

Convergência Digital:

Convergência Digital ...

as tendências e os impactos da ...

Convergência Digital ...

as tendências e os impactos ...

**... da informática em tudo, em todos
e em todo lugar**

Fabio Silva

fabio@cin.ufpe.br

*O que é mesmo
esse
negócio
de convergência?*

Convergence refers to the power of digital media to combine voice, video, data, text, and money in new applications, devices and networks.

<http://dcc.syr.edu/>

“Todas as mídias, hoje separadas, livros, filmes, telefones e televisão tornam-se digitalizados e passarão a ser distribuídos pela rede global.

... Convergência digital é o colapso das fronteiras entre os negócios.”

(Lee Inn-Chan, Diretor Executivo do Korea Information Development Institute, 2004).

Welcome

How It Works

Browse Selection

Start Your FREE Trial

Have a special offer? Enter Code:

Redeem

The **Best** Way to Rent Movies

Plans
from only
\$4.99
a month

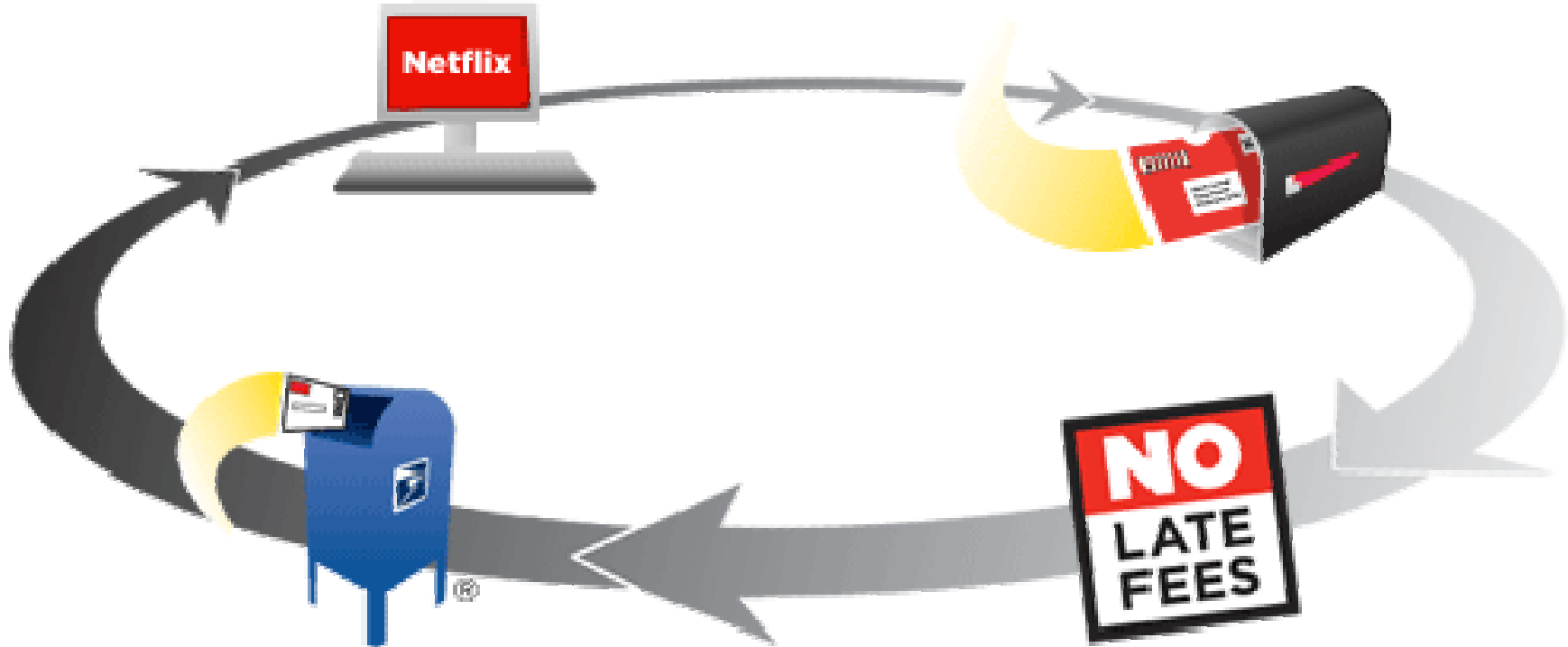
 **Start Now**

FREE TRIAL ([Offer Details](#))

- Free shipping - Both ways
- No Late Fees - Keep DVDs as long as you want
- Over 75,000 Titles - Classics to new releases
- Cancel anytime

1 Create your list of DVDs online

2 We rush you DVDs from your list



4 Return a movie to get a new one from your list

3 Keep each DVD as long as you want



Faz sentido? Por que?

10 filmes de 4 Gbytes/filme = 40 Gbytes

= 40.000.000.000 bits

1 Mbit/s = 1.000.000 bits/s

40.000 s = aprox. 11 horas

Quais são as alternativas?



Baseado em palestra do Prof. Silvio Meira, 2006.



LIBRARY

- Music
- Movies
- TV Shows
- Podcasts
- Radio

STORE

iTunes Store

PLAYLISTS

- Party Shuffle
- 90's Music
- Music Videos
- My Top Rated
- Recently Added
- Recently Played
- Top 25 Most Played



iTunes STORE

- Music
- Movies
- TV Shows
- Music Videos
- Audiobooks
- Podcasts
- iPod Games
- iTunes Latino

TOP MOVIES

- School of Rock (Comedy)
- The Thomas Crown Affair (... (Romance)
- Pirates of the Caribbean: D... (Action & Adventure)
- The Longest Yard (2005) (Comedy)
- Mean Girls (Comedy)
- The Prestige (Drama)
- Stargate (Sci-Fi & Fantasy)
- South Park: Bigger, Longe... (Comedy)
- Rocky (Sports)
- Jackass: The Movie (Comedy)

TOP TV EPISODES

- Catch-22 (Lost)
- Safety Training

NEW RELEASES

Music	Movies	TV Shows	Rock	Pop	R&B/Soul
The Best Damn Thing Avril Lavigne	Year Zero Nine Inch Nails	Radio Disney Exclusiv... Corbin Bleu	Fall Clay Walker	I'm Not Dead (Bonus T... Pink	Bucky Covington Bucky Covington
What Light - Single Wilco	Unexpected Lumidee				

great albums on sale \$7.99

THE GUGGENHEIM GROTTO
SINGLE OF THE WEEK

list 37
Symphonies & Sonatas for Spring

Kurt Vonnegut Audiobooks

Amaze your ears.
iPod Headphones

STAR TREK ENTERPRISE

WHAT'S HOT

Music	Movies	TV Shows	Audiobooks	Podcasts	Games
Tyler Perry's "Daddy's... Various Artists	American Doll Posse... Tori Amos	Waking Up Laughing Martina McBride	Voice of the Violin (B... Joshua Bell	Wolfmother (Deluxe V... Wolfmother	Buy U a Drank (Shawty... T-Pain featuring Yung Joc
Como Ama una Mujer Jennifer Lopez	Blades of Glory (Orig... Various Artists				

QUICK LINKS

- Browse
- Power Search
- Account
- Buy iTunes Gifts
- Redeem
- Support
- Complete My Album **NEW**

TOP SONGS

- Give It to Me - Timbaland
- I Tried - Bone Thugs-N-Harmony
- Girlfriend - Avril Lavigne
- Buy U a Drank (Shawty Sna... - T-Pain featuring Yung Joc
- Glamorous - Fergie
- Beautiful Liar - Beyoncé & Shakira
- Before He Cheats - Carrie Underwood
- What I've Done - Linkin Park
- Don't Matter - Akon
- The Sweet Escape - Gwen Stefani

TOP ALBUMS

- The Best Damn Thing - Avril Lavigne
- Year Zero - Nine Inch Nails



Electronics Design, Strategy, News
EDN The internet Home of...
ElectronicNews **EDN** Electronic BUSINESS

EDN NETWORK ELECTRONICS INDUSTRY

SEARCH

Sponsored by:
OPEN HOUSE
APRIL 2007

EDN: Electronics Design, Strategy, News

ADVERTISEMENT



HOME NEWS CENTER DESIGN CENTERS BUSINESS CENTERS MORE...

Free Print Subscription Printer-friendly version Email to a Friend

Digg This Slashdot This add to Del.icio.us

Motorola ships millionth IPTV set-top box

By Colleen Taylor, Contributing Editor – Electronic News, 4/5/2007

Marking a milestone for the booming internet protocol television (IPTV) technology, **Motorola Inc.** announced Wednesday that it has shipped its one millionth IP set-top box.

"Communications companies worldwide are expanding into video through IPTV," said Doug Means, Motorola corporate VP and general manager, said in a statement.

In February 2006, **Motorola acquired Kreate! Communications**, a leading developer of innovative IP-based digital set-tops. Kreate! brought innovative IPTV set-top software and hardware solutions to European telecom operators and ISPs, adding significantly to Motorola's existing portfolio. Motorola shipped its 50 millionth digital cable set-top box in October 2006.

The company is not without competition, of course. With its trademark product release fanfare, consumer electronics superstar **Apple Inc. began shipping its own Apple TV video box** product last month, proclaiming on its Web site that "the revolution will be televised."

Market researchers expect that premium video services are set to continue shaking up the existing entertainment media landscape in a major way, with IPTV leading the pack. IPTV is currently the fastest-expanding segment of the pay-TV market, with revenue expected to increase to \$23.5 billion in 2010, rising at compound annual growth rate (CAGR) of 103 percent from \$681 million in 2005, market research firm **iSuppli Corp. has predicted.**

***Por que
alternativas?***

Attitudes to Time and Money

Money, but no time — 45 seconds is too long to wait
— time, but no money

Personalization

Attitudes to privacy, ownership, piracy, color and language

Working Practices and Attitudes

Blurring of work and leisure; conflict between new and old attitudes

Source: Gartner (September 2005)

Aging Population

Home healthcare, longer working career and product physiology



Single Living

Products and services for family styles, plus tools for single parents

Technology Refusers

Invisible technology, rather than high technology

Globalization

Products for many regions, languages and attitudes

Para resolver ineficiências...

Wireless Corporate Application Examples		
Mobile Worker Classes	Types of Applications	Sources of Benefit
Field Sales	<ul style="list-style-type: none"> Leads database access Product info lookup Inventory lookup Returns processing 	<ul style="list-style-type: none"> Increased time with clients (more calls per month = increased revenue) Improved customer satisfaction
Field Service	<ul style="list-style-type: none"> Logistics (scheduling and dispatch) Job order processing Parts lookup 	<ul style="list-style-type: none"> Reduced data entry errors Reduced overtime Reduced time between calls Reduced repeat visits Increased accuracy of time arriving to site
IT Management	<ul style="list-style-type: none"> Remote management consoles System performance dashboards 	<ul style="list-style-type: none"> Reduced overtime Higher uptime Increased performance visibility
Healthcare	<ul style="list-style-type: none"> ePrescriptions Medical diagnosis database lookup Drug interaction lookup 	<ul style="list-style-type: none"> Reduced overtime Improved convenience for patients Higher quality of service
Policing and Security	<ul style="list-style-type: none"> Police database access Logistics 	<ul style="list-style-type: none"> Increased officer safety Reduced time per interaction

***E também porque
queremos conforto ...***





**Em um mundo
que é móvel...**

RADIO AMATEUR NEWS

REG. U.S. PAT. OFF.

15 Cents
AUGUST
1919
OVER 100
ILLUSTRATIONS
Edited by
H. Gernsback

"The 100% Wireless Magazine"



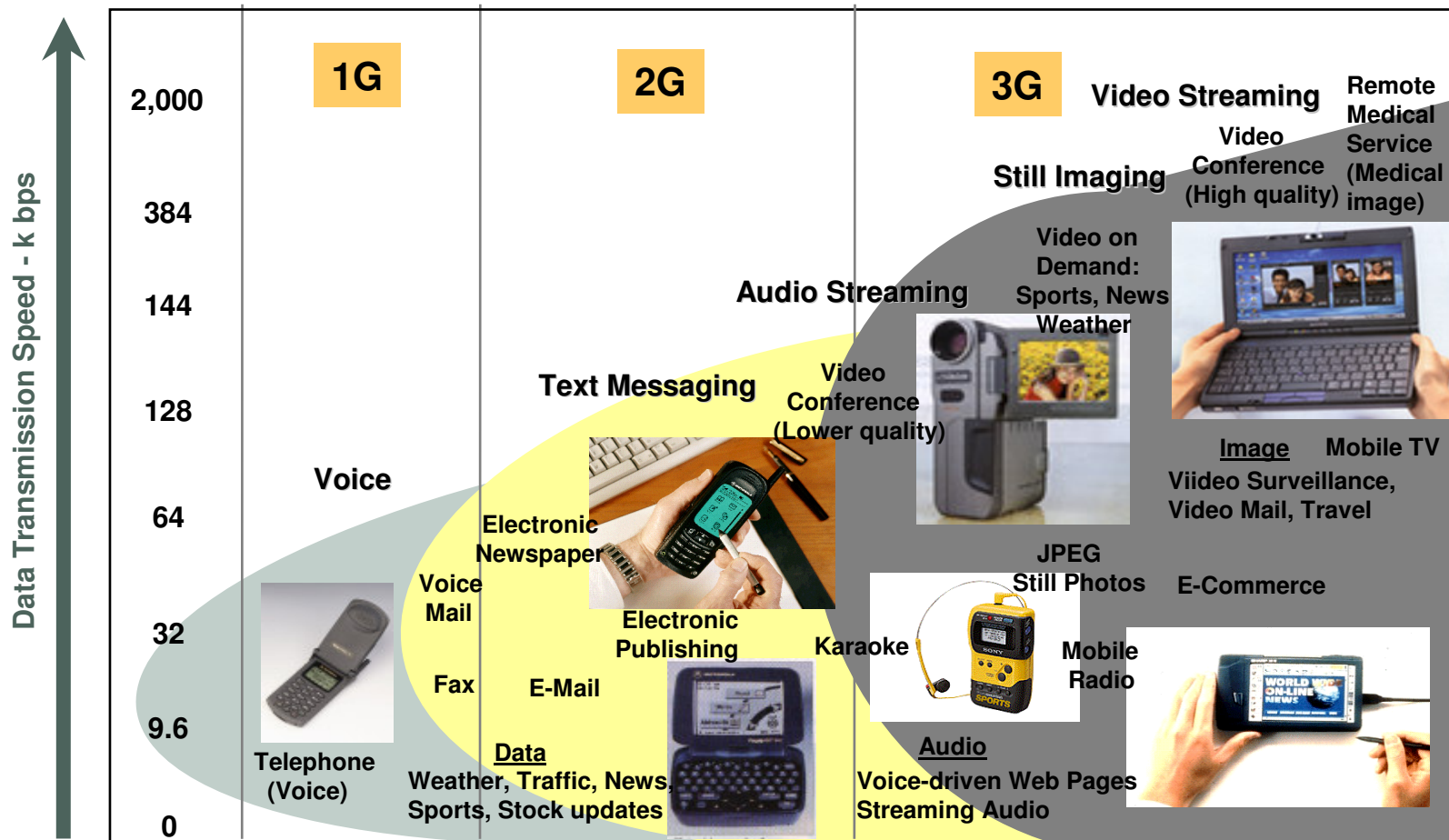
In This
Issue:

THE AUTO RADIO-PHONE
By A. H. Grebe
TREE RADIO TELEPHONY AND TELEGRAPHY
By Major General Geo. O. Squier

LOOP ANTENNA AND DIRECTION FINDERS FOR AMATEURS
By David S. Brown
LOW POTENTIAL RADIO FREQUENCY ARC
By Charles W. Nallie

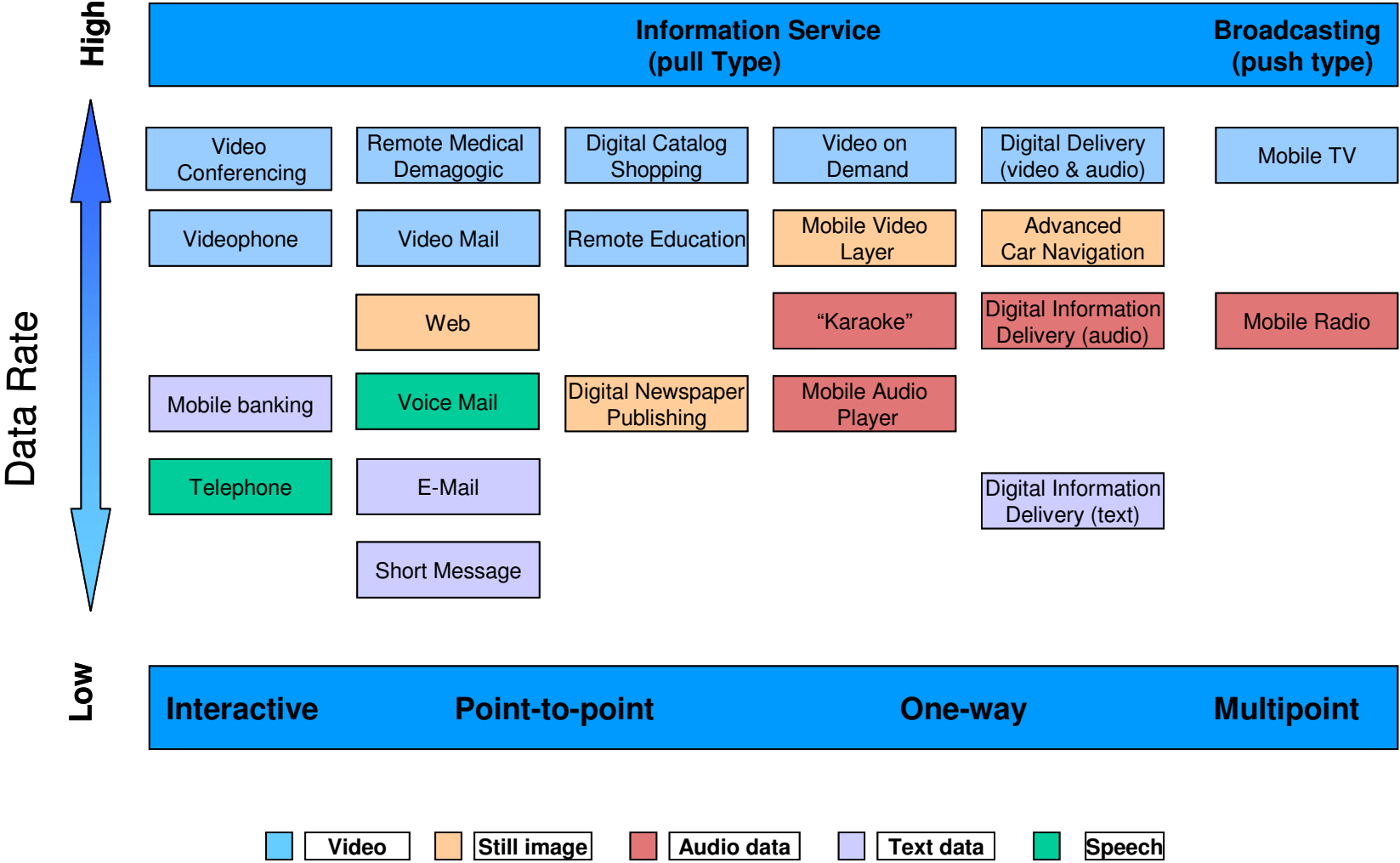
PUBLISHED BY EXPERIMENTER PUBLISHING CO. 233 FULTON

A Visão em 1999 ...



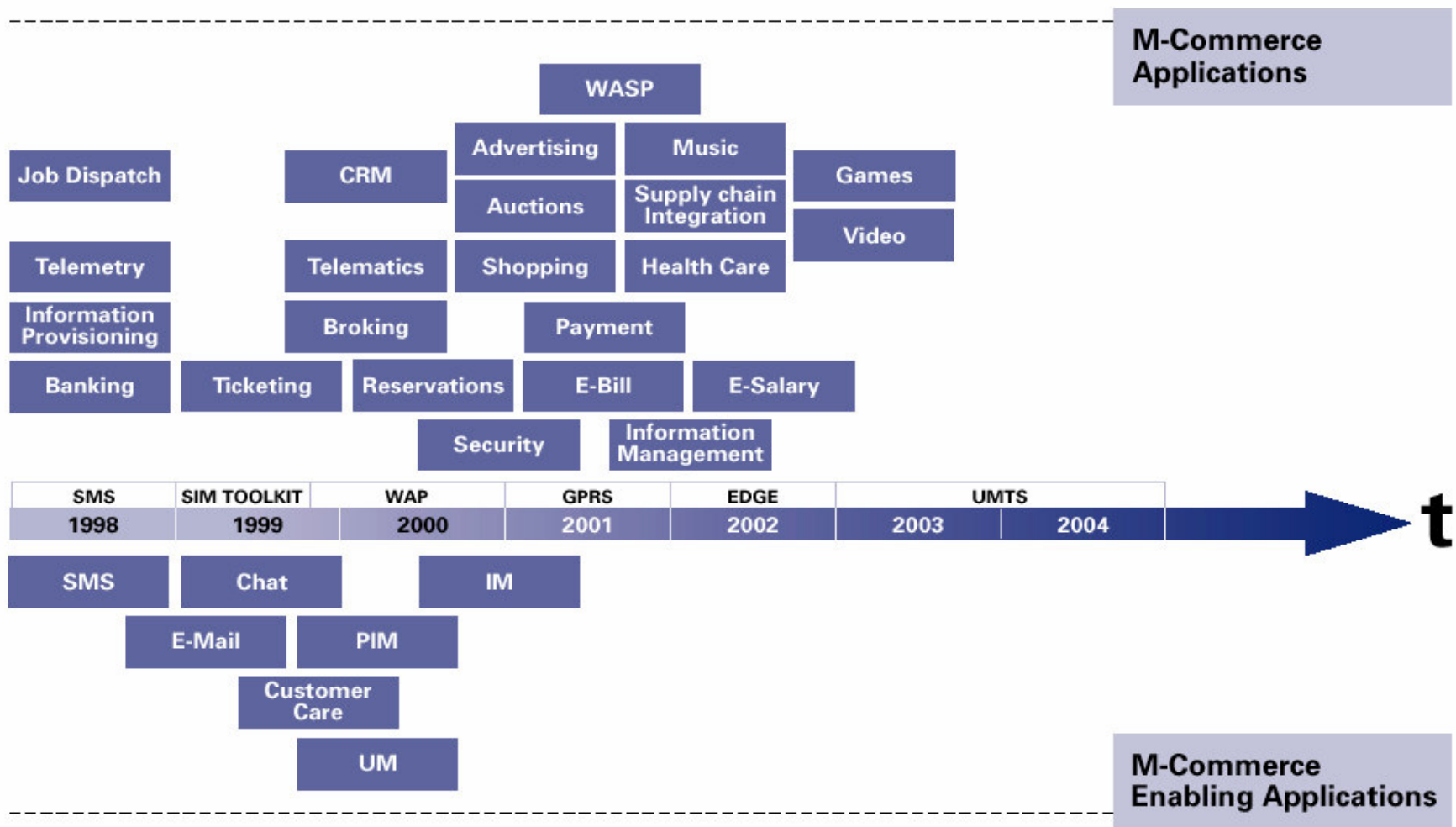
Source: ITU World Telecommunication Development Report 1999, adapted from European Commission (DGXIII).

Visão de Mercado DoCoMo.jp



o futuro visto do passado ...

Mobile Applications in Commercial Operation



- Home
- About us
- Membership
- Technical
- Programme
- Asiavision
- Sports
- Media & Development
- Publications
- Calendar
- Past ABU Events
- Latest news
- Media Resources
- Industry links
- Contact us
- Positions Vacant
- Members Only

print 

Koreans to get free mobile TV broadcasts nationwide in May

Beginning next month, South Korean citizens will be able to watch free TV programmes on their mobile handsets, not just in Seoul and its vicinity, but also across the country, reports *The Korea Times*.



The Ministry of Information and Communication said it gave licences to KBS and MBC - the country's two top TV outlets - to start nationwide mobile broadcasting called terrestrial DMB.

Short for terrestrial Digital Multimedia Broadcasting (T-DMB), the system lets people on the road enjoy seamless video, theatre-like audio and data via in-automobile terminals or cell phones.

"KBS plans to expand the service areas to the whole country next month and MBC is poised to follow up in August," said Lee Ki-joo, a director general at the ministry.

"By then, T-DMB services will cover about 75 percent of the territory, or almost all residential areas. This will give a momentum to the struggling video-on-the-go services," Mr Lee said.

Terrestrial DMB debuted in December 2005 for the first time in the world but its coverage has been restricted to Seoul and the surrounding Kyonggi Province.

"Up until now, about 3.5 million terrestrial DMB devices have been marketed and the number is expected to double this year with the advent of the nationwide T-DMB era," Mr Lee said.

□We will also come up with various measures aimed at boosting the T-DMB offerings, which will feature six videos and one audio.□

Friday 06 Apr 2007

SEARCH OUR WEBSITE

ABU Weekly News Digest

Enter your email address below:

Forthcoming events



40th Sports Group Conference < [more](#) >



DRM-AIR-ABU Showcase < [more](#) >



RADIO NEWS EXCHANGE

ABU PRIZES 2007



FREE*

The PX-500 Mobile Broadband Connection Card



On the nation's largest mobile broadband network.

[Shop now >](#)

*After \$49.99 mail-in rebate with an unlimited



SEARCH



SUBSCRIBE TO

STORY TOOLS

Email |
 Print |
 RSS |
 del.icio.us |
 My Yahoo |
 Digg |
 Slashdot |
 Blogger |
 LiveJournal

Harris Teams with LG for Mobile TV

By Glen Dickson -- Broadcasting & Cable, 4/3/2007 8:49:00 AM

Broadcast technology giant Harris says will officially unveil at NAB 2007 a new mobile digital TV system it has developed with Korean consumer electronics manufacturer LG Electronics and demonstrate the technology on the show floor.

The mobile DTV system, called "MPH" for "Mobile-Pedestrian-Handheld," is an in-band system that will allow broadcasters to transmit a programming stream that can be received by mobile and portable devices alongside their existing high-definition TV programming stream, says Harris. It will be demonstrated in the Harris booth, the Advanced Television Systems Committee (ATSC) "Hot Spot" for new DTV technology, and in live, mobile demonstrations throughout the NAB convention.

For years, broadcasters have been pushing for a way to provide mobile and portable TV service via the U.S. digital television standard, which uses a transmission scheme called 8-VSB. LG's U.S. research subsidiary, Zenith Electronics Corp, the inventor of the 8-VSB system, developed a more robust transmission scheme called E-VSB that promised portable reception, but it hasn't been commercialized. Then Samsung and transmitter manufacturer Rohde & Schwarz developed another in-band system, called A-VSB, which they successfully demonstrated providing mobile TV service at the Consumer Electronics Show in January, in partnership with Sinclair Broadcast Group. That system is currently being considered for standardization by the ATSC.

TALKBACK | **BLOGS** | PODCASTS

We would love your feedback!

[Post a comment](#)

[» VIEW ALL TALKBACK THREADS](#)

Advertisement

The NO-FEE American Express SimplyCashSM Business Card

- **5% cash back** on gas, wireless, and office supplies
- **1% cash back** on virtually everything else
- No limit to the cash back you can earn: it's automatic, every month

[Apply Now](#)

Get a decision in 60 seconds



OPEN FOR BUSINESS

MediaFLO™ USA

MediaFLO USA, Inc.

As a wholly owned subsidiary of QUALCOMM Incorporated, MediaFLO USA is the nationwide dedicated multicast network that benefits wireless operators, content providers, and the consumer. Aggregating, optimizing, and distributing compelling content, MediaFLO USA delivers an unmatched mobile multimedia experience.

[Click here to visit the MediaFLO USA Web site.](#)



MediaFLO™

MediaFLO Technologies

Designed from the ground up by QUALCOMM engineers, FLO technology is the air interface capable of multicasting significant volumes of rich multimedia content to millions of mobile handsets from a single frequency network. FLO provides wireless operators with the technology to efficiently and cost-effectively complement existing cellular networks.

[Click here to visit the MediaFLO Technologies Web site.](#)



More Media. More Mobile. More You.

Content Providers

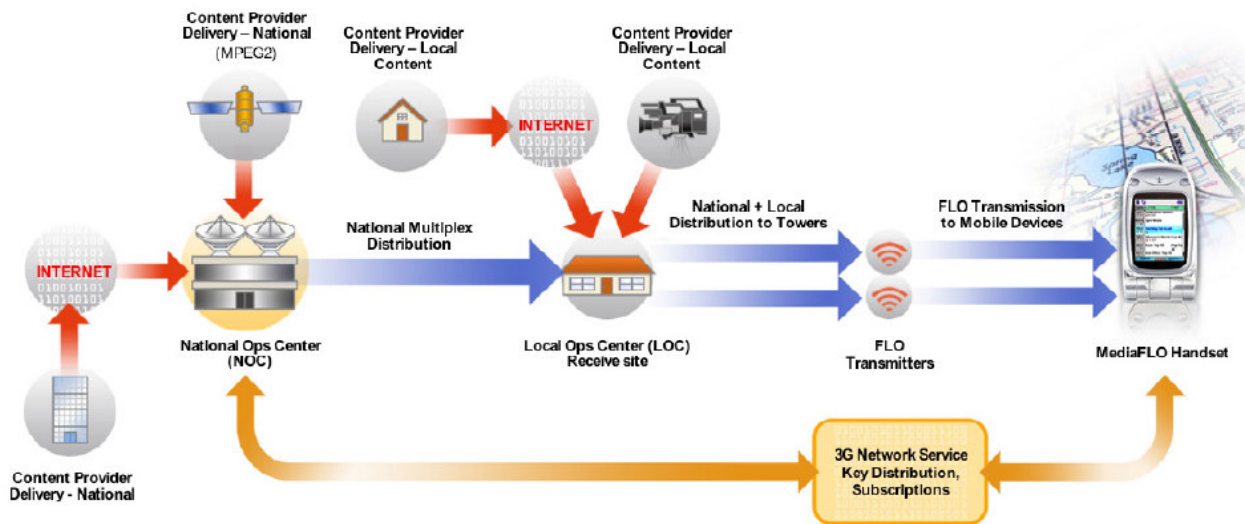


Reach out. Extend your brand into the wireless world.

[Read More...](#)



"Increasing demand for consumer upgrades toward higher-end, FLO™ -ready handsets."





Business Edge

ONTARIO BUSINESS NEWS - WITH AN EDGE

Invest in experience.



- change edition -

April 20, 2007

04 / 20 / 2007 - Vol. 3, No. 8 - Ontario Edition

Home

Archives

Circulation

Lists

About us

Contact us

- quick search -

GO



Edge Archives

Edge Writers:

- choose a writer -



GO

Edge Departments:

- choose a department -



GO

News Briefs

Succession planning critical: poll

[read more](#)

Baby Boomers 're-careering' to avoid retirement

[read more](#)

Gen-Y consumers driving mobile TV future

Vast mobile market includes many business applications

By Tom Keenan - Business Edge

Published: 04/05/2007 - Vol. 4, No. 7



EMAIL



PRINT



COMMENT

A bun fight in Europe may affect how you ultimately watch TV in the palm of your hand.

Ah, you say, but I don't want to watch TV there. I like my 50-inch plasma display with the 7.1 channel surround sound.

Sure, sure, but then you're probably over 30 and have better things to do with your time than sit at the bus stop watching excerpts from Family Guy or some idiot dancing on YouTube.

But take a look at the Gen-Y types (born 1976-1995) waiting for their buses. Most have MP3 players stuffed in their ears and fingers on cellphones or other gadgets. Maybe there is money in this video-on-the-run stuff. Remember how we all laughed at ringtones - now a US\$3.5 billion-plus worldwide market?

The recent mobile-TV dustup in Europe is classic EU bickering, with Viviane Reding, the European commissioner for information society and media, basically ignoring the advice of the European Mobile Broadcasting Council and the majority of Europe's broadcasters and telecom operators.



SILVERTIP
GOLF RESORT
CANMORE • ALBERTA



Luxury
Mountain
Retreats

in Canmore, Alberta

Gen-Y ou Net.Generation

- 97% own a computer
- 94% own a cell phone
- 76% use Instant Messaging.
- 15% of IM users are logged on 24 hours a day/7 days a week
- 34% use websites as their primary source of news
- 28% own a blog and 44% read blogs
- 49% download music using peer-to-peer file sharing
- 75% of students have a [Facebook](#) account
- 60% own some type of expensive portable music and/or video device such as an [iPod](#).

Connecting to the Net.Generation: What Higher Education Professionals Need to Know About Today's College Students, Reynol Junco and Jeanna Mastrodicasa (2007).

Email:

Password:

Login

[Forgot Password?](#)

Already a Member? [Login](#)



Facebook is a **social utility** that **connects you** with the people around you.

Everyone can use Facebook — [Sign Up](#)

[upload photos](#) or [publish notes](#) • get the [latest news](#) from your friends • post videos on your profile • tag your friends • use [privacy settings](#) to control who sees your info • [join a network](#) to see people who live, study, or work around you

 [Find your friends](#) ▶

or **Search** by name: [Search](#)

[More Search Options](#) »

Facebook is a [social networking website](#) which was launched on [February 4, 2004](#).

Facebook was invented by [Mark Zuckerberg](#) in 2004. Initially the membership was restricted to students of [Harvard College](#). It was originally based on what first-year students were given called the "face book" which was a way to get to know other students on campus. It was subsequently expanded to other Boston area schools ([Boston College](#), [Boston University](#), [MIT](#), [Tufts](#)), [Rochester](#), [Stanford](#), [NYU](#), [Northwestern](#), and all [Ivy League](#) schools within two months. Many individual universities were added in rapid succession over the next year. Eventually, people with a [university](#) (e.g. [.edu](#), [.ac.uk](#), etc.) [email address](#) from institutions across the globe were eligible to join. Networks were then initiated for high schools and some large companies. Since [September 11, 2006](#), it has been made available to any [email address](#)^[2] user who inputs a certain age range. Users can select to join one or more participating networks, such as a [high school](#), place of employment, or geographic region.

As of [July 2007](#), the website had the largest number of registered users among college-focused sites with over 34 million active members worldwide (also from non-collegiate networks).^[3] From September 2006 to September 2007^[4] it increased its ranking from 60 to 6th most visited web site, and was the number one site for photos in the [United States](#), ahead of public sites such as [Flickr](#), with over 8.5 million photos uploaded daily.^{[5][6]}

The name of the site refers to the [paper facebook](#)s depicting members of the campus community that US colleges and preparatory schools give to incoming students, faculty, and staff.



Por que não no .br?

cinco gerações da informática

(by Silvio Meira)

Primeira

***atrás do
balcão***

segunda

no balcão

terceira

depois do balcão

quarta

em você

quinta ...

***em tudo,
em todos,
em todo lugar.***

*Um pouco de
história das
comunicações*

História (até 2G)

1831 - Telégrafo

1835 – Código Morse

1843 – Longa Distância

1894 – Sem Fio

1895 - Rádio

1927 – TV

1949 – Rede TV US

1972 – TV a Cabo US

1998 – DVB-T Europa
e ATSC US

1876 – Telefone

1877 – Switch

1878 – Lista Telefônica

1889 – Central

1889 – “Orelhão”

1947 – Celular

1978 – AMPS

1979 – Rede Celular Japão

1983 – Rede Celular US

1987 – 800 MHz Liberado FCC

1987 – GSM

1991 – TDMA

1994 – CDMA

1936 – Computador

1948 – Transistor

1958 – CI

1969 – ARPANET

1971 – Microprocessador

1973 – Ethernet

1981 – PC

1989 – Web/HTML

1994 – Internet Comercial

1999 – 802.11 (Wi-Fi)

Conteúdo Digital

Marcos Evolutivos e Tecnologias

0G

- PTT
- MTS
- IMTS
- AMTS

1G

- NMT
- AMPS
- Hicap

2G

- GSM
- iDEN
- D-AMPS
- cdmaOne
- PDC

3G

- W-CDMA
- UMTS
- FOMA
- CDMA2000 1xEV
- TD-SCDMA

4G

Pesquisa

2.5G

- GPRS
- WiDEN

3.5G

- HSDPA

2.75G

- CDMA2000 1xRTT
- EDGE

3.75G

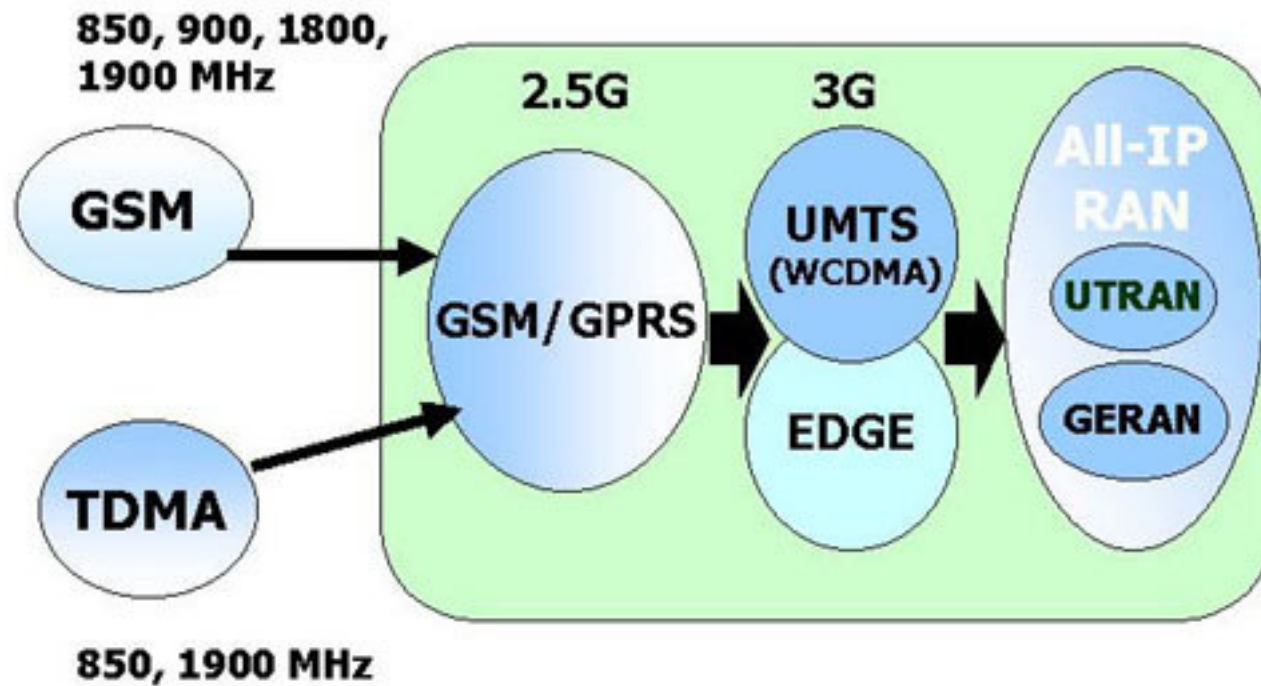
- HSUPA

Transmissão Digital

Conteúdo Digital Móvel

Evolução de GSM 3G

GSM Evolutionary Path to 3G



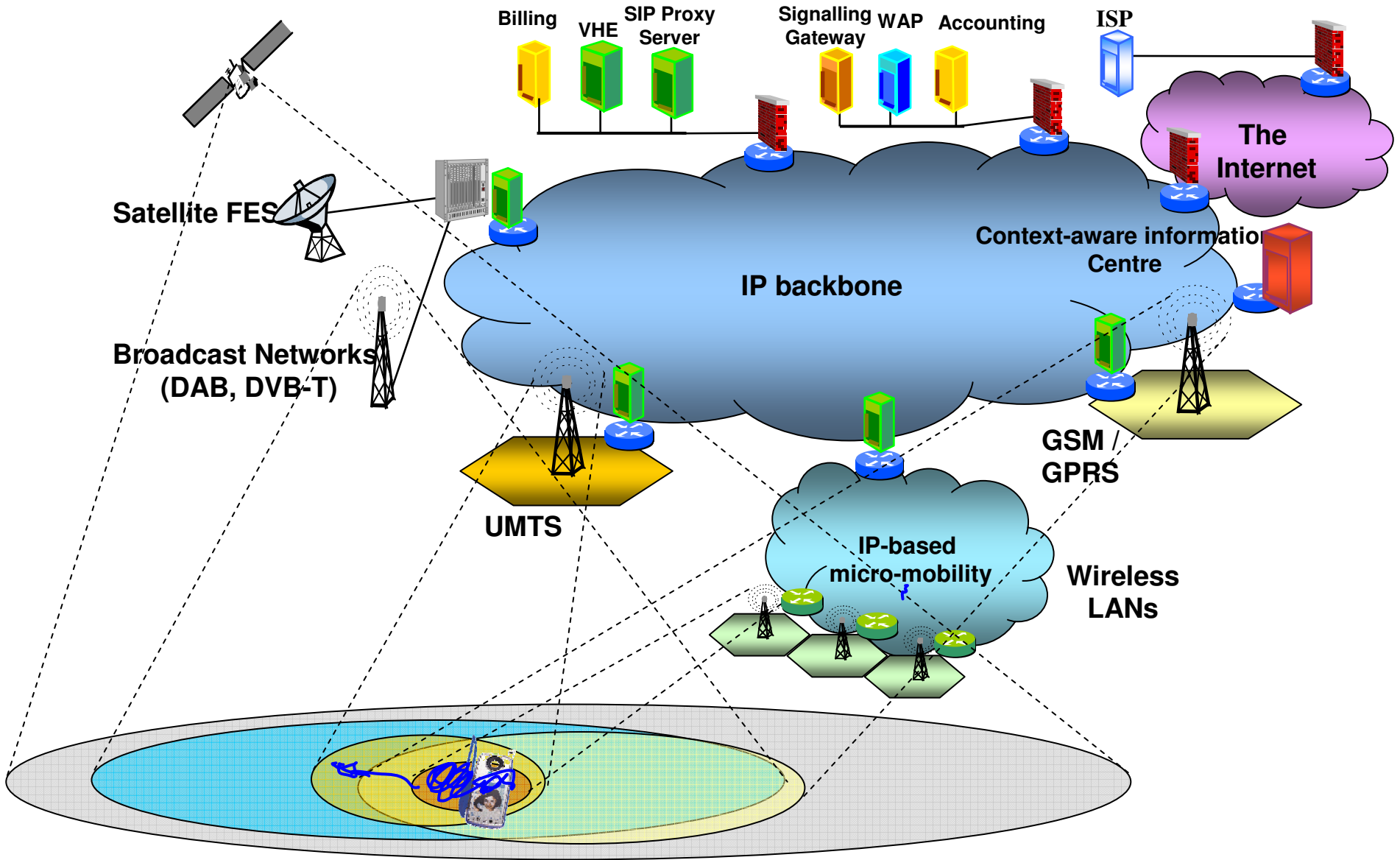
... e depois, 4G

- Pervasive networks. An amorphous and presently entirely hypothetical concept where the user can be simultaneously connected to several wireless access technologies and can seamlessly move between them.
- Included in this concept is also smart-radio technology to efficiently manage spectrum use and transmission power as well as the use of mesh routing protocols to create a pervasive network.
- The killer application of 4G is not clear, but video is one of the big differences between 4G and 3G.

As possíveis tecnologias ...

- 4G uses OFDM (Orthogonal Frequency Division Multiplexing), and also can implement OFDMA (Orthogonal Frequency Division Multiple Access) to better allocate network resources to multiple users.
- 4G devices may use SDR (Software-defined radio) receivers which allows for better use of available bandwidth as well as making use of multiple channels simultaneously.

Um ambiente heterogêneo





***The Business
Opportunity
for
Consumer
Wireless
Applications***

**3G
americas**
November 2004

Oportunidades
para os negócios
e os projetos no
mercado de
consumo.

The ideal wireless application should

- **Be entertaining and easy to use**
- **Accommodate the device**
- **Support spontaneity**
- **Be easy to obtain**

Enterprise Applications

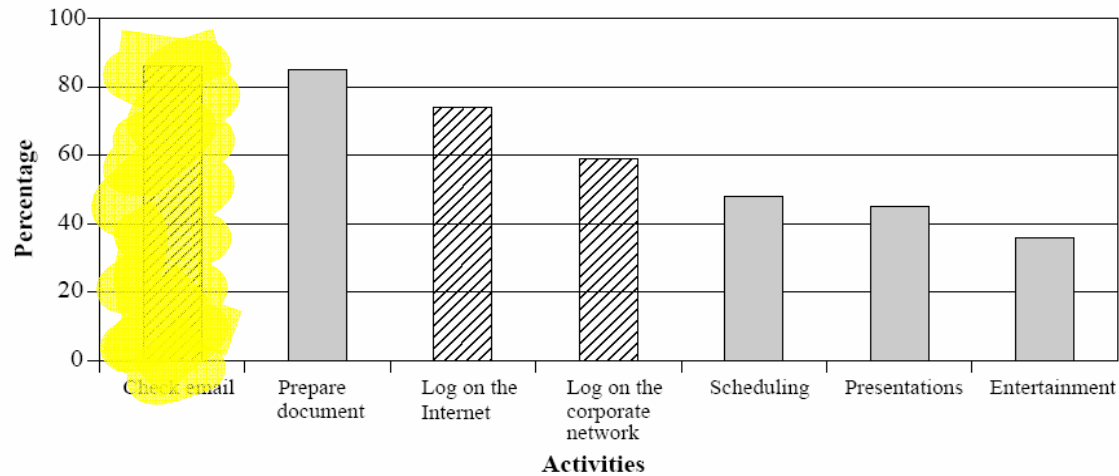
**Key Considerations for
Selecting and Deploying
Wireless Corporate
Applications**



**3G
americas**
August 2005

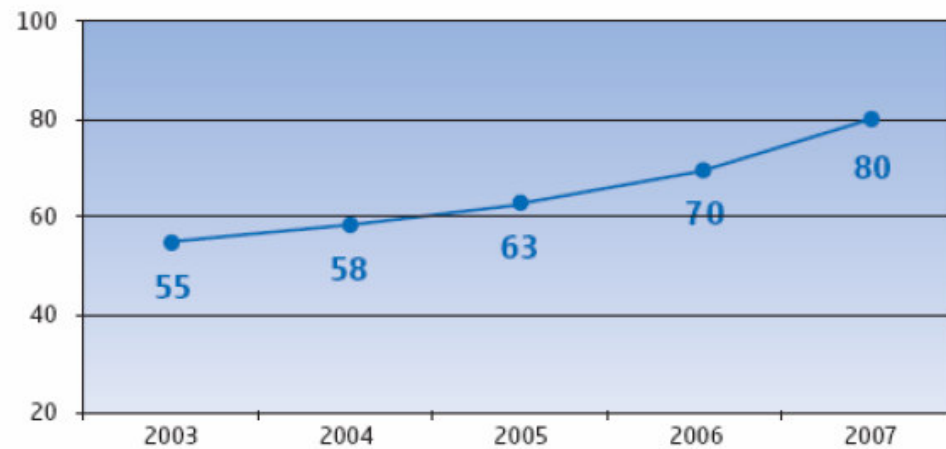
Mais
oportunidades
no mundo
corporativo.

e-mail é killer, porquê...



Laptop activities while traveling.

Extra Work Time per Employee/Day due to Wireless Email (minutes)



Source: Enterprise Wireless Email Market Trends - 2003-2007. The Radicati Group

Fabio Silva

fabio@cin.ufpe.br