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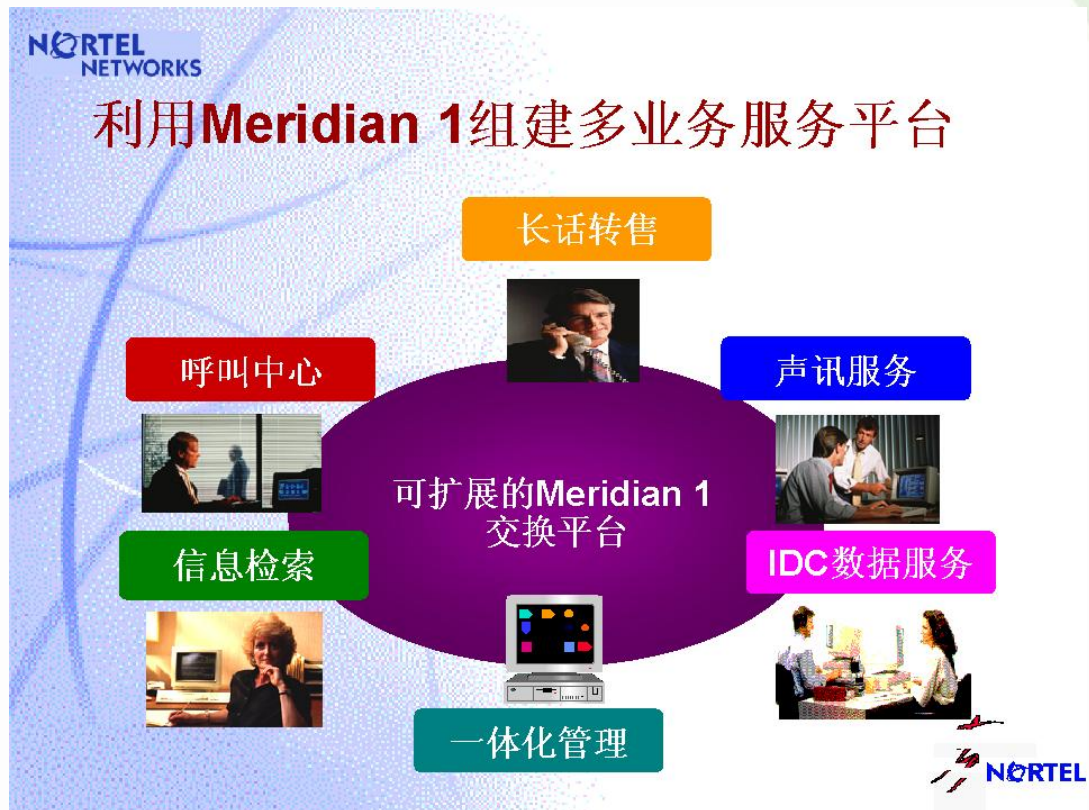
Tong Guang-Nortel Virtual Telecom Operator Solutions

At present, there is an increasing interest in the concept of “virtual operator”, which is a telecom value-added service. Companies develop it based on the infrastructures of other operators instead of building the infrastructural network by themselves. These services include the two main telecom services, that is, fundamental operational service and value-added operational service. The fundamental operational service includes IP phone resale, SMS, etc. and the value-added service includes many functions based on the call center platform, for instance, outsourcing call center applications. To offer services different from that provided by traditional operators, the virtual operator is required to provide a distinctive service platform with high technical content, and this platform should meet the following requirements:

1. Strong connection converging capability. Supplied with access to all kinds of services, for example, call center, long-distance resale service, distinctive service (voice messaging center), WEB access, etc.
2. Satisfying all kinds of business needs of virtual operators, such as VPN, IDC, and ISP.
3. Having a strong adaptive capability able to satisfy the needs of continuously emerging new services and make the system adjustment in a short time.

Aiming at the functional requirements above, Tong Guang-Nortel worked out a complete solution in combination with its own product lines and prepared the corresponding product planning. We can provide the following products as well as the corresponding services:

1. Meridian 1 OPT series of switches are a reliable voice access platform which creates reliable access at the telecommunication level. This series of products plus Passport multi-service switch can achieve more complicated networking functions. And, the capacity and processing capability of OPT81C can fully meet the access requirements of ISP.
2. Symposium series of call center products include call processes of MLS, SCCS/SECC, TAPI, IML, and CTI middleware software; SA and InteractAgent seat-end application software; peripheral devices such as Peri, IVR2000, and digital recording equipment, which can set up an entire call center. Nortel's Clarify and InteractAgent seat applications can constitute CRM solutions of different levels. After adding ezConnect, the whole system can be provided with the application capability of an Internet Call Center.
3. Passport series of multi-service switches adopts a unique packet switching technology of Nortel to allow voice, data, image, etc. to be transmitted simultaneously through one single transmission medium. It also adopts reliable compressing and QoS guarantee mechanisms, which effectively controls the daily operational cost of customers and satisfies the main business requirements of virtual operators. Passport multi-service switches and backbone network switches, Alteon network equalizing equipment, Opetivity network management software as well as other Nortel network products are a reliable guarantee for VPN, IDC, and ISP operations.



With several years experience in the market, Tong Guang-Nortel not only, as an equipment provider, benefits a wide variety of users but also, as a system integrator, obtains a rapid growth in the fields of telecom, finance, enterprise, etc. Complete presale and after-sale teams are a guarantee of the success of these projects. The product development and project management required by the virtual operation can satisfy the need of continuously changing services.

In addition, Tong Guang-Nortel can provide not only first class products and solutions but also first class system integration and project implementing experience. Tong Guang-Nortel can help its customers to continuously create new values.

Here we take the implementing manner of IP long-distance phone resale service as an example:

IP long-distance phone service is needed to complete subcontracting sales from different IP operators based on its own service platform. To extend this service to customers, the operator is required to provide flexible selling methods and competitive services. In background applications, the operator is supposed to provide richer and more flexible functions in comparison with traditional IP operators. Therefore, in this service, Tong Guang-Nortel is expected to provide not only multi-service, flexible, and targetable service platforms but also a complete billing solution for users. In order to provide such distinctive services, we developed both software and hardware to meet the operational requirements. When it comes to this type of service, we can provide the following unique functions at present:



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1. **Unified number access.** VIP customers and prepaid subscribers can dial a unified number to achieve access. The system will deal with the situation in accordance with different calling numbers.
2. Single stage dialing. VIP customers can directly input access numbers and called-party-numbers to complete the call process in one single stage.
3. Forced plugging and unplugging function. If the phone fees of prepaid users are not sufficient, the system will automatically give a prompt; when the phone fees run out, the system will also give a prompt.
4. **Continuous dialing function.** When the user completes a call, the system will prompt the calling party to continue to dial another number.
5. **No reply treatment.** In case of no answer or no reply, the system will give a prompt about the treatment method within the specified time.
6. **VIP customers have dedicated access and need not dial the pilot number.**
7. **Optimized relay router.** Reasonably assign the load of trunk lines according to priority level, time quantum, and service proportion to balance the load.

The IP phone and billing system are built on the Tong Guang-Nortel Meridian 1 switching platform, and therefore it is easy to achieve coexistence and enhancement of other services. In the project implementation stage, call center functions can be also added. The building of this project can not only achieves the service functions of the current IP phone but also provides service for other businesses in the future.

For this kind of platform, the call center system is also built based on Nortel's reliable Meridian 1 switch platform and advanced call center components, and it can be fully updated in accordance with the technical development and needs of the business in question. With the supported software, the call center at present achieves CRM management and technologies, which enables the operator to be the first to provide personalized services for users in the virtual operational business.

In terms of call center technology, the advanced Symposium call center management software is ideal. Additionally, IML, a kind of CTI middleware based on Nortel queuing machine, and InteractAgent seat-end application software as well as CRM applications. This allows for an open style structure in the application of call centers and facilitates the integration of the system and the WEB call center. In CRM applications, we fully consider the business needs of customers and achieve the management and monitoring over the whole course of the user request. With the work flow mechanism adopted, users can obtain more personalized products and the enterprise can comprehensively promote the quality of service, improving the efficiency and reducing the cost.

Aiming at the virtual telecom operational platform, the following service functions are provided at present:

- Service consultation
- Service inquiry
- Complaints and suggestions
- Service transaction

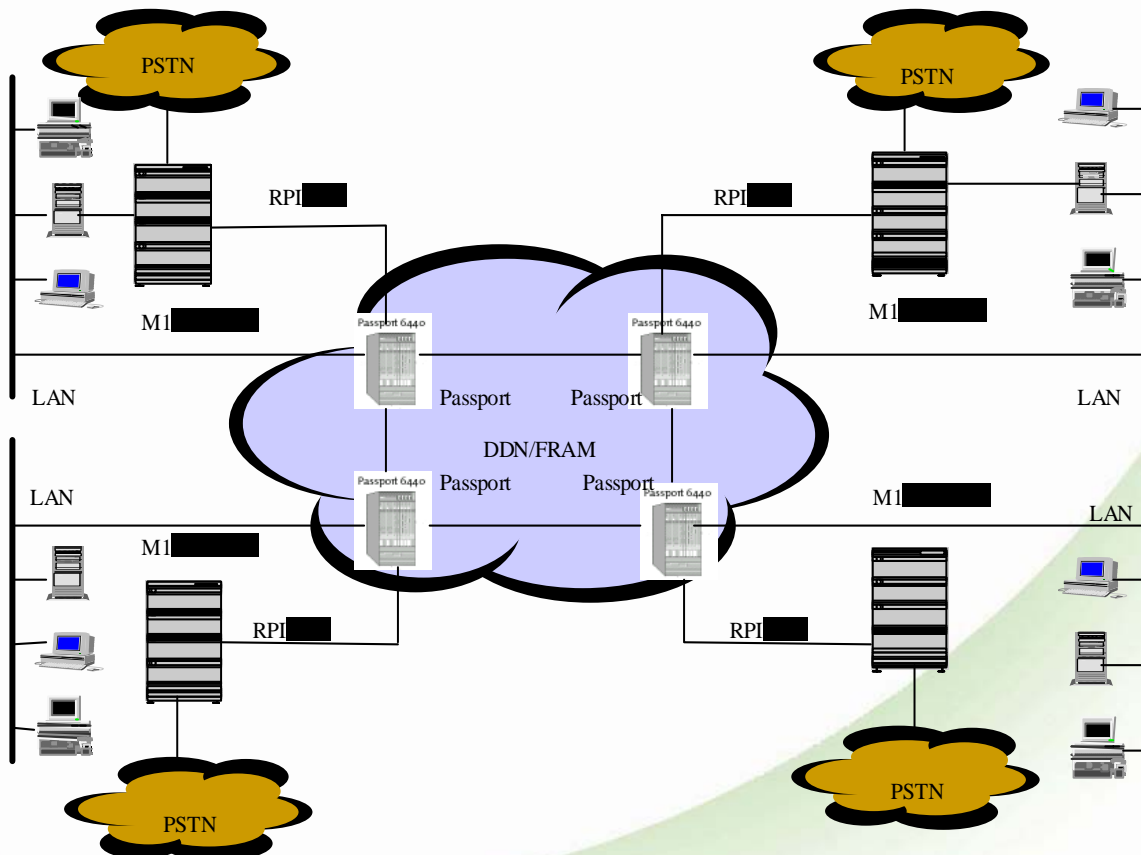
- Customer Data Management
- VIP customer service
- Marketing

With advanced technologies and managerial ideologies, the IP phone and call center business at present will offer unprecedented competitiveness to the virtual operation of customers.

Moreover, the virtual operation is still in the preliminary stage at present, and the business of many operators will be adjusted and complemented according to the related policies and market situation. The business platform in the primary stage will be able to achieve networking and complementation of functions so as to make full use of the resources of customers themselves.

In building the network, we will, through DDN or FR, use Passport to connect the nodes of multiple important cities with each other to achieve the mutual transmission of voice, data and image. The star connection is adopted for the connection between the subsidiary service point and central service point. The schematic is shown as follows:

Tong Guang-Nortel VVO Virtual Telecom Operating Platform Solution





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On the one hand, the networking mode can save money, and the internal communication is conducted via a dedicated network so that long-distance call fees can be reduced. On the other hand, networking functions can be provided, such as name display, network called name display, network calling number display, network called number display, network mail, network attendant console service, etc.

Tong Guang-Nortel hopes to establish a close cooperative relationship with customers from all over the world and help make virtual operation a reality everywhere as well as to jointly advance the development of this industry in China.