



# Basics of Interconnect Billing

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AdvOSS.com

[sales@AdvOSS.com](mailto:sales@AdvOSS.com)  
[support@AdvOSS.com](mailto:support@AdvOSS.com)

Phone: +1 647 259 8660

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## Executive Summary

This whitepaper provides a complete description of Interconnect with a brief introduction of RBOCs (Regional Bell Operating Companies) and CLECs (Competitive Local Exchange Carrier). It precisely explains the types of services offered by CLECs.

Whitepaper also explains different ways for the subscribers to access the service, provided by the operators with a network diagram for better understanding.

Finally, the whitepaper discusses different business models that can generate revenue for the LL Operators.

## Introduction

Interconnect is a term currently used to show a business model where different competing telephony providers coexist and Interconnect to each other. It is mostly used in countries where Telecom services are opening up to the private sector and the monopoly or national telecom is allowing other operators to compete with it. In USA the original large Telcos were called RBOCs (Regional Bell Operating Companies) and the new providers competing with the RBOCs are called CLECs (Competing Local Exchange Carriers).

Different names are given to these but for our document we will call the existing and incumbent large telecom provider as "Telco" and the new incoming competitor as a "Network Operator" or just "Operator".

Network operators usually provide two types of services:

1. LL (Local Loop) or WLL (Wireless Local Loop)
2. LDI (Long Distance International)

Different countries may have slightly varying names for the similar telecom services. The local loop operators provide normal telephone connections to their subscribers. They charge them a monthly line rent plus local and long distance and international call charges.



### **Local loop**

- **Local Loop**
  - The physical connection (typically, twisted pair of copper wire) connecting the end user (subscriber) to the central office.
- **Central Office**
  - Typically where the local loop is terminated for connection to the public switched telephone network (PSTN).

Local loop operators can reach their subscribers in three main ways.

1. By laying wires on the ground
2. By using wireless technologies
3. By offering their services over existing telephony networks

### 1. Wired operators

Local loop operators may choose to provide basic telephony services to areas where these are not already available or they may also choose to offer these services in areas where other operators (mainly the national telcos) already exist. In the later case, all the local loop operators compete with each other for the basic telephony services.

The following figure illustrates the local loop system and its billing mechanism (developed by [AdvacnedVoIP.com](http://AdvacnedVoIP.com)):

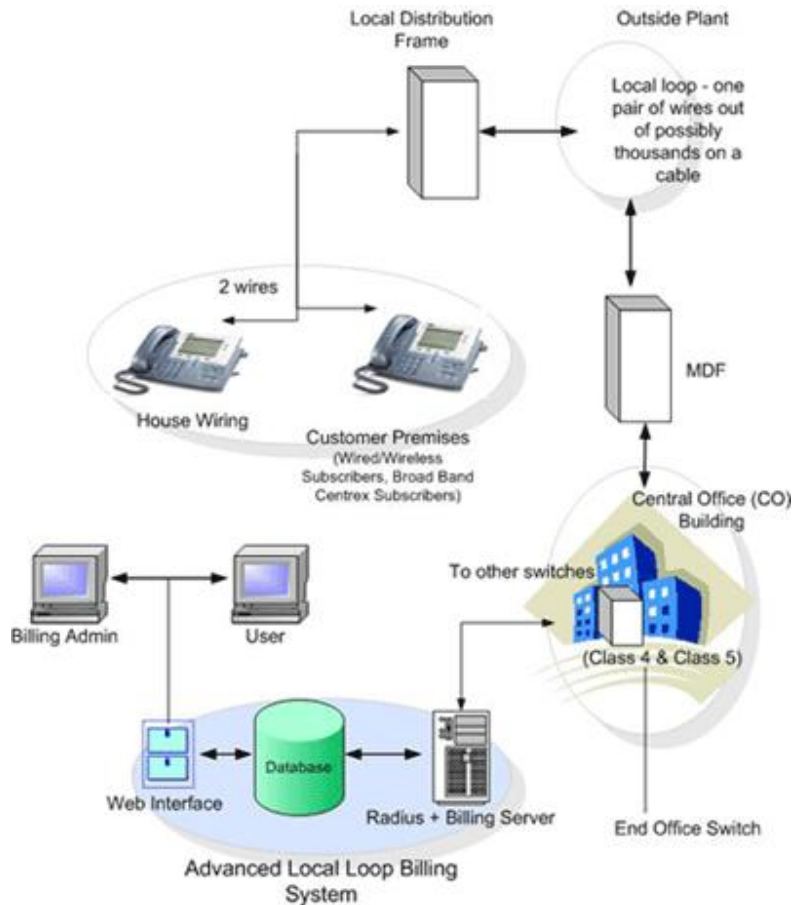


Figure 01: Local Loop Billing System

## 2. Wireless Operators

Wireless Local Loop (WLL) operators can choose to use any of the existing technologies for that. The main challenge with WLL operators is to have a frequency allocated to them. This is because at one time only one operator can use a specific frequency (unless special arrangements are made between different operators to use the same frequency). For this purpose the WLL operators need to deal with the local "Frequency Allocation Board" and get the required frequencies allocated to them.

Once the frequency is available they can use any existing wireless technology to communicate to their subscriber's telephones. Most commonly used technology is CDMA pioneered by Qualcomm.com because of its spectral efficiency i.e. the capacity to accommodate more subscribers on a given bandwidth.

The following figure illustrates the wireless local loop system and its billing mechanism (developed by [AdvacnedVoIP.com](http://AdvacnedVoIP.com)):

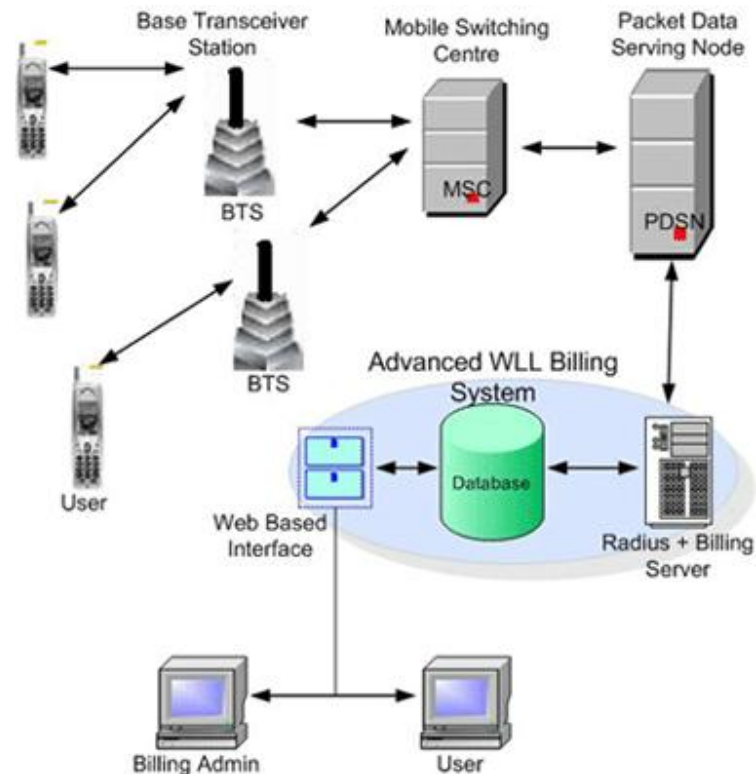


Figure 02: Advanced WLL Billing System

### 3. Wired over Existing Network operators

Different technologies like DSL and cable allow operators to provide separate telephone connections to users over existing phone lines. Local loop operators can choose to connect to their subscribers through DSL connections. For this the existing Telco needs to allow them to house their equipment in their exchange as well as on the customer's premises. Although this has the drawback that the existing phone line through previous Telco is still required, it has the big advantage of not requiring new wiring in metropolitan areas and no competition for scarce frequencies.

## Business Models

LL operators generate their revenue from two sources:

1. Originating voice calls from their subscriber base
2. Terminating voice calls from other network operators to their subscriber base

In either case, an LL operator needs to have an interconnect system to connect with other operators that he does business with. Like conventional payment clearing systems, NOT all operators deal with all other operators. If that is the case, payments as well as voice traffic needs to be cleared through any third party that deals with both the operators.

In some countries, the local telecom authority has some guidelines on the charging schemes of all local calls. In some other countries an operator is totally free to implement its own policies and charging schemes.

A LL operator also needs to decide how and where to send its long distance traffic. In some countries it is an exclusive prerogative of the national telecom. In other countries things are

opening up and private section companies are also allowed to carry national and international long distance calls.

In all cases, the LL operator needs to have a billing system that will interconnect it with all the other operators he is dealing with.

Mostly, the LL billing is postpaid and the CDRs (Call Detail Records) are exchanged with each of the partnering operators at the end of each accounting period usually a week or a month. Basic accounts are still reconciled at the end of the day between each party.

[Advanced Interconnect Billing](#) supports all common business models used by different types of LL operators.

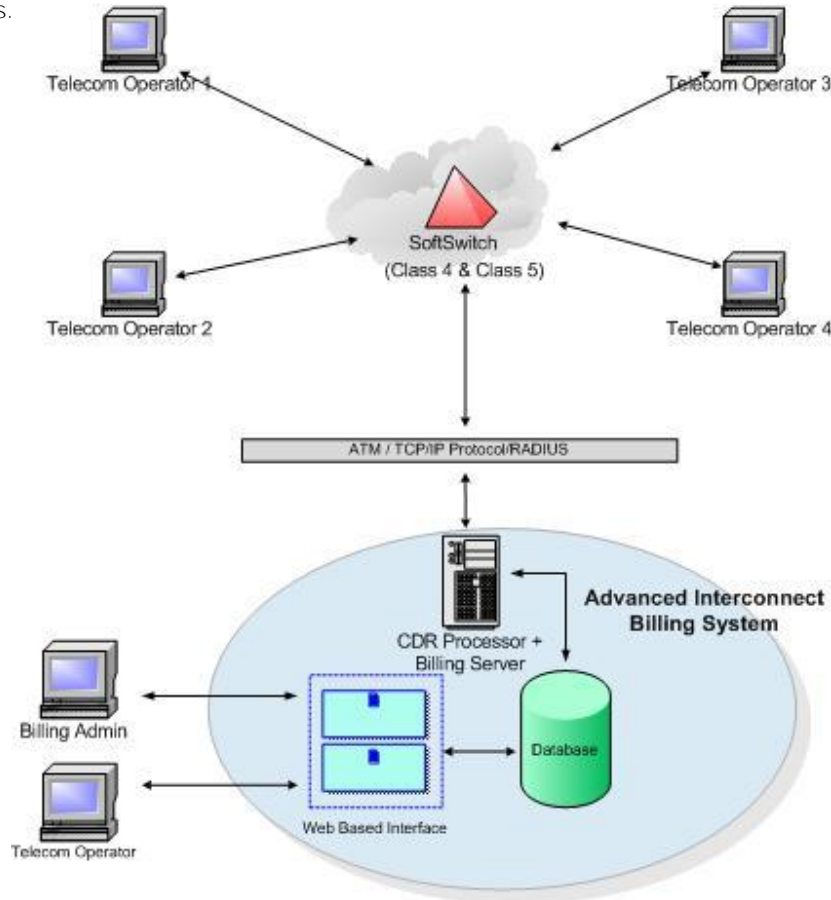


Figure O3: Advanced InterConnect Billing

## Summary

Interconnect is a term currently used to show a business model where different competing telephony providers coexist and Interconnect to each other. It is mostly used in countries where Telecom services are opening up to the private sector and the monopoly or national telecom is allowing other operators to compete with it.

Network operators usually provide two types of services:

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[Advanced InterConnect Billing](#) offered by AdvOSS.com supports all common business models used by different types of LL operators.

## Contact Information

In case of any ambiguity regarding the concept, explained in the whitepaper, please feel free to contact us at [support@AdvOSS.com](mailto:support@AdvOSS.com) or please, visit [http://www.AdvOSS.com/voip\\_contact.html](http://www.AdvOSS.com/voip_contact.html)

For further information please, visit [www.AdvOSS.com](http://www.AdvOSS.com)

## We welcome your suggestions

Thank You for reading this whitepaper. We will be pleased to receive your response and suggestions.