

Collaborative procurement of VoIP services

Concept Document by Duncan Martin
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Collaboration between NTUG and TENET

The National Telephony User Group (NTUG) and TENET have agreed to collaborate in a project to determine whether TENET should add a VoIP service option for participating institutions to the connectivity services that are already procured through TENET as agent.

Two years ago, TENET contracted Prof Roger Peplow of UKZN, who is an expert on telephony and a leading member of NTUG, to undertake a study of the VoIP opportunity as it was then. John Stevens of Rhodes University, who is also a leading member of NTUG, also participated in the exercise at TENET's request. The conclusion at that time was that the economic justification was too limited to justify action.

Since then VoIP has been deregulated, which has led to the entry of many VoIP providers and rapid growth of the market. TENET has had substantial discussions with BCX, Internet Solutions, Neotel, Orion, Storm Internet, Transtel and Vox Telecom about their VoIP service offerings. The time is now ripe.

VoIP Service Principles

This VoIP Investigation is about VoIP breakout at the institution's PABX and the use of IP connectivity, including that provided in terms of TENET's agency role, to carry calls part of the way between the PABX and the called party. It is not about VoIP on the LAN – i.e. the deployment of IP telephony on the LAN and desktops within the organization.

Initially, only outbound calls – i.e. calls which the institution has initiated – will be considered for IP routing. Inbound calls to institutions' fixed line numbers, which in any event do not incur call charges, will continue to terminate via the PSTN. At a later stage, when fixed line number portability¹ has been established and tested, the engineering and economics of extending the VoIP service to include inbound calls will be investigated.

Calls within the family of PABXs of participating institutions will attract no call charge at all. Indeed, such calls may be able to remain entirely within the TENET network.

There may be no savings on local calls, in which case local calls may as well continue to be routed to the PSTN network. There are savings to be had for long-distance calls. Savings on calls to mobile numbers can be expected to exceed those offered by least cost call routing (LCCR) providers. Savings on international calls are substantial – to the extent that some VoIP providers that do not have a direct interconnect agreement with Telkom route all calls to Telkom numbers overseas and break out there to an operator who then routes the call back to Telkom.

For outbound calls, automatic fail-over to the standard PSTN outbound service will apply. Consequently institutions will need to retain the ISDN or other inbound and outbound circuits between their PBX's and the PSTN. Some reduction in the number of circuits may be possible.

Received wisdom is that VoIP services are not completely commoditised. Each site has peculiarities, notably those relating to interfaces between VoIP gateways and PBXs that have to be taken into account when the VoIP service is implemented.

¹ "Fixed line number portability" means that the subscriber (e.g. a university) may retain the same telephone number range while switching from one fixed line telephony provider to another.

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NTUG and TENET believe that consortial procurement of VoIP services has the power to engender significantly lower prices. VoIP vendors offer increasing discounts for increasing volumes. By bringing a considerable number of institutions, each of which bears considerable recurring telephony costs, we should receive exceptionally attractive offers, both as regards price and as regards bespoke designs to accommodate our specific requirements. In particular, NTUG and TENET expect that bespoke designs that make use of the “TENET” bandwidth to carry calls between the campuses and the VoIP vendor’s interconnection points will further reduce the effective cost of telephony services to the institutions.

Interplay between the Internet access and VoIP services

A central idea here is that of using a site’s TENET bandwidth to carry voice traffic between the site itself and the core of the VoIP provider’s network and interconnect points with the PSTN, cellular networks and international voice networks. The diagram on page 4 depicts the envisaged architecture. Defining clear, workable interfaces between the TENET network and VoIP provider’s network will be crucial, especially as concerns service levels and fault diagnosis procedures.

Proof of Concept trials will check the engineering and contractual viability of the concept, as well as its economic justification, prior to the issuing of formal requests for proposals to VoIP vendors.

Principles of the collaborative procurement

Consortial procurement inevitably involves the surrender of some individual autonomy and flexibility in order that all members of the consortium may realise a sustained economic benefit. In return for the prospect of a large, sustained aggregate volume of business from the participating consortium members, the vendors offer abnormally deep discounts.

Clearly, the consortial commitment to sustain a certain aggregate volume (subject, of course, to satisfactory performance by the vendor) will limit the rights of individual consortium members to terminate or reduce their level of participation. The consortium needs to protect itself from vendors who make loss-leader offerings, perhaps bundled with other services, to some of the members in order to break the consortium. At the same time, the vendor should not be granted an exclusivity that shields it from on-going exposure to fair competition for the consortium’s business².

Existing GEN2 Agency Agreements do not cover VoIP services. In the envisaged VoIP procurement, TENET will act as the agent of each participating institution, and so will require the authorisation, in terms of a new VoIP Agency Agreement, of each institution that wishes to participate.

NTUG will advise its member institutions and TENET, but will not be a party to any contract.

The VoIP supply contract will accommodate institutions that are bound by existing LCCR contracts or that, for some other reasons, cannot participate fully from the beginning.

² One model would allow a member of the consortium to contract with an alternative vendor, and to divert some or all of its business to that vendor, provided that

- (a) At least six months have elapsed since the commencement of the current contract;
- (b) the offer from the alternative vendor is for a comparable service and is not bundled with other products or services that are not involved in the current contract;
- (c) the alternative vendor has formally extended its offer to the entire consortium; and
- (d) the current vendor has declined to match the alternative vendor’s offer.

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The VoIP procurement will be run independently, and probably before, the “GEN3” procurement of Internet access services.

Institutions may expect their incumbent providers to try to counter the initiative by offering special “stay with me” or “come back to me” discounts, especially as a component of a telephony offering that is bundled with other products and services.

Evaluation criteria

There are two main criteria: acceptable voice quality and lowest effective price.

The adoption of VoIP should produce savings, but will certainly also result in some loss of voice quality during calls compared to that to which people are accustomed in calls between two PSTN subscribers. Most VoIP vendors recommend adoption of a quality standard that compares with that achieved during mobile calls.

It is clearly a requirement that a vendor’s system, and the systems on which the vendor depends, should be capable of measuring the voice quality and ensuring, by declining new calls during congested periods if necessary, that the selected minimum voice quality level is sustained.

VoIP vendors bill on a call-minute basis, which makes it relatively simple to estimate the savings that will be achieved in a typical month. However the fixed monthly costs of additional TENET bandwidth have also to be taken into account, especially as this bandwidth will have to be reserved or prioritized for VoIP traffic in some way. The VoIP vendor may levy a one-off installation charge, which would also be taken into account.

The agency process and procurement

All TENET institutions will be invited to become involved in the VoIP Project. Signing up will involve two stages, as follows:

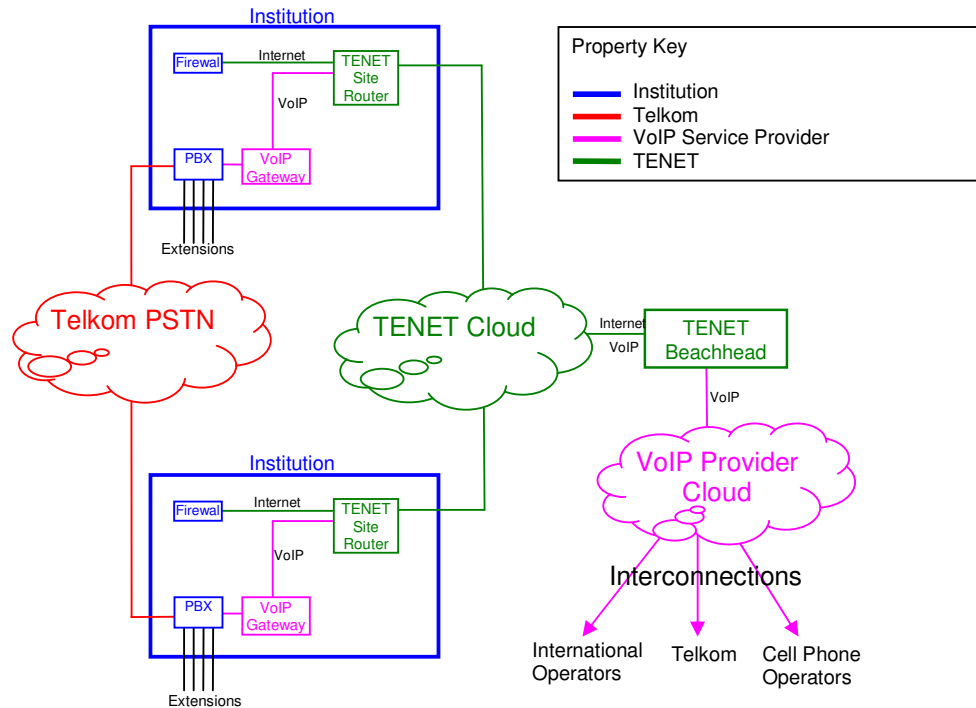
Stage One:

1. The Institution confirms its serious interest in participating in the investigation, and nominates two persons to become members of the VoIP Project Reference Group. The Reference Group will meet twice, so some travel costs for the institution will be involved.
2. For each PABX for which the institution wishes to consider a VoIP connection, the institution provides the following information to the Project Team:
 - Make and relevant technical details about the PABX
 - Number, type and capacity of the circuits that connect the PABX to the PSTN.
 - current commitments to LCCR and/or VoIP providers;
 - an indicative analysis of its monthly outbound call volumes (in call minutes) over recent months, broken down into the following categories:
 - local calls to fixed line numbers
 - long-distance calls to fixed line numbers
 - international calls
 - calls to cellular subscribers

The VoIP Project Reference Group and NTUG will assist TENET in the writing of the Request for Proposals (RfP) against which VoIP vendors will be invited to submit proposals.

The VoIP Reference Group will also assist TENET in drafting a VoIP Agency Agreement in terms of which an institution will authorise TENET to act as an institution’s sole agent for the

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procurement of VoIP services (for a specified time period). In terms of this authorisation, TENET's signing of a contract with a VoIP provider will commit the institution to that contract.

Stage two:

Once the RfP dead line has passed, the Reference Group will meet to hear presentations from vendors and to discuss the proposals. A short list may be compiled.

At that point, TENET will invite all TENET institutions (whether or not they signed up for Stage One) to enter into the VoIP Agency Agreement, thereby appointing TENET as their agent for the procurement of VoIP services.

Institutions that have entered into the VoIP Agency Agreement before a specified "early adoption deadline" may nominate one person to the VoIP Provider Selection Team that will assist TENET in the evaluation of vendors' proposals, the selection of the one or two vendors with whom all-out attempts will be made to negotiate a contract.

The contract may provide for an early-adopters' special discount that will apply only to institutions that entered into the VoIP Agency Agreement before the early adoption deadline.

Once a VoIP service contract had been signed, implementation would begin immediately for the early adopter institutions.

TENET would invite all TENET institutions, regardless of their previous involvement in the VoIP Project, to enter into the VoIP Agency Agreement.

VoIP Project Management

TENET has appointed Sybrand Brink (sybrand_brink@tenet.ac.za) to provide leadership in an on-going way in the VoIP Project.