

Tripcom FP6-027324

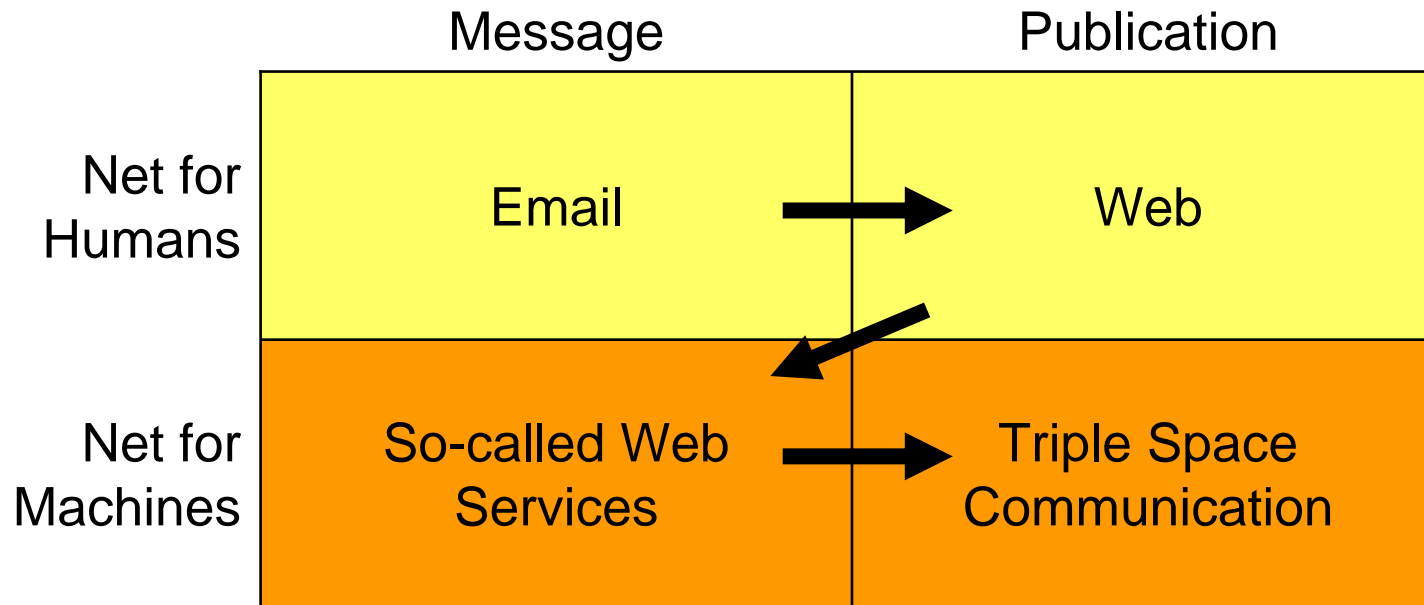
Project-Overview



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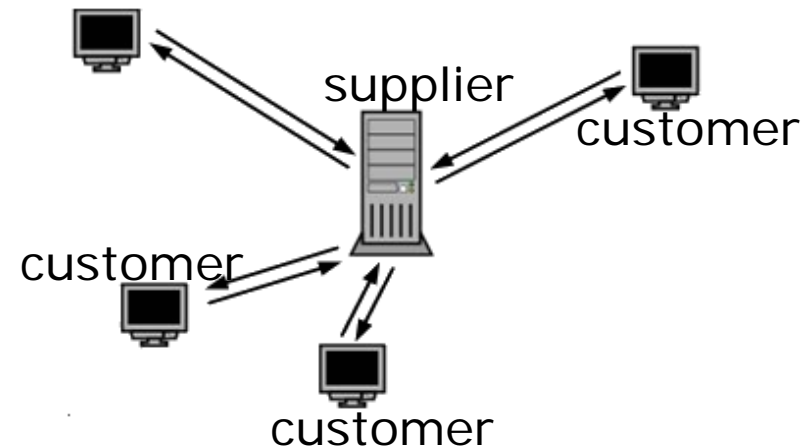


- Problem and vision
- History and facts
- Work packages
- Management



“Triple Space may become the Web for machines as the Web based on HTML became the Web for humans”

- Web based computer interaction dominated by message exchange based communication.
 - Web services / SOAP
 - Agents

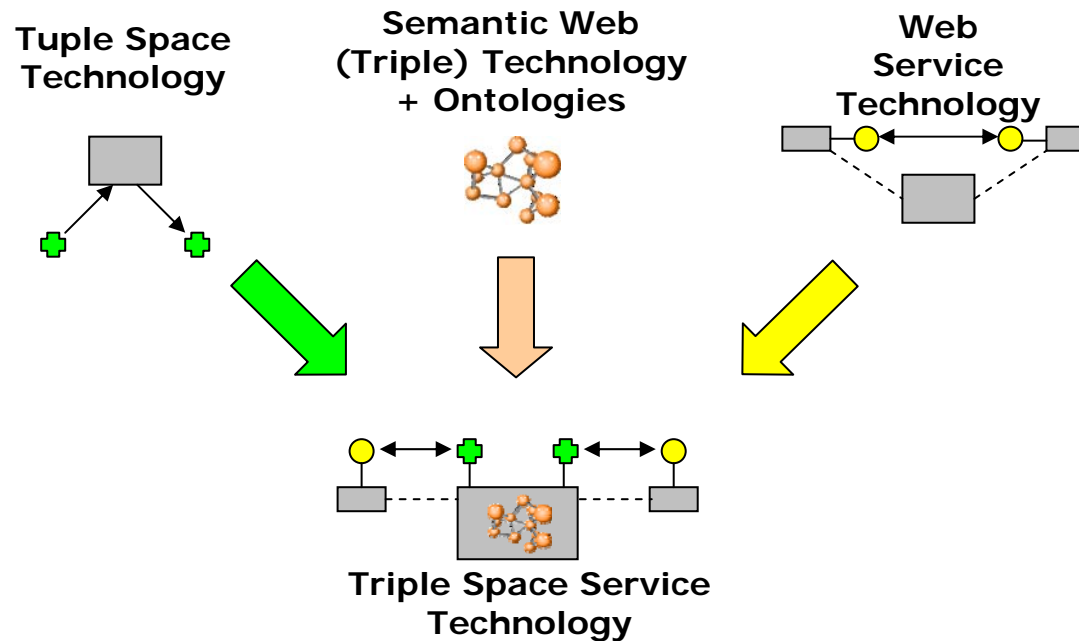


- Not following Web architecture and **results in unnecessary complexity** on machine to machine interaction.
- Web scales to its current size because it uses **persistent publication** as the communication paradigm as well as defined interfaces and uniform addressing.

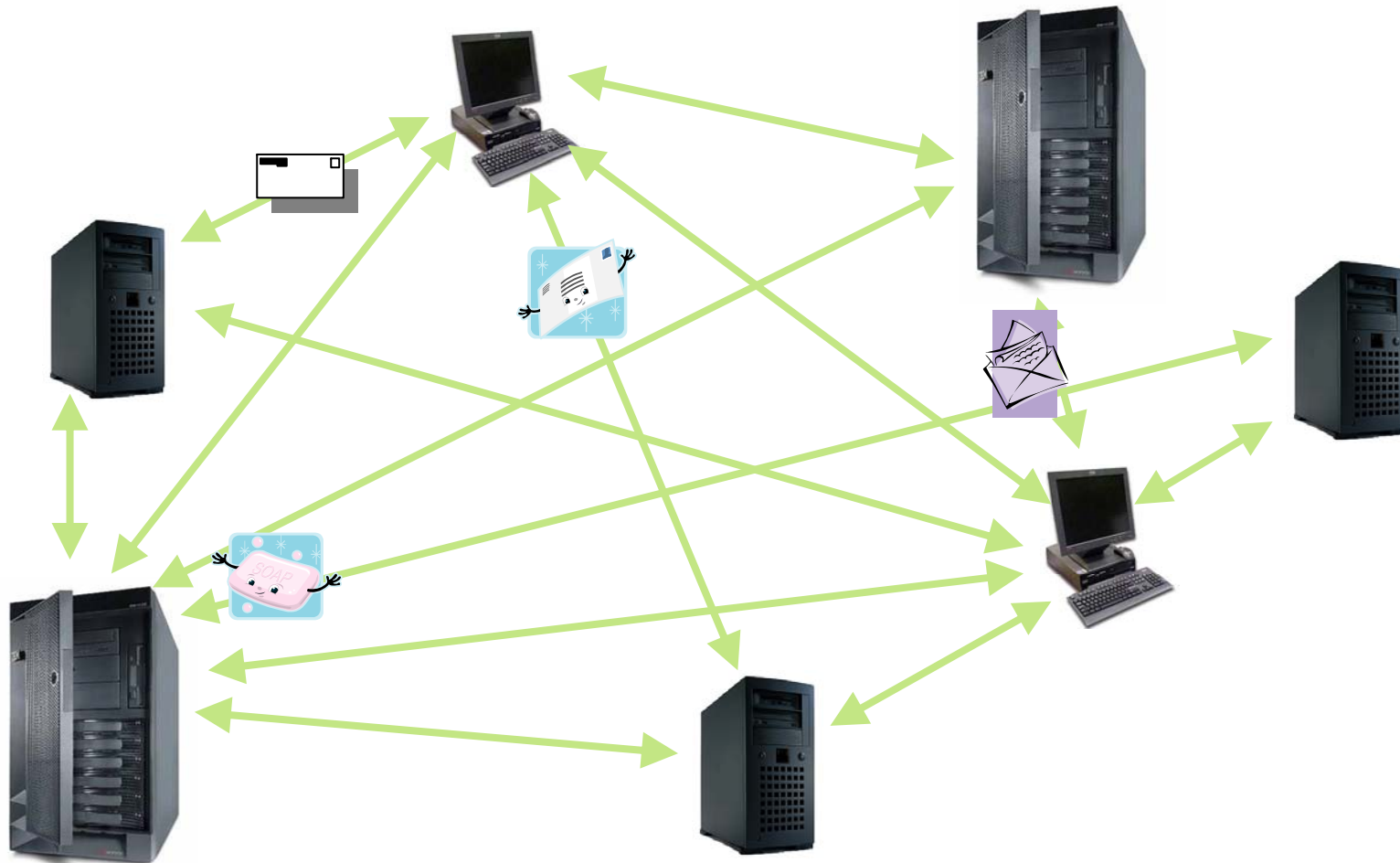
The Result



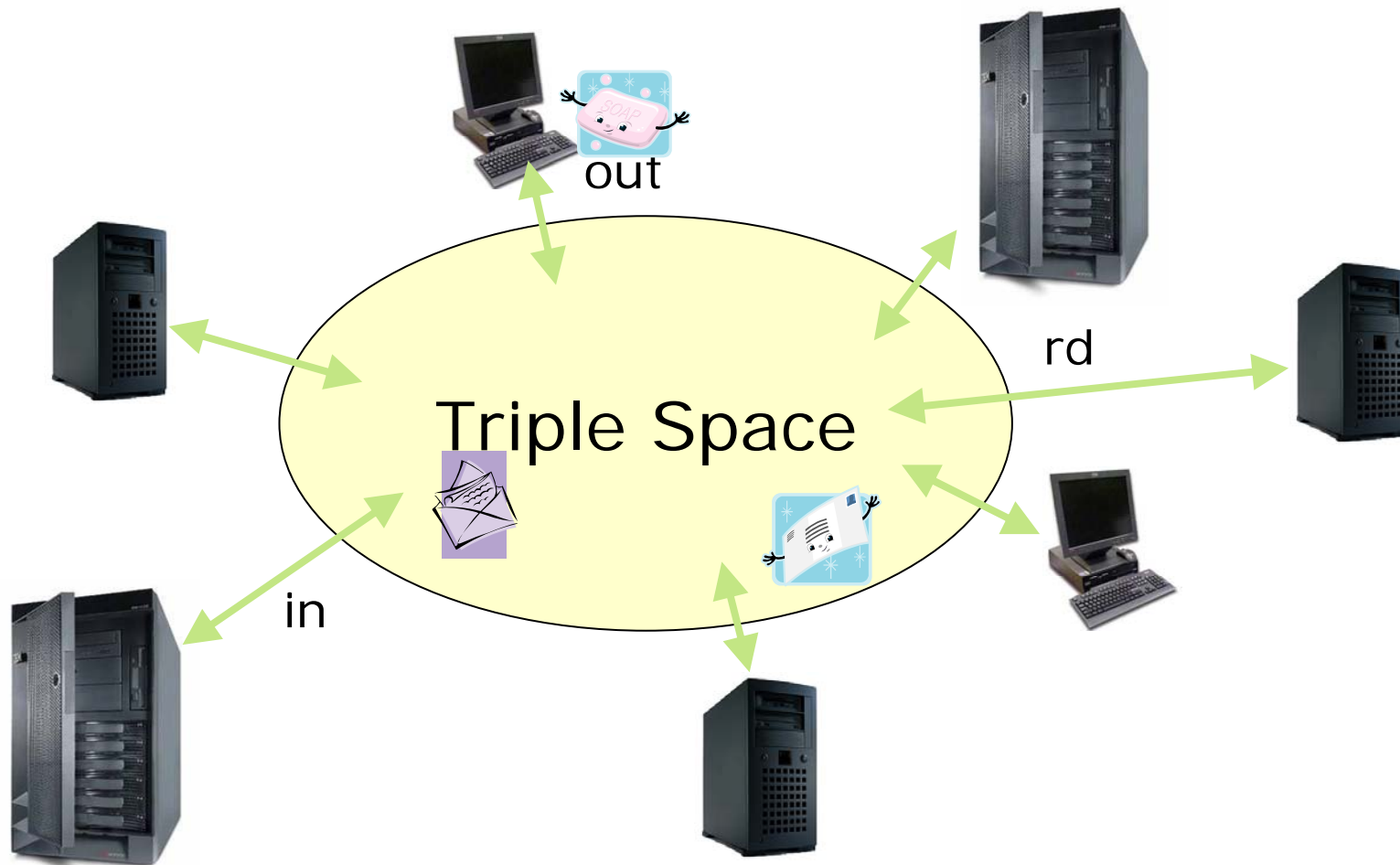
Triple Spaces provide a communication paradigm for *anonymous* and *asynchronous* information exchange that ensures the *persistency* and *unique identification* of the communicated *semantic, semi-structured* data.



Message Based Communication

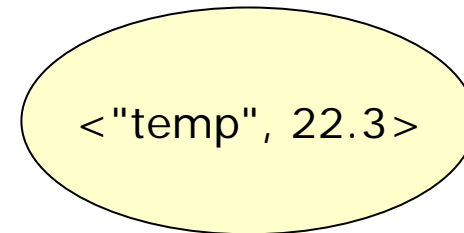


Space Based Communication



- Based on Tuplespaces model for parallel computing (Linda language, Yale, ~1982)
- Idea:
 - A space contains items (“tuples”)
 - Items can be put into the space
 - Items can be read or withdrawn from the space
 - A “matching” rule guides what is withdrawn relative to a pattern (“template”)
 - Data is addressed associatively
 - Very high-level coordination model with a simple API

out(<"temp", 22.3>



rd(<"temp", ?t>)

-> t=22.3

- From Tuplespace to Triple Space
 - Tuples extended to support RDF Triples in the space
 - Conceptually: WP 2 and WP 3
 - Storage, Usage, Security: WP 1, WP 4, WP 5
 - out/in/rd extended with operations on the space that take into account the specifics of “semantic tuples”
 - Matching uses inferences

out(<t:temperature, t:is, xsd:22.3>

<t:temperature, t:is, xsd:22.3>

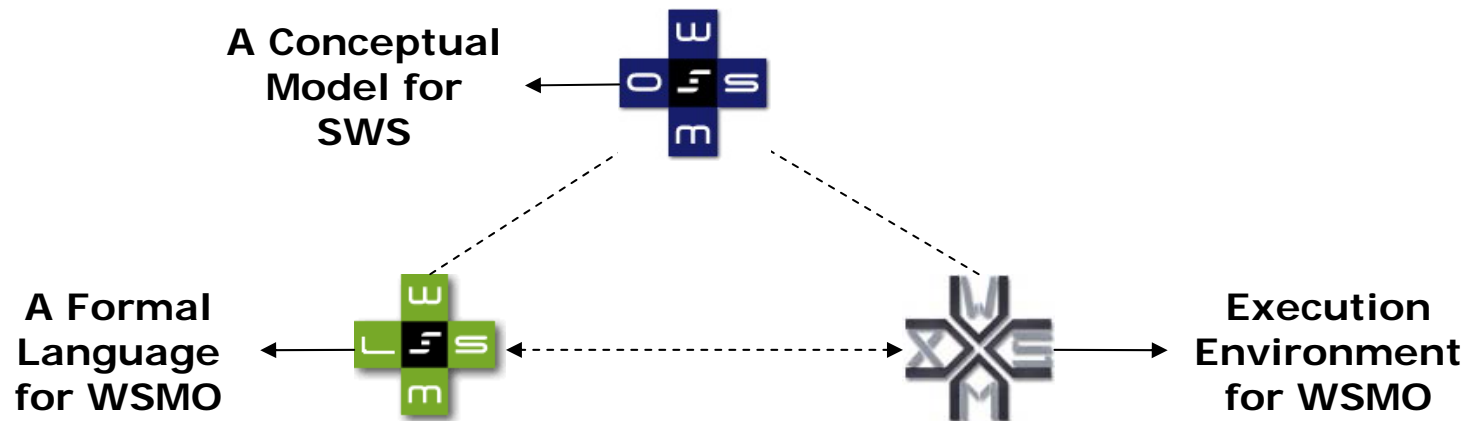
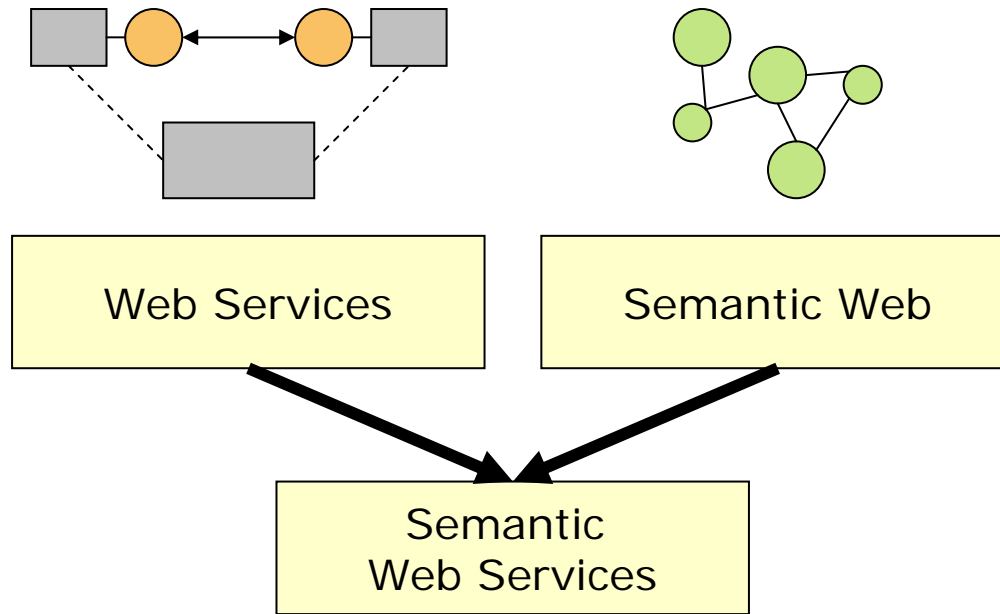
rd(<t:temperatureF, t:is, ?t>)

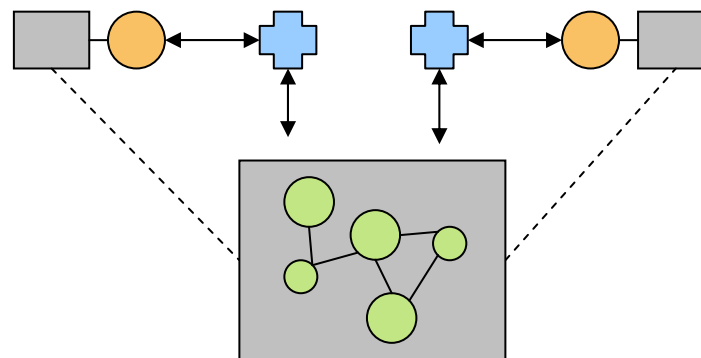
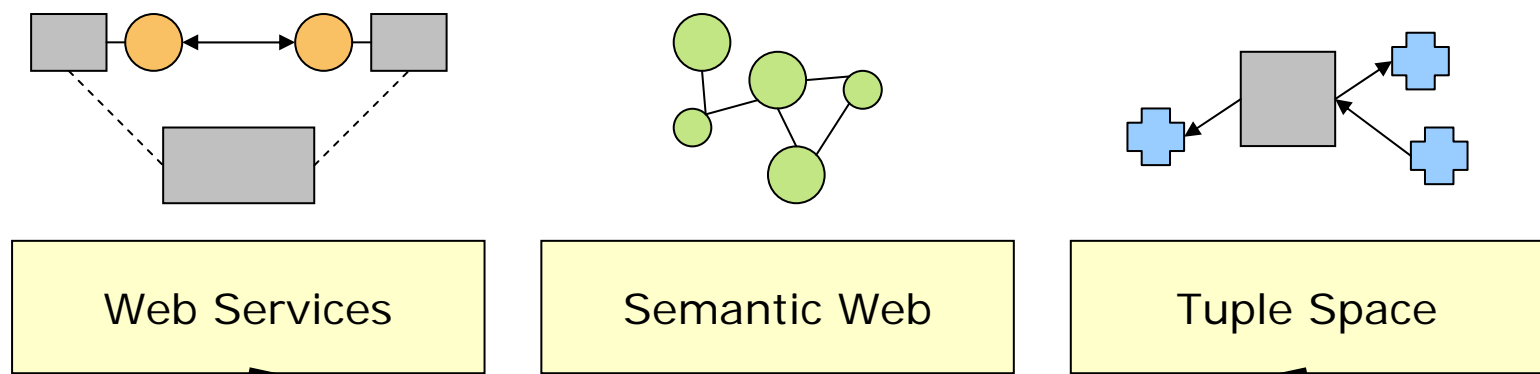
-> t=72.1

- **Time autonomy** means
 - No time dependencies between data provider and reader.
 - Accesses to the triple space and write or read of information at own discretion of process.
- **Location autonomy** means
 - Triple space as a storage location is independent from any storage space in the provider or reader of data.
 - Complete independence is achieved by ensuring that triples are passed to and from the triple space by value and in the format required by the triple space.
- **Reference autonomy** means
 - Provider and reader of data do not have to know each other
 - Reading and writing of data can be anonymous.
- **Data schema autonomy** means
 - Triples are external data schema
 - Data provider and reader are independent of the internal data schemas they have.

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Semantic Web Services





Added Expertise in:

- Semantic Web (RDF)
- Web services (WS-* Standards)
- Linda/Tuple Spaces (extensions towards Semantic Web)
- Applications in Industry and Public Sector

- Aim:
Realise Triple Space as a global infrastructure for machine communication of semantic data based on the Web principles of persistent publication and simple interaction
- Specific use cases in the project:
 - Extend Semantic Web Service communication (WP4)
 - Enhance EAI with semantics and coordination (WP7, 8a)
 - Enable the infrastructure necessary to support a European

Use cases eHealth and EAI in State of play presentation

Facts & Figures



■ Time

- Start date: April 2006
- End date: March 2009
- Duration: 36 months

■ Partnership

- Number of partners: 9
- Number of countries: 7
(AUT, BUL, ESP, FIN, GER, IRL, ITA)

■ Work

- Number of work packages: 10
- Number of deliverables: 46
- Number of person months: 623

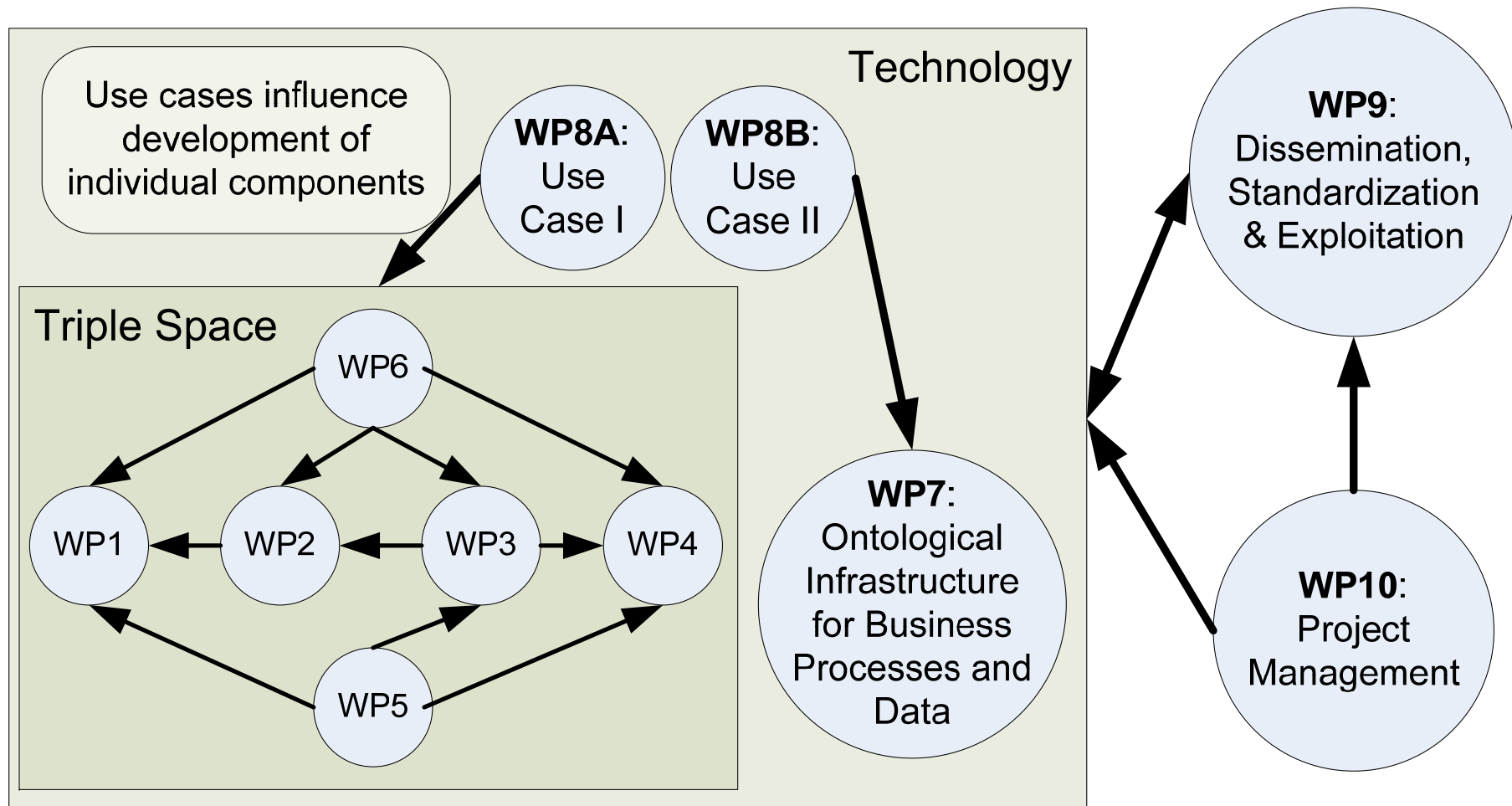
■ Money

- Budget total: €4,661,110
- EC funding: €3,650,000

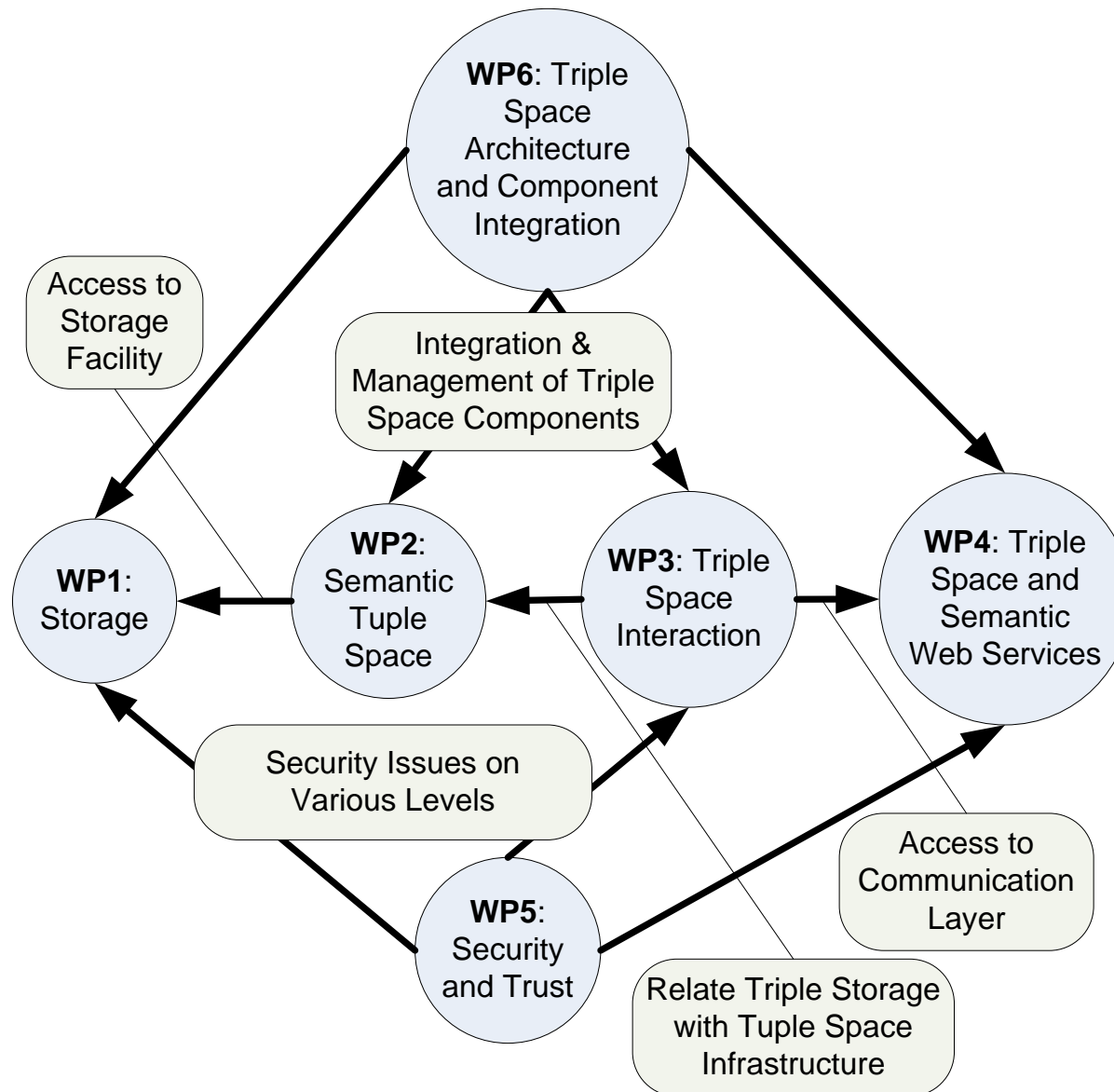


- Problem and vision
- History and facts
- **Work packages**
- Management

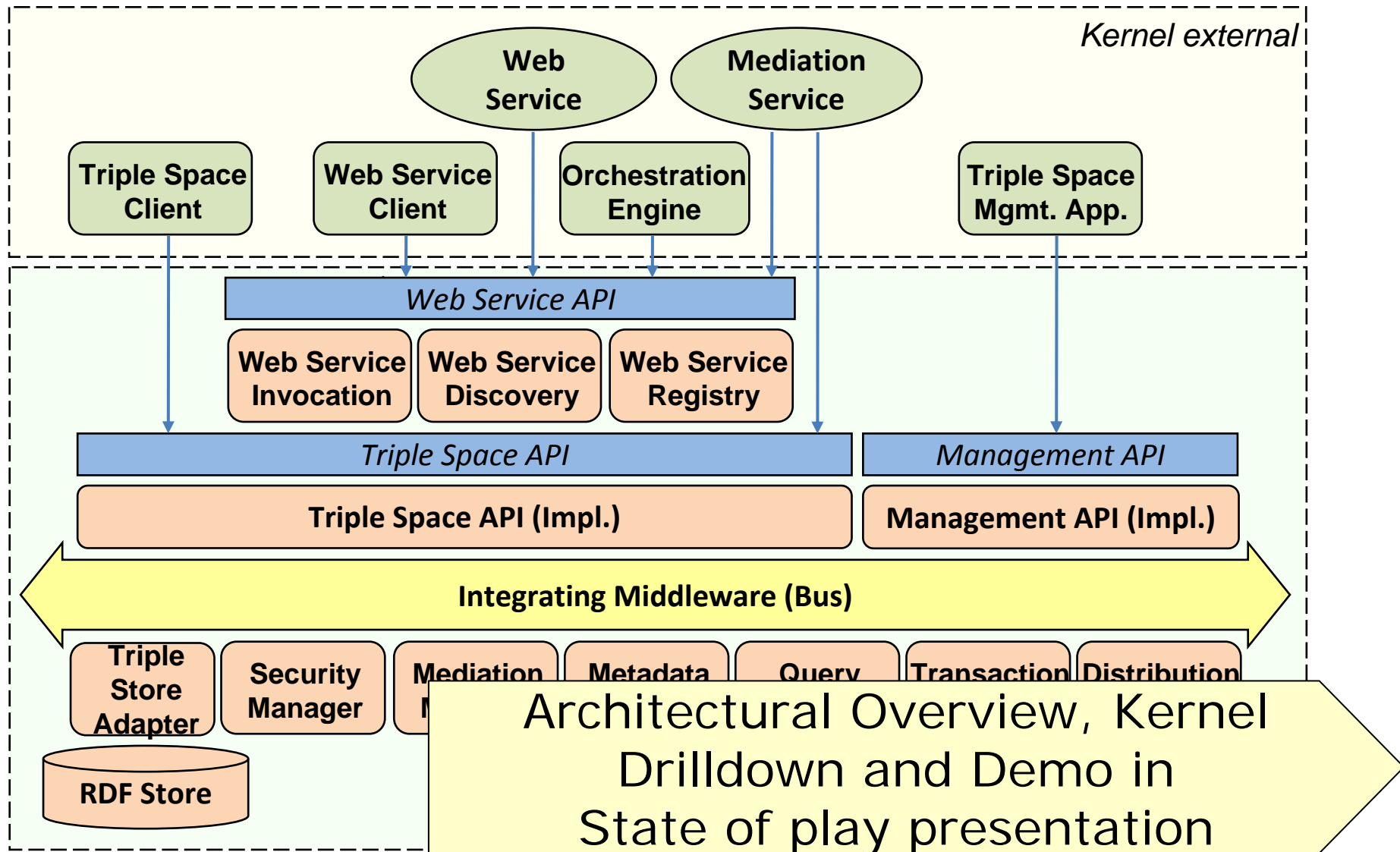
Project Work Packages



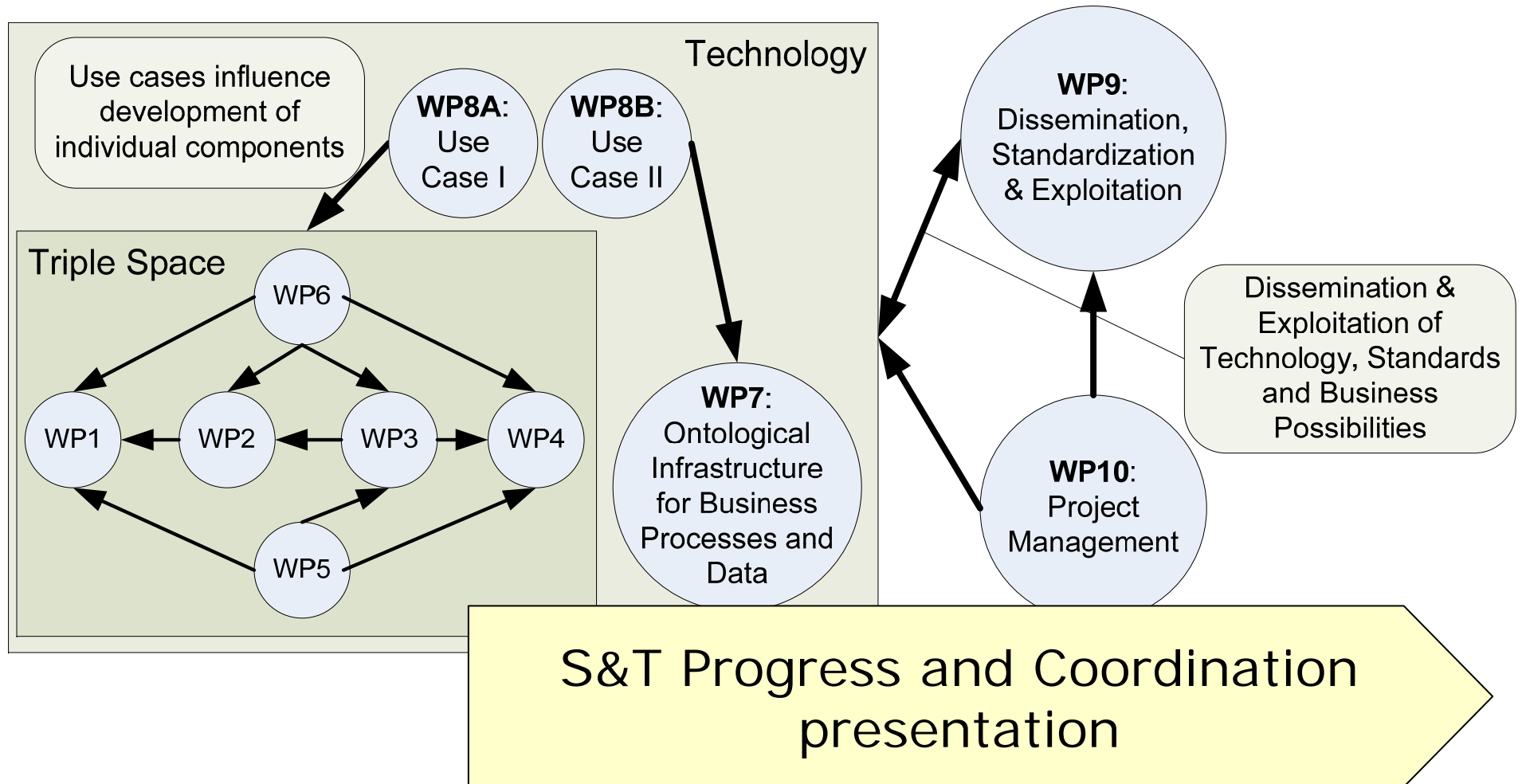
Technology Work Packages



Triple Space Architecture

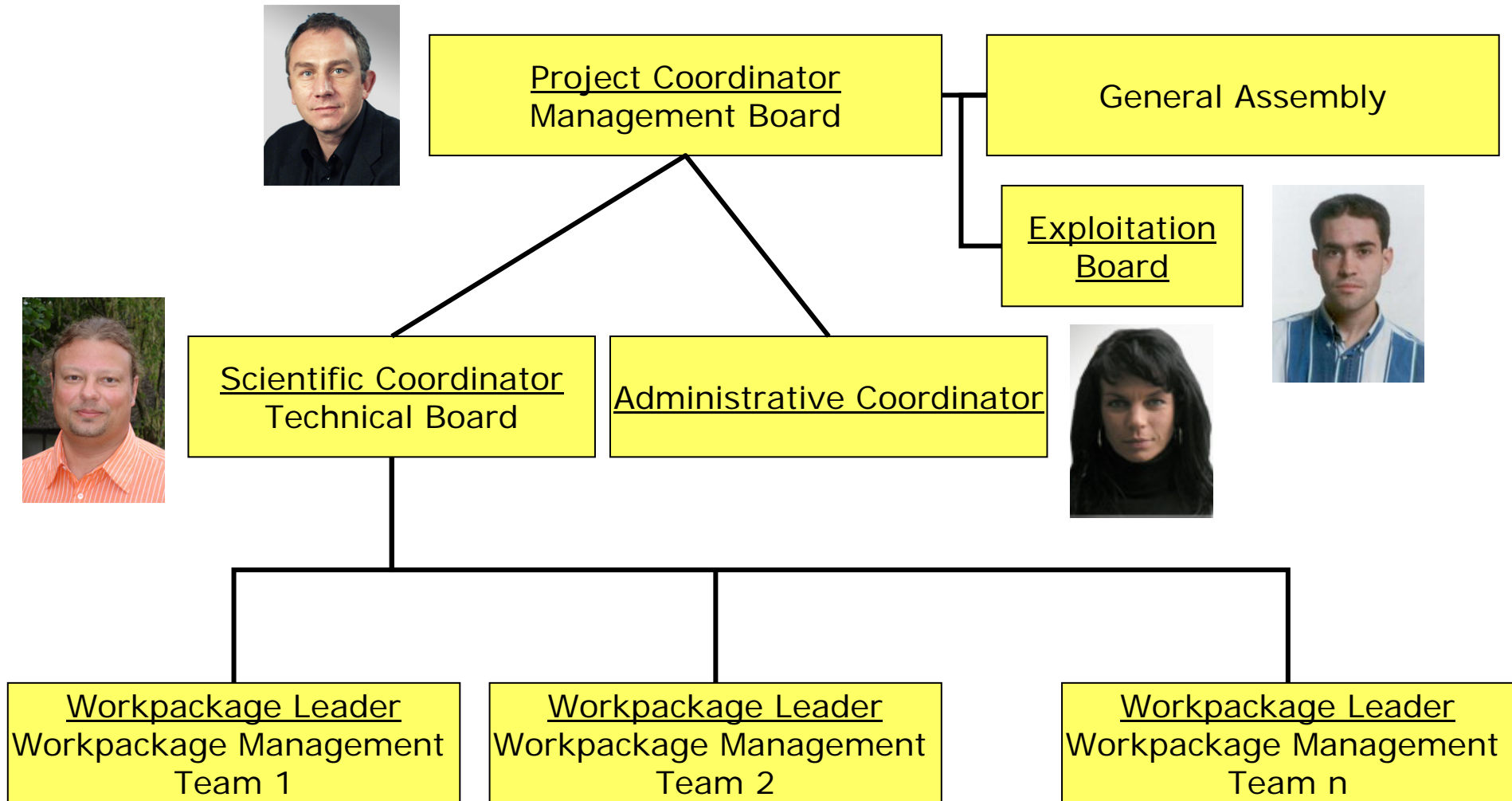


Work Packages - Impact



- Problem and vision
- History and facts
- Work packages
- **Management**

Structure and Key Persons



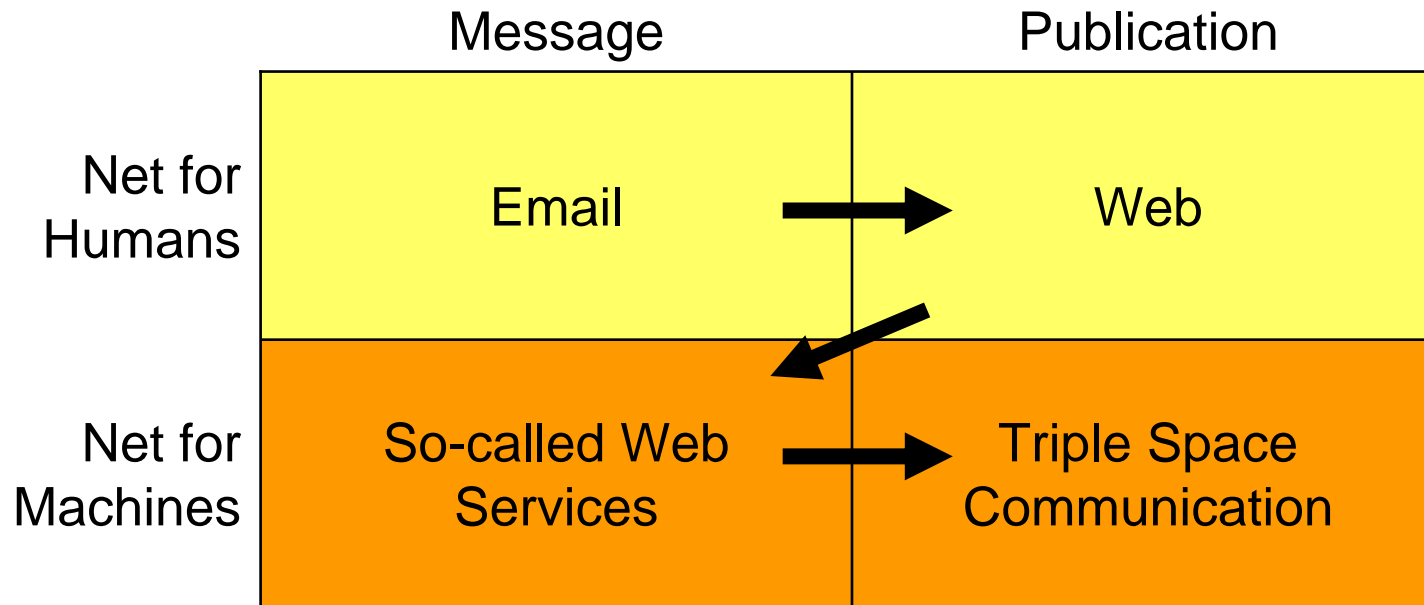
Effective management of quality is of fundamental importance to the success of the project.

- TripCom has implemented a Quality Assurance Procedure which ensures that every deliverable has to undergo a three-step quality check before it is submitted to the EC
- The Quality Assurance Procedure starts exactly 1 month before the final EC submission date of the respective deliverable
- Reviewers involved in the Quality Assurance Procedure have been assigned for all deliverables due until M18. The complete [Project Management presentation](#) available at [http://www.tripcom.com](#)

- Project Dissemination
 - Dissemination channels
 - Project website
 - Target communities
 - Papers published / conferences attended

- Take advantage of commercial experience of industrial partners to provide a business orientation to TripCom
- Represented by the **Exploitation Board**, consisting of partners from the industry
 - Members
 - David de Francisco **TID** (Chair)
 - Vassil Momtchev **ONTO**
 - Janne Saarela **Profium**
 - Frank Leymann **USTUTT**
 - Emanuele

Dissemination and Exploitation
presentation



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