Beyond IMS...

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Advanced Network Modeling

Bell Labs/Lucent Technologies

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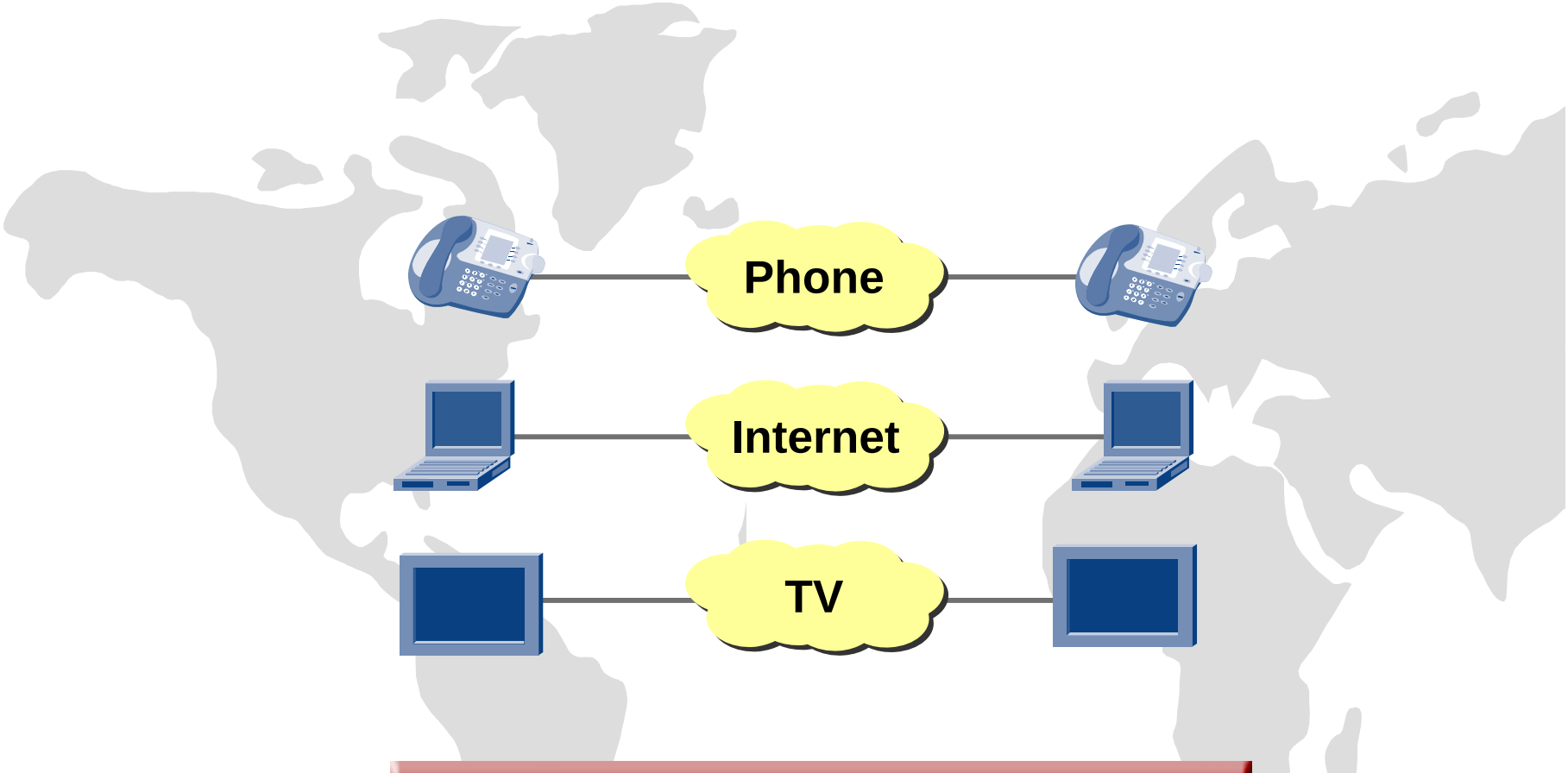
Bell Labs Innovations

Outline

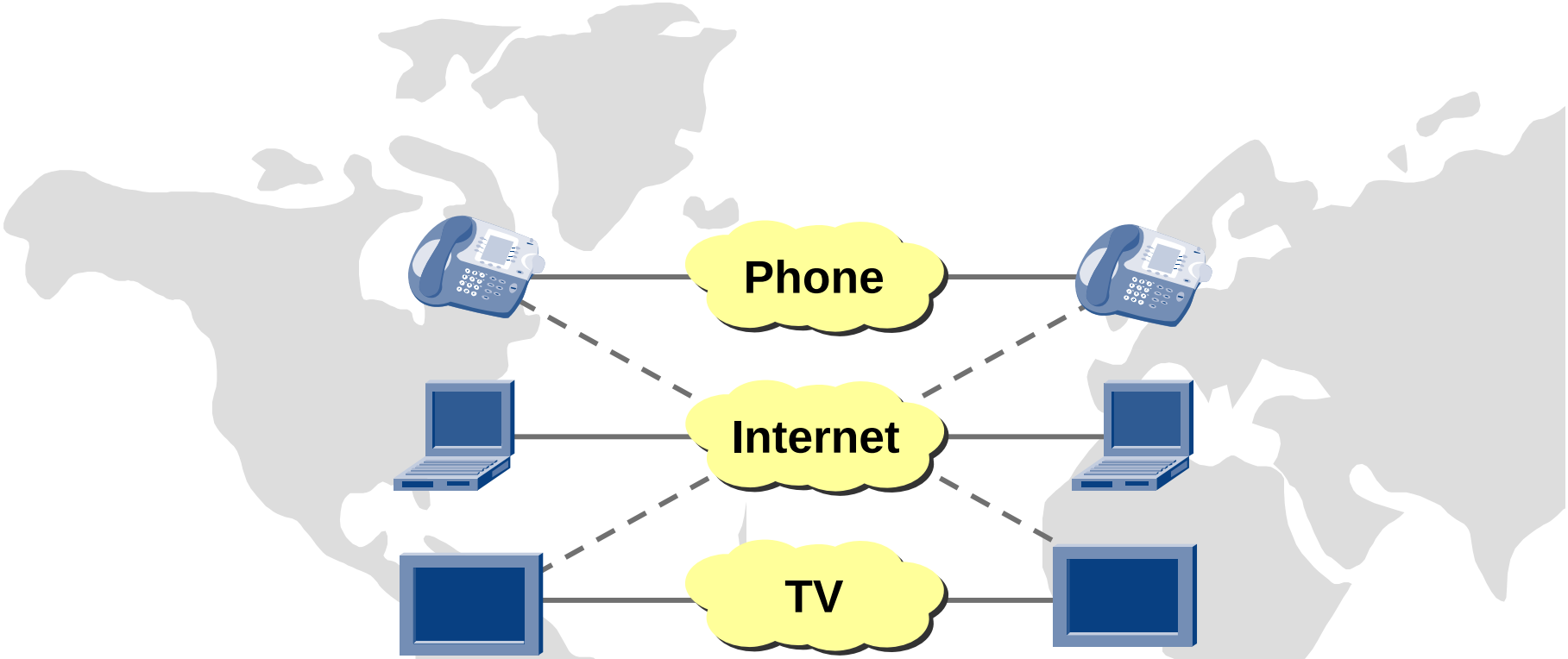
- Yesterday, Today and Tomorrow
  - Wireless-Wireline Convergence Example
- Introduction to Blended Services
  - Bundling vs. Blending
- How is blending achieved?
  - Introduction to the SCIM and SCIM+
  - Examples
- IMS, SDP, and SDEs
  - Soft Definitions
  - Challenges
- A View of Nirvana??
- Summary
- Acknowledgments

Yesterday World of Communications



Yesterday's communications world: Separate networks and services.

Today's World of Communications

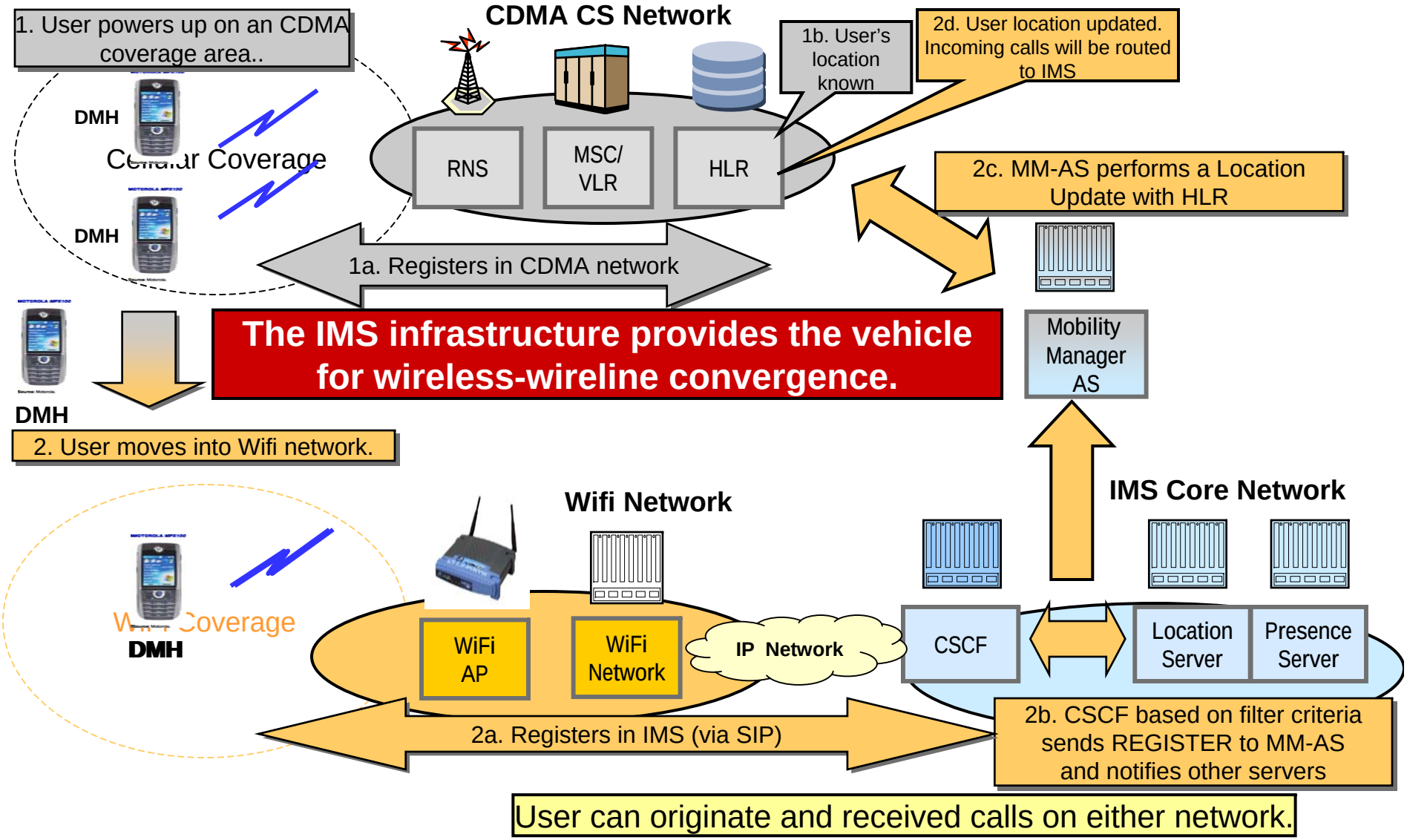


Service Convergence is beginning…
Examples: VoIP, IPTV, Wifi Roaming.

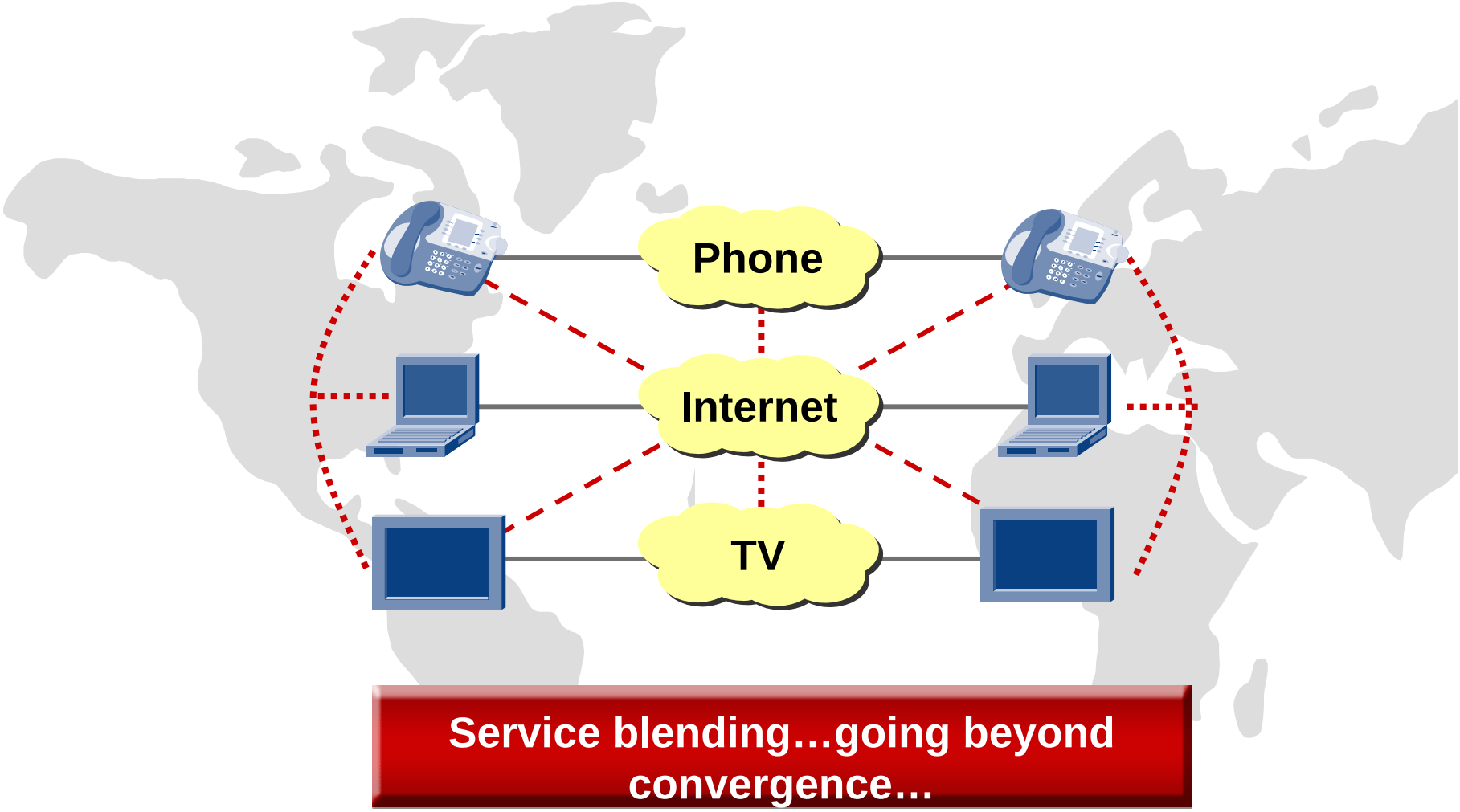
IMS, through the separation of session control from the application and transport layers, provides a framework for this convergence.

IMS & Wireless-Wireline Convergence

Wifi Roaming Example

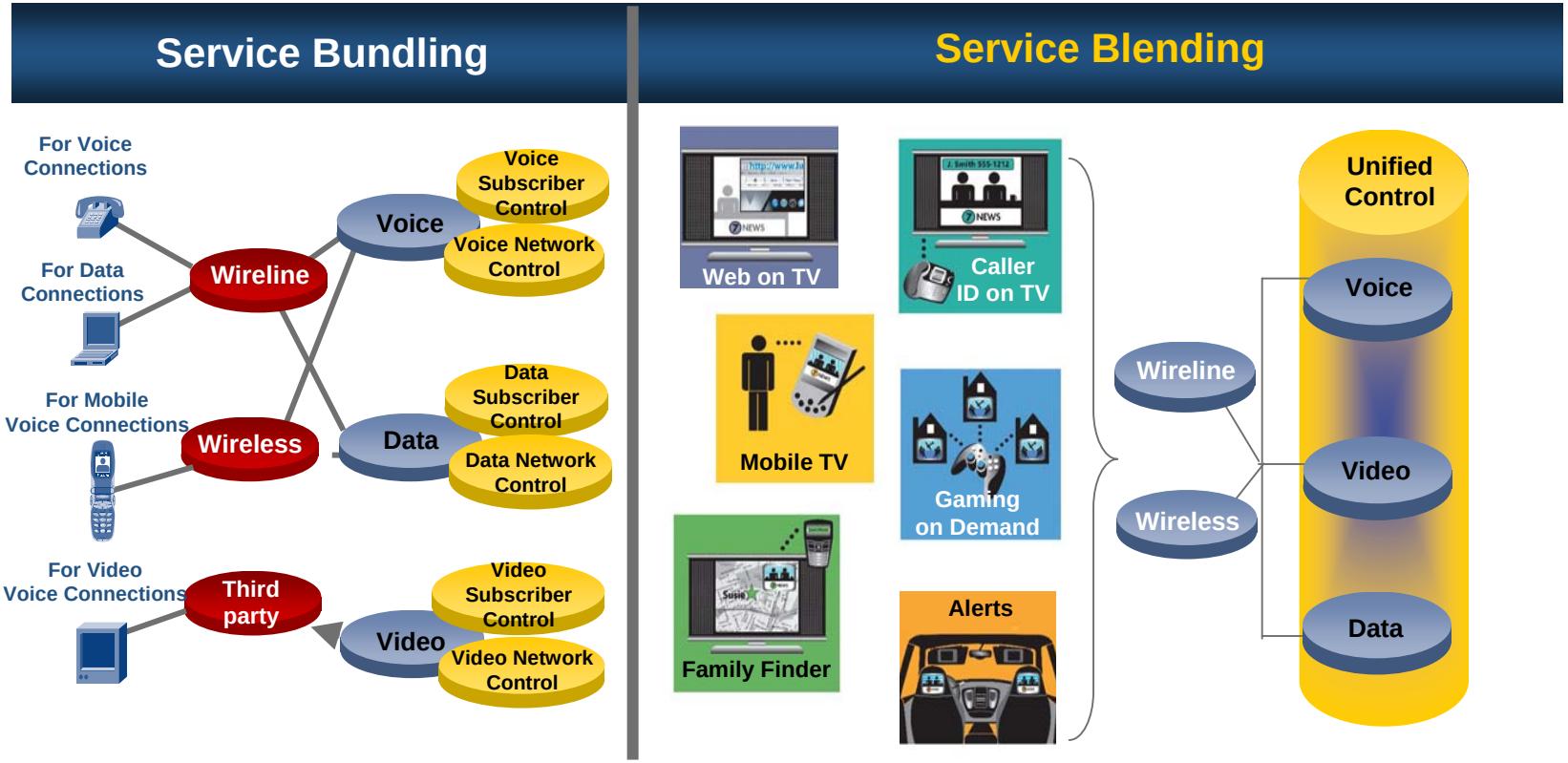


The Future World of Communications



Service Bundling vs. Service Blending

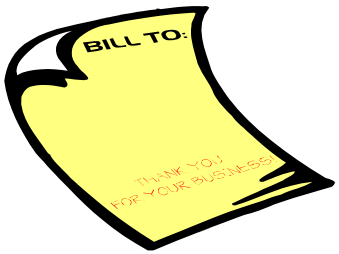
- *Service bundling* offers unified ordering and billing for otherwise separate services.
- *Service Blending* enables different services to control one another, providing new services



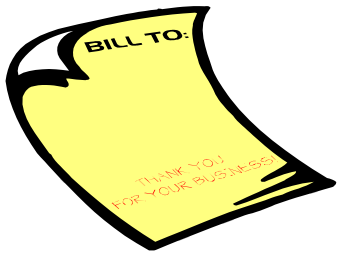
Example: Separate Services

Phone Service

TV Service



- Separate Bills
- No service integration



Example: Simple Service Bundling

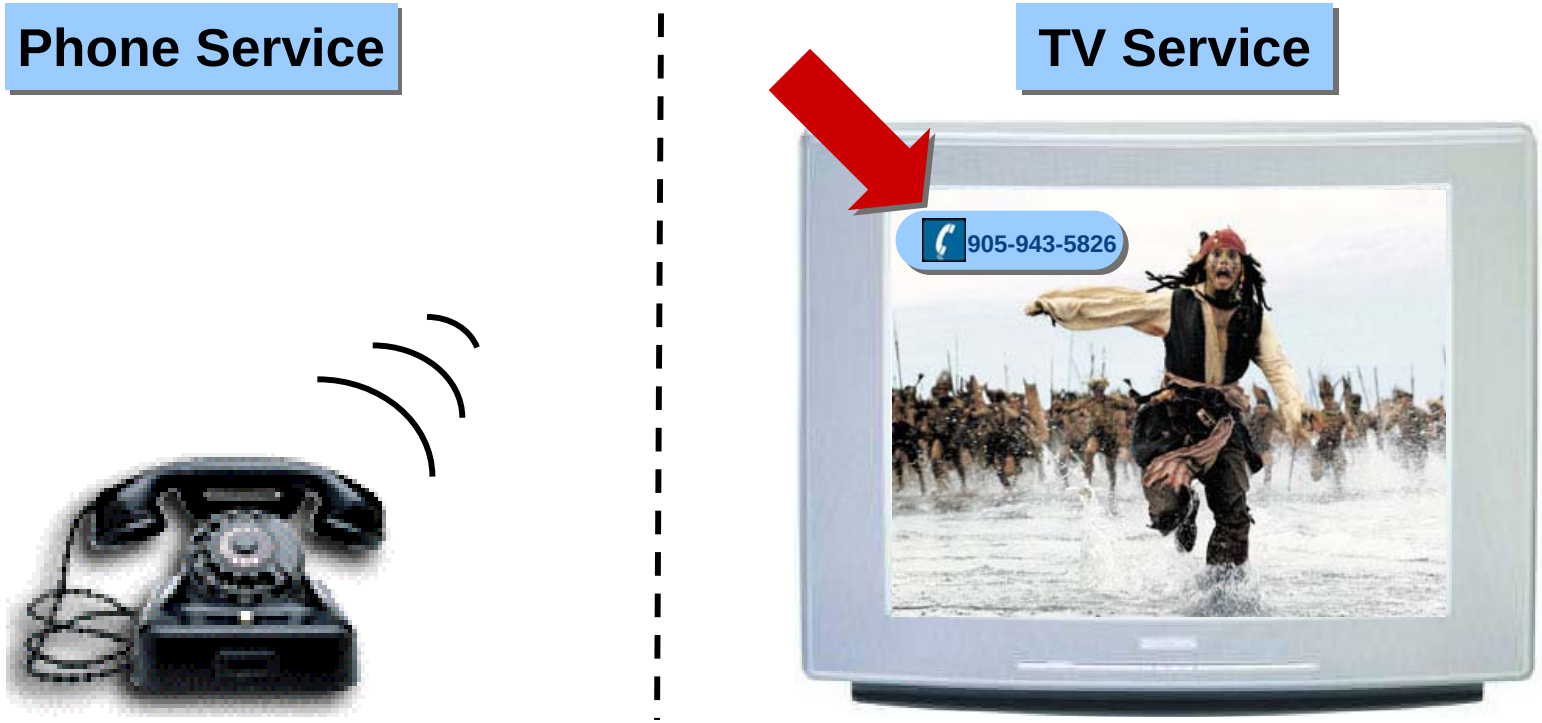
Phone Service

TV Service

- Single Bill
- No service integration (still independent services)

- No cost reduction
- No true differentiation (can easily be copied)

Example: Enhanced Service Bundling



- Services are overlaid (e.g. display of Caller ID on TV)
- But: Services still do *not* control each other.

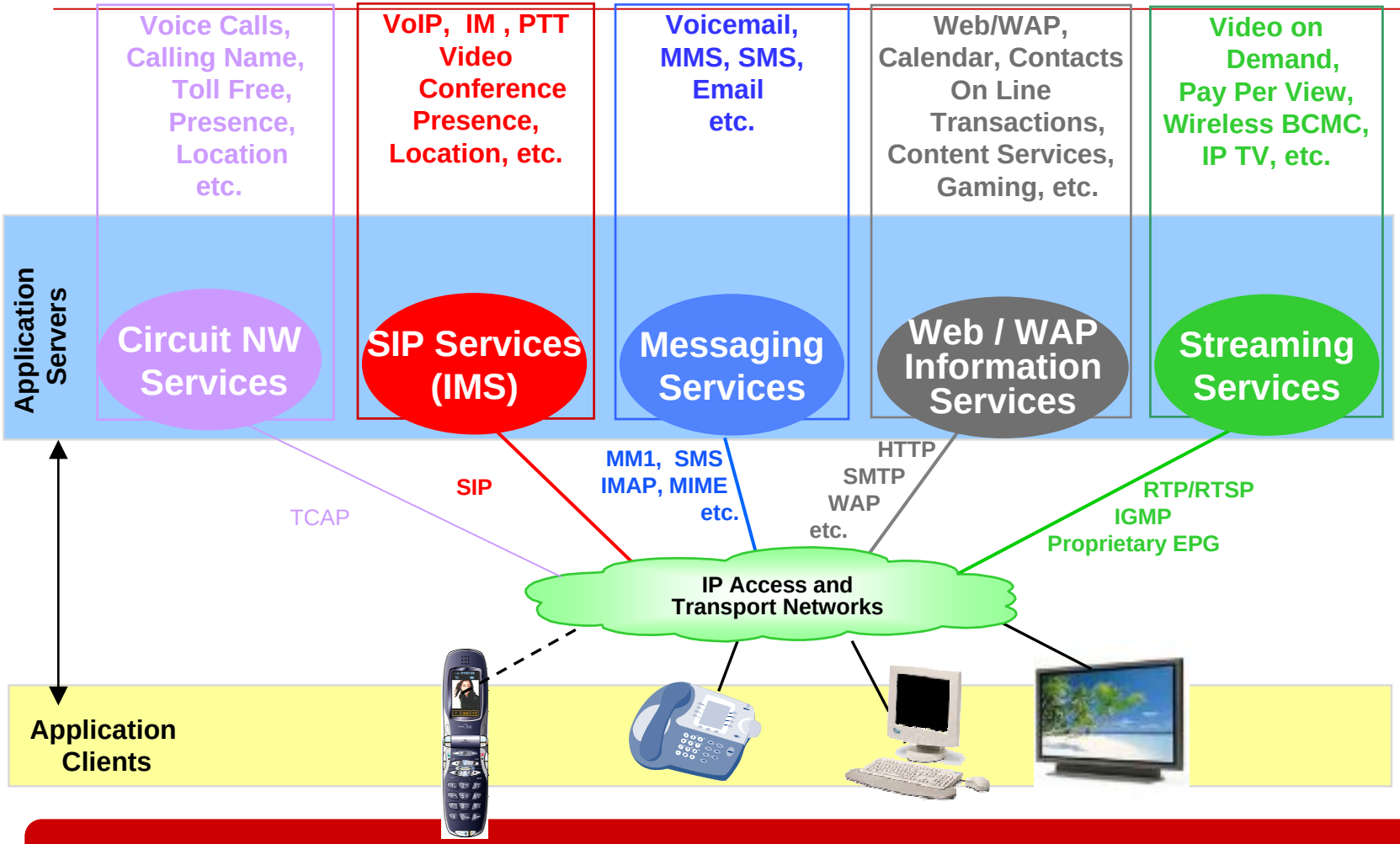
Example: True Service Blending

Phone Service

TV Service

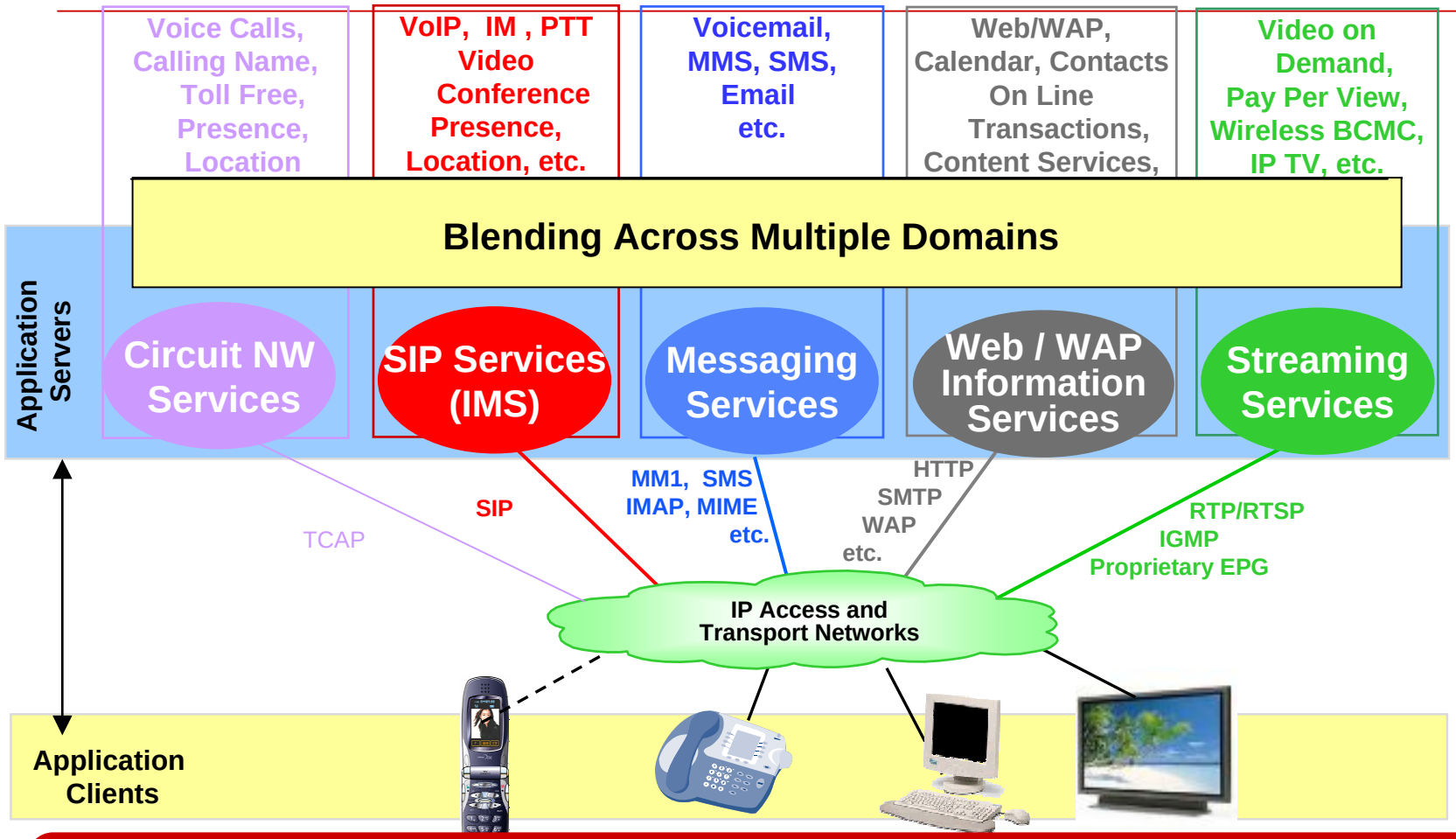
- Services interwork and control one another, e.g.
  - Call disposition via TV Remote Control,
  - TV content is automatically recorded during a call.

Service Infrastructures



Carriers are deploying multiple architectures for delivering services

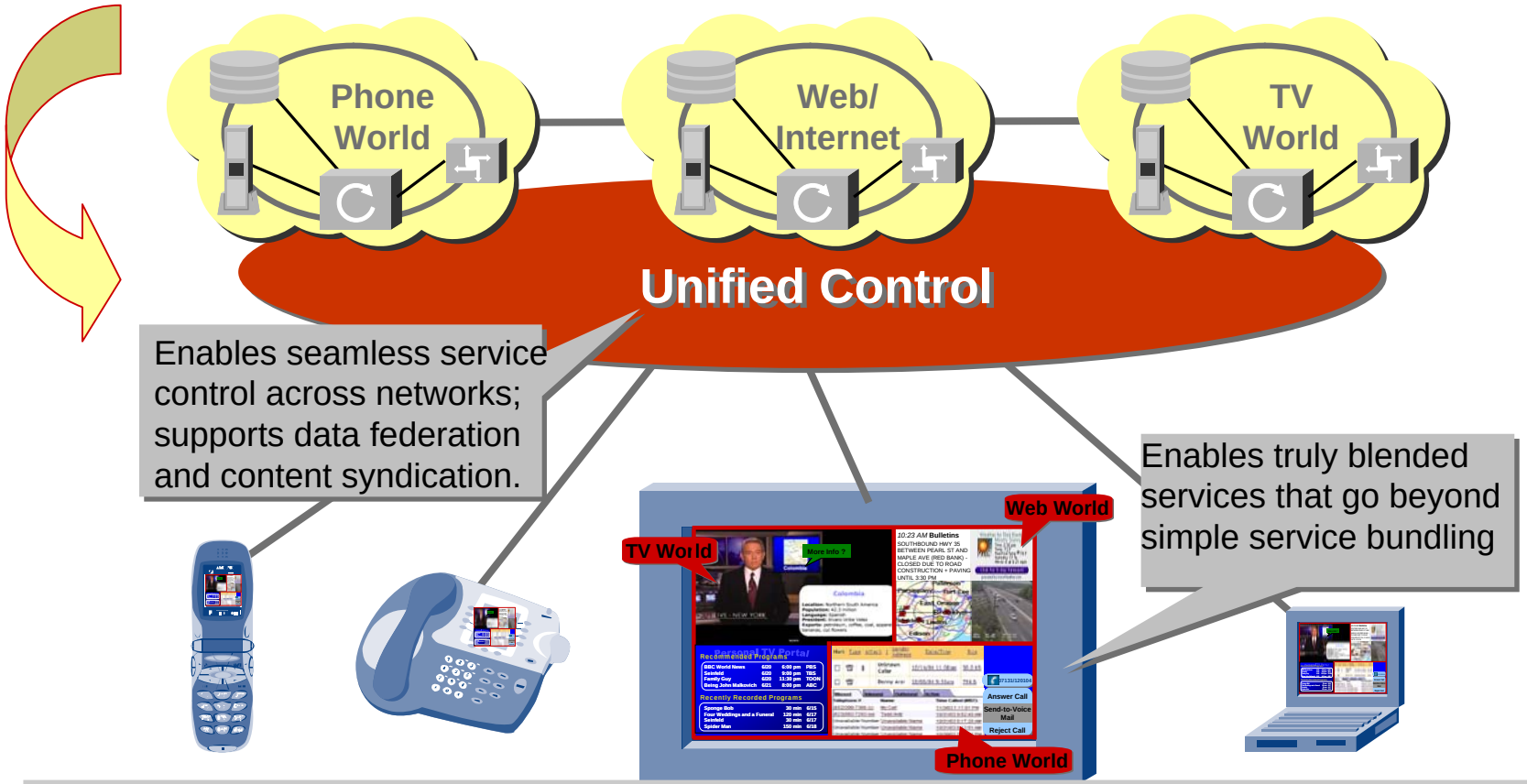
Service Infrastructures



This provides opportunities to create blending across multiple domains.

How is blending achieved?

- Through the creation of a services "ecosystem" that provides unified control across multiple service domains



IMS provides a framework for blending through the use of SCIM…

Service Capability Interaction Manager
SCIM Definition

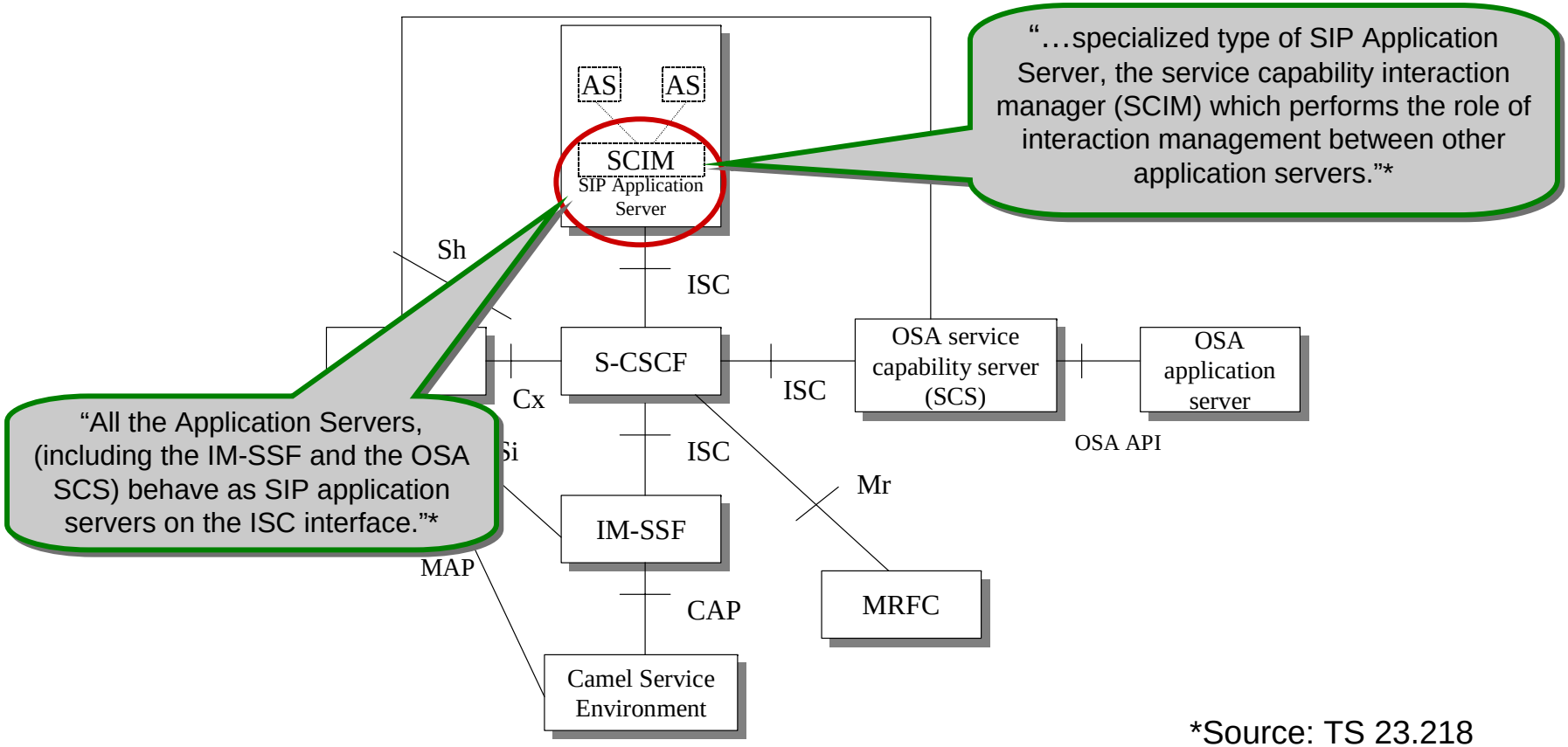


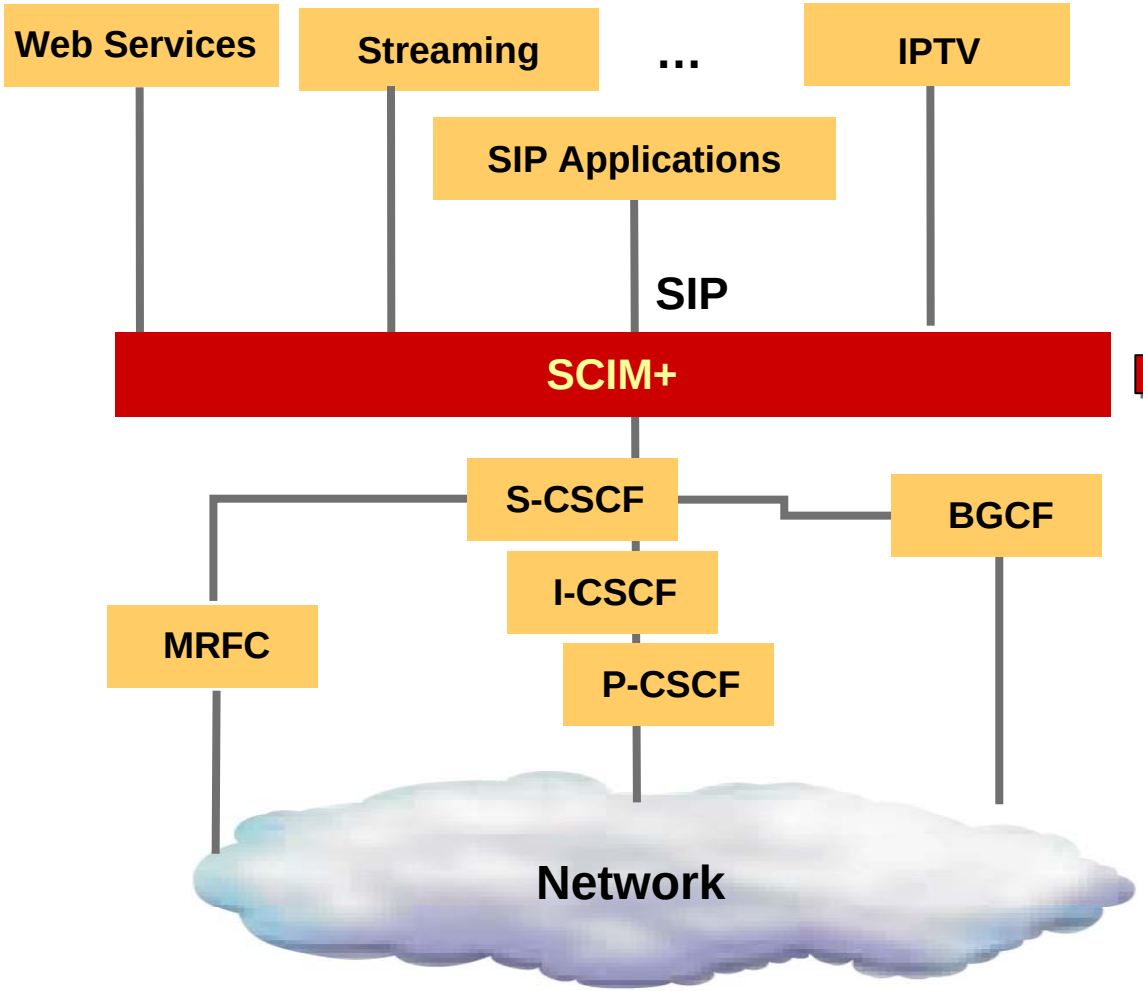
Figure 5.1 1 – 3GPP TS 23.218

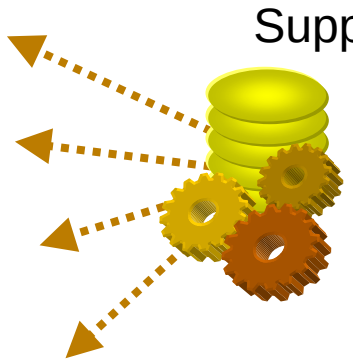
*Source: TS 23.218
* See also: TS 23.2002

3GPP is not expected to further define the SCIM since it is in the application layer.

Kicking It Up a Notch - SCIM+

Network Architecture





Support Systems & Databases (e.g. HSS, DNS, Presence, Charging)

Controlling interactions

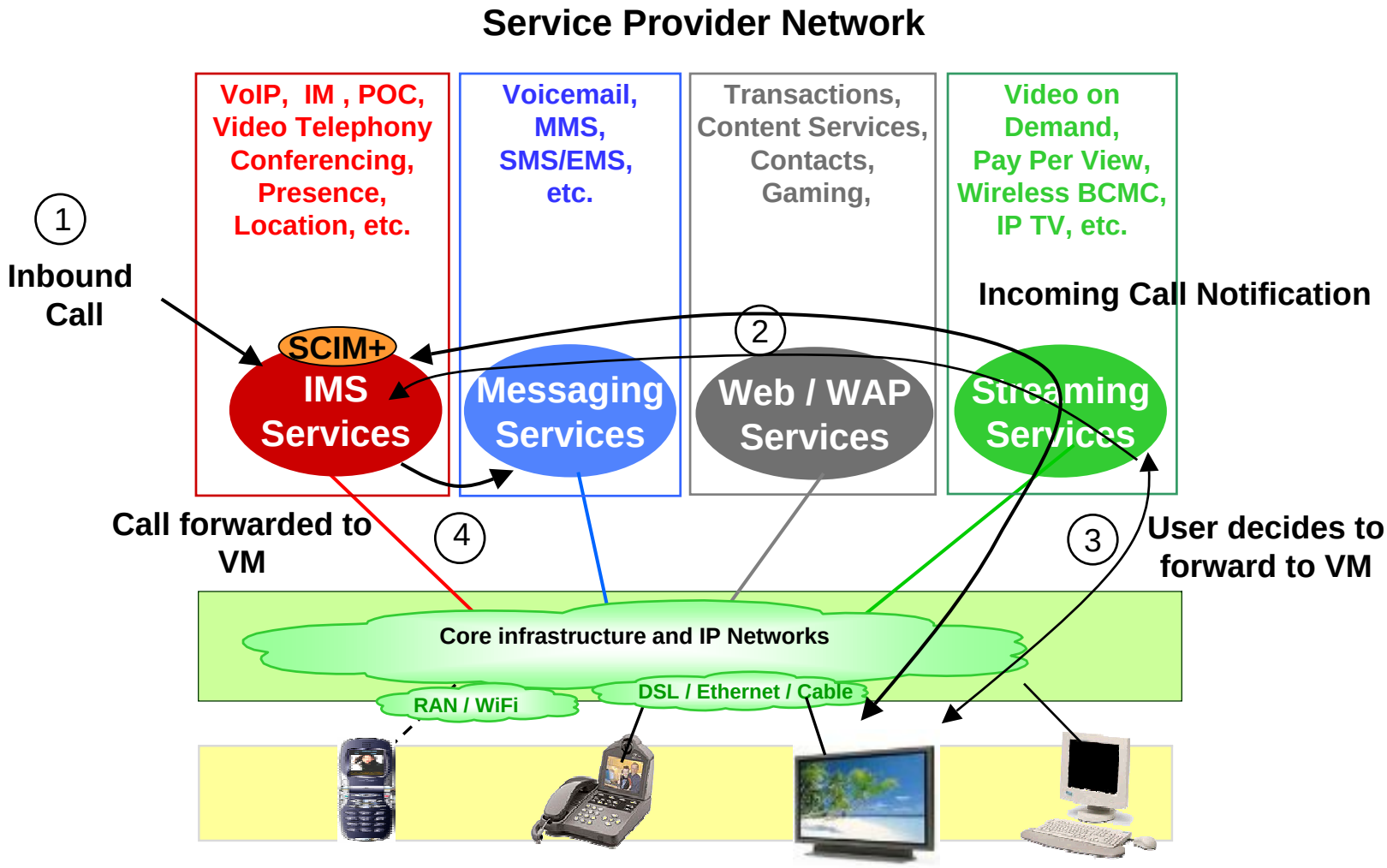
- –Among Application Servers
- –Among Multiple sessions
- –To Multiple or Diverse CPEs

Blending of services across domains

- –Blend with Presence, Location, etc.
- –Blend with Web Servers, messaging
- –Blend with Session Context
- –Blend with IT or Desktop Applications

Blended Service Example

Call Routing and TV Service

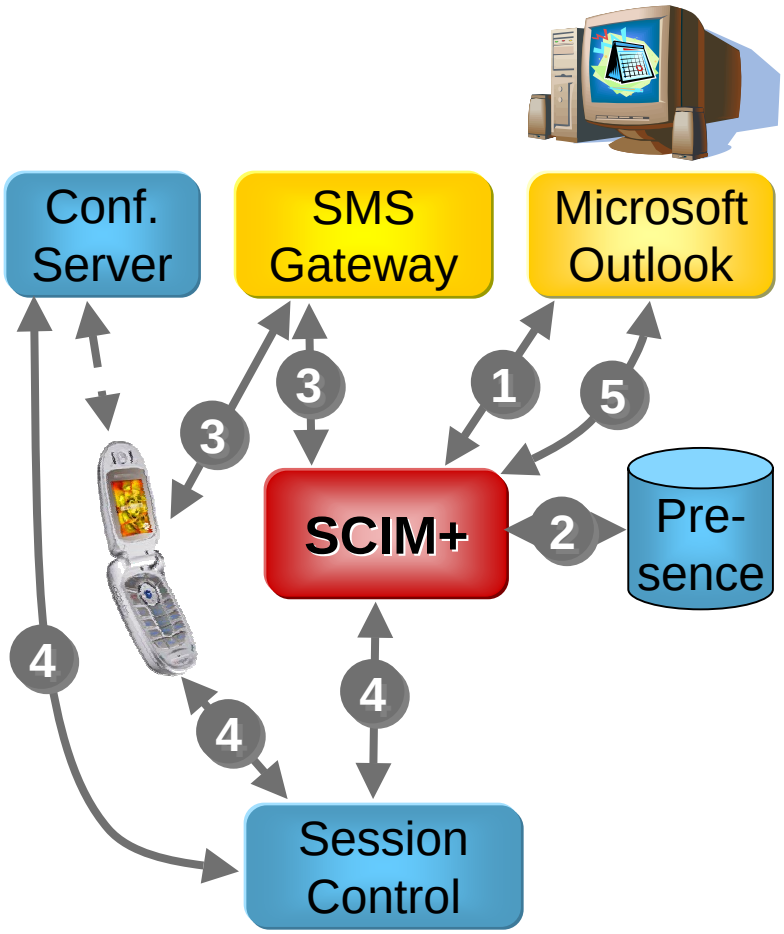


Blending of Voice and TV Services

Another Example

Outlook Calendar Notifications

- **Use Case**: Receive conference call reminder on cell phone with option for automated call placement.
- **Call Flow Example**:
  1. Outlook triggers alert for “conference call” via HTTP or Web Services interface
  2. SCIM+ checks presence status of user (i.e. is cell phone on or off?)
  3. If cell phone on, SCIM+ sends notification (e.g. via SMS), adding option for automate call placement.
  4. If user selects to be placed on conference call, SCIM+ bridges user into conference
  5. SCIM+ notifies Outlook via HTTP or Web Services interface to dismiss future reminders.



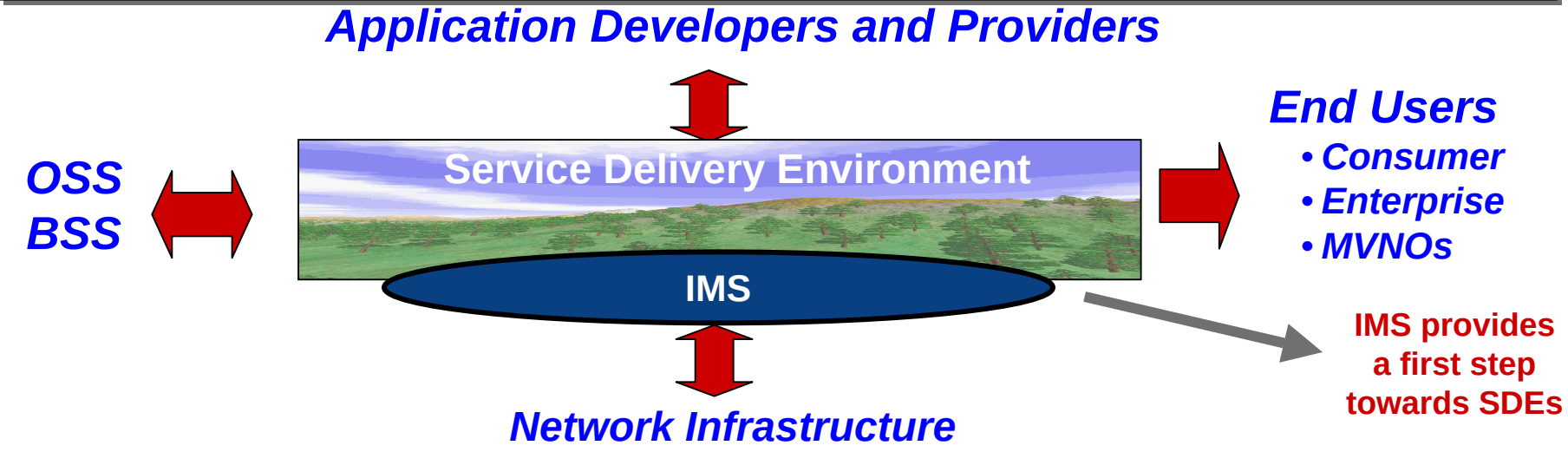
Beyond IMS…Building an Ecosystem

IMS, SDPs and SDEs – Some Soft Definitions

SDP → Service Delivery Platform → A misnomer → Not a Platform but rather a set of functions traditionally used by IT vendors for creating Business Processes and Web services.

SDE → Service Delivery Environment → A full ecosystem for the rapid introduction of new services:

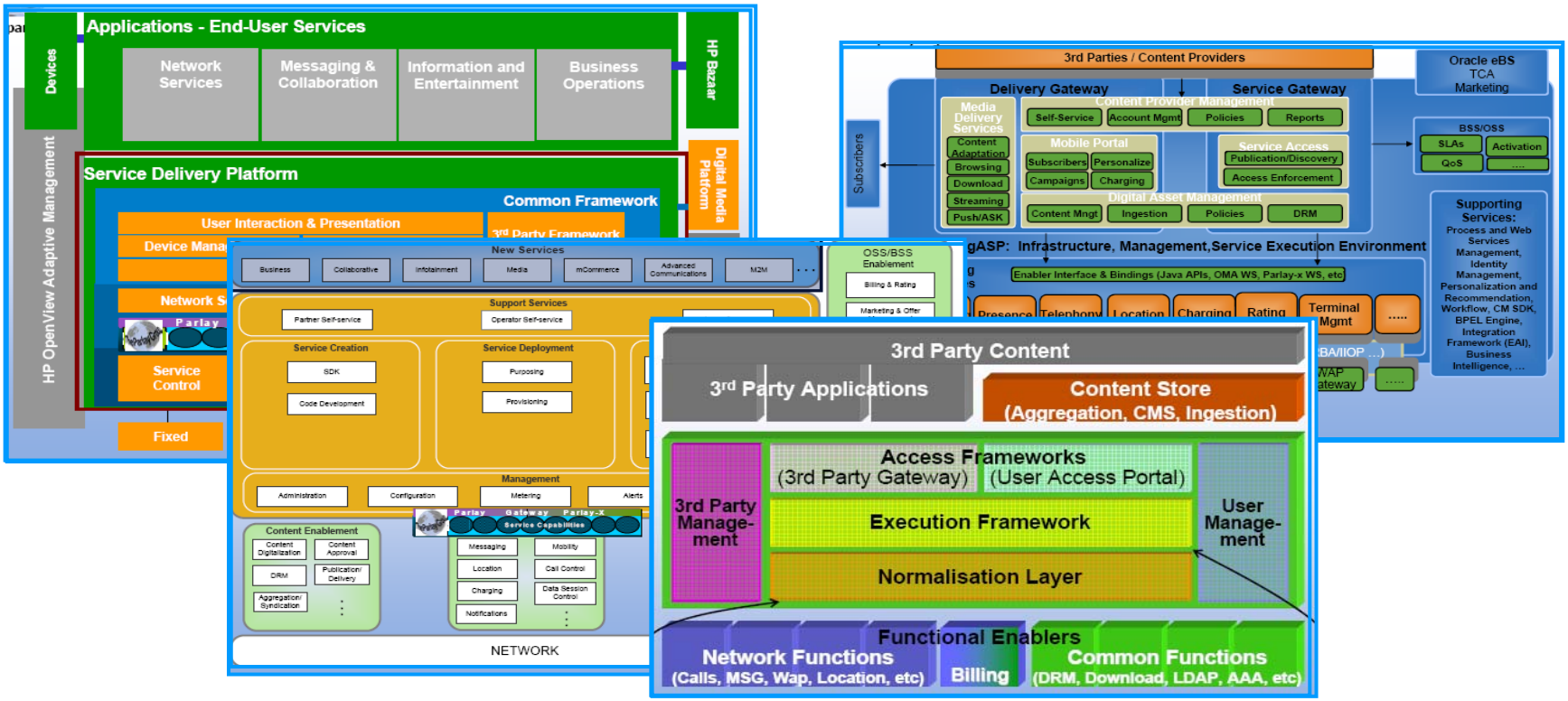
- Brings together network services with SOA based Web Services
- Provide seamless integration into BSS/OSS
- Enable the large ecosystem of IT application developers to write new services



A full function SDE spans the capabilities of traditional telecom vendors and traditional IT vendors.

Beyond IMS…
Challenges

- No standards
- Lack of alignment on scope and components

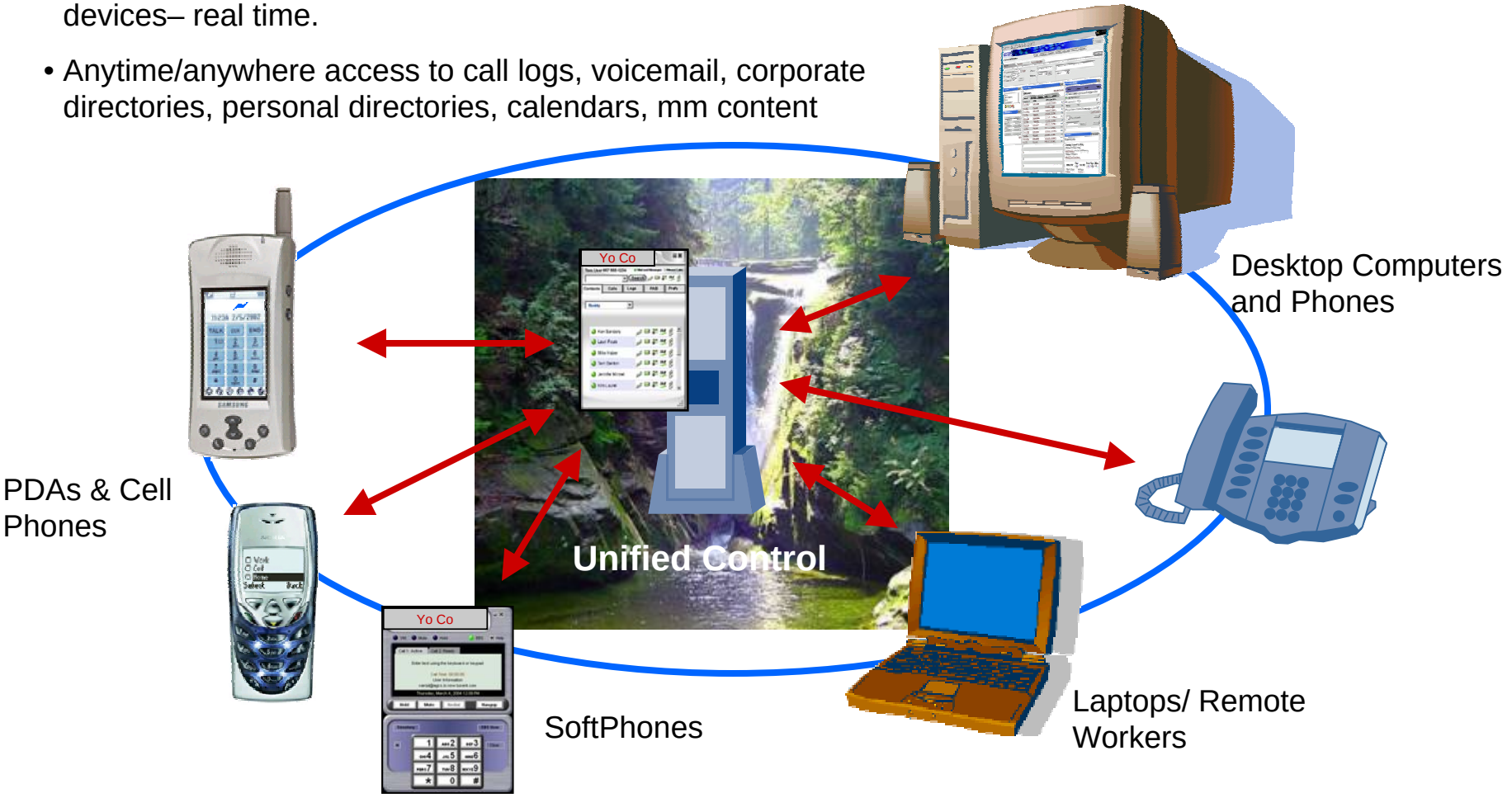


Hard definitions are hard to get…still an evolving area…

Beyond IMS…A View of Nirvana???

Unified Communications – Anywhere, Any Device, Anytime

- Goes beyond just voice to include video, email, IM and future applications controlling and interacting with one another
- Communication sessions are invoked through a variety of devices– real time.
- Anytime/anywhere access to call logs, voicemail, corporate directories, personal directories, calendars, mm content



Summary

- Networks that in the past were separate are beginning to converge:
  - Web, telephony, TV are all coming together.
- This coming together of networks allows for different levels of “service convergence”:
  - The first step was to offer service *bundling* but this is limited.
  - Service *blending* on the other hand can offer real differentiation to Service Providers.
- Blending relies on unified control across multiple domains:
  - IMS is a starting place:
    - Offers an open framework for such unified control through the separation of the session layer from the application layer and the use of the SCIM.
- The development of full “Service Ecosystems”, through SDEs, is the next step forward in the world of next generation networks.

Acknowledgements

- Markus Hofmann
- Rick Hull
- Amit Mukhopadhyay
- Doug Varney
- And many others in Bell Labs/Lucent Technologies working in this area.