Policy in the Spotlight

Bandwidth Demands and New Business Models Drive the Policy Control Opportunity

Infonetics Research, Inc.
www.infonetics.com

By SHIRA LEVINE
Directing Analyst, Next Gen OSS and Policy, Infonetics Research

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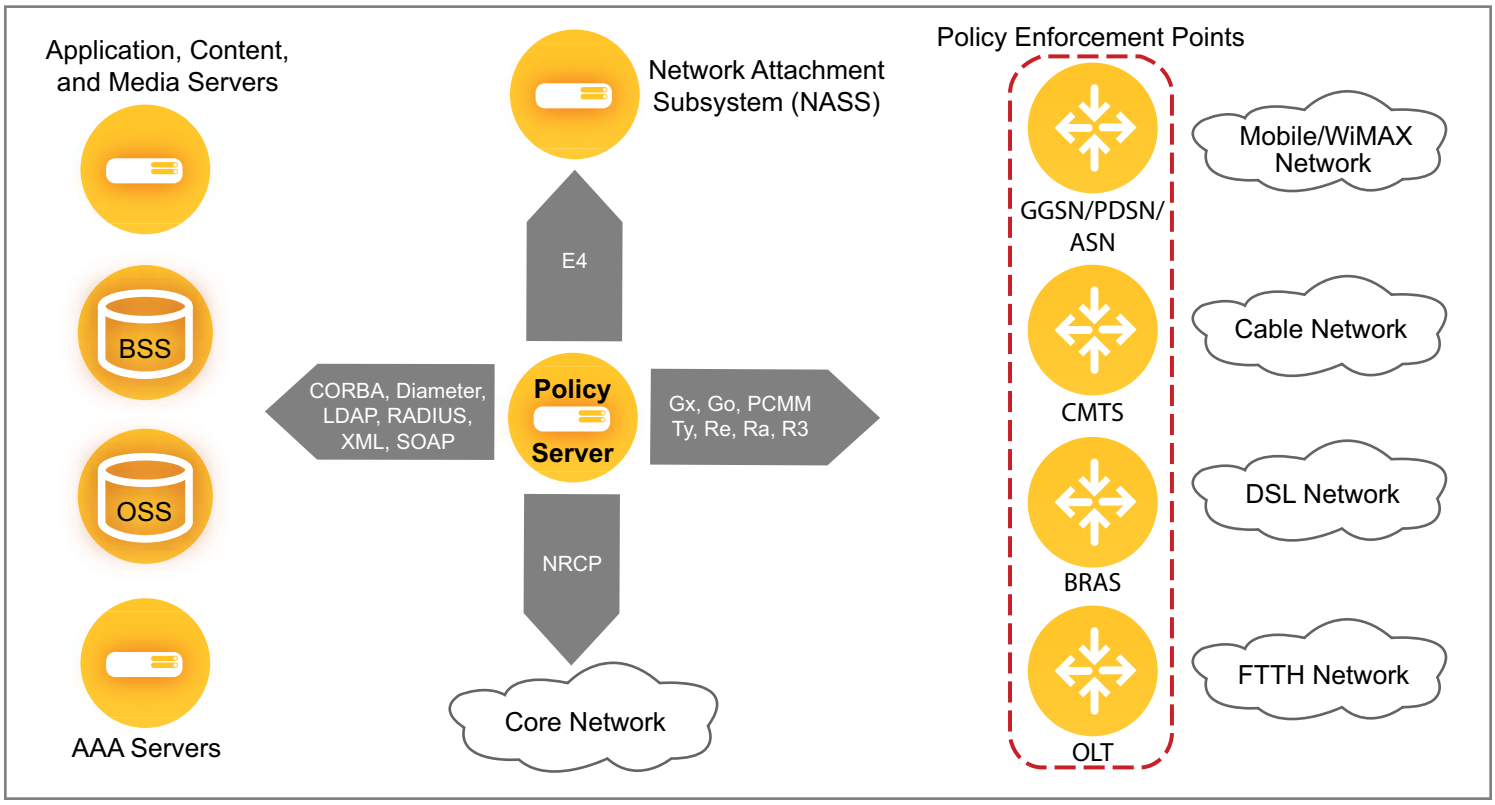
INTRODUCTION

As the consumption of broadband services increases and new rich media content, services, and applications emerge, operators are facing unprecedented demand for more bandwidth and higher quality of service. Though many service providers are upgrading their infrastructure over the next several years to accommodate this demand, they are increasingly recognizing the need to better use existing network resources, operate more efficiently, and reduce the costs associated with creating and rolling out new services. Enter policy servers, which can better manage the burdens associated with massive consumption and peak time traffic spikes. Policy servers enable operators to smooth out traffic patterns, sparing themselves capital and operational costs that could be put to better use elsewhere in the enterprise.

POLICY SERVER NETWORK TOPOLOGY



At the same time, the policy server's traditional position in the network realm is expanding to encompass a new range of operator requirements. As operators face competition from not only traditional service providers, but also the emerging set of non-traditional provider such as cable MSOs, satellite operators, and non-facilities-based content and Web-based application providers, they must differentiate themselves on a service basis, as opposed to simply relying on price as a differentiator. Policy control capabilities support the creation and delivery of more personalized services and more sophisticated content offerings, particularly when used in conjunction with advanced rating and charging capabilities—such as providing parental or employer control of cell phones, or offering different pricing for content downloads depending on time of day.

The policy control function has begun to extend up into the IT layer, acting as a bridge between network-focused OSS systems and IT-focused BSS systems and combining subscriber-specific information with network resource information.

Over the last few years, the role of the policy server has evolved from a tool to manage bandwidth on broadband networks into a more sophisticated, standards-based solution that extends up into the IT layer, acting as the intersection point between network resources and subscriber/application requirements. Policy servers are now capable of handling not only static data such as network and device information, but also dynamic, session-based data such as the bandwidth requirements of an application, variable subscriber preferences, and time-of-day parameters. As a result, as the topology diagram on page 1 shows, the policy control function has begun to extend up into the IT layer, acting as a bridge between network-focused OSS systems and IT-focused BSS systems and combining subscriber-specific information with network resource information.

The use of policy servers originated in the cable industry, where multiple systems operators used them to manage broadband usage, and several significant industry shifts have affected the policy server market over the last few years, both expanding the range of operators who are deploying them and changing how they are actually used:

- **Rapid growth of IP-based traffic**: Unlike the more predictable circuit-based services, in which QoS is built into the technology, IP-based services have traditionally been best-effort, making the assurance of IP services more of a challenge. This issue came to the forefront as voice over IP became more broadly available in the 2005 time frame, requiring operators to be able to prioritize voice traffic over other data traffic. Operators have begun using policy control to better manage available bandwidth, including implementing bandwidth caps to force heavy users to pay more according to bandwidth consumed, and to better manage edge traffic during peak usage hours and traffic spikes, enabling them to optimize their existing network capacity.

- **Service innovation**: Incumbent operators are seeing unprecedented competition, creating an intense pressure to differentiate based on service features. Triple play services were the first large service innovation supported by policy servers. As cable and fixed line operators became more familiar with policy, other capabilities such as “turbo buttons” and off-peak hour bandwidth boosting have been added. Other value-added services being explored include subscriber control capabilities, including parental controls based on factors such as time of day and enterprise management of employee cell phones.

- **Plans and pricing**: All-you-can-eat pricing, once the norm for data services, is being replaced by tiered service plans, particularly in cable and fixed line environments. These plans are tiered by speed of connection, bandwidth consumed, or both, with subscribers who consume more than their allotted bandwidth often charged an extra fee as an incentive to move to the next tier up.

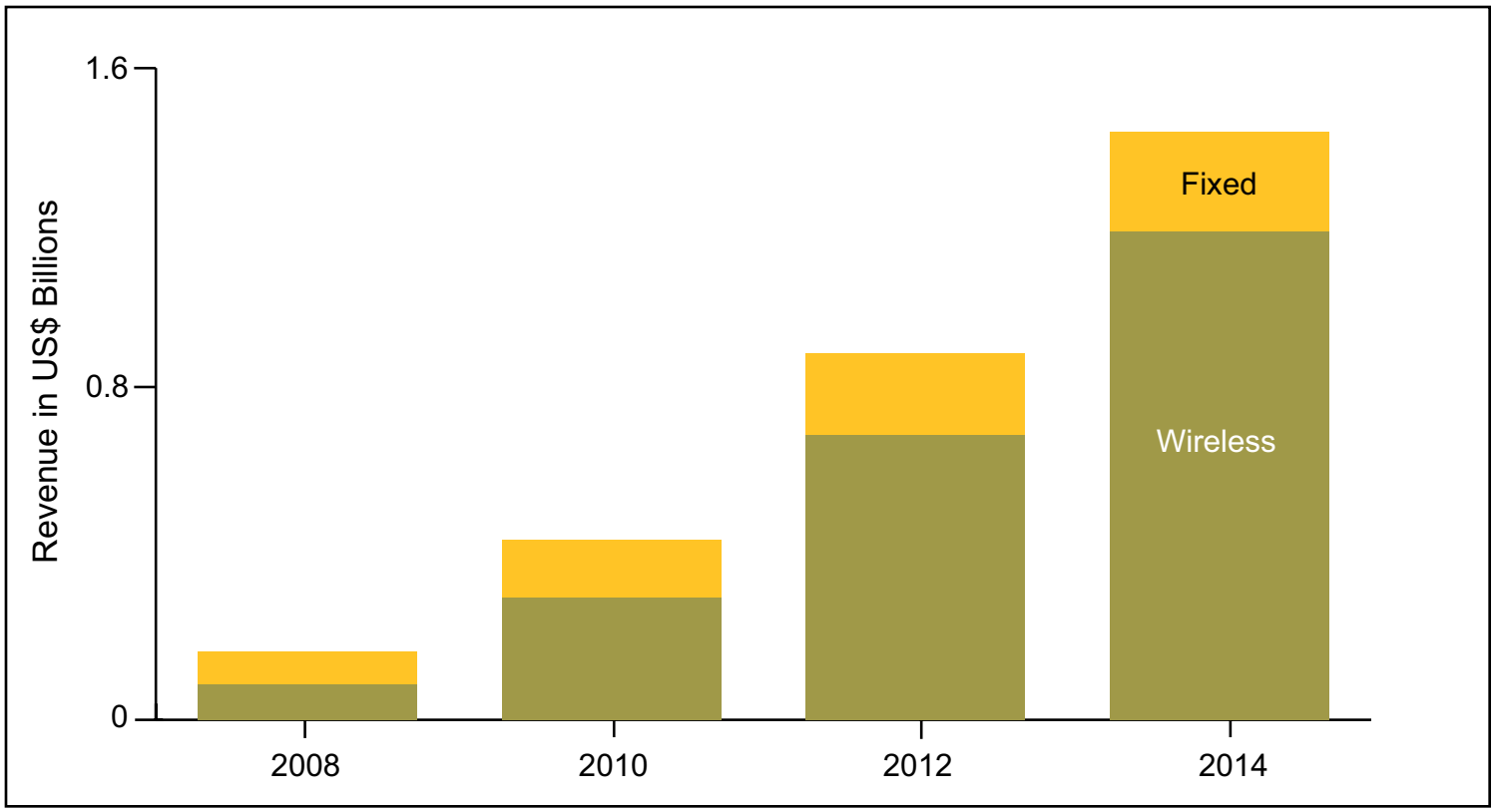
- **Standardization**: Standards have become increasingly important in the service provider environment as operators look to reduce their development and integration costs, and policy servers are no exception. Policy server deployments have largely been standardized around network-specific standards: PCMM in the cable industry, and 3GPP/IMS and SIP in the fixed line and wireless realm.

- **Regulatory requirements**: As regulated entities, service providers need to follow specific rules that are often determined by regulatory bodies. Policy servers have been used to enforce some of these rules such as fair use guidelines, and are being implemented in response to the upcoming “bill shock” regulations in the European Union.

WIRELESS DRIVES POLICY SERVER MARKET GROWTH

These trends will drive the policy server market to $1.4 billion by 2014. As the chart below shows, that growth will be weighted heavily toward the wireless market as deployments in the wireless space finally surpass the lead once held by fixed line deployments. Wireless operators are viewing policy control as a tool for alleviating strain on shared RAN resources caused by 3G and PC-based data services by better managing bandwidth usage during peak hours and off-loading traffic onto WiFi networks.

POLICY SERVER MARKET FORECAST



Significant long-term growth in the wireless market will come from WiMAX and LTE deployments, as operators are increasingly looking to include PCRF-compliant policy control capabilities as part of their next gen network deployments in an effort to better monetize these network investments via mechanism such as service tiers and "turbo" offerings. Policy servers are also being viewed as a tool to reduce the cost and time associated with provisioning customers on these new networks, particularly in developing markets with high subscriber growth, and increasingly as a way to improve the overall customer experience by offering value-added services and implementing loyalty programs, particularly in emerging markets. While cable operators and fixed line telcos will continue to deploy policy servers to manage their broadband data and video services, their numbers will be dwarfed by wireless network deployments.

REGIONAL TRENDS: DATA TRAFFIC, REGULATORY FACTORS AFFECT POLICY GROWTH

APAC and EMEA make up the majority of the market through 2014, particularly the more developed countries within those regions, where 3G data traffic and WiMAX/LTE implementation are driving policy server deployments. Operators in EU countries are also looking at policy servers as a way to manage new regulations around roaming charges and "bill shock." On the fixed line side, telcos in those regions that are deploying IPTV over their DSL networks are using policy servers in conjunction with middleware to manage subscriber authorization functions for access to VOD content.

Policy investments in North America have been historically dominated by cable MSOs looking to manage bandwidth usage among their broadband subscribers, and IMS deployments, particularly by cable operators, will be a key driver behind the North American policy market going forward. North American wireless operators such as Verizon have been deploying policy to manage the QoS experience for subscribers accessing off-deck content, and will continue to invest in policy solutions as a way to better manage 3G network congestion caused by smartphones and network devices such as the iPad and the Kindle.

Operators in emerging markets such as Africa, Latin America, Eastern Europe and parts of Asia are focusing on using policy control capabilities to create innovative loyalty programs as way to combat high churn rates, particularly in those areas where the subscriber base is primarily prepaid. We anticipate policy deployments in these markets to pick up as operators' 3G upgrades continue and mobile broadband usage ramps up.

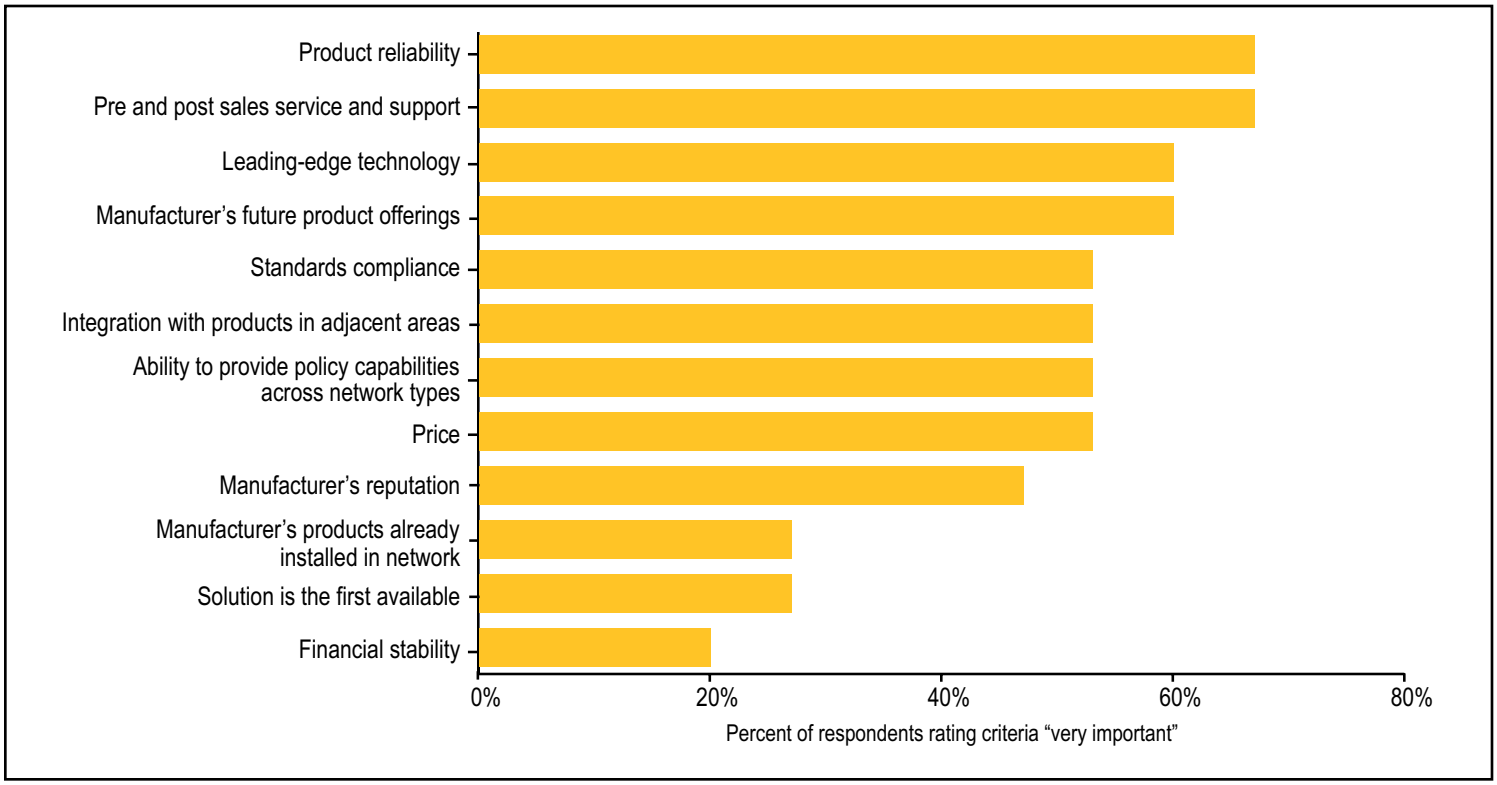
RELIABILITY, SUPPORT HIGH ON OPERATORS' LIST OF POLICY SERVER CRITERIA

As policy control has taken on a more central role in operator environments, there have been shifts in how purchase decisions around policy servers are made. While policy control has traditionally been a function of operators' network departments, operators are increasingly looking for policy management solutions that extend higher up the stack, into the IT realm, which has created a larger role for IT and marketing departments in the decision-making process.

In the fall of 2009, Infonetics Research conducted a survey of policy decision-makers within service providers, interviewing 15 operators using online, e-mail and telephone methods. All respondents had already deployed policy servers or planned to do so by 2010. The survey provided insights into operators' views on the policy server market, including their criteria for choosing a policy control solution.

We asked respondents to rate criteria for choosing a policy server vendor on a scale of 1 to 7, where 1 means not important, 4 means somewhat important, and 7 means critical. The chart below shows the percentage of respondents rating each criterion a 6 or 7, or very important.

POLICY SERVER VENDOR SELECTION CRITERIA



Infonetics Research, *Policy Server Vendor Ratings: Global Service Provider Survey*, December 2009

Product reliability and service/support ranked highest—not unexpected, given the increasingly important role that policy control plays in the operator's network, and given the number of smaller policy vendors currently challenging the more established players in this market. Respondents also ranked standards compliance high on the list, as they look to include PCRF-compliant policy control capabilities as part of their next generation network deployments, as well as easy integration with products in adjacent areas such as charging and subscriber data management. Only 27% named having the vendor's products already installed in the network as an important selection criterion, confirming the growing influence of younger standalone policy vendors that don't have the NEPs' long-standing presence in the market.

Policy has emerged as a tool to help operators differentiate themselves from their competition on a service basis, as opposed to relying on price as a differentiator.

STRATEGIC OUTLOOK

As operators roll out new services and capabilities, they have had to add new logic and control at the edges of their networks to better manage the requirements of these applications, as well as the wide range of end-user devices currently in use. Policy servers are emerging as a key tool to achieve that goal, particularly when used in conjunction with the authorization and enforcement capabilities offered by other network resources, such as AAA and RADIUS servers, edge routers, deep packet inspection (DPI) platforms, and broadband gateway and aggregation hardware.

At the same time, policy has moved beyond its traditional role of managing bandwidth consumption to become an enabler of value-added services such as guaranteed bandwidth for certain categories of subscribers and/or content, sophisticated service control capabilities, and more targeted advertising campaigns and offers. Policy has emerged as a tool to help operators differentiate themselves from their competition on a service basis, as opposed to relying on price as a differentiator.

Operators are also increasingly recognizing the value of policy servers in enabling them to deliver more sophisticated content offerings, particularly when used in conjunction with advanced rating and charging capabilities. For example, policy control can provide subscribers with different types of content depending on what kind of subscription they have, or offer different pricing for content downloads depending on time of day. Forward-looking service providers envision a time when these many new services and capabilities are combined in ways that transform the customer experience. ■

INFONETICS RESEARCH

LEAD ANALYST

Shira Levine
Directing Analyst, Next Gen OSS and Policy
shira@infonetics.com
+1 (408) 583.3381
twitter.com/shiralevine

With 15 years as an analyst and journalist in the telecommunications industry, Shira Levine joined Infonetics Research in April 2009 an accomplished expert in the OSS, billing, and service delivery platform markets. She authors several Infonetics equipment market size and forecast reports on policy servers, service delivery platform (SDP) software and services, and subscriber data management (SDM) software and services, as well as an ongoing series of Continuous Research Service (CRS) notes and surveys on important communication industry players, technologies, and service provider trends.

In addition to deepening Infonetics' current OSS and policy coverage, Shira is expanding it to include emerging topics such as the changing service delivery infrastructure, the evolution of Telco 2.0, the role of integrated communications providers (ICPs), new service models (SaaS, hosted services, third party providers), and new ways for service providers to better leverage their competitive advantages for profit.

Shira speaks at vendor events and tradeshows around the globe, including TeleManagement World and Billing and OSS World, and is a consultant to startups, service providers, manufacturers, and the investment community.

Prior to Infonetics Research, Shira was the Senior Analyst in IDC's Next-Generation OSS and Billing Program, where she expanded the company's coverage and initiated SDP and telecom analytics market reporting. As a senior research analyst with Stratecast's OSS Competitive Strategies practice, she covered the OSS/BSS market and service providers' OSS strategies and requirements. Before becoming an analyst, Shira was Executive Editor of *America's Network* magazine, covering OSS/BSS, network management, service management, provisioning, customer care and billing. She was also the Editor of *Telecom Investor* and senior editor at *Telephony* magazine, where she covered the cable TV and telco video markets and regulatory events, including the pivotal Telecommunications Reform Act of 1996.

Levine holds a BA in Classics from Amherst College and an MSJ from the Medill School of Journalism at Northwestern University. She is based out of Infonetics' Boston Metro office in Massachusetts.

SALES

Larry Howard, Vice President
larry@infonetics.com, tel: +1 408.583.3335

Scott Coyne, Sr. Account Director
scott@infonetics.com, tel: +1 408.583.3395

ABOUT INFONETICS RESEARCH

Infonetics Research is an international market research and consulting firm serving the communications industry since 1990. A leader in defining and tracking emerging and established technologies in all world regions, Infonetics helps clients plan, strategize, and compete more effectively.