

Network Slicing : An Operator's perspective



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All the Gs have focused so far on one vertical : The Mobile

2G 1990 Mobile Voice



3G 2000 Mobile Internet



4G 2010 Mobile broadband



5G

5G is about empowering the verticals

“One Size fits all” will NOT hold for 5G

2G 1990 Mobile Voice



3G 2000 Mobile Internet



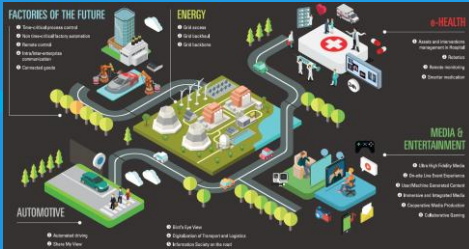
4G 2010 Mobile broadband



5G 2020 e-Mobile broadband + Many other verticals

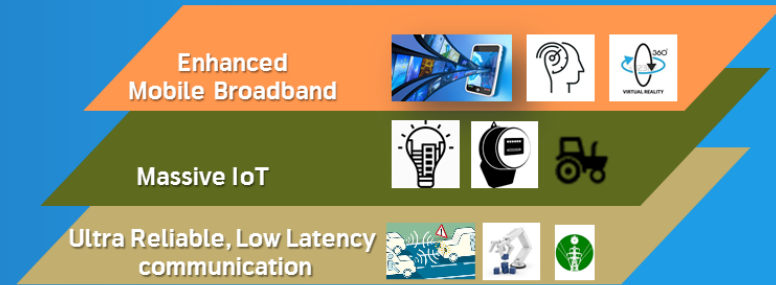


*Source : 5GPPP white paper 2016

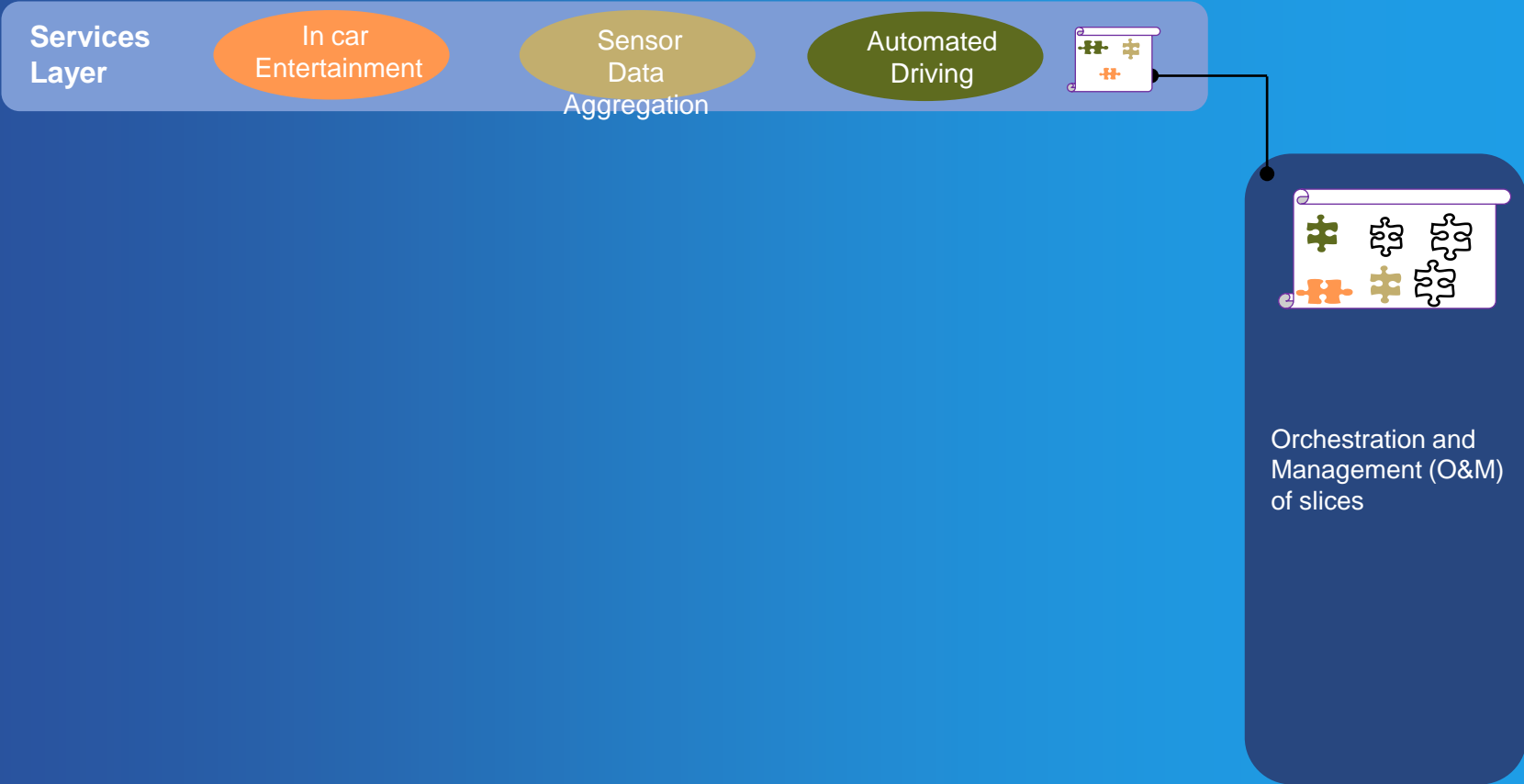


Why Slicing

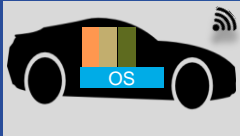
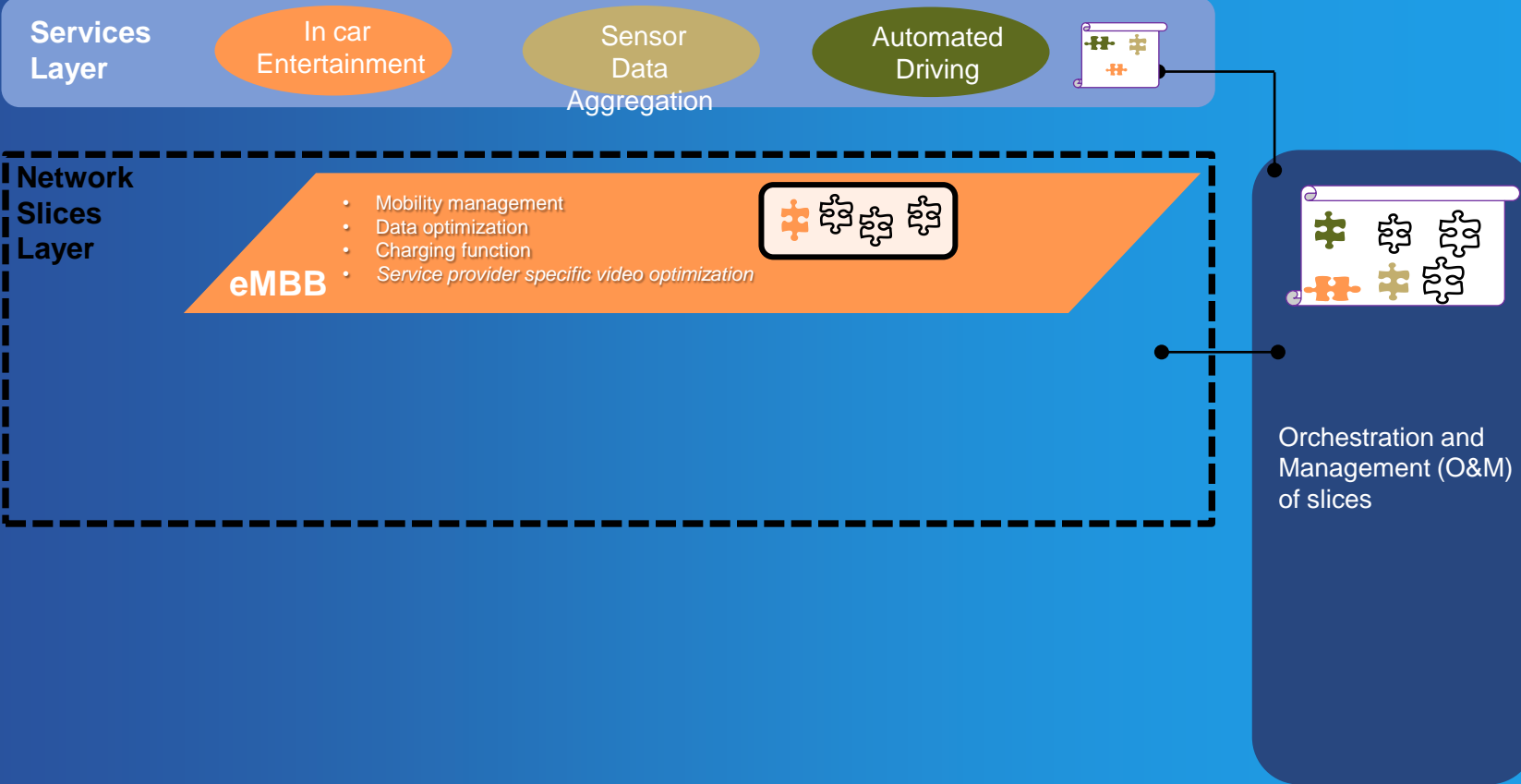
- To address the plethora of 5G verticals/use cases one needs tailored architecture
 - Provide more control to verticals
- Provide resource isolation → efficiently address specific requirements the vertical scenario demands.
 - Isolate traffic (Misbehaving sensor in a slice doesnot effect public safety service, MVNO), Different service type (IoT verses eMBB), serve specific business (Volvo verses BMW)
- Provide E2E service
 - Existing mobile networks → monolithic → single network carries out all services
 - protocols such as DiffServ in IP prioritizing different services. But, the protocols tend to be piecemeal, not E2E
- Enable new architectures , Micro services, +++
- Multi-tenancy support
- New business opportunities



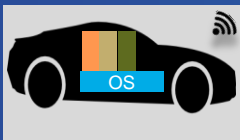
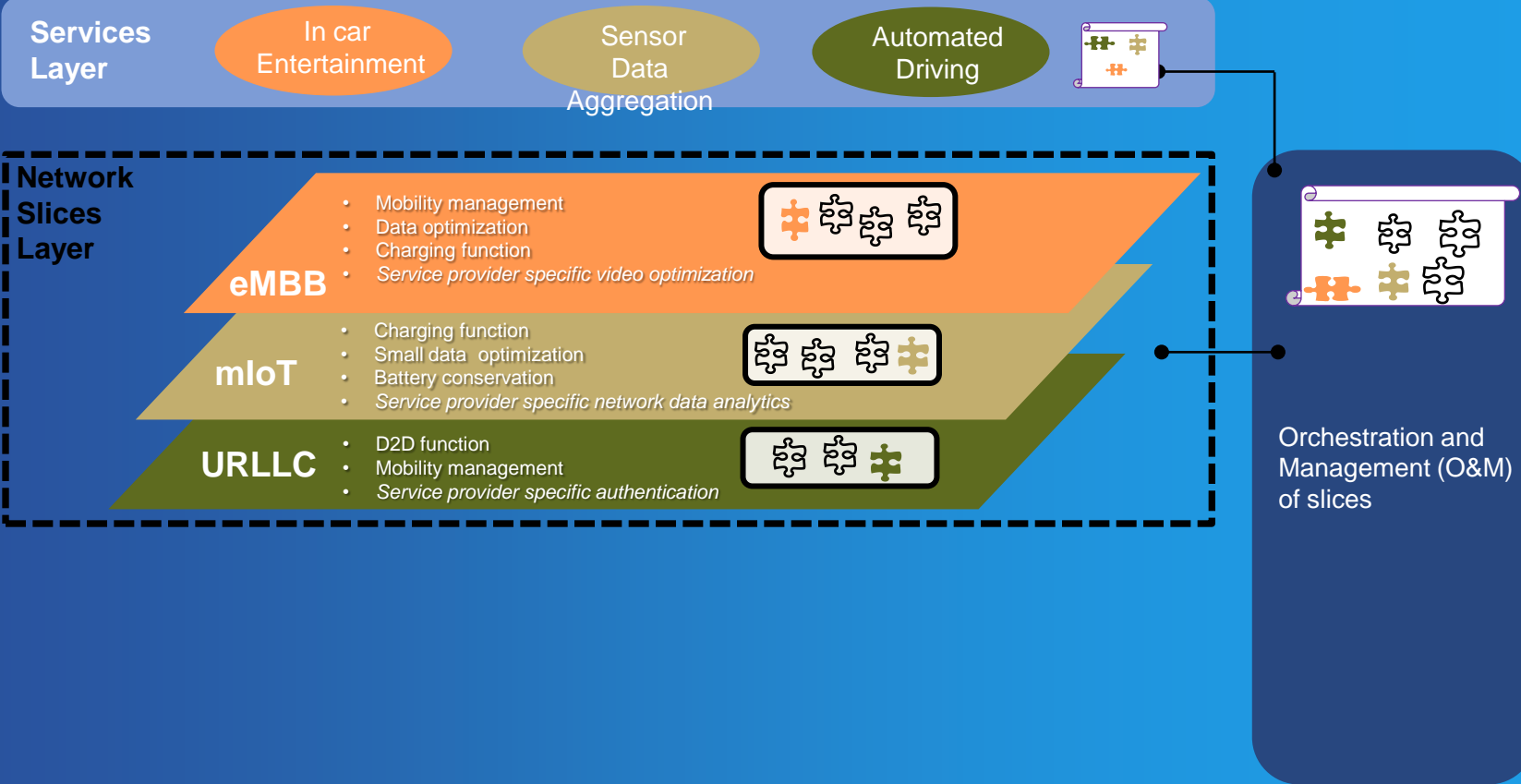
Slicing is a system concept realized with “appropriate” network functions and corresponding resources to provide required telco service with a dedicated behavior



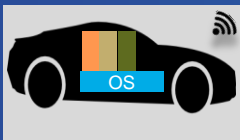
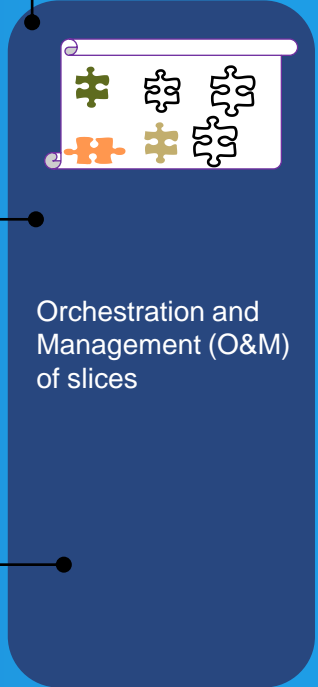
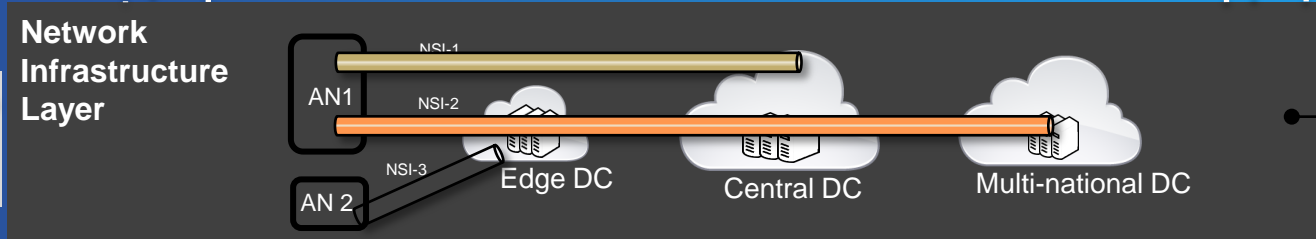
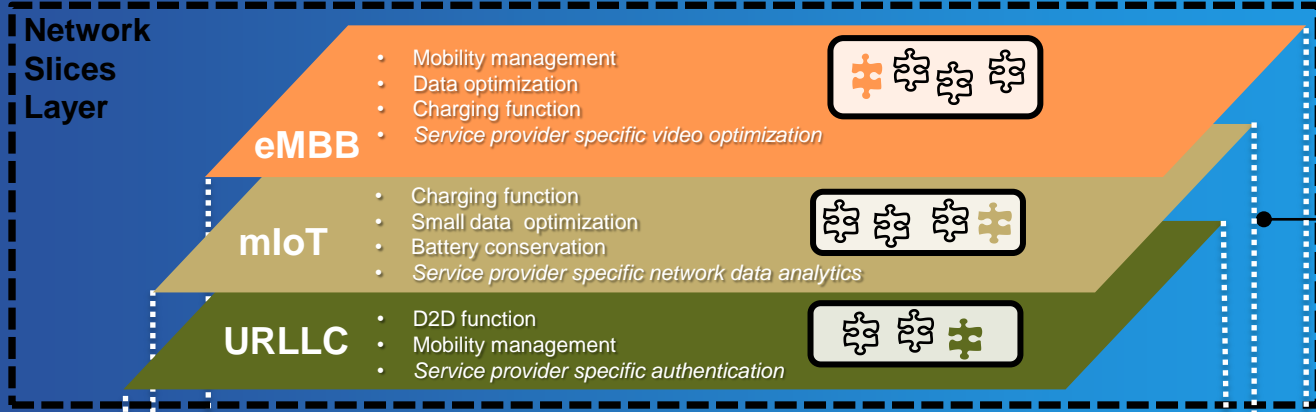
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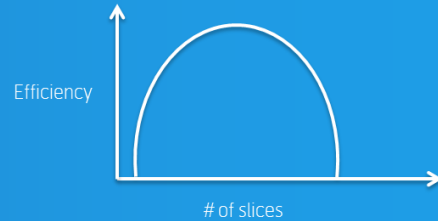


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Challenges

- Orchestration
- Complexity, How many slices
- Will the Telco's indeed deploy the <many> slices
- Service integration to slices
 - Standardized interfaces
- Composition of slices
 - Which NFs should be shared and which should be individual to slices
- How to provision UE with a set of slices which are indeed E2E
- What if you move from one slice to another, Who takes care of guaranteeing SLA
- Shall the OSS/BSS be sliced. Separate OSS/BSS for different slices
- Security



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