MPLScon 2006

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Challenges and Benefits

IPsphere FORUM

THE BUSINESS OF IP

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Vice Chair

MPLScon
Multi Protocol Label Switching

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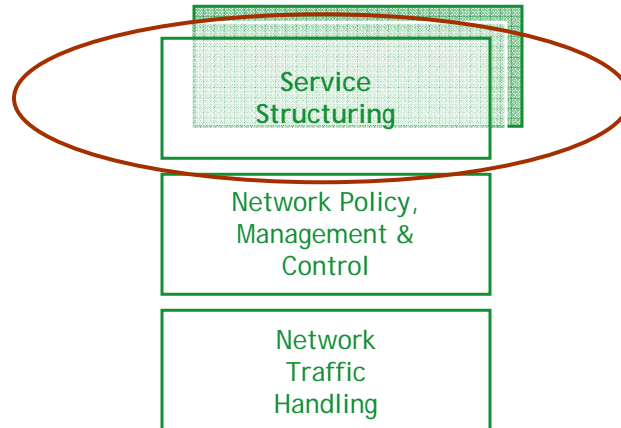

What is the IPsphere Forum?

Mission: An enhanced commercial framework - or business layer - for IP services that preserves the fundamental ubiquity of the Internet's technical framework and is also capable of supporting a full range of business relationships so that participants have true flexibility in how they add value to upstream service outcomes

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Focus

Service
Structuring
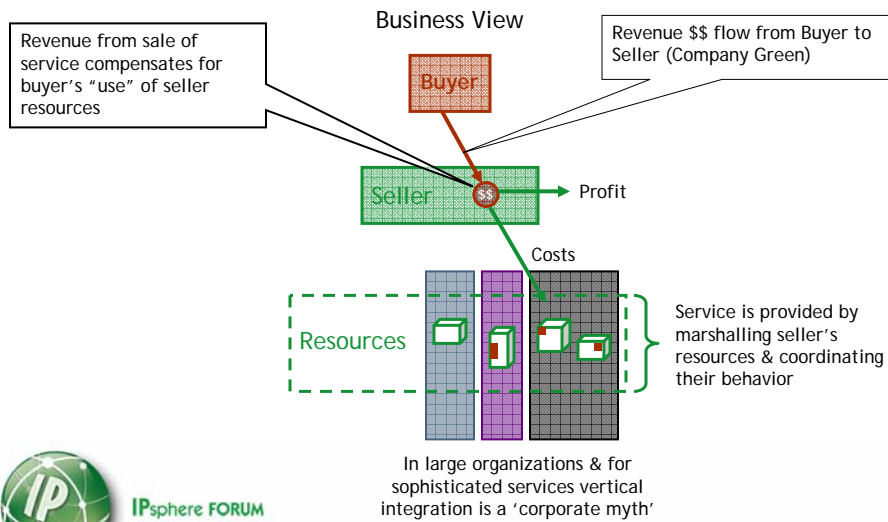
Network Policy,
Management &
Control

Network
Traffic
Handling

Vertically Integrated Services

Business View

Revenue from sale of
service compensates for
buyer's "use" of seller
resources

Revenue $$ flow from Buyer to
Seller (Company Green)

Buyer

Seller $$ → Profit

Costs

Resources

Service is provided by
marshalling seller's
resources & coordinating
their behavior

In large organizations & for
sophisticated services vertical
integration is a 'corporate myth'

Cooperative Services

Revenue from sale of service compensates for buyer's "use" of seller & partner resources

Revenue $$ flow from Buyer to Seller (Company Green)

Buyer

Seller

Seller (Company Green) Profit

Intra-provider cooperation

Pan-provider cooperation

Seller's Resources

Partner B Resources

Service is provided by marshalling, coordinating behavior of seller & partner resources

LOB1 LOB2 LOB3

Partner A Resources

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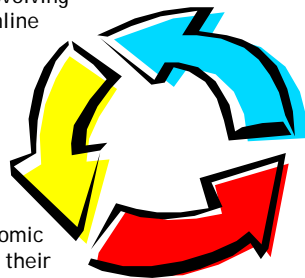

Cooperative Services Objective

Buyers of services enjoy a greatly expanding & evolving enhanced set of online experiences

Sellers offer an increasingly richer array of valued services drawing on a variety of resources

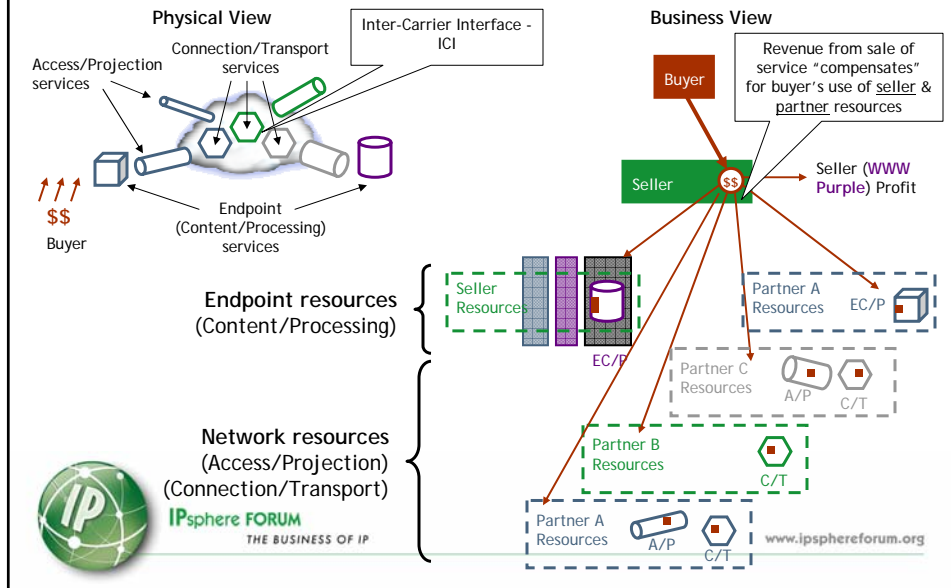Partners have clear economic incentive for contributing their resources

Thesis: Any overly egregious imbalance in the risk vs. reward profile for any of the groups who cooperatively structure resources to create a service market threatens that market overall
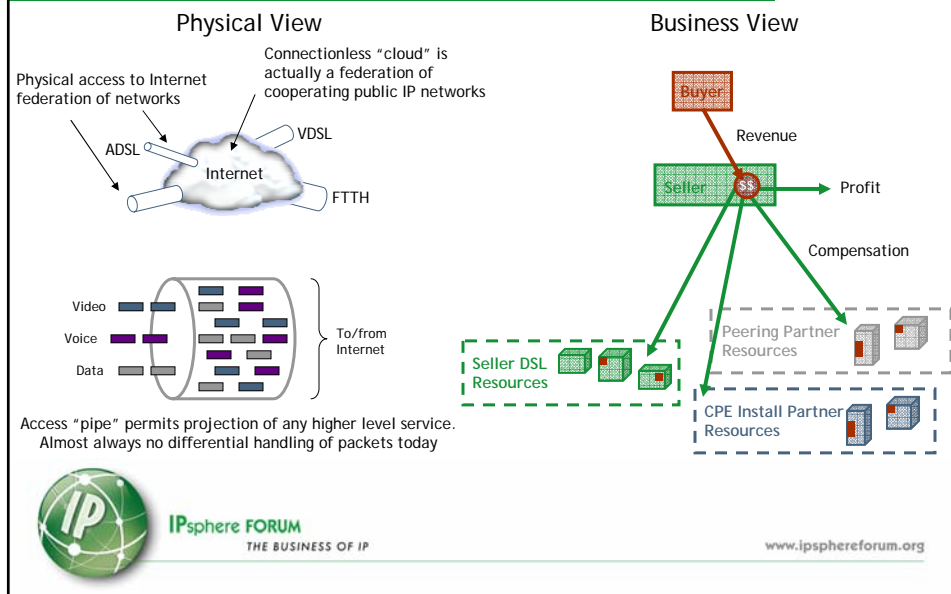
IPsphere FORUM
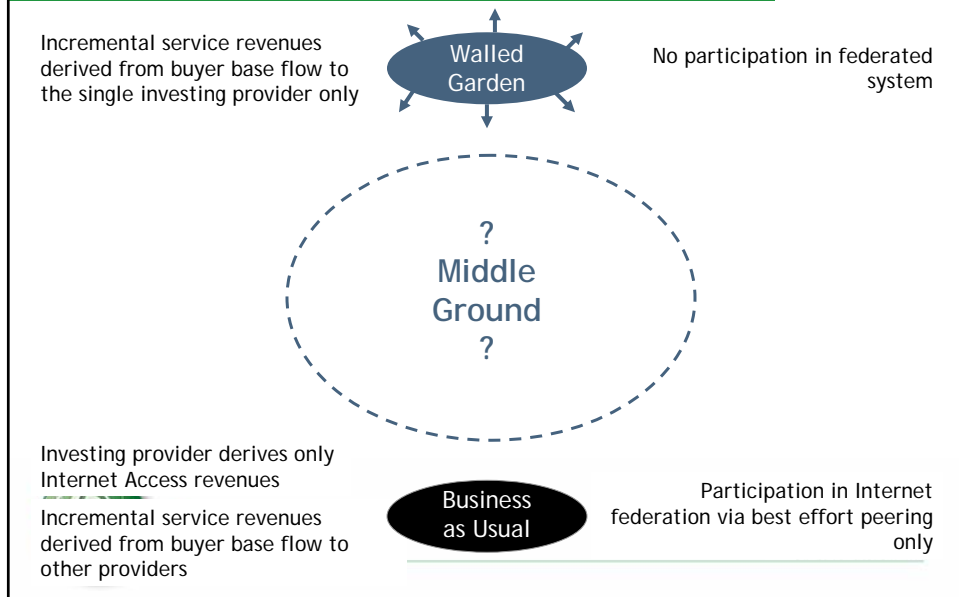THE BUSINESS OF IP

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The IPsphere Framework

Physical View

Access/Projection services

Connection/Transport services

Inter-Carrier Interface - ICI

Endpoint (Content/Processing) services

$$ Buyer

Business View

Buyer

Revenue from sale of service "compensates" for buyer's use of <u>seller</u> & <u>partner</u> resources

Seller $$

Seller (WWW Purple) Profit

Endpoint resources (Content/Processing)

Seller Resources

EC/P

Partner A Resources   EC/P

Partner C Resources   A/P   C/T

Network resources (Access/Projection) (Connection/Transport)

Partner B Resources   C/T

Partner A Resources   A/P   C/T

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Internet Access Example

Physical View

Physical access to Internet federation of networks

Connectionless "cloud" is actually a federation of cooperating public IP networks

ADSL   VDSL

Internet

FTTH

Video
Voice
Data
To/from Internet

Access "pipe" permits projection of any higher level service. Almost always no differential handling of packets today

Business View

Buyer

Revenue

Seller $$

Profit

Compensation

Peering Partner Resources

Seller DSL Resources

CPE Install Partner Resources

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Network Provider Alternatives

Incremental service revenues derived from buyer base flow to the single investing provider only

Walled Garden

No participation in federated system

? Middle Ground ?

Investing provider derives only Internet Access revenues

Incremental service revenues derived from buyer base flow to other providers

Business as Usual

Participation in Internet federation via best effort peering only

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Walled Gardens & beyond

- Walled Gardens must & will be structured
  - Agile solution structuring framework across internal functions is key

- To reward participation outside of Walled Garden
  - Improved pan-provider commercial framework is required which;
  - Encourages & rewards investments in resources used to facilitate services for which a resource owner doesn't have to be the direct seller of service

- Would also let network operators who MUST offer lower-level access, transport, connection obtain revenue from higher-level IT services
  - Offsetting costs of providing their mandatory low-level services
  - Ensuring their continued participation in the market without the need for significantly raising lower-level service costs

- An augmented commercial framework cannot be exclusive
  - Must have flexibility to support any business relationship – internal, external
  - Walled Garden, Middle Ground, Business as Usual

IPsphere & related NGN programs

IPsphere Forum focus

Outcome is an IT framework; not a set of network specifications

Service Structuring Stratum

Business framework via which NGN capabilities can be monetized to the optimal extent - leverages SOA work (W3C, OASIS, LAP etc.) into Telecom NGN context

NW Policy & Control Stratum

Network control & intra-operator policy mechanisms; IMS, TISPAN, TMF etc.

Traffic Handling Stratum

"Bearer" mechanisms from responsible bodies such as IETF, ITU, MFA, DSL Forum etc.

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IPsphere is a Business Layer above Network

1) Each Individual Provider registers "services"
2) Providers discover those services of others
3) Providers negotiate real-time contracts for composites of those services
4) Individual Providers provision their own networks per those contracts

IPsphere Service Structure Stratum

Web Services Framework

IPsphere Business Layer

N M S

N M S

N M S

N M S

N M S

CNI

ICI

ICI

ICI

CNI

Provider A

Provider B

Provider C

Provider D

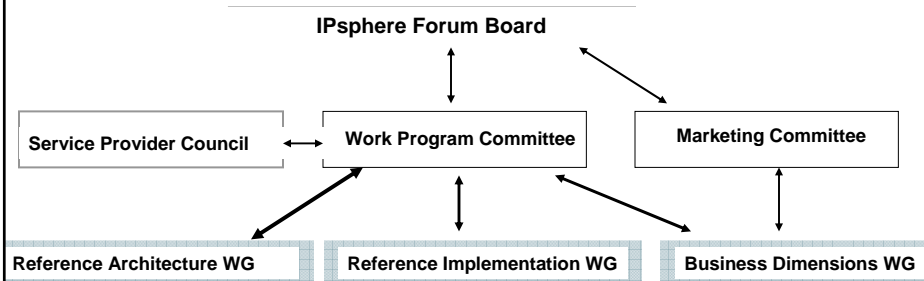www.ipsphereforum.org
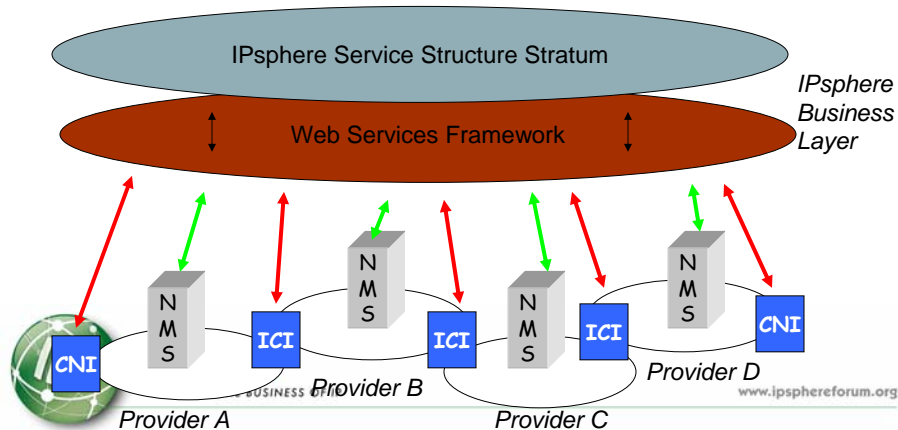
IPsphere Forum Board

- Omar Elloumi, Alcatel, Secretary and Treasurer
- Keith Dickerson, BT
- Monique Morrow, Cisco, Vice Chair
- Christian Jacquenet, FT
- Yi Zhao, Huawei
- Kevin Dillon, Juniper, Chairman
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- Andy Malis, Tellabs
- Douglas O'Leary, Verizon

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IPsphere Forum Structure

IPsphere Forum Board

| Service Provider Council | Work Program Committee | Marketing Committee |

| Reference Architecture WG | Reference Implementation WG | Business Dimensions WG |

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Work Group roles

- **BDWG charter**: primacy of business aspects in the IPsphere Forum through development & tuning of overall "business framework" reconciling the perspectives of both service users and service providers, and the parsing of member contributed (& board sanctioned) use cases through the "business framework"

- **RAWG charter**: the technical framework of the IPsphere Forum through development & tuning of overall reference architecture & associated specifications. Technical framework is tuned via ongoing validation against IPsphere BDWG "use cases", IPsphere RIWG "execution framework"

- **RIWG Charter**: Prove and tune technical framework via actual implementation, also showcase to promote & evangelize IPsphere functionality

- Leverage & liaisons with related SDO's handled via BDWG for commercially oriented topics, & via RAWG for technically oriented topics

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IPSF and Service Provider Council

- To provide requirements, architectural direction and best common practices for IPSF

- To review any new work items in the light of e.g. operational aspects

- To stimulate the generation of use cases that are important for SPs

- To discuss technologies for achieving commercial agreements or providing business opportunities between SPs

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SPC Members

- AT&T
- BT
- DT
- FT
- KT
- Telenor
- TeliaSonera
- Telstra
- Verizon

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Conclusions

- NGN business model will not follow the classical Internet framework
- Substantial need for a commercial framework for IP NGNs that enables both providers & users to meet their economic and technical needs optimally
  - And for the broadest possible set of network, content & application services as facilitated by NGN technologies; both inter- & pan-provider
- IPsphere Forum work on 'Business of IP' complements & leverages telecom industry NGN standardization activities already underway
- IPsphere Forum framework applies Service-Oriented Architecture (SOA) approach to service publication, consumption & federation

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