

Wireless Technology Roadmap

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BT wireless Architecture -

High Level Roadmap

GPRS

- “Optimise” current GSM & GPRS implementations today
 - New services & applications being launched with GPRS

3G R3

- Launch 3G networks starting in 2002
 - New revenues due to large number of new services & applications
 - Cost reduction due to use of ATM technologies, replacing TDM

3G R4

3G R5

3G R6

- All-IP network capabilities in “evolution” phases, starting in 2004
 - Significant number of new services & applications based on real-time IP, such as mobile multimedia over IP
 - Significant cost reductions due to use of IP technologies all over the networks

All roads lead to IP

!

Examples of Paradigm Shifts

- Wireless world and IP World are converging
 - Move to All-IP mobile networks
- Mobile operators want to go up the value chain and offer mobile multimedia services
 - No more voice-only or bit-pipe scenarios
- Regional / Global networks and services
 - Voice roaming was easy!
- Cellular and WLAN convergence
 - Is there an opportunity for mobile operators?

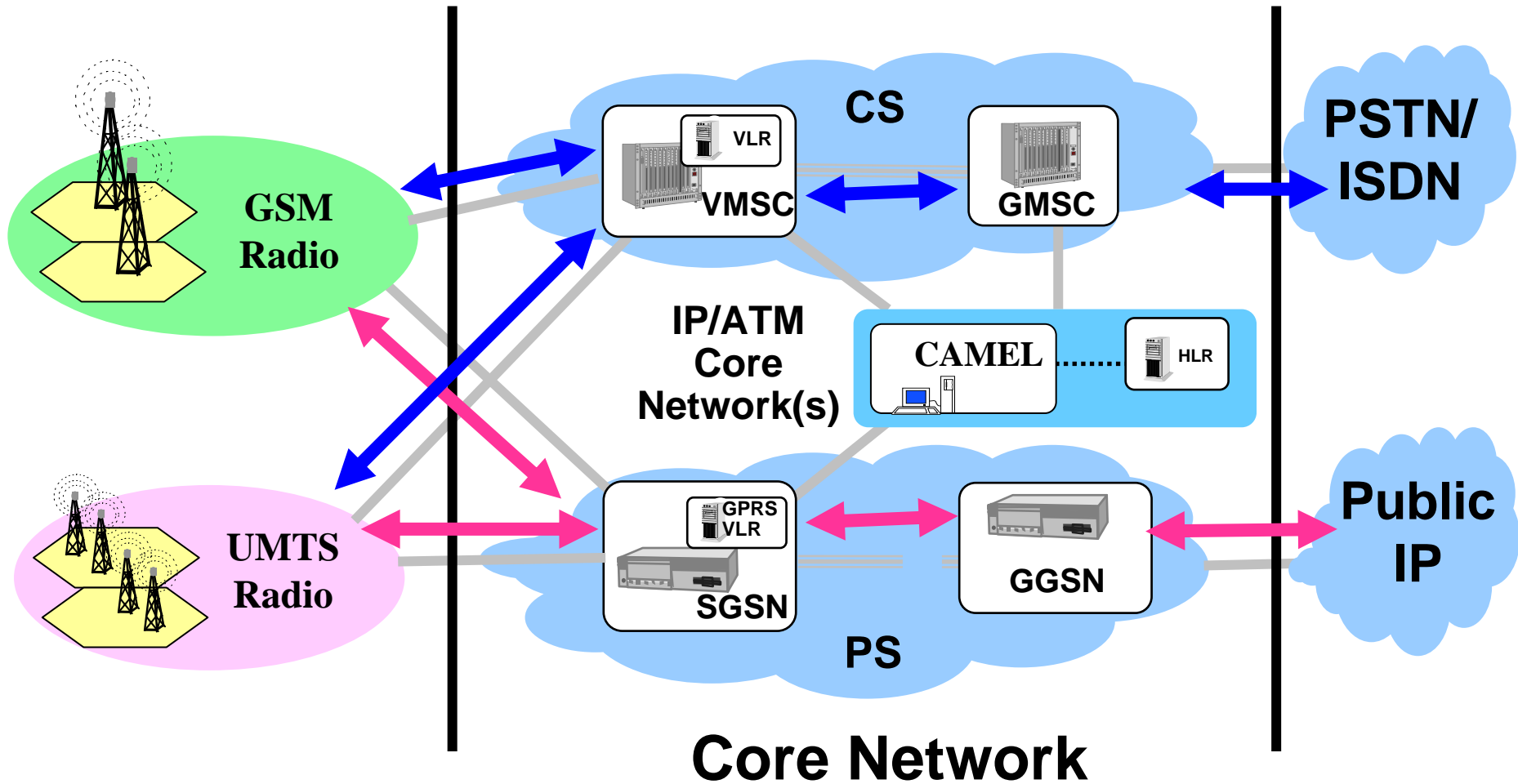
More Revolution than Evolution

Why do Mobile Operators Need IP?

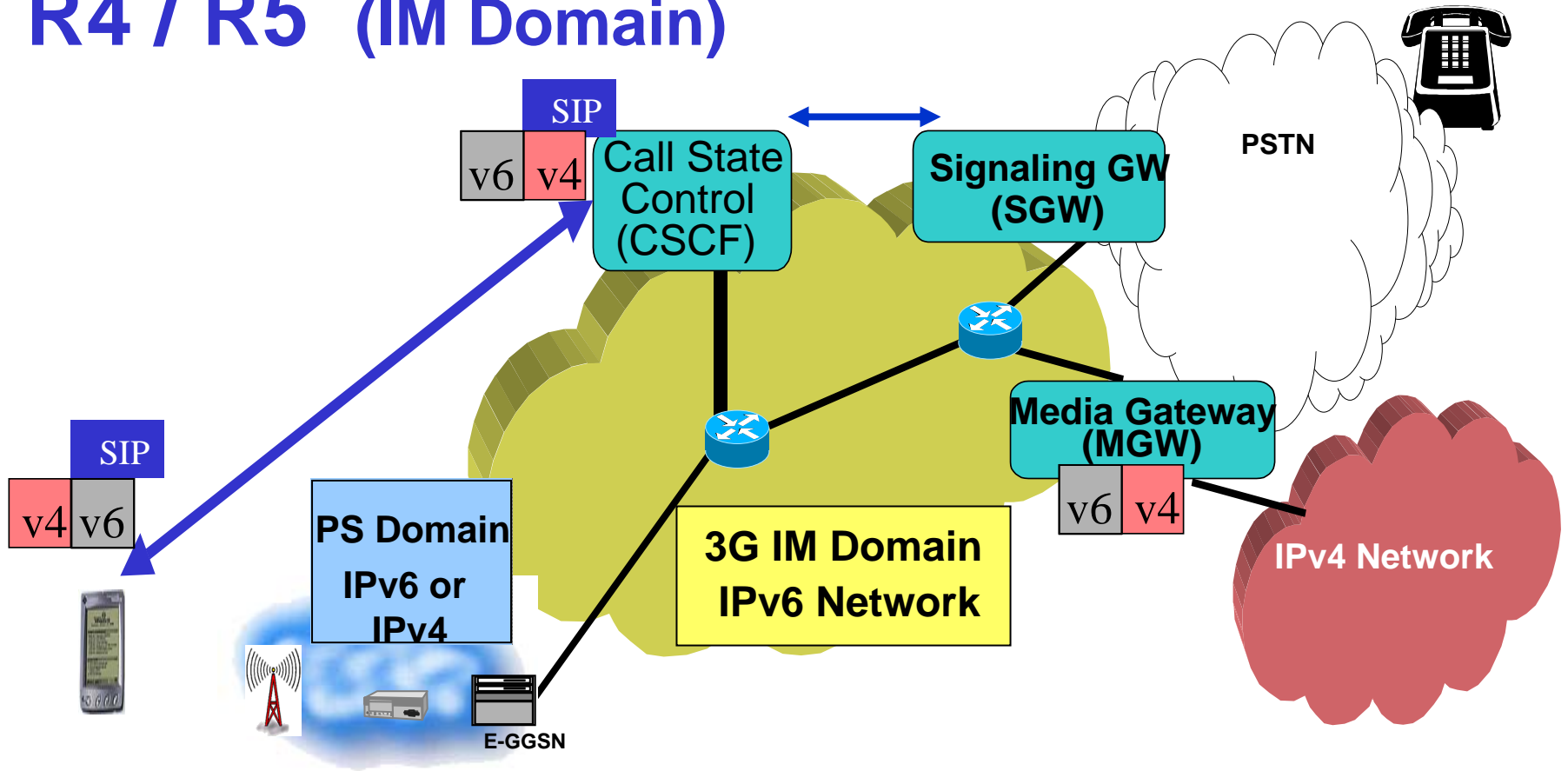
- **Deliver high-value, high-margin mobile multimedia services**
 - IP is the protocol of choice for application developers
- **Faster time to market for new services**
 - tap into internet innovation life cycle
- **Major cost reduction**
 - use IP technology widely to replace expensive circuit switch infrastructure

IP enables Mobile Operators to ride on Innovation Cycle up and Cost Curve down

Core Network at 3G Launch (R3)



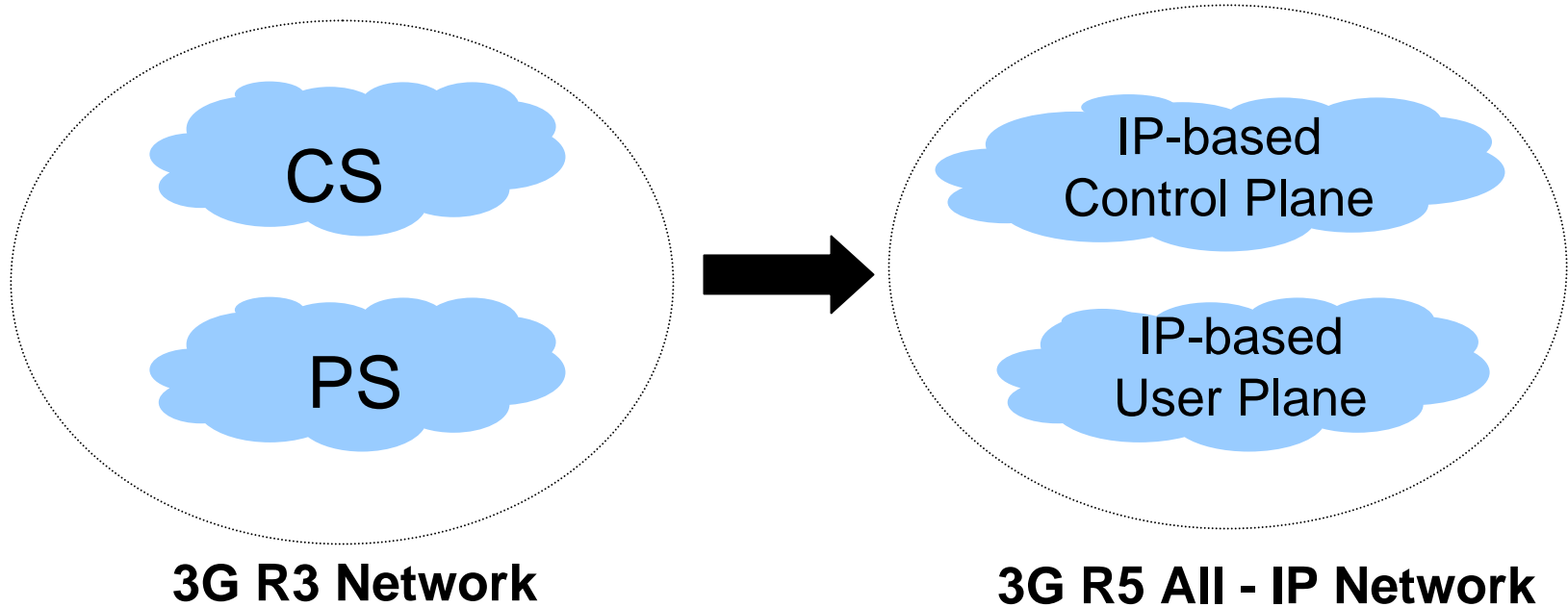
Roadmap to All-IP Networks - R4 / R5 (IM Domain)



- IP Multimedia (IM Domain) for real-time IP based applications
- Key Technologies are QoS, IPv6 and SIP signaling
- IM is critical to cap CS domain, and transferring all traffic including voice to IP environment

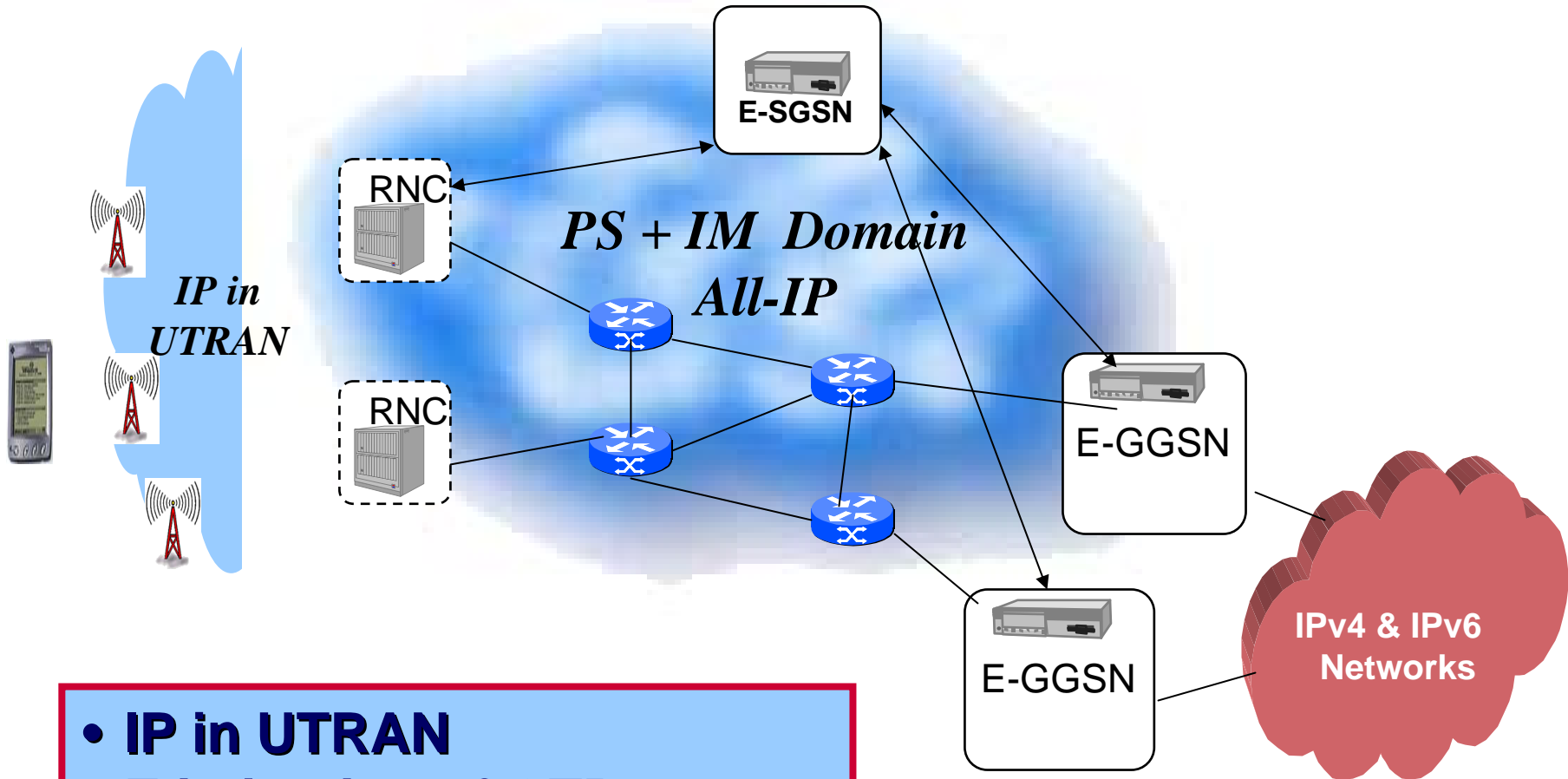
Core Network Evolution

R5 All-IP Network



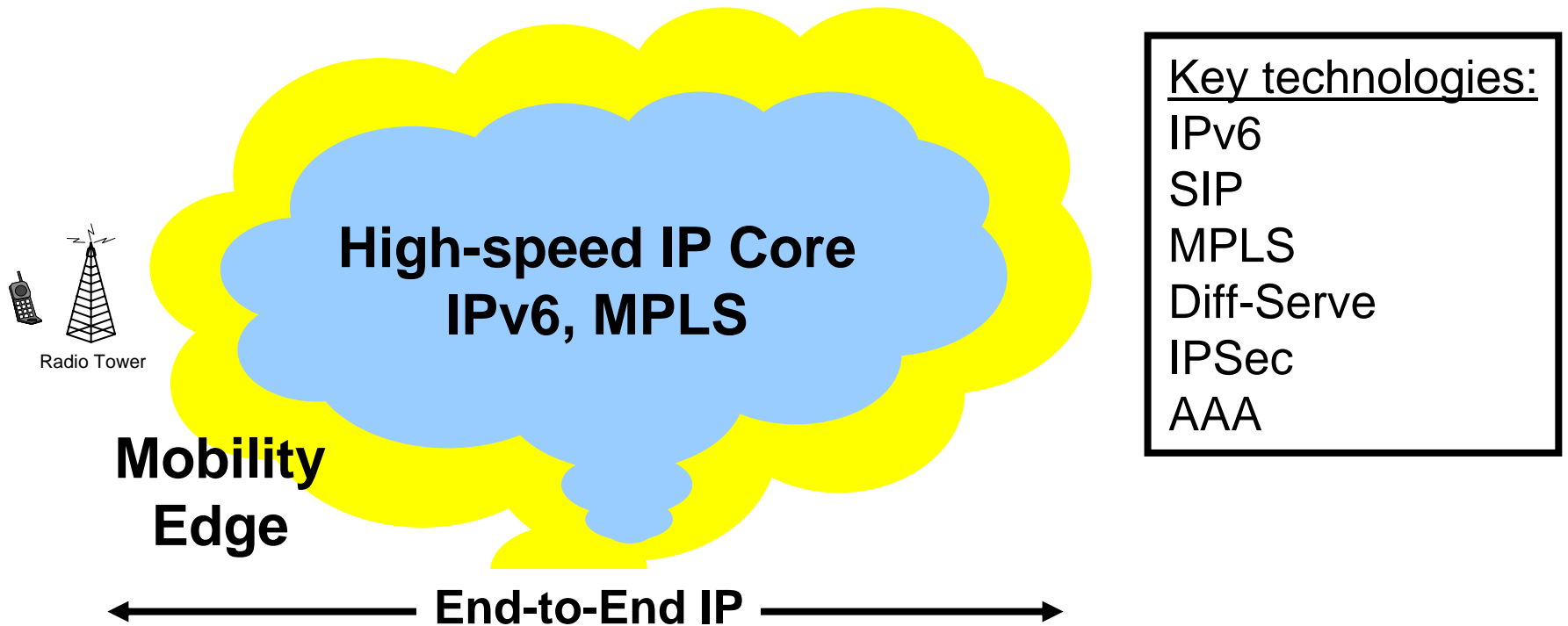
A very significant change, even though carried out in evolutionary steps

Roadmap to All-IP Networks - 3GPP R6+



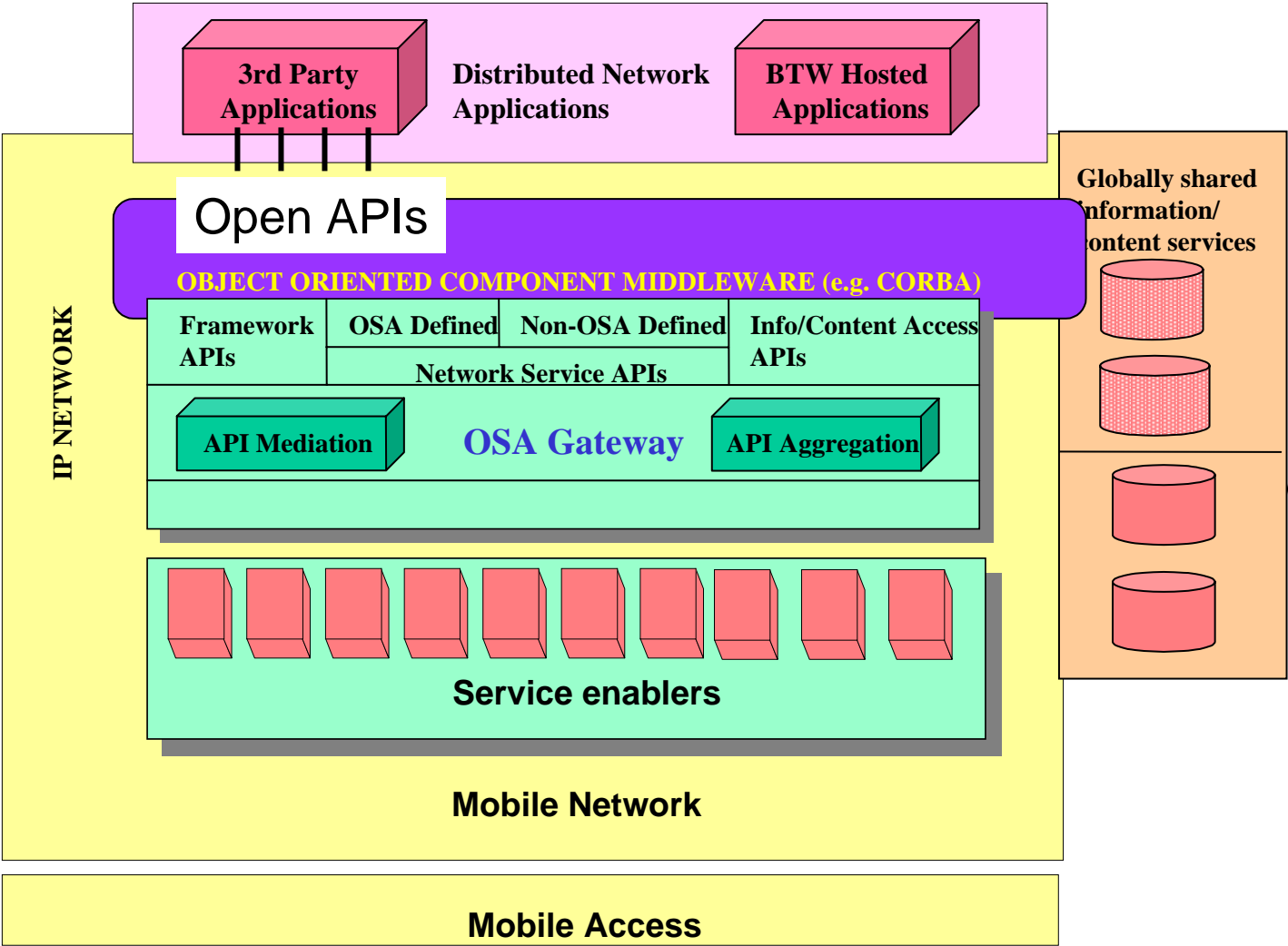
- IP in UTRAN
- Elimination of GTP Tunnels
- Mobility enabled Routers

Mobile Network and Access Convergence

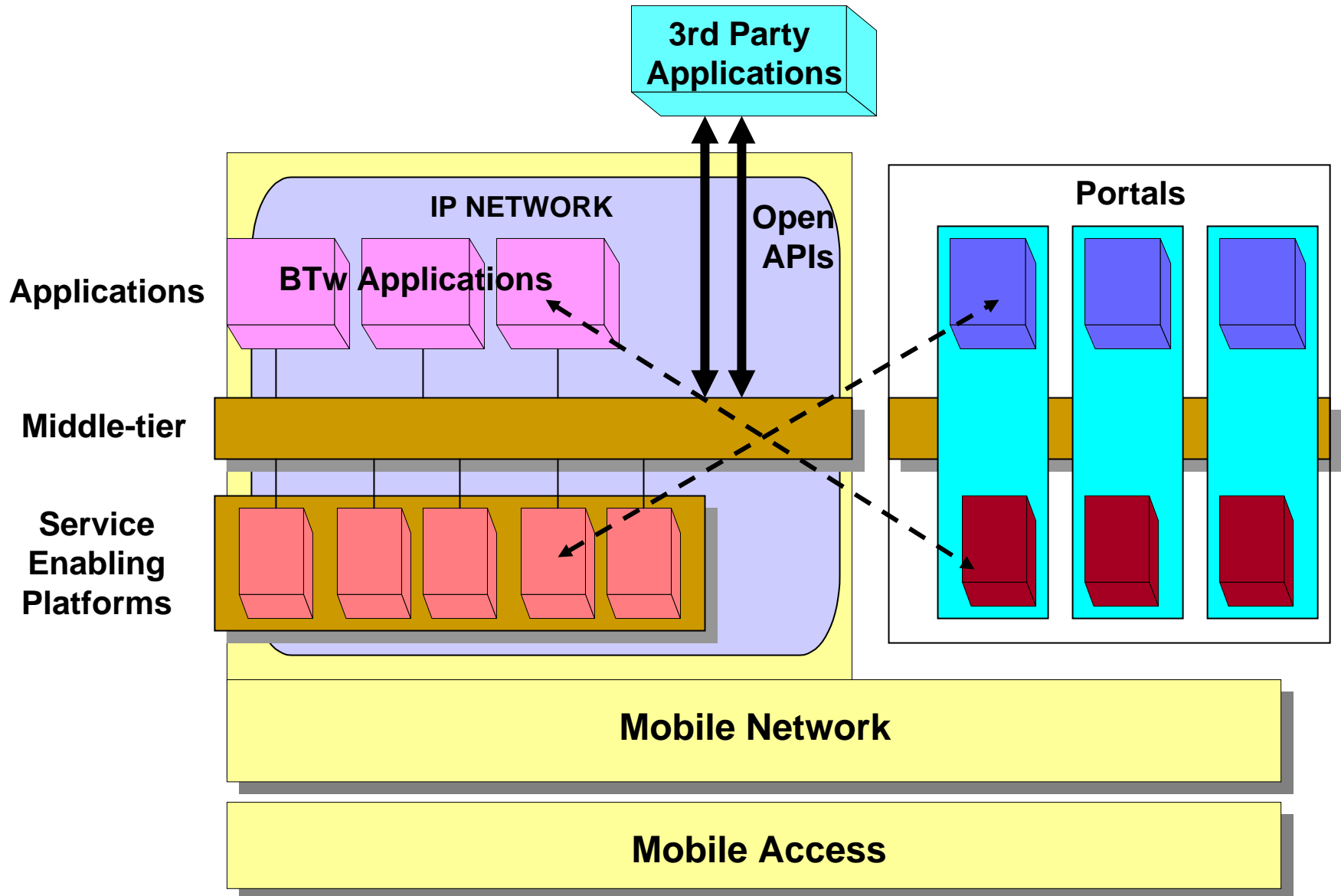


Key challenges: Quality of Service, Security, Interoperability, Bandwidth Efficiency, Mobility, Addressing, Service Management

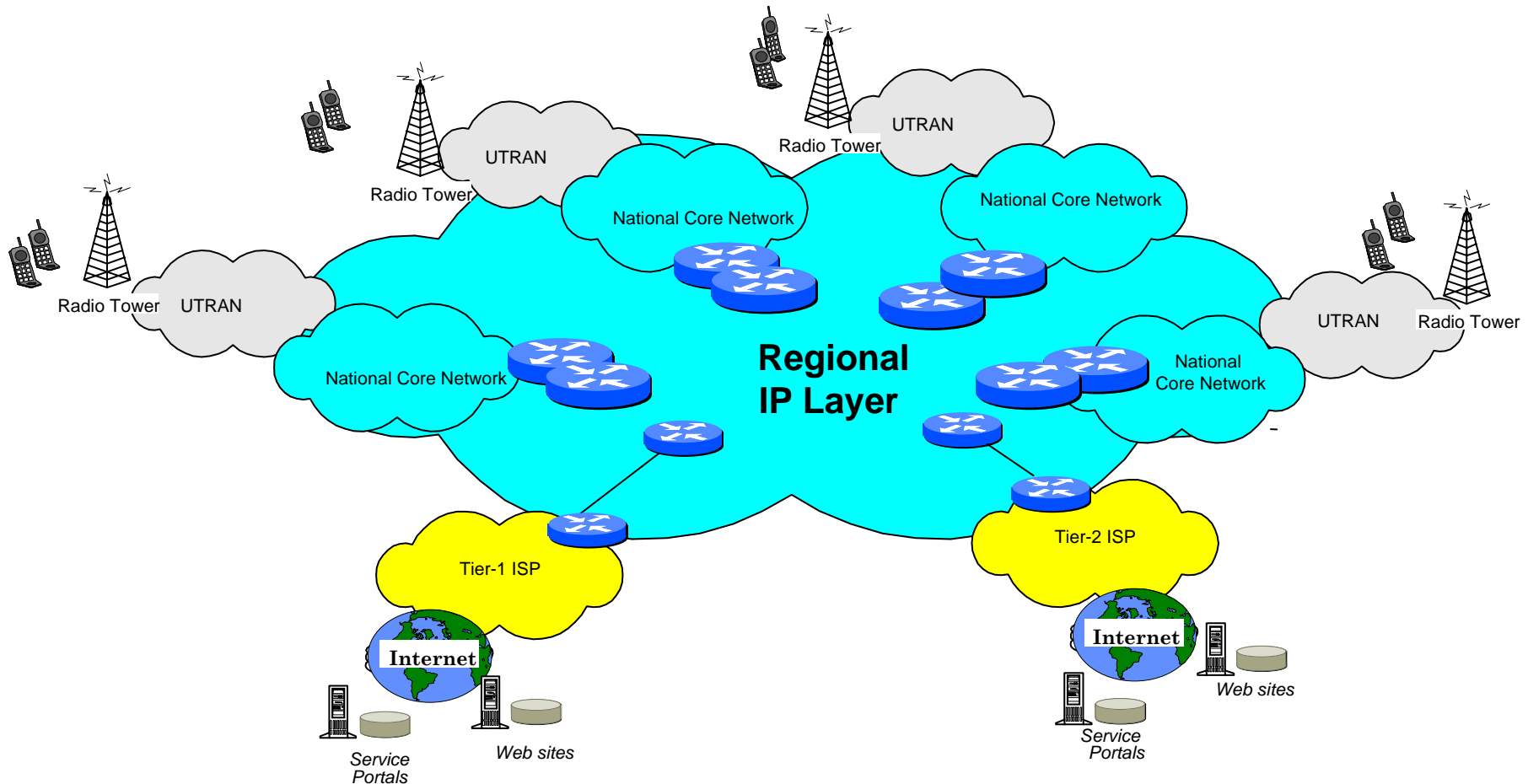
Mobile Network & Service Convergence



Architectural Alignment of Network & Portals

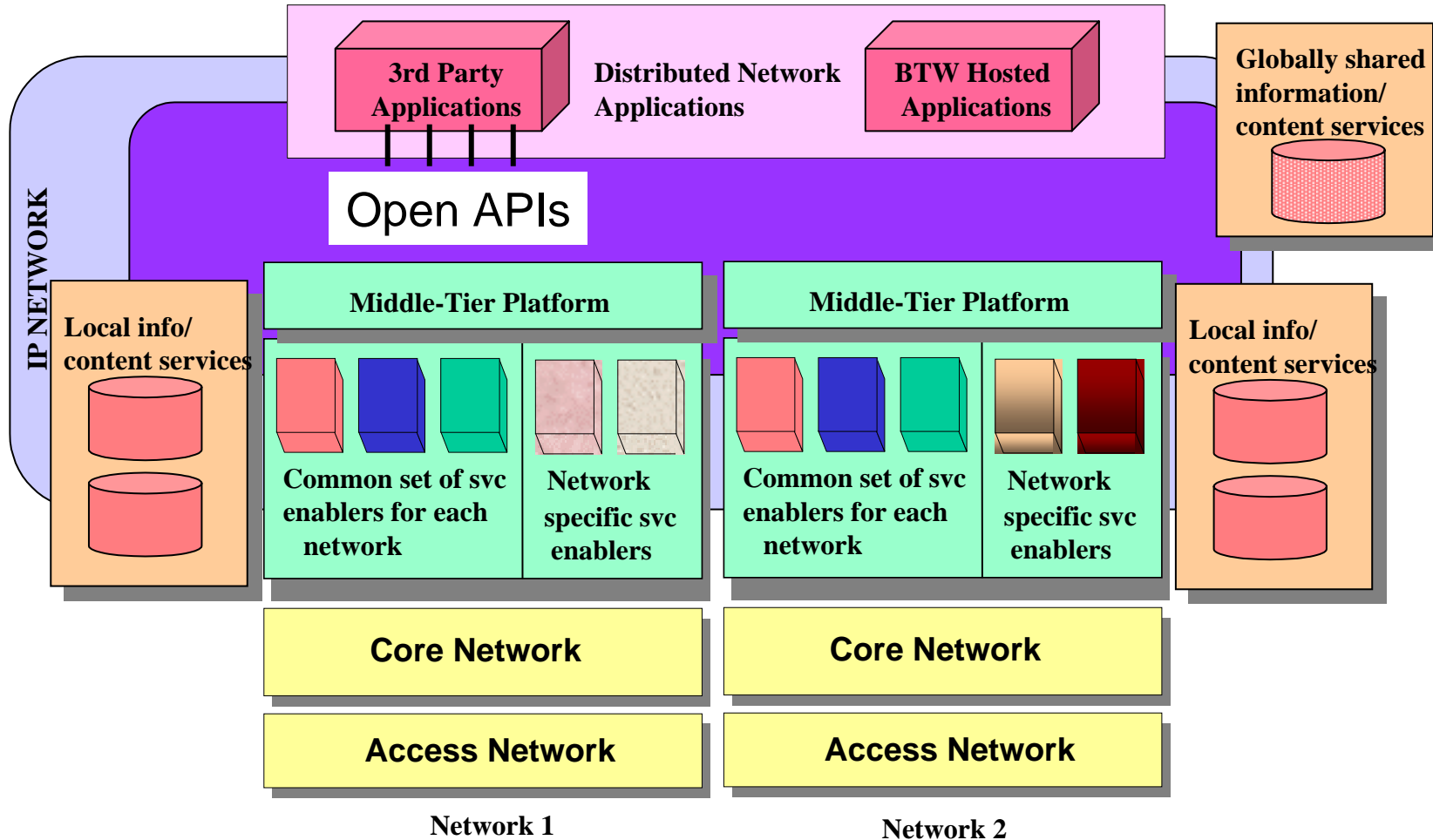


Regional IP Core Network Architecture



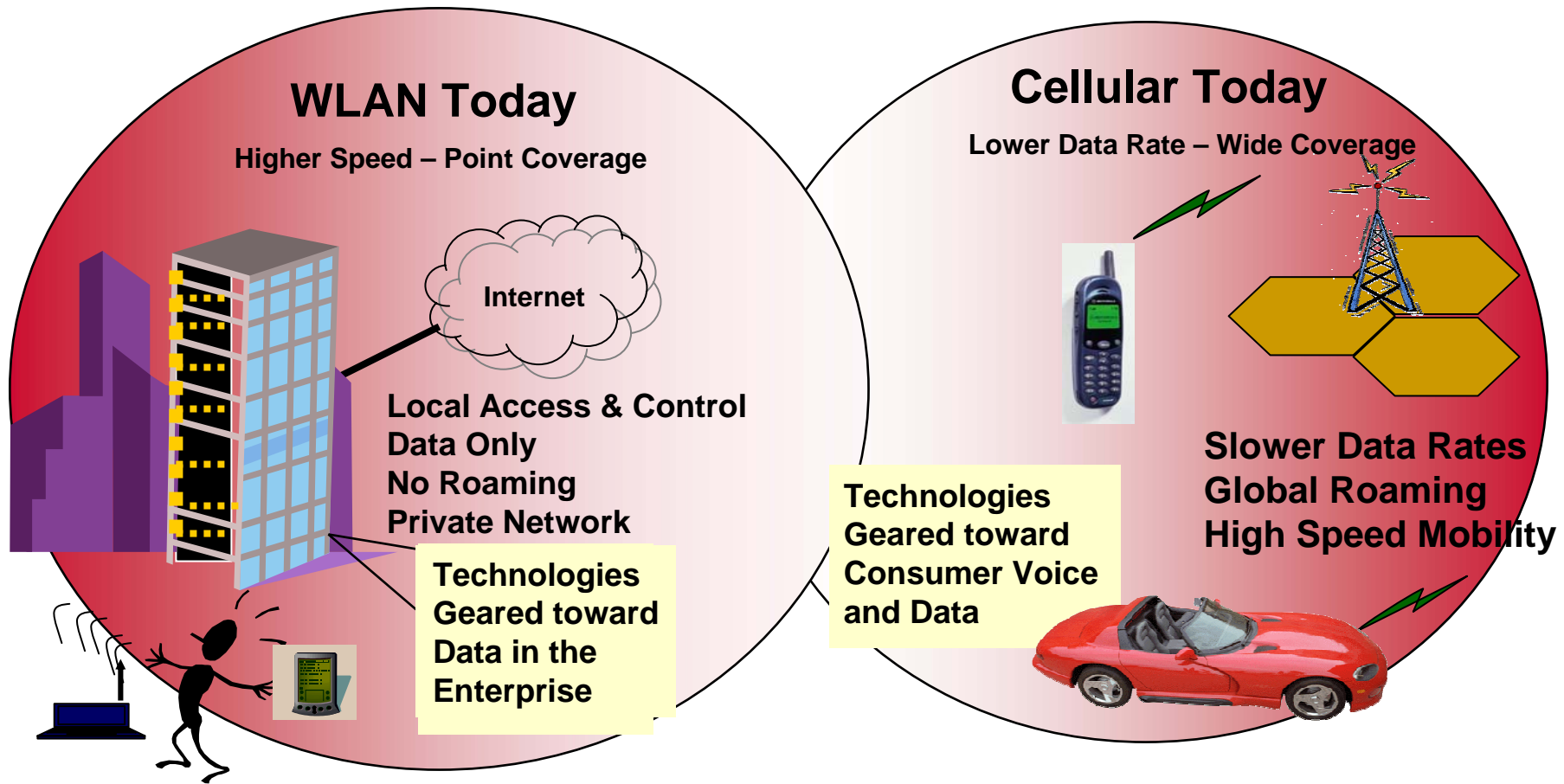
**Deploy common & wireless-dedicated IP layer for regional network,
& leverage it for high-quality, differentiating services**

Regional Service Layer Architecture



Deploy consistent, common service layer architecture across region, & deliver new & wider selection of services, with faster time-to-market

Cellular and WLAN Convergence



- How to extend cellular networks to WLAN, Home & Personal Networks?
- Different radio technologies, spectrums, device & application issues, etc
- Key challenges
 - how to offer seamless services (e.g. handoffs)?
 - how to get best of both worlds?

Summary

- **Obviously there is lots of hype about wireless Internet, wireless data, etc, BUT**
- **Mobile operators believe in Wireless Internet explosion, and put big sums of money into it through spectrum license fees**
- **Building new packet and IP based new networks and services**
- **Have several technical major challenges and looking for solutions**

Thank You !