

# The merits of IPv6 in the Cellular World

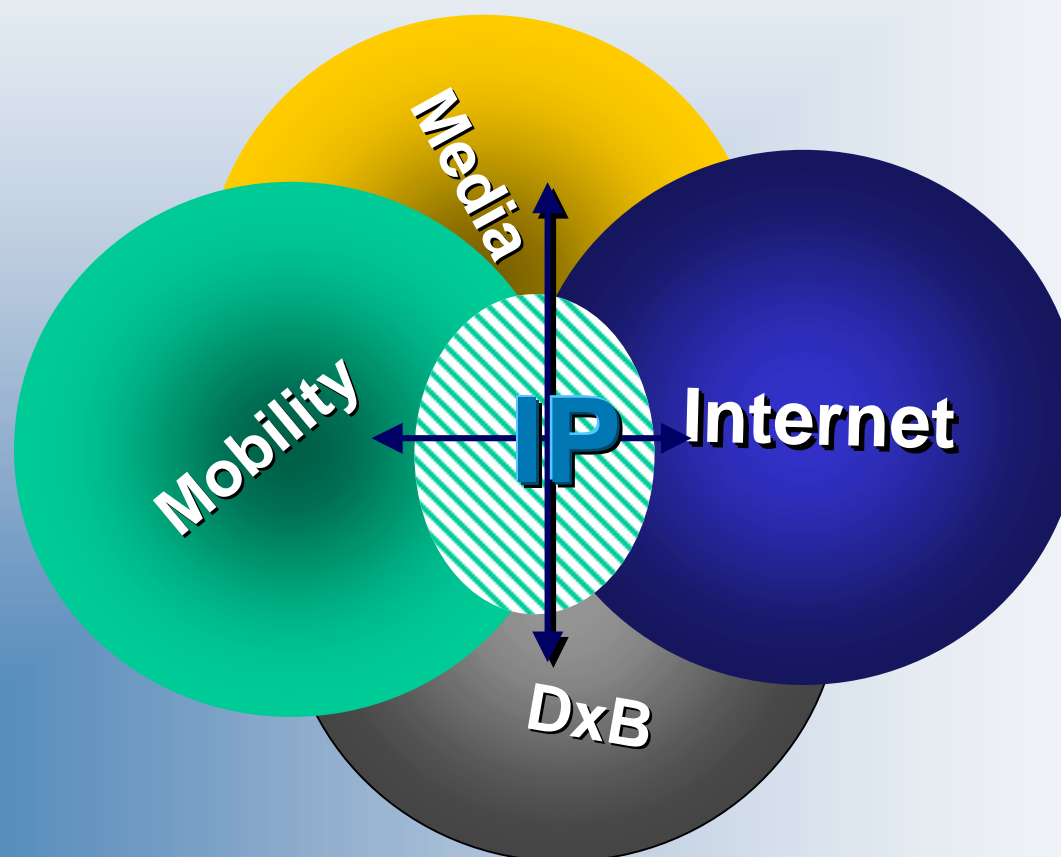
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# Presentation Outline

- **A market in transition**
- **Rationale for IP in Cellular Networks**
- **Need for IPv6?**
- **Competitiveness**
- **Conclusion**

# A market in transition

# A market in transition



# KEY BENEFITS OF UMTS



- **Flexible service creation capabilities**
- **Support of multimedia applications via:**
  - High bandwidth
  - a range of QoS attributes
- **Huge market opportunity**
- **Access to new revenue streams and new customers**
- **Implementation around IP paradigm**



# IPv6 commercial deployment early adopters



- **R&D and Educational establishments**
- **3G Mobile Operators**
- **Some retail ISPs with „Always on“ customer hosts**



# CONVERGENCE IS INEVITABLE

- A “bit” is “a bit” whether it represents audio, video, text, graphics or software
- Ensure broadest possible information of Internet and Intranet content is available to users
- Full convergence will take place on a service-level



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# Rationale for IP in Cellular networks



# WHY DO WE NEED IP IN WIRELESS NETWORKS?

## The economics are shifting



## There are sound engineering reasons



# Economic Reasons

**IP is ubiquitous. This will lead to,**

**-Economies of scale in installation  
and operation of networks**

**-The drive towards Virtual Private  
Networks in the corporate market place  
will lead to an open market where IP  
transport becomes a commodity.**

**This allows for low cost of entry**

# Engineering Reasons

**Simplifies the network**

**Allows modularity of the network**

**Gives open interfaces**

**Independent upgrades**

**Exploitation of new technologies**

**Other reasons.....**

# THE NETWORK OPERATOR WILL BE....

- **Databased**
- **Innovative, and**
- **Focused on applications, content,  
and the customer**



**QoS**  **ATM+MPLS+Diffserv**

# Need for IPv6?

# IPv4 exhaustion

- No one can predict, may start 2005??
- Not known:
  - Continued use of NATs
  - Need for special IPv6 features
- Time scales for resolving some issues
- IPv6 needed everywhere before IPv4 withdrawn to support full compatibility

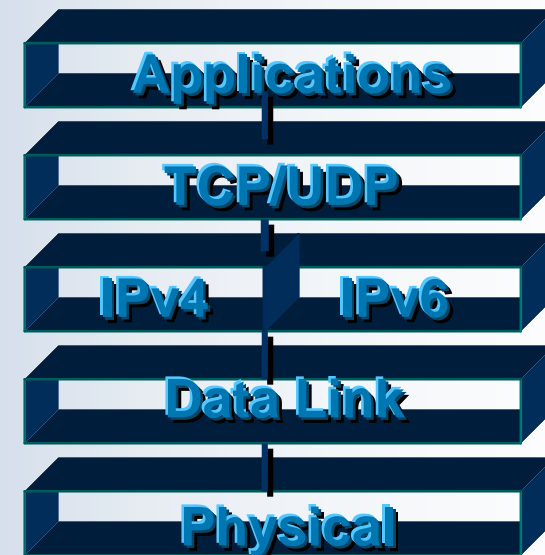
***Introduction of IPv6 should be not prolonged!***

# IPv6 Advantages

- Huge address space & capacity
- Restores end-end paradigm and so facilitates applications
- Better routing aggregation
- Easier administration with auto-configuration
- Better mobility
- Integral security

# Why do we need IPv6?

- **IPv6 will be essential for IP Multimedia**
- **Dual Stack**
  - Commercial host and router support
  - Terminal support





# IPv6 Backbone

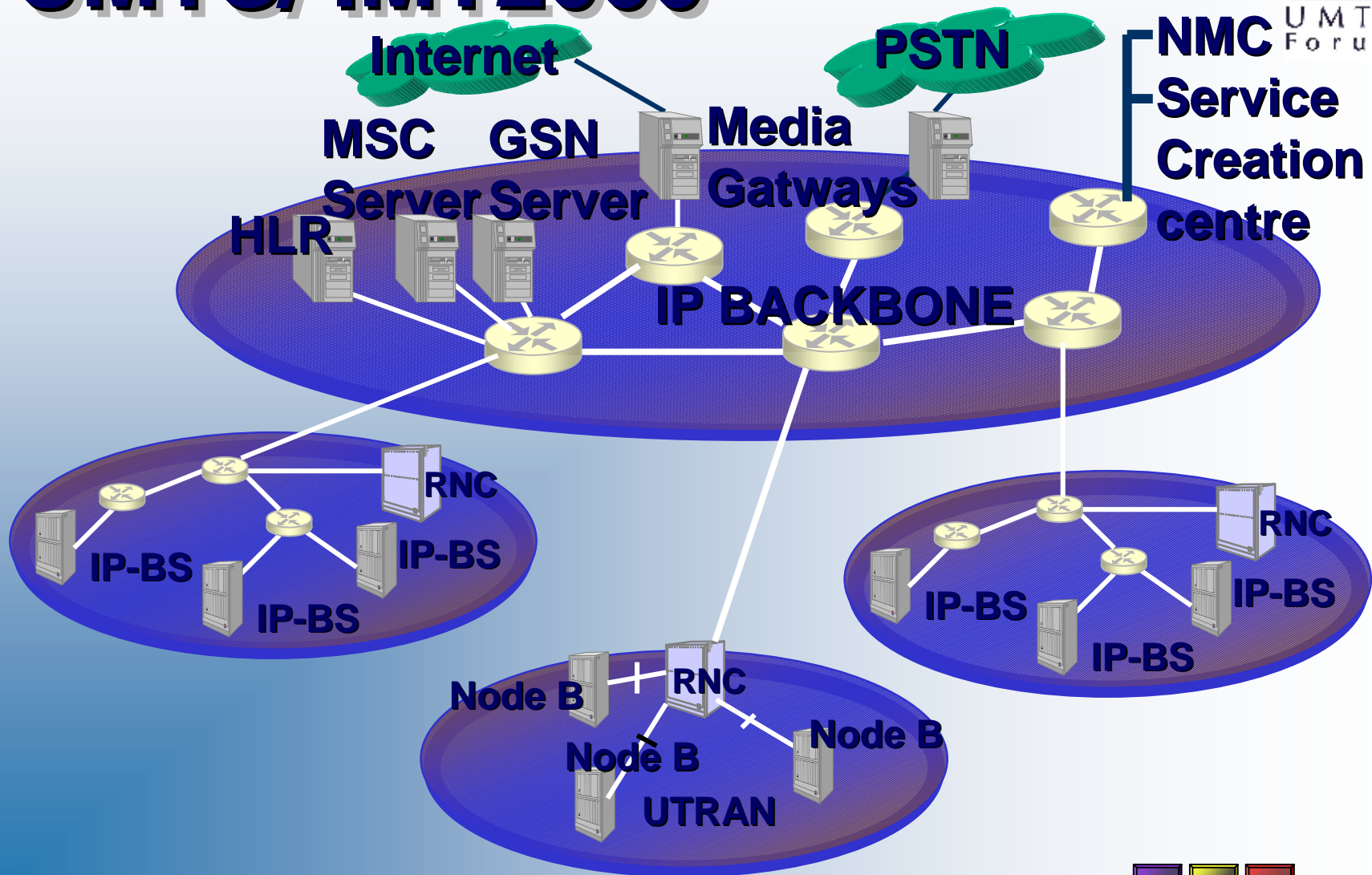
- Offers:
  - Router efficiencies
  - Anycast-useful for mobile networks
  - Flow control
  - Security
  - Scalability



# UMTS/ IMT2000



UMTS  
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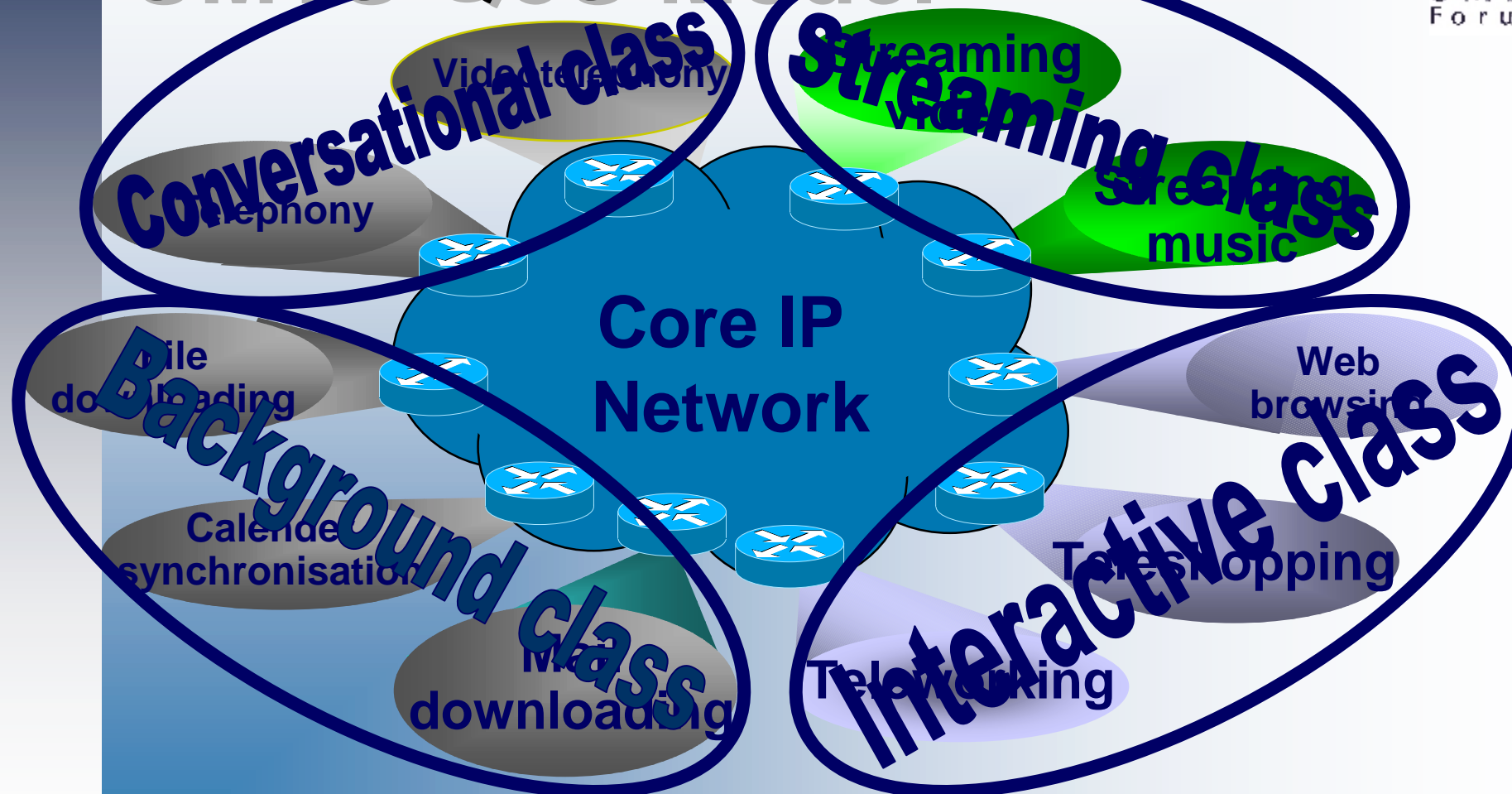


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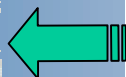
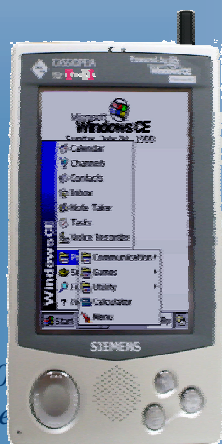
# Competitiveness

# UMTS QoS Model



# Applications

- E-commerce & IP Applications
- E-Solutions
- Location based services
- Broadcasting
- Multihoming



PDA

## IP in Devices

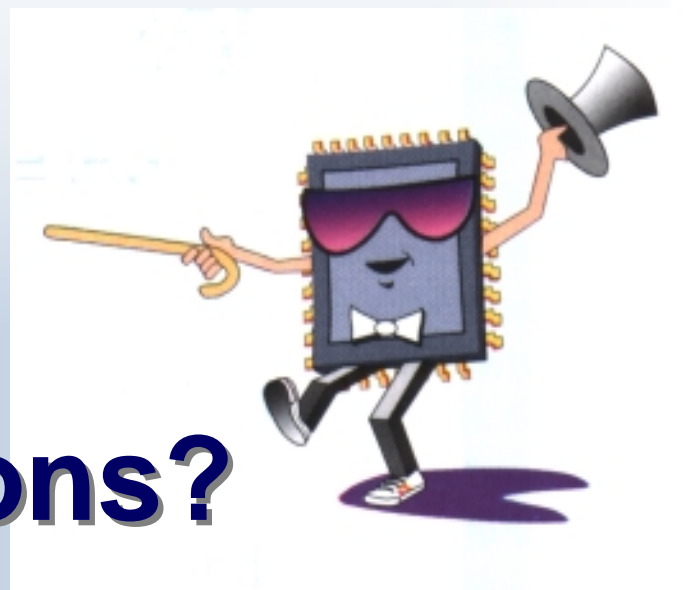


# SUMMARY

- **The 3G Architecture is moving towards a IP centric structure**
- **IPv6 offers an excellent framework for Multimedia applications**
- **IP over the radio interface is challenging but there is a lot of good work being done**
- **Deployment of IP Addressing and TLD's need more understanding and acceptance**



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



**Any Questions?**

***Visit the UMTS Forum website  
[www.ums-forum.org](http://www.ums-forum.org)***