

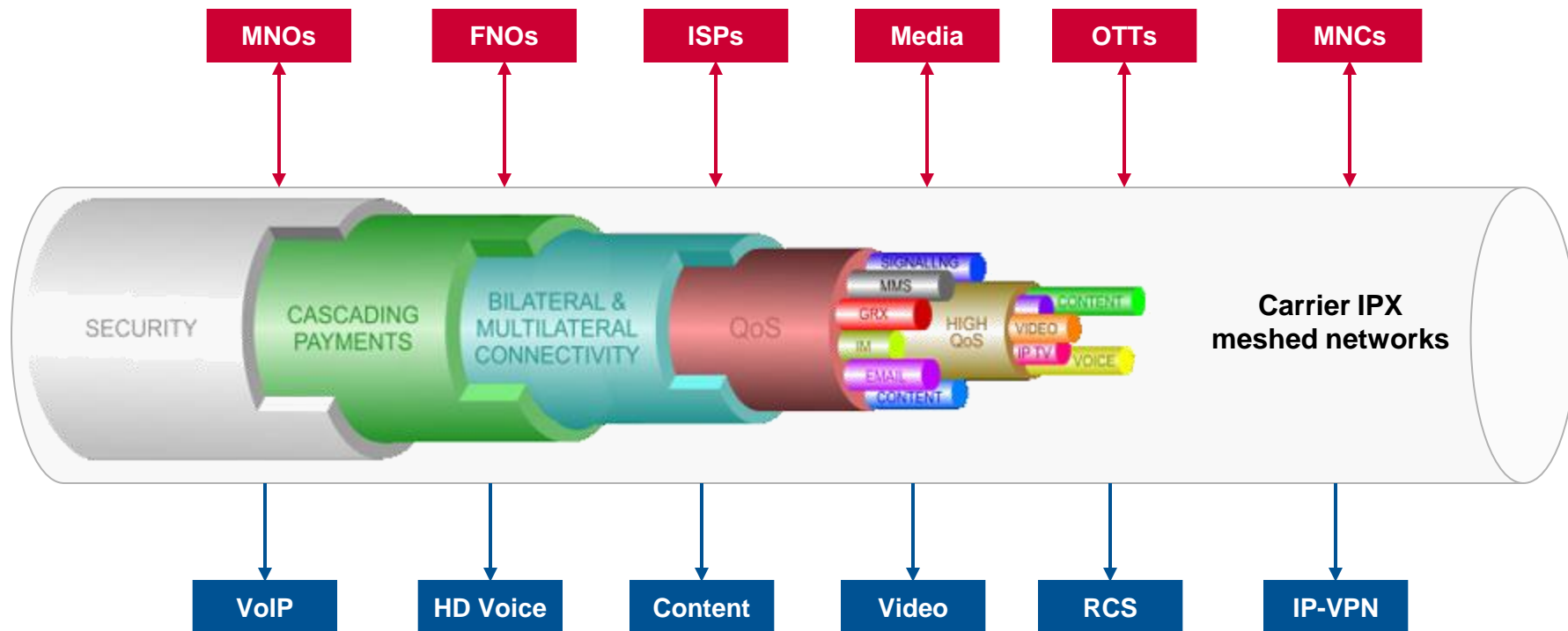
IPX - What is the opportunity?

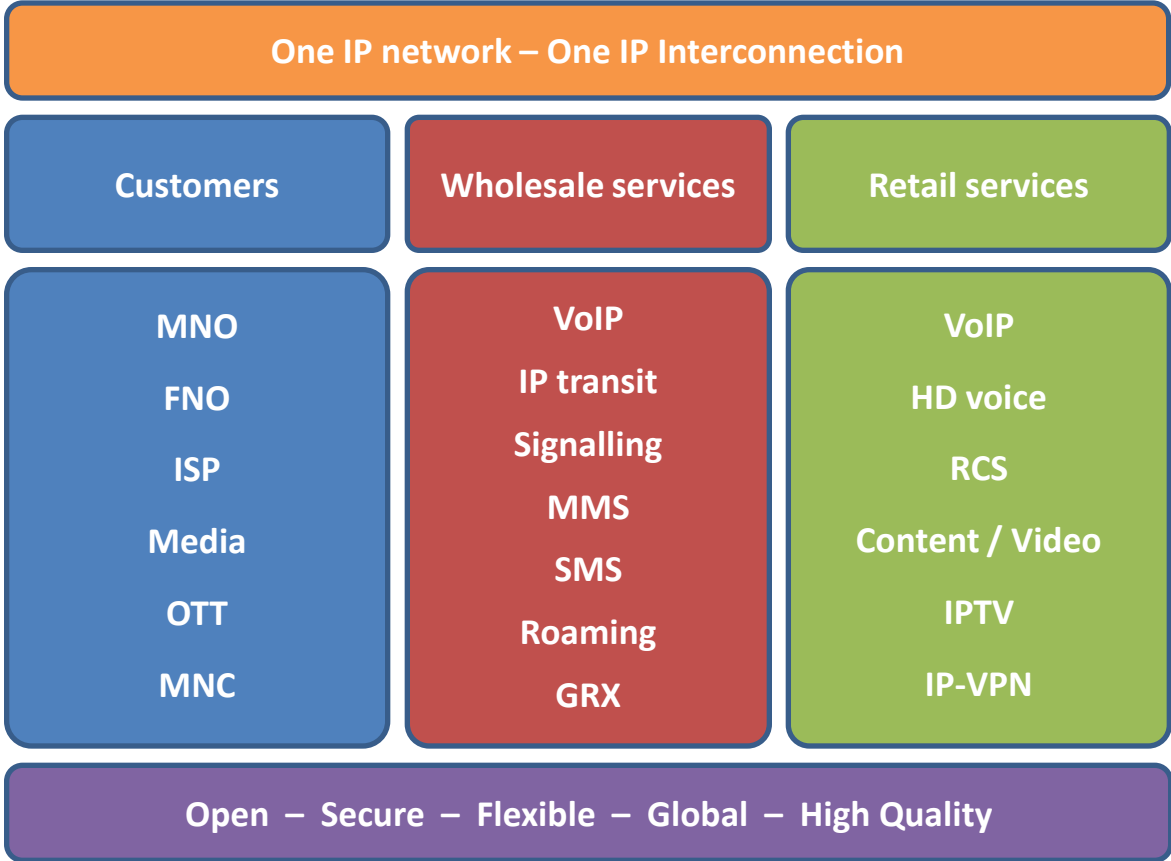
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IPX Definition: IP eXchange - A telecoms interconnection model for the exchange of IP based traffic (voice or data) between mobile and fixed operators, via an IP based Network-to-Network Interface (NNI).

IPX technical parameter/requirements: Defined by the GSMA

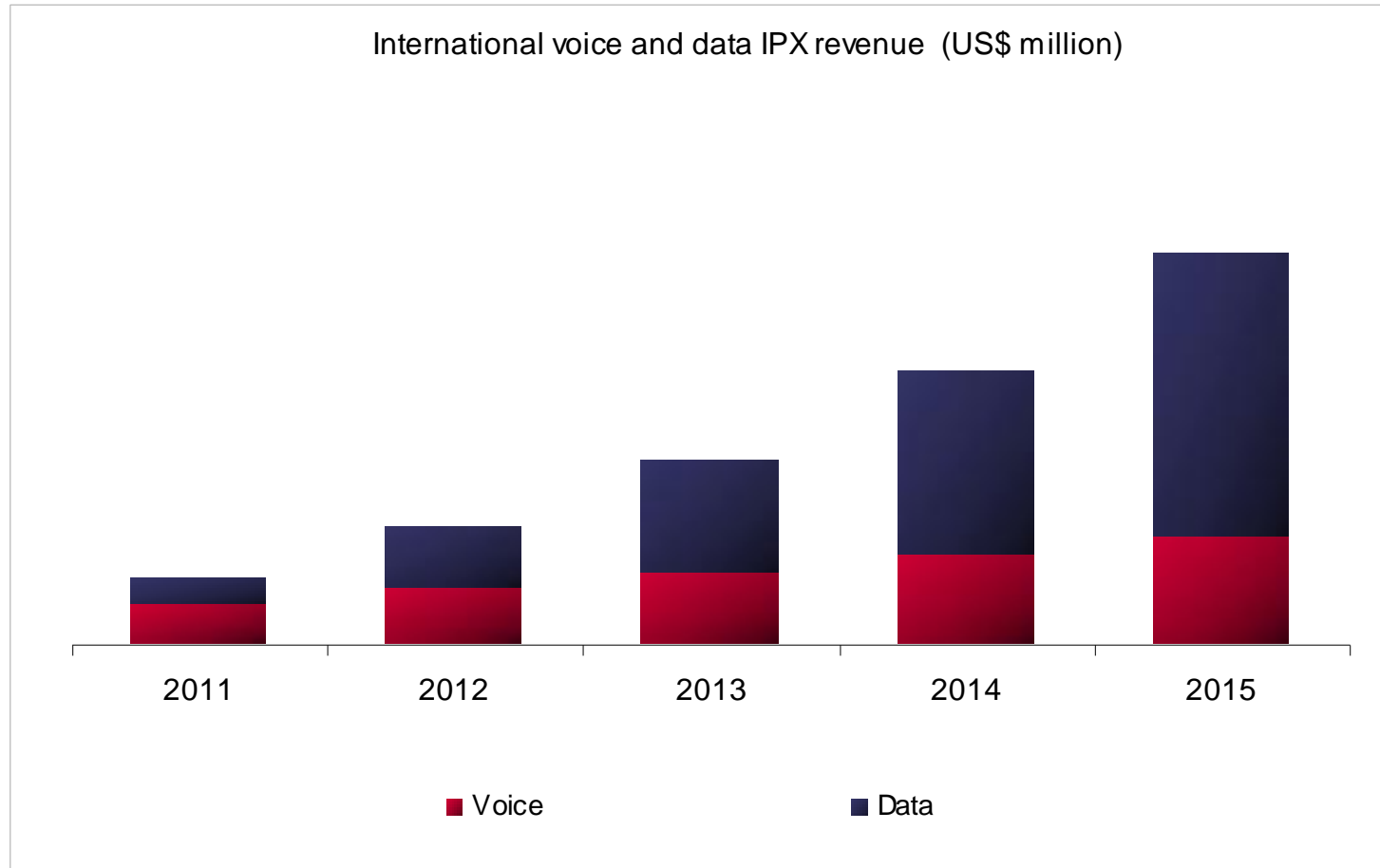
IPX technical and commercial interconnection models: Defined by the i3Forum



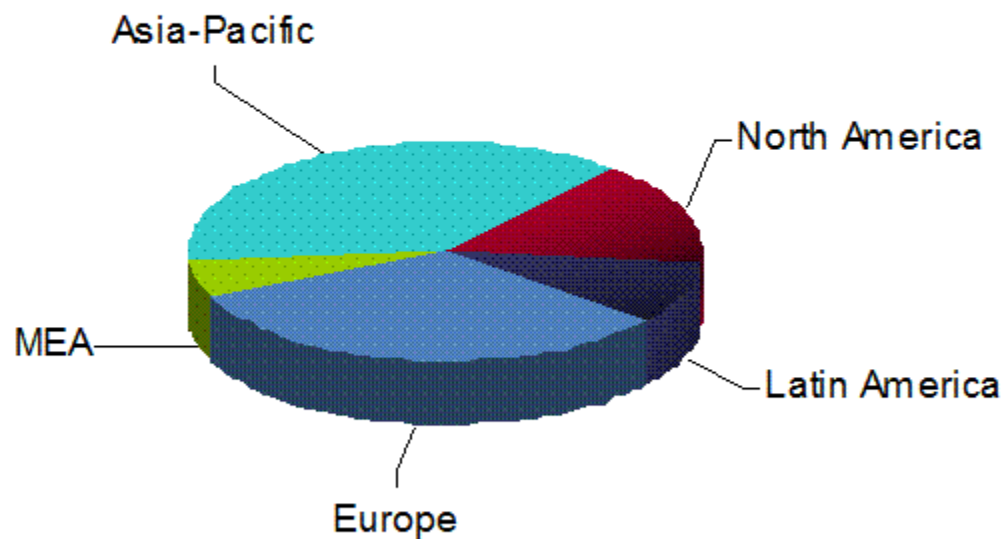


Drivers	Inhibitors
<ul style="list-style-type: none">▪ Wholesale operators looking to move beyond bit-pipe provision▪ Need to monetize VoIP services▪ Need of service providers to reduce capacity required to terminate calls and increase margins▪ Increased number of LTE network launches▪ GRX not suited to support LTE services▪ Need to expand reach of VoIP services▪ Network operators' need to compete with OTT players▪ Need for new LTE providers to expand service capability through roaming▪ Launch of VoIP on LTE	<ul style="list-style-type: none">▪ Poor understanding of what IPX-based services entail▪ Difficult and complex standardization of the IPX service▪ Potential cannibalization of switched revenue for fixed & mobile operators▪ IPX sold at a premium compared with IP transit, while most operators are looking to cut costs▪ Operators still looking to interconnect directly with their major traffic partners

<p>2010</p>	<p>Fixed customers drive early growth</p>	<ul style="list-style-type: none"> - National implementations - Bilateral interconnect between IPX providers starts
<p>2011</p>	<p>Mobile operators' usage grows for voice</p>	<ul style="list-style-type: none"> - Increasing international implementations - IPX providers partner to increase reach and service capability - Some wholesaling of white label IPX service capabilities
<p>2012-2013</p>	<p>Mobile operators' usage for data emerges</p>	<ul style="list-style-type: none"> - Mass market entry by int'l wholesale network providers - Leading players extend global reach through interconnection & partnering – but only with similar sized partners - Most national fixed incumbents have an IPX offer targeted at VoIP providers
<p>2014-2015</p>	<p>LTE drives growth</p>	<ul style="list-style-type: none"> - IPX interconnections start to follow GRX interconnect patterns: A few major IPX providers emerge. These are supported by a larger number of smaller regional players



Total International IPX revenue by region, 2015



- For more information you can contact me directly:
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- For more information on our IPX market revenue analysis please visit:
<http://www.hotelecom.com/ipx-revenue-analysis.html>

- Read our article on IPX and it opportunities at:
<http://www.hotelecoms.com/cp-article-january2012.htm>

- Short video on the IPX market on next slide >>