

Convergence is So Yesterday:
THE FUTURE OF TELEVISION



Television Entertainment Trends

500 BILLION HOURS

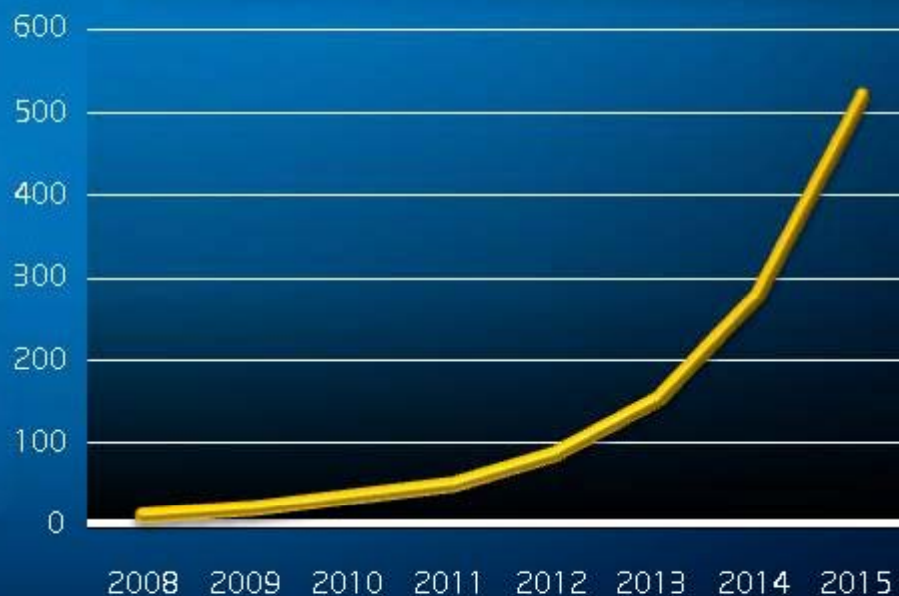
Of Video Content in the Cloud*

12 BILLION DEVICES

Can Receive TV Content Via Internet**

**TV Still the Center
of People's Lives**

Billions of Hours of Content





Mark Francisco
Comcast Fellow
Office of the CTO



Television's Future is in Good Hands

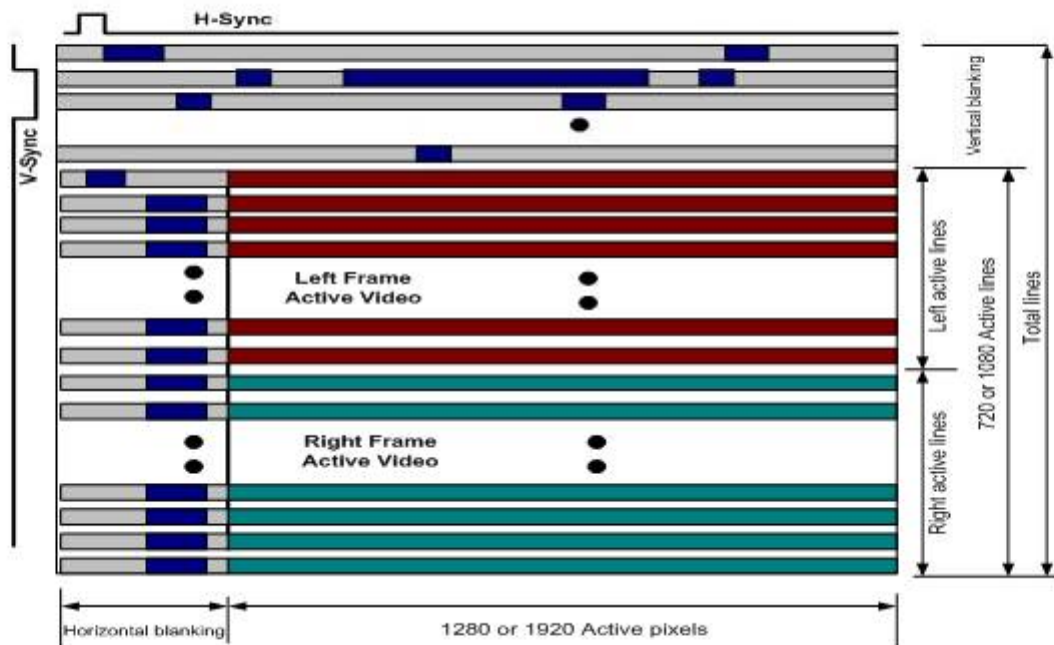


Television Trends



- Platform independent development
- Standards take hold
- Television is currently changing from a device to an application
- Highly personalized and social experience

Top-to-Bottom Spatial MUX Detail



Our Vision



- Entertainment to fit the time span desired & social setting of the viewer
- Interaction will become an integral part of the entertainment experience
- The most exciting part of TV will be the content
- Television will match each person's interests
- TV will be everywhere!

Developing the Future of TV by Understanding What People Really Want

Over a Decade of Global Ethnographic Research

Rigorous Consumer Testing and Iteration





Brian David Johnson
Consumer Experience
Architect



The Future of TV as an EXPERIENCE



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INFORMATIVE UBIQUITOUS PERSONAL SOCIAL

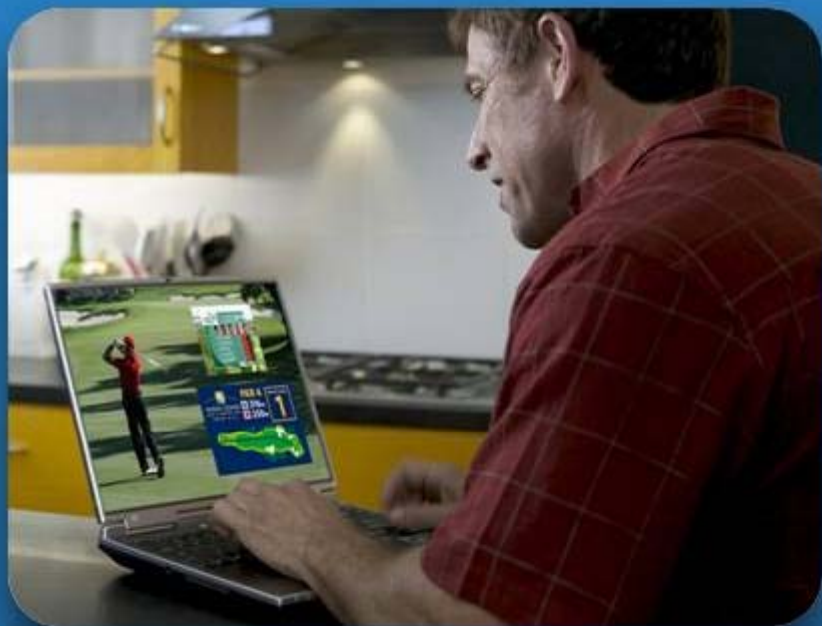


INFORMATIVE

UBIQUITOUS

PERSONAL

SOCIAL



Architecture for Informative TV

Video Processing

- Object detection and tracking
- Mid-level keyword detection

Metadata Generation

- Cast indexing
- Highlight detection

Personalized Browsing

- Highlight event
- Interested characters



Sports Highlight Viewer 

Swedish Soccer Championships 2001
Hammarby, Stockholm, Sweden



Event Log

- 00:00:00 - Goal
- 00:25:270 - Goal
- 00:50:000 - Goal
- 01:13:000 - Shoot
- 01:34:000 - Shoot
- 01:57:110 - Shoot
- 02:02:290 - Free

Legend



Media playback controls: Stop, Previous, Play/Pause, Next



Yimin Zhang

Senior Staff Researcher,
Intel Labs China

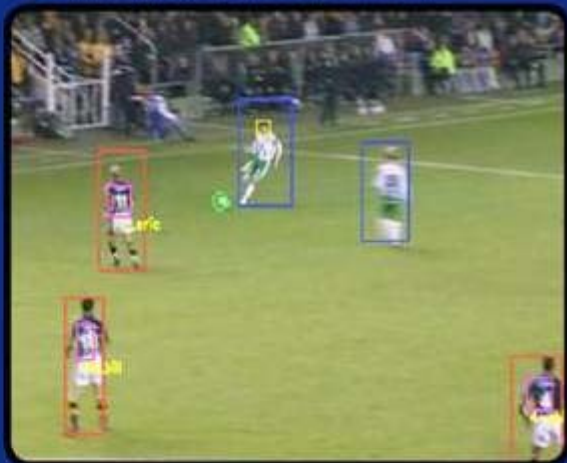


Informative TV Demo

Sports Highlight Viewer



Swedish Soccer Championships 2001
Hammarby, Stockholm, Sweden



Event Log

- 00:00.000 - Goal
- 00:25.270 - Goal
- 00:59.600 - Goal
- 01:13.980 - Shoot
- 01:34.890 - Shoot
- 01:57.110 - Shoot
- 02:02.290 - Free



Legend





INFORMATIVE UBIQUITOUS PERSONAL SOCIAL



Architecture for Ubiquitous and Personal TV



...y Viewing Guide

...st
... Follow the Leader
...le Show with David ...

...ews at 11

...gi
... The Great Dead Tree
...e Lost Room

...od Case
... Game Over

...edium
... Do You Hear What I Hear

...umb3rs
... Angel and Devils

...urvivor
...e Amazing Race

...riminal Minds
... The Big Wheel

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Mark D. Yarvis
Senior Research Scientist



INFORMATIVE
UBIQUITOUS
PERSONAL
SOCIAL





Google

intel

MOTOROLA

Steelcase

Turner
A Time Warner Company



Elizabeth Mynatt

Director, GVU Center
Associate Professor, College of Computing

GVU
GEORGIA TECH

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Participatory Media
People are Active Participants

Role of IA in the Future of TV

- Provides greater intelligence
- Creates personal experiences wherever you go
- Connects people

**It's not a question of *if or when*,
but is a question of *how***

SCREEN
U T



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The future of entertainment
and the devices we

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BRIAN DAVID JOHNSON



The Future of TV is
Immersive Entertainment



Immersive Sound



Immersive Video



TECH CHECK with Jon Galloway Your Best App for Technology News & Trends

3D TV Revolution Is Upon Us

September 2, 2009



COMPUTERWORLD

Sony to Launch 3D Television Next Year

September 3, 2009



ZDNet

First 3D TV Channel Coming to U.S. Next Year

August 17, 2009

CNN.com /technology

HOME WORLD U.S. POLITICS CRIME ENTERTAINMENT HEALTH TECH

3-D Television Expected to Come to Homes in 2010

September 18, 2009





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Director of Technology
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The HDI Difference

Comfort • Clarity • Color • Cost • Compliance • Coming Soon

Efficient RGB Laser Sources



Dual 1080p LCOS Imagers



Extended Color Space

The Challenge of Real-Time 3D Capture





Howard Postley
COO/CTO

3ALITY
DIGITAL

The Limits of Copper Cables

Existing
Electrical
Cabling
SIP to Truck



27 x 3 Gb/s Coax
9 x 1 Mb/s Serial
1 x 1 Gb/s Ethernet



Jeff Demain
Director of Strategy
Photonics Technology Lab



Simplifying With Light Peak

**Existing
Electrical
Cabling**
SIP to Truck



Light Peak
One Optical Cable



Up to 100Gbps
Up to 100m

Light Peak in Action

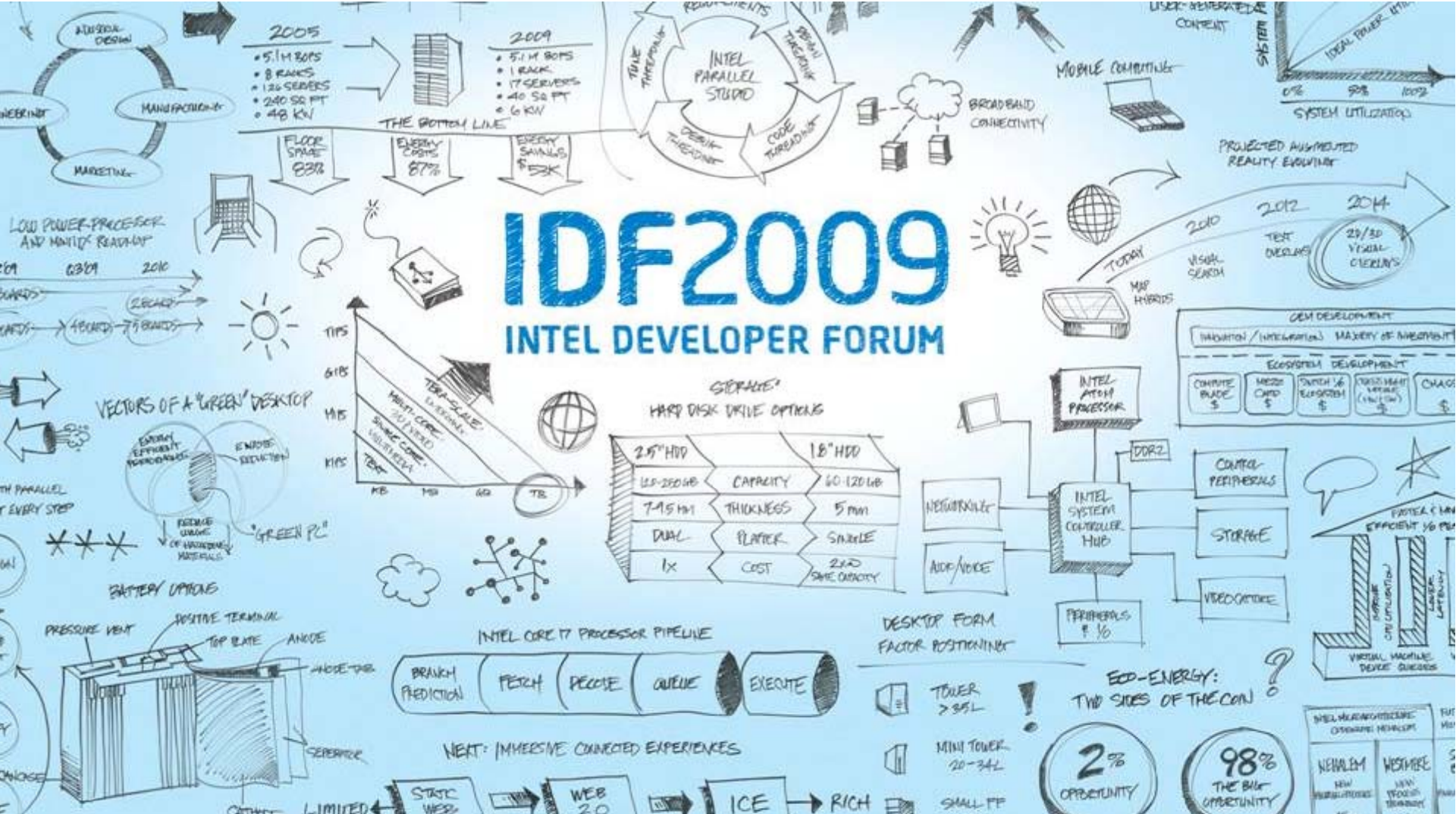


Multiple Protocols ▪ Bi-directional Transfer ▪ Quality of Service ▪ Hot Pluggable

THE FUTURE OF TV =

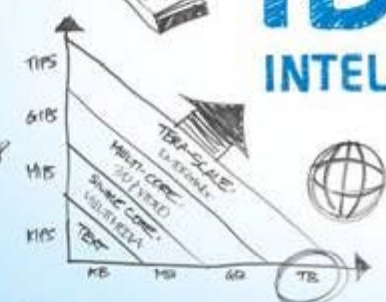
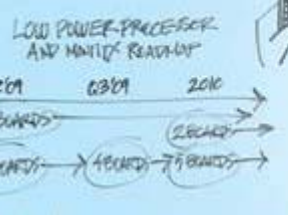
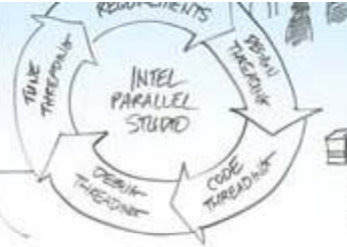
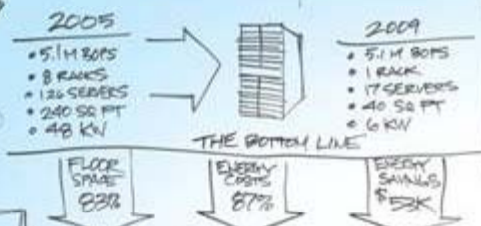
- *Informative TV*
- *Ubiquitous TV*
- *Personalized TV*
- *Social TV*

An immersive TV experience across multiple devices
opens up new challenges and opportunities



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STORAGE HARD DISK DRIVE OPTIONS

2.5" HDD		1.8" HDD
15-250GB	CAPACITY	60-120GB
7-15mm	THICKNESS	5mm
DUAL	PLATTER	SINGLE
1x	COST	2x2 SAME CAPACITY



DESKTOP FORM FACTOR POSITIONING

- TOWER 235L
- MINI TOWER 20-34L
- SMALL FT

