Web 2.0 Meets the Handset
or *Mobile Embraces the Web (finally!)*

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What Can We Learn from History?
(part 1)

Internet 1994	Mobile Data Services 2005
Too slow	Too slow
"Walled gardens"	"Walled gardens"
Lack of interoperability	Lack of interoperability
Open Web changed the world	? ? ?

2005: W3C starts the Mobile Web Initiative

What Can We Learn from History?
(part 2)

Internet 1994	Mobile Data Services 2005
Lack of content	Tons of content and growing
No industry / business model	Both emerging rapidly
Web 1.0: Documents	Web 2.0 and Web 3.0
Smaller user base	Mobile = 2x current Web users
Web = novelty	Web is a staple of life (for many)

2008: Is the US mobile industry finally ready to embrace the open Web model?

World Wide Web Consortium: Leading the Web's Expansion…

.. from a Web of linked **documents**,

to ***One Web***:

- **of Creators and Consumers (2.0)**
- **of Linked Data and Services (3.0)**
- **on Everything**
- **for Everyone**

One Web …

… *providing the same information and services to users, regardless of the device they are using.*

Web 2.0

- What is it?
  - Everyone is a creator, as well as a consumer
  - Dynamic interaction
- **Web 2.0 @ W3C = [Rich Web Clients Activity](#)**
- Updating existing W3C standards & javascript
  - [HTML5](#) + graphics, styling, etc.
- Standardizing new technologies
  - [AJAX](#) technologies and other javascript stuff
  - [Widgets](#), security, etc..

Web 3.0*

● Web 1.0 = Linked Documents

● **Web 3.0 = Linked Data (Semantic Web)**

– Web becomes
a global,
relational database

– Potential to
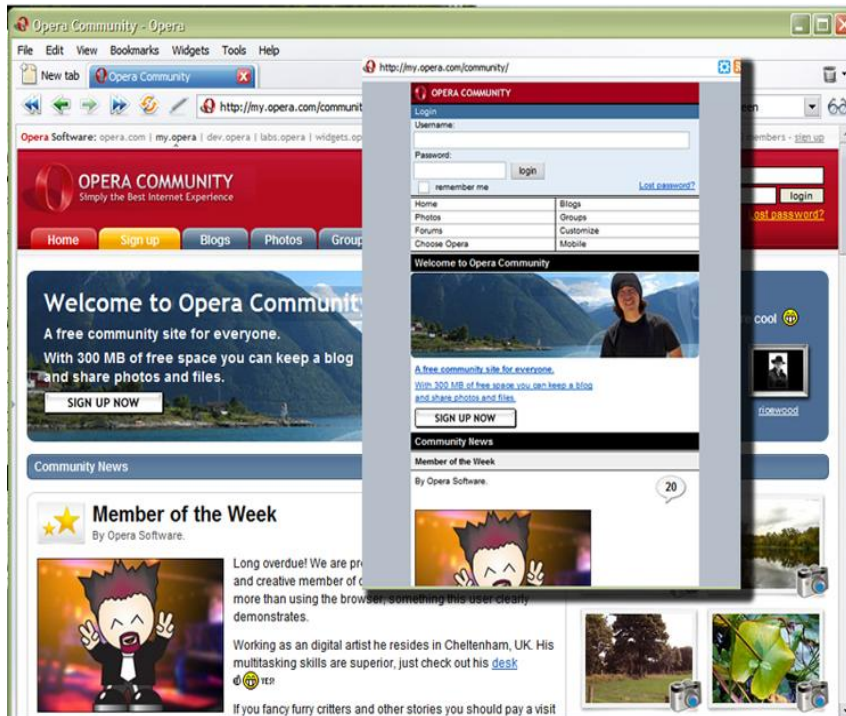break down
walled gardens
of many Web 2.0
applications
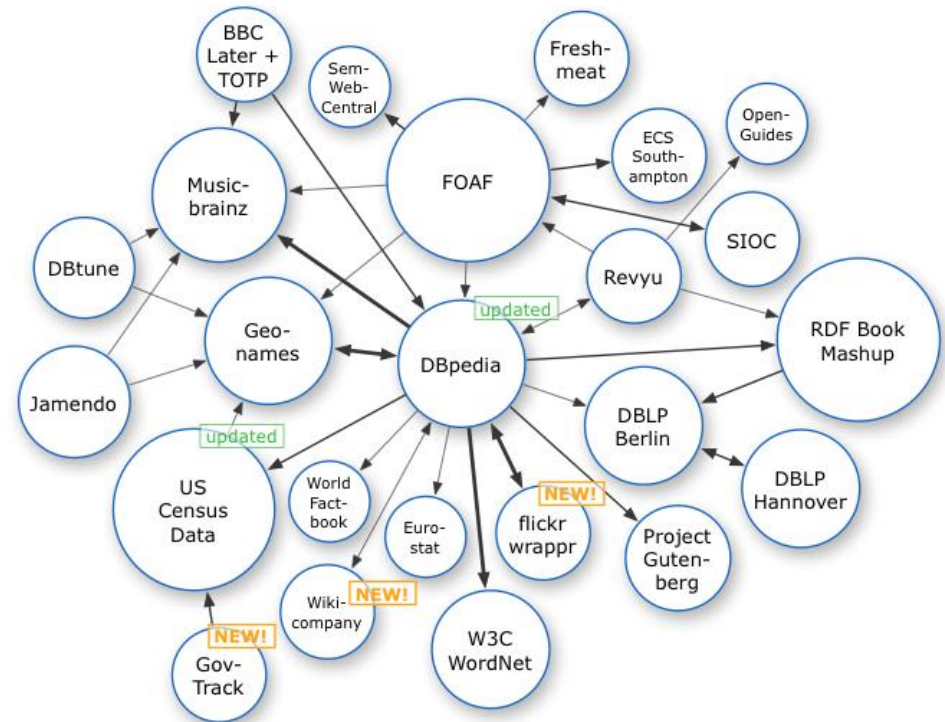
*New York Times, InternetNews

Web on Everything: W3C Mobile Web Initiative

Make Web access on all devices seamless, reliable, cost-effective

- [Mobile Web Best Practices 1.0](#)

- [Device Description](#)
- [Ubiquitous Web Applications](#)

Supporters of Mobility and Ubiquity Standardization @ W3C

Additional, Key Participants: Alcatel-Lucent, AOL, AT&T, BT, Citigroup, El Mundo, FOSI, Google, Hutchinson 3, IBM, Intel, Microsoft, OMA, Openwave, Samsung, Siemens, SK Telecom, Sun, T-Onlin, Telefonica, many others.

MWI Next Generation:
New push about to start …

- mobileOK, certification, testing, etc.
- Mobile Web 2.0 applications
- Best practices for content adaptation
- Location-based services (including security)
- Mobile Web in developing countries
- Integration of voice and multimodality
- Mobile video

Web for Everyone

- Commerce
- Healthcare
- Education
- eGovernment
- Communication
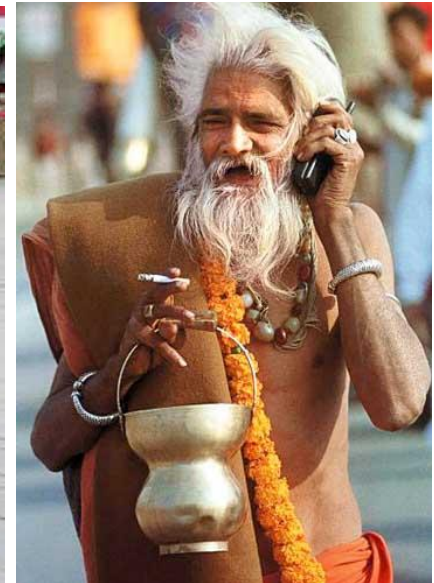
- [Mobile Web Initiative](#)
- [Accessibility](#)
- [Internationalization](#)
- [Developing Countries](#)

Challenges for the Web Everywhere

For:

- Consumers
- Enterprises
- Technologists
- Advertisers
- Society

In areas including:

- Identity, privacy, trust
- Pricing and revenue models
- Ubiquitous interoperability
- Consistent, high quality user experiences
- … on variety of devices
- Etc.
- Etc.

For more information

http://www.w3.org/

Mobile Web Initiative
http://www.w3.org/Mobile/

W3C Membership:
http://www.w3.org/Consortium/membership

Questions

For

Today

Big Question (all)

What does the mobile industry have to do to bring Web 2.0 to consumers in meaningful new ways?

(devices, privacy, pricing, applications, access...)

Question #1

What will be the role of operators in mobile advertising two years from now? What are the key factors for increasing or losing their seat at the table?

(e.g., based on current/potential value of data)

Question #2

Consumers vote with their feet, thumbs and wallets when it comes to user experience -- what are the next three capabilities consumers will want and the mobile industry should be planning for?

(content, communication [txt, im], device)

Question #3

What opportunities
and hazards
come with
mobile social networking?

Question #4

**Mobile advertising
reality check:
what's just hype,
and what does mobile marketing
industry need to do
to prove its value?**
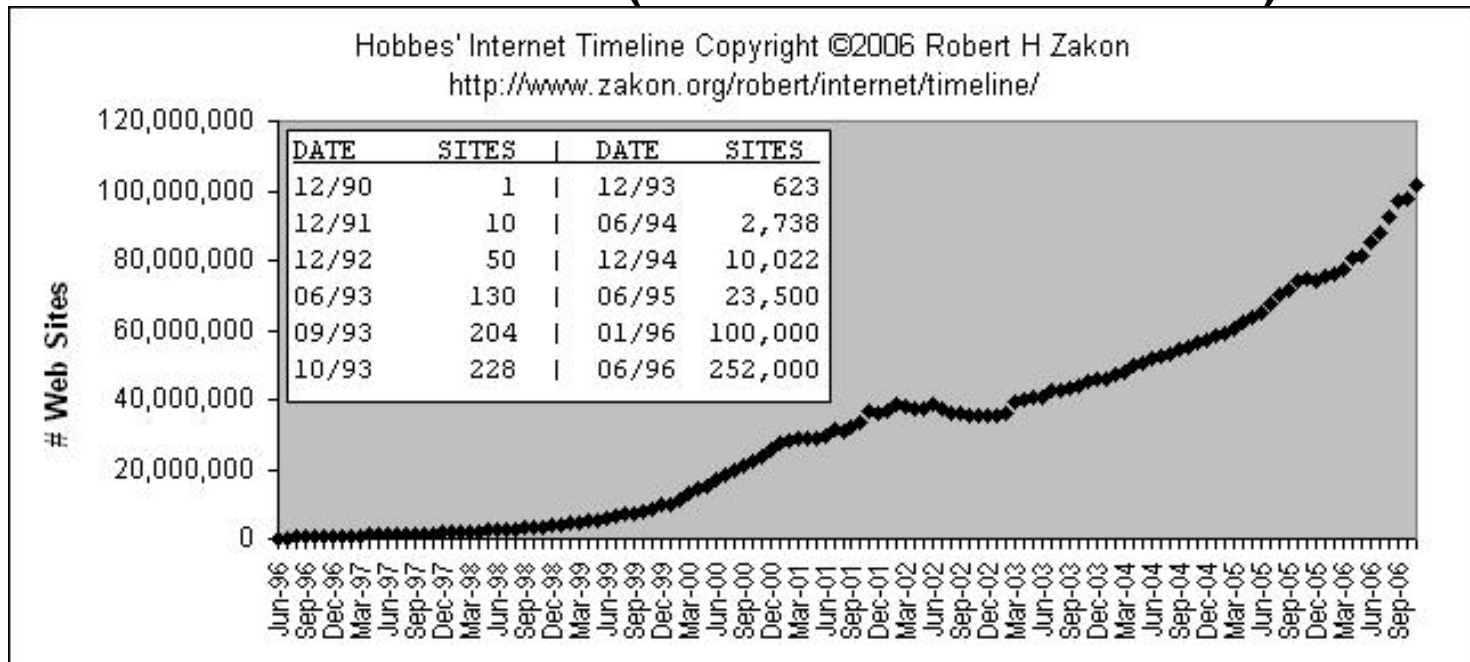
- Extra slides follow

More than 1 Billion Served

	WORLD INTERNET USAGE AND POPULATION STATISTICS					
World Regions	**Population (2007 Est.)**	**Population % of World**	**Internet Usage, Latest Data**	**% Population (Penetration)**	**Usage % of World**	**Usage Growth 2000-2007**
Africa	933,448,292	14.2 %	43,995,700	4.7 %	3.5 %	874.6 %
Asia	3,712,527,624	56.5 %	459,476,825	12.4 %	36.9 %	302.0 %
Europe	809,624,686	12.3 %	337,878,613	41.7 %	27.2%	221.5 %
Middle East	193,452,727	2.9 %	33,510,500	17.3 %	2.7 %	920.2 %
North America	334,538,018	5.1 %	234,788,864	70.2 %	18.9%	117.2 %
Latin America/Caribbean	556,606,627	8.5 %	115,759,709	20.8 %	9.3 %	540.7 %
Oceania / Australia	34,468,443	0.5 %	19,039,390	55.2 %	1.5 %	149.9 %
WORLD TOTAL	6,574,666,417	100.0 %	1,244,449,601	18.9 %	100.0 %	244.7 %

*In **1995, there were ~16,000,000 Internet users, or 0.4% of global population***

Source: http://www.internetworldstats.com/stats.htm

Internet Growth Driven by Open Web

Number of Web Sites (domain names and content)

Hobbes' Internet Timeline Copyright ©2006 Robert H Zakon
http://www.zakon.org/robert/internet/timeline/

DATE	SITES		DATE	SITES
12/90	1		12/93	623
12/91	10		06/94	2,738
12/92	50		12/94	10,022
06/93	130		06/95	23,500
09/93	204		01/96	100,000
10/93	228		06/96	252,000

Internet Users in early 2007 ~ 1+ billion

Users:Servers ratio=> 1996 ~ 150:1.   2000 ~ 50:1.   2006 ~ 10:1

Sources: *http://www.zakon.org/robert/internet/timeline/*
              http://www.internetworldstats.com/stats.htm

Mobile Growth and Potential

Legend: Area (GSM) | Wireless Penetration | Population (GSM)

http://www.gsmworld.com/documents/universal_access_full_report.pdf *(2006)*
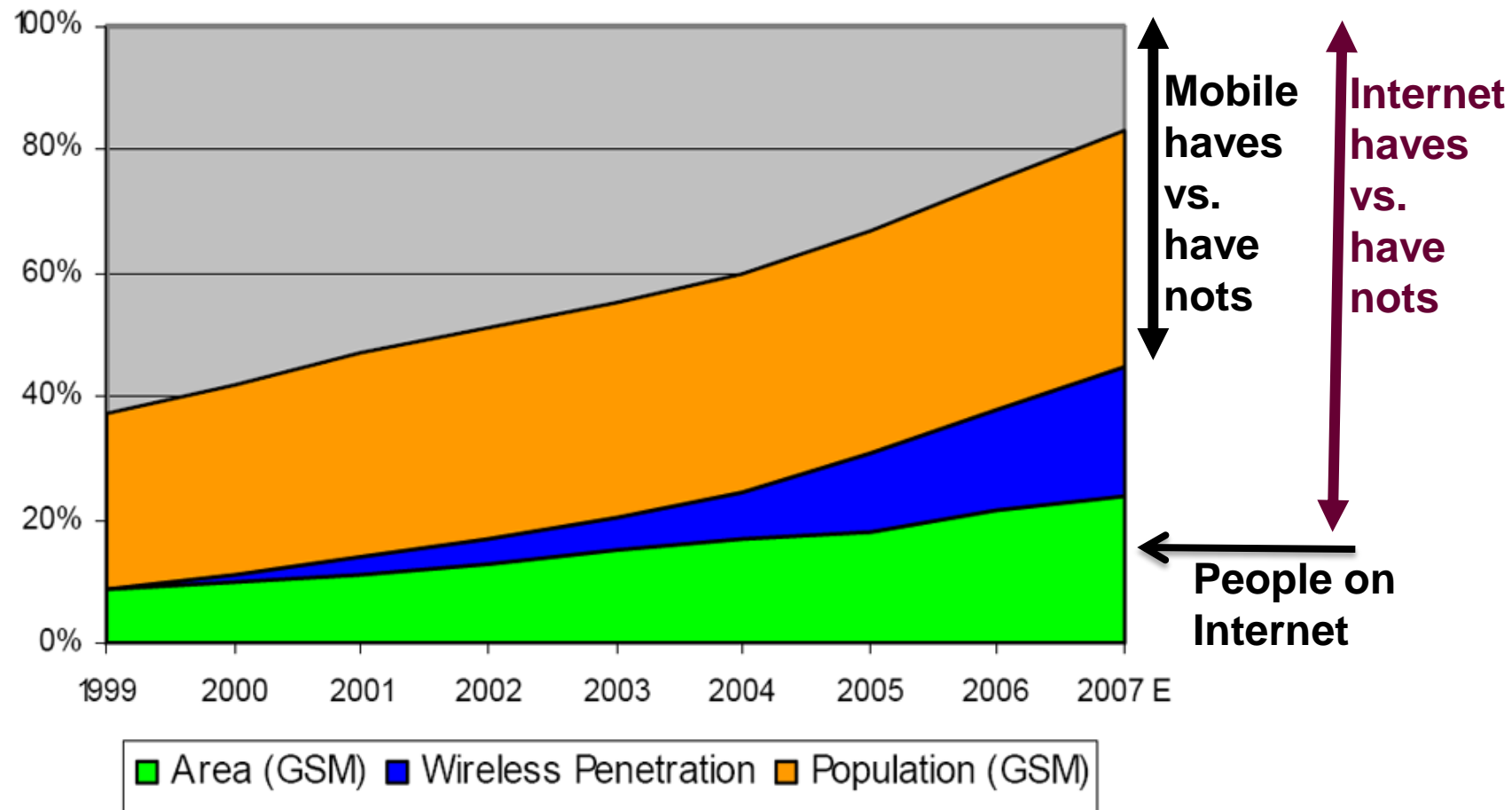
What Led to the Web's Success?

- Simple architecture - HTTP, URI, HTML
- Networked - value grows with data, services, users
- Extensible - from Web of documents to ..
- Tolerant - works with imperfect mark-up, data, links, SW
- Universal - regardless of HW, OS, SW, language, ability
- Free / cheap - browsers, information, services
- Simple (and fun) for users - text, graphics, links
- Powerful - for people (and machines)
- ***Open standards ...***

Challenges for Mobile Web

- 2 billion people own mobile phones with Web browsers
  - *300-400 million are actively used*

- 2-3 million new mobile phones sold / day
  - *Most new phones will continue to include simple Web browsers*
- *Potential for bringing the Web to more people is huge*

Mobile Browsing

Graphic: Nokia
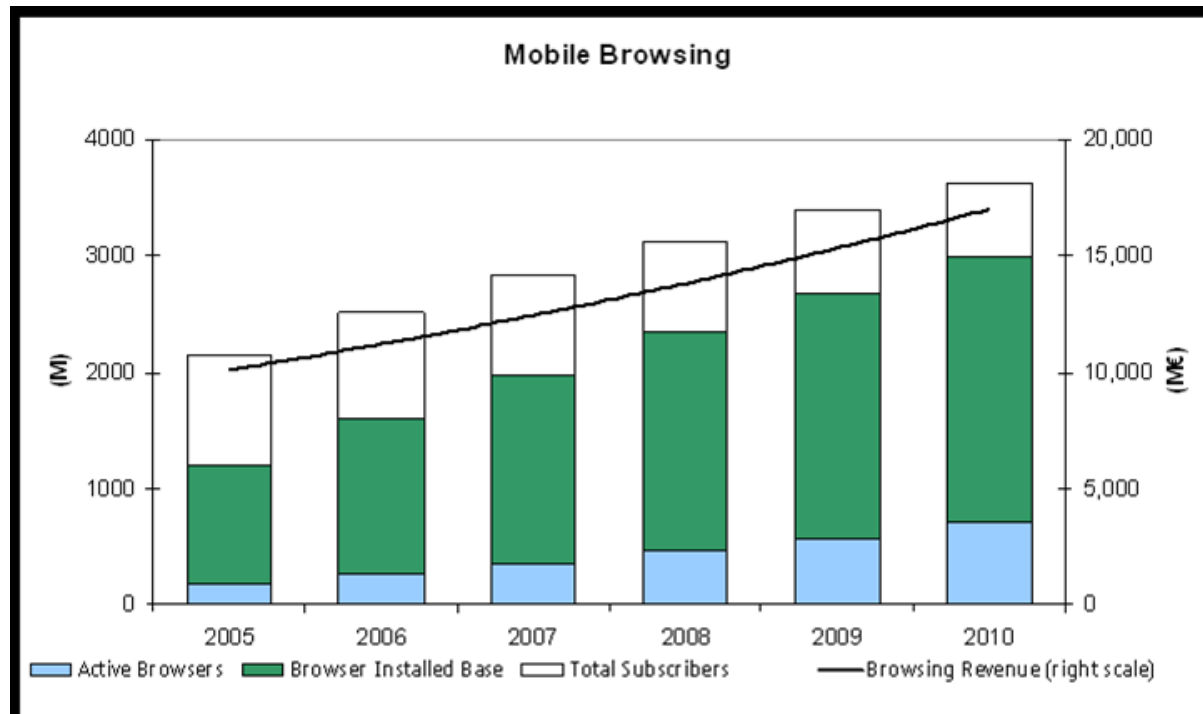
W3C Standards Address Mobility Challenges

User Requirements	W3C Solutions
User-friendly content	**Mobile Web Best Practices**
"One Web"	**Device Description**
Effective adaptation	**Ubiquitous Web**
Labeling, protection	**Protocol for Web Description**
Description, discovery, trust	**mobileOK**
Voice, stylus, keys	**VoiceXML, Multimodal**
Universality	**WAI, I18N, Developing World**
Security	**Browser Security, Privacy**
Interoperability	**Web standards: XHTML, CSS, Graphics, Forms, AJAX, Widgets, Ubiquitous Web, etc.**

Ubiquitous Web Applications

- Enabling Web applications to interact across wide diversity of devices:
    - Computers, equipment, media, appliances, mobile devices, physical sensors, effectors, consumer electronics

- Deliverables … standards for:
    - Device independent authoring
    - Delivery contexts
    - Remote eventing, device coordination
    - Location service support

Working Group homepage

Internationalization

- Can you view content easily no matter where you are in the world?

- How can we make mobile devices travel more easily around the world?

Web 2.0 Convergence on Handsets

- Using the Web on phones can be frustrating, costly, and limiting.

- Fixing this requires:
  - Seamless interoperability
  - Ease of use
  - Safety…*and…*
  - **Simple guidelines on the use of existing standards**

Mobility is global…

…and the Web is mobile.

Making the Web work across devices,
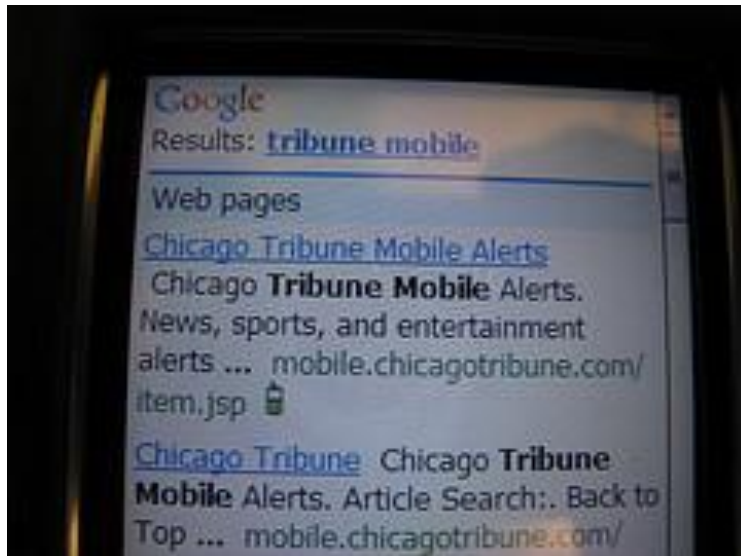
…how, when, and where you want,

…with new rich media experiences,
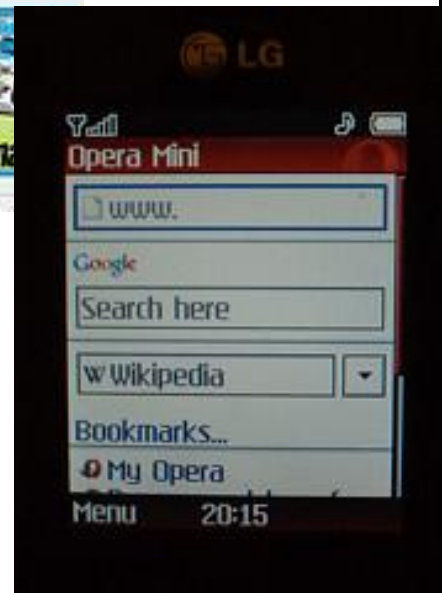
New technologies, new revenue models