Enabling Biomedical Research in Europe: Using the Dutch Experience as a Template

Rene Verheij*, Tyrone Grandison+, Frank Baas#

*IBM GBS - Netherlands, Johan Huizingalaan 765, 1006 CE Amsterdam, The Netherlands.
+IBM Almaden Research Center, 650 Harry Road, San Jose, CA 95120, United States.
#Academic Medical Center, Meibergdreef 9, 1105 AZ Amsterdam, The Netherlands.

**Background**

• The Dutch hospital system contains an enormous amount of clinical data in various formats and in independent databases, which may be from differing vendors.

• There is significant investment in these systems and little interest in re-architecting, re-developing and re-deploying newer systems that interoperate and abide by privacy and policy constraints.

• However, a system is needed that empowers researchers.

**Solution Architecture**

- Query System
- Disclosure Control
- Data Integration

- Data Source 1
- Data Source 2
- Data Source n

**Component Interaction**

- User specifies query
- DDQB displays results
- WSII collects results
- Data sources process query

- DDQB generates SQL
- WSII distributes query to data sources

- HDB enforces policies

**System Benefits**

• Medical researchers get the data they need efficiently. No longer necessary to manually obtain exported data from different systems.

• Reduction in the probability of errors occurring in the data.

• The researcher is not expected to understand the gory details of all the computer systems used across all the units he interacts with.

• The dependency on system administrator has been eliminated. Privacy and security issues are enforced (at the technology level) by the system.

• Increase in the researcher’s productivity, as the process of selecting patient cohorts can now be completed in minutes or hours rather than weeks or months.