# Preface

Developments in network and switching technologies have made telecommunications systems and services far more data intensive. This can be observed in many telecommunications areas, such as network management, service management, and service provisioning. For example, in the area of network management the complexity of modern networks leads to large amounts of data on network topology, configuration, equipment settings, etc. In addition, switches generate large amounts of data on network traffic, faults, etc. In the area of service management it is the registration of customers, customer contacts, service usage (e.g. call detail records (CDRs)) that leads to large databases. For mobile services there is the additional tracking and tracing of mobile equipment. In the area of service provisioning there are the enhanced services like for example UMTS, the next generation of mobile networks, but also the deployment of data intensive services on broadband networks such as video-on-demand, high quality video conferencing, and e-commerce infrastructures.

This results in very large databases growing at high rates especially in new service areas. The integration of network control, network management, and network administration also leads to a situation where database technology gets into the core of the network (e.g. in architectures like TMN, IN, and TINA). The combination of vast amounts of data, real-time constraints, and the need for robust operation presents database technology with a lot of challenges such as distributed databases, database transaction processing, storage and query optimization, etc. Finally, there is the growing interest for telecom operators in IP. Both IP based telecom services as well as the integration of IP and traditional networks (like PSTN) require additional database functionality.

With the above in mind, we organized this workshop to initiate and promote telecom data management as one of the core research areas in database research and to establish a strong connection between the telecom and database research communities. In response to the call for papers we were very happy to receive 24 papers both from universities and the telecommunications industry. Given the high quality of the submissions we decided to have the 12 best papers presented at the workshop. The papers have been grouped in four sections addressing network management, service enabling, CDR handling, and real-time databases.

Finally, I would like to address one issue that was also raised during the panel discussion, the question "What is so special about telecom databases?". My answer to that is that the important issue is the extreme requirements that telecommunication applications put on their databases. The requirements are very high in terms of availability, amounts of data to be processed, and number of systems to interoperate. In addition, the telecommunication business is going

through a period of extreme growth, especially in the areas of mobile and Internet services, and thus the scalability requirements are very high. At the same time we see specific needs with respect to new functionality and new architectures of database management systems. This requires combined research efforts from the telecom and database communities on key issues such as functionality, architectures, robustness, and scalability.

March 2000 Willem Jonker

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