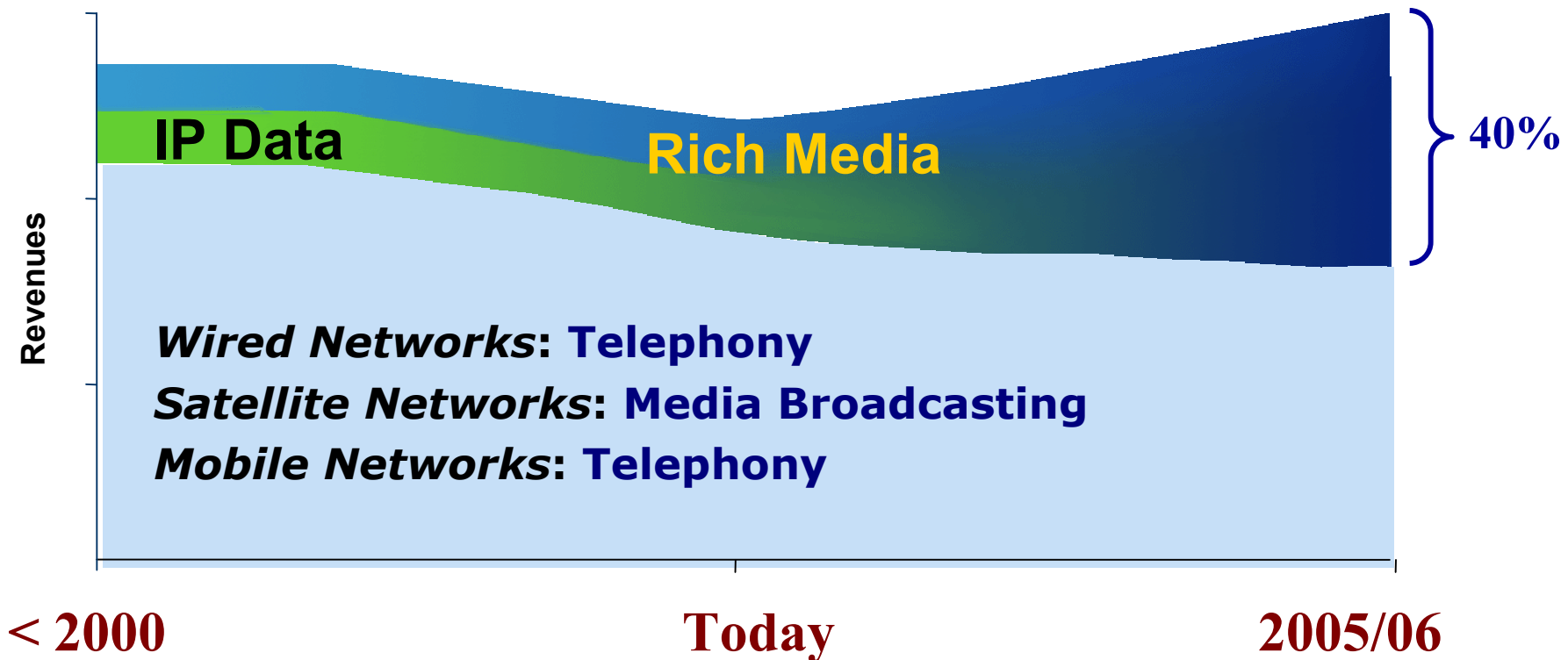# Broadband Networks: Applications and Services

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C.E.O. and Founder

September 17, 2003

Presentation Overview

- **Evolution of Networks and Services**

- **Broadband Networks: Respective Applications and Services**
  - ☐ Terrestrial networks
  - ☐ Mobile Networks
  - ☐ Satellite Networks
  - ☐ Enterprise Networks

- **Castify's Solutions**

Evolution of Networks and Services (1)

Revenues

IP Data

Rich Media

40%

Wired Networks: **Telephony**
Satellite Networks: **Media Broadcasting**
Mobile Networks: **Telephony**

< 2000   **Today**   **2005/06**

Analog → Digital → IP Data → Rich Media

Evolution of Networks and Services (2)

Applications and Services become more complex

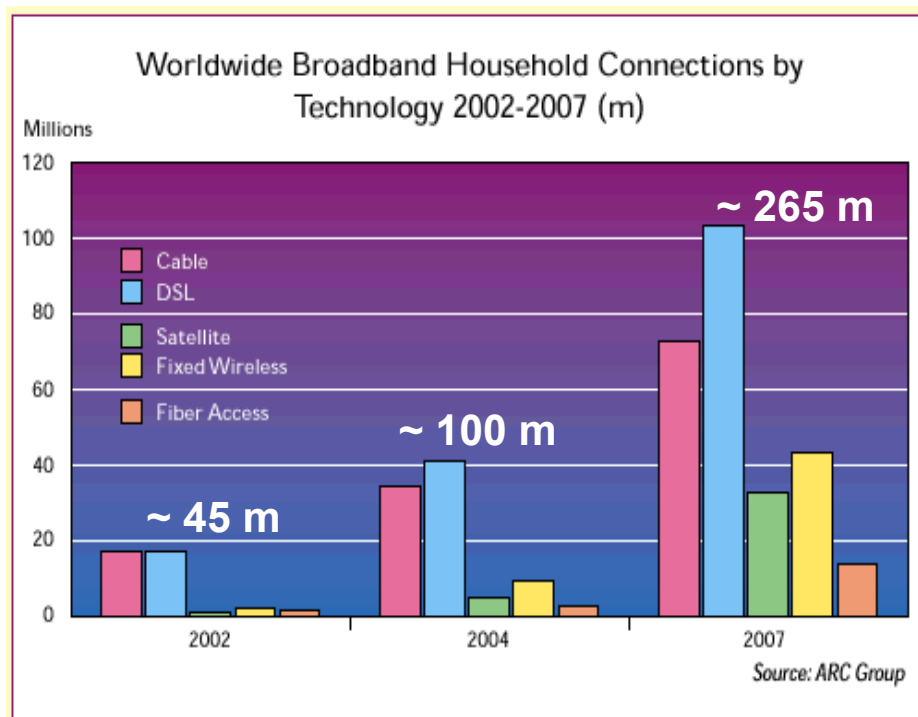**Intelligent Networking Components paramount**

Network Infrastructure is distributed

Broadband Consumer Market

Worldwide Broadband Household Connections by Technology 2002-2007 (m)

Millions

- Cable
- DSL
- Satellite
- Fixed Wireless
- Fiber Access

~ 265 m

~ 100 m

~ 45 m

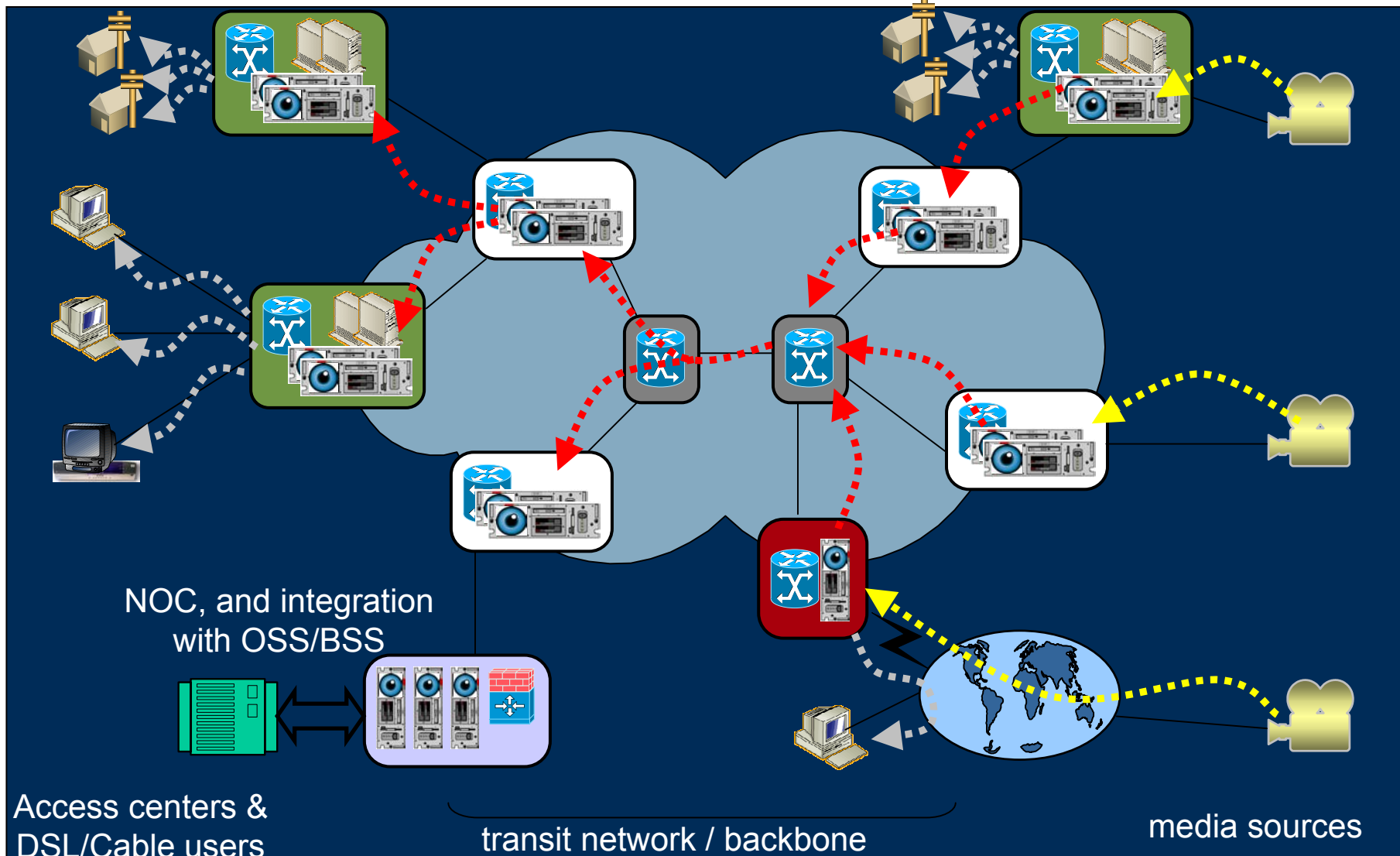2002   2004   2007

Source: ARC Group

- **Total # Of DSL subscribers has reached 36 million at the beginning of 2003**

- **In 2003, the growth rate in the # of DSL subscribers exceeds 200% in many countries in eastern Europe and Asia**

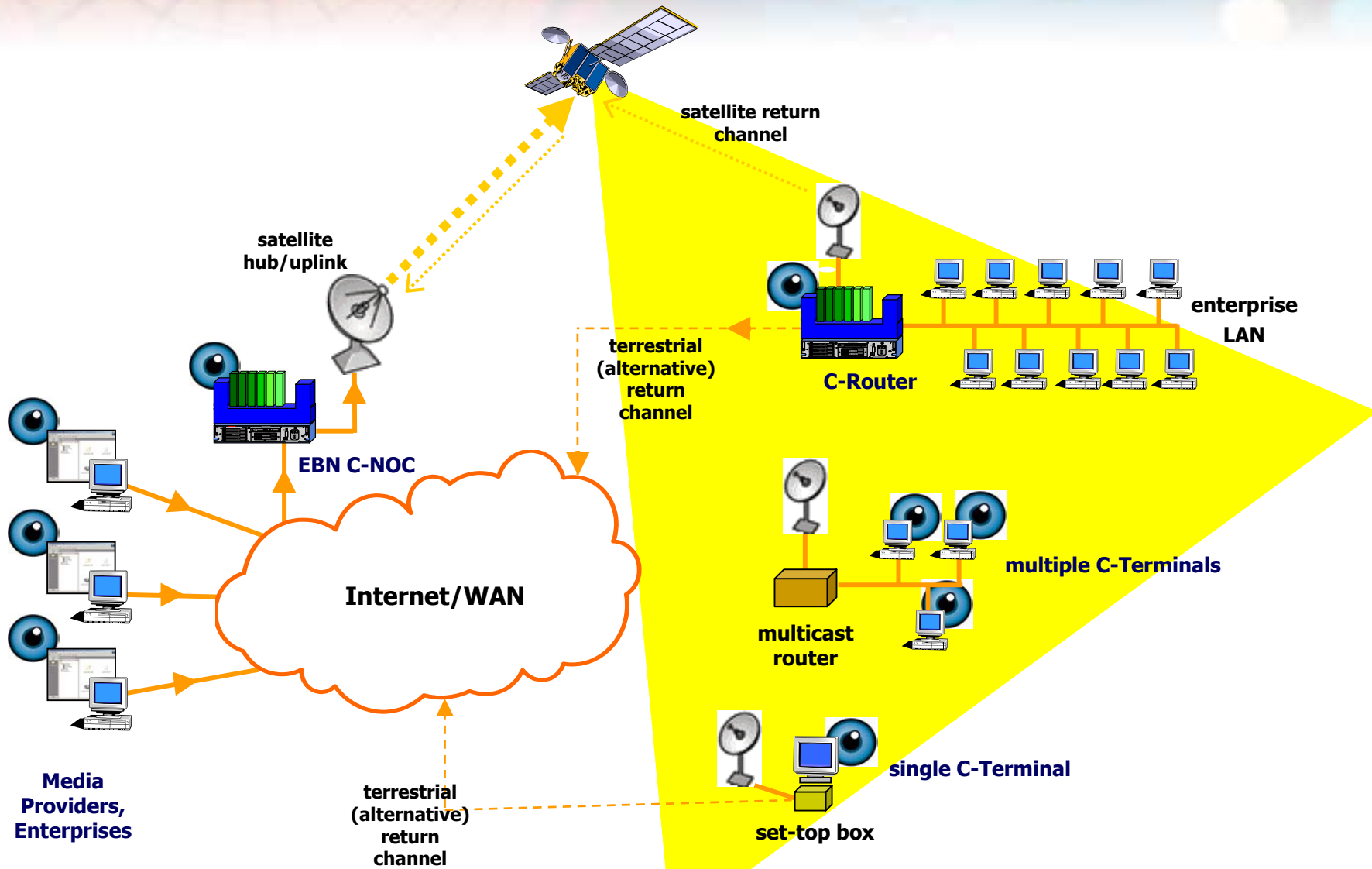# From Broadband Access to Broadband Services
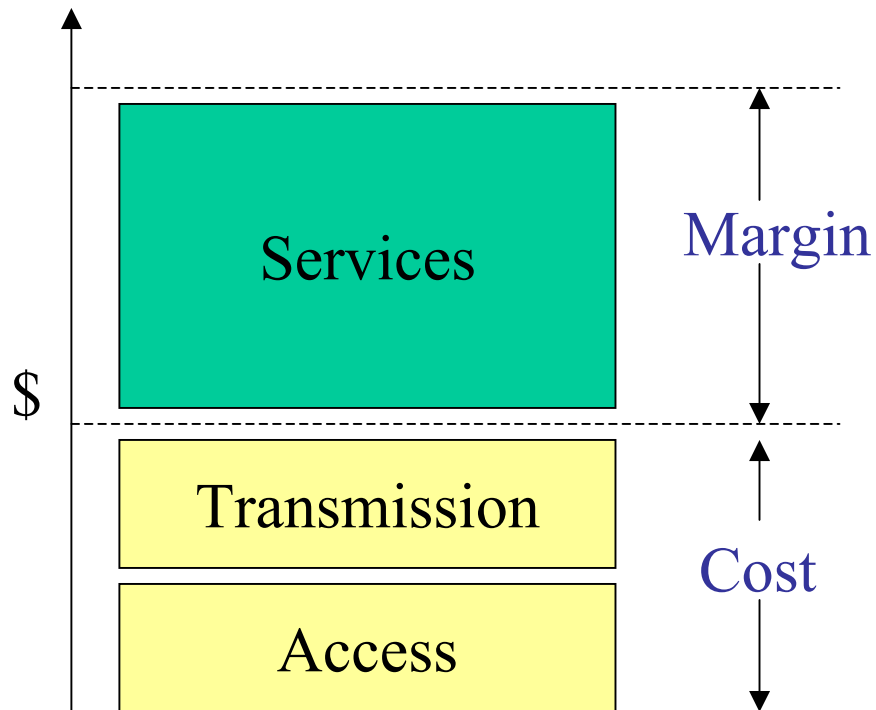
- Value-added Services will increase Broadband Operators' margins

- From Connectivity to value:
  - Video-on-Demand
  - Pay and Interactive TV
  - Live Events and Concerts
  - Music on Demand
  - …

# DSL/Cable Broadband Services: VoD, PayTV, etc..

NOC, and integration with OSS/BSS

Access centers &
DSL/Cable users

transit network / backbone

media sources

Satellite Broadband Services

satellite return channel

satellite hub/uplink

terrestrial (alternative) return channel

enterprise LAN

C-Router

EBN C-NOC

Internet/WAN

multiple C-Terminals

multicast router

Media Providers, Enterprises

terrestrial (alternative) return channel

single C-Terminal

set-top box

Mobile Networks: From Voice to Data Services

- Mobile operators and service providers MUST develop mobile data and multimedia services to sustain their revenues:

  - By 2010, average monthly revenues from voice services per user (ARPU) will drop from $28 to $16 "*Telecompetition, August 2003*"

  - Mobile Data services ARPU must grow from $2 today to over $12 by 2010, $10 of which coming from **Advanced Mobile Data Services**, i.e. video, audio, and photo downloads and delivery "*Telecompetition, August 2003*"

  - Advanced Mobile Data Services (delivered on 3G and 2.5 G networks) will generate **$47.5 Billion** revenues worldwide in 2005 "*Telecompetition, August 2003*"
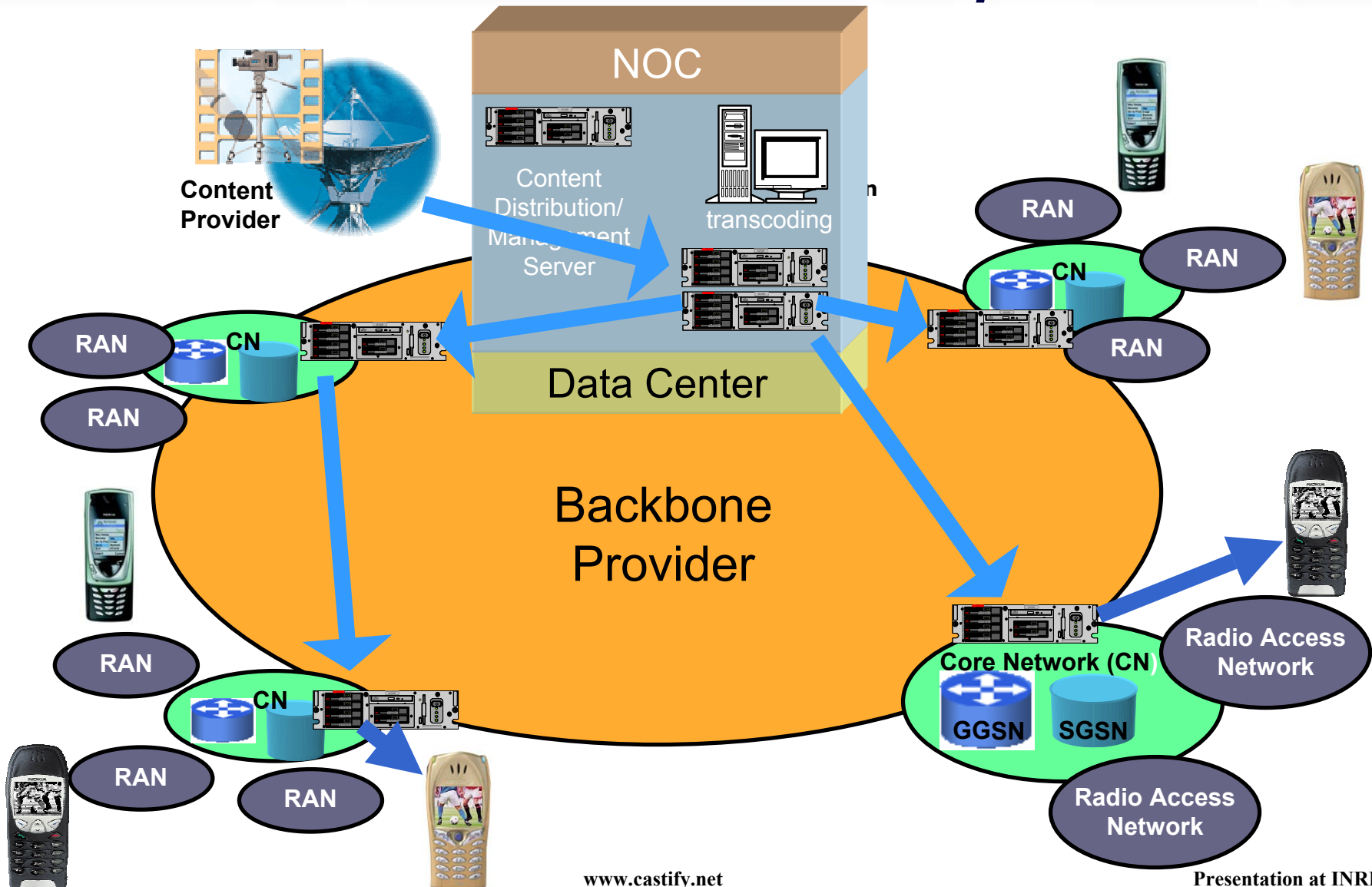
Mobile Services Landscape

voice

data

video
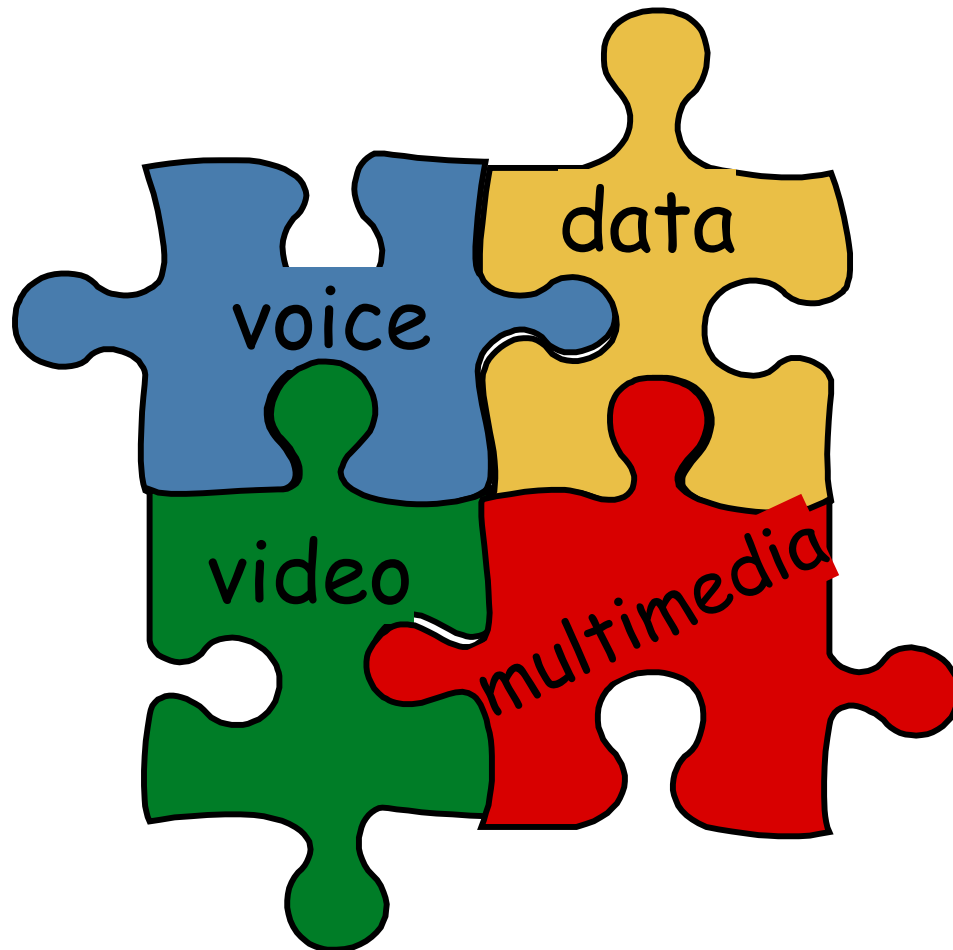
multimedia

Challenges

- Enable delivery of multimedia content

- integration of new services

- distribution of many types of content across network with limited bandwidth

Advanced Mobile Services: A/V Clip Download

NOC

Content Provider

Content Distribution/ Management Server

transcoding

Data Center

Backbone Provider

RAN

CN

Core Network (CN)

GGSN

SGSN

Radio Access Network

Radio Access Network

# Large Enterprises: The Challenge

- **Heterogeneous Network Capacity**
  - Gigabit capacity within the Intranet and the LAN
    - Bandwidth is available behind the Firewall
    - Bandwidth demanding applications can be supported only locally
  - Only few Megabit capacity between offices and to the outside
    - Bandwidth bottleneck between the enterprise's offices, remote locations, and sales outlets

- **Large companies permanently need to**
  - Adapt their IT infrastructure to support their evolving businesses
  - Run their business processes more cost efficiently (reduce cost)
    - Distribution of large volume manuals, software updates, training material, sales updates, strategy speeches, etc..
  - Reduce cost of sales / increase net margin
 - Protect their IT investment

Large Enterprises: Applications and Services

- A huge and vast market in several industries
    - Automotive, Financial, IT, Retail, Governments, etc.

- A broad range of Applications
    - Digital mass data distribution and delivery,
    - e-Training and e-Learning,
    - software distribution and update
    - Corporate communication, Business TV, Earning announcements
    - Point of Sales, Point of Information, Kiosk Systems
    - Distributed File & Storage Management

- *Aberdeen report (March 2003)* shows that managed content delivery can cut as much as 50% of communication cost of production and transmission.

Enterprise Broadband Platform
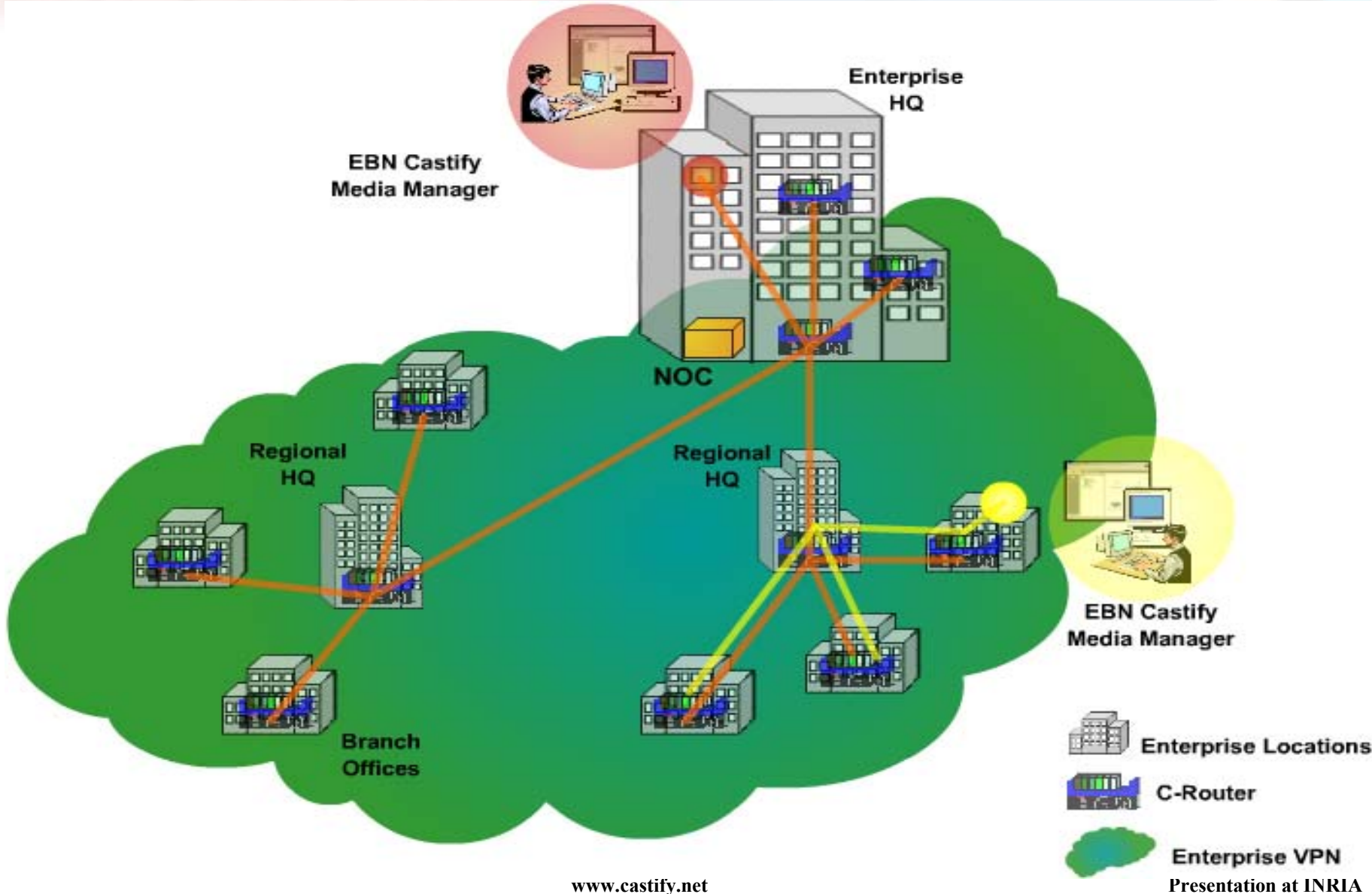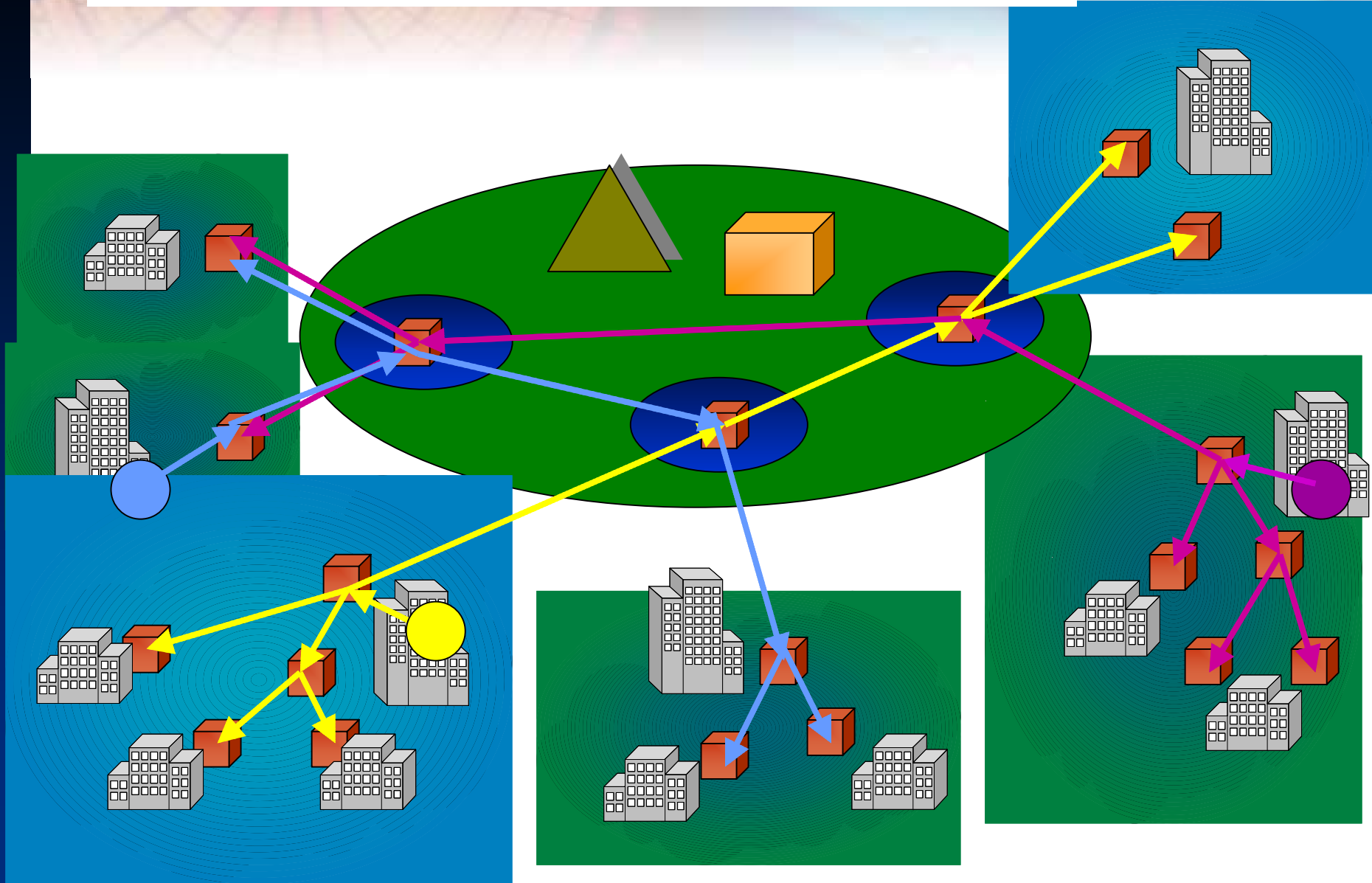
Castify's Mission

Castify's Mission

- Be the leading provider of **Managed Content Delivery Software** for

  - ☐ **Network and Service Providers** to run, manage, and scale their broadband media services (*video on demand, PayTV, download and play services, etc.*)

  - ☐ **Large enterprises** to support their Broadband Applications (platforms for *mass data transfer, staff and sales training, employee communication, sales support, software updates, etc*.)

  - ☐ **Mobile Operators** to run, manage, and scale their Advanced Mobile Data Services (*video and music clip download and display, infotainment, etc.*)

Castify's Mission

- Build a fully <u>secure</u> and <u>scalable</u> software platform for <u>controlled</u> content distribution and delivery

- Build a software platform that runs on <u>hybrid networking</u> environments and supports many:
  - <u>Applications</u> (ranging from VoD through PoS to distributed storage management)
  - <u>Media formats</u> (WMF, Real, MPEG4, MPEG2, Packet Video, etc.)
  - <u>Business models</u> (subscription, pay per view, pay per download, bandwidth-based, storage-based, etc.)
  - <u>Receiving devices</u> (server, PC, SetTopBox, TV, etc.)

Thank you

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