

Network Evolution Services

Intercai can assist organisations to reduce the cost and improve the effectiveness of their countrywide or international telecommunications networks. There are often major improvements that can be made but this is a strategic issue and requires ownership by executive management. A summary is provided here of our skills, approach and credentials in this valuable service.

Intercai is a telecommunications consultancy with UK, US and Middle East operations. We have considerable experience in telecommunications cost reduction, network design, optimisation and evolution. We operate internationally and have undertaken major projects across Europe, in the US and the Middle East.

We have found that there is normally considerable scope for reducing cost and improving service and performance in established networks. Typically, corporate organisations have taken a somewhat tactical view of their networks and have often not taken advantage of new technologies or indeed specifically addressed the architecture of their network. A case in point is the convergence of data and voice networks where Voice over IP is a natural

candidate for cost saving as it can justify a good level of investment. The prospect is to save money and improve the network and the service it provides to the business.

The figures used here illustrate the highly complex nature of telecommunications and the way that it now links closely to and depends upon Information Technology (IT). Telecommunications, in overall sense, can be considered to comprise a number of service layers, with Service Level Agreements (SLAs) as denoted in figure 1.

Intercai addresses and is experienced in all of the principal factors of the telecommunications network and our depth of telecommunications operator experience enables us to provide a valuable service to corporate organisations:

- Technology and network design
- Commercial aspects including financial modelling of the network environment
- Operational aspects including management systems and Service Level Agreements
- Our extensive knowledge of telecommunications includes
- Telecommunications Operators in many countries and varying in size and complexity from incumbent carriers to service providers.
 - Telecommunications environments comprising hardware, protocols and systems.
- Data and telephony networks.
- Operational Support Systems and Network Management Systems
- Fixed and mobile and other wireless communications.
- The IT domain and IP based systems
- Implementation and integration of IP based Service Delivery and Assurance Network Management Systems.

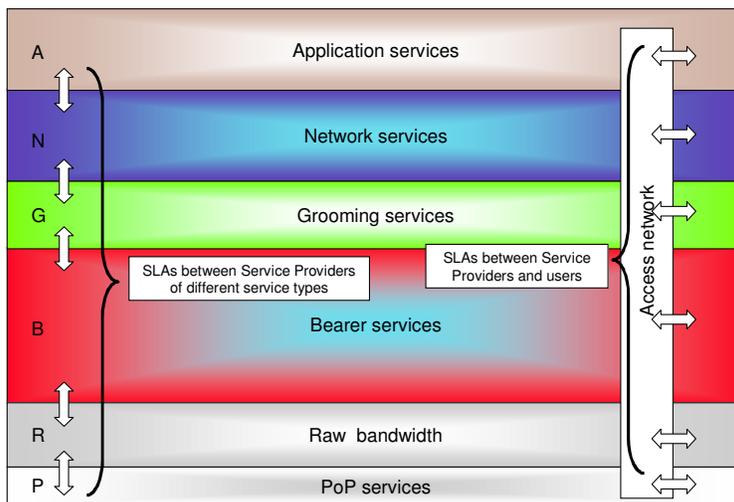


Figure 1: Telecommunications services layers

Approach

Our client work is based on a clear understanding of the situation and we prepare a proposal for our services. This is a vehicle for setting and managing client expectations and comprises:

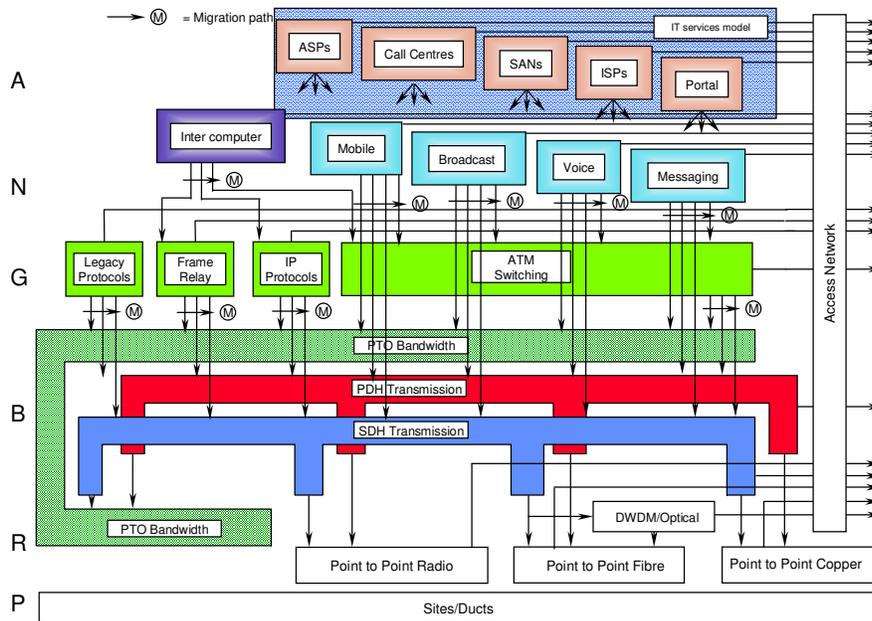
- Our understanding of requirements, that is the issues that the client wishes to be addressed.
- Our approach to the assignment
- The deliverables we will produce
- The timescales, the costs and the return on investment
- The team that will deliver the service
- The assumptions on which our proposed services are based.

Whereas the client has clear objectives such as performance improvement and cost saving, there is often insufficient information initially for us to give a definite cost and timescale of the work. In these cases, we would work for an initial period of perhaps a month and conduct a pragmatic feasibility study. We would take an overall view of the project and work on specific aspects so that we would gain a sufficient understanding of the issues to quote for the whole project. We would produce deliverables in this process that would demonstrate the validity of our approach to the client.

Client Project Profile

These guidelines reflect the profile of network evolution projects we work on

- Corporations with a spend of \$5M per annum or more on telecommunications lines involving several hundred circuits in tens of countries and tens to hundreds of office locations.
- Taking a holistic view of data and voice circuits and the extent to which they satisfy operational needs.
- Analysis of telecommunications bills and contracts provided by the carriers. Addressing the issue that often the client's bills are at a summary level and lack the required itemised detail.
- Ensuring that network assets are recorded and analysed in terms of the contribution they make.
- Conducting an analysis of the telecommunications costs in relation to the network assets.
- Gaining an understanding of the telecommunications service requirements of the business. We would use any client input available on this, but have our own automated techniques using system software.
- Identifying redundant lines, overcapacity and pinch points. Deciding on a course of



- action through retiring lines, upgrading lines and rerouting of traffic to make better use of lines.

This information would be used to

- Provide a comprehensive and sufficiently detailed database of network assets
- Prepare a business case for the evolution of the network from a Return On Investment perspective
- Support the ongoing management of the network and its assets
- Develop a network evolution plan that considers available technology, changing user needs and the inevitable flux in the organisation that the network serves.
- Develop the processes that are needed to keep the network fully operational. Part of this would be a systems plan that identifies which parts of the process should be automated and how this can be achieved.

The exercise will lead to action with service providers and this is subject to their cooperation regarding billing information and contractual latitude to make the necessary changes.

Also the exercise will typically involve changes to the network assets in terms of hardware, protocols, systems and management software.

Project Examples

The Intercai services are based on considerable experience in these and other areas of telecommunications. Examples of related projects are given here.

- We have assisted a major international IT organisation in outsourcing services to support the merger of two UK utilities. Our role is to redesign and optimise of their network infrastructure that serves some 500 sites, leading to a more effective use of telecommunications and a large reduction in cost.
- We assisted a major IT organisation for the Classroom2000 educational project in Northern Ireland with the preparation of alternative strategies for the

presentation of costs. We built a full reliability and SLA model that calculated the exposure of the project to service credits. In conjunction with the telecommunications supplier we optimised the topography of the network infrastructure and the tariffs being used to ensure the minimisation of telecommunications costs of the scheme.

- We led the design team for the Government Data Network. This included the network architecture, its management systems, security features, performance measurement and financial analysis. This network supported over 40 central government departments. The project included pioneer work on the on-line measurement of performance of the network and the setting of guaranteed service levels.
- We assisted a carrier's carrier to optimise the charges made by BT for access circuits. This involved a detailed analysis of the client's bill from BT and a model based comparison with published tariffs for the services. This resulted in the identification of overcharged circuits and a significant reduction in cost for the client.
- We designed all of the systems and processes needed to run an emerging carrier's network. This encompassed the definition of all of their assurance, fulfillment and billing functions, the systems to automate those processes the distributed communication network, remote site connection and the network operations center.
- We led the design team for the UK academic network, SuperJANET4. This entailed the creation of a network architecture that offered demonstrable performance enhancement over the installed network. As lead designer, we were the primary interface to the customer and were responsible for implementation costing.