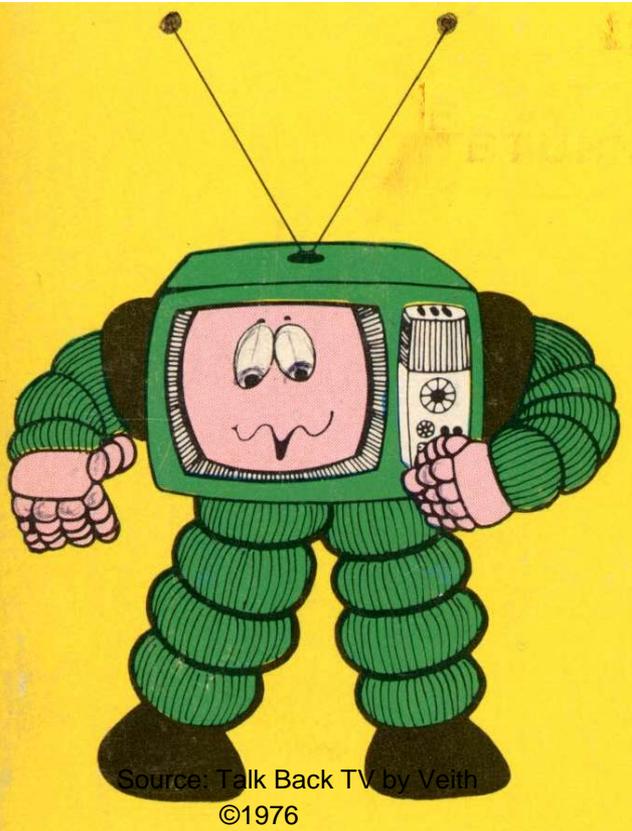
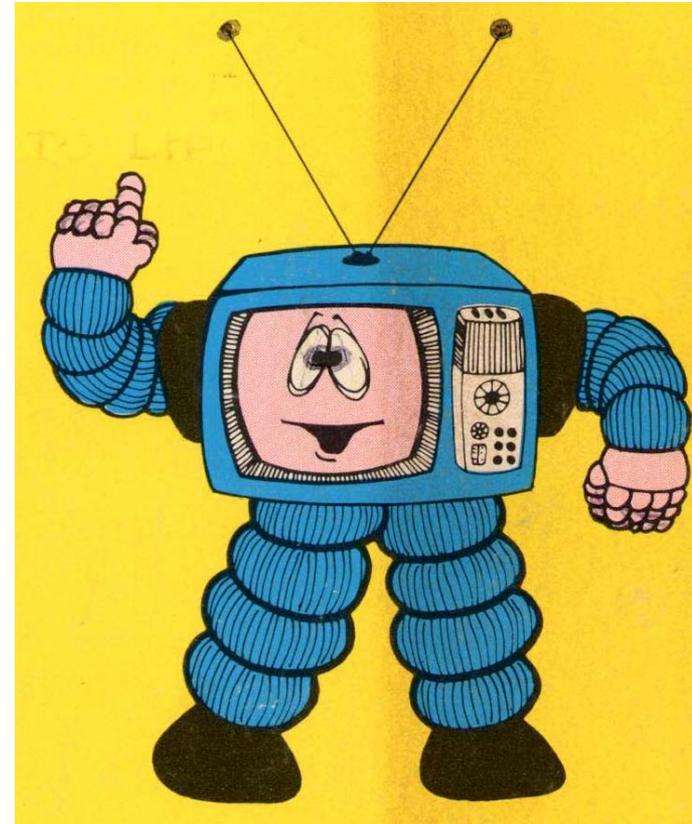


Time to Get Serious with Interactive TV



Source: Talk Back TV by Veith
©1976

**2011 Broadcasters Clinic
October 11-13, 2011**



Stuart Lipoff
IP Action Partners

IPaP
IP Action Partners
192 Kirkstall Road
web www.ipaction.com

The Situation

iTV >30 year incubation but now we have a perfect storm

- EBIF & OCAP Middleware in STBs
- Always on connectivity in homes and mobile
- ATSC/MH for cellphones has an interactive profile
- Switched Digital Video & Advanced Audience Measurement Systems in multichannel video
- Demonstrated consumer interest, e.g.
 - AT&T reports >78million SMS votes during American Idol in 2008 grew >178M in 2009



Intel's Smart TV Vision



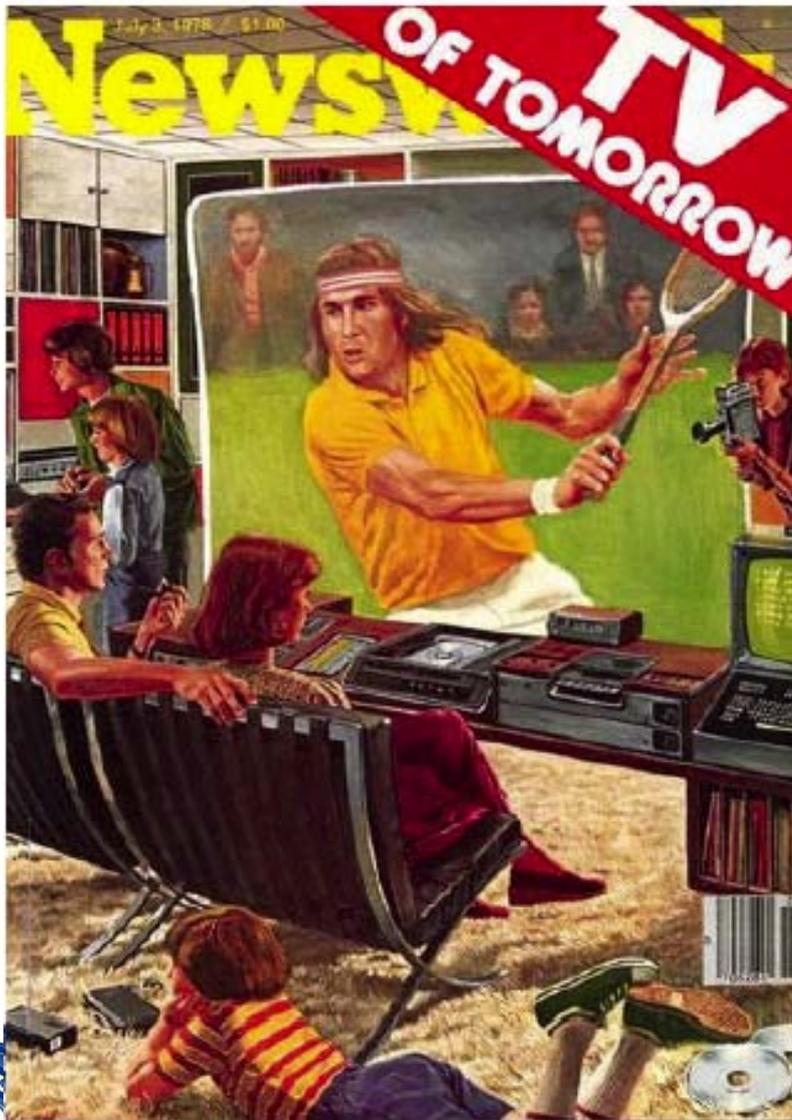
Concepts in Intel's Smart TV Vision

The Intel Vision Include a Number of Bound and UnBound Interactive Applications Which Had Several Common Concepts

- Interactive Advertising, Shopping, and Video eCommerce
- Advanced Human Interfaces
 - GUI
 - Voice Recognition
- TV Extras Enhancements to Linear TV
- Artificial Intelligence Expert System Recommendation Engine
- Access to Online Internet Content on the TV Screen
- Social Networking by Text and Video Conferencing
- Sharing of Photo, Video, and Other Content



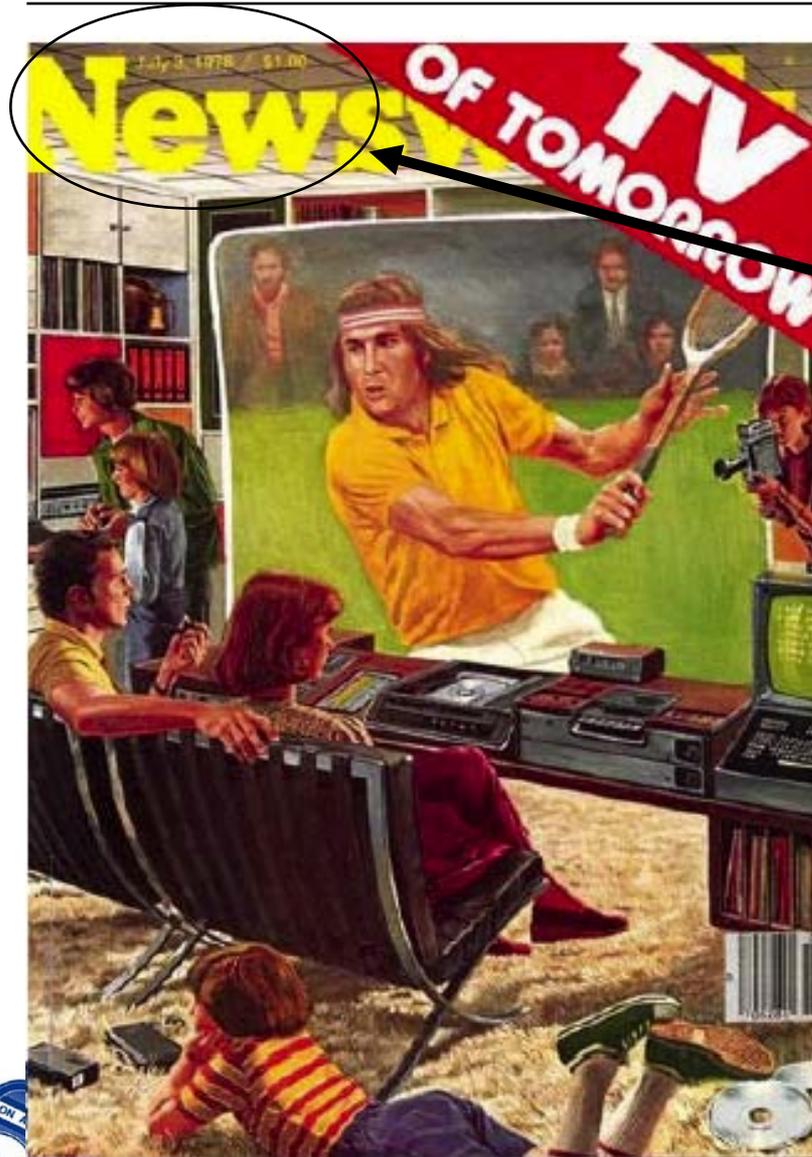
Historical Perspective



For a very long time
interactive TV (iTV) has been
TV of Tomorrow



Historical Perspective



For a very long time
interactive TV (iTV) has been
TV of Tomorrow

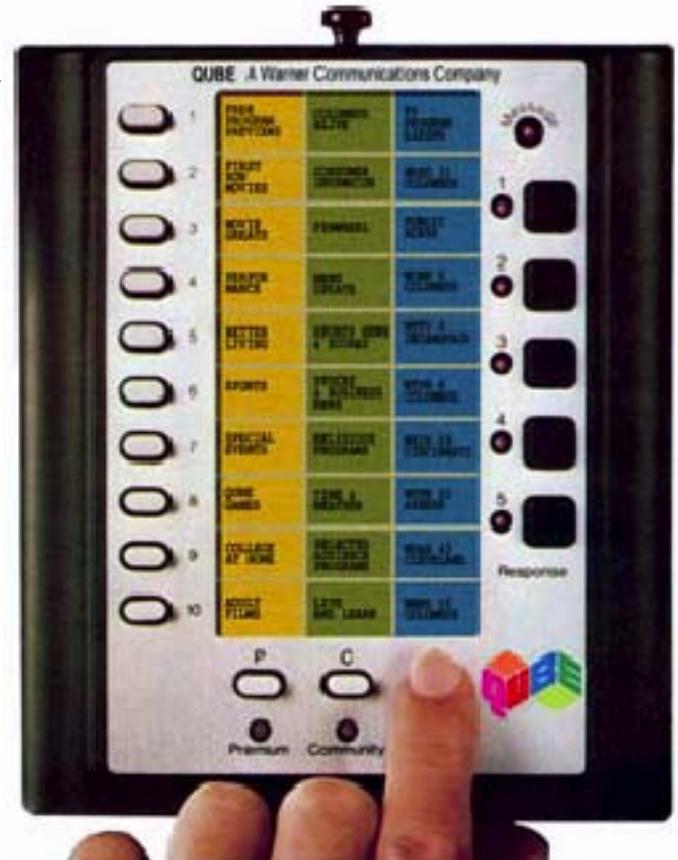


Historical Perspective

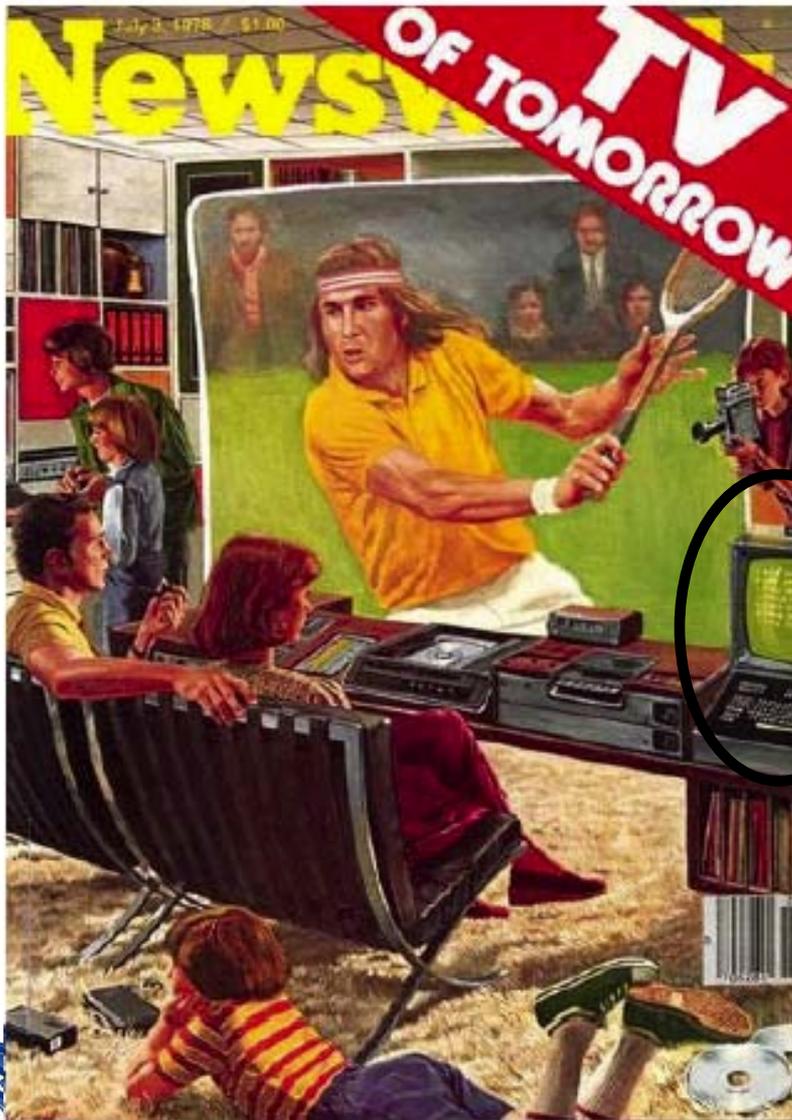


The vision has not changed much either

Warner QUBE Terminal



Historical Perspective



The vision has not changed much either

Commodore PET Computer



Historical Perspective



The vision has not changed much either

30cm Laserdisc Player



Historical Perspective



The vision has not changed much either

Atari 2600VCS Video Game



Historical Perspective

1978 is recent history compared to Winky Dink of 1953



Historical Perspective

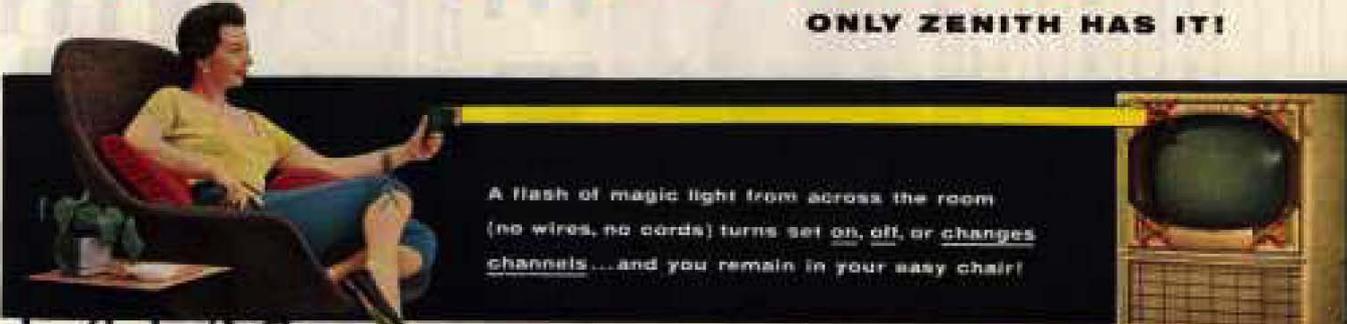
1978 is recent history compared to Zenith's Remote of 1956

YOU HAVE TO SEE IT TO BELIEVE IT!

FLASH-MATIC TUNING

BY ZENITH

ONLY ZENITH HAS IT!



A flash of magic light from across the room (no wires, no cords) turns set on, off, or changes channels...and you remain in your easy chair!

YOU CAN ALSO SHUT OFF LONG, ANNOYING COMMERCIALS WHILE PICTURE REMAINS ON SCREEN!



Here is a truly amazing new television development—and only Zenith has it! Just think! Without leaving from your easy chair you can turn your new Zenith Flash-Matic set on, off, or change channels. You can even shut off annoying commercials while the picture remains on the screen. Just a flash of light does it. There are no wires or cords. This is not an accessory. It is a built-in part of several new 1956 Zenith television receivers. Stop at your Zenith dealer's store. Zenith-quality television begins as low as \$549.95.*

If it's new... it's from Zenith!

YOU HAVE TO SEE IT TO BELIEVE IT

*Manufacturer's suggested retail price. Always higher in Far West and South.

The Blazer® (Model 32284BQ), 21" Flash-Matic Tuning, Cinchbeam, Clear-Lens, Blazed-grained finish cabinet on casters. Also in mahogany color (32284BQ). As low as \$599.95.*

ZENITH

The royalty of TELEVISION and radio

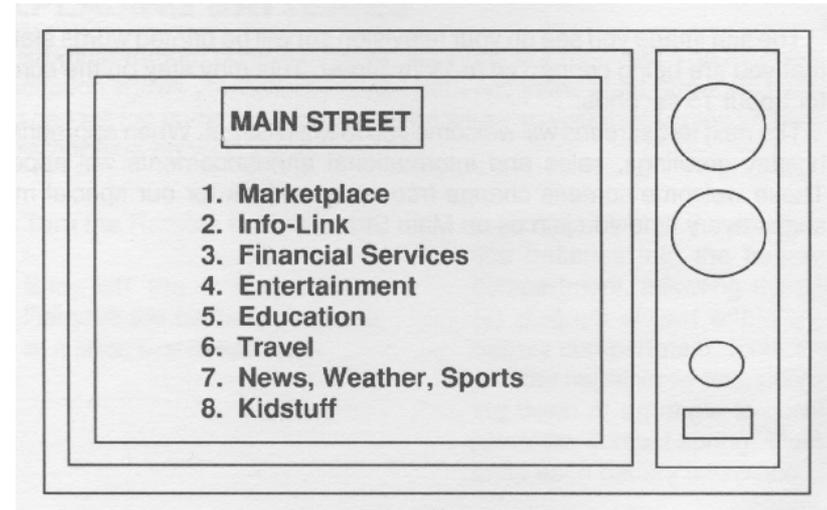
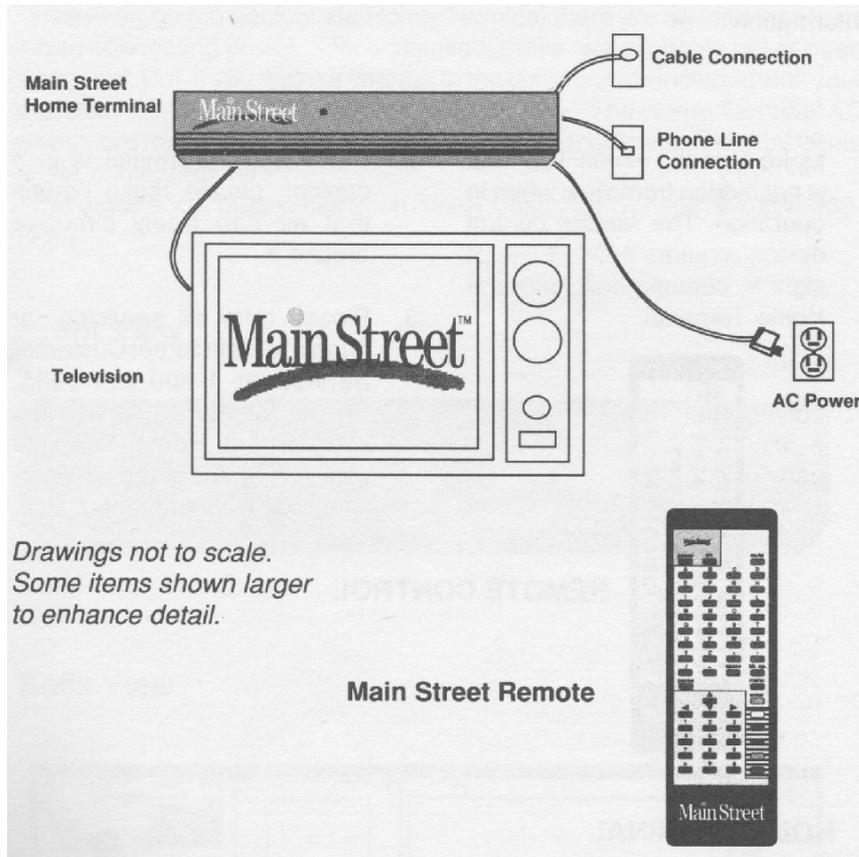
Backed by 24 years of leadership in radio and television. ALSO MAKERS OF FINE SOUNDING ZENITH QUARTZ RADIO-CLOCKSETS. Chicago, Ill., U.S.A.



Historical Perspective

And a bunch of other stuff since 1978

GTE MainStreet Cable Service



Service started 1988



Historical Perspective

And a bunch of other stuff since 1978

Philips CDI Player



R&D began 1984 released for sale 1991



Historical Perspective

And a bunch of other stuff since 1978

TiVO and Replay DVRs



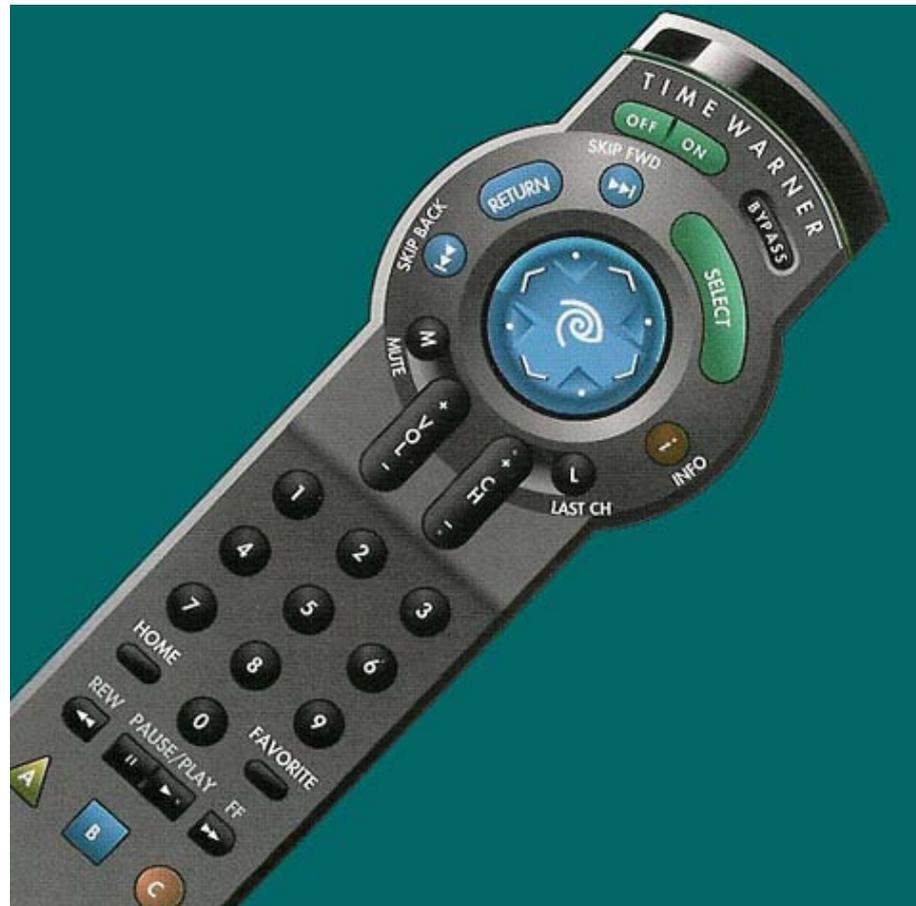
Introduced 1999



Historical Perspective

And a bunch of other stuff since 1978

Time Warner Cable Full Service Network in Orlando



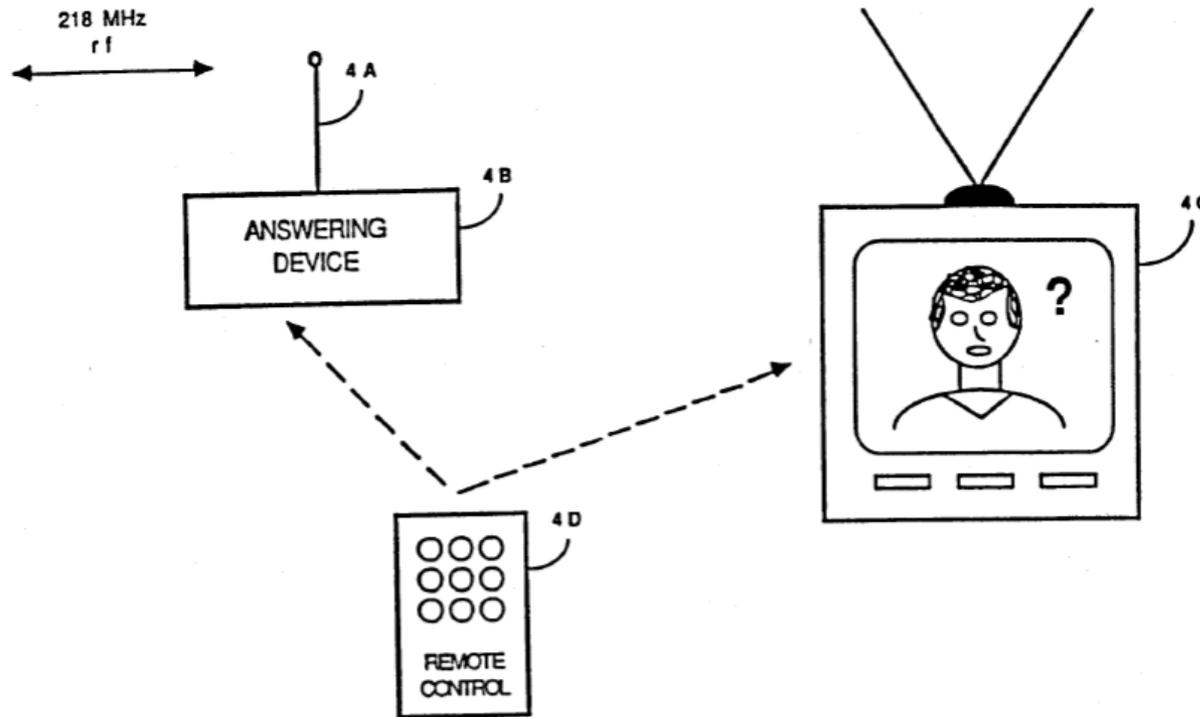
Service began 1994



Historical Perspective

And a bunch of other stuff since 1978

TV Answer's IVDS Wireless 218MHz System



Source: US Patent 5101267
Filed Aug 7, 1989

RESPONSE UNIT



Historical Perspective

And a bunch of other stuff since 1978

Qualcomm's MediaFLO Smart Phone Service with Interactive Profile



Historical Perspective

And a bunch of other stuff since 1978

Qualcomm's MediaFLO Smart Phone Service with Interactive Profile

Personalized Homescreen



Historical Perspective

And a bunch of other stuff since 1978

Qualcomm's MediaFLO Smart Phone Service with Interactive Profile

Unified Guide



Historical Perspective

And a bunch of other stuff since 1978

Qualcomm's MediaFLO Smart Phone Service with Interactive Profile

IP Data Services

The screenshot displays a mobile phone interface for Barcelona. At the top, it shows the city name 'Barcelona', a sun icon, and the current temperature 'H: 15°' and 'L: 7°'. A timestamp 'Last updated 4:24 pm' is in the top right. Below this is a weather forecast for the week, with days of the week (Mon-Sat) and corresponding weather icons and temperature ranges. At the bottom, there is a program guide with icons for HTV, WBN 9, VIEW 41, FSX, Weather, and News. Navigation arrows are visible on the left and right sides of the program guide.

Day	Mon	Tue	Wed	Thu	Fri	Sat
Weather	Sun	Cloud	Sun	Sun	Cloud	Cloud
High	15°	13°	15°	16°	14°	15°
Low	6°	5°	6°	7°	5°	7°
Program	HTV	WBN 9	VIEW 41	FSX	Weather	News



Historical Perspective

And a bunch of other stuff since 1978

Qualcomm's MediaFLO Smart Phone Service with Interactive Profile Interactive Advertising

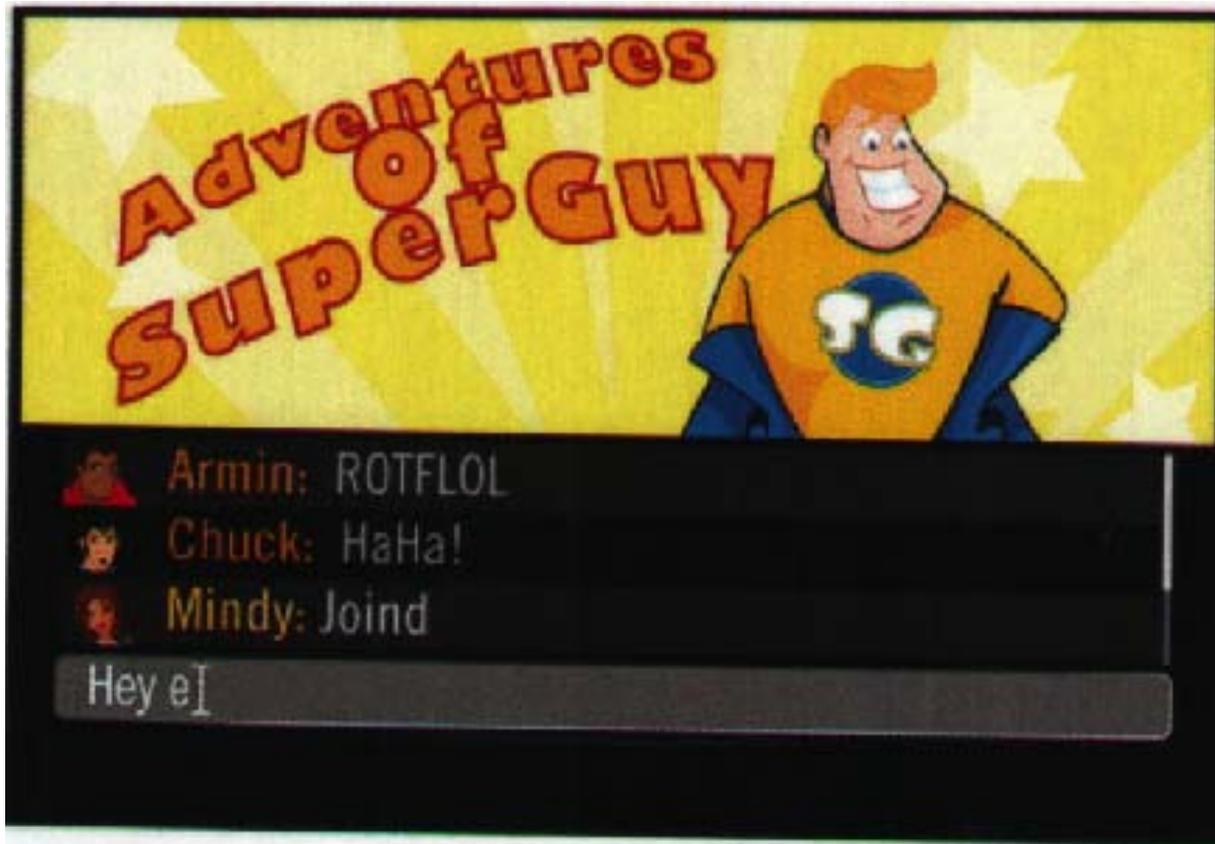


Historical Perspective

And a bunch of other stuff since 1978

Qualcomm's MediaFLO Smart Phone Service with Interactive Profile

Chat/Presence



Historical Perspective

And a bunch of other stuff since 1978

Qualcomm's MediaFLO Smart Phone Service with Interactive Profile Jukebox/Merchandising

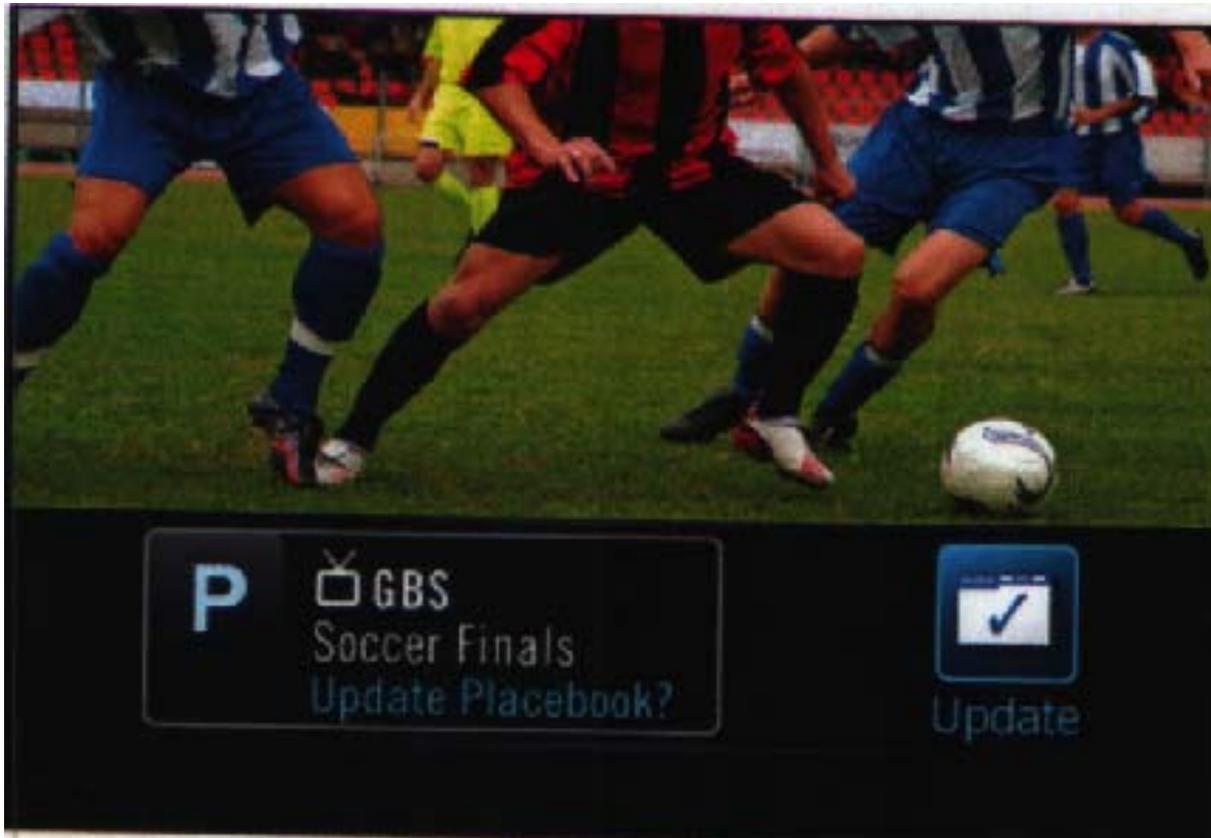


Historical Perspective

And a bunch of other stuff since 1978

Qualcomm's MediaFLO Smart Phone Service with Interactive Profile

Social Networking



Historical Perspective

And a bunch of other stuff since 1978

Qualcomm's MediaFLO Smart Phone Service with Interactive Profile Rating



Historical Perspective

And a bunch of other stuff since 1978

Qualcomm's MediaFLO Smart Phone Service with Interactive Profile

Program Reminders

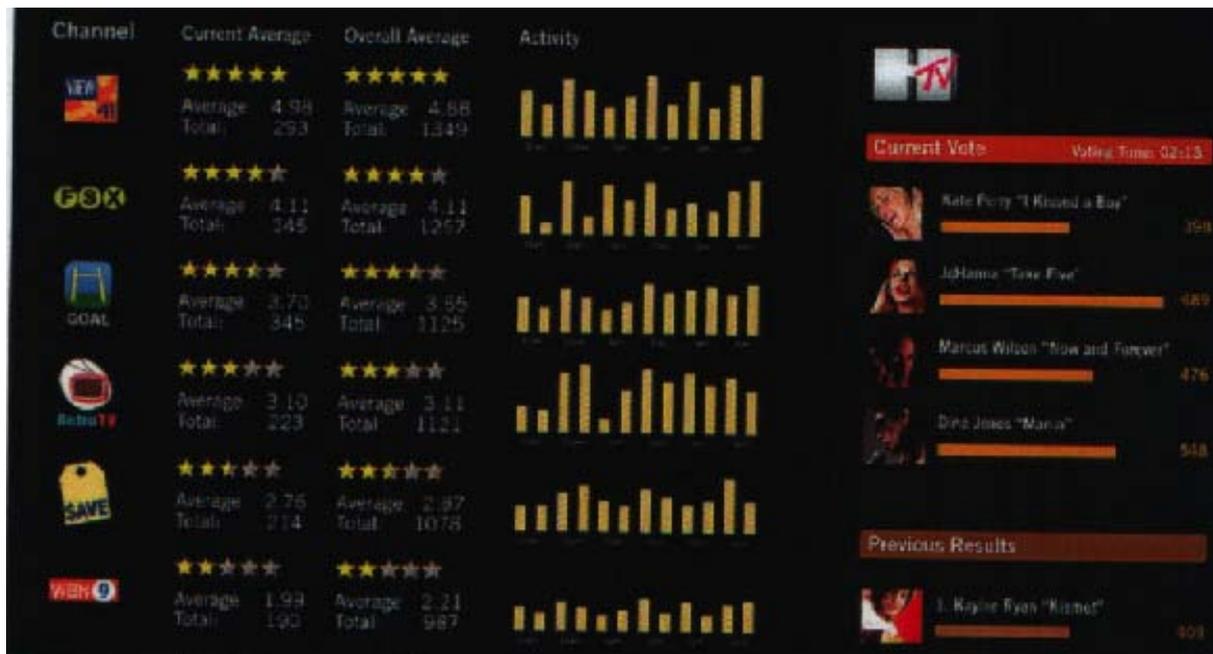


Historical Perspective

And a bunch of other stuff since 1978

Qualcomm's MediaFLO Smart Phone Service with Interactive Profile

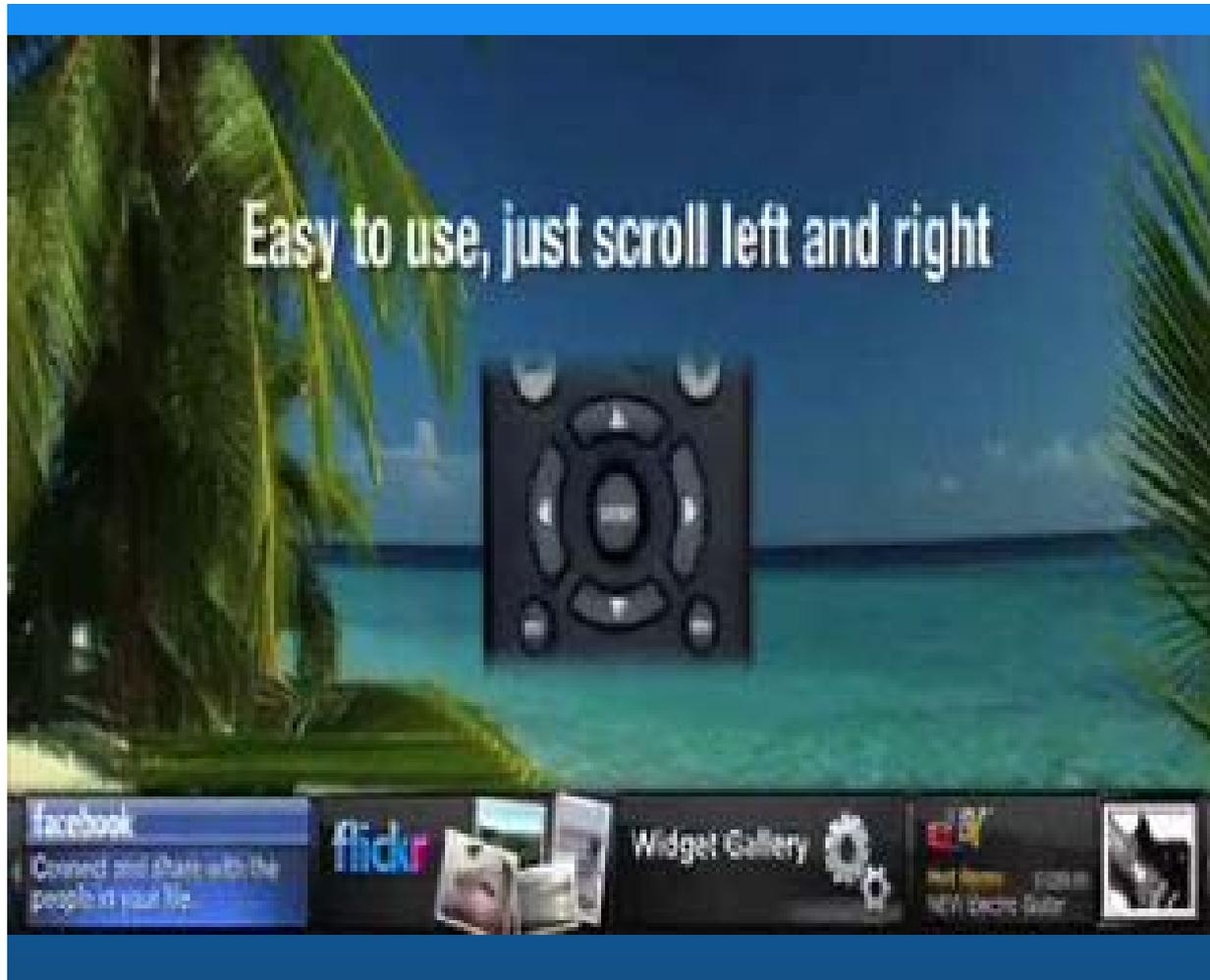
Usage Tracking



Historical Perspective

And a bunch of other stuff since 1978

Yahoo Connected TV



Current ITV Technology

Currently we have

- Yahoo Connected TV Widgets
- Smart Phones
- Video Enabled PCs
- Multiple Platforms
 - Connected TVs
 - iTV Appliances (e.g. AppleTV)
 - Game Consoles (e.g. Xbox)
 - BluRay Players
 - Cable STBs with EBIF or OpenCable/TruTV/OCAP
- Enabling Middleware



Enabling Middleware

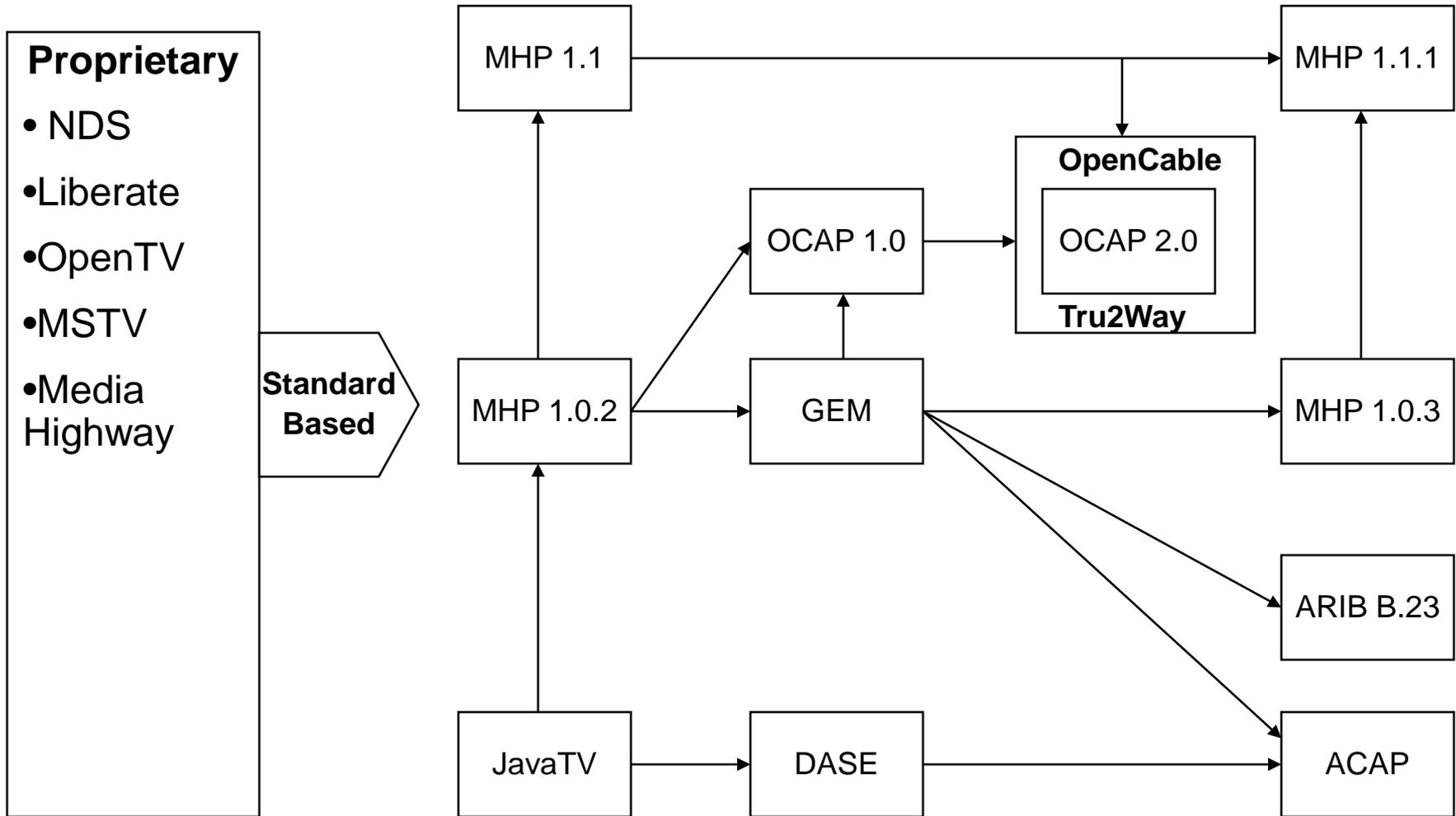
Proprietary

- NDS
- Liberate
- OpenTV
- MSTV
- Media Highway

Standard
Based

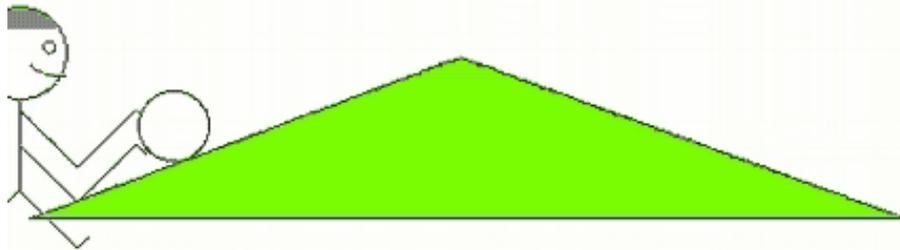


Enabling Middleware



Why Now?

A new idea can seem to incubate forever until inhibitors are overcome



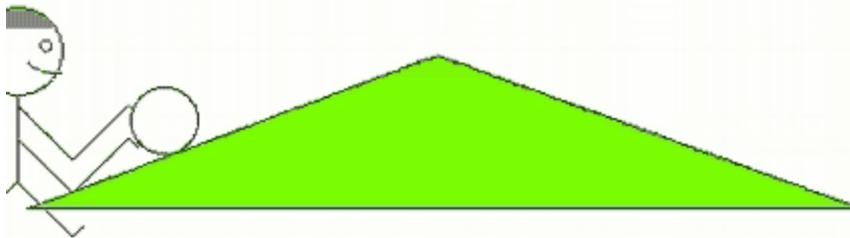
Inhibitors

- Infrastructure
- Standards
- Technology limitations
- Government
- Content
- Social acceptance



Why Now?

The dynamics can change rapidly once you get over the hill



Inhibitors

- Infrastructure
- Standards
- Technology limitations
- Government
- Content
- Social acceptance

Accelerators

- Network effects
- Synergies
- Competition
- Economies of scale



The Interactive TV Playing Field

Creative people will likely vastly expand what is already a long list

		Bound Applications	
Delivery Modality	Subscriber Initiated	System Initiated	
Real Time Wired Network Services	<ul style="list-style-type: none"> • Advertising response • Opinion polling 	<ul style="list-style-type: none"> • Audience measurement • Synthetic channels 	
Real Time Wireless Network Services	<ul style="list-style-type: none"> • Deep dive • Gaming 	<ul style="list-style-type: none"> • Advertising insertion • Content advice 	
Intelligent Customer Premise Devices	<ul style="list-style-type: none"> • Content determination • Subscriber generated 	<ul style="list-style-type: none"> • Content push 	

