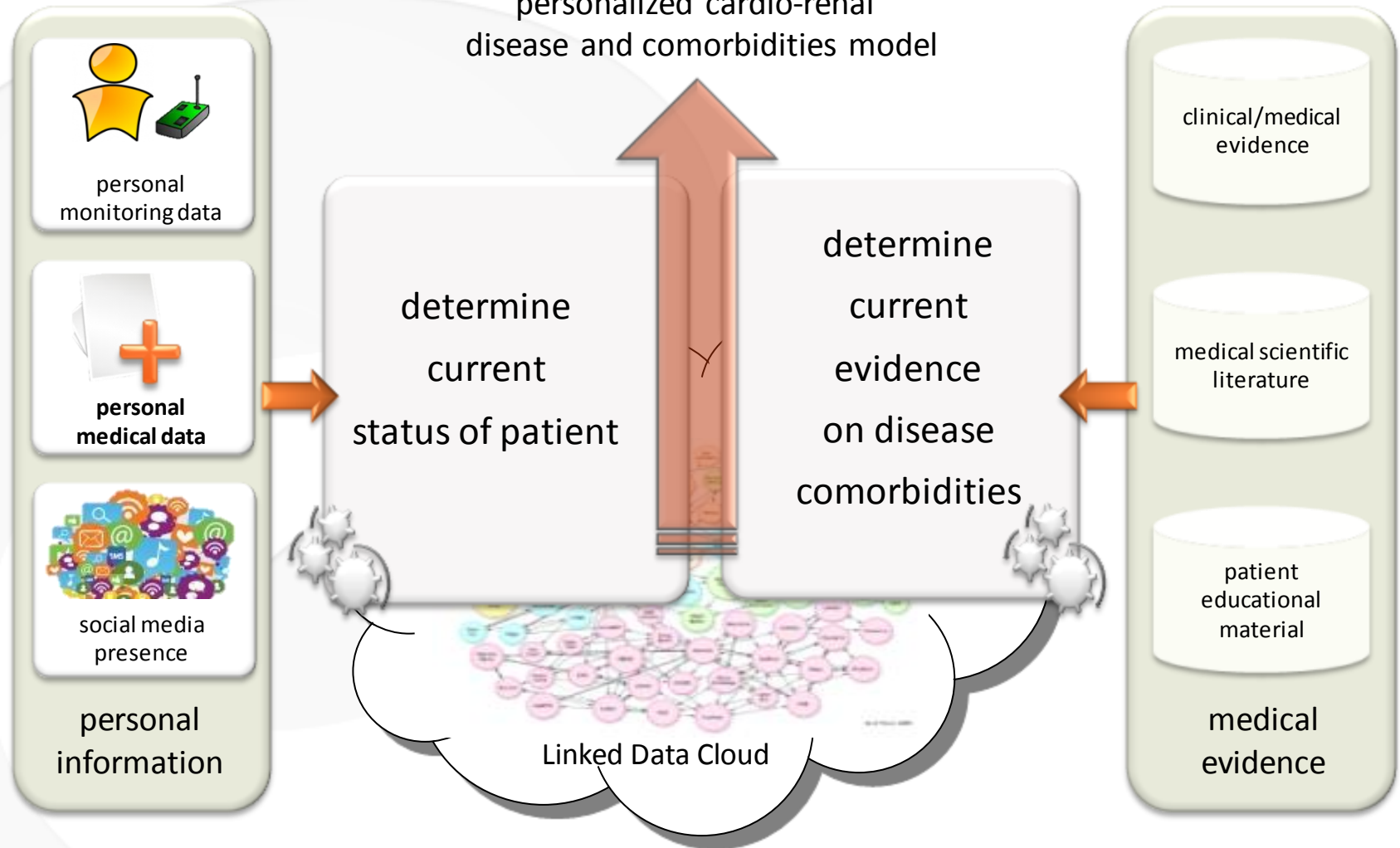
foster understanding of comorbid condition

calculate informed comorbidity progression

compile personalized empowerment services

support shared informed decision and
integrated management

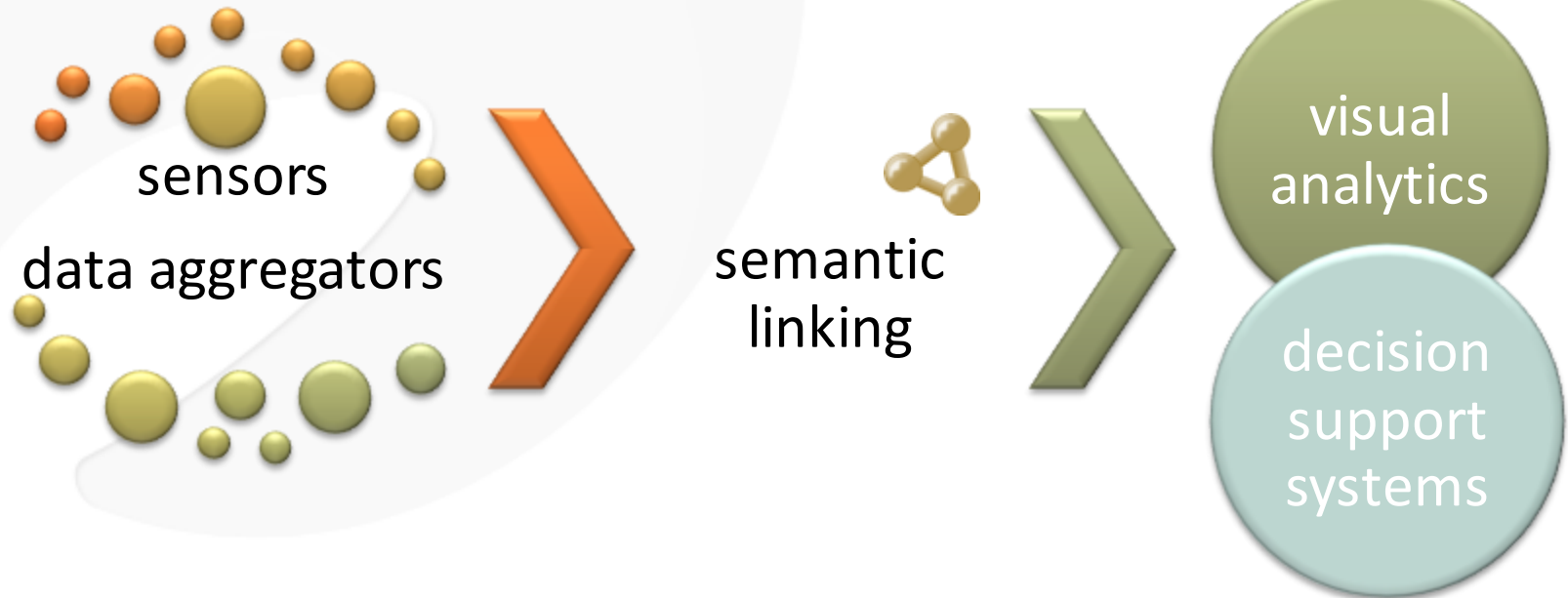
data interlinking and clustering for
personalized cardio-renal
disease and comorbidities model



shifting the focus towards
personalized comorbidity management

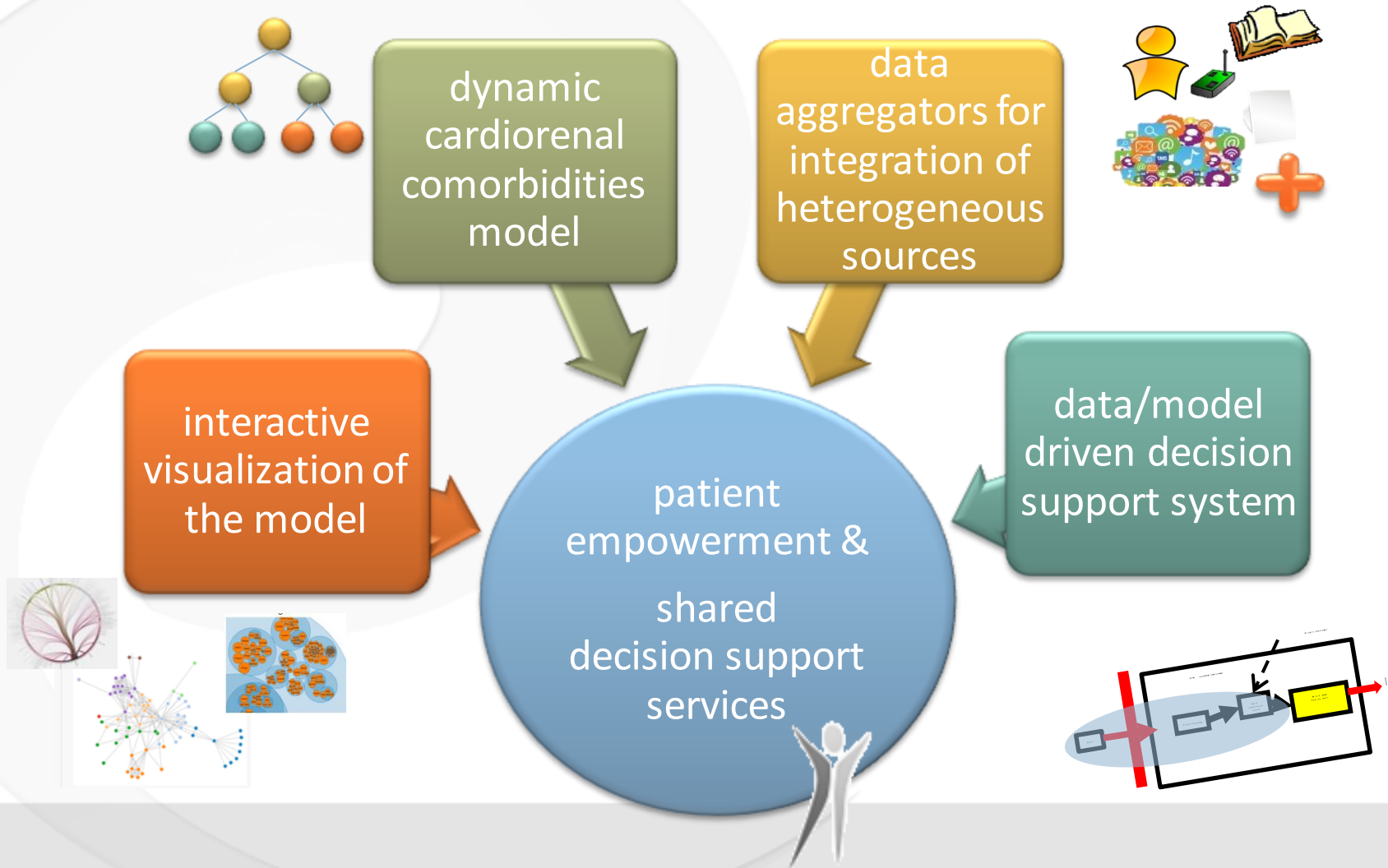
S&T methodology

analysis & design



empowerment & decision support
for pilot demonstration

outcomes



work plan

- 1st year: analysis and modeling**
analysis, design, model & ontology,
initialization of RTD tools design and development
- 2nd year: main technological research and development**
data harvesting, model/RDF population,
system visual interface, DSS infrastructure
testing
- 3rd year: enhancements, deployment & validation**
advanced analytics, integrated services, pilots,
evaluation, implications

- ⇒ strong user involvement in all phases of RTD
- ⇒ a clear task-deliverable correspondance

milestones

1st year

M03 ⇒ MS1: project successfully initiated

M12 ⇒ MS2: a comprehensive CARRE information model
has been developed – 1st draft of RDF ready

2nd year

M14 ⇒ MS3: a working CARRE RDF scheme and ontology
have been produced

M18 ⇒ MS4: data aggregators are efficiently working

M24 ⇒ MS5: visual interface to the RDF store is completed

3rd year

M30 ⇒ MS6: service environment integration has produced
a first working prototype

M36 ⇒ MS7: project successfully completed

disseminate & exploit

main **focus** during
the **entire lifetime**
of the project and **beyond**
(not just in the end!!)

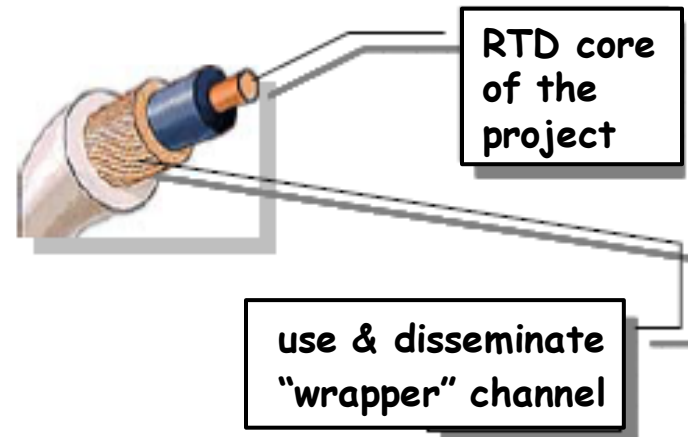
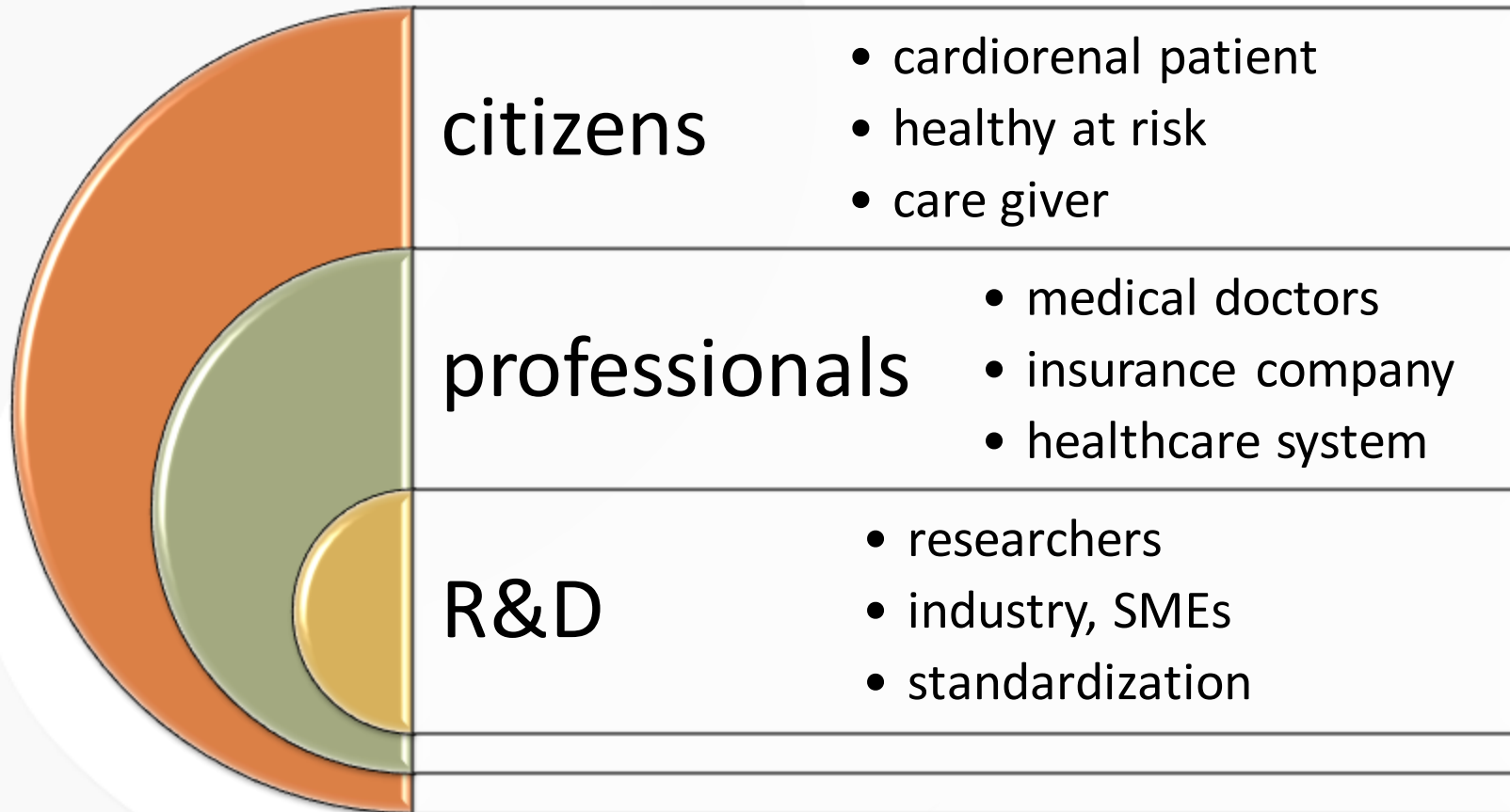
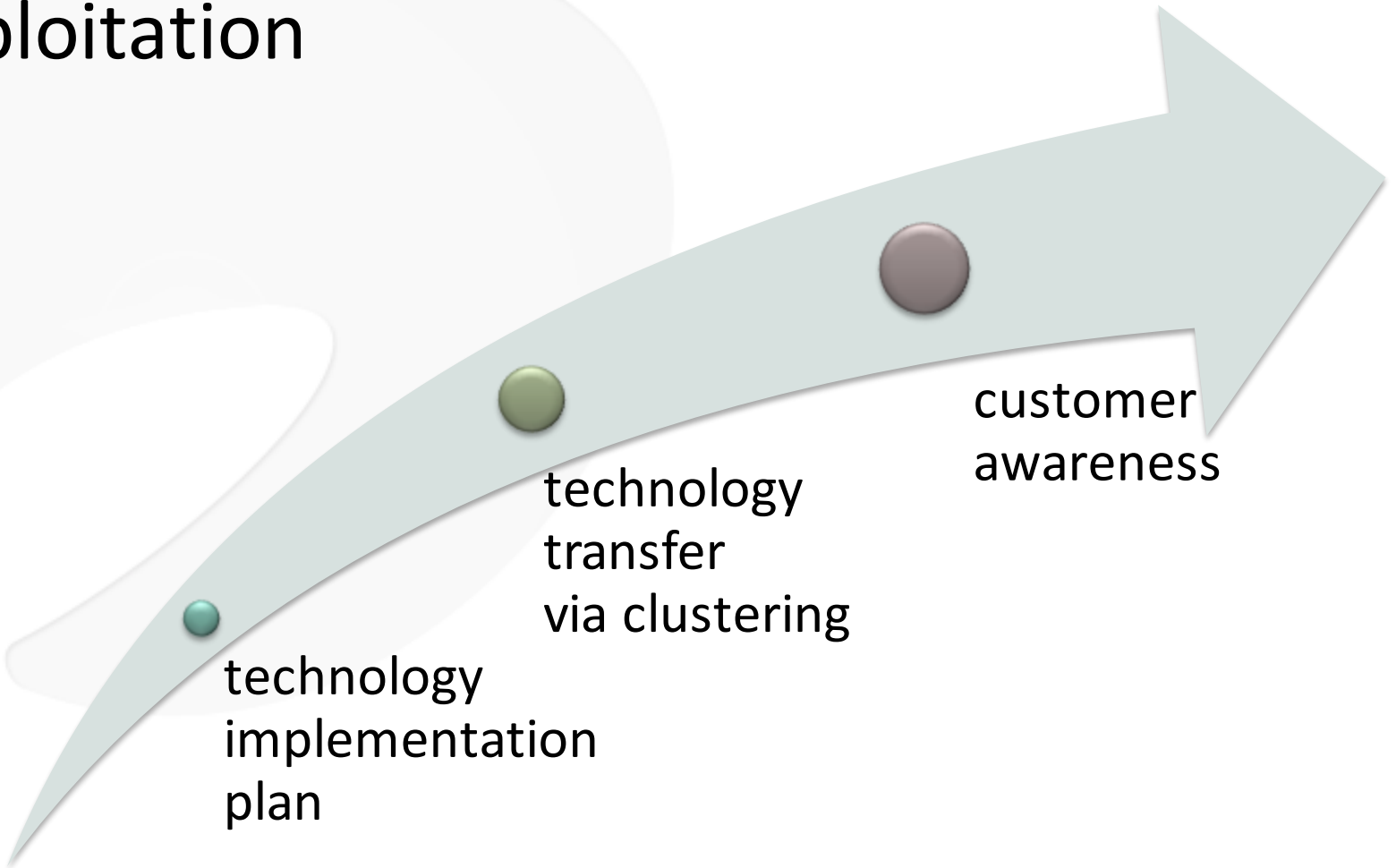


Figure adapted from: SCUBE-ICT, HAGRID, and IST_BONUS project consortia, "Training Guide: Getting Started with EU ICT Research, SCUBE-ICT, EU, September 2009 (p. 48)

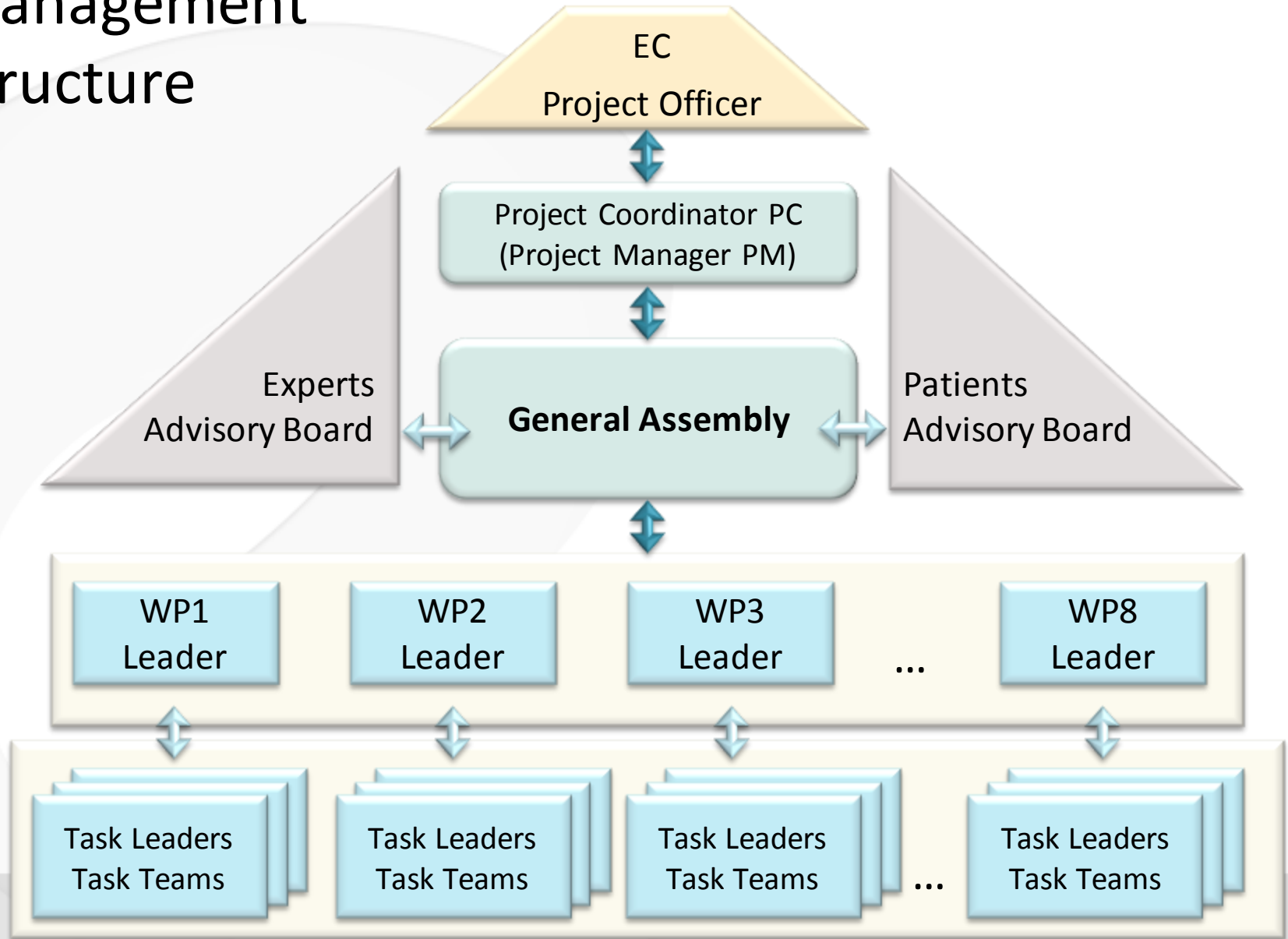
target user groups



exploitation

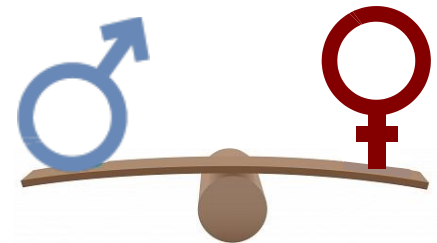


management structure



gender balance in CARRE

- ↳ **Coordinator and Project Manager** are both women
- ↳ **WP leaders**: 50% representation of both genders
- ↳ **Task leaders**: 55% representation of women
- ↳ **Team Leaders and GA**: 1/3 female representation
- ↳ **Key team members**: 1/3 female representation



CARRE partners

Democritus University of Thrace (Greece)

coordination, user-driven analysis, pilot deployment, evaluation



The Open University (United Kingdom)

ontology development, semantic interlinking



University of Bedfordshire (United Kingdom)

visual analytics & data harvesting



Vilnius University Hospital Santariškių Klinikos (Lithuania)

user-driven analysis, pilot deployment, evaluation



Kaunas University of Technology (Lithuania)

sensors, data aggregators



Industrial Research Institute for Automation and Measurements (Poland)

decision support, systems security and data privacy



contact

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CARRE

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