Migrating to a NFV-based Home Gateway

Introducing a Surrogate vNF approach

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Objectives of the paper

- Proposing a technical solution to ease the migration to future Home Gateway technologies.

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- Study the feasibility through a concrete usecase.

Presentation plan

Context

1. Home Boxes Today
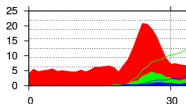

2. Virtual Home Gateway

3. NFV for Future Networks

Proposal

4. Easing the Migration

5. Experiments, Results

6. Discussion & Conclusion

With Customer Permise Equipment (CPE), Service Providers bring a lot of features to Users

Home Gateway (HG)

- Connects the Service Provider Network
- Network services: NAT, DHCP, Wifi...
- Users-facing services: Printing Service, VoIP, Parental Control...
- New Services: Internet of Things, Home Automation...

Set-Top-Box (STB)

- Decode media IP flows to a display device (through HDMI)
- Live TV, Video On Demand ...
- Catch-up TV, Recording ...
- Legacy Digital terrestrial television ...

CPEs cost a lot to produce and to support

High Capital Expenditure (CAPEX)

- High design & Engineering costs
- Supply Chain costs, need for spare devices
- Hardware upgrades can be necessary to rollout new services

High Operational Expenditure (OPEX)

- Need to maintain legacy models
- Difficult to update software of a very fragmented installed base
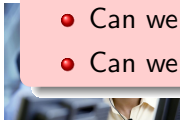- Costly customer service

CPEs cost a lot to produce and to support

High Capital Expenditure (CAPEX)

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How do we fix it?

- Can we design better CPE architecure?
- Can we leverage existing industry proposals?

- Difficult to update software of a very fragmented installed base
- Costly customer service

Current CPE architectures fail to realize service dynamics but alternatives exists.

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