



The Rise And Fall Of Centrex Services

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Centrex services are not a new concept in the world of telephony. Whereas the concept of outsourcing your business telephony requirements to a service provider existed in the TDM world, it is now rejuvenated with the introduction of "IP Centrex," also known as "hosted IP services."

This paper discusses the question of why IP Centrex is succeeding in places where TDM-based Centrex has failed. We will demonstrate that the key to IP Centrex's success lies in a combination of several factors, which differentiate IP Centrex services from the old TDM-based Centrex.

What Is Centrex Service?

Generally speaking, Centrex service is the outsourcing of internal enterprise telephony services to an external service provider. The telephony services included in most cases are the following:

- Toll-free calls within the organization;
- Extension dialing (e.g., four digits);
- Networked, toll-free calls between different branches of the organization;
- Connection to the PSTN;
- IVR/Auto Attendant;
- Voice mail and/or unified messaging;
- Basic call center; and
- Internal/External conferencing.

When Centrex services are not employed, enterprises need to purchase, install, and maintain all the equipment required to provide the services mentioned above: PBXs, IVR servers, voice mail servers, etc.

With the Centrex model, the service provider is responsible for providing the services using its own equipment which is usually purchased for a group of customers, and installed in the central office of the service provider or at the customer premises.

Why Use Centrex Services?

Most enterprises today tend to outsource a lot of the services and processes that are not a part of the core business of the enterprise. Despite the fact that is not the core business, most enterprises regard telephony services as a strategic business asset required for normal operation of its organization. Outsourcing telephony services using a Centrex model saves the investment in capital equipment required for the telephony services, and the skilled manpower and operation costs involved in maintaining the telephony services.

On the other hand, providing Centrex solutions is a key differentiator for the service provider, creates new revenue streams, and reduces customer churn for the service provider.

The TDM Centrex Model

Centrex is not a new idea or service. It has been an option since the early days when service providers supplied digital telephony services over TDM networks. Originally, Centrex service meant grouping several

regular PSTN lines under the same umbrella, providing toll-free calls inside the organization, internal dial plans for various Centrex customers, and basic value-added services via the PSTN TDM network. In addition, Centrex customers were assured of the following benefits (amongst others): reliable and worry-free service, maintenance, and upgrades, and no wasted floor-space due to on-site PBXs.

Actually, what happened was trying to use the classic PSTN Class 5 switches, which were designed for scalable PSTN services, to provide partitioned enterprise features and applications. From the service provider's point of view, it was a great solution. Almost no investment was required by the service provider except for upgrading the PSTN switch software and new revenue streams were supposed to be generated. Among the challenges that made this concept a partial failure in the TDM world was that it didn't offer the customers a service that was substantially more attractive than on-site PBXs. In addition, low-cost and feature-rich entry-level PBXs were widely available, making Centrex less attractive for small to medium-size enterprises. Such PBXs offered the customer more flexible control of the lines (e.g., changing or extending phone numbers required a bureaucratic ordering process) and more subscriber features (without subscription fees).

The IP Centrex Model

In the IP world of location independence, an IP Centrex solution is not different in nature from any regular IP-PBX implementation. In the IP world, the IP-PBX / Softswitch, the phones, the PSTN connections and the value-adding application servers can be located anywhere on the IP network. Therefore, IP Centrex service can be implemented in many different ways. The IP-PBX can be located in the customer site, co-located in the service provider site, or implemented as a partition on the service provider IP Centrex server. The same goes with the value-adding application servers. In all cases, independent of the location of the systems, the service provider can manage the service remotely for the enterprise.

The Biggest Difference

In most cases, Centrex services will replace an aging PBX installed in the customer premises without the related depreciation costs. The business model behind moving to Centrex is saving the capital and operation costs of owning a telephony network, without compromising the level of service and the features provided. One of the biggest drawbacks of the TDM-based Centrex solution was that because of its implementation over the existing old TDM switches, it provided similar (basic) telephony features as was offered to normal Class 5 subscribers (although the feature list of TDM-based Centrex did improve and become more competitive with on-site PBXs over time). On the other hand, the IP-based Centrex solutions provide many more features than the regular corporate PBX. The IP Centrex PBX is actually a fully-featured enterprise IP-PBX managed for the enterprise by the service provider, while the TDM Centrex service was based on carrier grade public PSTN switches that did not provide the required enterprise features.

In addition, the TDM-based PSTN switch was not created with partitioning in mind. Therefore, handling basic features required for Centrex such as overlapping dial plans, security, and billing was a nightmare for the service provider. However, today's IP Centrex solutions are built from the ground up to support partitioning and multi-tenant implementations. Managing multiple customers is fast and easy for the service provider. In addition, it is far easier for customers to manage their lines or extend them (e.g., via the service providers' Web site).

Value Added Services

An enterprise PBX solution is not complete without some value added services such as IVR, ACD, voice mail, and more. The Centrex model provides the enterprise a great advantage in this space. Instead of purchasing, configuring, and maintaining highly complicated systems on their own, customers can enjoy the economies of scale of a service provider, providing a service as a part of a system supporting many customers.

Actually, this general model works much better with the IP Centrex than with the TDM-based Centrex. Value added services today are implemented by using highly scalable IP-based application servers, centrally located in the service provider network, supporting hundreds of customers. In the TDM world, the servers had to be installed locally, the CTI support was very challenging, and the time-to-market simply did not justify the model.

End User Terminals

Replacing the phone located on the corporate CEO desk is not a trivial thing. The phone is one of the most useful pieces of technology in today's office environment, and the features provided by the phone are very important for personal productivity.

Replacing a digital smart phone with a TDM-based Centrex service does not allow the use of the same features any more. On the other hand, in the IP world, the same IP phone can be configured to work with a local IP-PBX or an IP-based Centrex application. The move is transparent to the end user, and today's IP phones provide features that are richer than that of the smart TDM phones. Features, such as Internet browsing, touch screens, visual unified messaging on the phone, conference call management, and CTI are common in today's IP phones.

Moves, Adds, And Changes

One of the main costs of maintaining a telephony network for the enterprise is managing moves, adds, and changes. The average cost of moving a person from one seat to another in the TDM telephony world is \$100. This number is based on an enterprise using its own PBX, and it is even higher using the TDM Centrex model, since in most cases, changes can not be done by the enterprise and adds require new PSTN lines from the service provider. Actually, the time required to add a new phone into the system in the TDM Centrex world can be a show stopper for the model. On the other hand, in the IP Centrex model, moves, adds, and changes are much simpler.

Such changes involve almost no time or money. Adding a new phone can be done by the customers themselves using a Web interface. Moving requires only taking a phone and connecting it somewhere else, or even logging into another phone.

Remote Management

Another day-to-day task that has changed as a result of the IP technology implementation is the management and configuration of the PBX and the value added services. Using your own PBX and value added services require extensive training and operation costs.

With the Centrex model, you outsource the maintenance and operation to the service provider, but there is always a delicate balance between outsourcing the service and maintaining control in the enterprise and in the user community.

A TDM-based Centrex solution does not allow enterprise customers to do anything on their own. In addition, it requires direct connectivity into the PBX network to monitor and control the service. Any configuration or changes done by the end user require the use of a cumbersome DTMF-based interface.

On the other hand, the IP Centrex solution allows the sharing of management, configuration and monitoring tasks between the service provider, the enterprise administrator, and the end users, who all use a user-friendly web-based GUI.

The New Business Model

IP Centrex actually creates a brand new business model and a new type of service provider.

In the world of TDM-based Centrex, the only service provider that could supply the Centrex service was the Telco (or "PTT"). Centrex service was implemented on the existing Class 5 switches as an extra software package. The service provider had to own the equipment, as well as the last mile in order to supply the service.

In the world of IP Centrex, all you need in order to supply the service is a fast IP connection to the customer. This can be done on another service provider's network, using an IP-VPN service or even the public Internet. The service provider can be a Telco, an MSO, an ISP, or even a PBX reseller that wants to transform his business into a Centrex model.

Summary

Here is another case where IP changes the business model in the telecom world. Centrex services, which fell short in the TDM world, are now becoming very successful using IP technology. The benefit of moving to IP Centrex is clear both to the service providers and to enterprise customers since the new IP Centrex technology allows the surmounting of most of the obstacles that occur with the TDM Centrex model. **IT**

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