

# Global VPNs

## *An Overview*

NOTE: This presentation was developed in 1998 and therefore some of the carriers have changed.



# What is a VPN?

**A Virtual Private Network offers private network features for voice, data and image transmission, across the public telephone network<sup>1</sup>.**

**Capacity is available on demand, and paid for on a usage basis.**

<sup>1</sup> The term VPN has also been adopted for Internet applications.

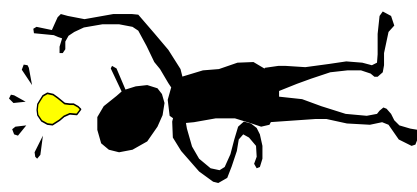
# What is a GVPN?

**Global-** available in a number of countries from a single network

**Virtual-** capacity is shared between users and allocated as needed

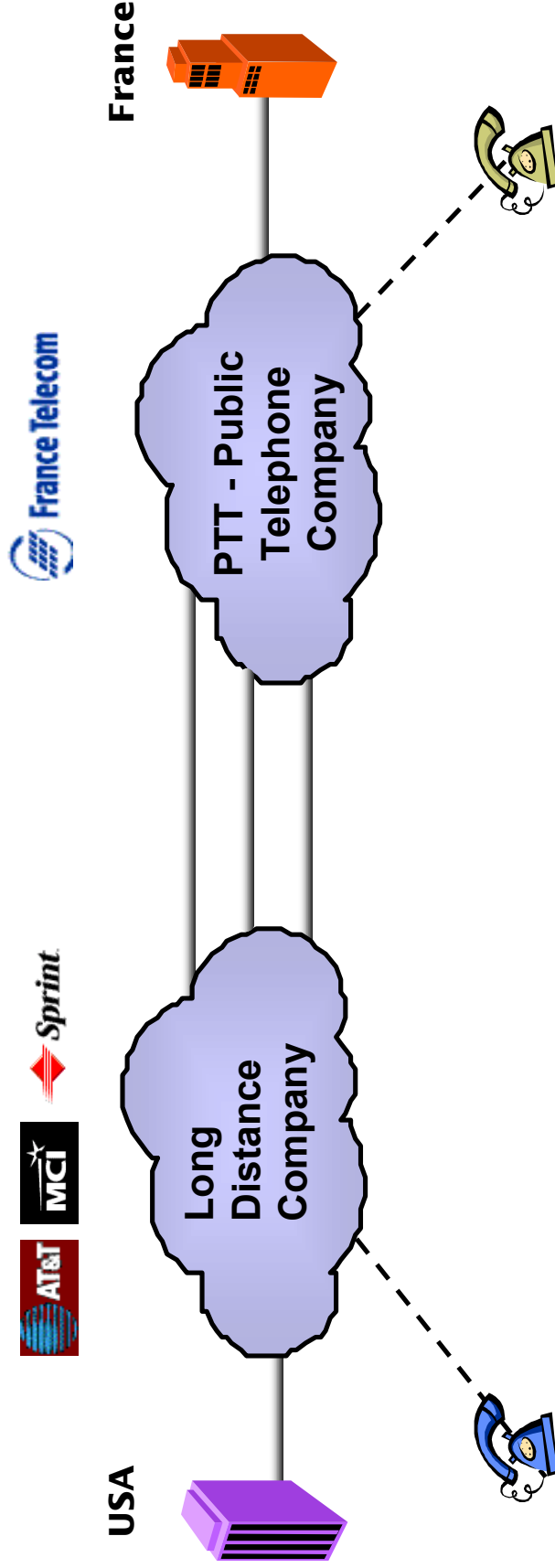
**Private -** functionality emulates a private network

**Network-** need we say more?



# Traditional International Call

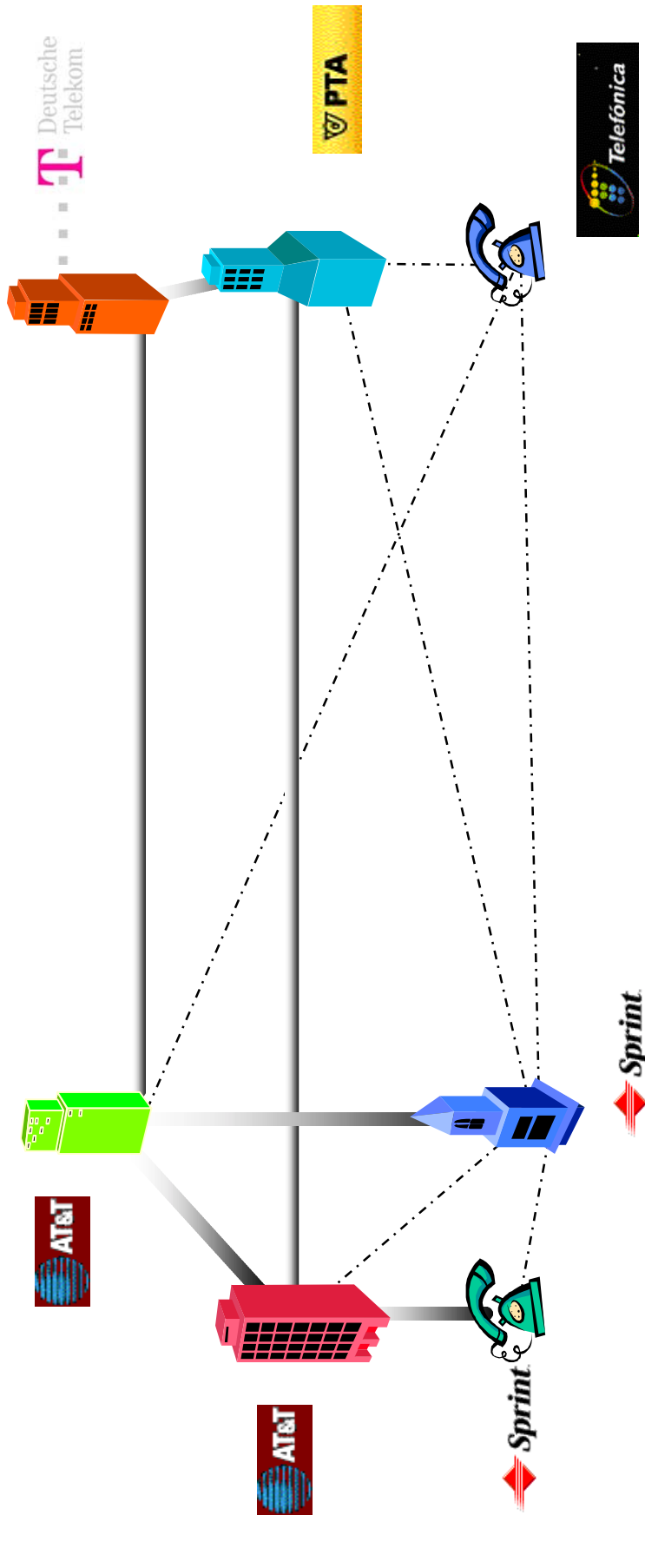
## Example:



- Features only work one way
- No benefit for calling intra-company
- No control over call routing - based on 'correspondent' rules

— Dedicated  
 - - - - - Switched

# Traditional Private Network



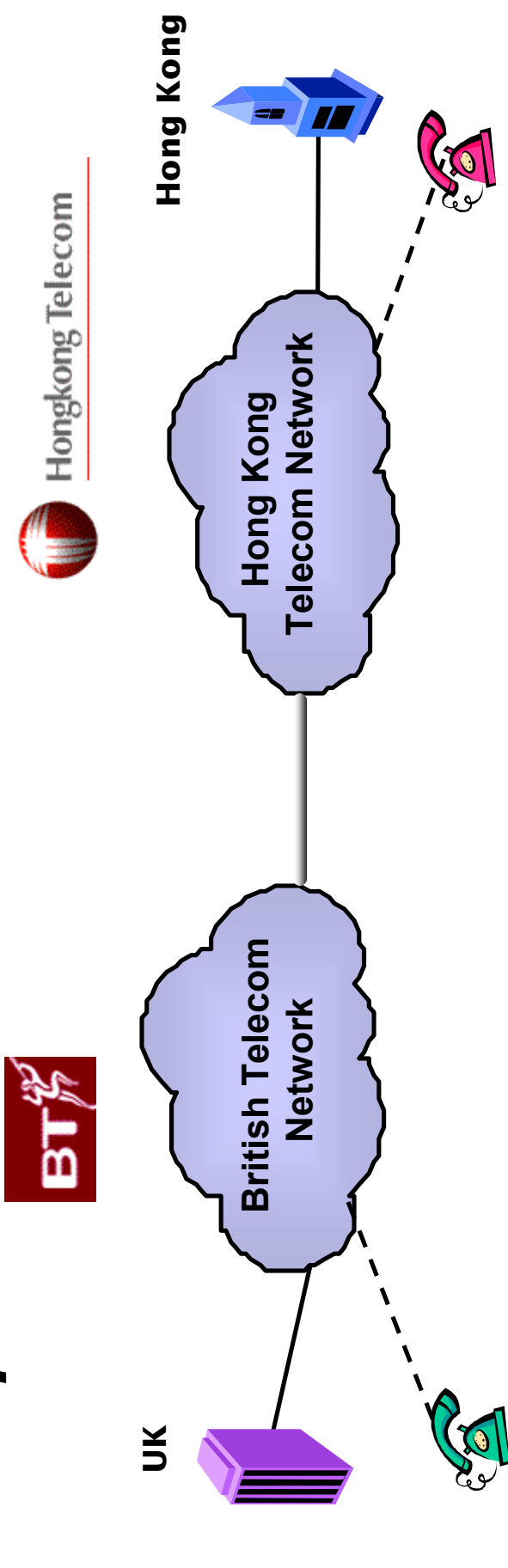
— Private Line  
 - - - - - PSTN

- Complicated - might be a mixture of private and public, and multiple suppliers
- Private lines have fixed pricing, regardless of usage

~~Good features and security with PBX over private line~~

# “Bilateral” Virtual Private Network

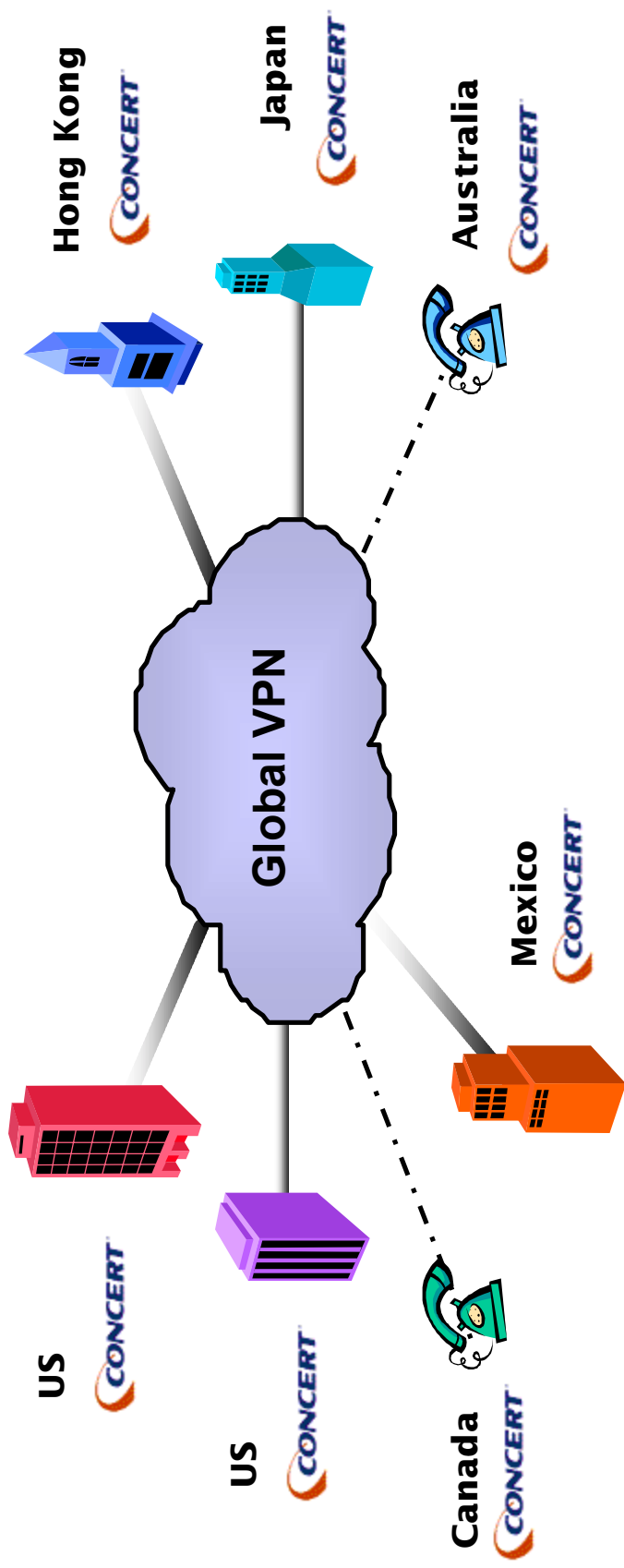
## Example:



- Earliest form of VPN service
- Offered between traditional PTTs, features at lowest common level
- Customers generally must liaise with different PTTs
- Limited centralized service, billing or reporting.

— Dedicated  
- - - - - Switched

# “Pure” Global Virtual Private Network



— Dedicated  
- - - Switched

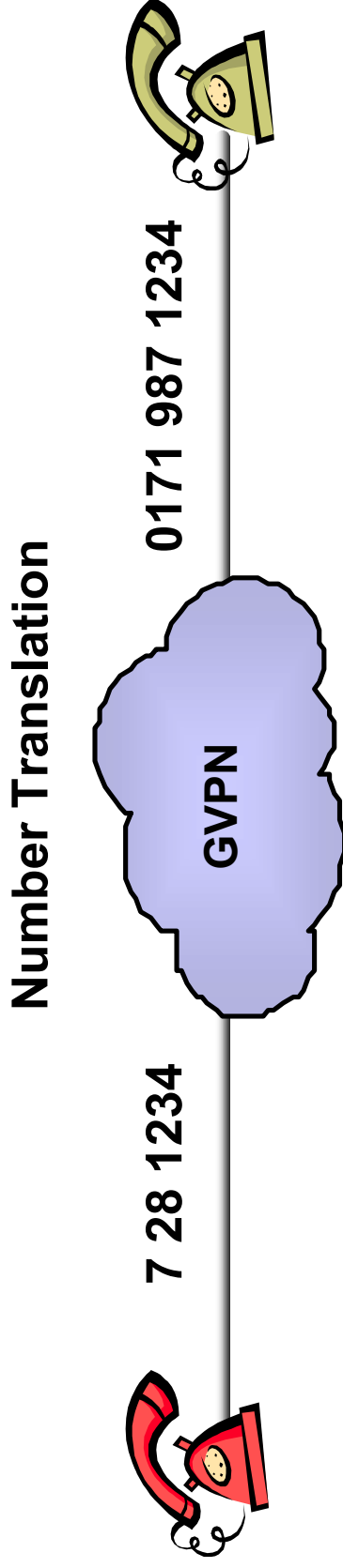
- Network allows PBX & private line features, vendor manages capacity, features & routing
- Usage based pricing
- Rarely possible to implement “pure” VPN due to coverage limitations
- Customer is locked into one vendor

# GVPN Features

- Dial Plan
- Managed Routing - DTO, NCR etc.
- Call Screening/ Barring
- Calling Line ID (sometimes)
- Switched data - 56/ 64k
- Global or local billing/ reports
- Global and/or local discounts

# Understanding the Dial Plan

- The dial plan determines what the user dials.
- The dial plan dictates what the carrier does with the call:



# **GVPN Functionality**

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**Call types and features include:**

- **On-Net**
- **Off-Net**
- **Forced On-Net**
- **Virtual On-Net**

# GVPN Terminology

## What is “On-Net”??

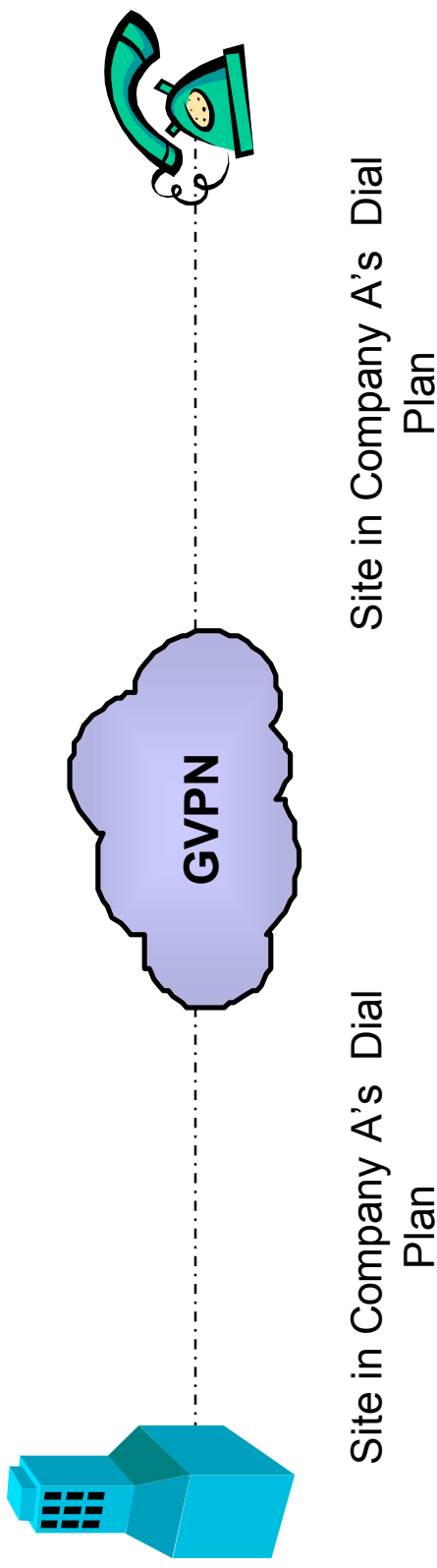
- For some carriers anything in the dial plan is “On-Net”. (a)
- For other carriers, an “On-Net” call must be made from and to a location in the dial plan, and made from a site directly connected to the GVPN by a dedicated access line. (b)
- For some carriers, an “On-Net” call must be made from and to a location in the dial plan, and be made from and to a site connected directly to the GVPN by a dedicated access line.(c)

***Beware of anomalies - they have a significant impact on price!***

# GVPN Call Types

## On-Net (a):

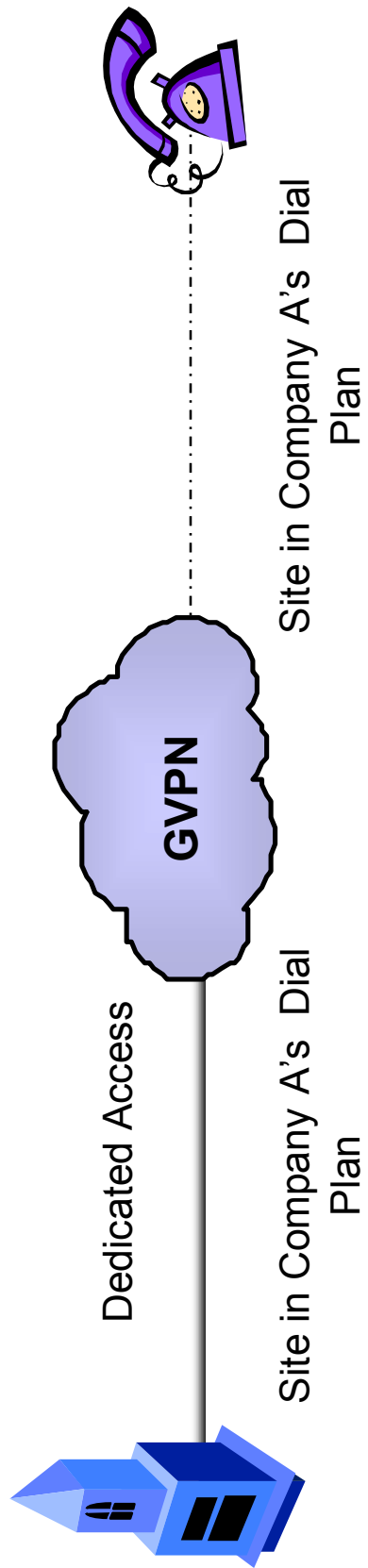
An “On-Net” call is made from a location in the dial plan to a location in the dial plan. The method of connection to the network ( dedicated or switched) is not important.



# GVPN Call Types

## On-Net (b):

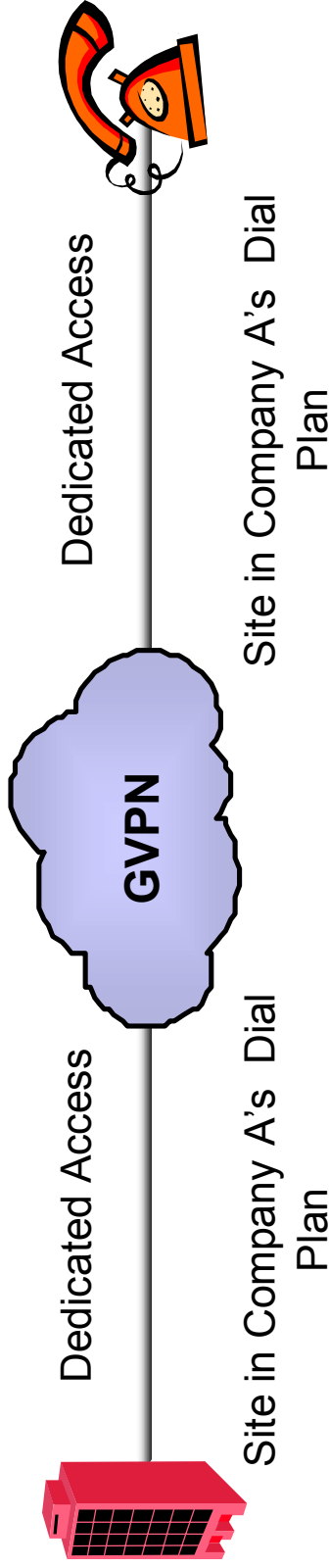
A call is made from and to a location in the dial plan, and from a site connected directly to the GVPN by a dedicated access line.



# GVPN Call Types

## On-Net (c):

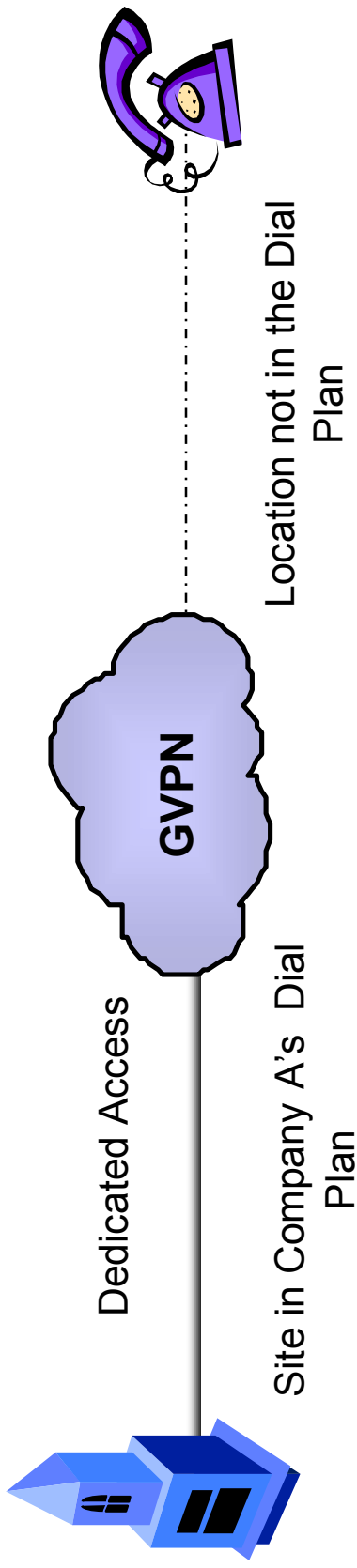
An "On-Net" call is made from and to a location in the dial plan, and from and to a site connected directly to the GVPN by a dedicated access line.



# GVPN Call Types

## Off-Net:

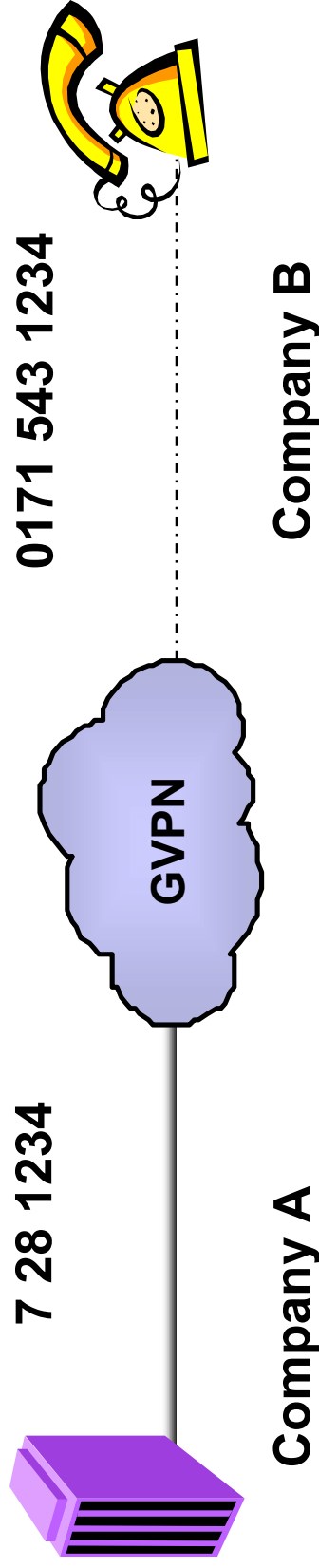
The simplest explanation is that an “Off-Net” call is made from a site in the GVPN dial plan to another location that is not in the dial plan. The same caveats apply as to On-net - definitions of “Off-Net” vary by carrier and buyers should check these definitions with each carrier.



# GVPN Features

Virtual On-Net:

Allows a site to be included in a GVPN dial plan for inbound calls but not necessarily make outbound GVPN calls.

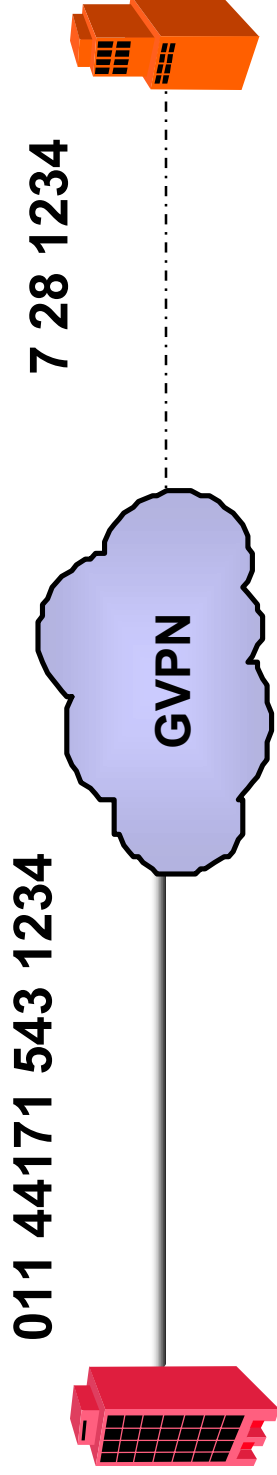


# GVPN Features

## Forced On-net:

Forces PSTN call onto the GVPN network through digit translation in the network.

The user dials the PSTN number, the network recognizes it, and completes the call as if dialed "On-Net."



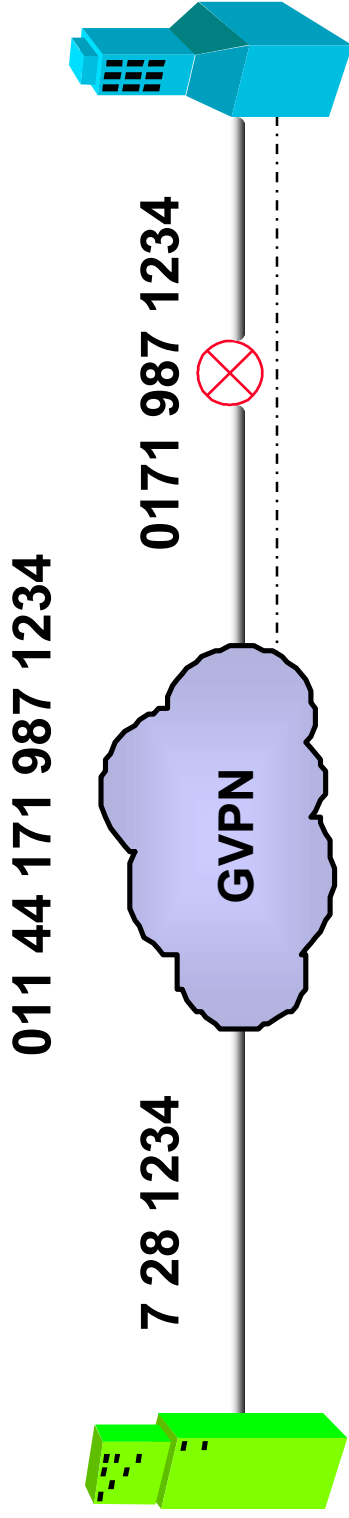
***Allows the customer to benefit from On-Net pricing without reprogramming the PBX***

# GVPN Features

## Direct Termination Overflow:

DTO allows calls that reach a busy On-Net destination to re-route through the PSTN network.

Some carriers now offer more functionality through Network Call Redirect (NCR), which allows multiple 'hops'.



## **GVPN Pricing and Billing**

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Most carriers offer :

- Reduced pricing for “On-Net” calls.
- “Off-Net” calls at lower prices than “normal” calls.
- Global or local billing/ reports.
- Global and/or local discounts.
- Invoices and management reports in a choice of language and currency.

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