Directorate-General for Translation

Machine Translation at the European Commission

META forum, Budapest
28 June 2011

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DGT - Language applications

EUROPEAN
COMMISSION

DGT

- EU Official languages: 23
- EC procedural languages: 3 (EN, FR, DE)
- DGT:1750 linguists and 600 support
- Where: in Brussels, Luxembourg and in local offices in Member States

Machine Translation at the EC

The past: ECMT

- Rule-based machine translation
- Developed between 1975 and 1998
- 28 language pairs available (ten languages)
- Since 2006 only linguistic maintenance work on a couple of systems
- Suspended in 12/2010

The future: MT@EC

- **05/2010** Commission Task Force confirmed need for new MT for the Commission
- **06/2010** Action plan approved by management
- **09/2010** Work started for MT@EC

Task Force outcome *(May 2010)*

Conclusions

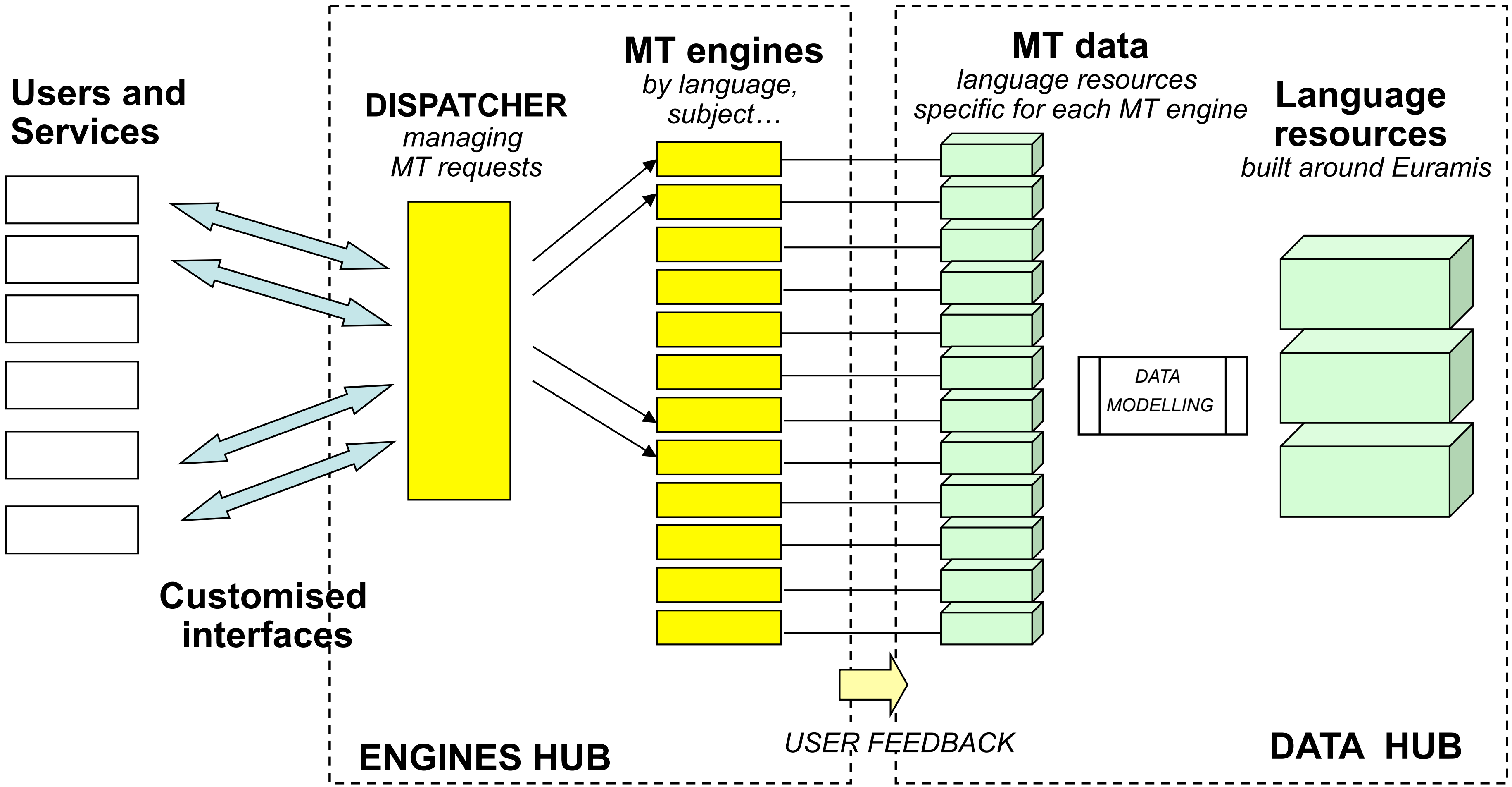
- MT@EC is necessary for the Commission
  (trust, confidentiality, continuity)
- Data-driven systems: a major technological breakthrough
- Any solution should be *flexible* and *sustainable* and ensure *technological independence*

First steps towards MT@EC

- Collection of user requirements
- Elaboration of an "architecture" (outline)
- Proposal for organisational and financial arrangements

Machine Translation Service

Outline of the proposed architecture



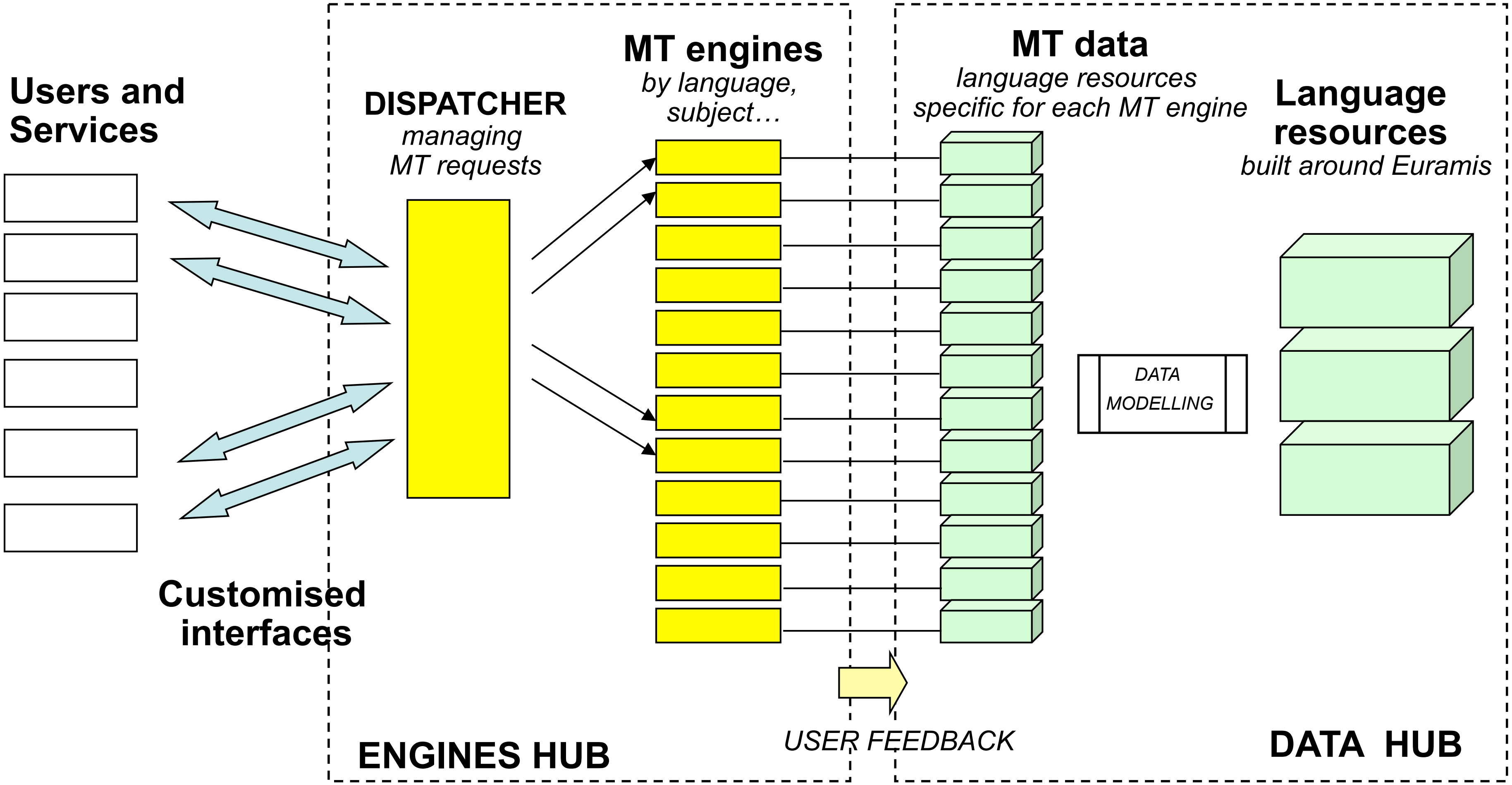
Towards MT@EC…

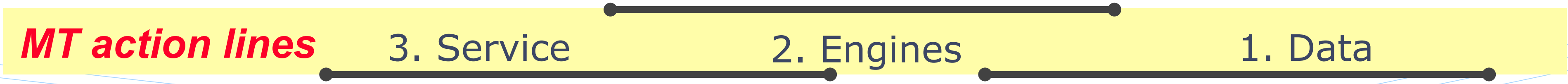
MT Action plan

- Adopted in *June 2010* by DGT
- Implementation started immediately
- Work along three action lines:
  1. data
  2. engines
  3. service

MT@EC architecture

outline





MT Action plan

Action line 1: MT data

Objective: Infrastructure for the data required for the MT engines and the operation of the MT@EC service

Challenge: be ready for optimising all kinds of data for MT

Started with: internal DGT translation memories

> **tasks:** extract data, and put in place automatic procedures for cleaning, filter and processing them for MT

Now:

- ✓ Initial processing for internal datasets defined

Next:

- ✓ Work with other datasets
- ✓ Implementation of automatic procedures and process in the context of a database

MT Action plan

Action line 2: MT engines

Objective: Set up MT engines and develop the necessary knowhow and processes for linguistic support in DGT.

Challenge: Compare alternative systems (both commercial and non-commercial) in terms of quality of output, price (total cost of ownership), feasibility, language coverage etc

MT Action plan

Action line 2: MT engines

Started with: open source tools

- Basis: SMT system *Moses* to establish internal *benchmarks.*

  tasks: set up SMT engines and develop user interfaces and tools for capturing feedback in order to improve them.

- In parallel looking also into open source rule-based tool like Apertium (Luxembourg workshop) – technology watch

MT Action plan

Action line 2: MT engines

- Now:

  Engines built: 50 (EN->X, X->EN, Other ECMT language pairs)

- Use:

  ✓Limited custom access to engines since March

  ✓Maturity check: prioritise

  ✓"Real-life trial"

MT Action plan

Action line 2: MT engines

Next :

- Improve SMT language pairs to use as benchmarks

  - Through user feedback

    ✓ Linguistic and translators' perspective: started in DGT

    ✓ End users outside DGT: bilateral arrangements

  - Through targeted linguistic interventions pre-translation/ translation (calls for tenders - demonstration)

- Prepare for comparisons (target end of the year)

MT Action plan

Action line 3: MT service

Objective: Infrastructure for operating the MT@EC service

Challenge: flexible and sustainable implementation and governance of MT service

Started with: proof of concept

tasks: design and implement "proof of concept":

- to analyse the scope of the service and primary scenarios of behaviour (that will drive the system's functionality)
- to provide estimates for next phase

Now:

- ✓ Architecture confirmed (SOA)
- ✓ Elaboration of prototype service starting in June

Next:

- ✓ *Testing*

MT@EC - next

Service

- June 2011: start elaboration
- End 2011: tests with prototype (tbc)
- June 2012: start development
- 2013 (2nd half): operational baseline MT@EC service

Engines

- End 2011: benchmark/baseline versions
- Continuous actions to improve performance:
  - quality of MT output (though use and targeted linguistic interventions)
  - speed (through engineering interventions)

MT@EC - next

Open to the market

- Language technology watch (continuous)
- Linguistic interventions - demonstration projects in 2011
- Comparison of baseline engines to market offerings - 2012

  check:

  http://ec.europa.eu/dgs/translation/workwithus/calls/open/index_en.htm

… and to research

- Using Moses
- A major institutional user of MT
- Involvement in projects (e.g. Multilingual web)
- Conferences for EU institutions staff (e.g. EM+ workshop)
- Provider of language resources…

A closing word on data

- by September: update DGT-Translation Memory ("Acquis")
- Where: most probably on JRC web site http://langtech.jrc.it/DGT-TM.html
- Now: 2 187 504 source segments
  16 883 981 target segments
- To add: 2 415 739 source segments
  38 168 330 target segments
  (corresponding to all 2004-2010 EU legislation)

Thank you

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LIETUVIŲ
ČEŠTINA
MALTI
POLSKI
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