Fundamental stakes of the convergence of telecoms networks

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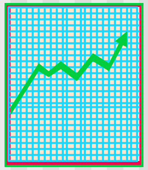
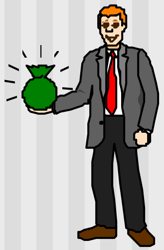
Agenda

- Market Trend

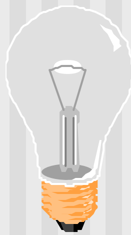


- Challenges

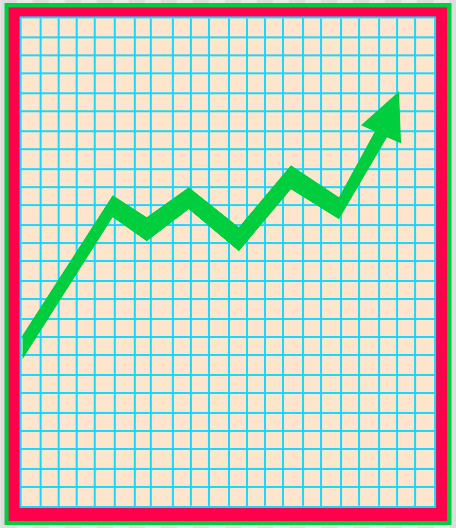
- Opportunities



- Solution



Market Trend



The Communications Age

Buildings

Computers

Homes

People

Networked Economy

Mobil Devices

Smart Cards

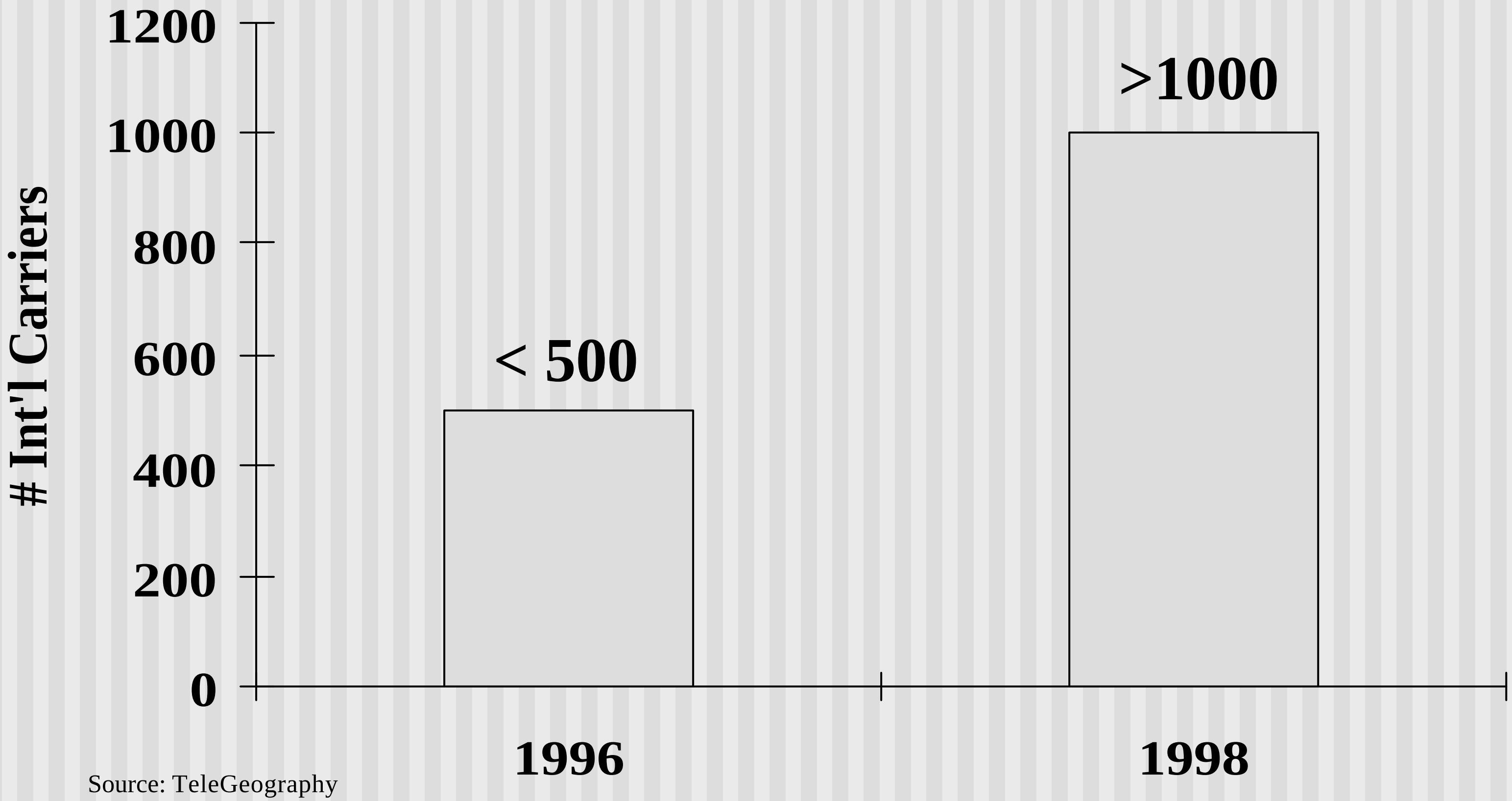
Home Appliances

Business Model Moves Into eServices Model

- Communications
- Wireless Communications (Free Phone)
- Cable TVs (Free Setup Box)
- Applications Hosting (Free Software)
- Internet Access (Free PCs)

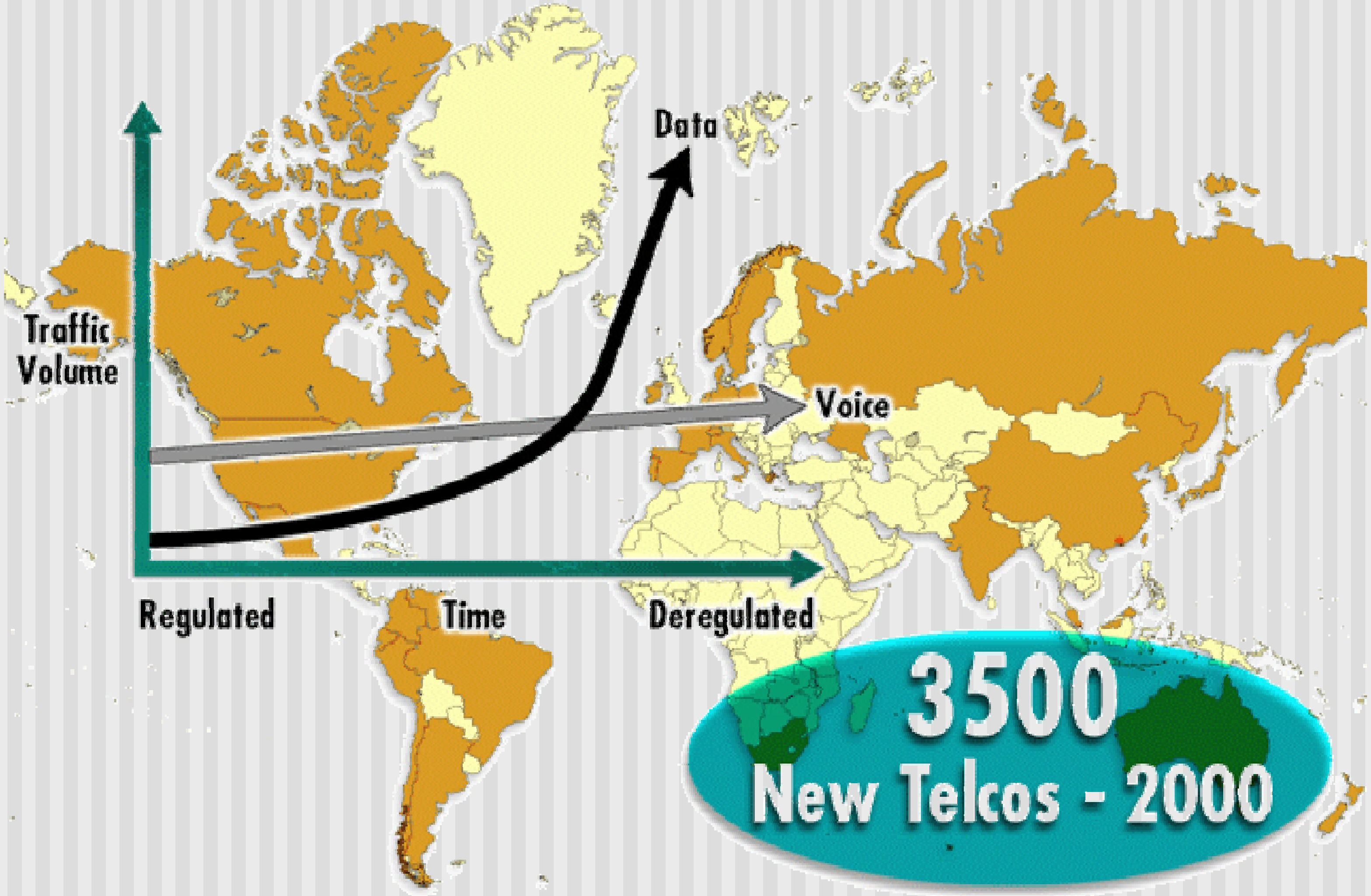
Service providers play a key role in eServices world!

Attractive International Market Driving Growth in New Entrants



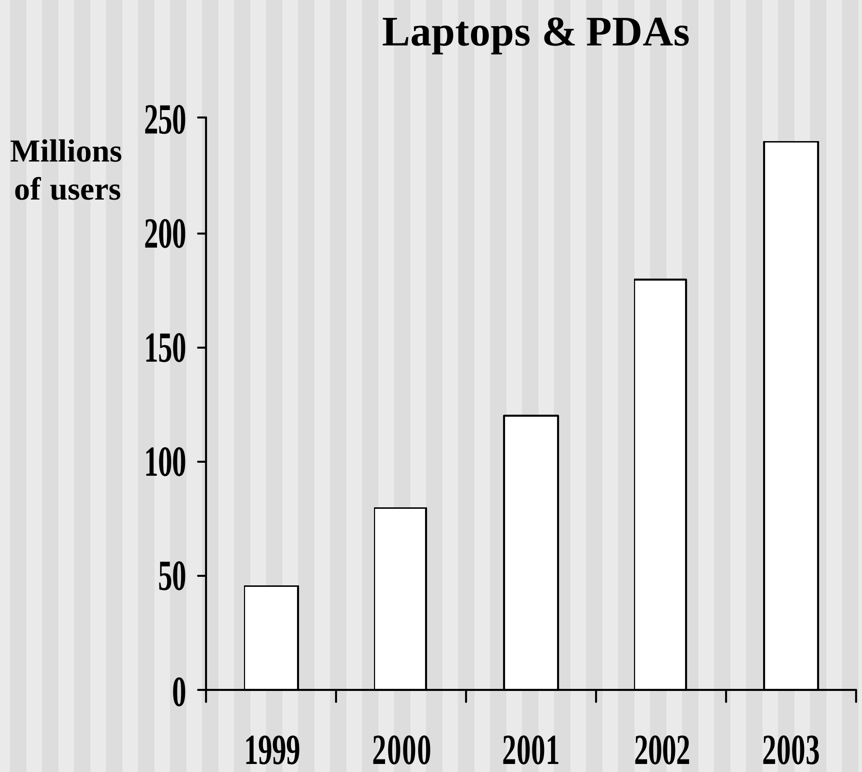
Source: TeleGeography

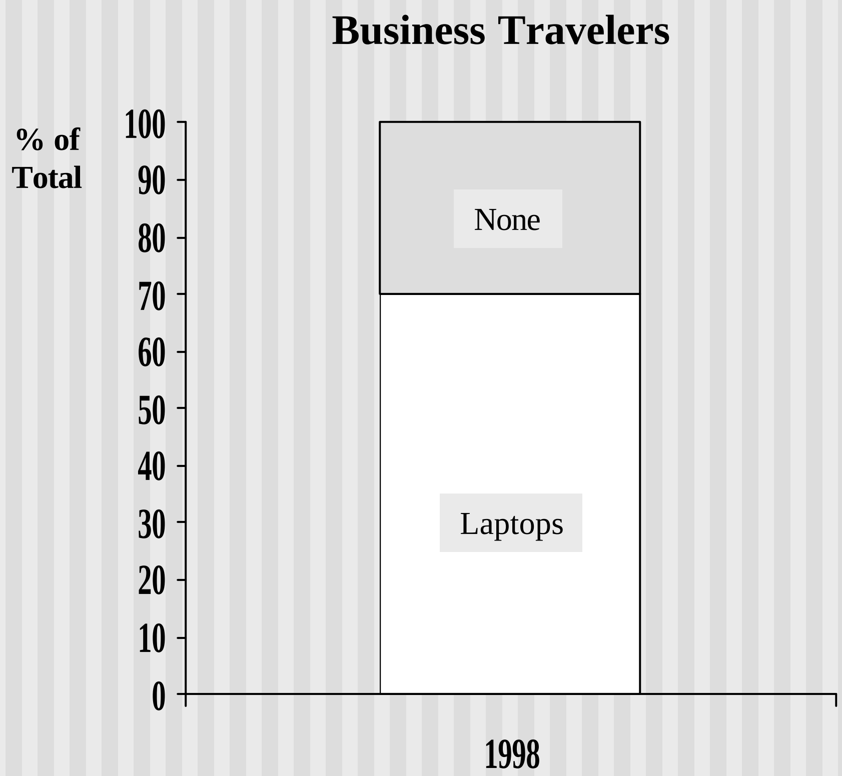
Deregulation



Source: NBI, NTL's Consultants

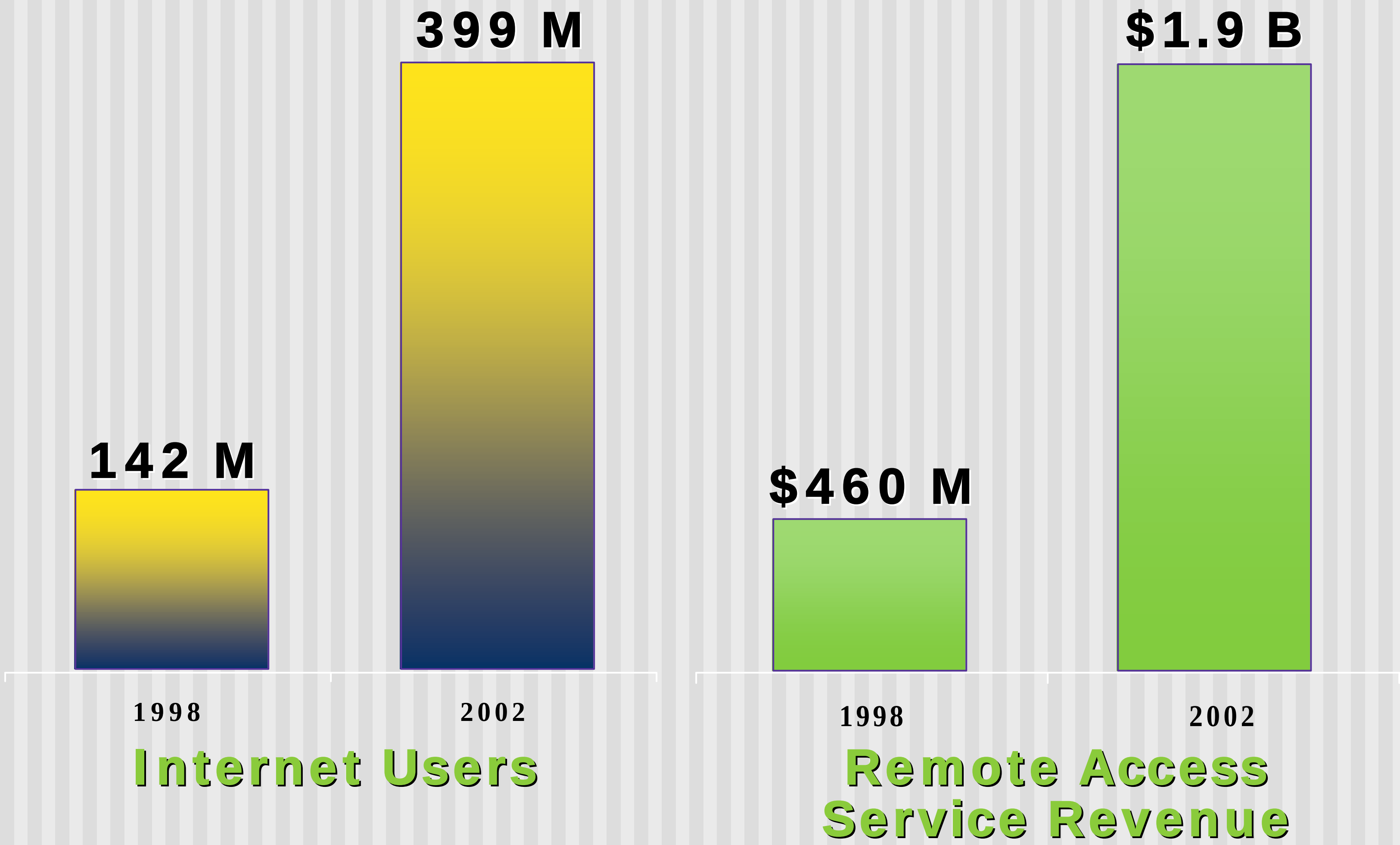
As Demand Increases for Remote Working





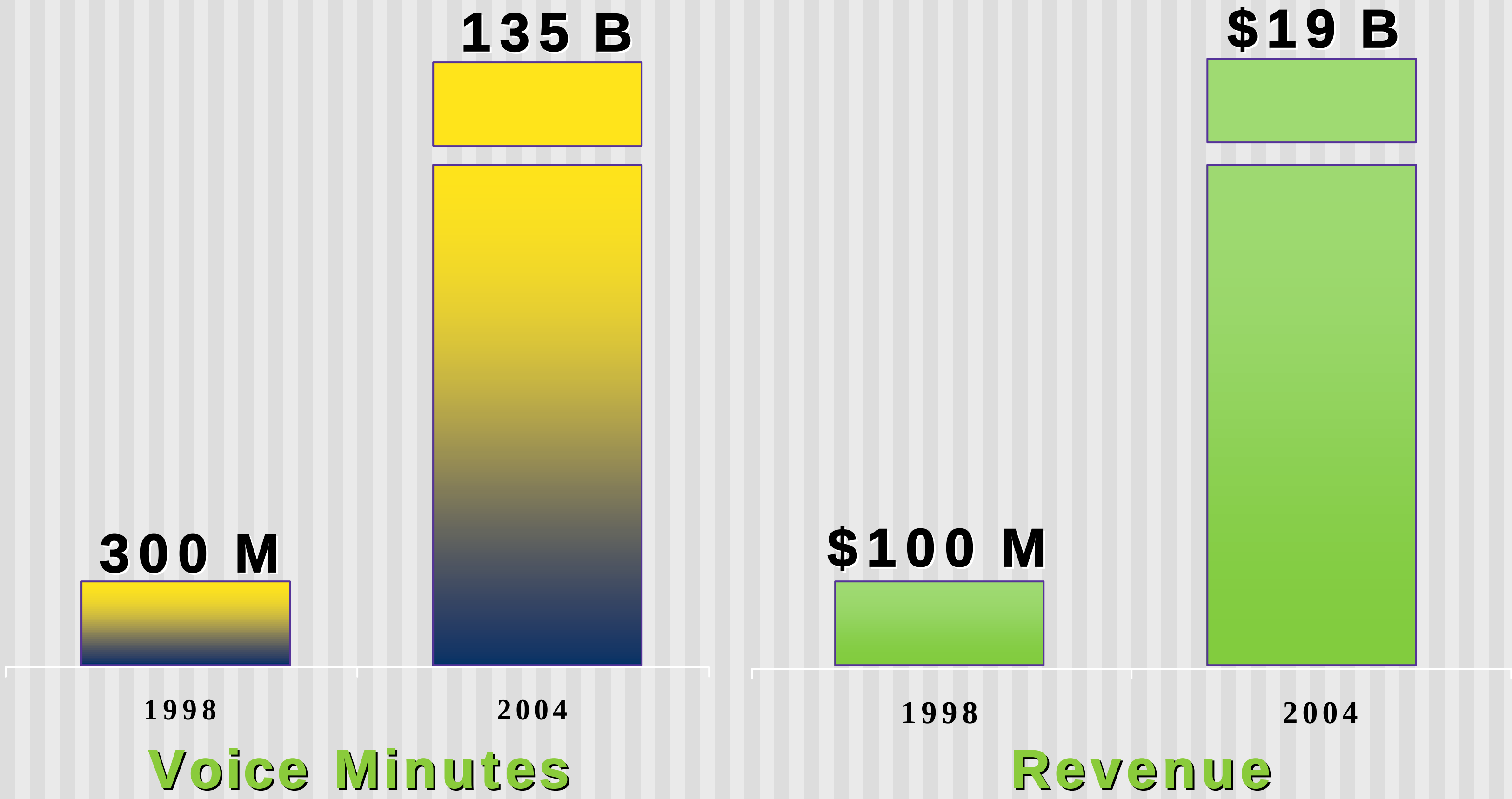
Source:Nokia

Global Roaming Market



Source: IDC; The Yankee Group

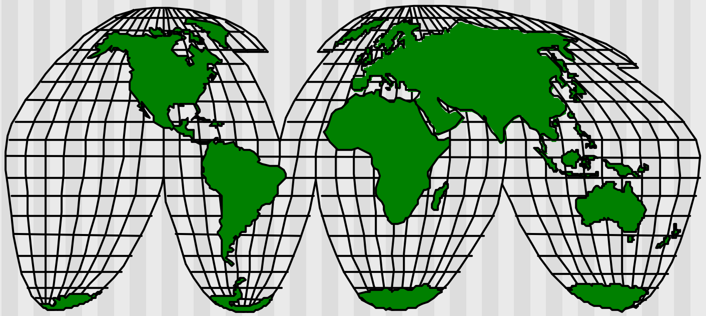
Internet Telephony Market



Source: IDC

Technology vs Services

Technology is global



Service is local

Challenges

Challenges for Traditional Telcos

- Legacy Network Infrastructure
- Numerous, Inflexible Back Office Systems
- Changing Focus from Regional to International
- Eroding Prices - Margins Squeezed
- Aggressive, New Entrants
- Deregulation
- High Cost Structure

Challenges for ISP to Sustain and Grow Their Business

Cheap, Moving to Free, Access

Difficult to Differentiate

Poor Marketing Capabilities

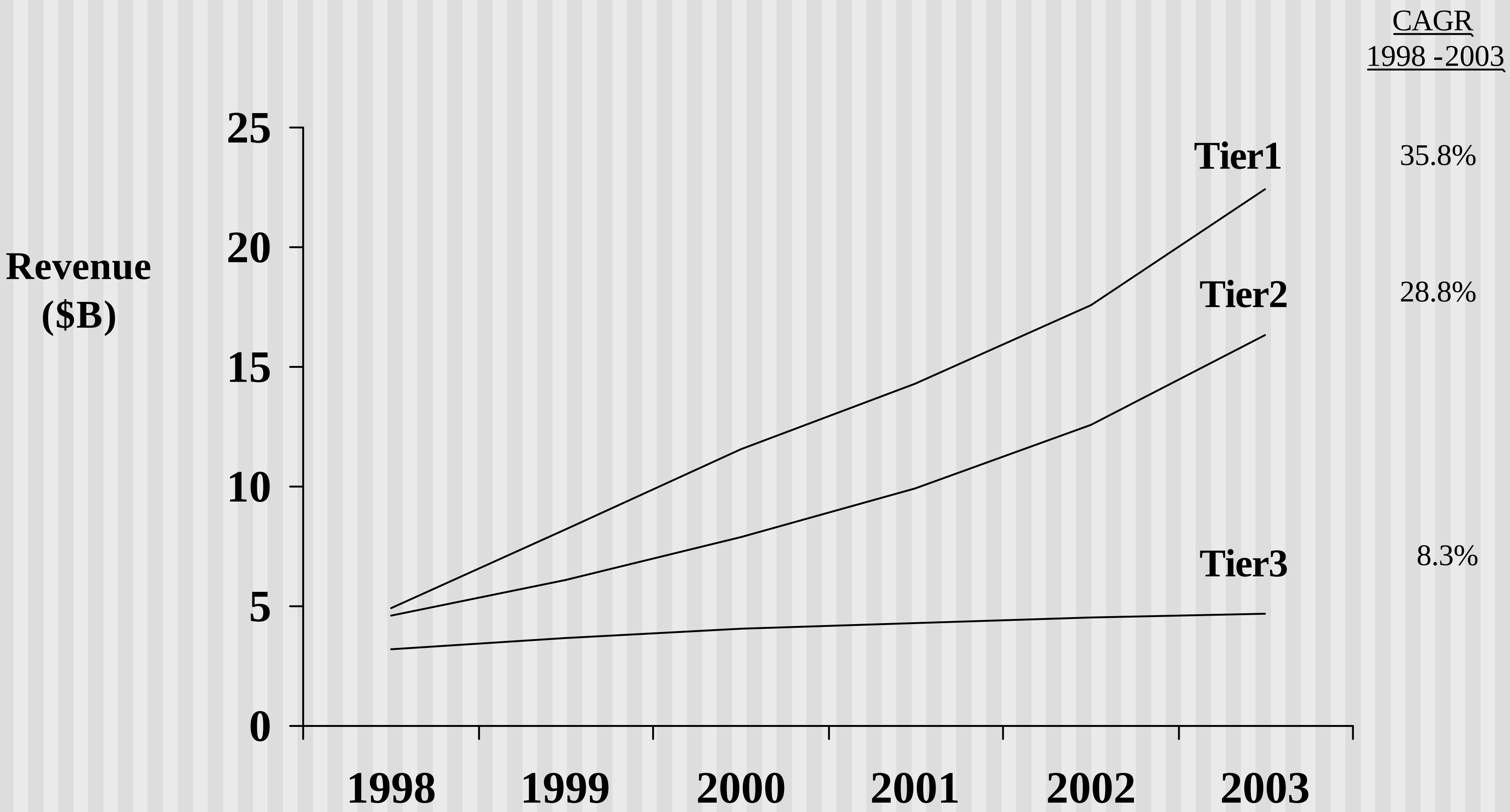
High Customer Churn

Consolidation

Primarily Local/Regional Footprints

Stiff Competition

Economies of Scale Benefit Big ISPs



Source:IDC

Service Providers Major Trend

Customer Facing Providers - Providers of basic and enhanced communication services to business and residential end-users.

Back Office Providers - Providers of communication facilities and services to Customer Facing Providers enabling specialty and focus.

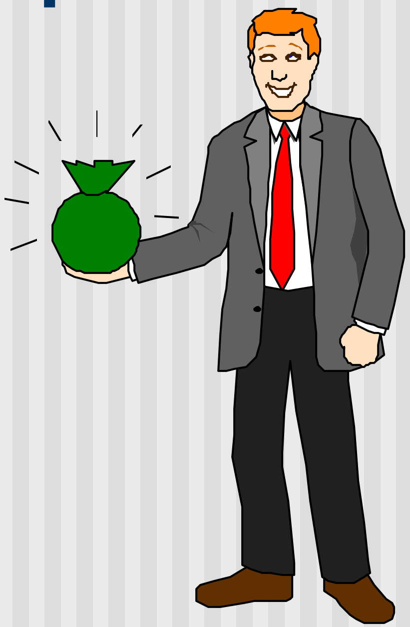
Revenue models are traditionally based primarily on subscriptions and/or per minute pricing, although advertising and "pipe" usage pricing are rapidly emerging as the new models.

Source: Pipper Jaffray

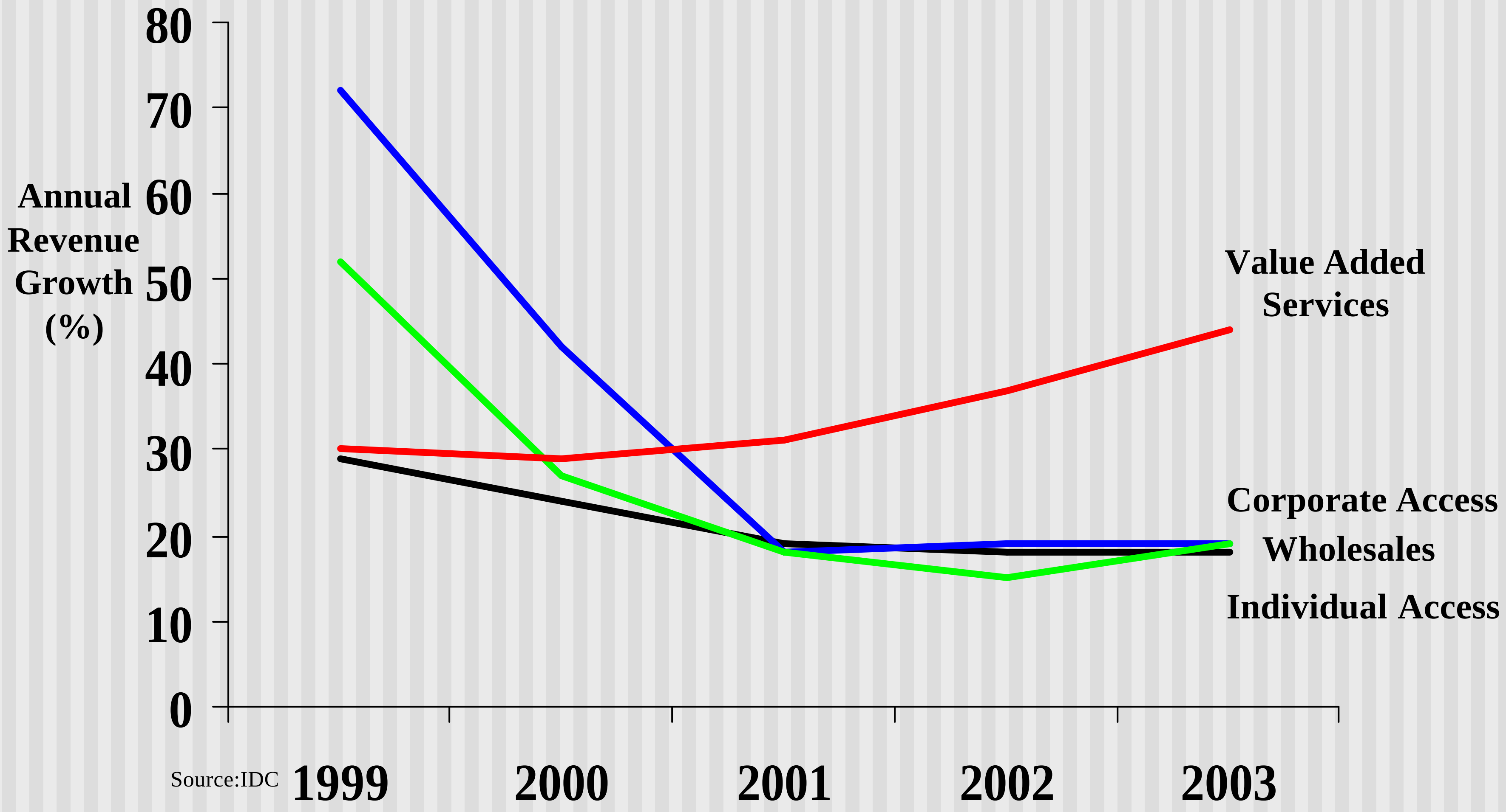
The Service Creation &Value Chain

Backbone Networks	Access Networks	Managed Network Services	Service Application Creation	Managed Services/ Applications	Aggregation of Services/ Applications
Optical, ATM FR	V.90, ISDN DSL, Cable Modem, Wireless	LAN, WAN QoS Wholesale	Commerce Content Delivery Multimedia	Facilitation Outsource Management	Communities
Backbone Providers	ISPs, Carriers	Network Service Providers	Broadband Service Providers	Application Service Providers	Portal/ Aggregators

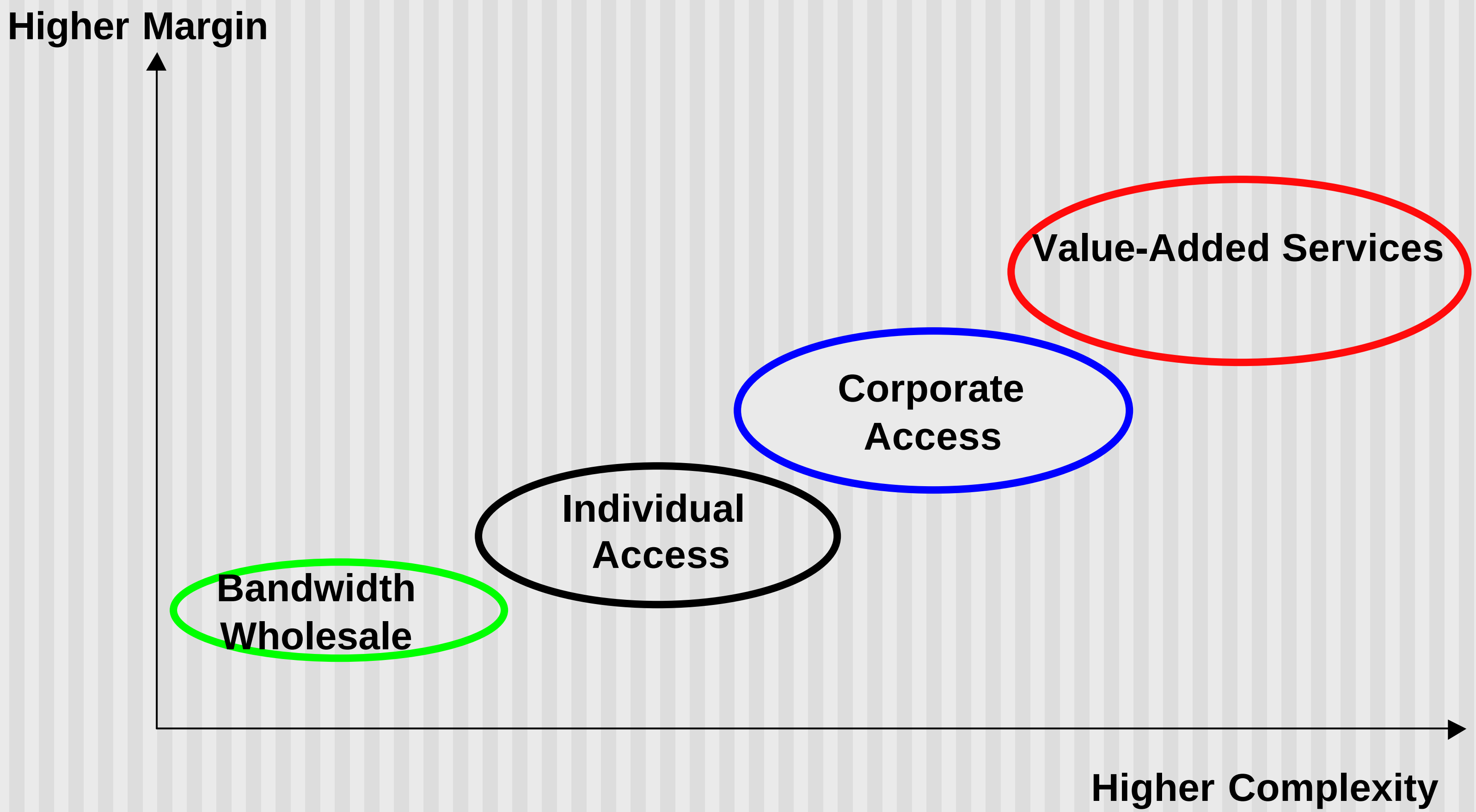
Opportunities



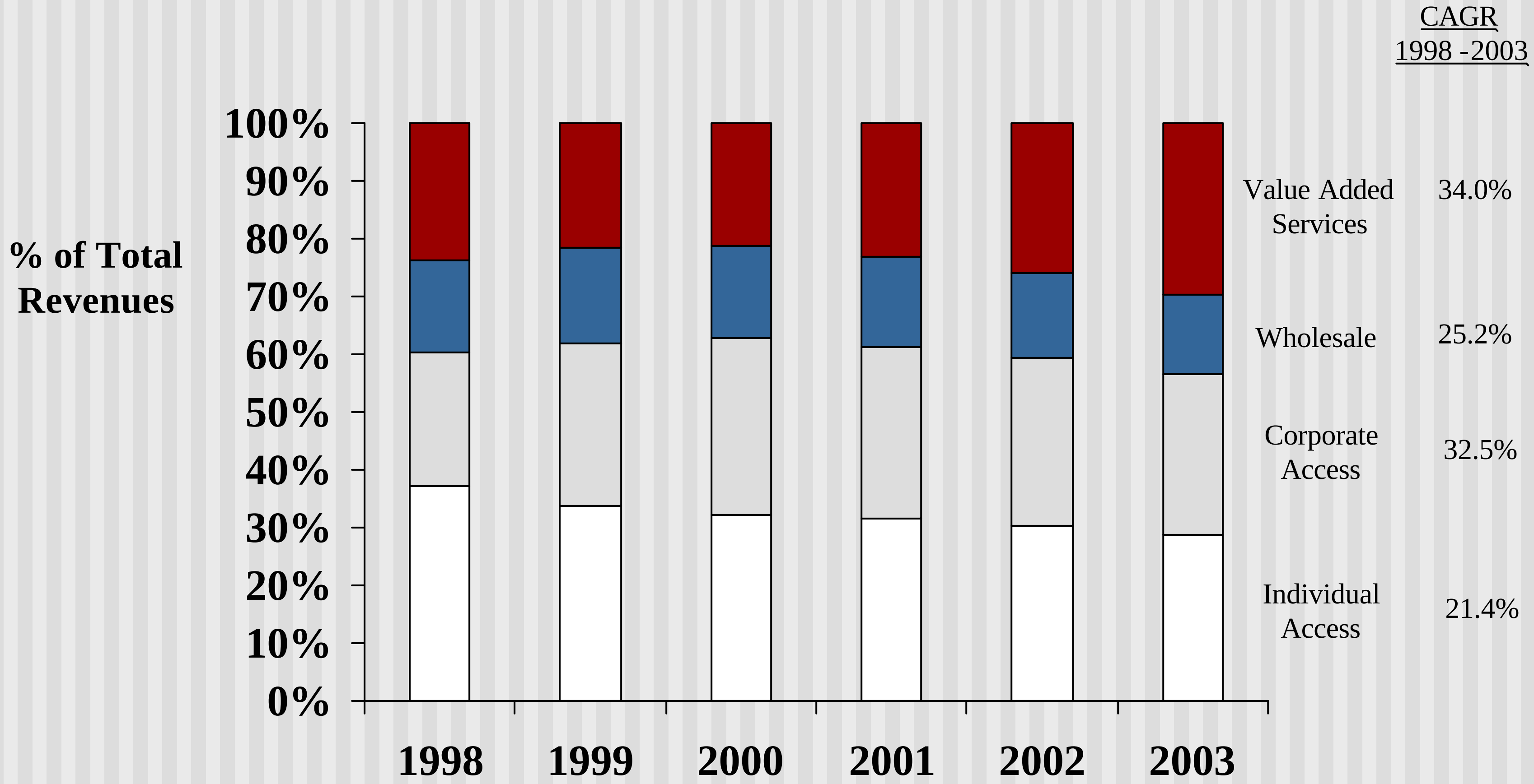
Value-Added Services the Key to Future Growth



Higher Margins and Complexity



Growth in Revenues Will Come From VA Services & Corporate Focus...



Source:IDC

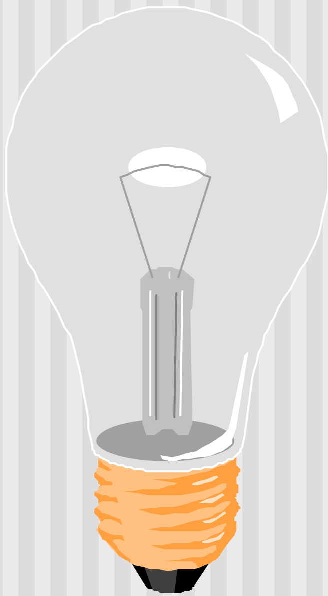
Current Value-Added Services

- E-mail
- Web hosting
- DSL
- Global Roaming
- VPN
- E-commerce
- IP Telephony

Future Value-Added Services

- Unified Messaging
- Enhanced Voice Services
- Wireless Internet
  - Fixed
  - Mobile
- Service Bundling

Solution



Implementation of Value-Added Services

- Speed - first to market advantage
- Ease of Implementation - Integrated
- Cost of Implementation
- Immediate Global Reach
- Scalability
- Customer Transparency - Single Bill

After Toll Avoidance, Value-Added Services will Drive Industry in the Future

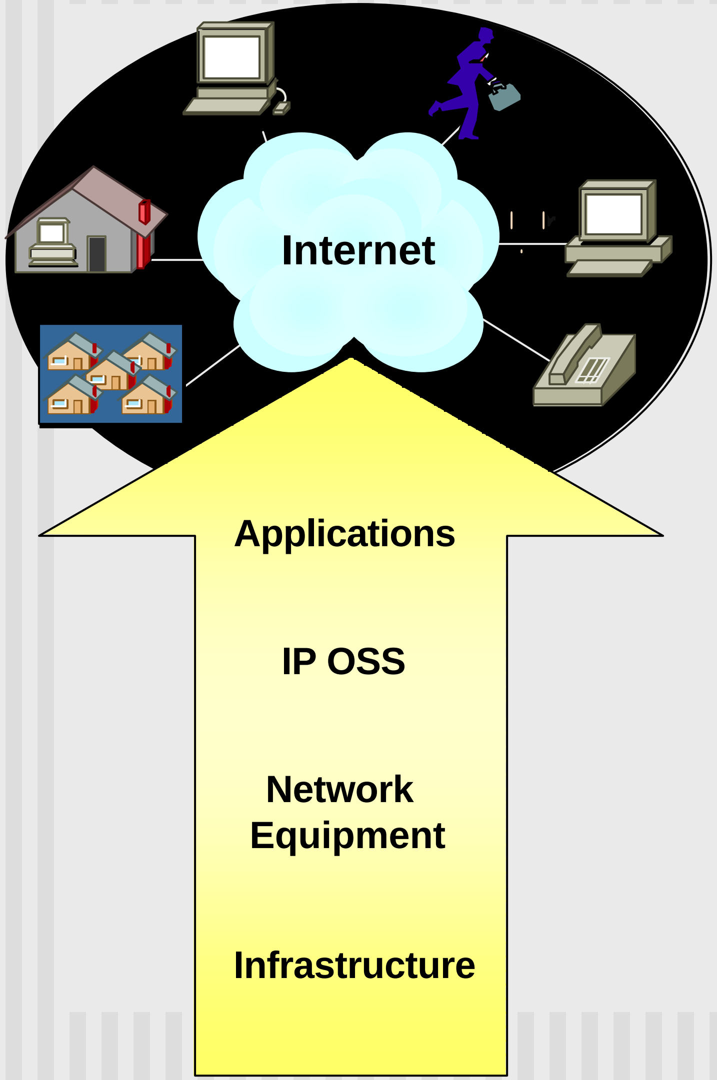
"The immediate driver (of IP Telephony) has been, and continues to be toll avoidance. In that the gateway…. is becoming a commodity, toll avoidance will decline as a driver of the industry going forward. Replacing this driver will be the services and applications …."

Piper Jaffray Inc, February 1999

"The use of IP telephony will be spurred not by simple cost savings, but by the implementation of innovative new services. This in turn will encourage new, not replacement communications, and create incredible business opportunities for the carriers."

Vint Cerf, Senior VP MCI, 1998

Summary: Enabling the Global Internet Economy



End-User Applications will Drive the Internet Economy

- **Value Added IP Services**
- **Global Service Coverage**
- **Service Provider Revenue Opportunities**
- **Service Provider Differentiation**
- **Single Bill for Multiple Services**