

# Enabling Mobile Web

*WWW2005*

*W3C Track*  
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Toshihiko Yamakami

yam@access.co.jp

ACCESS

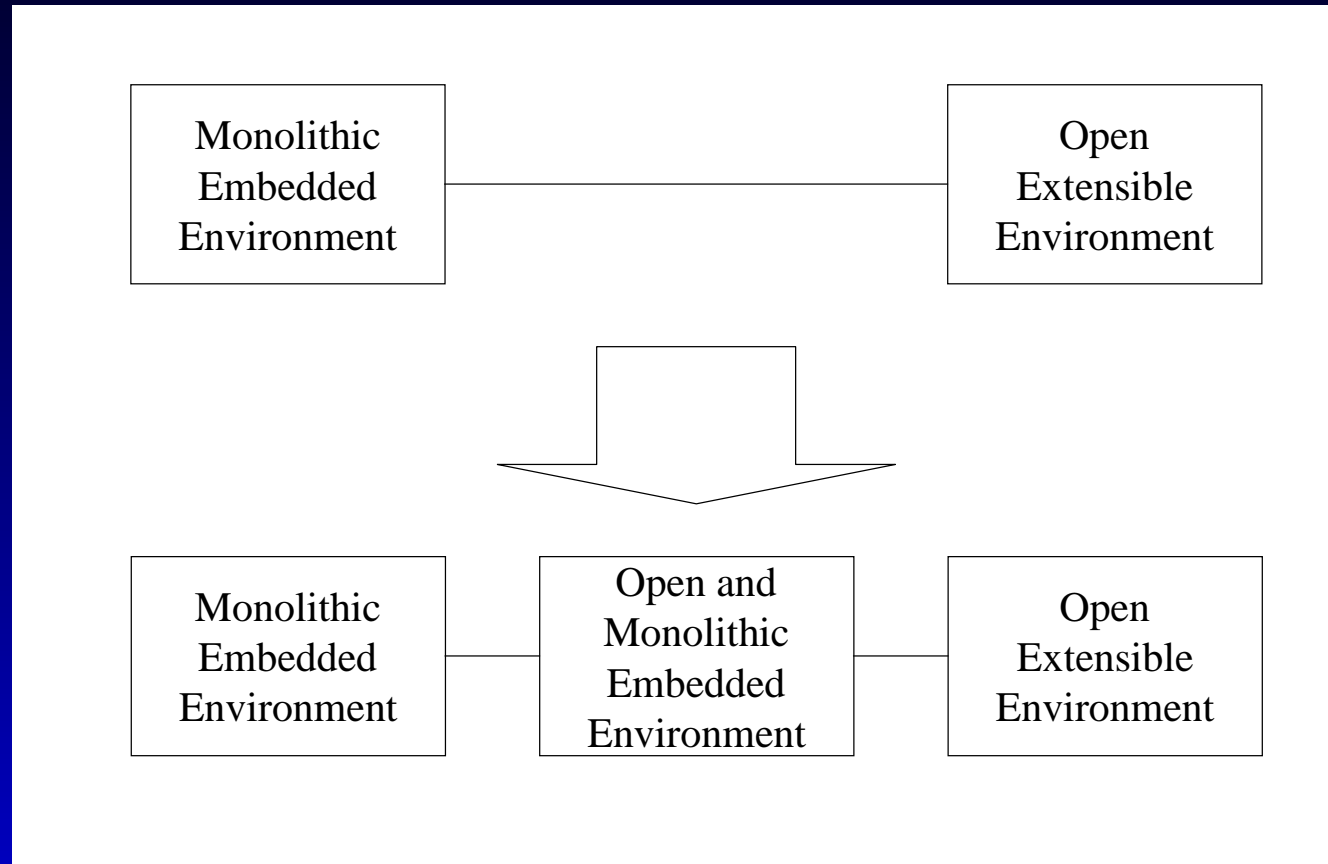
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# Outline

- Software Engineering Challenges
- Constraints
- Diversities
- Challenges for Mobile Profile Design
- Conclusion

# Open and Monolithic World



- Shift to the open and monolithic environment
- still constraints like battery

# Software Engineering Comparison

	Traditional Embedded App	Extensible Embedded App	Common Internet App
Memory Consciousness	High	High	Low
Memory Management	Predefined	On-the-fly	On-the-fly
Extensibility	Low	Medium	High
Auto-fault-recovery	High	Medium	Low
Fault-oriented Design	Low	High	Low

# Platform Diversity

## SymbianOS/S60/UIQ

**NetFront**  
NetFront v3.0  
Welcome to NetFront  
The advanced Web browser on Nokia 7650  
Options Previous

## PalmOS

Yahoo! Finan... Federation In...  
Market Summary  
Dow 9612.73 -112.52 (-1.13%)  
Nasdaq 1568.84 -35.68 (-2.21%)  
S&P 500 1051.49 -15.65 (-1.47%)  
10-Yr Bond 5.05% +0.01%

## VxWorks



## Linux



## BREW/RexOS (Qualcomm)

MZZ  
lifestylechannels  
1 Guides  
2 Nightlife  
3 Playlists  
Guides  
Barcelona  
New Orleans  
Milan  
Paris  
Tokyo  
Washington DC

## MS WinCE (PocketPC)

NETFRONT v3.0 11:14  
file:///s:\mce/pca/index.html  
NetFront v3.0 Wireless Profile is the successor to Compact NetFront and Compact NetFront Plus, the most popular i-mode browser in the world. NetFront v3.0 Wireless Profile provides support for the most important standards for mobile phone Internet access: WML 2.0, which is based on XHTML Basic.

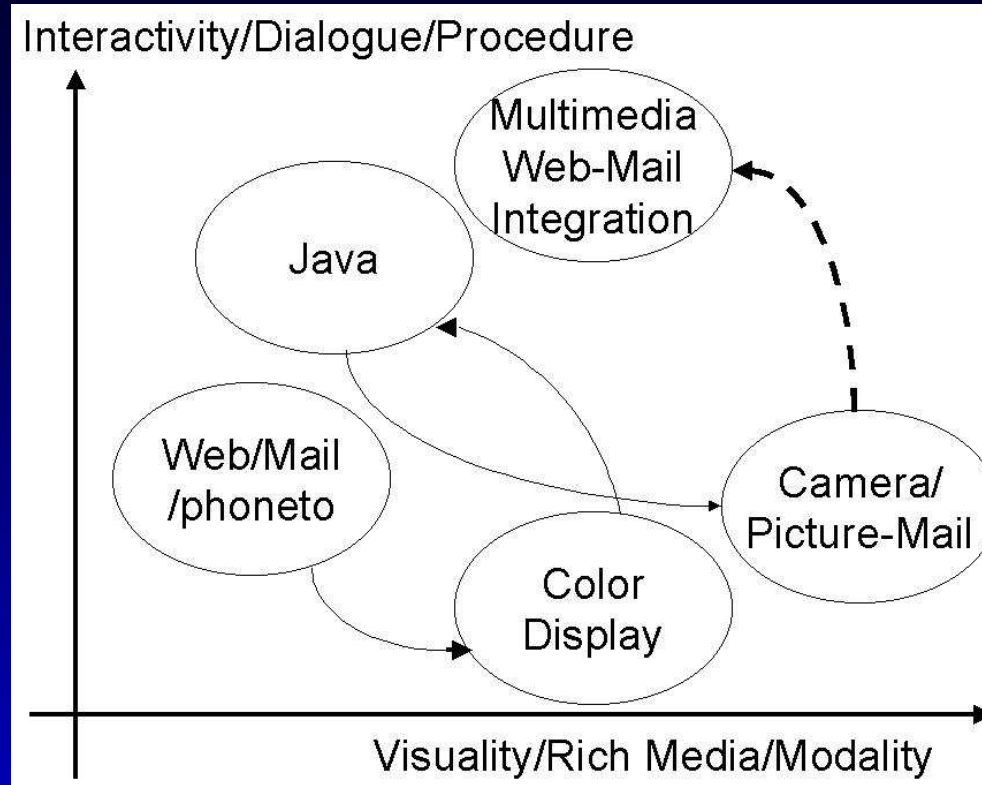
## uITRON OS



# Evolution Trend



# Spiral Evolution



# Constraints in Mobile Clients

Display Size  
Limitation

Memory  
Capacity

CPU  
Horsepower

Local File  
Systems

Network  
Bandwidth

Battery Life  
Limitation

Appliation  
Environment

Diversity of  
components



# Diversity and Uncertainty

Device  
Capabilities

Underlying  
Network

Operating  
Systems

Application  
Environments

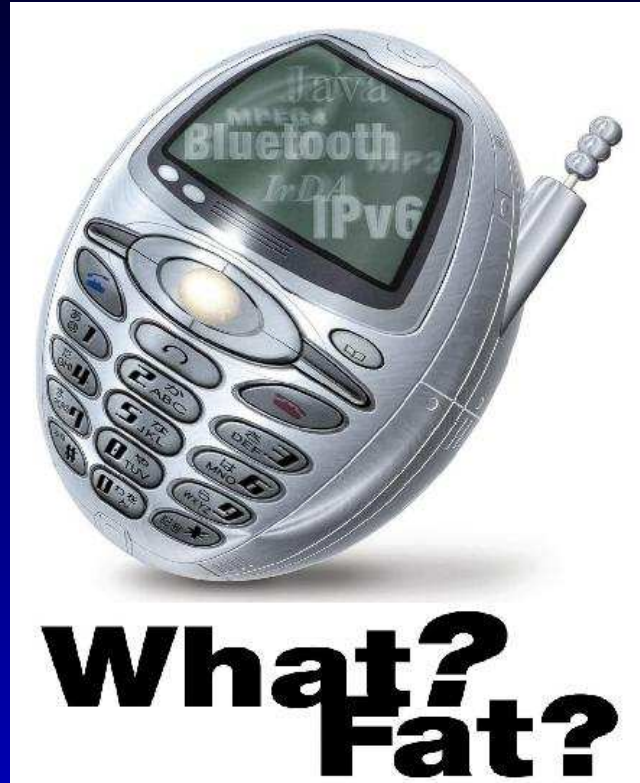
Business  
Models

Fast Market  
Cycle

# Challenges for Mobile Profiles



# What, Fat?!



# Conclusion

- New Challenges for Enabling Mobile Web
  - Beyond Convergence
  - Context Awareness
  - Evolution, Dynamics, Diversity
  - Increased Complexity
- More Business Engineering
  - Tight Relations to Politics and Business
  - Spiral Development: Social and Business Adoption
- Real Challenges for Standardization
  - New Mindset for Evolving Mobile Profiles and Integration
  - Vision, Experience, and Business Engineering Required