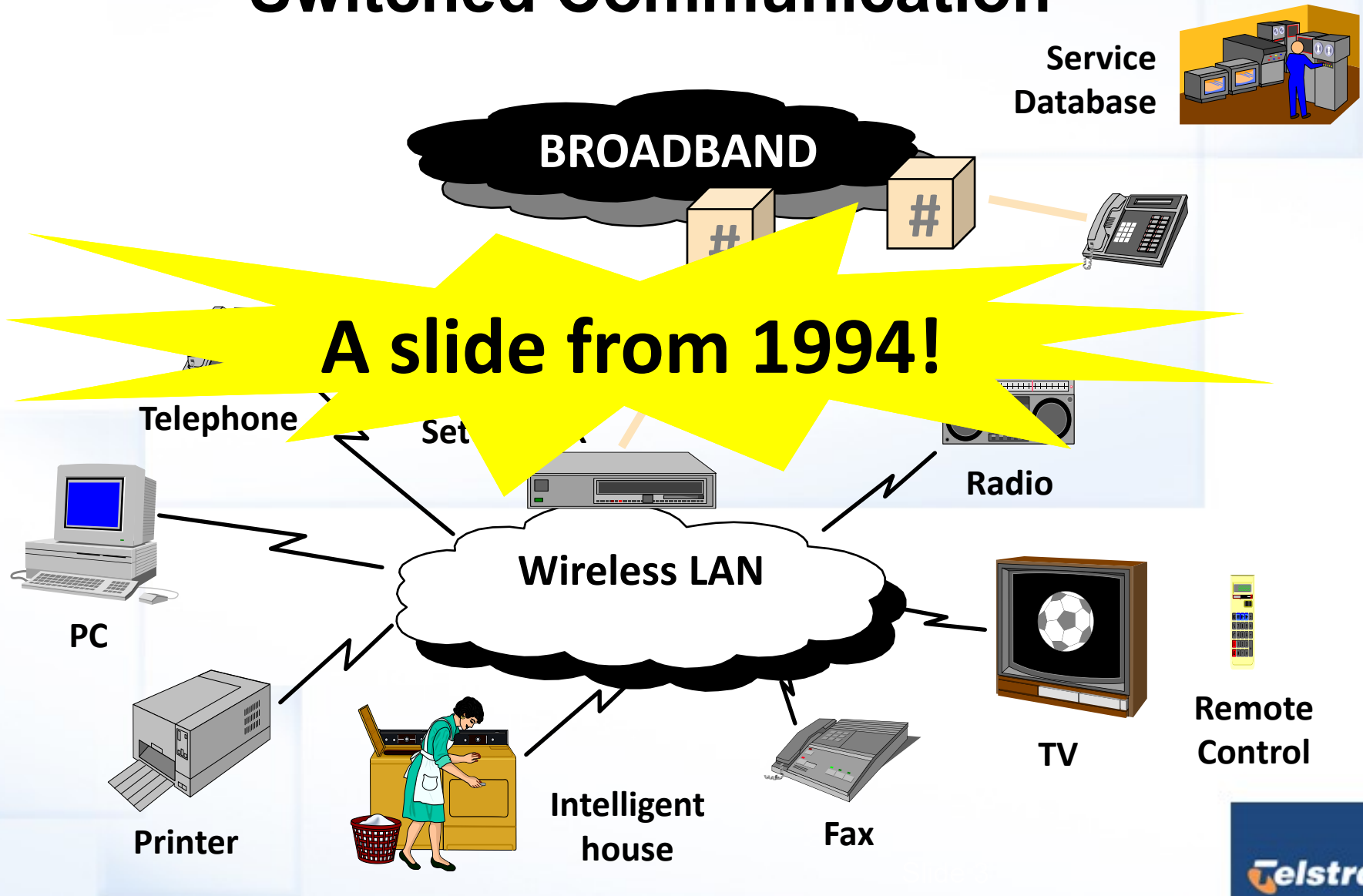


Ten Years at TRL

Hugh Bradlow

Plus le change, plus le meme chose

Convergence of Broadcast Entertainment & Switched Communication



1995: The Internet

What is the Internet?

- A computer networking technology
 - TCP/IP
- A specific network of networks (*'the Internet'*)
 - defined by its address spaces
 - IP, Domain Names. user ID's
- A set of services
 - to be discussed
- A political philosophy
 - independence - individuals are not beholden to anyone else
 - communal ownership - no barriers to exchange of

Slide from 1995

1996: The “Data Paradigm”

Presentation to NSPC'96

The Inevitable Evolution to a Data Paradigm

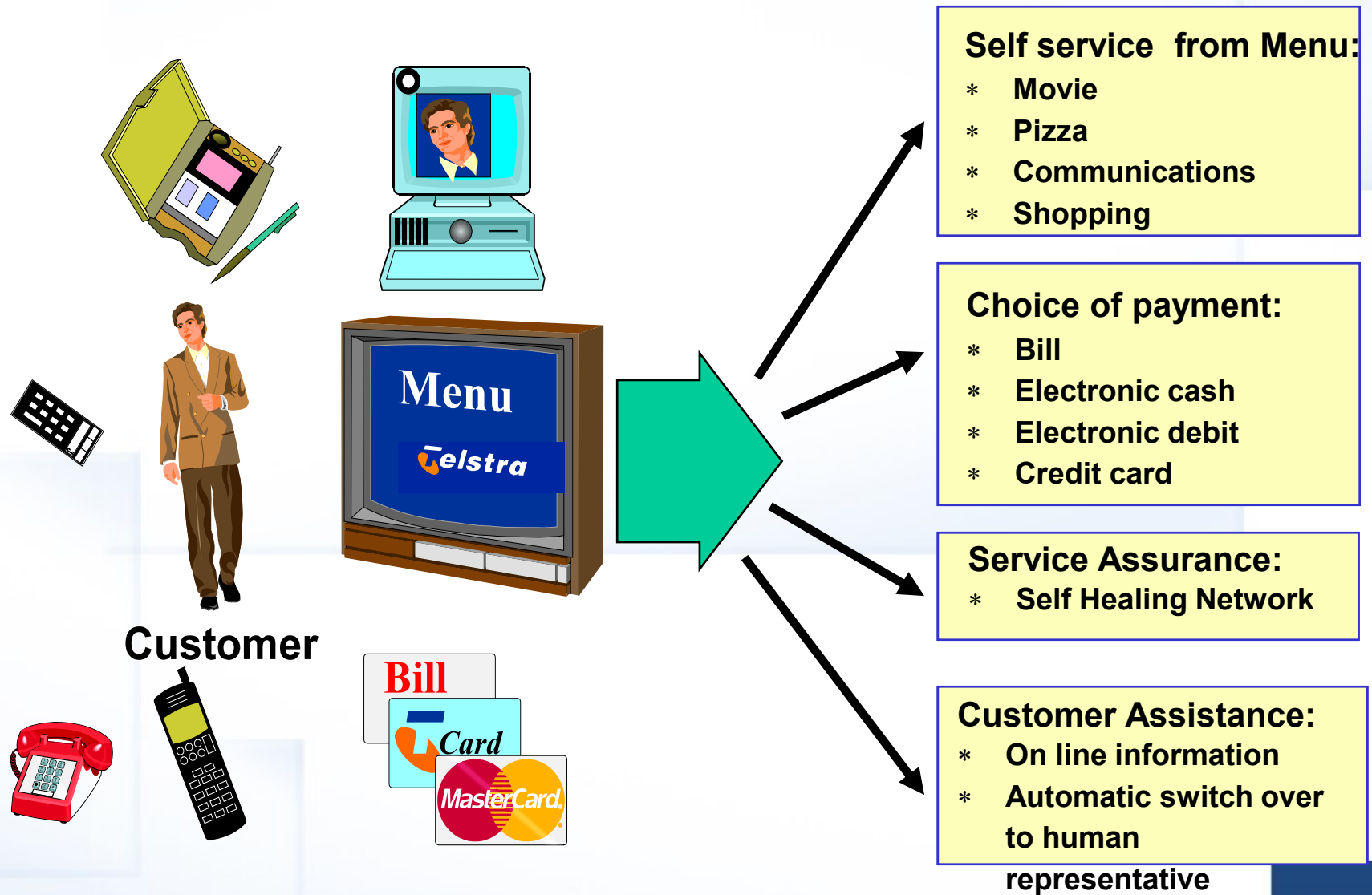
(or Chaos Theory)

by

Hugh Bradlow

Telstra Research Laboratories

Changing to Customer Focus



1998: DMO

1998: DMO Overview pack

Data Mode of Operation

**How will we operate Telstra's networks,
systems and processes in a world
dominated by a data paradigm?**

1999: Convergence

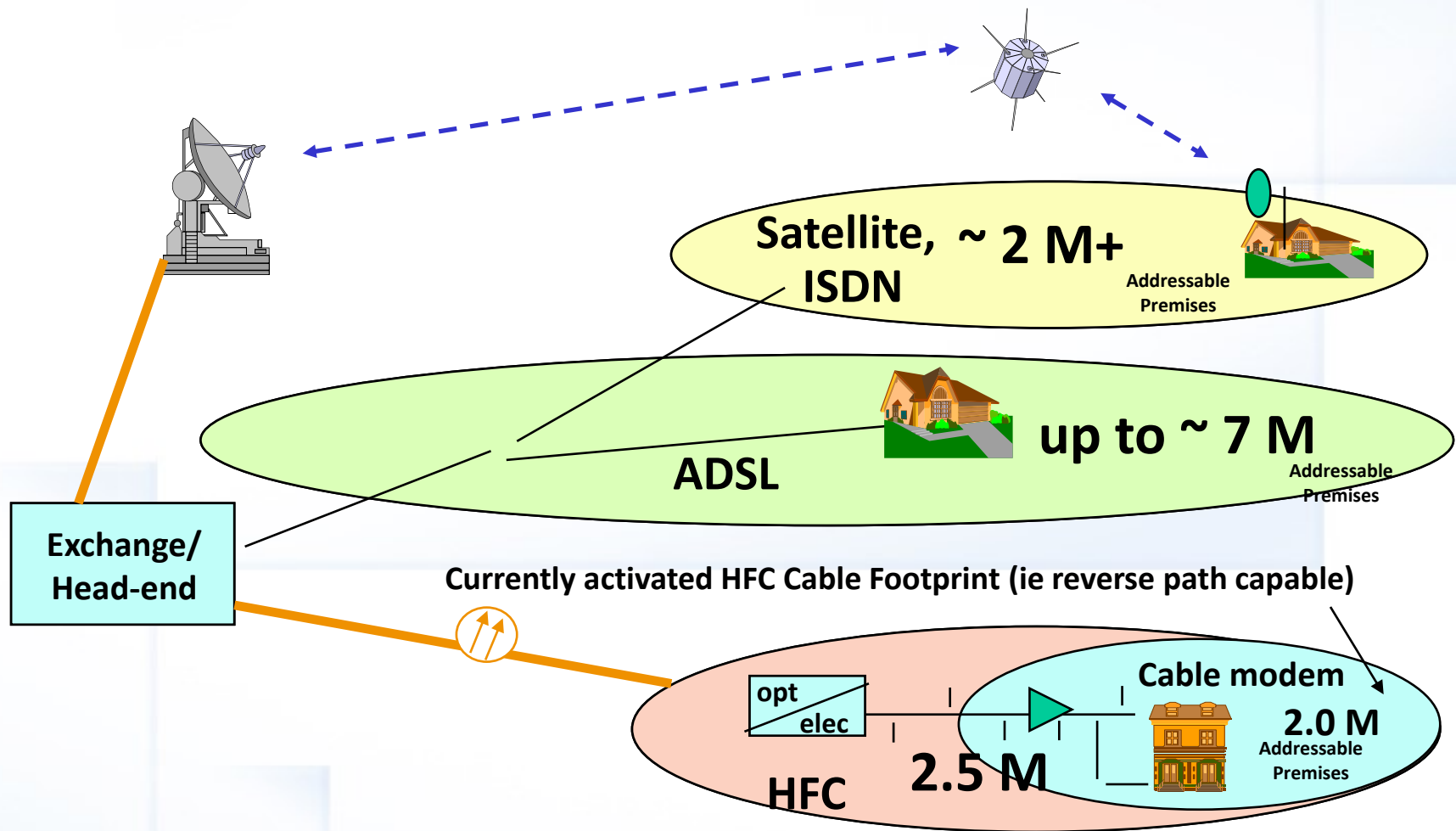
Convergence

- **Convergence is the confluence of telephony, data (Internet) and broadcast (audio/video) services to the customer**
- **There are 3 levels of convergence:**
 - **Service bundling (packaging)**
 - the customer receives all services through a single sales channel and is tarified based on the complete package of services taken
 - **Service integration**
 - the services interact with each other to provide new (or enhanced) services to the customer - e.g. Webdial 1800, interactive TV
 - **Access integration**
 - all services are delivered to the customer via the same access network interface

NSPC'99 Presentation

2000: Broadband

How Telstra is broadbanding Australia



Telstra Economic Coverage Access Markets

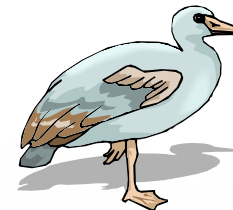
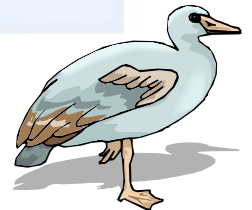
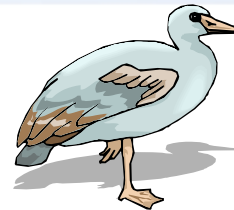
Slide from 2000

2001: The Year of the Ducks

The story of the 3 ducks (but not seagulls)



**Content &
Applications**



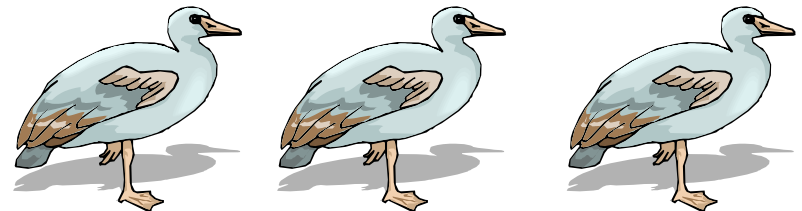
The story of the 3 ducks (but not seagulls)



New
Devices



**Content &
Applications**



2002: Carrier Class

Operations and carrier class

- **Cost rationalisation of infrastructure**
 - Server farms are expensive to manage
- **Inter-working and flexibility**
 - Customers and features overlap (e.g. authentication, billing, etc)
- **Management and operations**
 - Volume growth: More features lead to more moves and changes
- **Carrier class**
 - Robustness and reliability more difficult to achieve due to relative immaturity of technology deployment and greater implementation complexity
 - Higher expectations of performance as functions become integral to business and daily lives

Slide from NSPC'02

2003: Mobile data

Two Important Developments

1. Laptops are becoming a mainstream “mobile device”
 - Services targeted at laptop users will be important
2. Mobile devices used in connection with other devices
 - Modem
 - IXI portable mobile gateway,
 - Nokia N-Gage / Nintendo Gameboy Advance / Playstation Portable, ...

These developments will cause increasing transfer of audio/visual material to and from the mobile user

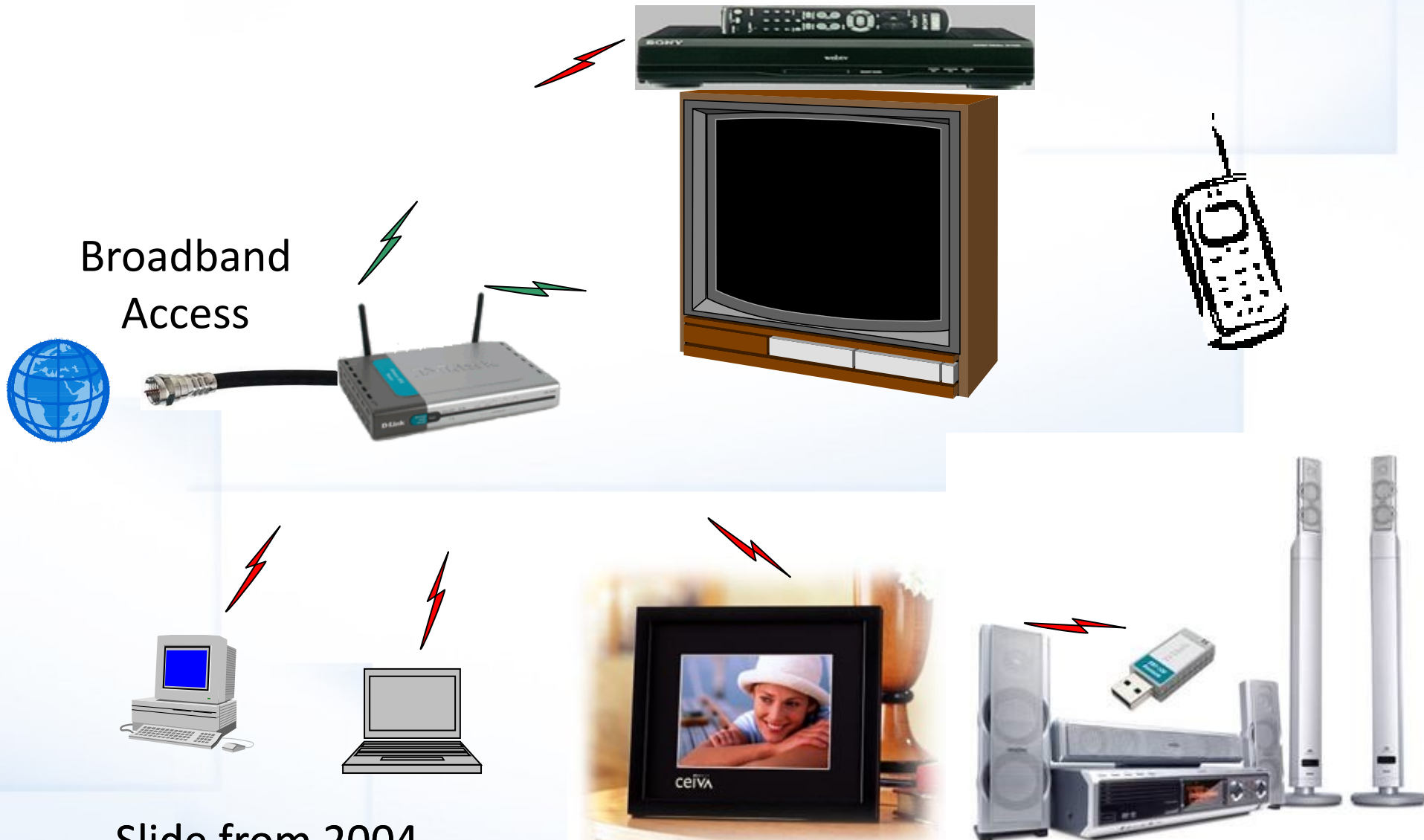
- Order of magnitude increase in data requirements



Slide from 2003

2004: Entertainment

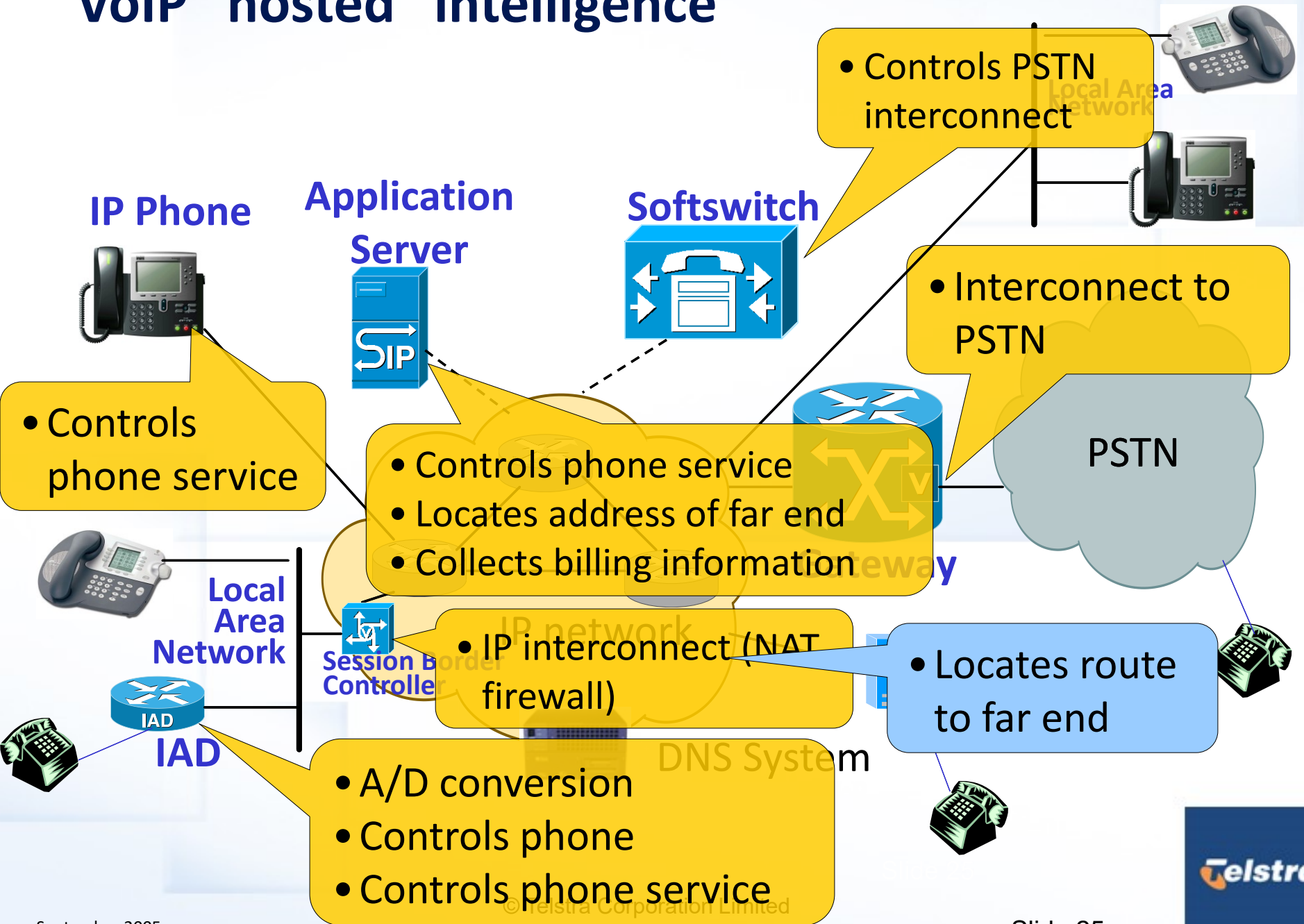
The broadband connected home – Phase 3



Slide from 2004

2005: VoIP

VoIP "hosted" intelligence



Are we there yet?

Doh!