

# **Mobile Multimedia Services**

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# Presentation Outline

- **Service / Applications wish list**
- **Standards**
- **Devices**
- **Conclusion**



# Main drivers towards the Information Society

## *The USER preferences*

### Needs & Wants

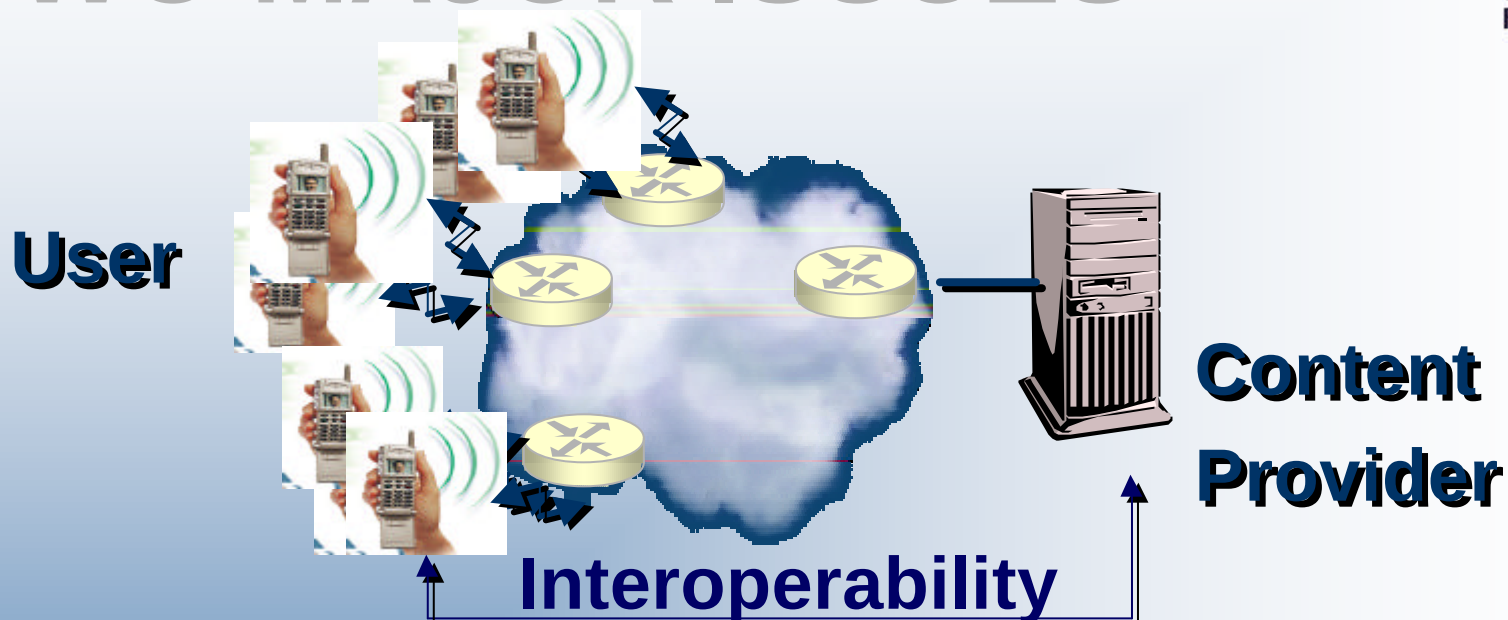
- Being Informed
- Being Entertained

### Being in Control

**“On the MOBILE”**



# TWO MAJOR ISSUES



- **USER wants information and Content while on the move**
- **The Operator wants to more Revenues**



# Definition of Services and Applications

- **Services are a portfolio of choices**
- **Applications are the building blocks that enable the creation of services**
- **Content is the information the user wants to create and /or use**
- **Devices allow a user to interact with the application to create, access and use content**



# Service / Applications wish list



|                                              | Mobile ISP             | Portal                           | Specialised Services    |                              |     |            |
|----------------------------------------------|------------------------|----------------------------------|-------------------------|------------------------------|-----|------------|
| Service Categories<br>Concept & Applications | Mobile Internet access | Mobile Intranet/ Extranet access | Customised Infotainment | Multimedia Messaging Service | LBS | Rich Voice |
| Conferencing                                 | ?                      | ?                                | ?                       |                              | ?   | ?          |
| Messaging                                    | ?                      | ?                                | ?                       | ?                            | ?   |            |
| Internet Access Networking                   | ?                      | ?                                | ?                       |                              |     |            |
| LBS                                          | ?                      | ?                                | ?                       |                              | ?   |            |
| Entertainment                                | ?                      |                                  | ?                       | ?                            | ?   |            |
| Financial services                           | ?                      | ?                                | ?                       | ?                            | ?   |            |
| Information services                         | ?                      | ?                                | ?                       |                              |     | ?          |
| M-Commerce                                   | ?                      | ?                                | ?                       | ?                            |     |            |



# Applications & Down Load Times

| <u>Services</u>                                     | <u>2G</u> | <u>PSTN</u> | <u>ISDN</u> | <u>2G+</u> | <u>3G</u> | Acceptable<br>Wait Times |
|-----------------------------------------------------|-----------|-------------|-------------|------------|-----------|--------------------------|
| E-mail file<br>10 Kbyte                             | 8 sec     | 3 sec       | 1 sec       | 0,7 sec    | 0,04 sec  |                          |
| Web page<br>9 Kbyte                                 | 9 sec     | 3 sec       | 1 sec       | 0,8 sec    | 0,04 sec  |                          |
| Text file<br>40 Kbyte                               | 33 sec    | 11 sec      | 5 sec       | 3 sec      | 0,2 sec   |                          |
| Unacceptable<br>Wait Times Large report<br>2 Mbytes | 28 mins   | 9 mins      | 4 mins      | 2 mins     | 7 secs    |                          |
| Video clip<br>4 Mbyte                               | 48 mins   | 18 mins     | 8 mins      | 4 mins     | 14 sec    |                          |
| Film with TV<br>Quality                             | 1100 hrs  | 350 hrs     | 104 hrs     | 52 hrs     | >5 hrs    |                          |

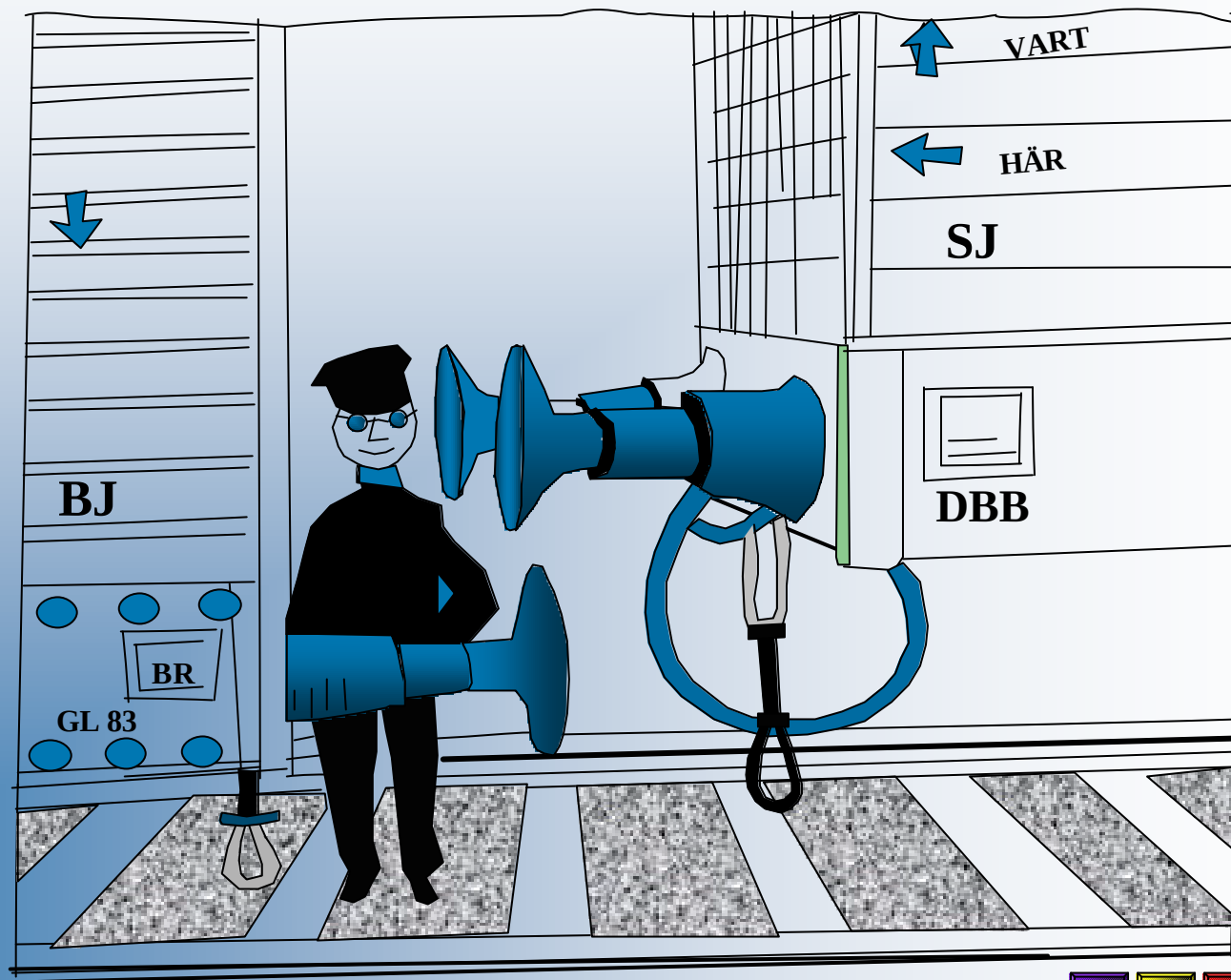


# **SERVICE ISSUES**

- **SCALABILITY**
- **INTEROPERABILITY**
- **PORTABILITY**



# Portability and Interoperability



# VOICE

**SIMPLE VOICE**

**RICH/  
Enhanced**

**VoIP**

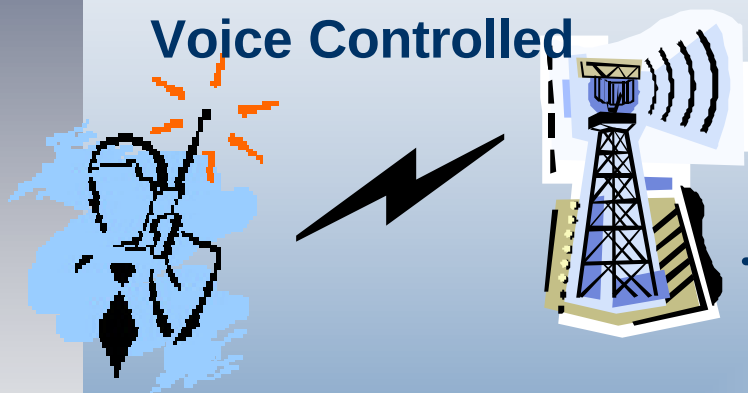
**Video Telephony**

**Voice Services**



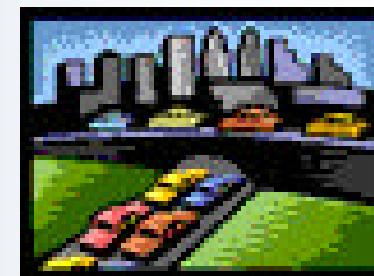
# Rich Voice Services

## Hands Free Voice Controlled



- Voice recognition
- Server enabled VXML
- Text to Voice
- Synthesised Voice
- Voice Browser

## Voice Enabled Traffic Services



## Voice Guided Navigation Services



## Voice Assisted Banking Services



Samsung Electronics

# Unified Communications



-IP-based unified Messaging  
voice, fax, email, voicemail  
services or

-Integrated with global VoIP  
infrastructure

-IP Communications

-Real-time Communications

-Content & Transaction Services

-Extensible Application Platform

- Web content

- Personalized,

Contact Centers, Online gaming

and Entertainment



# APPLICATIONS

- Information Services
  - classic
  - Location based and telemetry
- Message and Mail
  - voice, text, image and video
  - video postcards
- M-Commerce
- Enterprise processes
- Groupware
  - networked games
  - shared screens
  - chat groups
- Interactive multimedia



PDA  
/ Phone



**SIEMENS**

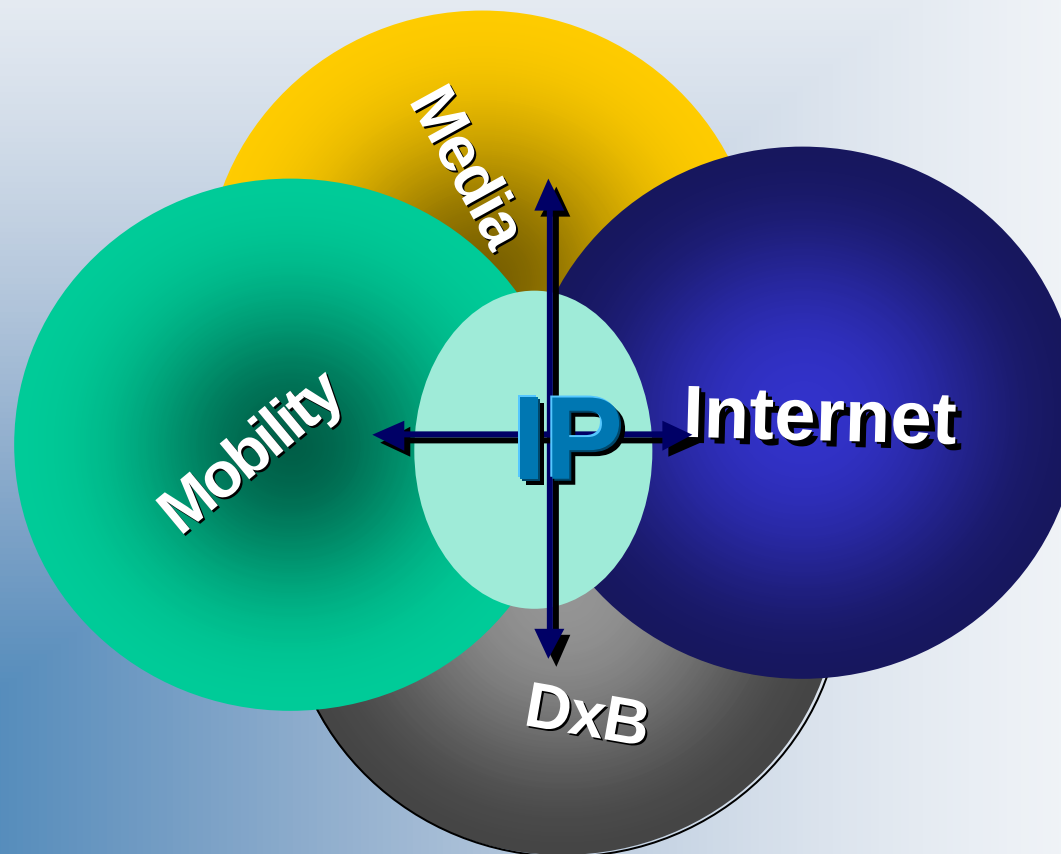
# **XCM: eXtended Content Management**



| <b><i>Content Development Management</i></b>                                                                                                           | <b><i>Application Content Management</i></b>                                    | <b><i>Content Delivery / Acceleration Management</i></b>                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| <b>Multimedia Content Authoring</b><br><b>Digital Asset &amp; Rights Mgmt.</b><br><b>Software Configuration Mgmt.</b><br><b>Document Process Mgmt.</b> | <b>Metadata Mgmt.</b><br><br><b>Recombination</b><br><br><b>Personalization</b> | <b>Edge Network Delivery</b><br><br><b>Streaming Media Delivery</b><br><br><b>Caching</b> |



# A market in transition



# Standards



**Convergence**

**Bluetooth**

**WLANS**

**IMT2000**

**UMTS**

**IPv4**

**IPv6**

**GPRS**



## **SUMMARY of Future Standards**



# STANDARDS

- **Divergence in the core and convergence on a service level**
- **Define precise service capabilities**
- **Establish relationship with Content standards bodies**
- **Define content charging hooks**



# IPv6

- UMTS R5 (2003) cellular wireless standards mandate IPv6
  - Enabling anyone to provide new applications and services
    - ? Allowing rapid innovation and growth
  - other important specs are further behind on the standards track, but in good shape
    - mobile IPv6, header compression,
    - A6 DNS support,...
- much work to be done moving application, middleware, and management software to IPv6**



# Quality of Service (QoS)

**Multimedia data requires a predefined QoS in terms of:**

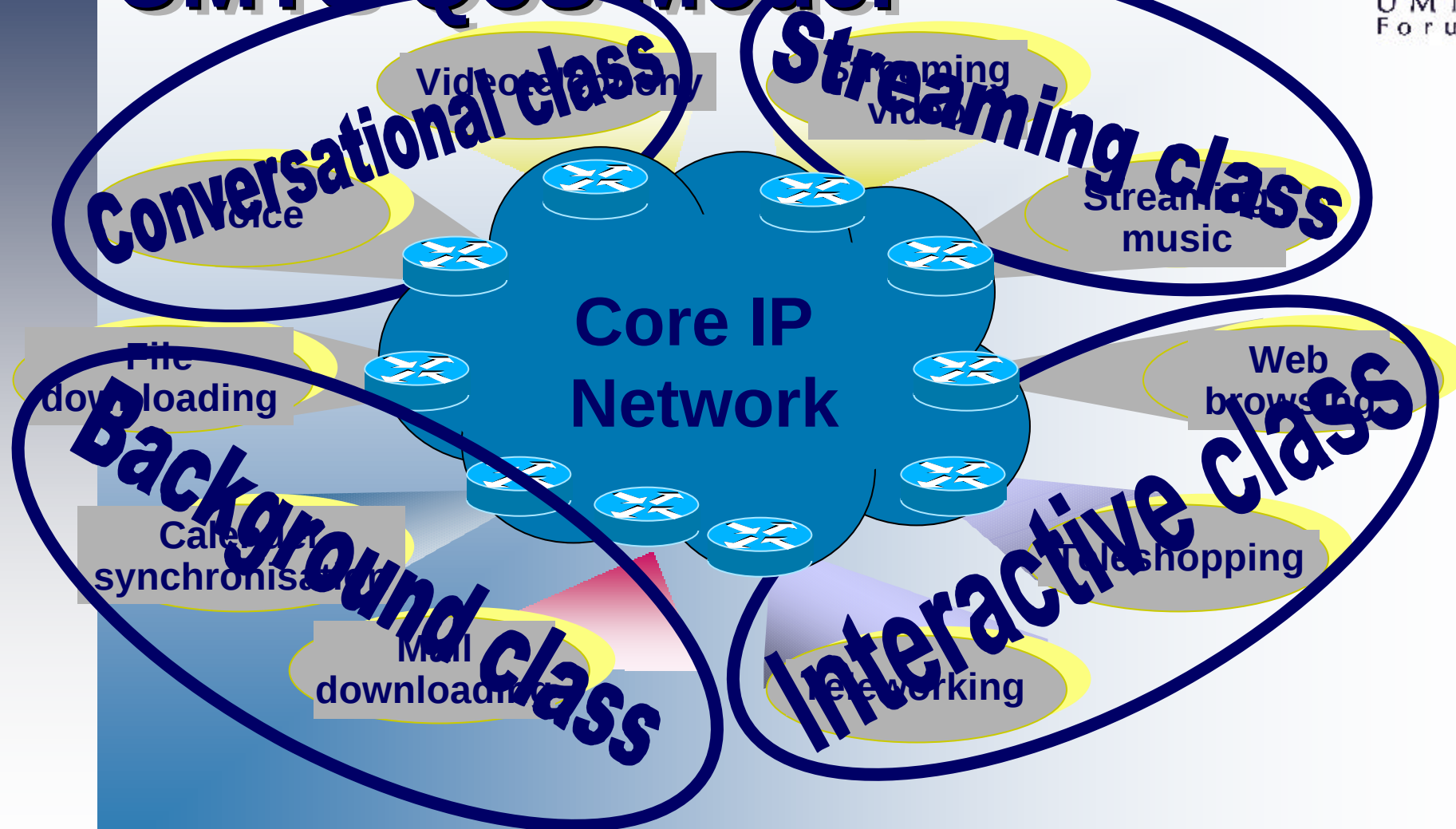
- Guaranteed throughput / amount of data processed per Second**
- Controlled delay / average time for a packet from origin to destination**
- Controlled Jitter /difference in delay from one packet to another**

***TCP can shape throughput and guarantee that the data reaches the other end but no predefined value, since it requires a feedback from receive end.***

***UDP guarantees throughput but not all the data reaches the destination since it does not wait for the ACK.***



# UMTS QoS Model



# Phone to DATA ASSISTANT

## Multifunctional UMTS Devices

- PDA
- MP3 Player
- Digital Camera
- Game Player etc...



## Content on Digital Data storage

- Flash cards, magnetic/optical Disks, Smartcards

## Ad-hoc Connectivity Bluetooth, RLANs, WLANs?



**New Multimedia / Mixed Data Services will create requirements on Applications /Content/Devices in Conjunction with different usage or User groups of UMTS Devices**

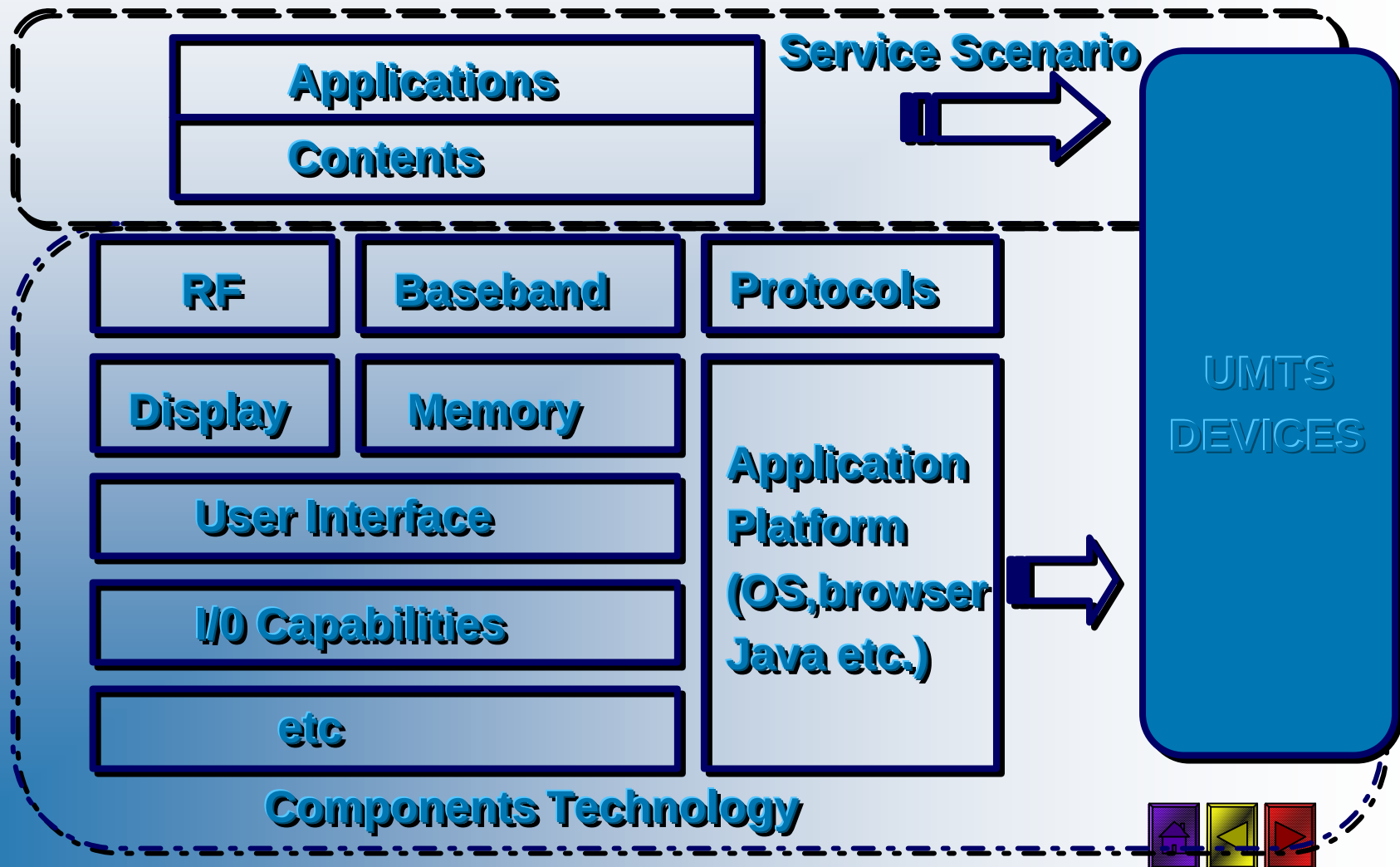


# Java Applications (Terminal)

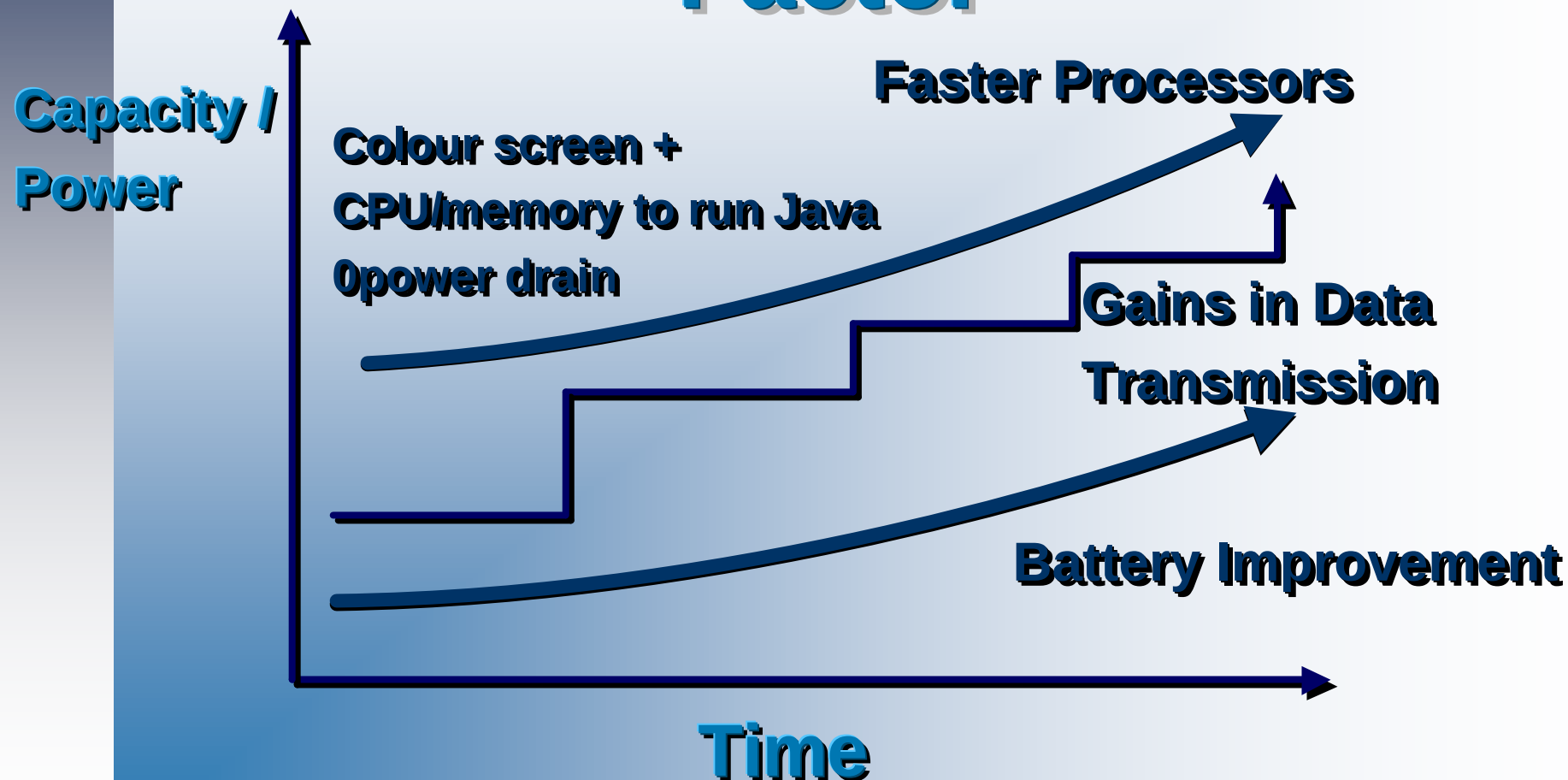
- Highly optimized VM (called KVM) for resource constrained devices  
Small memory footprint
- Compatible with standard JVM bytecodes
- Over air application (Midlet) download
- Write once use many times on the same profile



# RIGHT DEVICE



# Battery Power a Limiting Factor



# SUMMARY

- It is important to segment and offer a smaller number of services to the local users as well as roamers
- Support of multimedia applications via:
  - High bandwidth
  - a range of QoS attributes
- To ensure the success of UMTS Services Creation, introduction of Applications / Content and Devices have to be well coordinated



***Thank you for your  
attention!!***

