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Objectives of the QOSIPS Project

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Objectives of the QOSIPS Project

- Develop innovative technologies for supporting
  - Quality of Service (QoS) management,
  - Service differentiation &
  - Price setting of Internet Protocol Network Service Providers.
Non Supported Iterative Process

- Rough evaluation of impacts on Gross Adds
- Committee/Meeting 1
- Investigate impacts on Gross Adds & revenues
- Committee/Meeting n
- Committee/Meeting n+1
- Decision to reject or postpone analysis of the idea
- New Tariff ideas
- Decision to investigate further
- Decision to implement tariff
Functions of the QOSIPS System

- Provide exhaustive, non-intrusive & accurate measurement of real-time QoS of user’s traffic packets without injection of test packets in the network.

- Support customer’s profiling (through classification of customer “real” traffic & use of QoS oriented services) as an innovative way of generating service differentiation.

- Support the pricing of QoS oriented services such as QoS oriented Service Level Agreement, per application or/and per destination prioritisation, pay-per-use, pay-per-class of service, or global prices packaged per customer type, etc.
Interactive Iterative Process using QOSIPS

Strategic Imperatives

Real time QoS measurement

Customer profiling & new tariff ideas

ARPU Target

Simulation

Optimisation

Volume Target

Pricing

Decision to implement tariff

Decision to reject or postpone the implementation of the idea

Strategically targeted & optimised tariff plans & impacts on gross adds and revenues
Main Modules

- The Quality Module
  - To support measurement and customer profiling

- The Pricing Module
  - To optimise the NSP’s SLA with respect to existing and new innovative services.

- Interfaces to standard network management systems and billing system will be proposed.
QOSIPS’ Functions & Methodology

Software

Supervisor
(Management Module)

QoS Module
(Analysers, Correlation)

Dashboard
(Analysis, Graphs, Reports)

Pricing Module
(Adaptive Predictive Module, Optimisation, Learning)

Database Management Systems

Database Management Systems

Hardware

QoS Module
(Acquisition)

QoS Process

Service Innovation Process

Training Process

Pricing Process

Methodology
Objectives of the QOSIPS Project

- Consortium
- Quality Module
- Pricing Module
Participants

- Co-ordinator:
  - University of Manchester Institute of Science and Technology (UMIST-UK)

- Partners:
  - Knowledge Support Systems (KSS- UK)
  - Ipanema Technologies (Ipanema- France)
  - Politechnika Warszawska (WUT- Poland)
  - 9 Telecom (9 Telecom - France)
UMIST

- Project Co-ordinator
- UK Leading technological university.
- Has participated to a number of European funded project
- The research group participating to the QOSIPS project specialises in intelligent decision support technologies.
- UMIST particularly looks into the extraction and representation of business expertise and develop the Dashboard
KSS

- Software House developing Intelligent Pricing Decision Support Systems for
  - Petrol, convenience & Mass Retailing
  - Mobile Telephony
  - Retail Banking

- Listed on the London Stock Exchange and techMARK 100.

- The Pricing module’s technology is a direct extension of the work of KSS on intelligent pricing decision support software for competitive market as adapted to the IP networking pricing problem.
Ipanema

- Fast growing high technology company working on IP networks real-time measurement and optimisation.
- The Quality module and hardware’s technologies are a direct extension of the work of this company on network technologies as adapted to the IP networking context.
- Along with partner KSS, IPANEMA implement the QOSIPS system.
9 Telecom

- Innovative IP Network Service Provider.
- Its role is mainly to provide the “field of experimentation”.
- 9 TELECOM is providing user feedback all along the project and is using the QOSIPS system on a day to day basis, on small-scale real life cases.
WUT

- Leading technological university that specialises in heuristic and optimisation of multi-parameters problems.
- WUT along with UMIST provides the research inputs necessary to develop the Pricing Module of the QOSIPS system.
- WUT particularly looks into the optimisation algorithms of the Pricing Module.
- WUT is also responsible for the dissemination activities.
Objectives of the QOSIPS Project

Consortium

Quality Module

Pricing Module
Quality Module

Real-time Measure of all real-time QoS parameters

- Real metrics (one-way delay, jitter, loss)
- Accurate, exhaustive, non intrusive measure
- Multiple views: network and users global VPN, not only local access points
System Architecture Benefits

Highly scalable system
- in number of VPN access points and in VPN access speed
- very small data flows from Ipanema’s probes to central manager
- High level analysis and reporting executed centrally

Does not depend on network architecture
- Level 3 (IP) metrics
- Analysis up to application level for classification
- allows heterogeneous transit network technology
  - Diffserv, MPLS, even Best Effort
Real-time measurement of QoS
Strong Economic Impact

Measure benefits both enterprises and operators:
- investment and budget control
- Service Level Agreement (SLA) negotiation and control
- smooth real-time services (VoIP...) introduction

A competitive weapon for operators to:
- improve VPN service offer
- optimize tariffs
- gain market share and retain customer base
Objectives of the QOSIPS Project

Consortium

Quality Module

Pricing Module
Pricing Module

- Constructing Demand models describing the NSP’s pricing problem.
- Optimising the NSP’s portfolio of S.L.A. with respect to:
  - Q.o.S. and Differentiated services
  - Customer segmentation
  - Competitor offering
  - Strategic constraints such as image, market share, price positioning
- Computes sales, revenue & profit forecasts
Pricing Architecture

- Competitor Prices (Pc1, Pc2, Pc3)
- Expected Sales
- Executed Prices
- Optimum Prices
- Forecasted Sales
- Actual Sales
- Adjust Model
- Expected Costs
- Constraints
- Management Rules
- Simulation
- Optimization
- Modeling

Sales - One Period
Pricing Goals

Optimise profit by maximising the trade off between SLA revenue and investment

- Optimise investment
- Optimise revenue from SLA’s

Assess impact of competitor moves

Pre-assess performance of new services

Manage the complexity generated by the multiplication of services

Minimise Discounts/Penalties

Assist pricing decisions during negotiations
Strong Economic Impact

A competitive weapon for operators to:

- Control investment (avoid network over-engineering)
- Optimise profit (optimising SLA/tariff in line with customers’ usage profiles and classes of services)
- Increase market share (provide USP in comparison to other competitor IP Network operators)
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