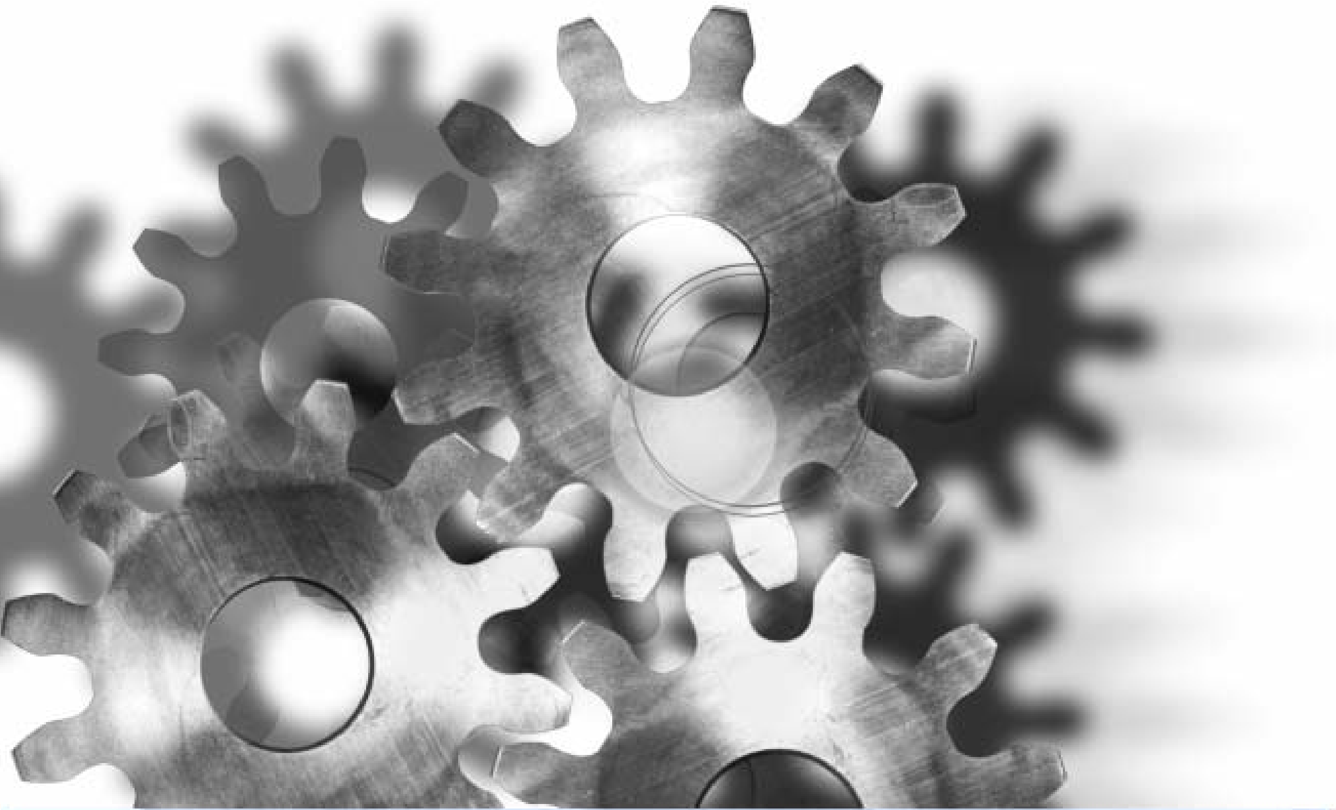

Digital, Home, and Quad Plays- the next frontier

Deepak Kamlani, President & CEO, Global Inventures

ITU-IMTC Forum, May 2006

Agenda

- About Global Inventures
- Digital Home Trends
- Quad Play Emergence
- Conclusions
- Q and A

Global Inventures Overview

Global Inventures
Accelerating Results Through Collaboration™

- **Founded 1992 – based in SF Bay Area**
  - 35 Team Members, focused on the Tech sector
- **We help create organizations developing Information and Communications Technology (ICT) standards and provide outsourced services to them**
  - 15 engagements today represent >2,000 tech firms globally
  - Broadband Wired/Unwired and Wireless, Mobility, Networked Consumer Electronics, Communications Protocols, and Enterprise Software categories
- **Our Services enable:**
  - Strategic Collaboration between stakeholders
  - Growth of ecosystems around new standards and initiatives
  - Improved market conditions and larger markets for products and services based on our clients' solutions ($20B+ TAM to date)

We accelerate results through collaboration

Inventures Clients

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MOBILE DTV ALLIANCE

ZigBee™ Alliance

50x15 PROGRAM
AMD
www.amd.com/50x15

WWW.SDCARD.ORG
SD Card Association

WiMedia ALLIANCE

IMTC

The Parlay Group

UPnP™
IMPLEMENTERS CORPORATION

OSGi™
OPEN SERVICES GATEWAY INITIATIVE

HomePNA, Inc.™
Home Phoneline Networking Alliance

MoCA
MULTIMEDIA over COAX ALLIANCE

HOMEPLUG®
POWERLINE ALLIANCE

WINA
WIRELESS INDUSTRIAL NETWORKING ALLIANCE

Enterprise Grid Alliance

OASIS DCML
Standardizing Information Exchange for the Data Center Environment

Our Services

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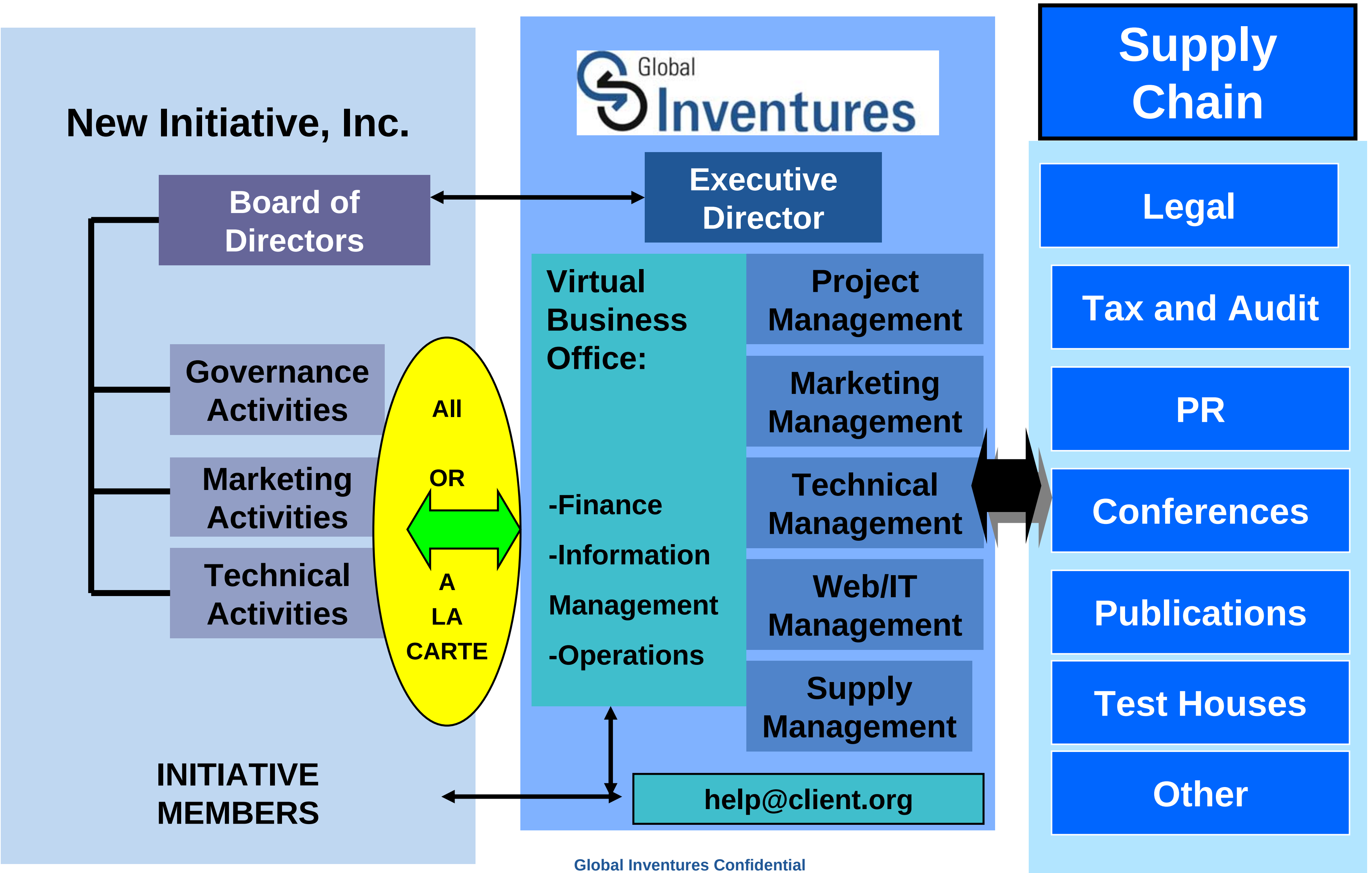

Basic Premise

The Digital Home is at the cusp of a Metcalf's Law* evolution and is roughly where the Office was 20 years ago

Broadband Penetration	+	Wired and Wireless Home Nets	+	Networked Fixed & Mobile Devices	+	Triple & Quad Play Services	=	

*The "value" of a network increases in proportion to the square of the number of nodes on the network

Digital Home Trends

- **440 Million Broadband homes globally by 2010**
  - Estimated 190 million now
- **Wide range of distribution and in-home network options available**
  - Wired/No New Wires/Wireless
- **More and more connected devices in home**
  - 175M networked nodes forecast in 5 years
- **More ‘networkable’ and ‘sharable’ content daily**
  - Consumer demand shifting from basic connectivity to ‘time shifting’ (e.g. TiVO) and now ‘place shifting’

Digital Home Drivers

- Data Networking (basic need)
  - Shared High Speed connections, File sharing, Networked printers and computers/computing
- Entertainment and Content (happening now)
  - Place Shifted Distribution
  - Multiple High Definition Video Streams, Audio, Downloaded Content, Pictures, Gaming-- Whatever
- Safety/Security and Energy Management
  - Monitor key resources
  - Sensing and Control applications
- Converged Applications
  - Incorporating Mobility

Digital Home Value Chain

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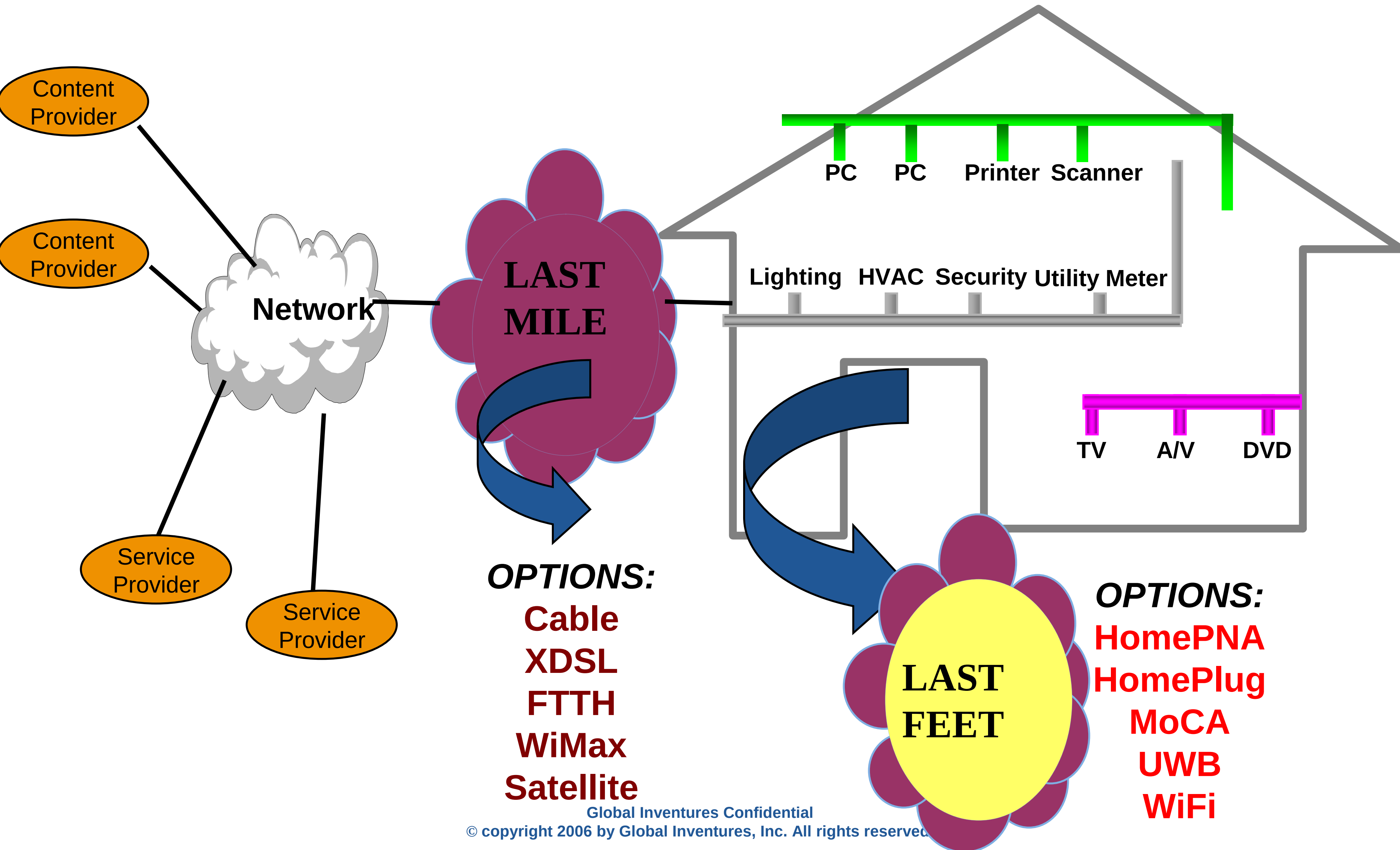
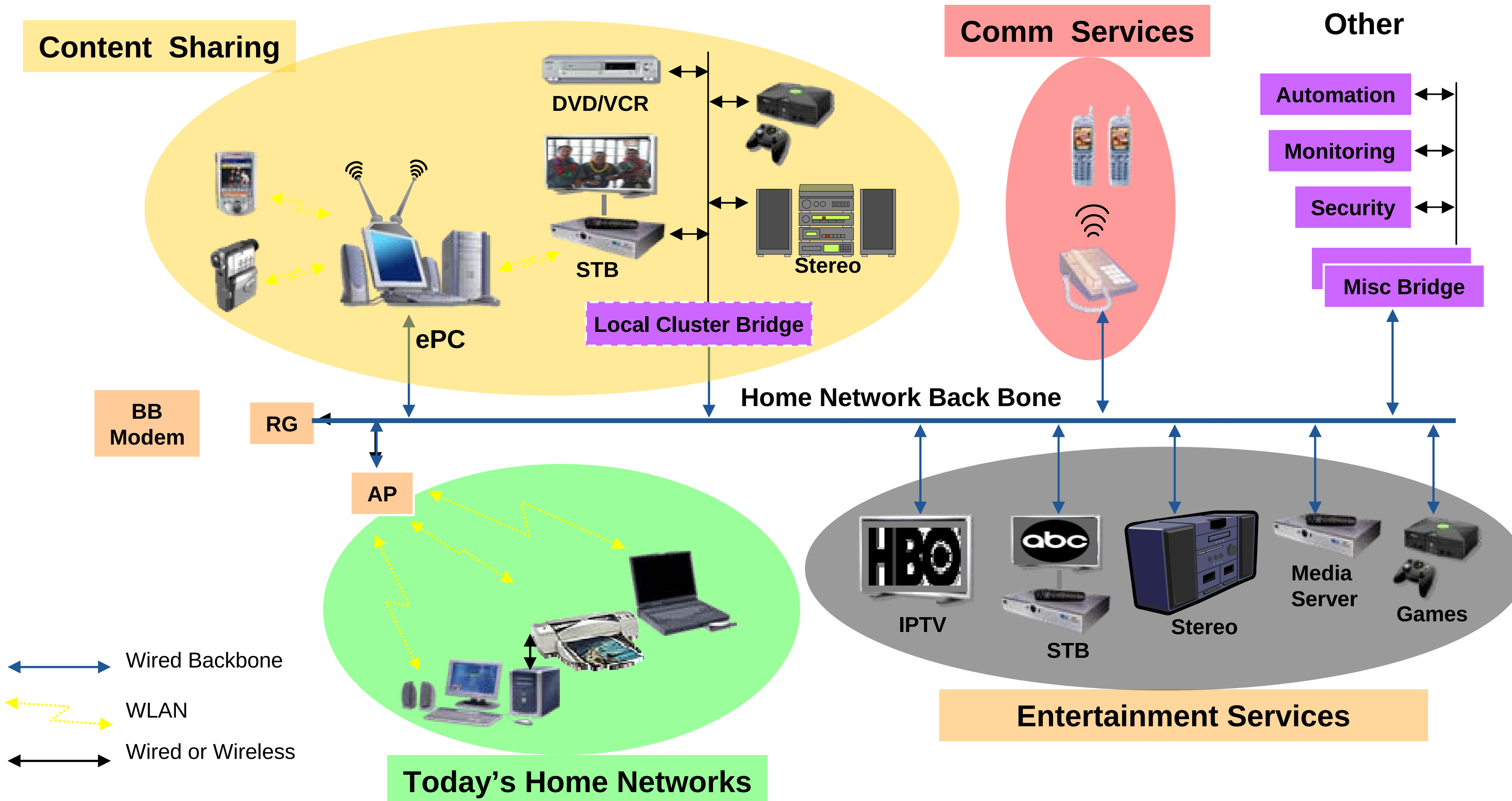


The Digital Home is an aggregation of Demand Clusters

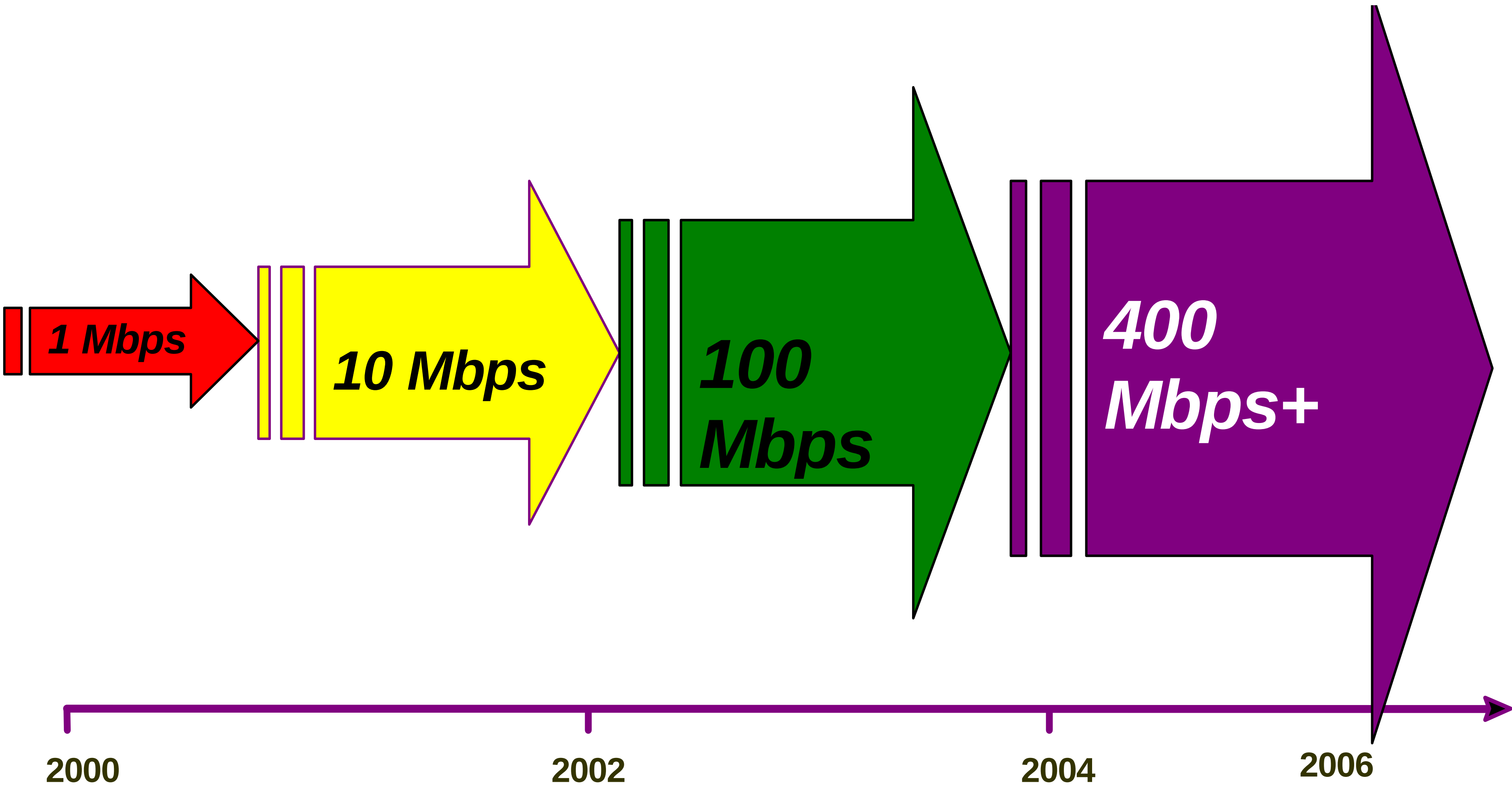


Source: Intel

The driving force is VIDEO

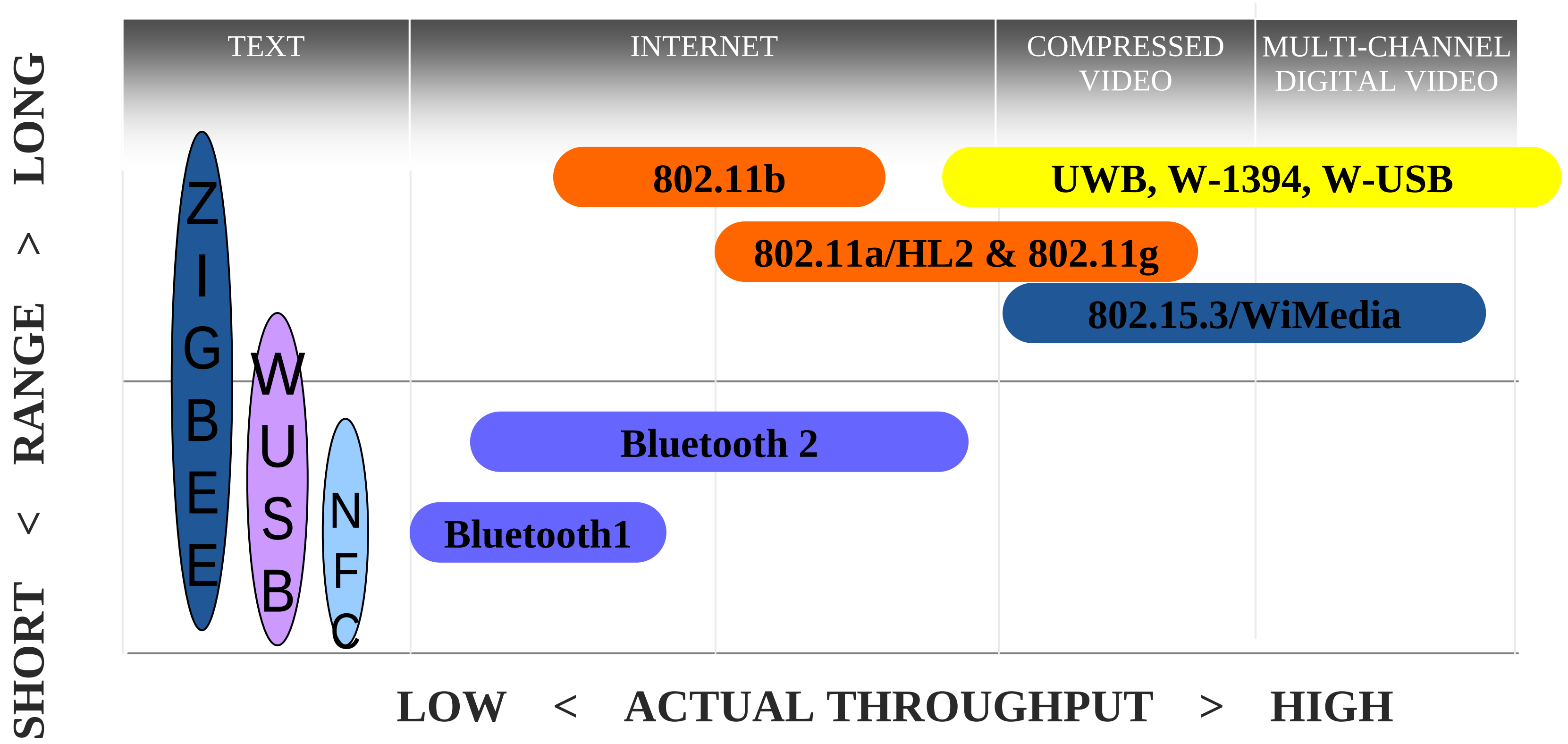
- Receive It
- Watch It live
- Time Shift it
- Place Shift it
- Share it

Wired Bandwidth will be and is there



In Home Network Bandwidth/No New Wires

Wireless Bandwidth Is Also There



Operators have landed on the Triple Play to drive RoI on pipes

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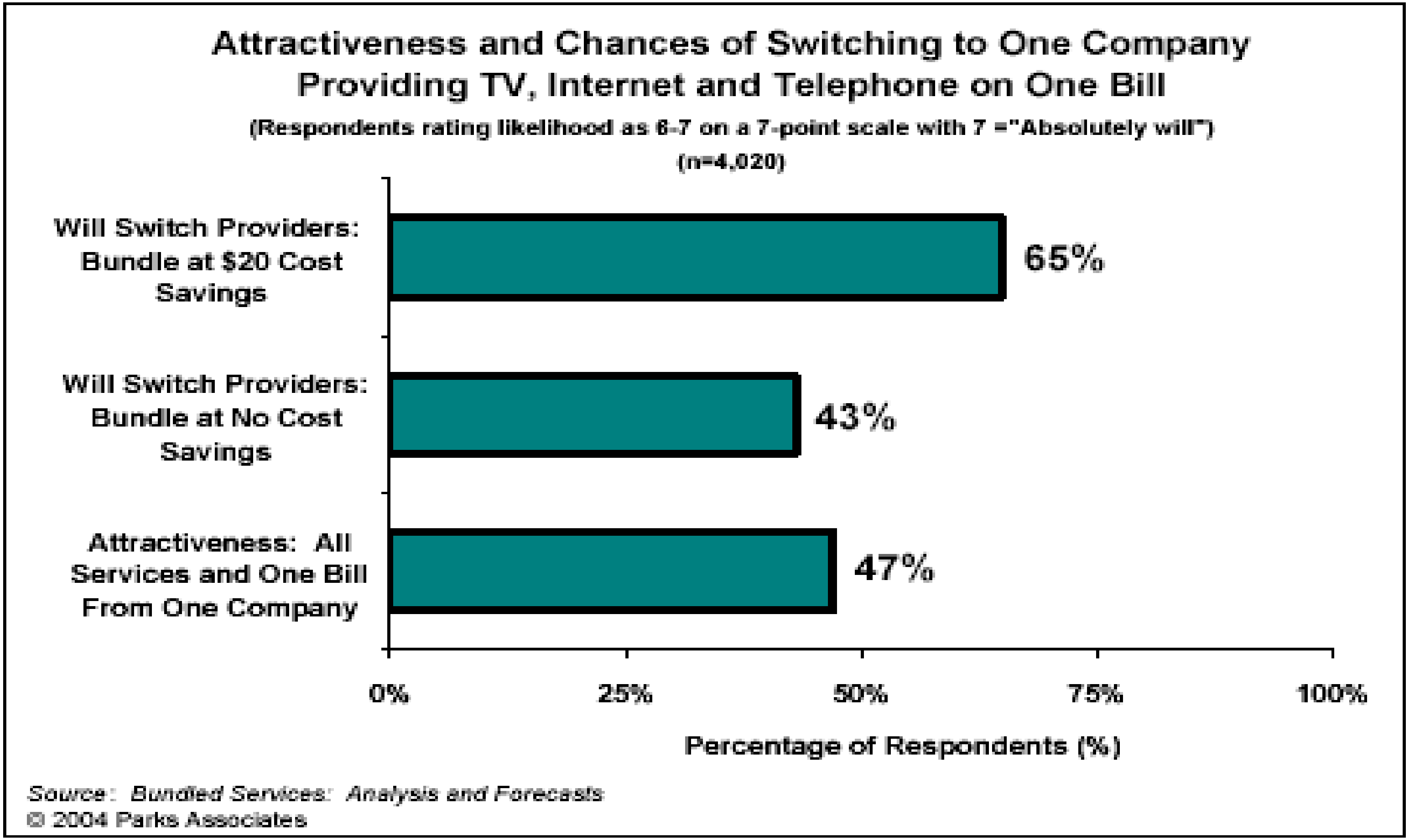
$255 Monthly Expenditures per home *Multi Operator*

$52 Long Distance
$48 Local
$45 BB Access
$45 Cable/Sat
$27 Home Security
$19 Internet TV
$10 Kids Prog
$9 PPV

<$255 Monthly Expenditures per home *Single Operator*

Bundled V/D/V Services

---And to drive stickiness



--And to meet consumer needs

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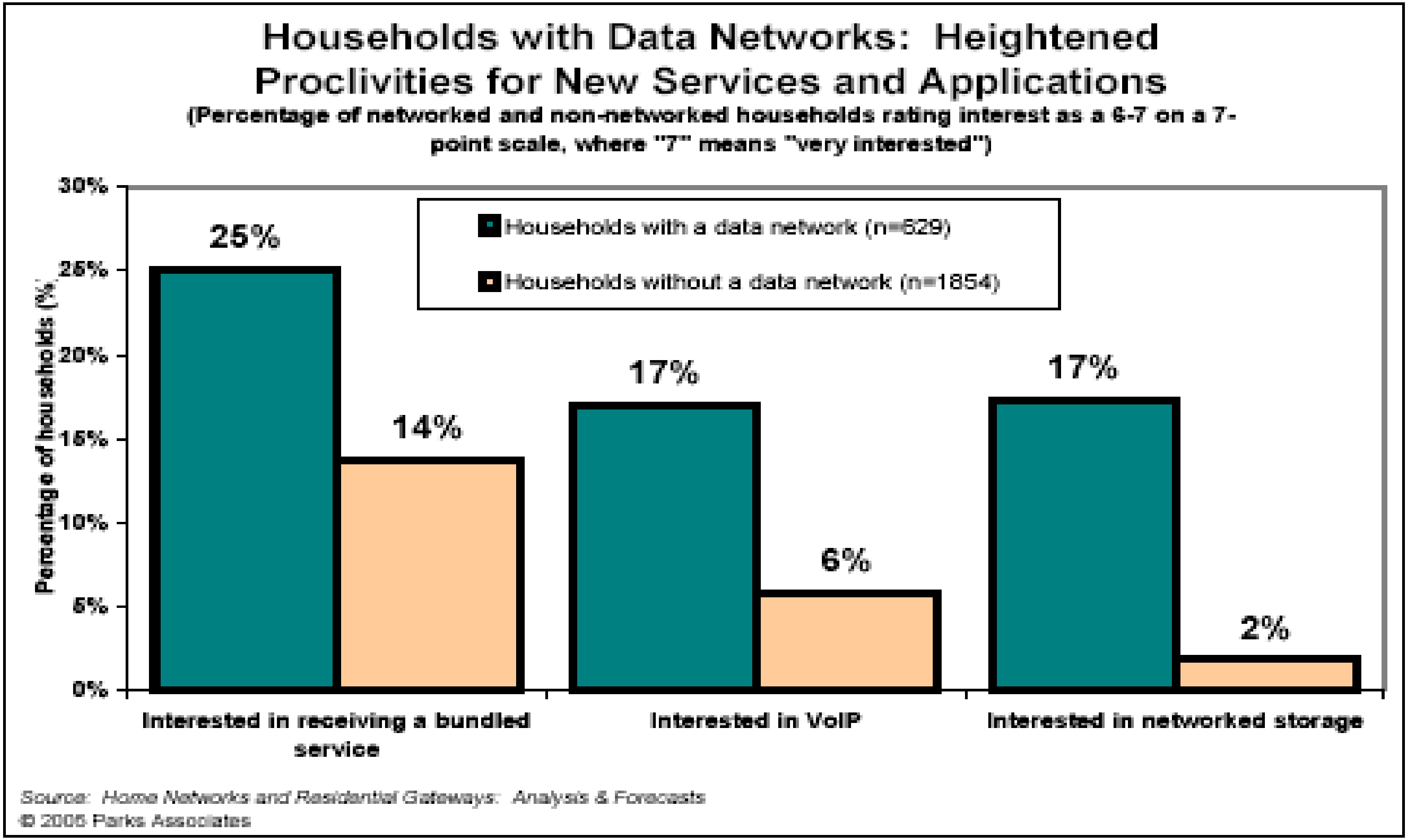
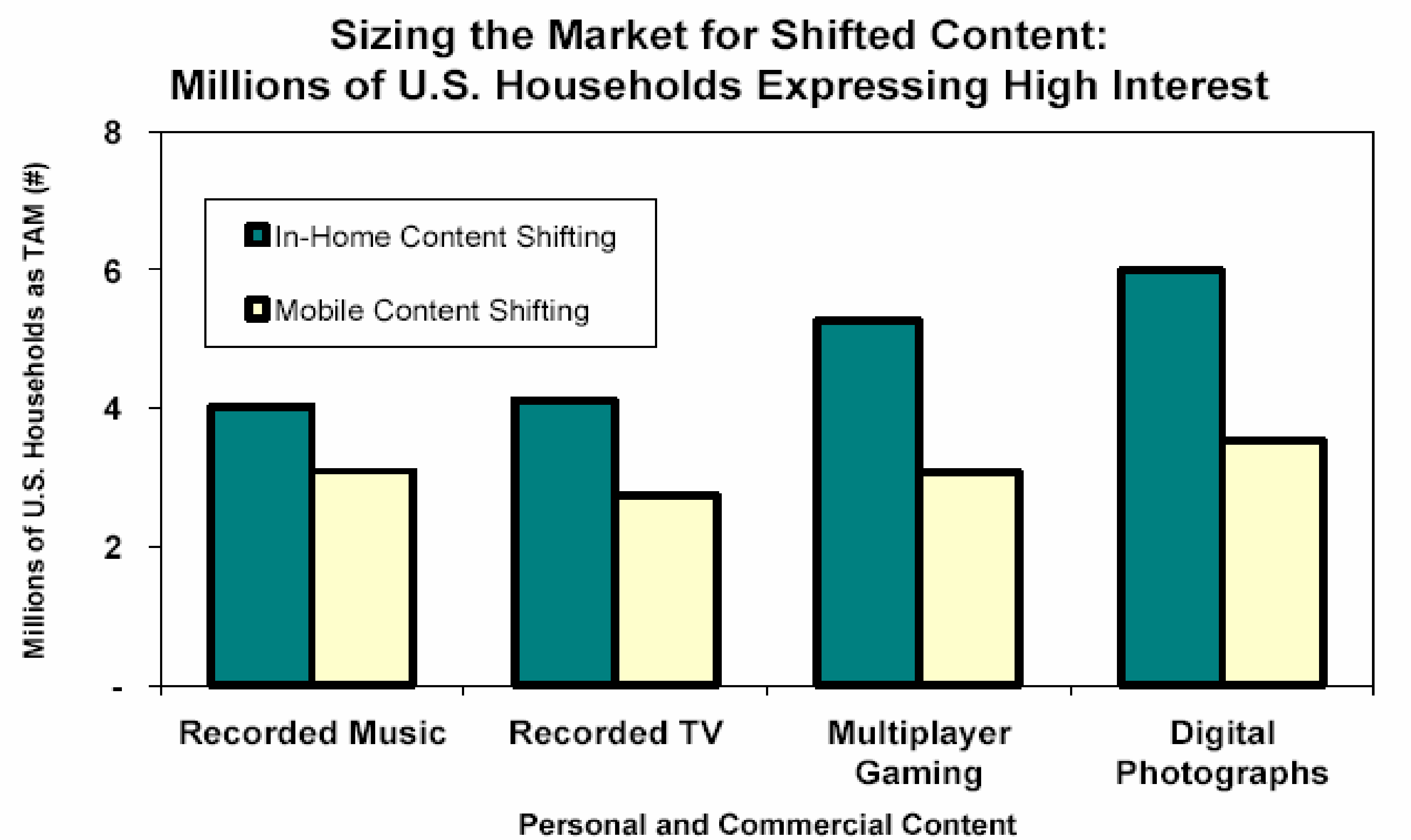
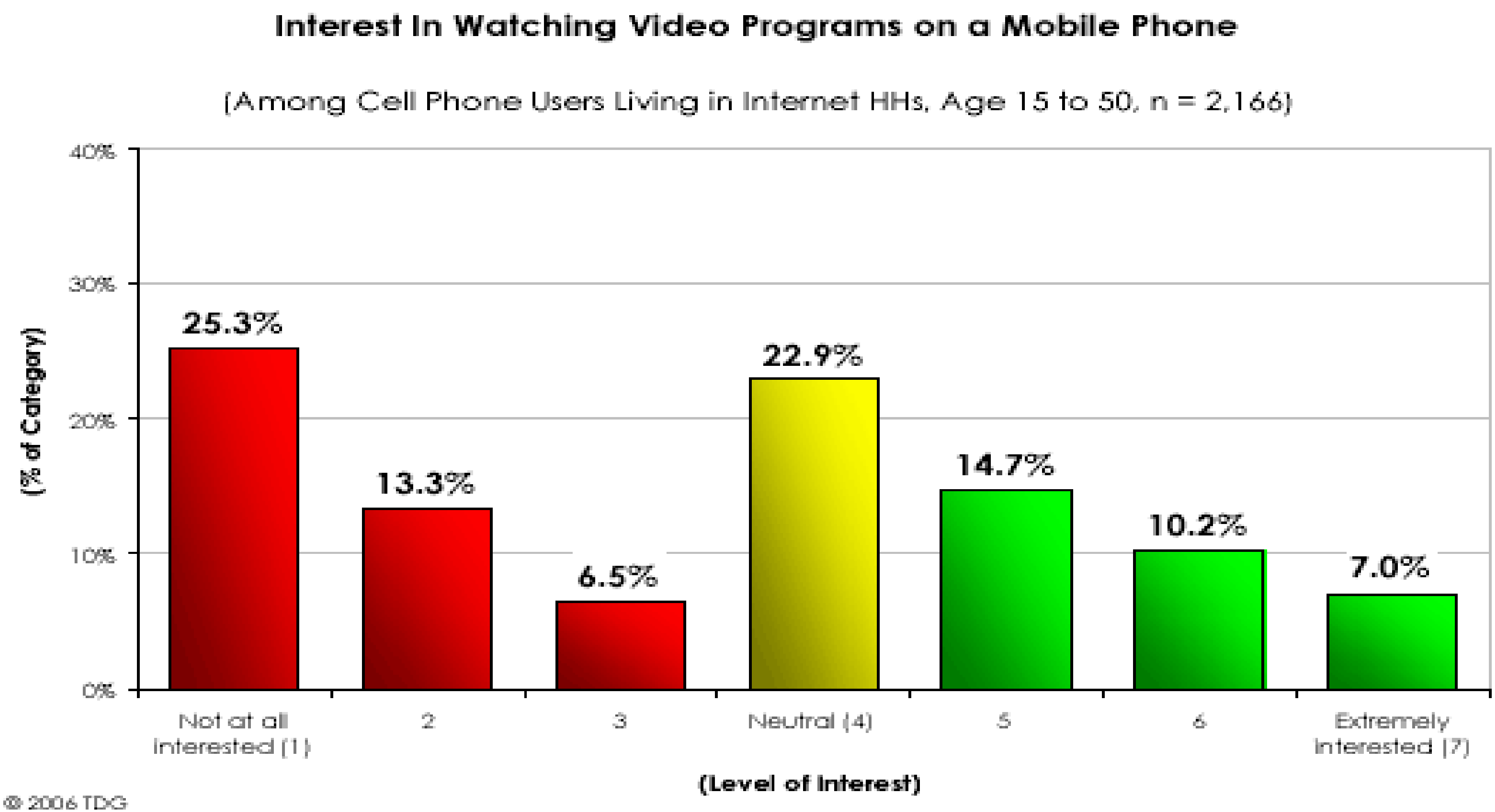


Consumers Want to Placeshift Content



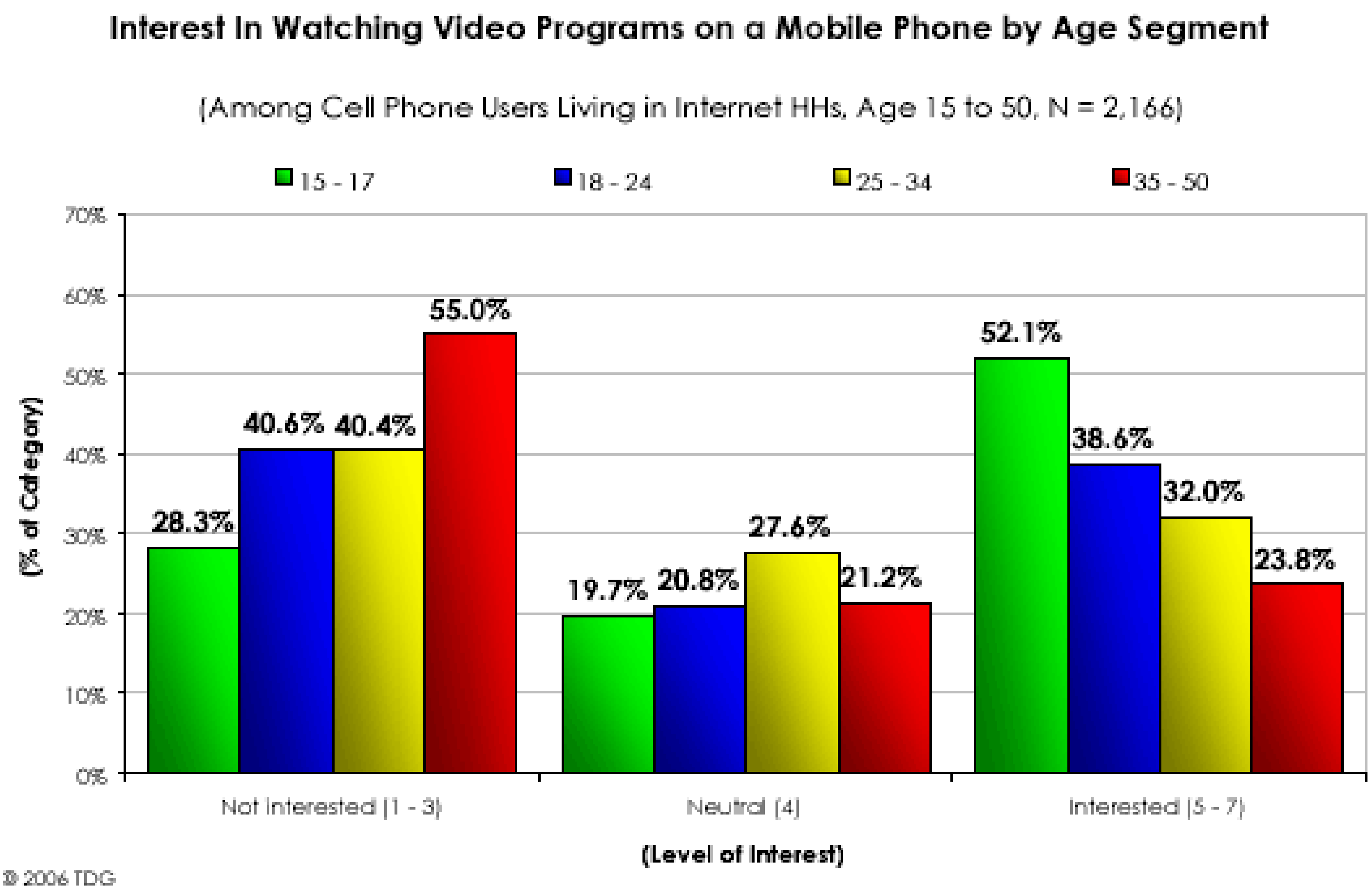
Source: Parks Associates' primary consumer research, 2H 2004
© 2005 Parks Associates

Mobile Devices play strongly in the Placeshifting trend/Quad Play

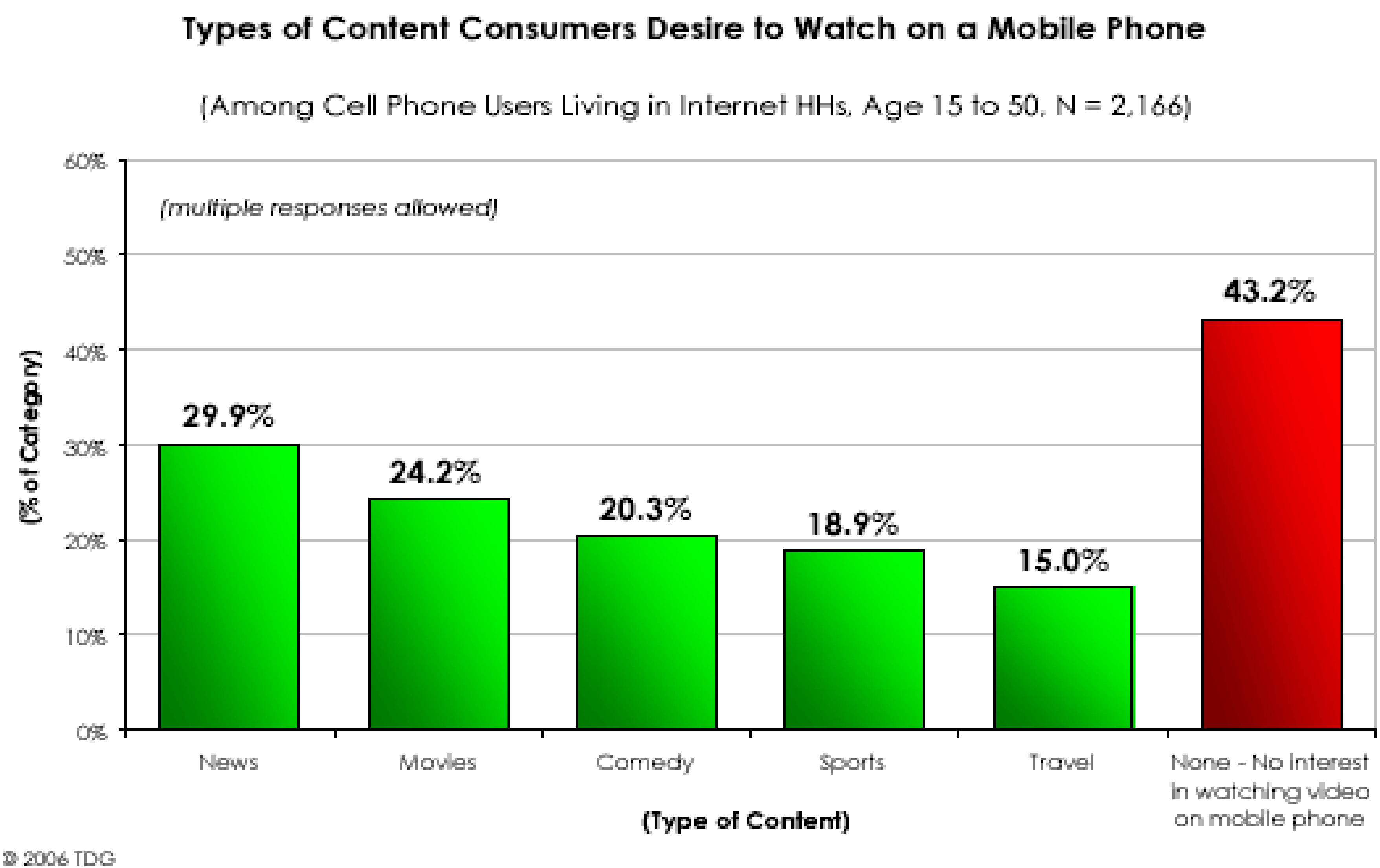


Source: TDG Opinions

The *Kids* Know Where It's At--



Interest extends to all types of content



The Ecosystem is taking shape

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MOBILE DTV ALLIANCE

- **Goal**
  - **To promote the best practices and open standards that deliver premium-quality digital broadcast television to mobile devices**
  - **Accelerate DVB-H development and deployment in North America**
- **Industry Benefits**
  - **An open value chain alliance offers more than one mobile DTV implementation alternative**
  - **Financial benefits through scale of operations across value chain**

Mobile DTV Alliance Founders

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Membership at ~30 Companies after 90 days – now includes Broadcom, Freescale, Philips, Samsung, Sony Ericsson

DVB-H is the baseline solution

- **Potentially 500 million mobile users will have access to DVB-H by the end of 2010**
- **DVB-H is the most widely used mobile DTV standard worldwide serving US, Europe and Asian markets**
- **Multiple DVB-H trials underway today, including:**
  - Australia, Finland, France, Germany, Italy, the United Kingdom and the United States, Malaysia, Spain, and more

The Mobile TV Value Chain

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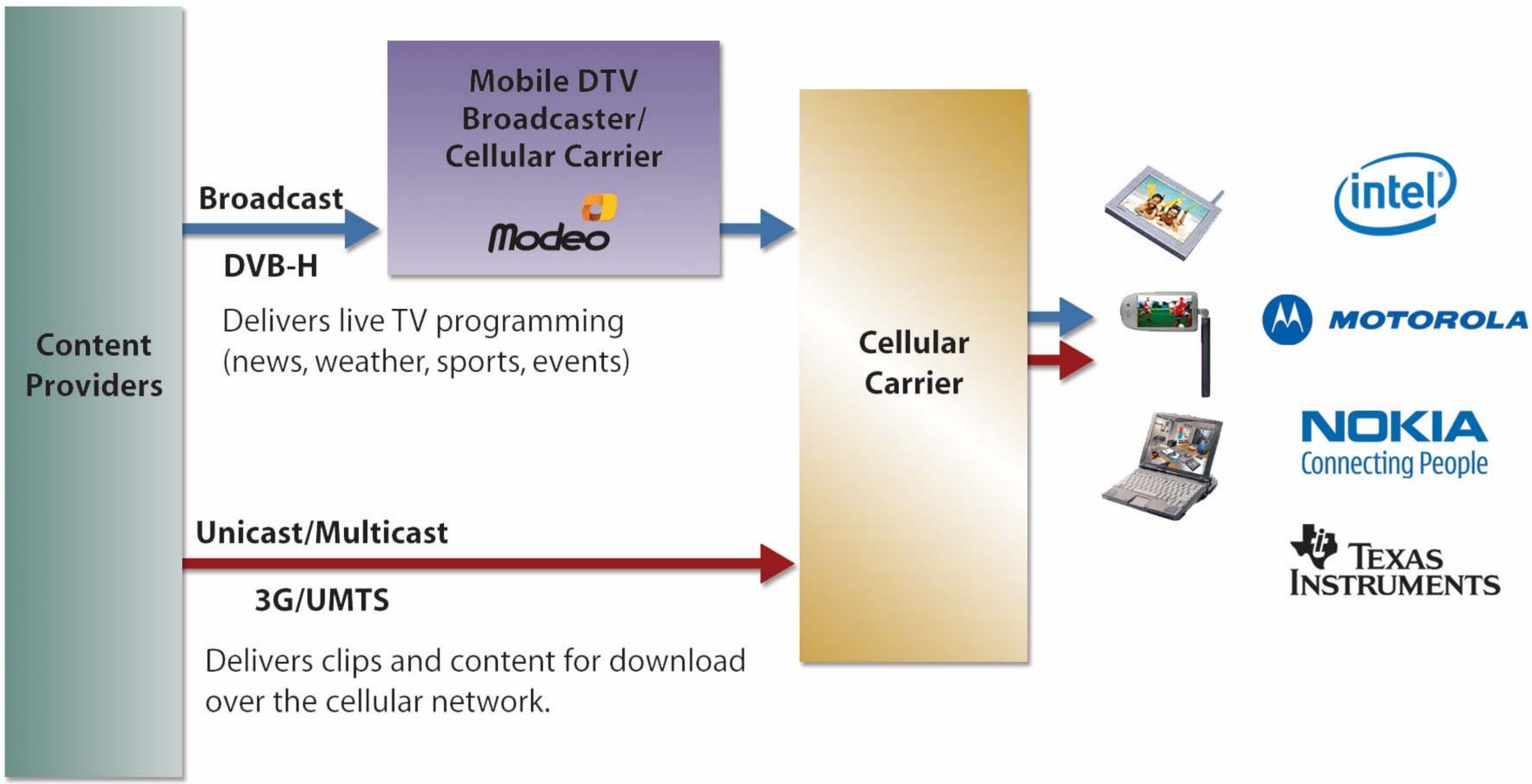

An open industry alliance offers the market a mobile DTV implementation alternative and financial benefits through scale of operations across the value chain.

Early results are very encouraging

DVB-H trials completed in Helsinki and Berlin have delivered invaluable consumer feedback:

- 41% of pilot participants would be willing to purchase mobile TV services
- Half thought that a fixed monthly fee of 10 Euros (~$12 USD) was a reasonable price to pay
- Users spent approximately 20 minutes a day watching mobile TV, although more active users watched between 30 to 40 minutes per session

Source: Helsinki trial data collected from Nokia, Digita, Elisa, TeliaSonera Finland, MTV, Channel Four Finland (Nelonen), YLE

Technology/Market Evolution

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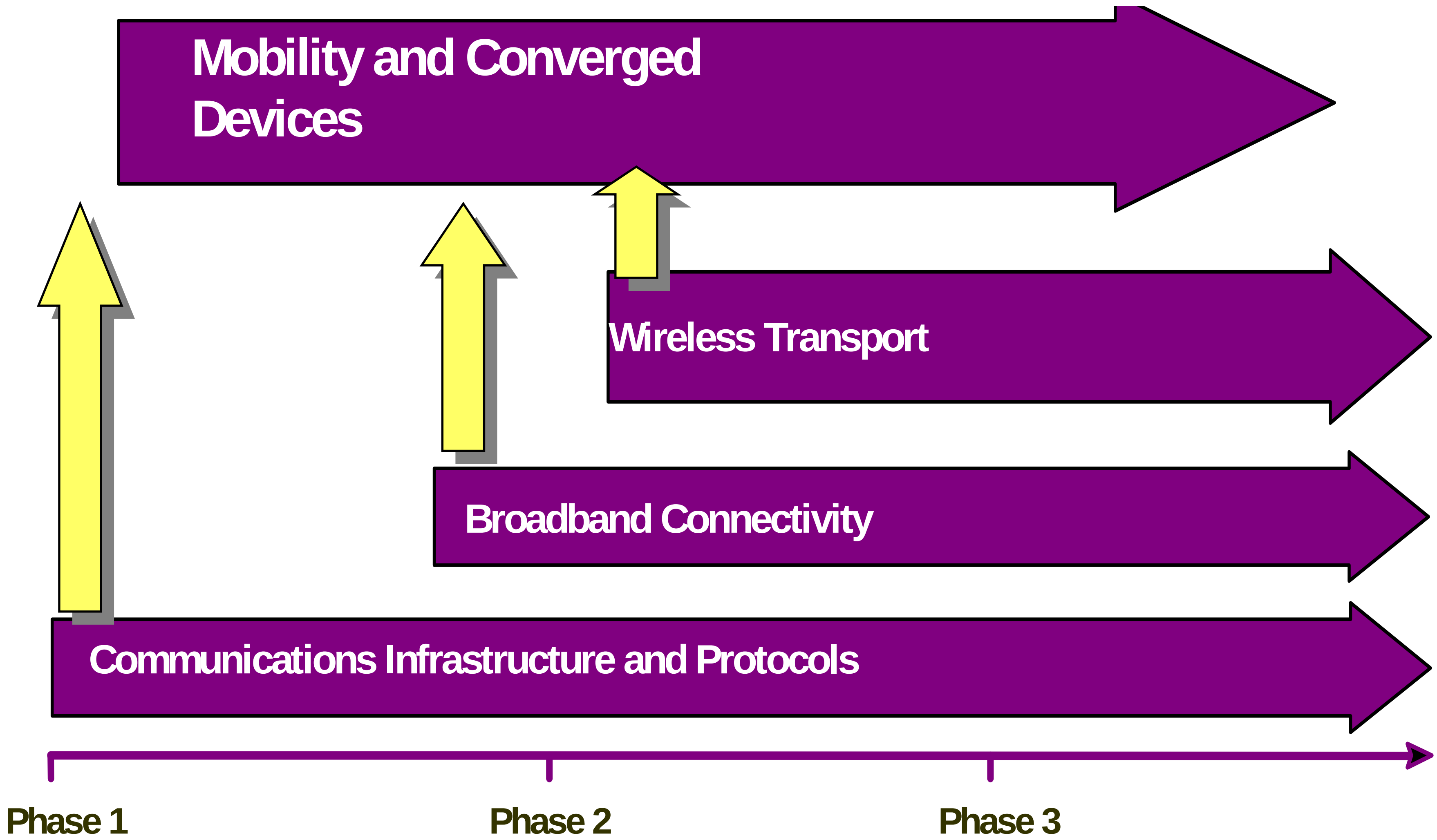

Some Conclusions

- **The Digital Home is the next big opportunity frontier**
- **Many pieces are beginning to fall in place**
  - On the Supply side- in-home networks and distribution
  - On the Demand side- proven placeshifting needs
- **Video in all forms is at the epicenter- unicast, multicast, digital broadcast, two-way, etc.**
- **Mobile video represents a logical progression from: Watching content at the cinema ⇨ Watching on a flat panel at home ⇨ Watching on a mobile**
- **Quality is NOT a universal need**
  - Matters to PLU (People Like us) but we are ***transaction facilitators***
  - Matters less to the buyers (your average teenager) and they ***dictate to PLU***

Is this the future for Quad Play and Convergence?

- It's a VoIP Phone
- It's a PC
- It does Email, News etc.
- It's a Camera and Album
- It receives and plays Motion video/TV
- It stores and plays Music
- It has Games
- It works everywhere

Thank You!

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