

# iService: Human Computation through Semantic Web Services

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## Challenge

- Current computing technology is still inferior in certain problem domains
  - Identifying objects in photos or videos
  - Researching data details
  - Identifying duplicates
- There is the need to access human intelligence in a simple, scalable and cost-effective manner

## iService Providers

- Benefit from a simple user interface on a mobile device
- Internet enabled mobile devices allow people to complete simple and short tasks that require human intelligence, while travelling to work or waiting for an appointment
- Service providers get rewarded for their spare time

## iService

- iService enables a simple, scalable and on-demand access to human intelligence
  - In the form of Semantic Web Services
  - By using the Web as a platform and
  - Common mobile devices as user interface
- It take advantage of important factors, including human mobility, ease of use and the potential of using semantic information

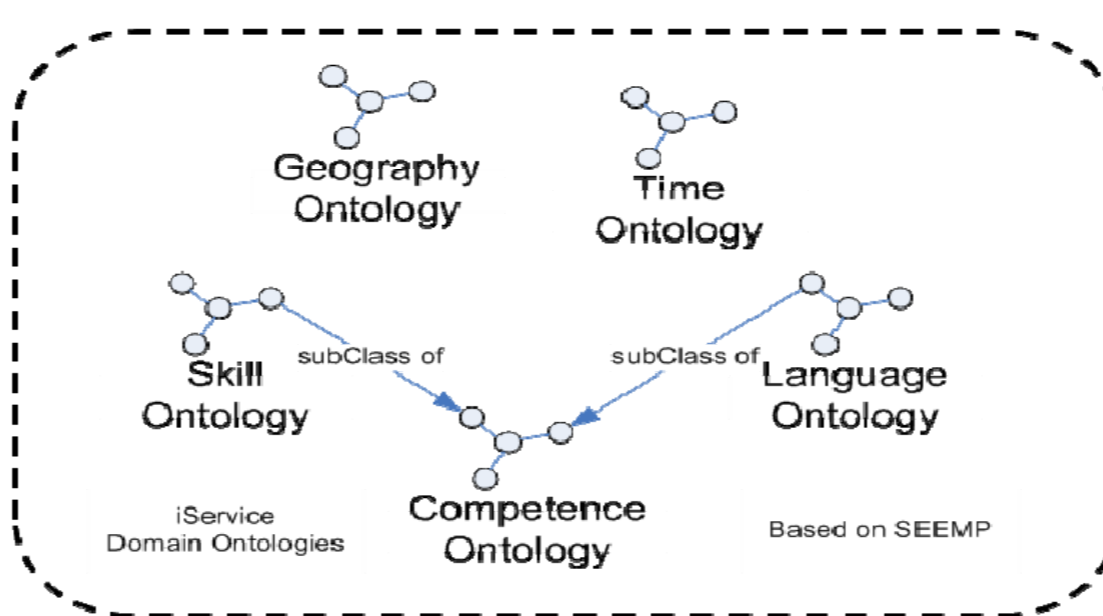
## iService Consumers

- Benefit from iService due to lower employee cost and on-demand workforce
- The quality of work is ensured because only work with acceptable quality is paid for
- The same task can be given to multiple service providers, so that the results can be compared and reviewed

## iService Architecture and Use Case

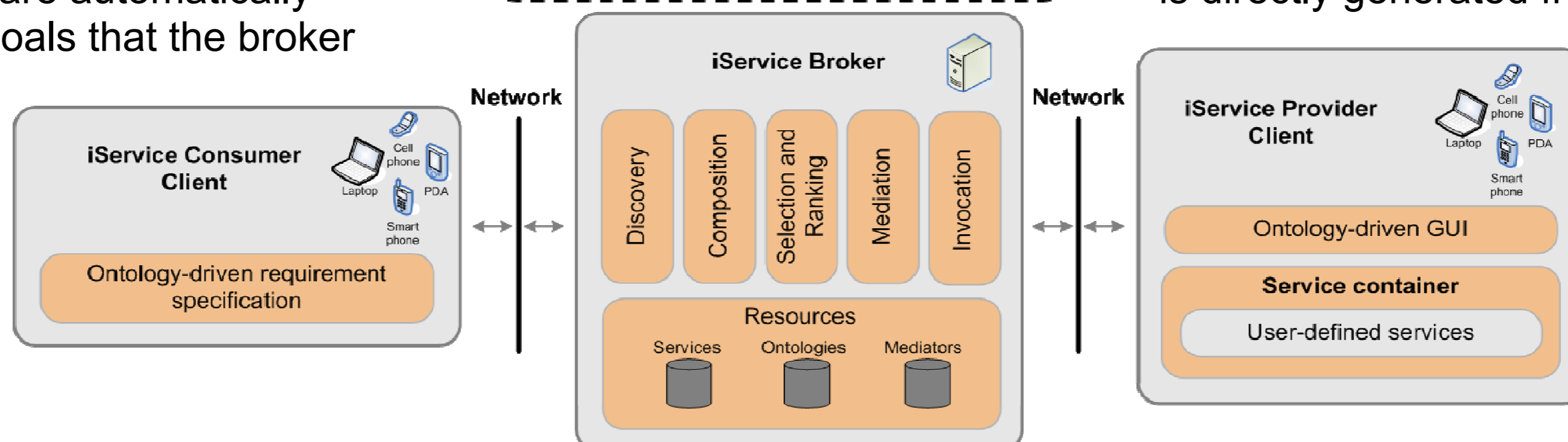
**iService Consumer Client:** Provides for a light-weight iService consumer environment

- Enabling potential customers to formally express the requirements and raw data to be processed
- The requirements are automatically translated to WSMO Goals that the broker needs to satisfy



**iService Provider Client:** Enables service providers to access the iService environment

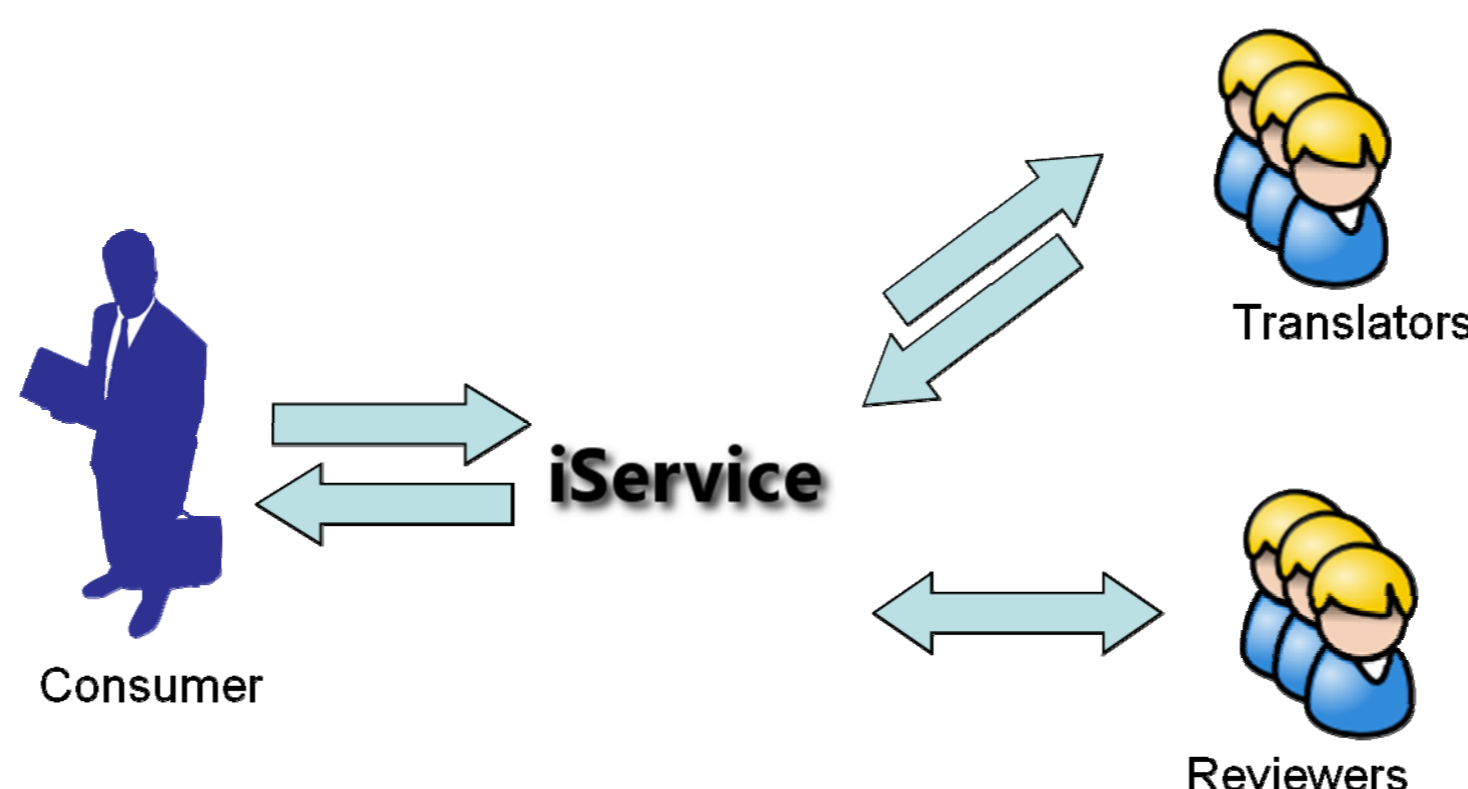
- Users can provide formal descriptions of their capabilities stored in the broker's repository
- A personalized service, specified in WSMO, is directly generated from the user input



**iService Broker:** Characterized by strong component decoupling and goal driven usage, the platform realizes dynamic discovery, selection, composition, mediation and invocation of human provided services, where semantic service descriptions play a major role

**Consumer:** A web page developer, who wants to have a validated translation of his web page

- After an initial user registration step, the user specifies his requirements through a set of ontology-based dialogs
- The result is a generated WSMO Goal definition, submitted to the iService broker



**Providers:** Translators and reviewers act as service providers (they perform and validate the translations)

- Each service provider has to register and specify his/her capabilities.
- Based on the registration, WSMO service descriptions are created that describe capabilities of individual service providers

**iService Broker:** Once the iService broker has the consumers' goal definition, it does semantic service description-aided discovery of capable translators and submits work items to them