Lessons learned in a decade of Japanese Mobile Internet:

Challenges in the Mobile Internet Evolution

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Outline

- ACCESS Overview
- Lessons: Triple Burdens (Restriction, Dynamism, Diversity)
- Evolution History of Mobile Internet in Japan
- Lessons Learned in Time Dimension (Stage, Changes, Landscape Shift, . . .)
- Phased View of Mobile Internet Evolution
- Business Model Conflicts
- Hot Topics: One-seg broadcast, video, and real-world integration
- Summary

ACCESS overview

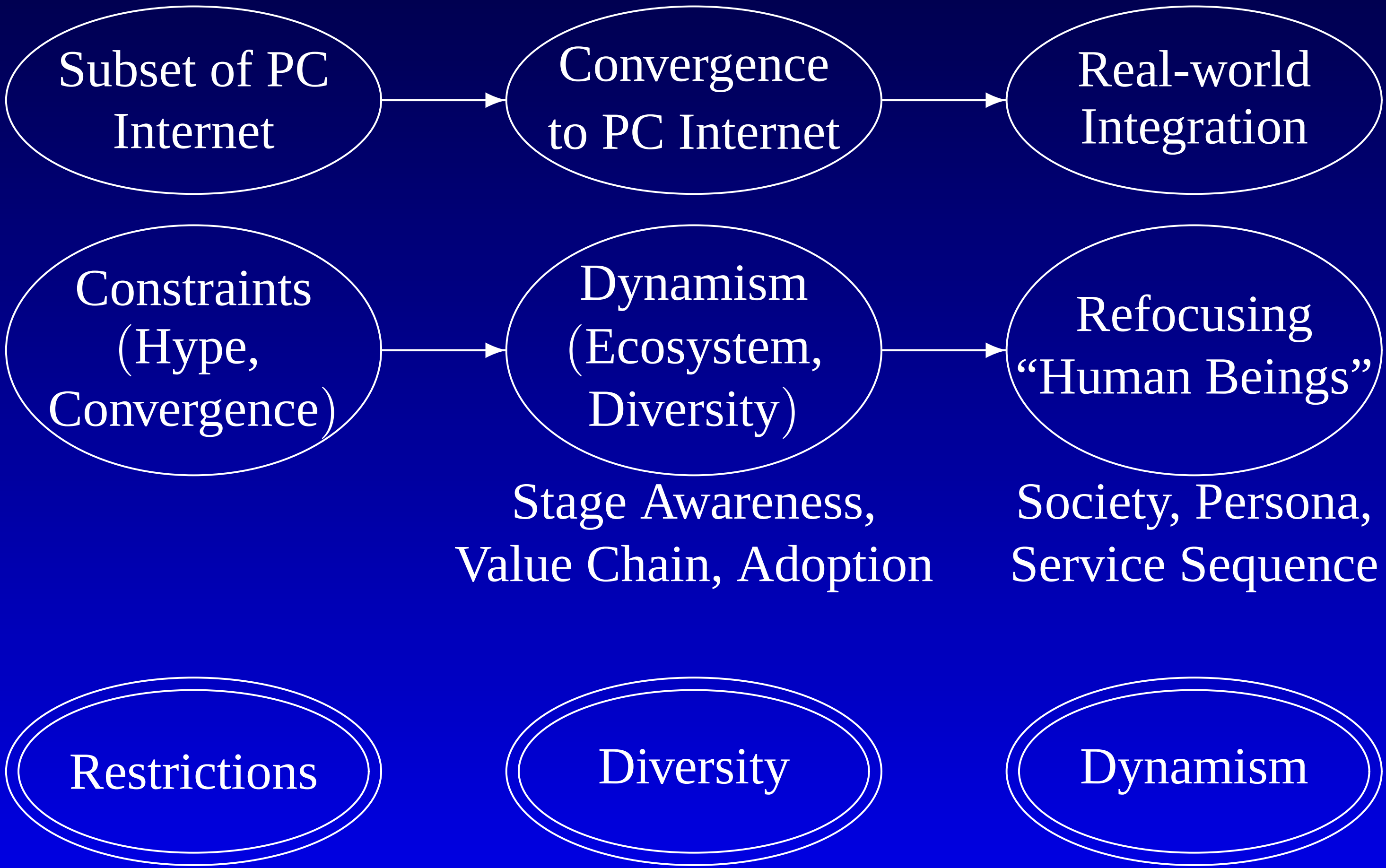
- Founded in 1984 (Tokyo)
- 1,625 employees (2008/E)

$NetFront^{TM}$ Family

- Browser and network software components: 760 million licenses (by April 2009)
- One-seg browsers: 153 models, 48 million units in Japan (by 2009)

Lessons

- The biggest lessons may be “dynamism” and “never-ending challenges”.



A Decade of Evolution

Screen Resolution

Year	1999	2006	2008
Screen Resolution (dot)	94x72	240x400	480x864
Model	501i	903iTV	905i
Color	Monochrome	color	color

A Decade of Evolution(2)

Data Speed

PDC	9.6Kbps–28.8Kbps
IMT-2000(3G)	–144Kbps(H) –384Kbps(L) –2Mbps(S)
HSDPA*	2–3Mbps(ave) 14Mbps(max)

Note: S: stayed, L: low speed, H: high speed

HSDPA: High Speed Downlink Packet Access

PDC: Personal Digital Cellular

(Japanese local 2G standard)

FOMA started in 2001, HSDPA started in 2006

A Decade of Evolution(3)

Mobile Internet Users (premium service subscription)

Year	Premium Users (Mil)	Users (Mil)	Percentage (%)
2000	26.86	58.19	46.2
2002	59.53	73.77	80.7
2004	73.55	85.48	86.0
2006	82.59	94.94	87.0
2008	90.17	105.83	85.2

http://www.tca.or.jp/database/index.html

Evolution

ECMAscript, DOM
SMIL, SVG, PDF
IrDA comm.
3D Polygon
Camera
Java support
SSL support
JPEG
WAP2.0
+ Alpha
Color support
Ringer tone
download
C-HTML
GIF
Mega Pixel Camera
Flash support
i-mode
Start
Video download
TV-Conference
@Mail
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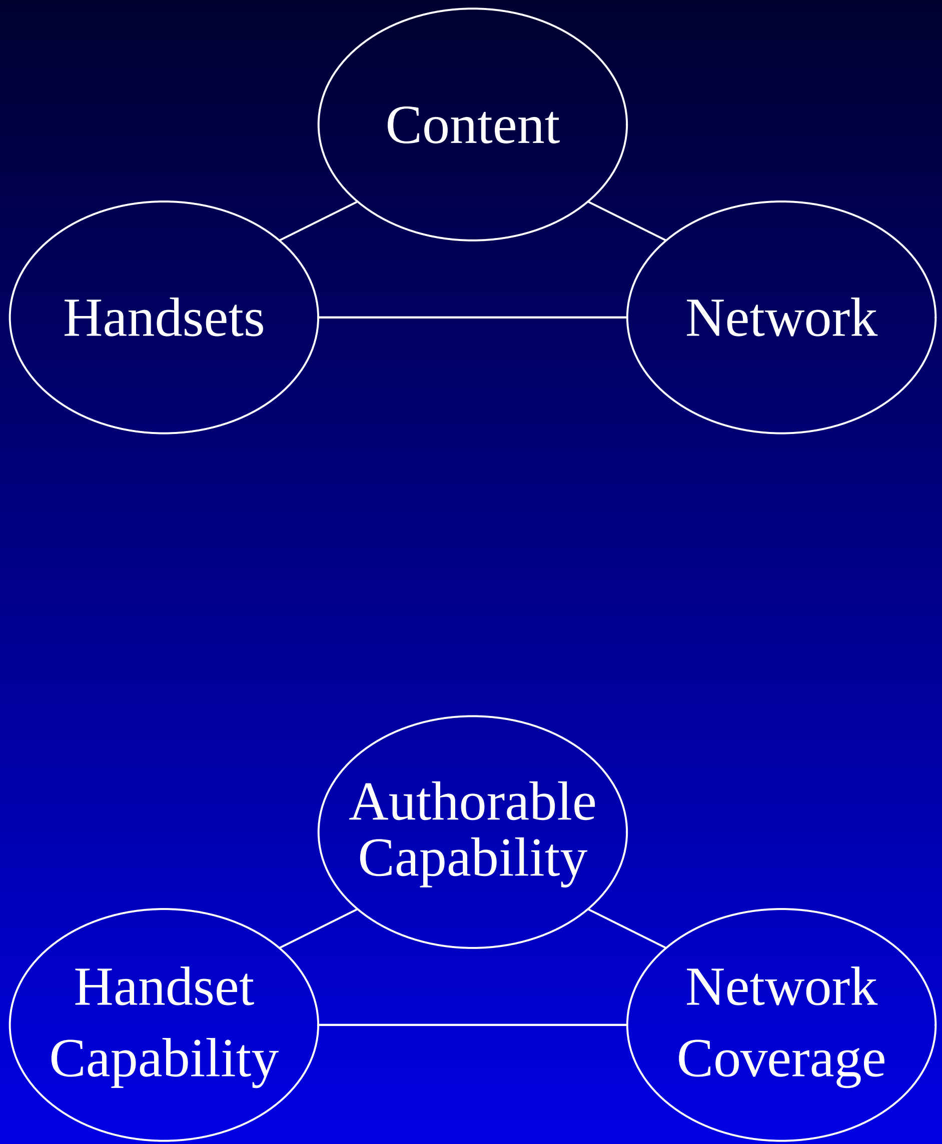
Global
i-mode
3G
FOMA

Stake Holder Relation



Challenges for Content Providers

Capability Diversity

Time for Adoption

Evolution Speed

- Content market dynamism (with technology dynamism) continues to provide challenges.
- Having killed many start-up companies over a decade.
- Too many technology components (difficult for end users to swallow).

3G Penetration in Japan

Month	3G Users (Million)	Wireless Subscribers (Million)	Ratio (%)
2004.9	24.94	84.31	29.6
2005.9	39.23	89.13	44.0
2006.9	58.15	93.81	62.0
2007.9	79.83	99.33	80.4
2008.9	94.03	104.83	89.7

Data Service Flat Rate Users

Month	Flat rate users (Million)	Wireless subscribers (Million)	ratio (%)
2004.9	2.38	84.31	2.8
2005.9	9.27	89.13	10.4
2006.9	17.90	93.81	19.1
2007.9	31.03	99.33	31.2
2008.9	39.73	104.83	37.9

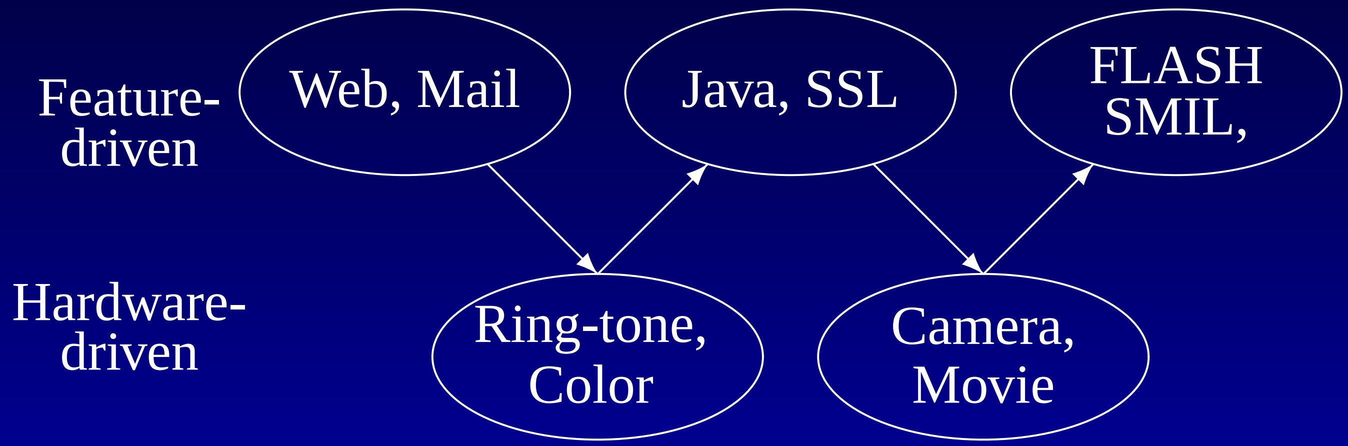
Mobile Content Business

Category	2004	2005	2006	2007	2008
Mobile Content	2,603	3,150	3,661	4,233	4,835
Mobile COmmerce	2,593	4,074	5,624	7,231	8,689
Mobile Solution	5,196	7,224	9,285	11,464	N.A.

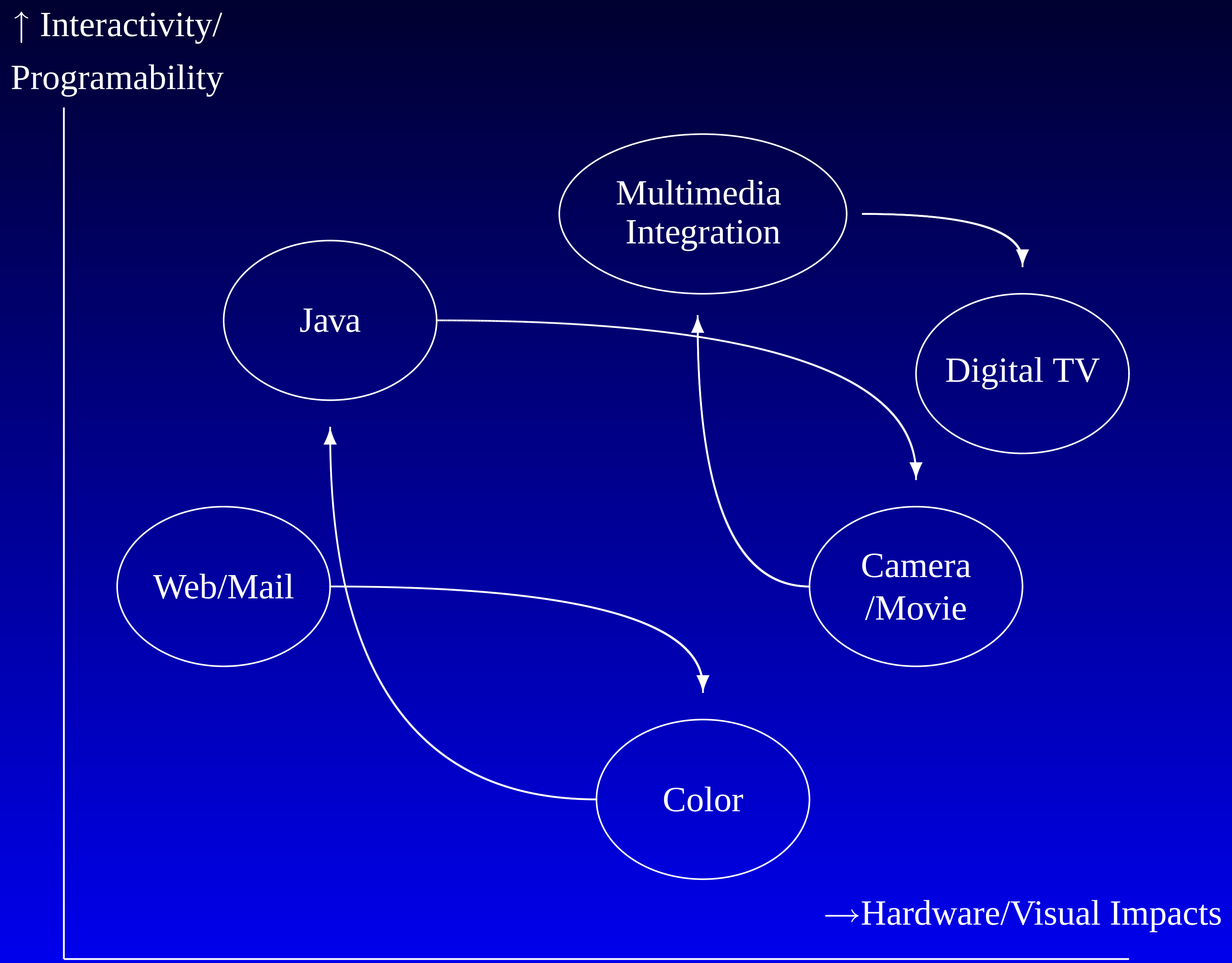
(100 Million Yen)

2009.7.22 http://www.soumu.go.jp/

Turn-taking Model



Spiral Model



Crashed Entrepreneur Dreams

Creation of new venture companies	→	IPO of early companies	→	Merging or Business extension	→	M&A from existing media companies

- Failure over Death Chasm
  - Increased Competition
  - Increased Diversity of Capabilities

Acceptance Management

- Initial Risk-taker’s role
- Time to allow unexpected user feedback
- time for user’s mutual education

Mobile Battlelines

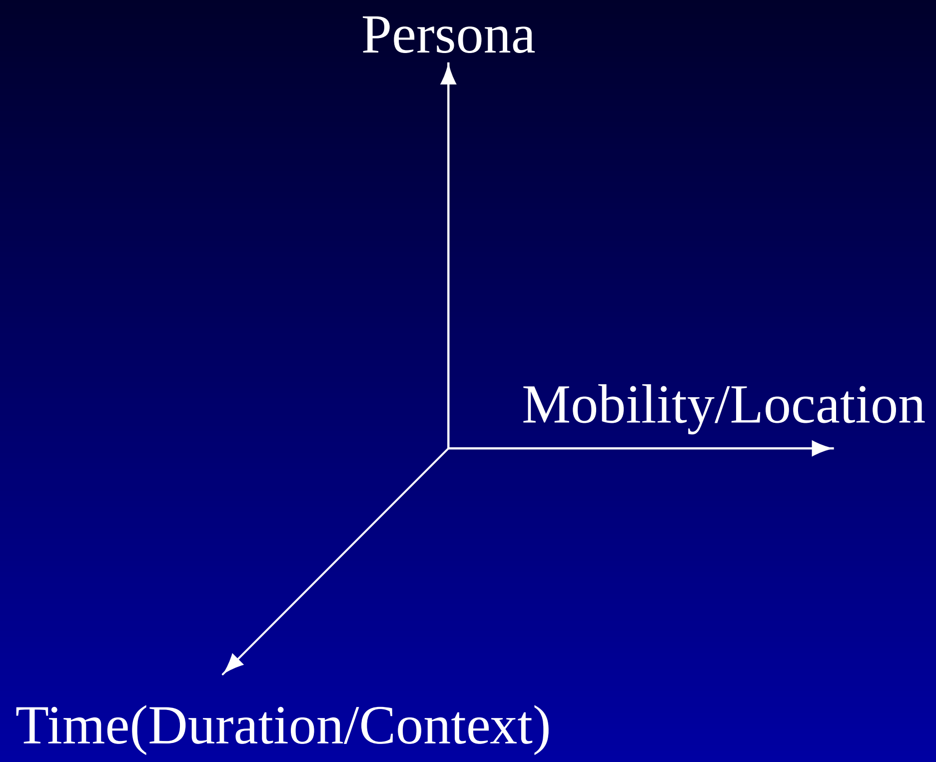
- As the number of service menu increases, the impact of each service decreases.
- User's capacity to choose services is limited.
- Increased services lead to incresed development cost.

Stage Awareness

Hardware Upgrades	New Services
Design	Discount

- Technology vs. Marketing dimension
- New Hardware vs. New/Old Hardware dimension

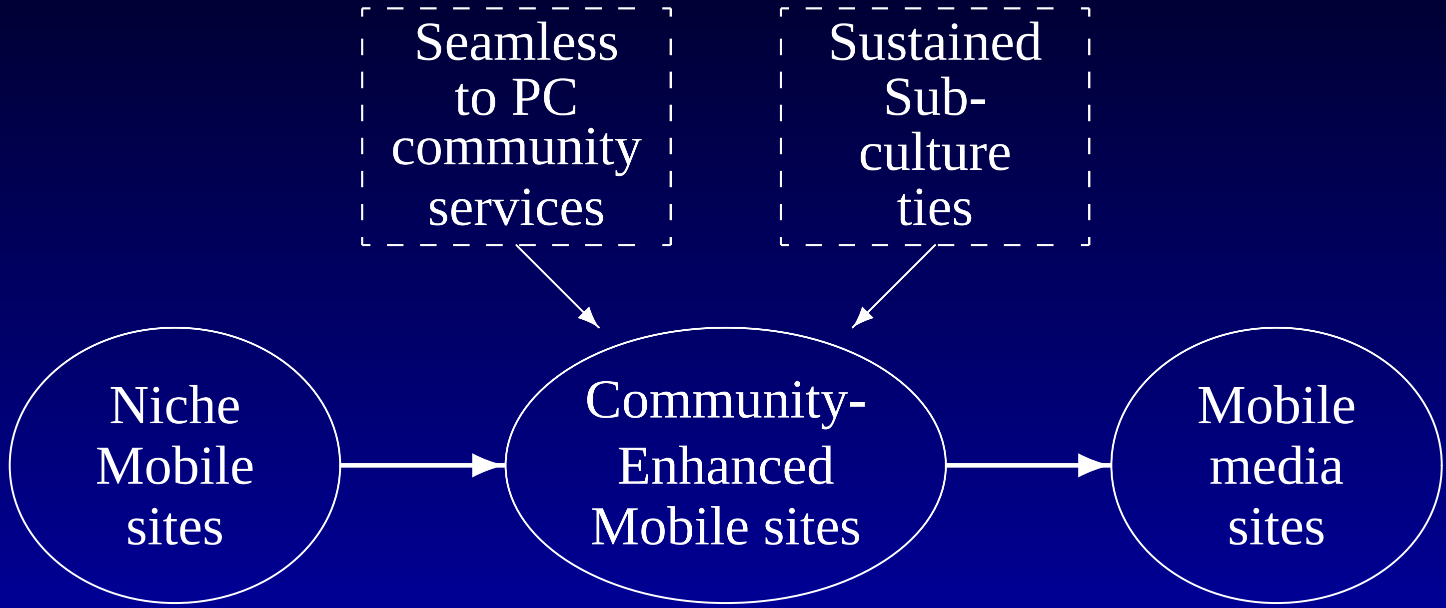
Three Dimensions



Business Model Conflicts

Traffic Revenue →	Service Revenue
Communication Revenue →	Media Revenue
Free (Advertisement) →	Content Revenue
Mass (General) →	Target Segment
Communication (General) →	Real-World Integration

Portal Evolution Model



Community media
New video media
Community-combined game media

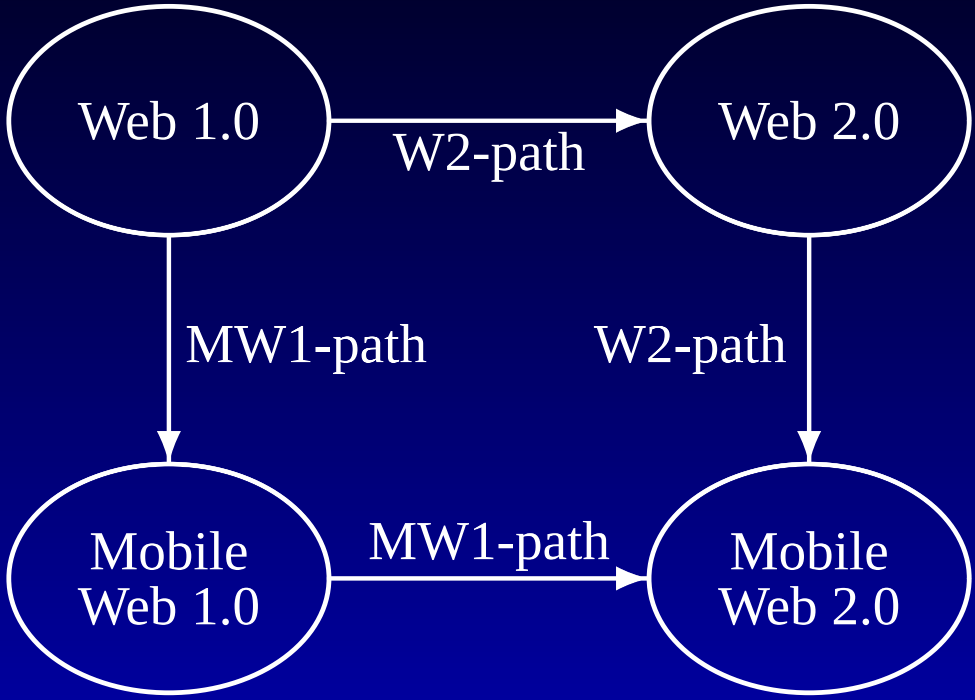
Emerging New Players

service	company	category	users
mixi	mixi	SNS	16.4 Mil (total, 2008E), More than half visits from Mobile.
GREE	GREE	mobile SNS	10.0 Mil (Feb 2009)
mobaga-town	DeNA	Game, SNS	14.5 Mil (June 2009)
niconico-mobile	Niwango	Video-sharing	3.6M (mobile, May 2009)
Rewarding-Coupon	McDonald's Japan	mobile coupon	13.0 Mil (mobile, May 2009)
TSUTAYA online	TSUTAYA	Entertainment	14.3 M (total, 2008E)

Social Ties

Stage	First	Second	Third
Type	PC-mobile seamless community	Mobile virtual community	Video-empowered community
Sub-culture factor	Increasing communities	Teen-ager virtual role-playing community	Subculture-driven video-empowered community
Example	Mixi	Mobage-town	Nico nico douga

Mobile Web 2.0



- Why Web 2.0 is important?
  - Mind share engineering using social ties (day- week- scale interactions).
  - Marketing and education efforts are shared with mobile community.

Hot Topics

- Topics
  - One-seg: departing from simultaneous broadcast, integration of broadcast/mobile
  - Video Internet (integration of sync/async media)
  - Real-world integration
- Keyword
  - Complicated Eco-system coordination (broadcast, real-world)
- Why broadcast media?
  - Technical and Business consequences of 3G and Flat-rate services.
  - Mobile is ready to cross the industry borders (broadcasting, . . .).
  - User demands beyond mobilized Internet.

Mobile Broadcast (One-seg)

- Original idea

Advertisement | Charged Content | E-Commerce

- Staged Shift

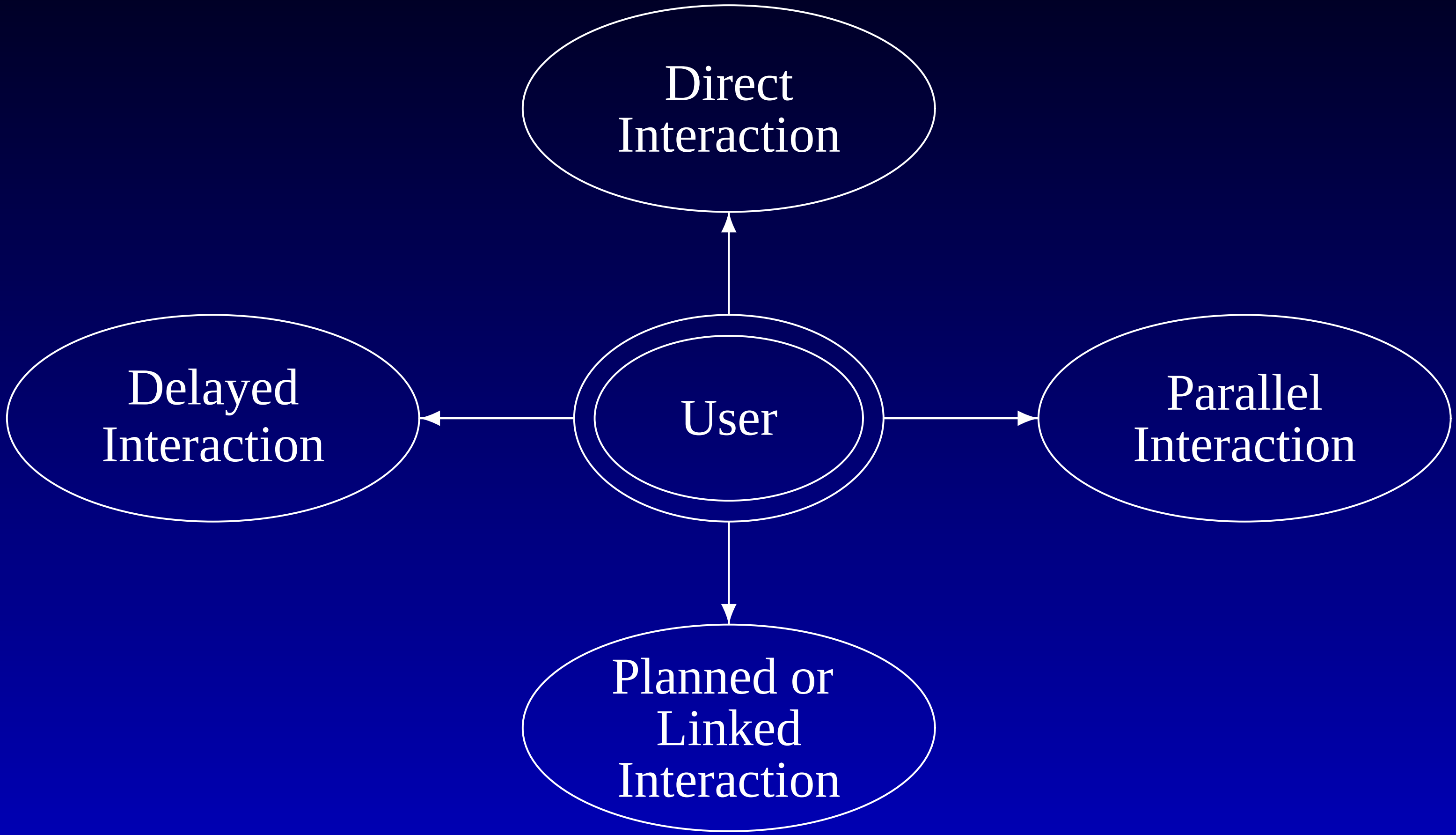
Broadcast → Mobile → Hybrid Enabler

Advertisement | E-Commerce
Charged Content | Local Broadcast
Real World Integration

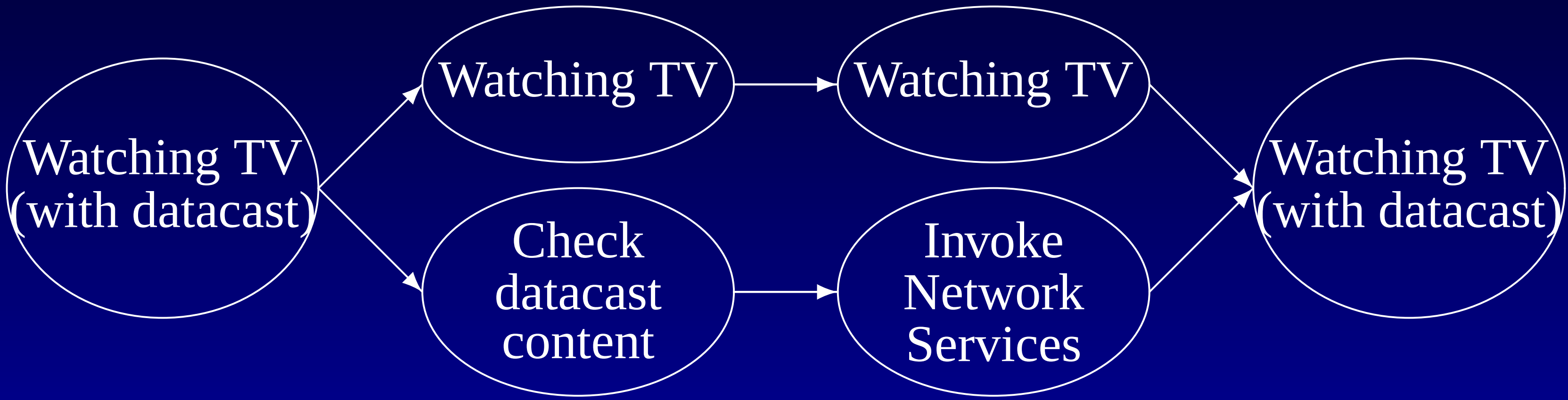
- Revenue Sources

Video Front End | Broadcast and Social Media | Real-world Cross-media

Interactivity Model



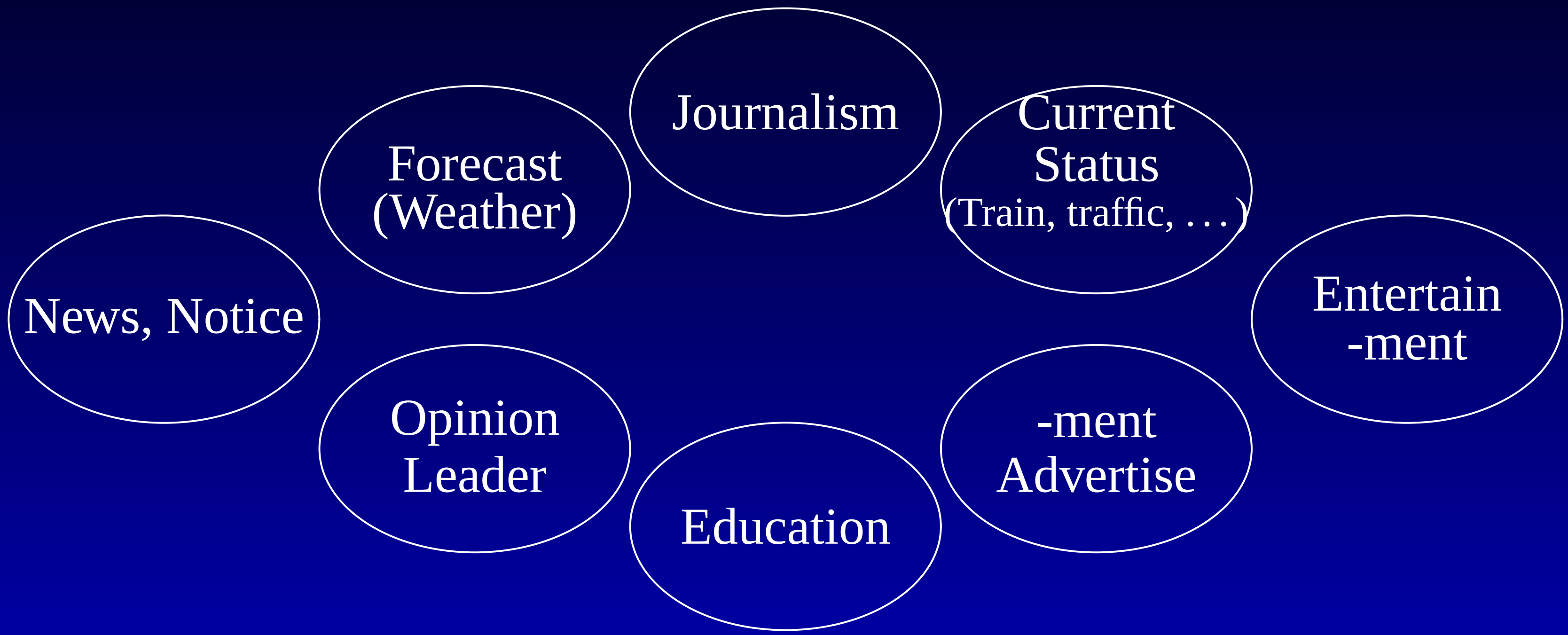
Parallel Interaction Example



Linked Interaction Example

- Emerging platform integrating sync/async media (push and pull, cross-media)

Decomposition of “Broadcast”



Content Staged Shift

- This shift is universal.

Closed	Semi-Open	Open
i-mode	AppStore	Internet

- One-seg evolution
- Aiming at “sales promotion” (solution business)

Broadcast media (Realtime + Rich media) + Knowing Each user (User + Context) $\Longrightarrow$ Facilitating In-depth User Interaction Support

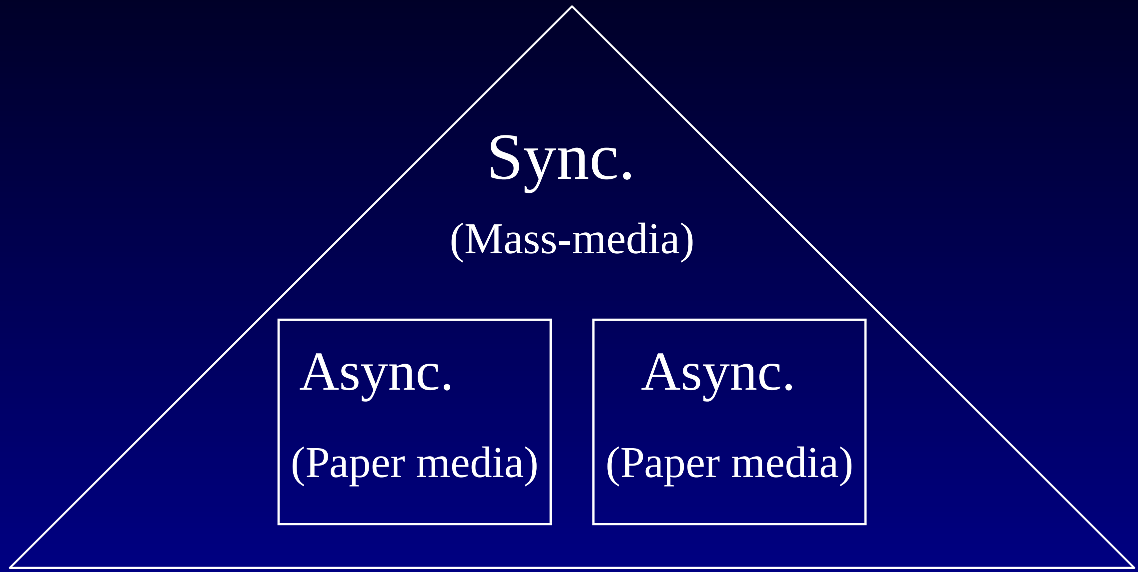
Mobile Video

- Avex entertainment and DOCOMO joint-venture for mobile-video content.

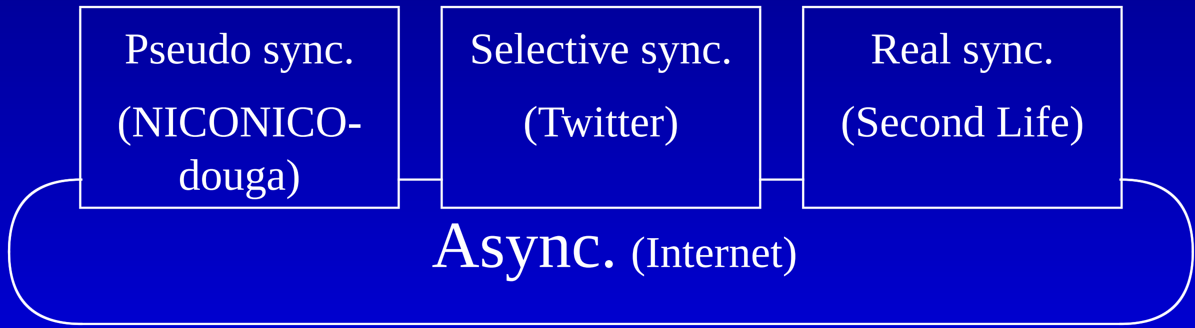
Category	Cinema	TV	Mobile Video
Era	1890’s–	1920’s–	2000’s-
Length	2 hours	0.5–1 hours	3–8 minutes
Screen	Hall-size	Home-size	Mobile display
Business Model	Paid	Advertisement /Paid	Paid
Type	Outdoor leisure	Home entertainment	Personal entertainment

- People’s time with TV descreases with emerging Internet video.
- Not second use, primary content for mobile is needed.

Bigger Picture of Media Evolution



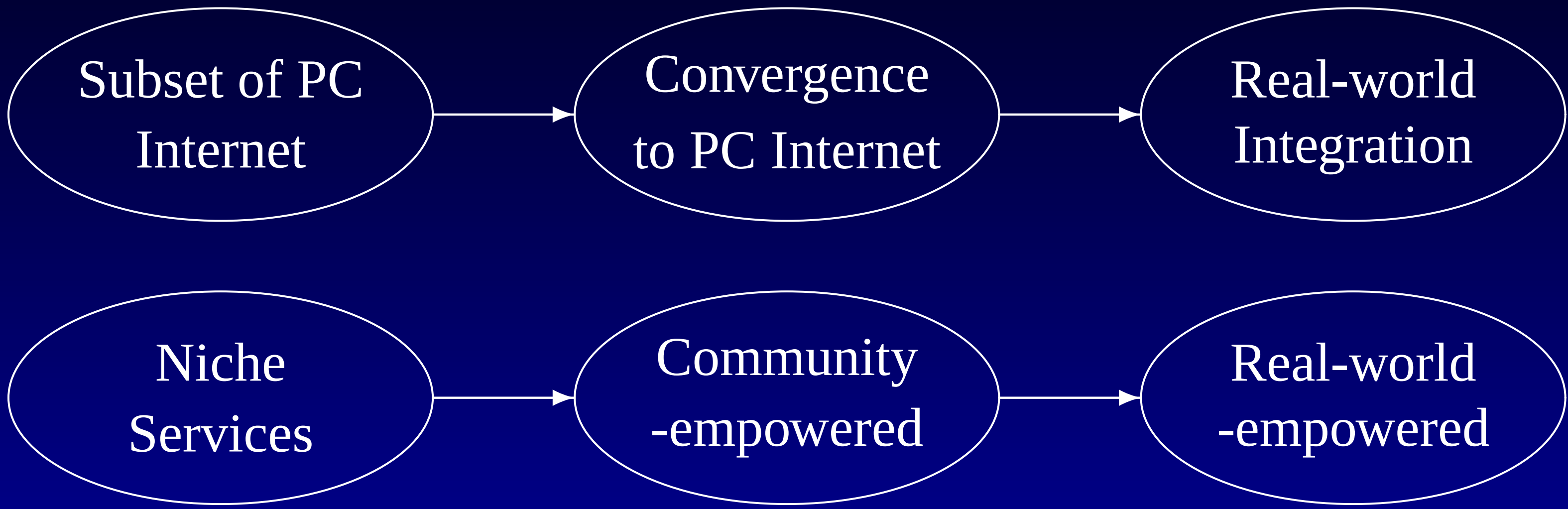
(a) Early-modern/Mass-media



(b) Modern/Internet

Note: From Satoshi HAMANA "Information Environment Research Note"

Location-based Content



- Significant business model skew in location-based games.

Location-based Content (2)

2-dimentional barcode

GPS-based navigation

Location-based Content(3)

Game	Description	Users (Thousands)
Warring States Game	Visiting 600 teritories in Japan, orientation-game-style, Free.	180 (March 2009, Launched May 2005)
Colonical Life Plus	Location-bound community game, Free	200 (May 2009, Launched in 2003)
Antename	Competition for Transporting distances, Free.	10-50 (not published, individual-operated)

- High core user satisfaction.

Augmented Reality

- Trend to continue to explore real-world business opportunities.
- With emerging technologies to track and interact with real world (camera, sensor, near-field communication . . .)

Application Store

Store	Company	Description
App Store	Apple	With iPhone 3G, App Store was launched in July 2008. It provides appliations for iPhone and iPod Touch. Total download number reached 1.5 billion with 65 thousand applications (as of July 2009).
Android Market	Google	Download of free applications was launched in October 2008. Charged application download started since February 2009.
BlackBerry App World	RIM	Launced in April 2009. More than 1000 applications for consumers and business users are provided.
Ovi Store	Nokia	It was launched in May 2009. It is available for more than 50 Nokia models.
Samsung Mobile Applications	Samsung	Test download started in February 2009 in UK with 1100 applications.
LG Application Store	LG	It was launched in July 2009 for Asian users with 1400 applications.
Windows Marketplace for Mobile	Microsoft	It is planned to launch in the 2nd half of 2009 for Windows Mobile 6.5 devices.

App Store

- 148app observation (July 2009) http://148apps.biz/app-store-metrics/
  - Downloadable applications at US 58,088 (excluding 4,206 undownloadable applications)
  - Games 10,584, Non-Game applications 47,504
  - Number of Active Publisher at US 15,242
  - Average application price 2.59$; game 1.40$, non-game 2.85$
  - Free applications 13,093(22.54%); game 2,888, non-game 10,205
- Dejavu of early i-mode …

Conclusions

- Service Evolution is pains for carriers, vendors and service providers.
- Dealing with Evolution is difficult.
- Time from micro-management to long-term trend provides challenges.
- Phased Views on Mobile Evolution are crucial.
- 3G and Flat-rate turn to be not a paradise for content providers.
- Mobile specific portal development is witnessed.
- Emerging video and real-world integration shows some future implications.