

IP Phones and Low Cost Calling for Students

Background

The client provides accommodation centres for students. Every room required both internet and telephone service. Many of the students are visitors to the country from overseas and therefore make a high proportion of international calls. The challenges faced in this project were technical, financial and operational. Technically, the buildings had to be equipped in the most versatile way to give high quality voice and data access over a common infrastructure. Financially, the client had to manage the credit risk associated with a young and mobile customer base and to face the fact that there would be a large customer turnover. Also despite serving a somewhat captive market the call rates offered had to be competitive enough for the students to wish to use them. Operationally, it had to be easy to add, modify and remove customers and to maintain the network.

WTL Solution

It was decided that the telephony element of the solution would be delivered using IP Phones. These were connected to a WTL IPNx switch running Pre-Paid accounts for each student. Using the powerful routing built-in to the IPNx national and international traffic were separated at the switch. International calls remain as VoIP and are routed via the internet to a major traffic exchange partner in Brussels. Here, calls could be passed to any one of a large selection of carriers depending on the least cost route for the particular destination. The traffic exchange has links to both VoIP and regular carriers.

For these international calls the IPNx converts the calls into NOP (WTL's patented Network Optimisation Protocol). This gives up to 16 to 1 compression of the traffic and gives excellent efficiency on the link to the traffic exchange. The exchange has been equipped to receive WTL's optimised NOP traffic.

Local and national calls are converted from VoIP to regular TDM and routed via E1 ports on the IPNx straight into the local PTT.

The use of IP phones allowed common cabling of all rooms using standard Cat 5 for both voice and data. The IP Phones selected were chosen because a) they looked good and would appeal to the young target market, b) they were not expensive and c) they gave good voice quality.



Implementation

An important feature of this project was the need to add new subscribers and manage existing ones quickly and easily. WTL modified their VoIP software so that the system now auto-provisions a new subscriber when they connect their IP phone and a new IP address is noticed. This is not a security or fraud issue as this IP address cannot make any calls until they have paid money into their Pre-Paid account.

As pointed out by the operator, "The customer sign on can take place at any time so there won't always be an engineer around to reconfigure the switch. But our subscribers want to be able to make calls as soon as they pay their money."

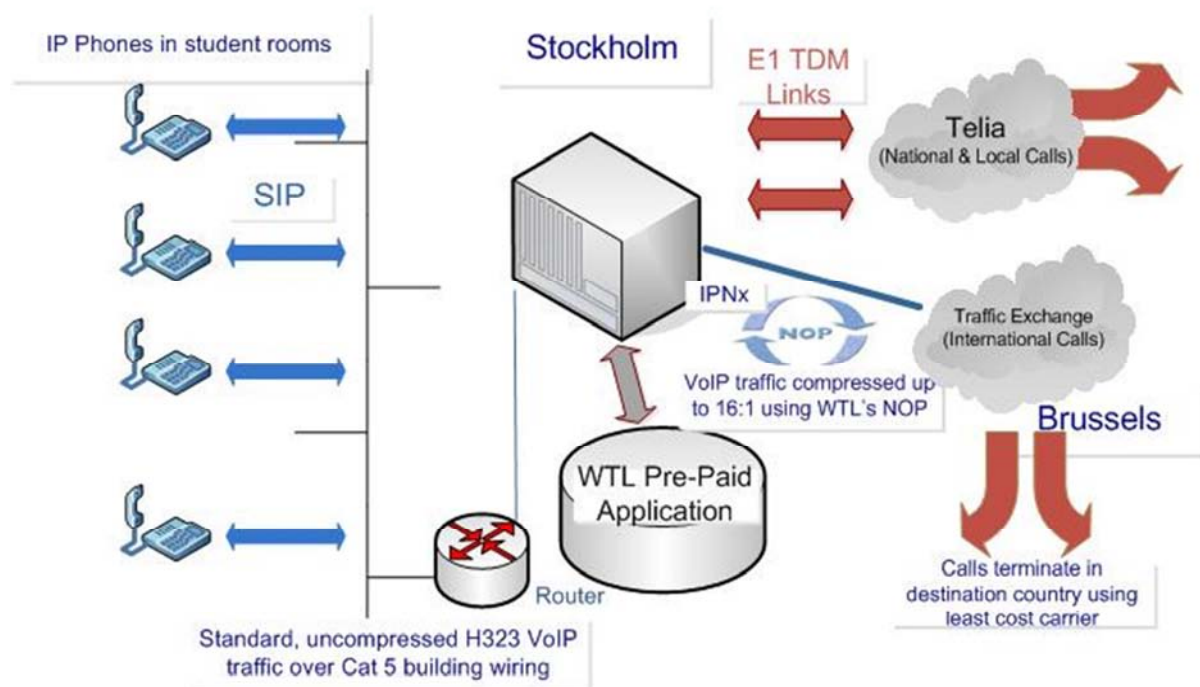
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The initial system was a pilot scheme for several hundred subscribers. This has been successful and is in the process of being expanded.

Pre-Paid IP Telephony



By using a fully Pre-Paid system of course bad debts are eliminated. The IPNx also has a series of revenue assurance and anti-fraud features built in to make sure that the operator does not get any nasty surprises. A real time database keeps track of caller balances – no credit, no call. If the credit balance approaches zero during the call the caller is warned and then when the balance runs out the call is cut.

For caller security the system is PIN based and features such as follow on calls (no need to re-enter the PIN), last number recall and personal stored numbers are also supported.

Future

The customer has a number of ambitious plans to build on the success of this initial telecoms venture. Subscriber numbers for the initial installation will grow for the first 12 months of the project. As well as in-room phones, IP pay phones will also be installed on the university campus. In parallel similar projects are to be launched at other campuses elsewhere in the country and also overseas. It is also planned to extend the low cost calling to non-student accommodation.

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Benefits of WTL Solution

- Ease of provisioning
- Lack of credit risk for the operator
- Use of NOP to reduce cost of carrying international traffic to the minutes exchange in Brussels
- Use of VoIP to take advantage of competitive international rates
- Single box solution for VoIP, carrier interconnect, call routing, Pre-Paid database, billing and provisioning
- Ability to add new services at any time (for example, call back, business telephony, calling cards)