

# Grid technologies for standardized next-gen telecom services framework

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# Agenda

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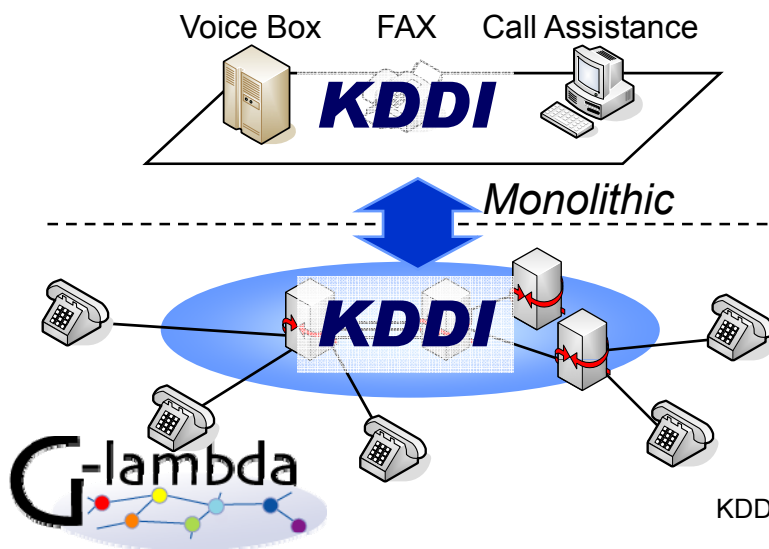
- Needs of GNI at the viewpoint of a telecom carrier
- Requirements
  - GNI should be standardized.
  - The scope of GNI should include capability to retrieve topology-independent requests.



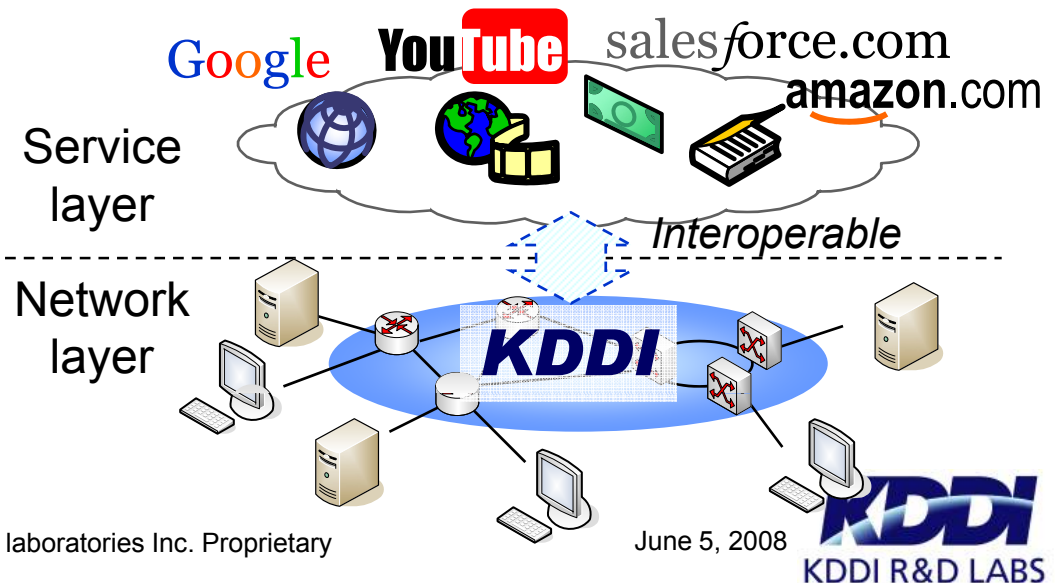
# Why is GNI required?

- Telecom business model is changing.
  - Traditional : vertical integration (e.g. telephone, circuit line)
  - Next : horizontal integration (e.g. SaaS, Cloud)
- Cooperation function among services and network is required.
  - **Standardized interface** between grid layer (service layer) and network layer
  - Functions **independent from underlying technologies**

## □ Traditional business model

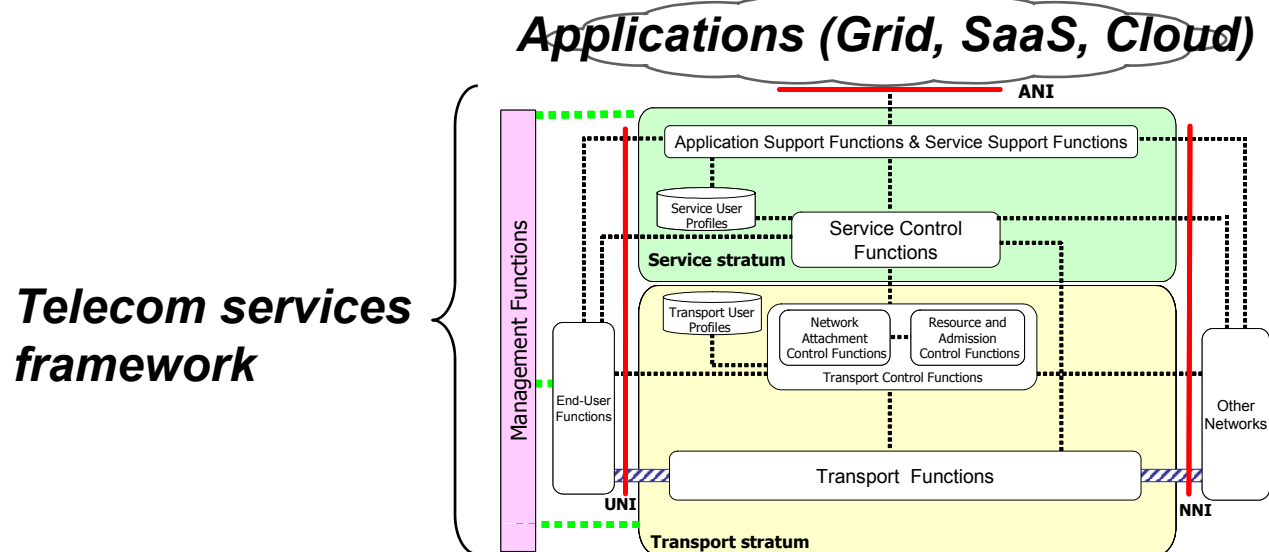


## □ Next business model



# Interface derived from grid technologies

- NGN architecture to control telecom network infrastructure has been established at ITU-T.
  - Functional components to realize telecom services
  - Open interfaces for user, network and application (UNI, NNI, ANI)
- Telecom network infrastructure is similar to grid environments.
  - Be controlled by *distributed* applications
  - Manage *heterogeneous* resources
- **Standardized interfaces based on grid technologies are suitable.**

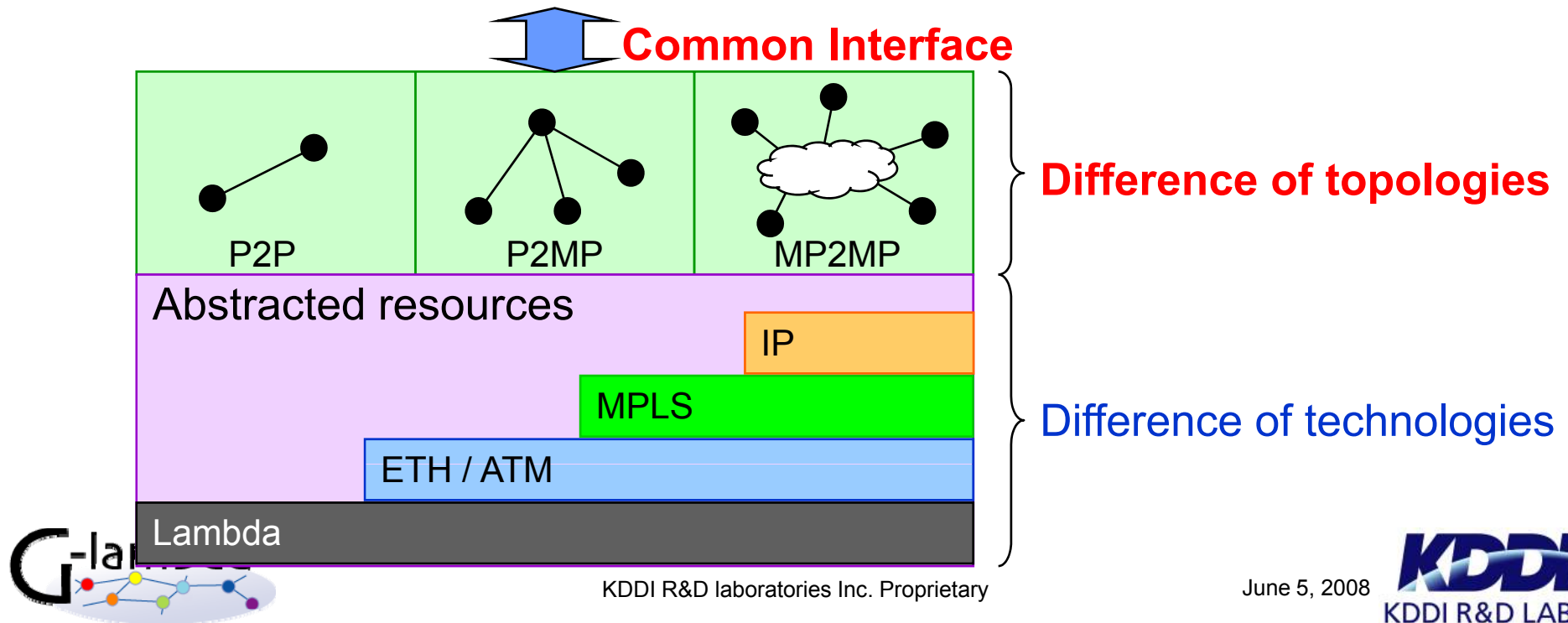


**Network resources (Switch, Router, WDM, ADM)**



# Topology-independent interface

- Telecom services framework will be established on **heterogeneous environments**.
  - Technology : Lambda, Ethernet, IP, MPLS, GMPLS, ATM, ...
  - Topology : P2P, P2MP, MP2MP
- The standardized interface between grid layer and network layer should include **capability to operate various network topologies**.



# Conclusion

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- ***GNI is the possible interface to apply telecom services frameworks for various network services.***
- GNI documents should include **capability to operate heterogeneous network infrastructure (topologies, technologies)**
  - Topology : P2P, P2MP, MP2MP
  - Technology : Lambda, Ethernet, IP, MPLS, GMPLS, ...

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