Putting IM into IMS:

Integrated Management challenges for the IP Multimedia System

Telcordia Contact:
Robbie Cohen
Senior Group Vice President
Wireless, Cable and Emerging Markets
rcohen@telcordia.com
+1 732 699 2331
May 19, 2005

It's a Mad, Mad, Mad, Mad World

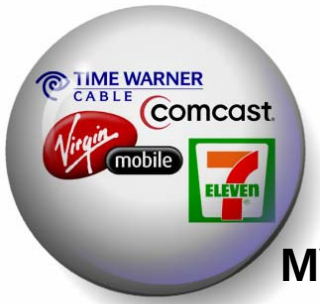
Mergers & Acquisitions

Wireless/Wireline Convergence

Wireless Technology Advancements

OSS Vendor Consolidation

Disruptive Technologies



MVNO & Cable Plays

VoIP

Competition is fierce!

What all the excitement is about

- IP
- Broadband
- Mobility
- Competition
- Voice, still

Users Want to be Connected, Always

The Transformed Customer's View

When I’m online,
I want text to my mobile to come up
in Messenger …
and I want to click to reply.

That’d be **cool.**

I just want **one** phone – my mobile …

but, I don’t want to
pay mobile rates
when I use it
in the office…
… or at home.

Can’t
be hard.

I wanna
choose !!!
... and I want
my **own** phone

I **want** to be able to
transfer calls from
my desk to my mobile.
So I can **keep talking**
on the way to a meeting.
Or on the way home.

I want to use the **same mobile** for business and personal calls.
But keep the bills **separate**.

I want to select a music clip from my TV,
and listen to it on my mobile …

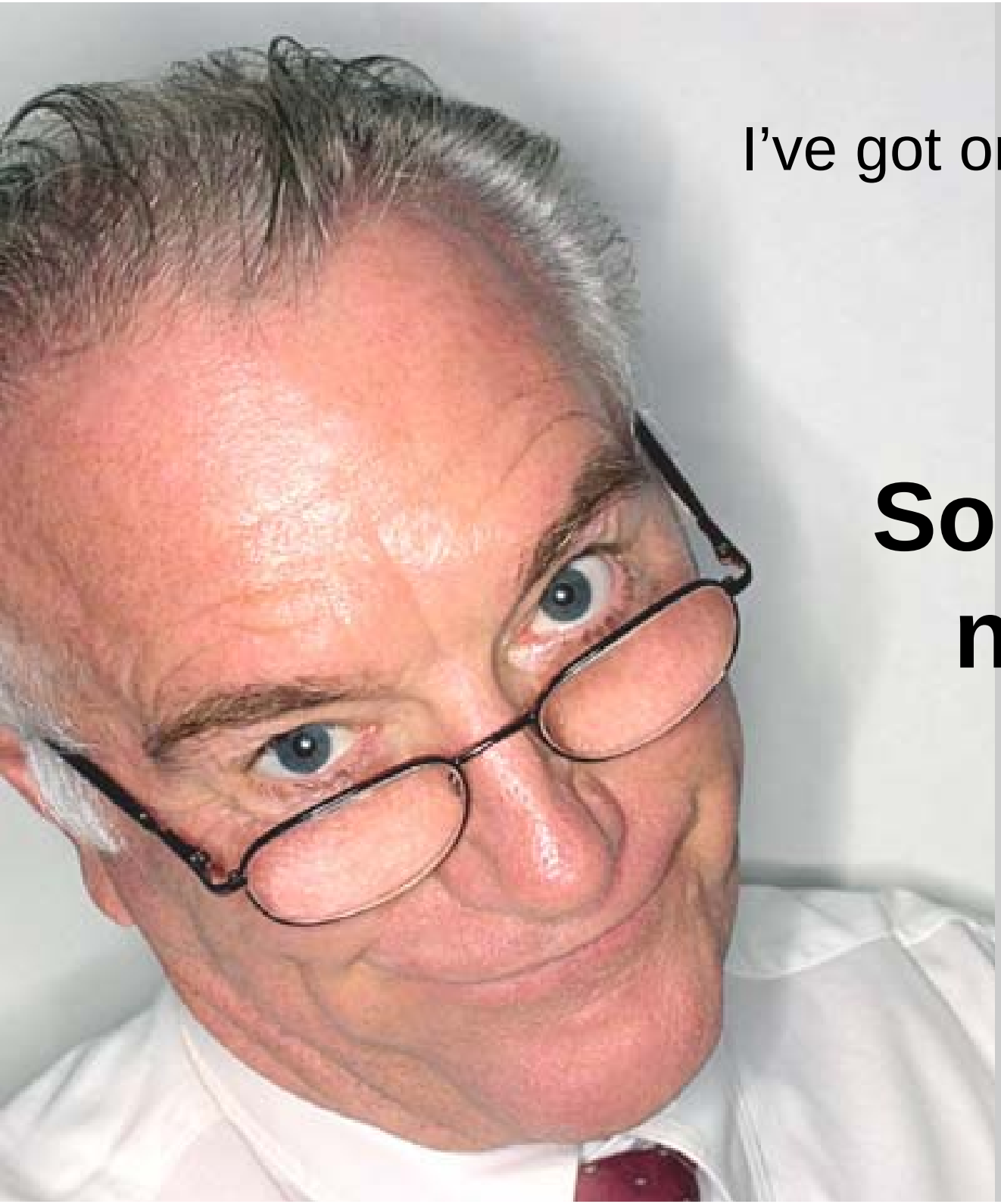
…or on my music system

Great goal!

I want to send **the goal** to my friends

Why can’t I use WiFi when I **travel**
and have it charged to
my **home account?**

When we're watching a movie, we want to **see who is calling** when the phone rings. **and** to see their picture **on the television.**



I’ve got one mouth and
three phones.

Something’s not right.

Anchoring Truths…

Ultimately, everything that can be … will be …

Wireless

IP

Personalized

Any service from any network delivered to any device

The Challenges for all Operators

£

- Create ubiquitous services in a converged landscape
  - Satisfy customer demand for anytime, anywhere, every time, everywhere

¥

- Avoid service substitution; fight margin erosion
  - Falling ARPU, customer churn, increased competition

$

- Keep the value in the network
  - Disruptive business models emerging; avoid disintermediation

€

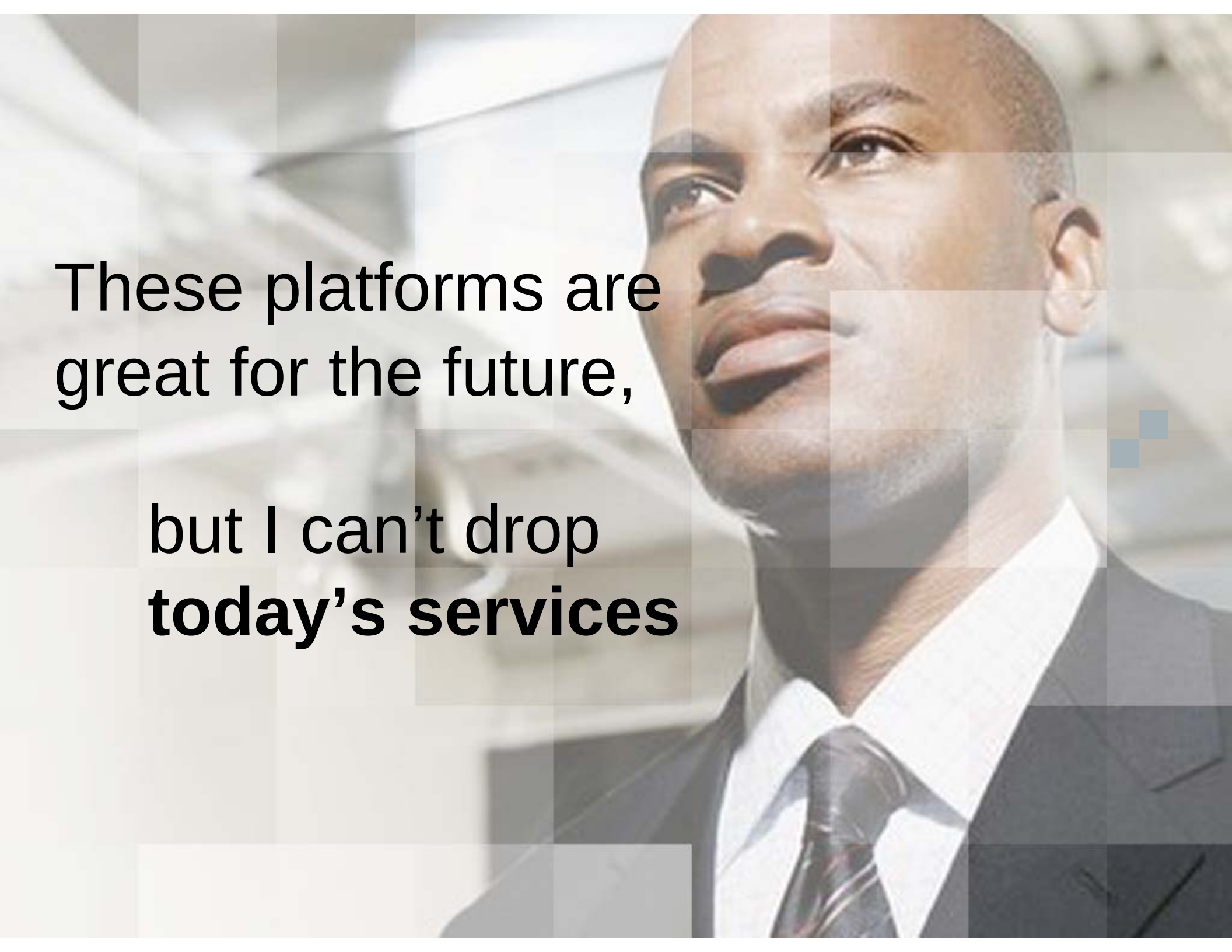
- Reign in network complexity
  - Multiple networking technologies; myriad of different elements

The Transformed Operator's View

Where are my **devices**

for fixed mobile convergence?

Why can’t
marketing
just make up their mind?

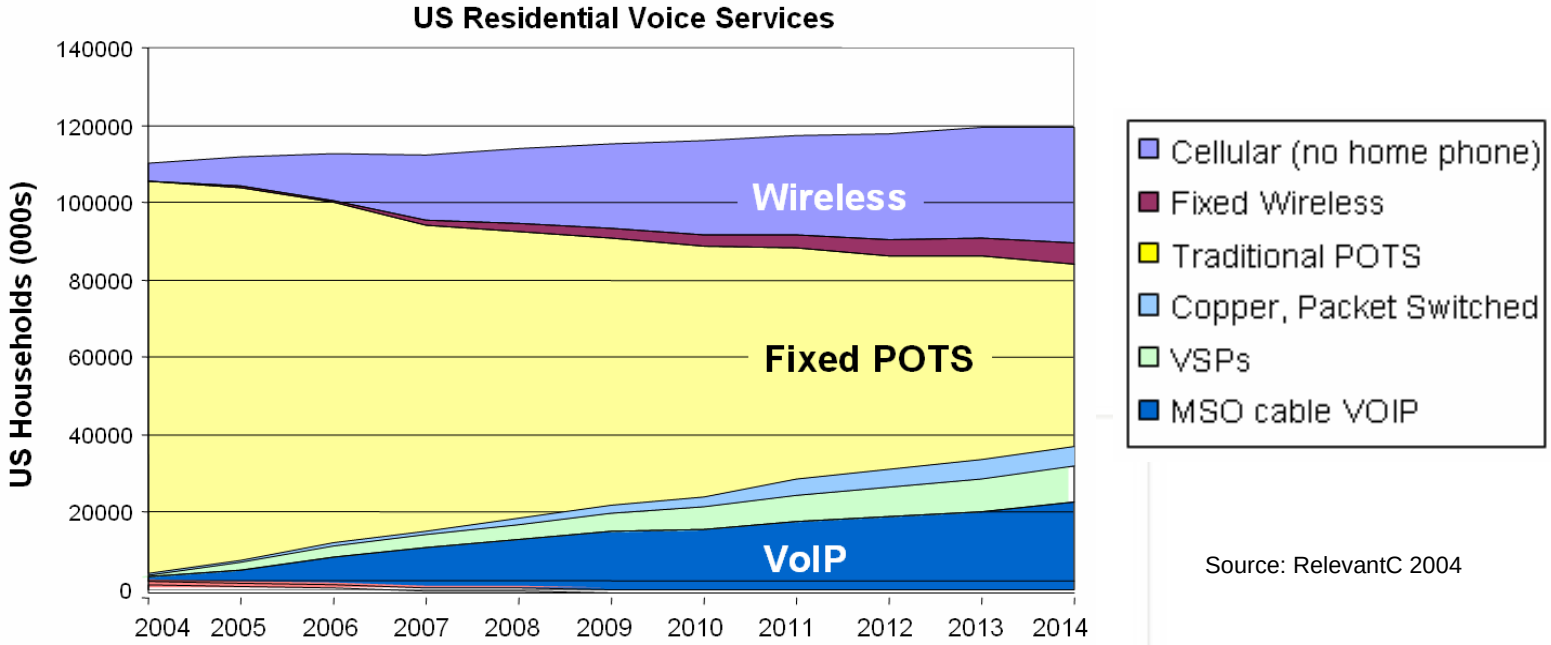

These platforms are great for the future,
but I can’t drop **today’s services**

How much **revenue**
will these new
services create?

Will the quality of my Service delivery ...

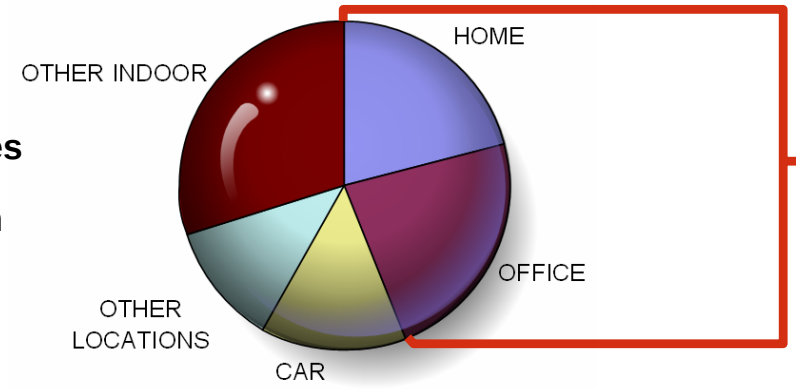
... Satisfy this customer?

Operators predicted to invade each others space



Source: RelevantC 2004

Mobile minutes consumed by caller location



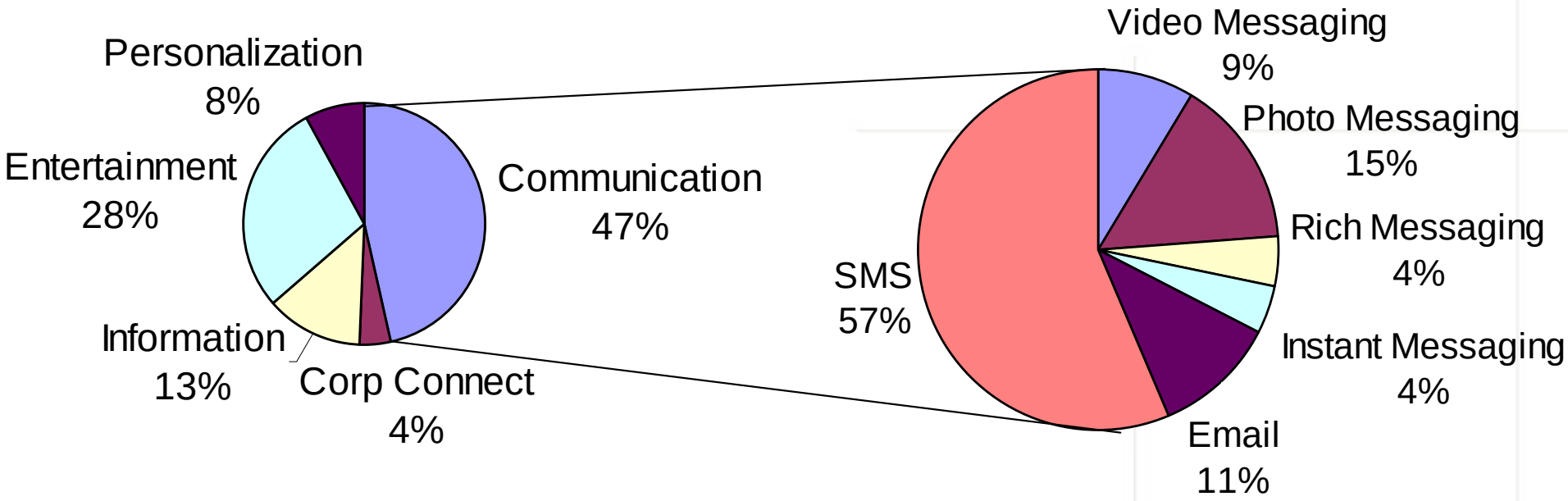
- **74% of mobile minutes are indoor calls**
- **40% of all mobile calls made within a few feet of the users' landline**

Note: Representative of average wireless subscriber in the UK, 2003

Source: OfCom, McKinsey 2004, RelevantC

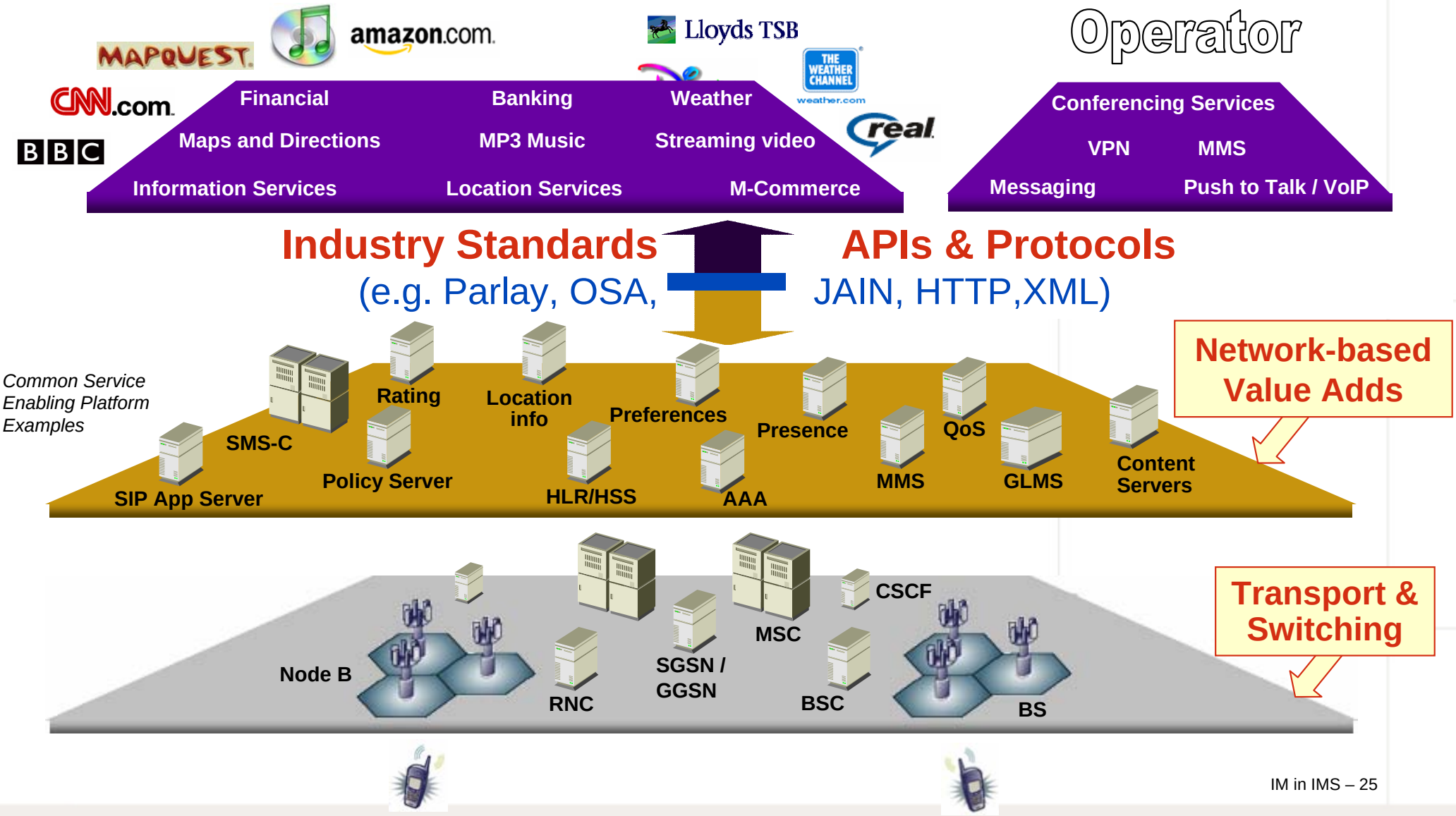
IP Enabled Mobile Services

Projected 2009 Global Data Revenues ($189 Billion)



Source: Strategy Analytics, August 2004

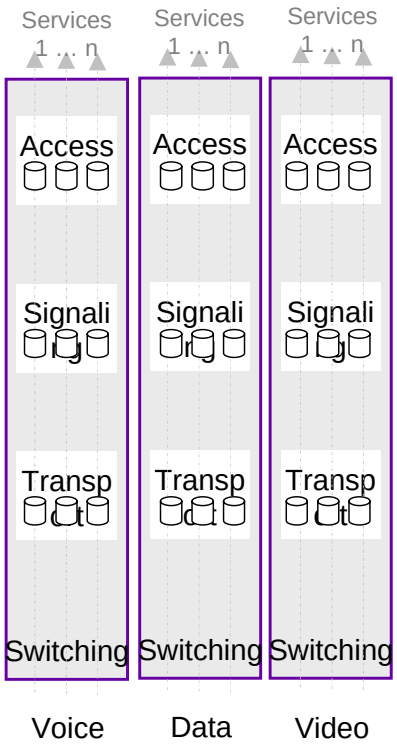
Emerging *Services* Environment

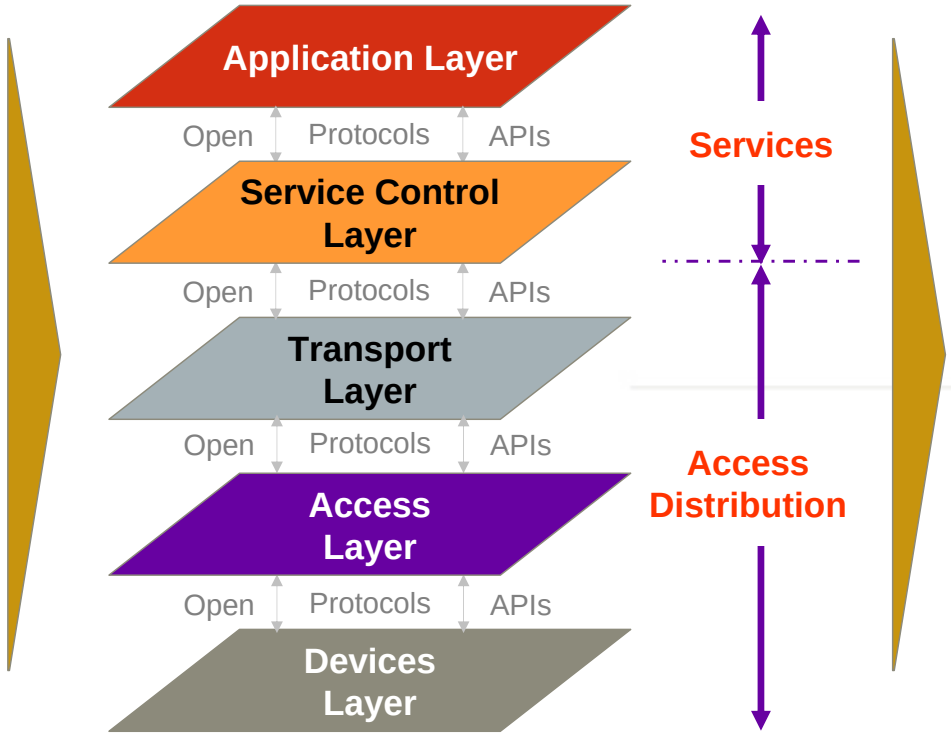


... so,

where is the solution?

The shift to IMS networks





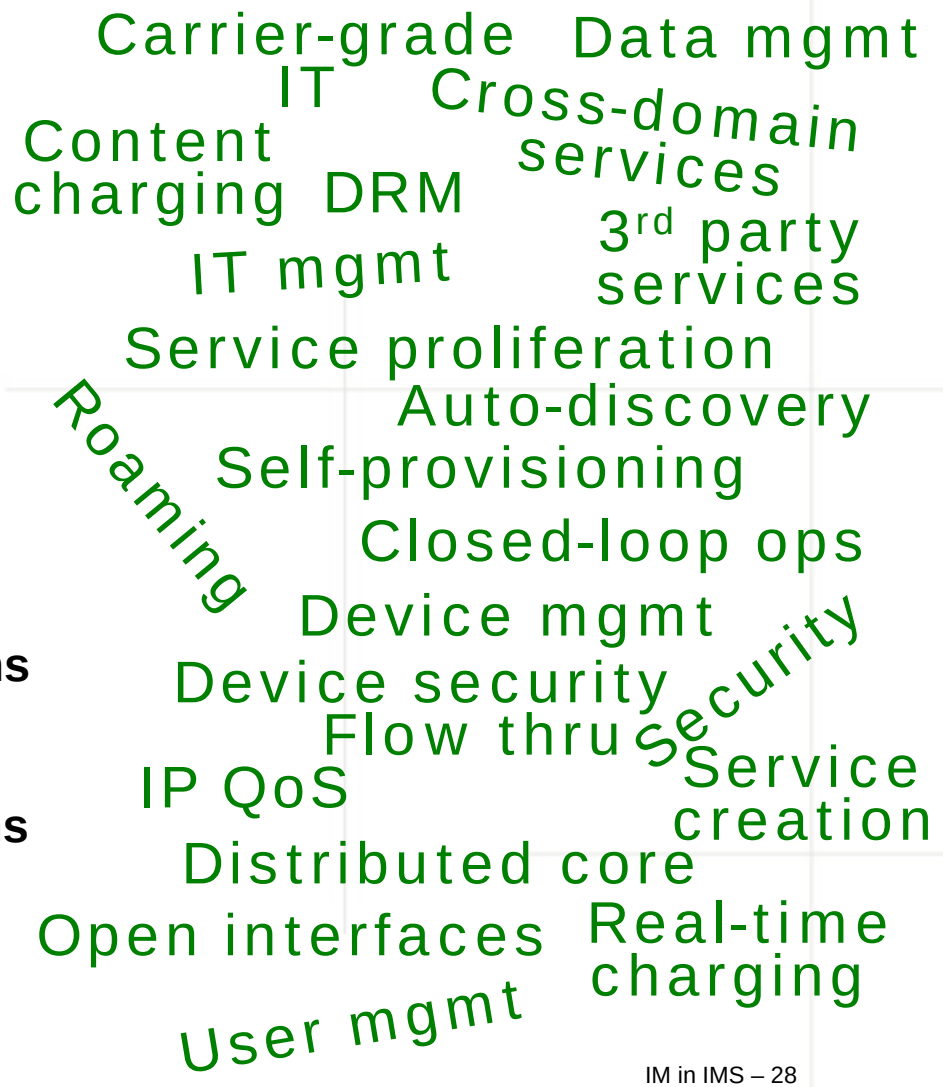
- **NEW** Convergent Content
- **NEW** Market Segments
- **NEW** Service Providers
- **NEW** Equipment Suppliers
- **NEW** Technologies

From closed, vertically integrated network silos **to horizontal layers with open standard interfaces and** **clear separation of network and services functions** **creating new sources of opportunities**

IMS Impacts

NEW Convergent Content	→	**Seamless Services**
NEW Market Segments	→	**New Services**
NEW Service Providers	→	**New Competitors**
NEW Equipment Suppliers	→	**Multi-vendor implementations**
NEW Technologies	→	**Complex implementations**

Management challenges



An example:
IMS Management Challenge of Devices

- Heterogeneity of
  - domain
  - capability
  - manageability
- Requirements
  - for auto-discovery of device and software load
  - correlation to known problems
  - patch push capability
  - security – virus protection, grey market
- Device management standards
- Consistency of the user interface

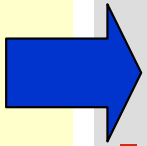
IMS Operational Impacts

Operations must be transformed, especially for non-mobile operators

- Business processes fundamentally change
- Network elements are distributed; networks are converged
- Determinate QoS replaced with sliding congestion and latency issues
- Network security, especially for control (signaling) links, becomes significantly more challenging
- Assurance & provisioning now must cross domains
  - Technology
  - Ownership
  - Industry
- Multi-vendor interoperability (with vengeance)

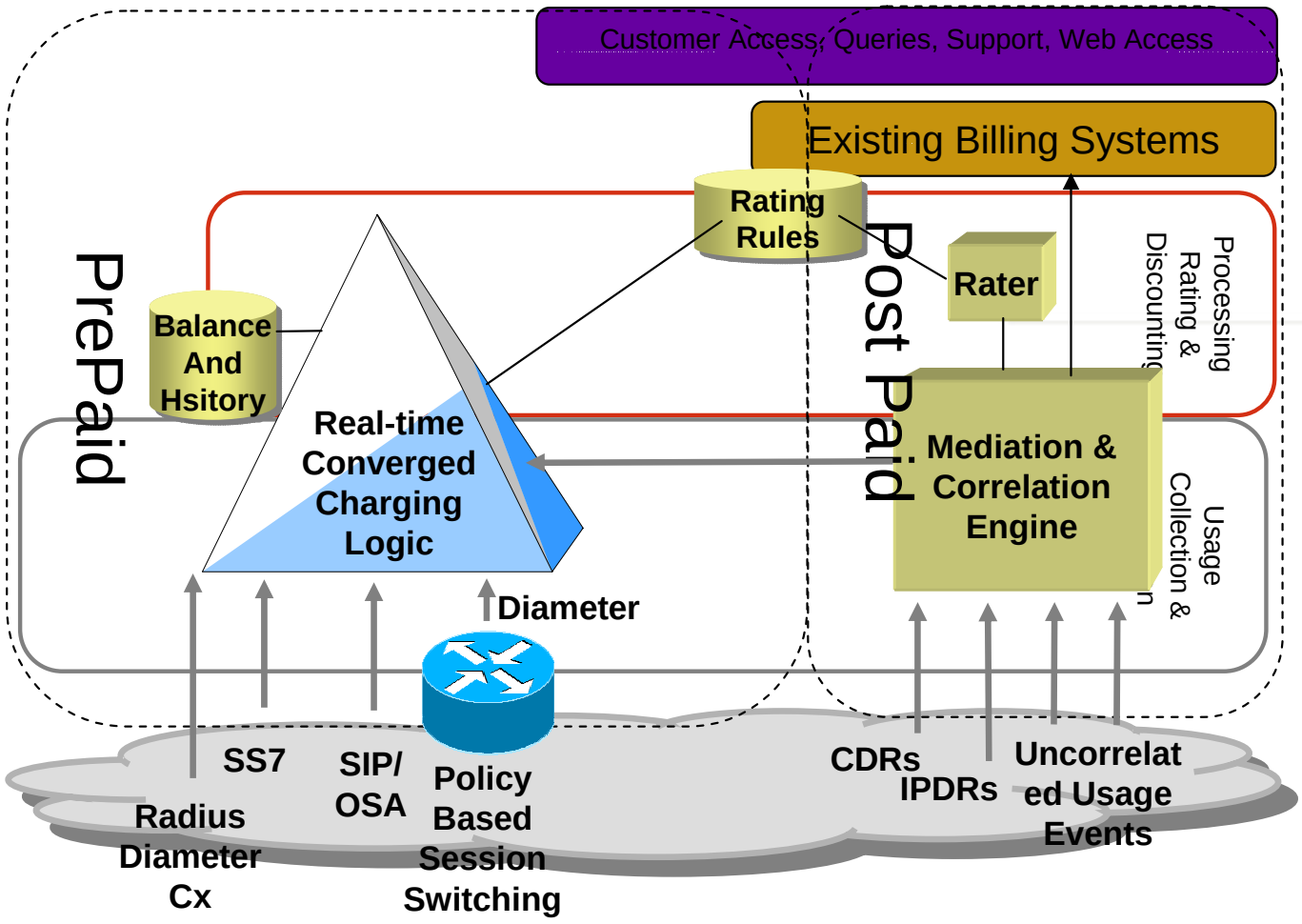
Operational Impacts: Assurance

- Services cross domains
  - access technologies
  - core technology (e.g.: SS7 to SIP)
  - companies and ownership (e.g.: broadband - mobile)
- Distributed network architectures
- Non-deterministic QoS
- Service proliferation / shared networks



- Service Management, not network management
  - Look to TMF work
- Flexible modeling of services
- Stochastic methods to measure performance
- Mix and match access

Operational Impacts: Flexible and Real-time Charging



- Proliferation of data sources
- Protocol proliferation
- Complex plans
- 3rd party settlements
- Content
- Real-time session control
- Complex rating

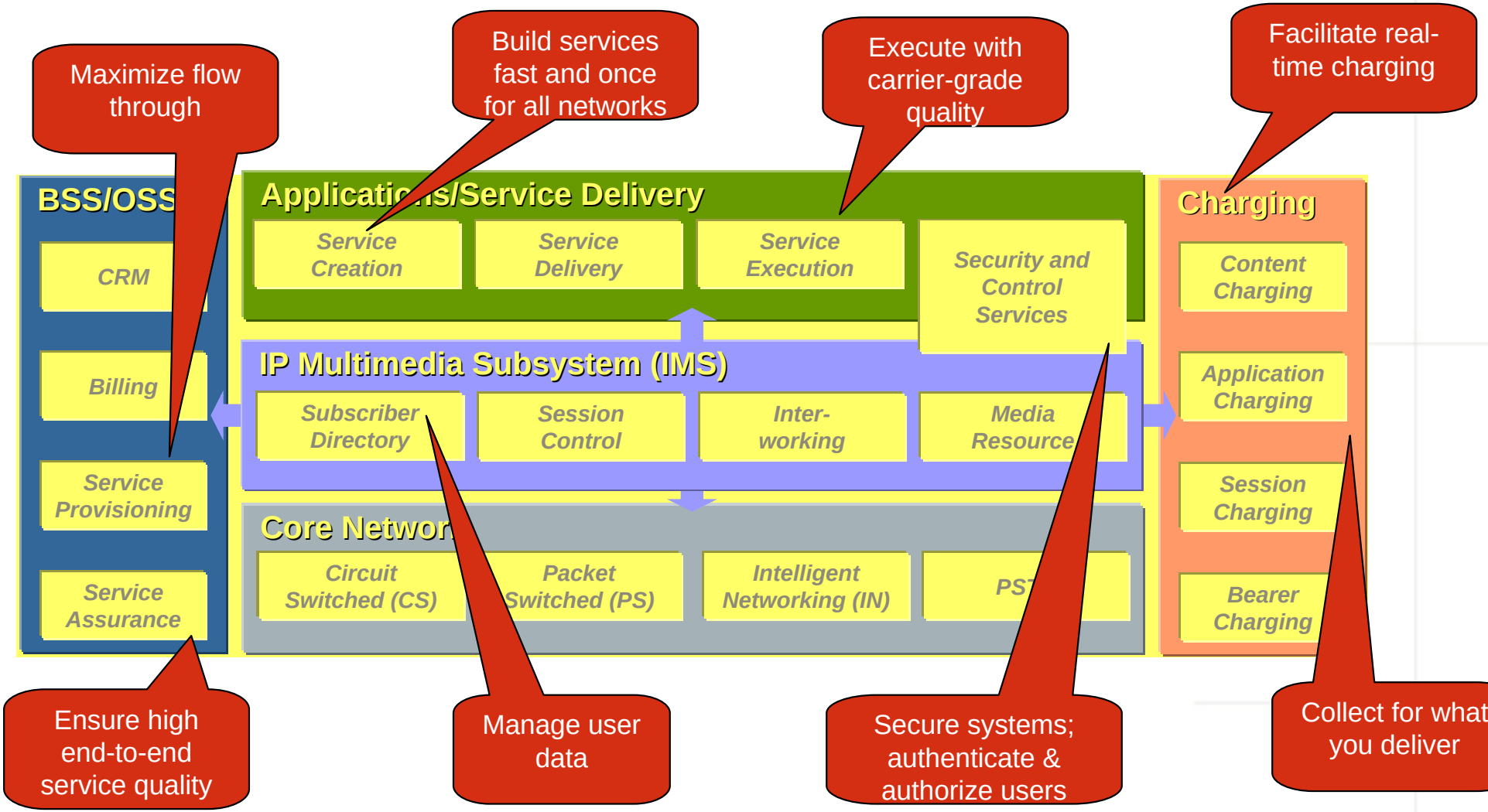
Operators must transform to a services orientation

- **Create, deliver, manage and charge for services, not communications**
- **Break down organizational and functional “silos”**
- **Consolidate “mini-solutions” that manage a single initiative**
- **Implement flexible service delivery platforms**
- **Use evolving infrastructure for new services**
- **Modernize legacy OSS**

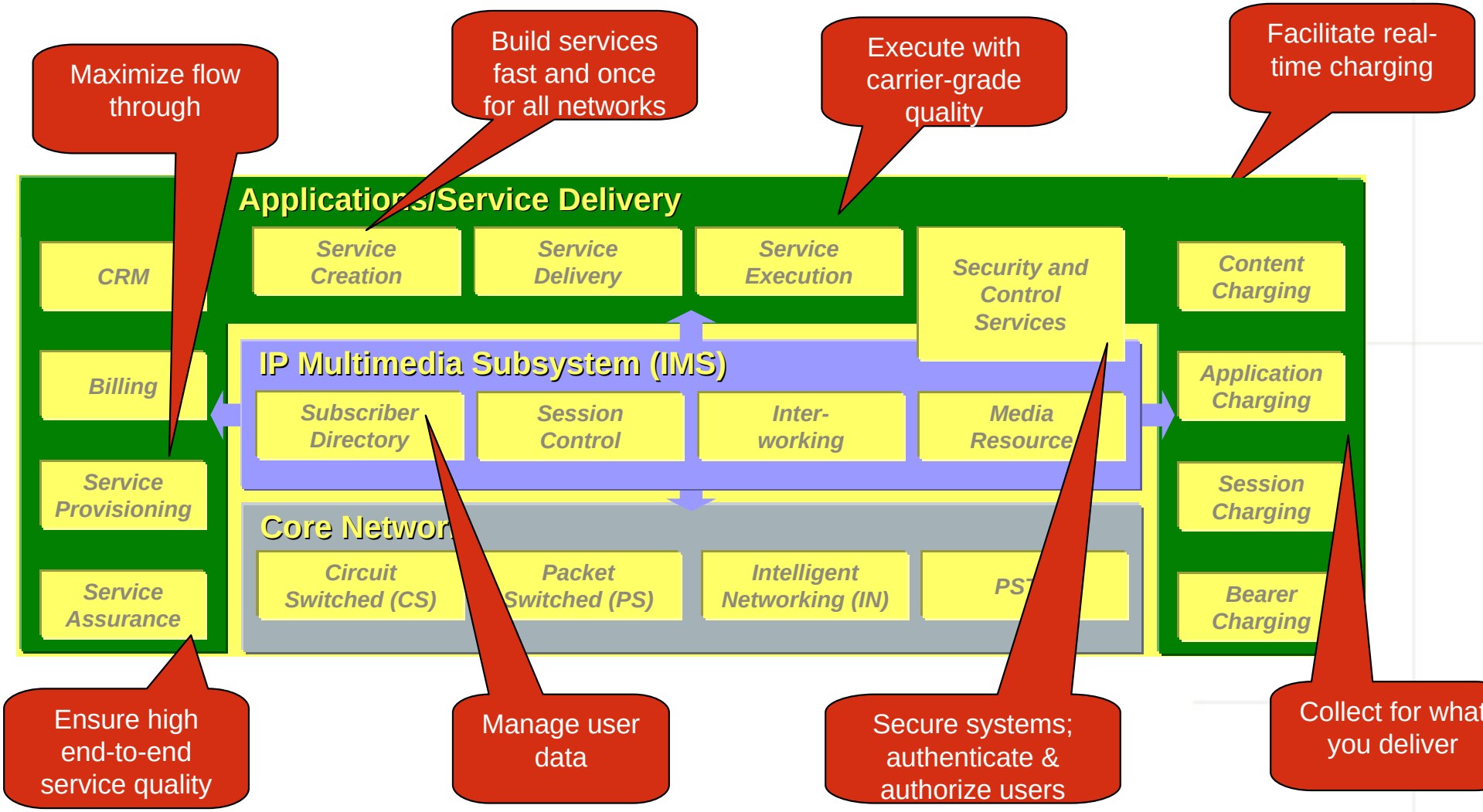
What do we do to help?

- Help make networks
  - Manageable
  - Evolvable
  - Profitable
- Help operators manage the accelerated pace of
  - Change
  - Competition
  - Customer demand
  - Operation

IMS Integration Challenges



IMS Integration Challenges



Who will rise to the top in today's telecom market?

- Those who
  - transform to meet customer's changing needs
  - continually innovate to stay ahead of the technology curve
  - embrace open, flexible, configurable solutions
  - minimize complexity and cost in their networks
  - focus on creating value for customers, stakeholders and shareholders

In Conclusion

- Telecom moving to value added, multi-service IP networks
- IMS is becoming the architecture of choice across wireless, cable and fixed broadband operators – at least in mind share
- But IMS (SIP) and Circuit-Switched voice (SS7-IN) networks will coexist for years, requiring truly “converged” service logic
- Seamless mobility across legacy, broadband and wireless yields the greatest convenience, coverage, user simplicity as well as the lowest blended cost
- Winning interim solutions will execute a “triple play” of benefits:
  - Fast to market
  - Seamless, intuitive usage
  - Consistent with the longer-term goal of IMS (“build IMS equity”)

Telcordia

Telcordia®

The Second Wireless Revolution: It's all about Services

Push To Talk

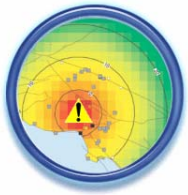
Micro Payments

Find-Me, Follow Me

Converged VPN

Video

Enterprise Integration



Presence-driven Services

Games

Custom Ringback Tone

Commerce

Multimedia

Instant Messaging

Voice

Internet

Data

Location-based Services

Voice & Data Pre-Paid

Voice & Data Post-Paid

Alerting Services (Weather, Traffic)

Converged Pre and Post-paid

Cable Revolution: The Quadruple Play

Games

Video *Entertainment*

Video

Voice

Voice *Multi-Media Two-Way Communications*

Video Conference

Commerce

Data *High Speed Downloads*

Data

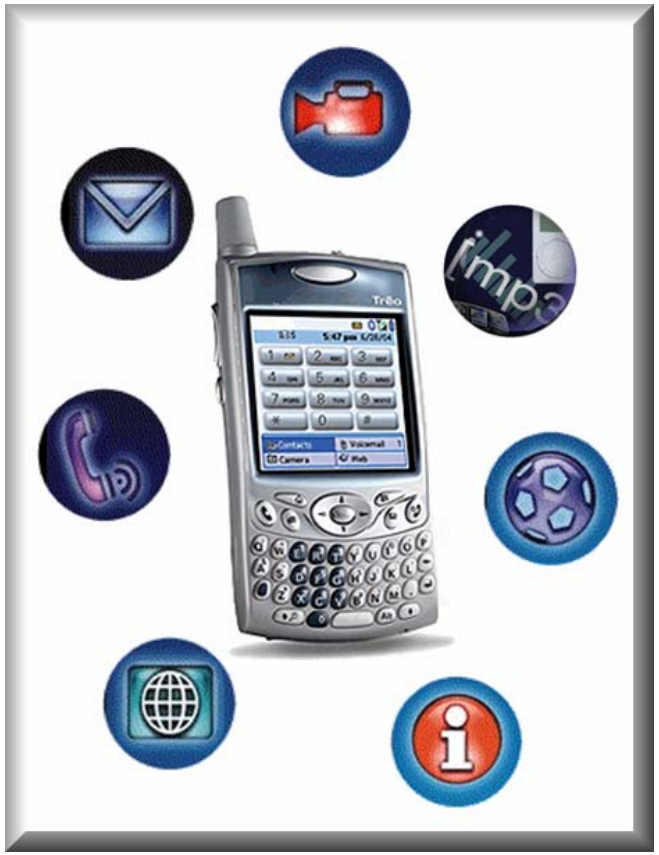
TV

Mobility *Personalized Services and Content*

Alerting Services (Weather, Traffic)

Content owners bring clout to the game

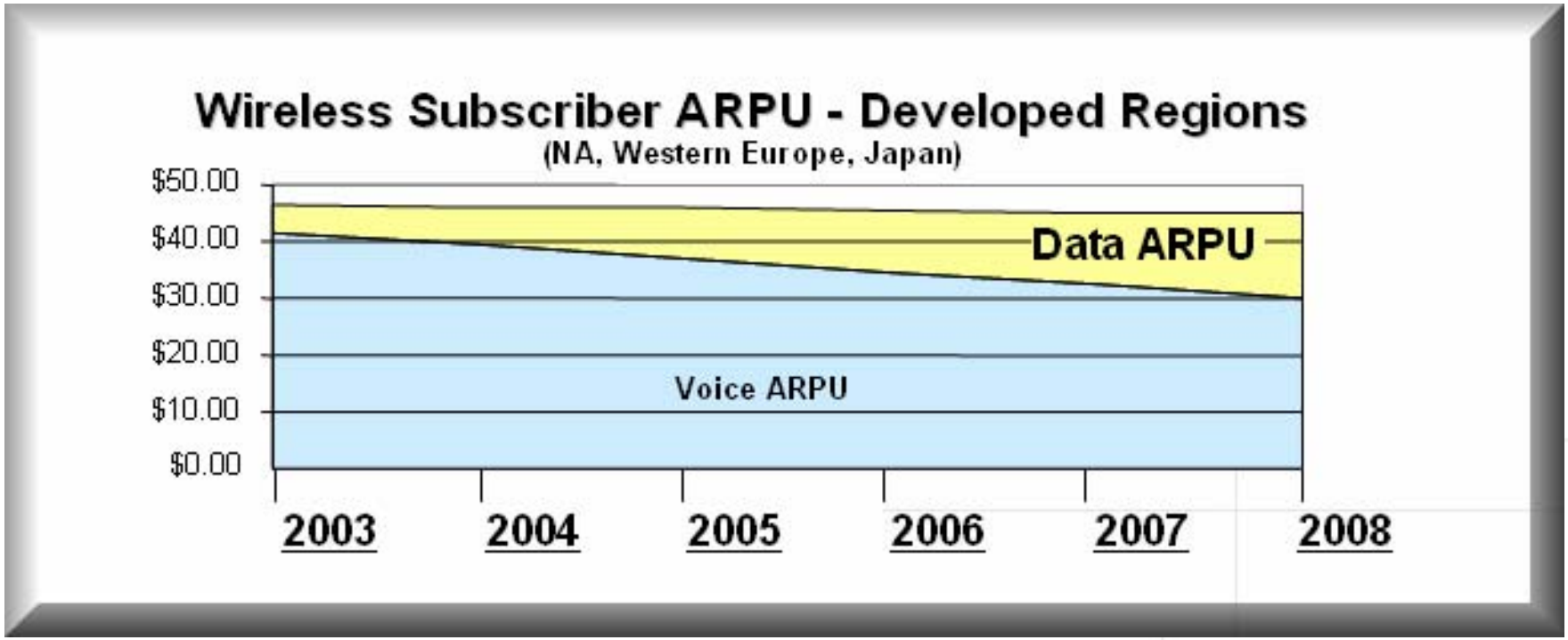
What our customers want



- **Hot new services with rapid, state of the art service creation**
- **Increased ARPU delivered by advanced, real-time charging for voice, data & content**
- **Increased cash flow from more efficient operations and network utilization**
- **Highest quality service assurance with measurable SLAs**
- **Open, flexible, configurable solutions that work with new and old infrastructure, and across converging environments**

Making IP = Increased Profits!

Voice dominates revenues



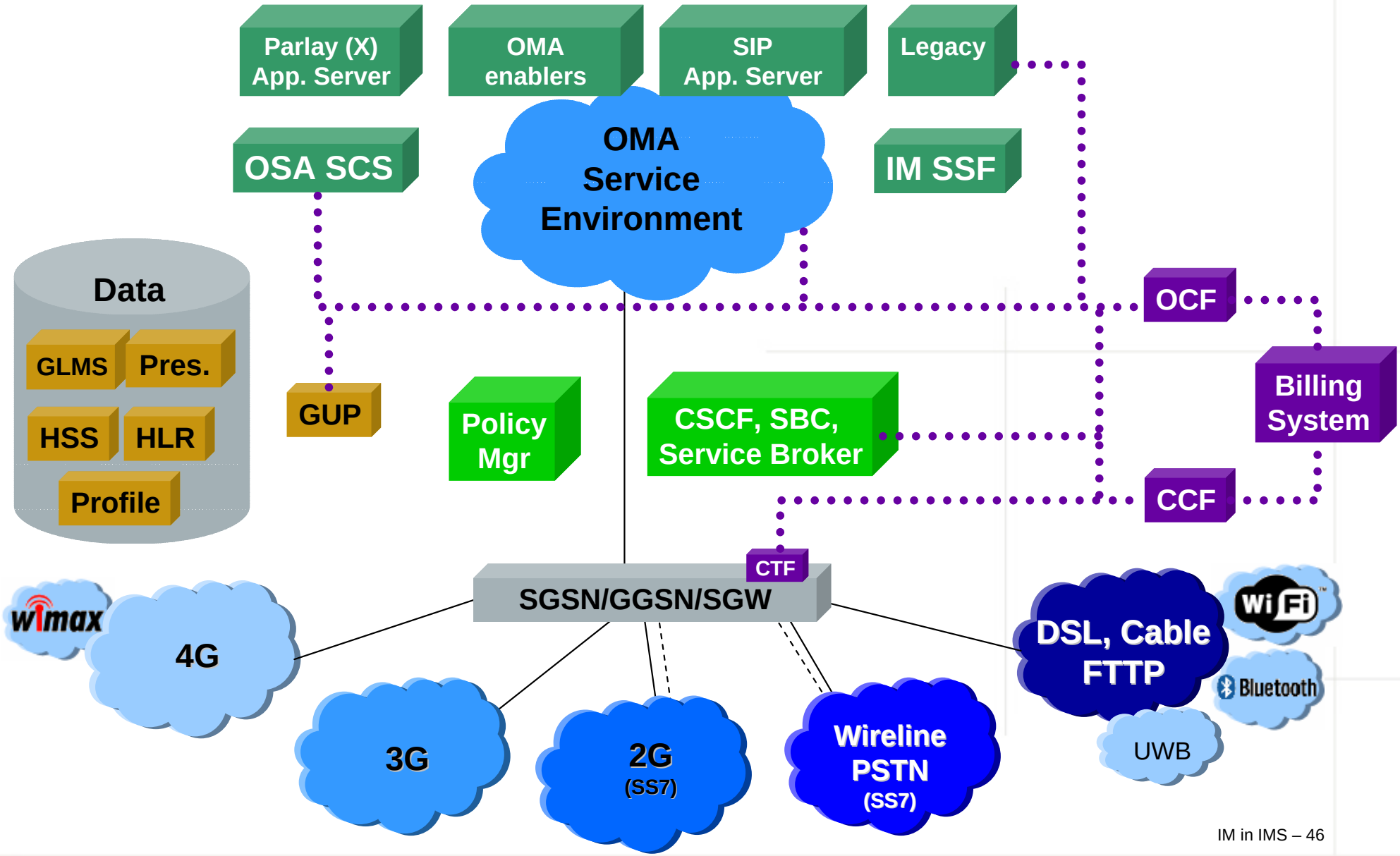
Voice continues to dominate revenues for coming years

“VoIP is turning telephony into just another Internet application—and a cheap one at that”

IEEE Spectrum, March 2005

“Each new adaptation provides opportunities for interactions and new niches”

John H. Holland

Hidden Order – How Adaptation Builds Complexity

IMS: Applications