Promotion and Funding
of Speech and Language Technology
in Germany

MinRat Dr. Bernd Reuse

Federal Ministry of Education and Research

bmb+f

VERBMOBIL Key Technology Project on Speech-to-Speech Translation of Spontaneous Dialogs (http://verbmobil.dfki.de)

- **Duration: 1/1993-9/2000**

- **Aims: Recognition and translation of spontaneous speech**

- **Research partners: 20 research groups from Germany - (4 from industry), 2 from USA, 1 from Japan**

- **Results:**

  - **Prototypical translation system for German-English (10,000 words) and German-Japanese (3,000 words)**
  - **Prototypical remote maintenance system for PCs (30,000 words)**
  - **800 scientific publications, 900 trained scientists**
  - **20 spin-off-products, 8 start-up-companies**
  - **German Future Prize of the Bundespräsident in 11/2001**

- **Funding: €59 million by BMBF, €28 million by industry**

6 Follow-up Projects on Human Technology Interaction
(http://www.dlr.de/IT/IV/MTI)

- **Duration: 7/1999-9/2003**

- **Aims:**
  - Interdisciplinary, intelligent, robust and user-centered interfaces
  - From keyboard, mouse and menu to user-specific I/O
  - Integrated multi-modal forms of interaction, speech, gestures, facial expression, haptics, visualization

- **Research partners:**
  - 72 Companies, 15 Universities, 15 Research Centers

- **Results up to now:**
  - 45 Applications for patents, 18 spin off products, 9 spin off companies

- **Funds** : Euro 80.5 million by BMBF/BMWi, Euro 67.9 million by industry
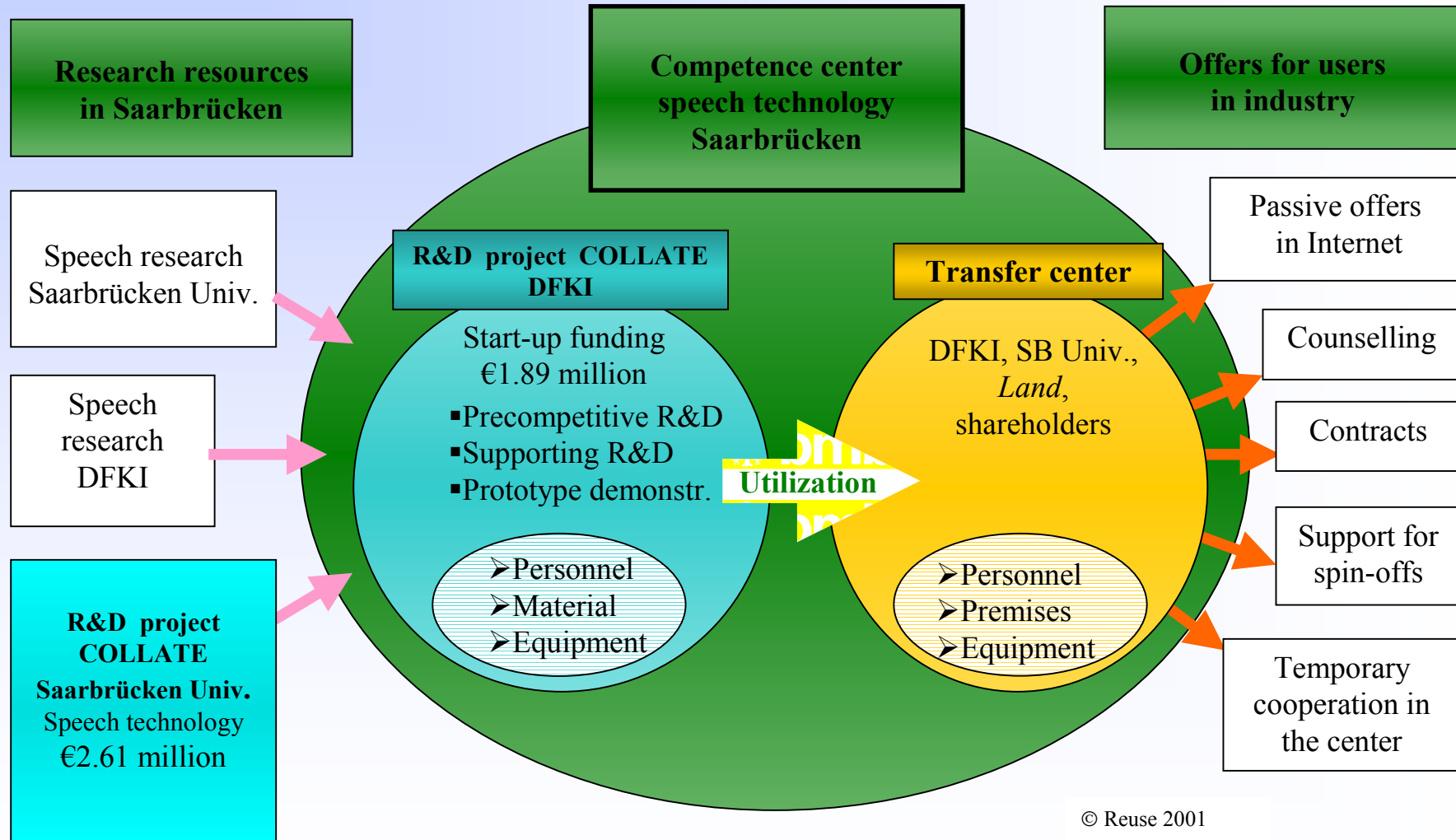
bmb+

Highlights of Lead Projects HCI/HTI

- **EMBASSI:** Increasing intelligence in user interfaces/operating manuals
  - **A remote control for all daily life appliances**

- **MORPHA:** Experts predict high market potential for service robots
  - **Mobile service robots on the advance**

- **ARVIKA:** Mobile operation in mixed real/virtual working environments
  - **A computer in your glasses**

- **MAP:** New technical solutions for mobile working
  - **The pocket-sized networked digital assistant**

- **SmartKom:** Specific interaction with the computer becomes very simple
  - **Integrated digital processing of speech, facial expression and gestures**

- **INVITE:** Integration of human movement as a form of interaction
  - **Acoustic interaction environment for blind and partially sighted people**

bmb+f

Follow up Project: Competence Center Collate
Saarbrücken   (http://collate.dfki.de/)

- **Duration: 4/2001 - 10/2003**

- **Aims: Preservation and transfer of the knowledge of Verbmobil**

  - **Virtual information center for language technology**

  - **Demonstration center for speech and language technologies**

  - **Evaluation center for developments/products in speech technology**

- **Research partners:**
  - **DFKI Saarbrücken, University Saarbrücken**

- **Results up to now:**
  - **480 Entries on projects, 1780 entries on experts in speech/language technology**
  - **35 Installed systems, 24 demonstrations**
  - **10 Evaluations**

- **Funds** : **Euro 4.5 million by BMBF**

Follow up Project: Speech Data Center BITS
Munich   (http://www.phonetik.uni-muenchen.de/Forschung/BITS/

- **Duration: 3/2002 - 2/2006**

- **Aims: Preservation, augmentation and transfer of the speech data of Verbmobil in cooperation with COLLATE**
  - Segmentation of German, American and Japanese speech data
  - Augmentation of speech data bases to different person groups
  - Synthesis corpus to improve quality of text-to-speech in German

- **Research partners:**
  - University of Munich

- **Results up to now:**
  - Speech databases: 77 h German, 34 h American, 69 h Japanese
  - Total labeled words 2.4 million

- **Funds :   Euro 1.26 million by BMBF**

International cooperation

- **International cooperation is necessary for speech and language technology research in any country**

- **In VERBMOBIL there was already an integration of research groups from Japan and the USA**

- **In the future we will include foreign groups in our projects as far as possible/necessary, either as subcontractors of our German partners or on a basis of bilateral shared funding**

- **Cooperation in the framework of the programs and projects of the European Commission have always been possible**

bmb+

Research Area	Start	Funds until 1992	Funds until 2001	Funds in 2002
Artificial Intelligence/ DFKI	1980	146.20	282.80	7.30
Speech Processing/ Verbmobil	1983	34.70	92.90	2.40
Key Tech Projects HCI	1999	...	42.04	16.10
Total		180.90	417.74	25.80

IT Research in Germany, BMBF (+ EU) Funds in 2002
(incl. UMTS)

as of 05/2002

Estimated EU Funds € 135.0 m

Internet Basics and Services € 26.6 m

Software Systems € 50.0 m

Basic ICT € 54.5 m

Microsystems € 55.5 m

Nanoelectronics € 77.5 m

Production Technology € 62.0 m

FhG, DFG, MPG € 172.2 m

"Blue List" € 42.5 m

Helmholtz Centers (FZJ, FZK) € 66.1 m

Others (UMTS) € 32.4 m

Bioinformatics (Div. 614) € 5.4 m

Total: € 780 million