



Webinar

Is On-Loading the New Off-Loading?

Policy-Driven Bandwidth Management
in Heterogeneous Networks

Is On-Loading the New Off-Loading?

Special Guest



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Featured Speaker



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Disruptive Analysis

Don't Assume

WiFi for mobile operators: Is On-loading the New Off-loading

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Why do mobile operators need WiFi?

- n Basic “hygiene factor” expected by users anyway
- n Indoor coverage
- n Data offload (for both volume of “tonnage” & signalling)
- n Incremental capacity to avoid spectrum constraints
- n International roaming

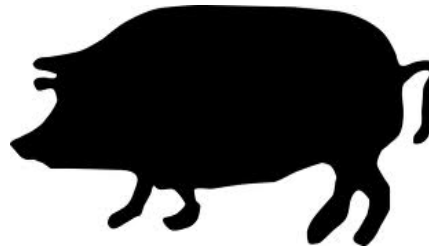
- n *Onload* and value-added location-specific business models



Congestion? What's the problem, exactly?



A) Specific devices?



B) Specific users?



C) Specific traffic types?



D) Specific times?



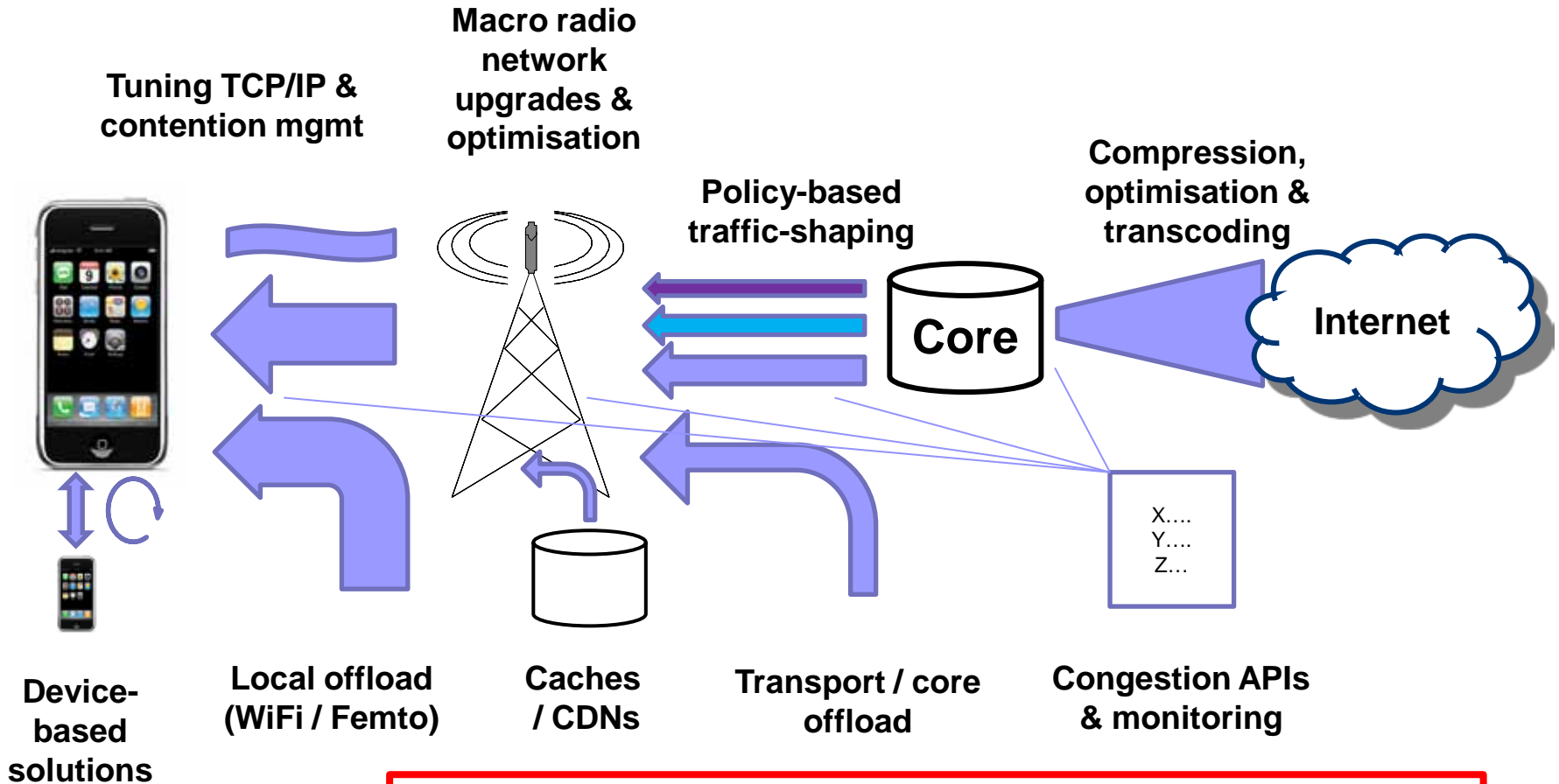
E) Specific locations?



F) Specific apps?



Mobile broadband traffic management options





“Seamlessness”: not always appropriate



**The best-tailored products
have seams for a reason**



User interface & interaction challenges ahead

Operator offload
WiFi client / app or
automated logon



Home broadband
“take-away” WiFi



Content-
provider
dedicated WiFi

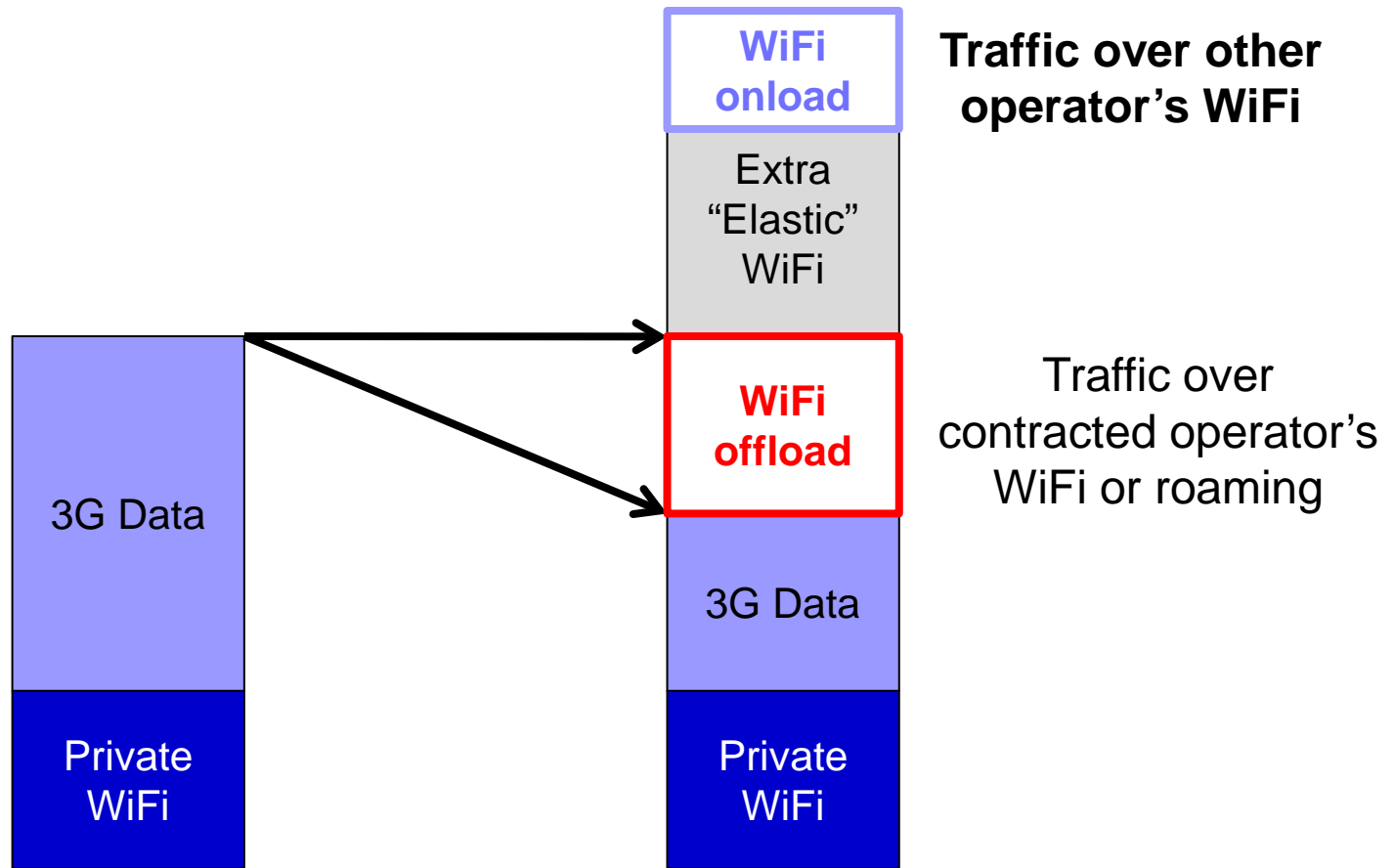


3rd-party
Telco OTT
Onload WiFi

*Plus enterprise
WiFi, loyalty
WiFi, device
vendor WiFi etc*



Not all smartphone WiFi will be offload



Smartphone data today

Smartphone data with operator WiFi



Disruptive Analysis

Don't Assume

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*Policy-Driven Bandwidth Management
in Heterogeneous Networks*

Leveraging WiFi for Mobile Broadband Traffic Management

- Providing bandwidth, mobility, and robust connectivity to Smartphone users
 - Bigger Pipes – more spectrum or throughput per link
 - More Pipes – effective use of all available radio networks
 - Better Pipes – efficient content delivery
- Emerging solutions create an integrated “Network of Networks”
 - Need to manage data flows and signaling across disparate networks
 - Solutions can be either at the IP and/or Radio Access Layers
- Policy driven Bandwidth Management is the key
 - Policies or preferences can be set by the Network Operator, and also by the Smartphone



Bigger Pipes alone will not solve all capacity & coverage needs

“Supply Side” Strategy
*More Bits per Hertz or
auction additional spectrum*



Won't work forever
*Approaching Shannon's Limit per link &
limited worldwide spectrum available*



Need Holistic Strategy Addressing Supply and Demand!

Using Multiple Networks to Meet User Needs

- *Traffic Offloading*
- *Traffic Onloading*
- *Least-Cost Routing*
- *Load Balancing*
- *Premium /Tiered Services*

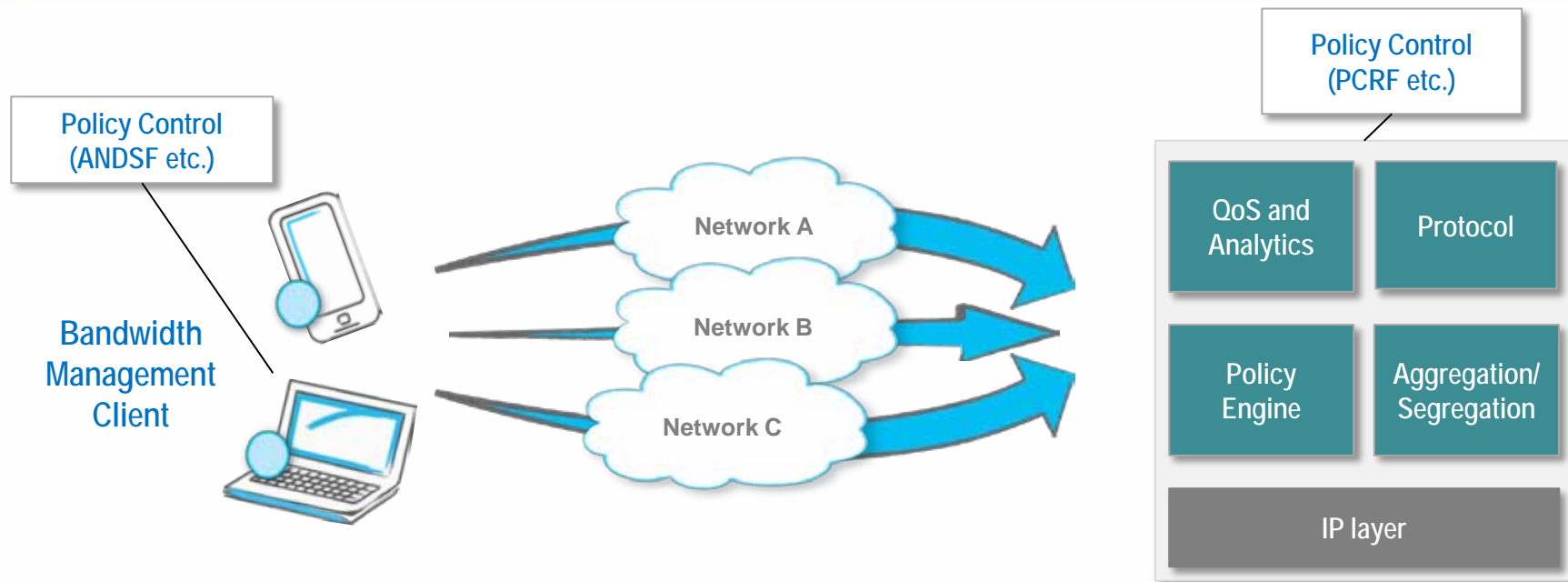


Leveraging the right "Pipe(s)"

- *Choosing the right pipe per application*
- *Meet different user needs or levels of service*
- *Provide most effective delivery*

- BW Mgmt solution based on Network & User Policy
- Policies allow/enforce different traffic flows for;
 - Enterprise - BYOD
 - Home or Roaming
 - By Subscriber or Application; e.g. Gaming, Video,

Policy based Solutions Leveraging Heterogeneous Networks



Programmable Policy rules & Application Detection

Policy based Network Selection - Offload

IP Flow Segregation (assigning an IP flow to a specific network)

IP Flow Mobility (moving an IP flow across networks)

Bandwidth Aggregation (distributing an IP flow over multiple networks)



Connectivity and Mobility Client for Mobile Devices (Smart Access Manager)

- 3GPP, IETF compliant **Connectivity and Mobility**
- Policy driven bandwidth management for maximizing **throughput & QoS/QoE**
- **Operator-controlled** network access (Network Server)
- Supports Network **monitoring** and **reporting** from device
- Application and network awareness based optimization
- **Context-aware** access - location, battery, link quality, cost etc
- **Real-time event management** - congestion, traffic shaping etc



Laptops and USBs



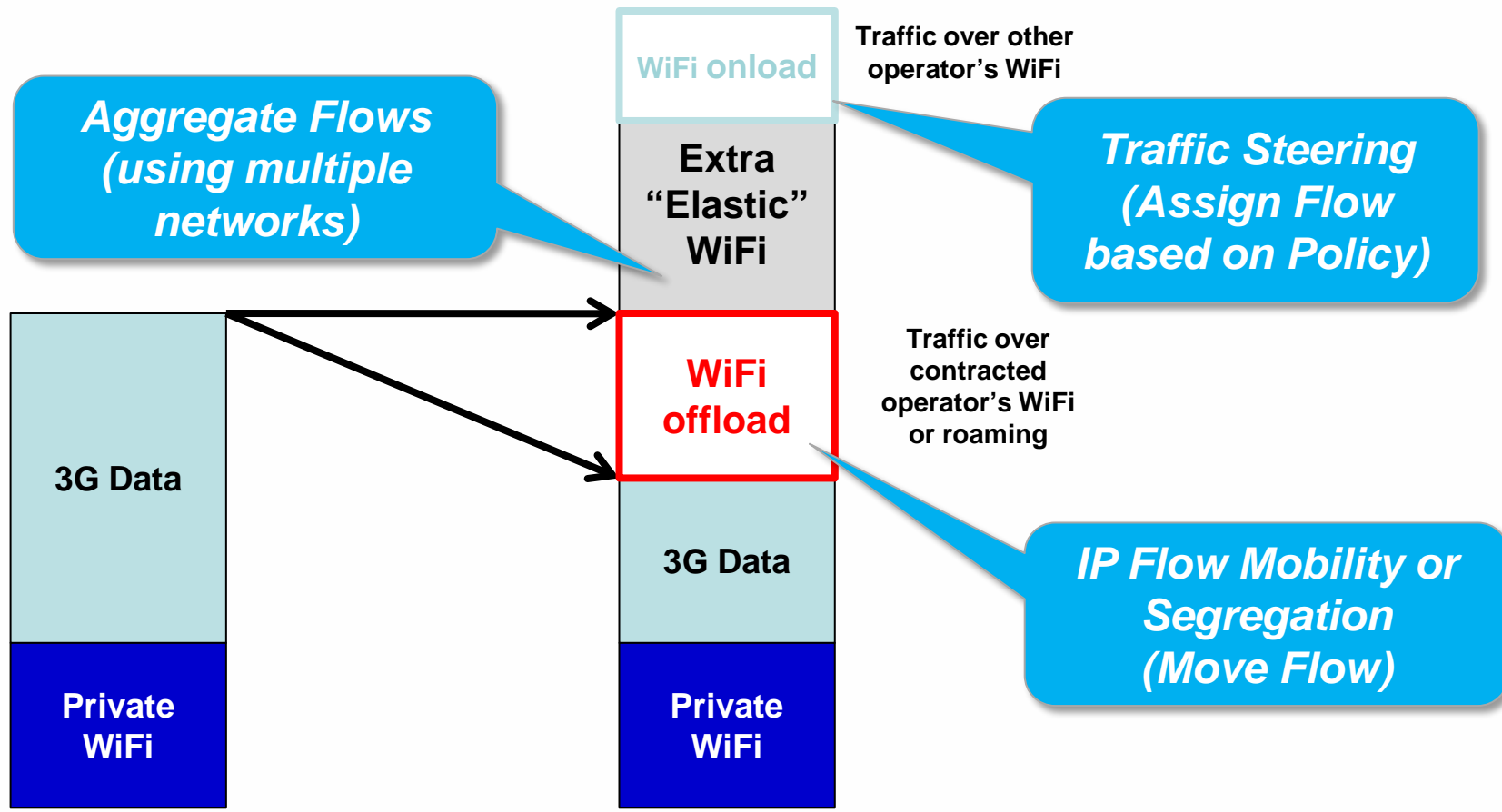
Smartphones and Tablets



CE Devices

Holistic Traffic Mgmt Schemes that support Offload & Onload

Smartphone traffic guided by policy that accommodates service provider and user preferences



Smartphone data today

Smartphone data with operator WiFi

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Q&A

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