

# PharmaForum - 3. November 2010 in Mainz

## 1. Company

Fraunhofer-Institut für Techno- und Wirtschaftsmathematik ITWM

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Since ITWM's foundation, its budget has more than five times the amount: beginning with 1,64 million € in 1995, it reached 14 million € in 2008. Nearly 70 percent of the operating budget stem from the institute's own profits. At present, ITWM's personnel consists of more than 200 employees, of which are 60 PhD students. They are supported by about 150 research assistants.

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## **2. Core Competences**

Our speciality is to develop mathematical applications for industry, technology and economy. The core competence of ITWM is mathematics: the language used by scientists and engineers to formulate models for technical systems. In our time it is particularly important, as it provides efficient algorithms to compute and analyse such models. Since its foundation in 1995 the ITWM has shown great success in building mathematical bridges between applied sciences and concrete application. Clients are large international companies as well as small and medium regional enterprises.

In the area of medical/pharmaceutical applications, the department "System Analysis, Prognosis and Control" has developed the following products and has worked on the following projects:

- Decision support in the medical sciences and in technology : CENA - software for nutritionanalysis and –consulting; Data mining in pacemaker data; Detection of Atrial Fibrillation based on the heart rhythm in rest
- Analysis of -omics data (DNA Copy Number Estimation, Analysis of Time Course Gene Expression Data, 2D Electrophorese-Gel Analysis)
- Production of pharmaceutical proteins in CHO cells: simulation, optimization and biomarker identification

## **3. Cooperations offered and requested**

- Consulting and support up to system solutions
- Software development
- Cooperation on all time scales and project sizes