# Quality of Service:
# the IST TEQUILA and MESCAL view

**Prof. George Pavlou**
**Centre for Communication Systems Research**
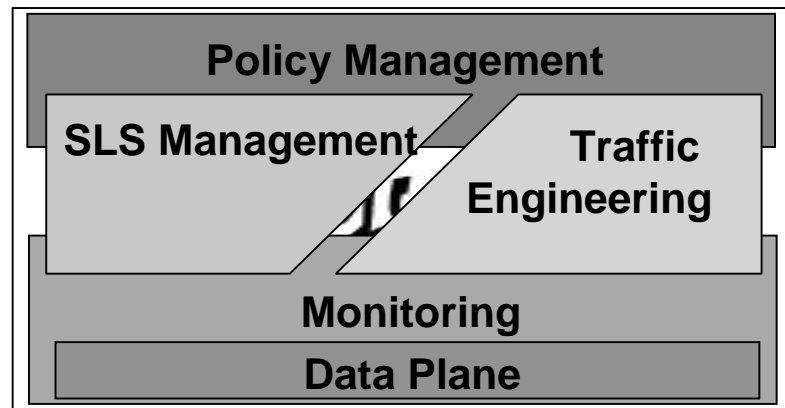**University of Surrey, UK**
**{G.Pavlou@eim.surrey.ac.uk**

# Need for Edge-to-Edge and Inter-Domain QoS Frameworks

- We believe that QoS is necessary but most aspects of the approach also work for over-provisioning
- While the fundamental elements for QoS are in place (PHB support in routers), there is lack of edge2edge and inter-domain QoS frameworks
  - IETF Per-Domain Behaviours (PDBs)
  - IST TEQUILA Service Level Specifications (SLSs)
  - Both address edge2edge QoS
- Important: need for inter-domain SLSs
  - Customer to (local) ISP, peer-to-peer between ISPs
- TEQUILA looked at intra-domain SLSs/QoS, MESCAL will look at the inter-domain problem
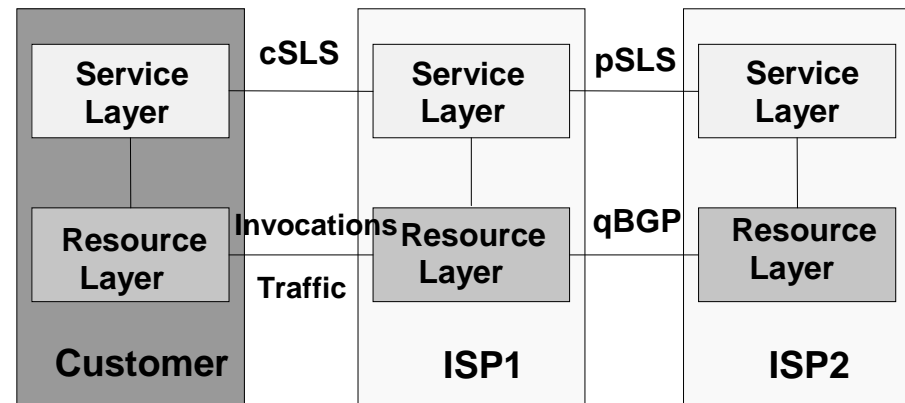
# Two-level Approach to QoS: SLS Subscription & Invocation

- **Subscriptions allow an ISP to provision their domain accordingly for expected traffic through:**
    - MPLS, CSPF/ECMP, over-provisioning

- **Makes it much easier to admit SLS invocations and manage congestion**
    - "First plan, then take care" approach

- **In case of a single supported traffic class (i.e. BE:-), TE with monitoring results in better resource utilisation and hence in later physical infrastructure upgrade**

| Policy Management | |
|---|---|
| SLS Management | Traffic Engineering |
| Monitoring | |
| Data Plane | |

**TEQUILA**

Service Layer — cSLS — Service Layer — pSLS — Service Layer

Resource Layer — Invocations / Traffic — Resource Layer — qBGP — Resource Layer

**Customer**          **ISP1**          **ISP2**

**MESCAL**