

Project brief: Mobile Payment System



Bridging a technology gap in m-payments

GSM/UMTS mobile network operator Orange (UK) sought to enable its customers to charge a wide range of purchases to their phone accounts. The new facility had to be brought into operation swiftly and with a minimum of change to existing systems, while providing high reliability and throughput.

Orange chose IPL Telecoms to analyze the systems problem and propose a solution. IPL Telecoms went on to design, implement and deliver a neat, minimalist, cost-effective system, which completes Orange's m-payment capability and sets Orange in a position to lead the market in new and original m-paid products.

Situation

Like most mobile network operators, Orange (UK) has two distinct schemes for charging its customers. Contract customers use services on credit and pay for them in arrears, whereas services for Prepay customers are charged to a pre-paid credit balance.

The products that Orange sells to its customers have developed far beyond simple voice telephony. Much of Orange's revenues come from SMS, WAP and GPRS data traffic, and from value-added products such as ring tone and game downloads.

As GSM networks evolve towards UMTS, the scope for offering value-added network-based products is increasing enormously. Also, mobile operators are looking to diversify into offering products which are largely independent of the network (mobile applications or even physical goods), but which retain the operator's branding and charging arrangements.

Problem

To maintain its market leadership, Orange (UK) needed to have the capability for charging new and diverse products to its customers, both Contract and Prepay, and to have total flexibility to introduce new chargeable product lines, with the minimum of cost and delay.

Like most GSM telcos, Orange operates separate systems for managing the Prepay and Contract service models. This sort of architecture can be a problem when new products are introduced, because it's inconvenient for a product sale system (which might even be outside the telco) to have to deal separately with two systems, and it would be inconvenient for the telco to have to update two systems for every new product that it offers.

Orange identified a need for a solution offering a single charging interface for both Contract and Prepay customers, and allowing Orange to introduce new products without upgrading its systems every time. The solution needed to be fail-safe to maintain customer trust, and scalable, to serve Orange's large customer base and rapidly developing product portfolio.



How IPL helped

Orange chose IPL Telecoms to analyze the systems problem and propose a solution. IPL started by sending an experienced telecoms consultant to conduct a feasibility study and then to define the system requirements. IPL started from a blank sheet, without any product-biased preconceptions. IPL analyzed the business problem, taking account of the several interested business units, and defined a solution architecture that would meet all of Orange's needs with the minimum of investment.

Orange used IPL's vendor-neutral technical specification to select an implementation by competitive tender. IPL won the bidding through a combination of technical excellence and economical but credible pricing.

To implement the system, IPL used a full time team of its software specialists, with dedicated project management. The team worked side-by-side with Orange technical staff, reporting regularly to an Orange project co-ordinator. Working in IPL's purpose-built software development facility in Bath, the team had the system ready for operation within weeks of starting development, on time and within budget.

Technical solution

The IPL Telecoms system, based on Java technology, provides facilities for credit checking and for customer charging, using a common XML message-based interface for both Contract and Prepay customers. The charging mechanism uses a transactional two-stage commit model, enabling a charge to be revoked if product delivery fails. It interfaces with the Orange subscriber database using a secure web service, to establish if a customer has a Contract or Prepay account. A balance enquiry or account adjustment is then sent to the appropriate back-end charging system. The system provides detailed logging and call records for all transactions, ensuring that a full audit trail is available for reconciliation purposes. It uses multiple servers to offer massive scalability, to support the projected growth in new product sales.

The benefits for Orange

Orange's technology gap was closed by IPL Telecoms, precisely, promptly and at minimum cost. Orange received a system which completed its m-payment platform and which fitted in perfectly with its existing systems and business processes. The IPL Telecoms system turned out to deliver much more than it had originally been expected to, enabling Orange to make significant capital savings in related areas.

IPL has a track record of delivering excellent value consultancy and end-to-end software-intensive solutions.

IPL's consultancy is renowned for its quality and value. We consistently exceed our clients' expectations through a combination of imaginative thinking, managerial and technical expertise and many years of engineering experience.

IPL's track record in end-to-end software solutions development is exceptional. Our proven development methodology allows us to cut through technical complexity, manage risk and completely focus on delivery. We consistently deliver reliable, efficient and accurate systems to a precise schedule.

IPL is an ISO9001:2000/TickIT registered company having a permanent workforce of 240, revenues of ca. £29M p.a. and 40,000 sq ft of secure office space in central Bath.

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