IP billing mediation

Project Brief: BT Cellnet

Often, when a network operator moves to a truly leading-edge network technology, the necessary support systems are not available in the marketplace.

When BT Cellnet started to deploy its GPRS network, the market could not yet offer a suitable GPRS billing tool. IPL helped by building BT Cellnet its first GPRS billing mediation engine, ahead of the product manufacturers.



BUSINESS OBJECTIVE

BT Cellnet, the leading European mobile voice network operator, saw an opportunity to take the lead in mobile IP data networks, and began an ambitious programme of network upgrades, to become the UK's first commercial operator of GPRS (General Packet Radio Service) network technology.

BT Cellnet needed to be able to process billing information for the GPRS network, right from the time of their earliest network trials. BT Cellnet's billing processes and management information systems needed to be proved to work with GPRS information.

GPRS networks produce billing information which is different, both in content and format, from anything that a circuit-mode telco network, either fixed or mobile, produces. BT Cellnet therefore needed something to take the GPRS billing records, as they came out of the network, and convert them into forms suitable for their billing infrastructure to work with.

This "billing mediation" system would have to work with new and untried network equipment, handling complex data formats which were still being defined. It would have to be scaleable to match a dramatic market uptake of GPRS. It would have to be reliable and secure enough to handle commercially critical data. It had to be built very quickly, to fit a breathtaking deployment programme.

Firms that can be relied on to do all that are rare. BT Cellnet selected IPL.

IPL'S SOLUTION

IPL specified and developed a UNIX-based system to take real time Call Detail Record (CDR) feeds from the GPRS network's IP gateways and make it available to a number of management information systems. The incoming data passed through a configurable ASN.1 parser, and was output in a number of formats, which were again user-configurable. This flexibility supported the very dynamic situation as both the network equipment and BT Cellnet's systems evolved to support GPRS.

The system's flexibility did not however compromise its performance. IPL's multitasking design was fast enough to process a complete 24-hour workload in just 150 seconds.

The system was also outstandingly simple and stable, and ready for lights-out operation. Software defences were built in against not only hardware failures, but also several possible failure modes of the surrounding systems.

MANAGING THE PROCESS

For IPL, developing high-integrity business critical systems to tight deadlines is routine. Our ISO 9001 Quality Management Sys-tem provides a consistent framework to assure the technical integrity and management of everything we do. Our project manager worked closely with selected BT Cellnet managers to define the mediation system's technical requirements in full detail. Then an implementation team in our secure, purpose-built Bath offices designed and developed the software. As the project progressed, changes in the technical requirements, forced by the development of the surrounding systems, were introduced in a clearly controlled way. After thorough low-level testing, we proved the system's correctness at Bath. Then we ran a formal acceptance test against the full technical requirements, at BT Cellnet's site. It went like clockwork, only faster.

Our project manager kept BT Cellnet thoroughly up to date with project pro-gress, and involved BT Cellnet in the major design and test reviews. The project met all its planned dates, either on or ahead of schedule.

Following BT Cellnet's acceptance of the system, IPL gave technical training to BT Cellnet staff, and provided on-site support through a hand-over period. As is our preference, we transferred all the intellectual property rights (IPR) in the system to BT Cellnet, to assure their freedom to exploit the work.

THE OUTCOME

BT Cellnet was the first operator in the world to demonstrate a live GPRS network capability, and has gone on to secure a prime position in the UK's GPRS service market.

IPL's Billing Mediation system has been a valued part of BT Cellnet's GPRS network. IPL is delighted to have contributed to BT Cellnet's success, and to have reinforced our track record of delivering leading edge technology, reliably and fast.

FURTHER INFORMATION

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