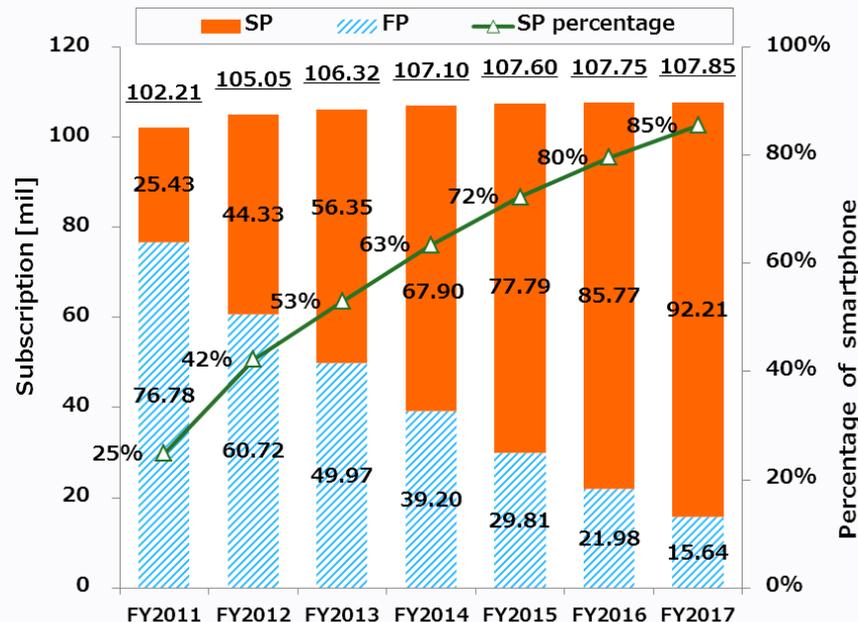


Network Enhancements for Better Customer Experience

3GPP TSG SA#58
Barcelona, Spain, 10-12 Dec 2012
Agenda Item: 5.1
Source: KDDI Corporation
Sprint Nextel Corporation

- Background
- Main Message
- Proposal 1: Congestion Control and Offloading
- Proposal 2: Flexible Multiple Access Application
- Future Vision...
- Conclusion

- Proportion of smartphones vs. feature phones in Japan still growing
- But subscription growth in Japan is reaching a plateau
- Subscriber saturation but continuation of traffic explosion
- From operators' perspective: need to minimize capital investment associated with traffic growth



Cell phone subscribers forecast in Japan

Source: KDDI

Must take action in Rel-12, else we cannot make it!!

How to survive?

We would like 3GPP to address...

- Congestion Control and Offloading
 - In response to 3GPP NW congestion, offload traffic to non-3GPP access NWs
- Flexible Multiple Access Applications
 - To provide services without customers being aware of access NW transition



Satisfy both customer experience and operator sustainability

Congestion Control and Offloading

Key issues for effective offloading. Lose no time progressing these with highest priority!!

- **UPCON**: CN awareness of RAN congestion and dynamic offloading lead to optimal NW selection
- **FS_CNO**: Through CN congestion control, more active offloading action can be taken
- **WLAN_NS**: UE awareness of Wi-Fi AP congestion via HS 2.0 enables making Wi-Fi connectivity much better with policies from ANDSF



Flexible Multiple Access Application

Key issue: Policy control, seamless mobility and technologies that provide services without making customers aware of access NW transition

- **P4C_F, P4C_TC, P4C_TI**: Enable customers to enjoy services provided by an operator without being aware of which access NW is being used
- **FS_SaMOG**: Seamless mobility for UE with IP address preservation
- **FS_NBIFOM**: IP flow mobility without Dual Stack Mobile IP

Next step...

- Create flexible QoS network
 - Offer QoS over multiple access NWs: perfect marriage of multiple access NWs
 - Features required for flexible QoS in Rel-12 should be allocated sufficient resource:
FS_ABC, FS_ACDC, FS_UMONC, OPIIS
 - And beyond...
- Toward Rel-13, start talking about future EPC

Conclusion

- Essential to improve QoE and to minimize CAPEX suitable for changing traffic trends
 => **Efficient offloading**

Categories of Highest Priorities

Congestion Control and Offloading	UPCON, FS_CNO, WLAN_NS
Flexible Multiple Access Application	P4C_F, P4C_TC, P4C_TI, FS_SaMOG, FS_NBIFOM

Category of 2nd Highest Priority

Flexible QoS Network	FS_ABC, FS_ACDC, FS_UMONC, OPIIS
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Thank you.