Open Router Platforms: Is it time to move to an open routing infrastructure?

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Disclaimer

- Opinions expressed here are my own and do not necessarily reflect official Alcatel-Lucent position
What is an Open Router?

• Open ≠ Open Source
• Open Source Router
  – Open source routing/networking stack + commoditized HW
  – E.g., Linux router
• Open Router
  – Ability to extend system functionality by users via fully specified API/behavior + SDK
    • E.g., win32, java
    • Include both control & data plane
  – Open source router is a open router, but a bad one
    – Open router can be built on proprietary platform
      • E.g., Game console, Java phone
Drivers

• Service providers
  – Need to differentiate
    • Vendor provided features are available to all users
    • Service providers can differentiate by providing unique features
    • Higher revenue
  – Accelerate innovation/competition
    • 3rd party market for new features
    • Lower cost

• System vendors
  – Reduce cost of development
    • Rapid changes in data path, e.g., 4G
Obstacles

• Technical
  – Reliability + stability
  – Standardized API – from who?
  – Proprietary data path implementation
    • Need equivalent of DX10, OpenGL

• Non-technical
  – Most service providers are conservative
  – How to develop a 3rd party market
    • Small market
  – Intelligence in end system vs network
My View

• Open Source Routers
  – Limited to commoditized HW
  – At best applicable to home/small enterprises
  – Lack of momentum behind open source
    • Too specialized, little fame

• Open Routers
  – Strong value proposition, paradigm changing
  – Forward looking service providers
    • Google?
  – May start in niche areas, e.g., security, govt
  – Not ready for prime time, but right time for research
Promising Trends

• Rise of value-added applications
  – Traditional routing is not interesting
  – Media, security, network control
  – Richer set of packet processing apps
    • Mix & match

• Standardized platform (e.g., ATCA) and multicore network processors

• Forward looking service providers