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The Akogrimo Service Provisioning Platform

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Current Situation in Mobile Communications

- **Convergence - Internet und Telephony**
- **Internet – “Dominant“ technology for Next Generation Networks**
- **Mobility will gain importance**
→ Mobile Internet

Looking back

- **Telephone systems -> „cash cow“**
- **Data networks have significant higher traffic**

Current Problem

- **Provide a infrastructure powerful enough to deploy value added services**
- **...increasing basically the willingness to pay**
- **...providing really added value for the customer**

ALL-IP - The Operator's Dilemma

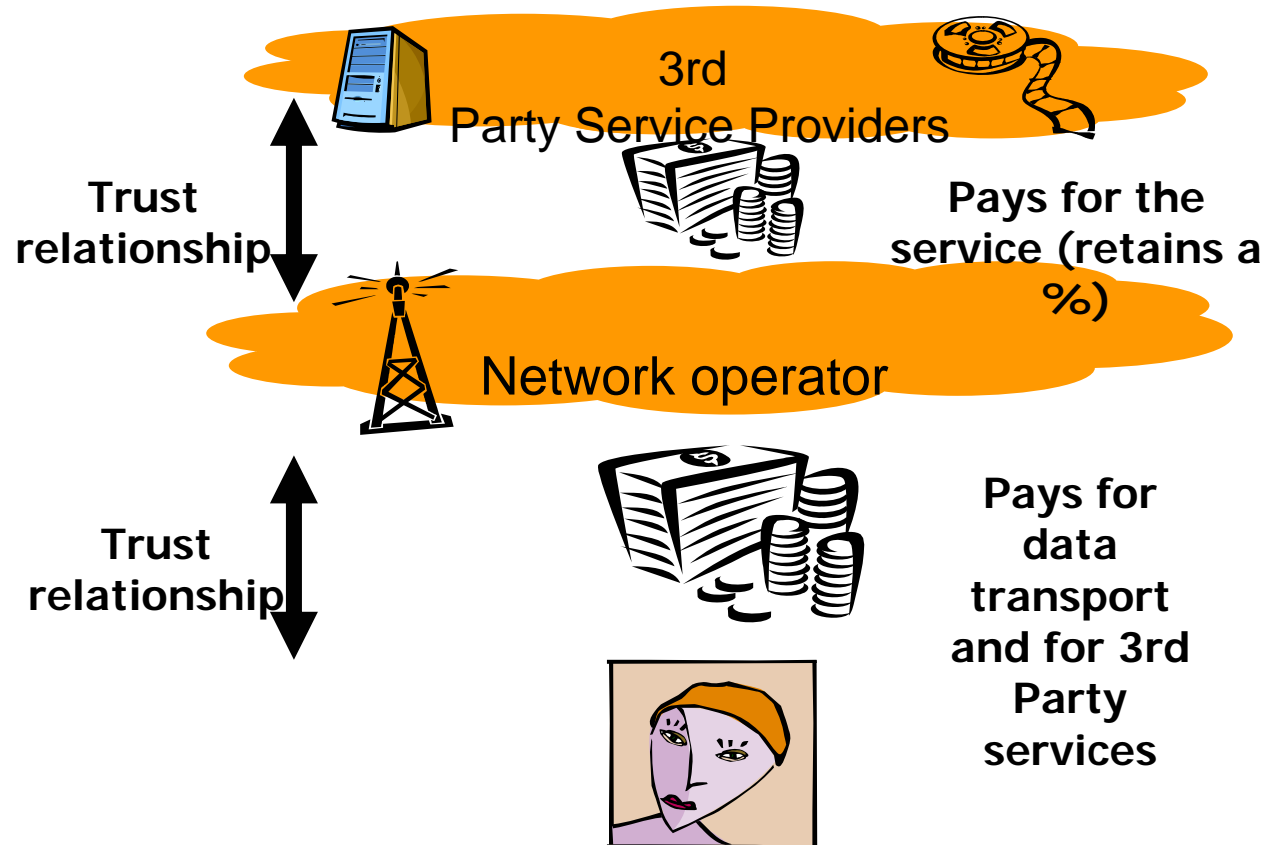
- Evolution towards “All-IP” – a risk for the network operators ?
 - ALL IP is expected to reduce OPEX/cost:
 - → one network only - technically able to satisfy user needs
 - Internet makes deployment of new services rather easy
 - Potentially beneficial for the “benefits”
 - Peer-to-peer applications
 - Potential operator risks:
 - Pure transport of bits
 - Where and how can they make business ?
 - Operator might be removed from the central position of the value chain

IMS - The future Service Platform of the Operators ?

- IMS is introduced by 3GPP (Release 5) and enhanced in Release 6 and 7
- IMS Service Platform has been designed to facilitate and to control multimedia sessions established between peer users
- Peers have to use the IMS elements for accomplishing the session setup signalling
- IMS deals only with signaling and control. IMS is not concerned with the data path
- IMS interacts with the 2G/3G nodes in order to control the data path (e.g. QoS provisioning supported by the Policy Decision Function)
- IMS can be considered as pure SIP based signalling infrastructure
- User control based on AAA principles – owned by operators
- Integrated Accounting and charging

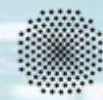
Role and Limits of IMS Service Delivery

- IMS relies exclusively on SIP – centralized control plane for session handling
- → Applications have to interact with SIP
 - No problem for VoIP, but e.g. skype ?
 - IT sector relies on SOAP
- Do we believe that all applications will be “SIPified” ?
- Service Discovery not really solved in IMS
 - A IMS user has problems finding a local service while roaming



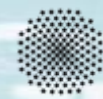
SOA - Another Convergence Process ?

- **Merging the Grid/Web Services world with the commercial Internet seems to be promising -> both have currently a problem**
- **The problem of the Telco world:**
 - Voice/network becomes a commodity,
 - existing value chains disappear,
 - the “killer application” justifying the 3G license investment is not yet in place.
- **The problem of the Grid (world?):**
 - No promising customer database in place
 - Not really a meaningful commercial success proven
 - most likely will not work on NGN/4G
- **→ IT meets (Mobile) Telco infrastructure**



Akogrimo Vision

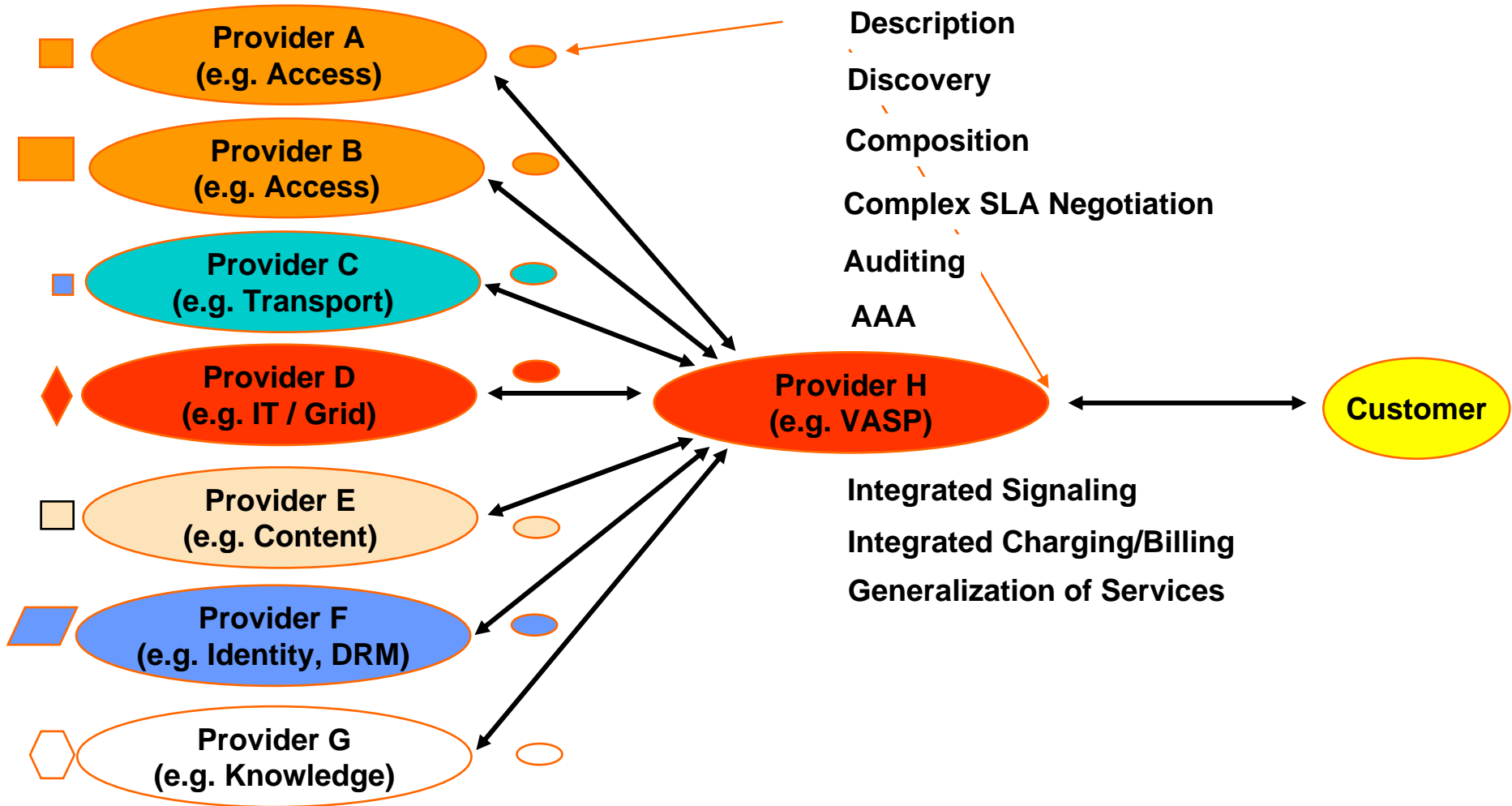
... to produce a breakthrough in current practices for Grids/Web Services with the creation of a distributed, mobile and pervasive environment to make it a business proposition for telecom operators and Service providers



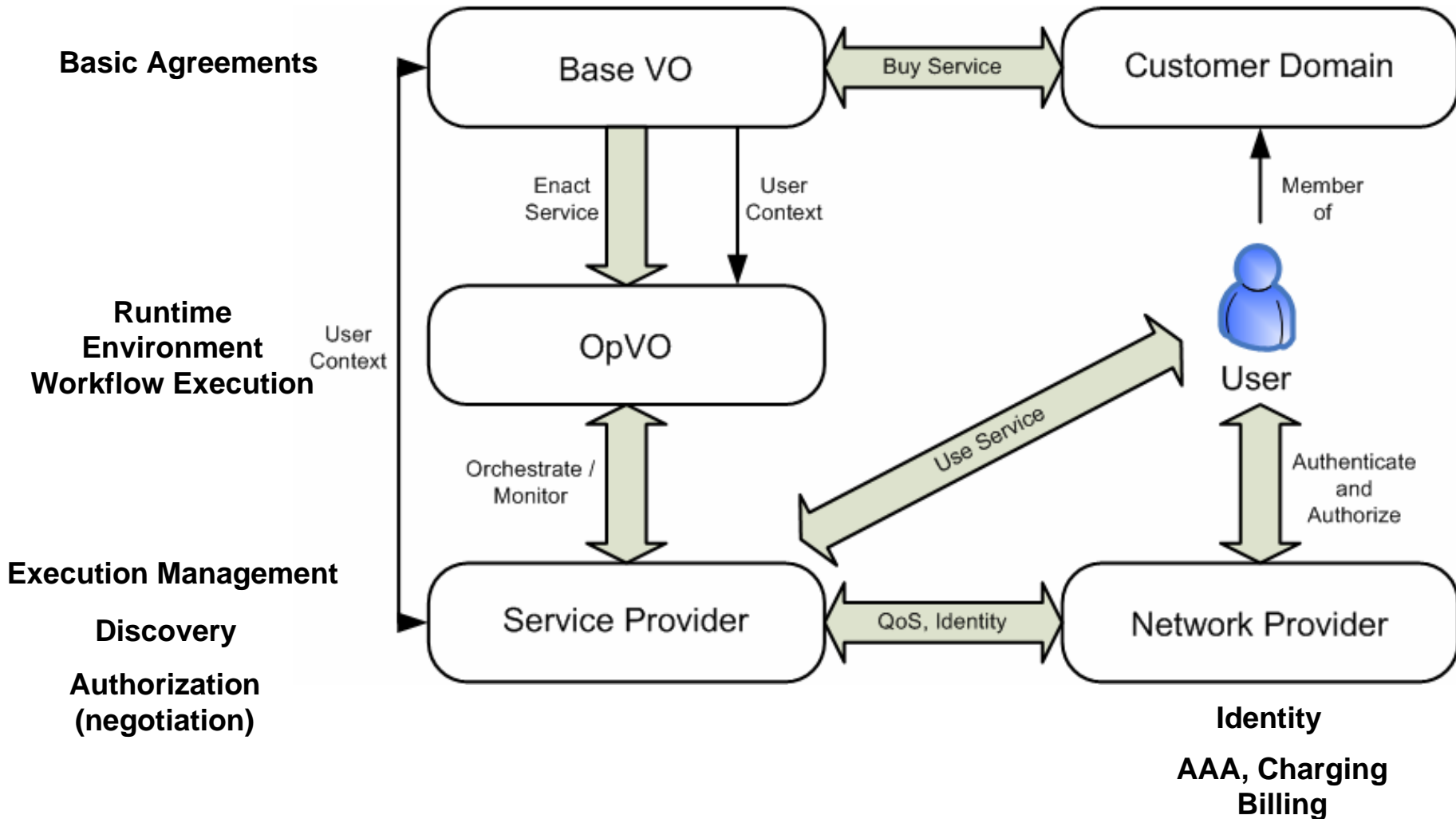
Key Challenge

- **Integrating the Signaling framework**
- **AAA Integration**
 - Authentication as precondition
 - Authorization for integrated services (SSO)
 - Accounting for composed services with negotiated revenue sharing
- **Service Virtualization**
- **Seamless Integration of „any“ Resources**
- **Dynamic Orchestration/Compositioning**
- **Integration of legacy IT Systems/Resources**

The Akogrimo Mobile Grid Scenario



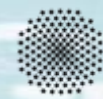
Akogrimo Conceptual Architecture





The Akogrimo Service Platform

- Seamless integration/enhancements to IMS
- Support of more enabler services like service discovery
- Introduction of the concept of a mobile dynamic virtual organization (MDVO)
- SIP/SOAP interworking
- Federation



Summary and Conclusion

- Akogrimo's prototy has been developed, integrated and demonstrated
→ (www.mobilegrids.org)
- Generation of added value in Telecom-oriented networks by introducing the intelligence of GRID/Web Services technology
- Extension of the Grid-based Virtual Organisation paradigm for users in all aspects of their daily life: ad-hoc, everywhere, anytime ...
- Akogrimo meets the requirements of complex problems (eBusiness, eLearning, eHealth, ...)
- Full integration in value chains of Telco infrastructure

Outlook

- **Control layer might be shifted to the Business Process layer (BPEL)**

- **Dynamics and re-negotiation for re-composition provide robust services and a competitive market place**

- **New topics:**
 - Federation
 - Cross administrative monitoring /access control
 - Service discovery
 - Context

... IP Sphere Forum has already started going that way



Thank You

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www.mobilegrids.org