IPX - What is the opportunity?

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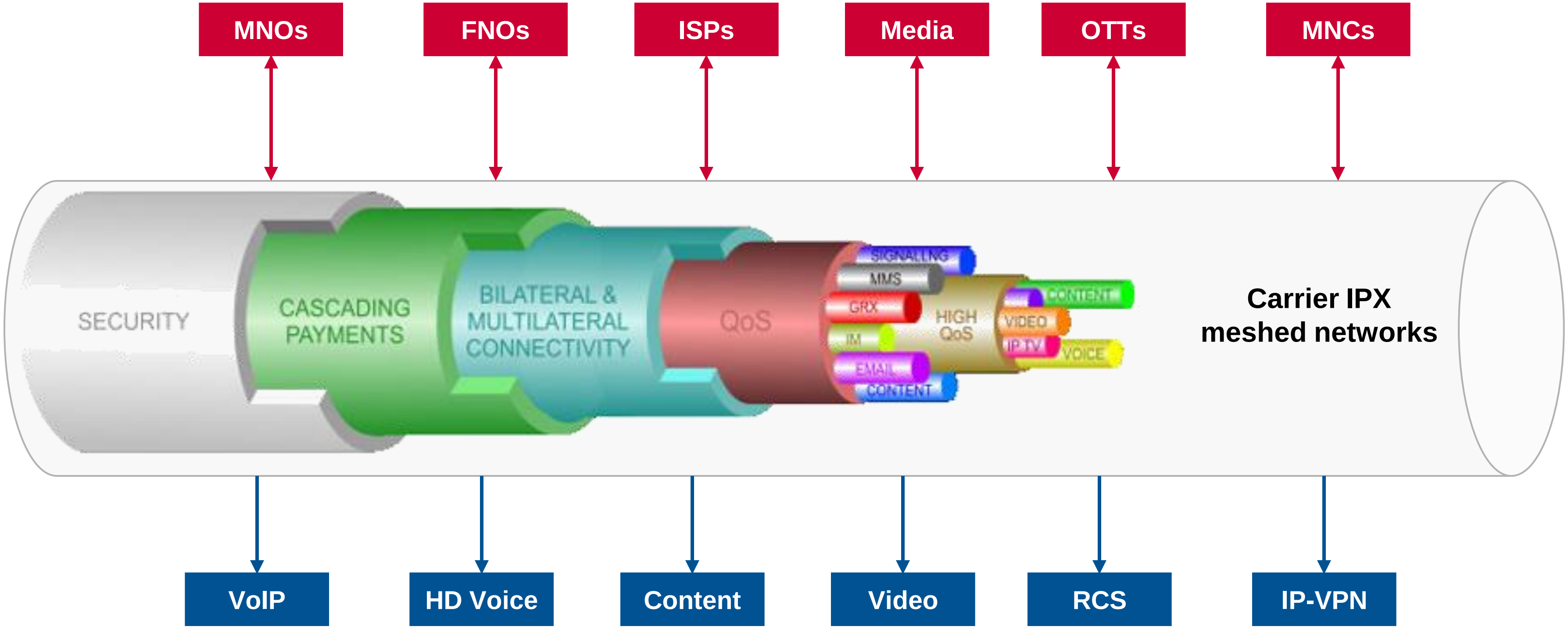
June 2012

IPX Service definition

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


MNOs
FNOs
ISPs
Media
OTTs
MNCs
SECURITY
CASCADING PAYMENTS
BILATERAL & MULTILATERAL CONNECTIVITY
QoS
SIGNALLING
MMS
GRX
IM
EMAIL
CONTENT
HIGH QoS
CONTENT
VIDEO
IPTV
VOICE
Carrier IPX meshed networks
VoIP
HD Voice
Content
Video
RCS
IP-VPN

IPX customers, services and characteristics

One IP network – One IP Interconnection

Customers	Wholesale services	Retail services
MNO	VoIP	VoIP
FNO	IP transit	HD voice
ISP	Signalling	RCS
Media	MMS	Content / Video
OTT	SMS	IPTV
MNC	Roaming	IP-VPN
	GRX	

Open – Secure – Flexible – Global – High Quality

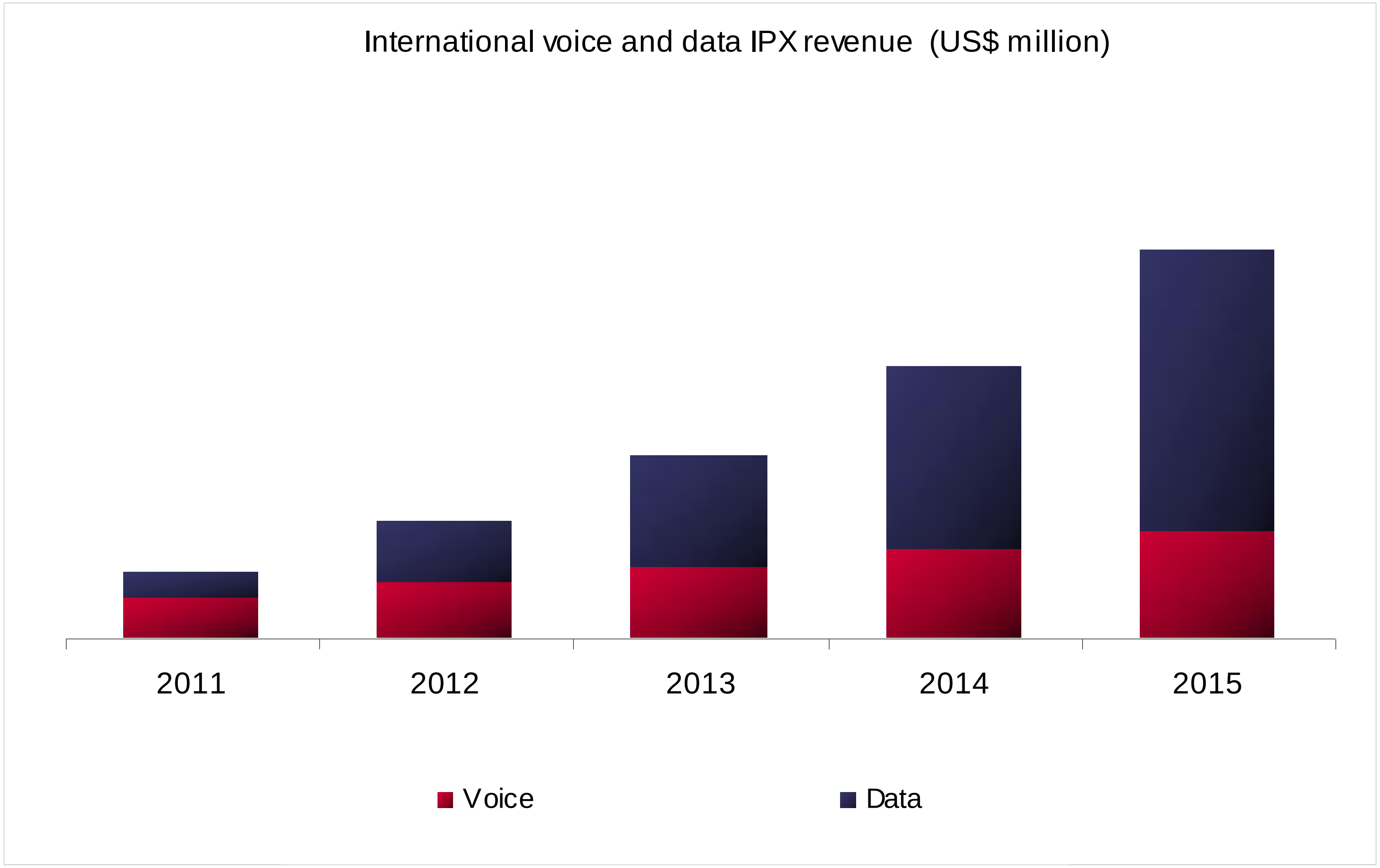
IPX Market drivers

Drivers	Inhibitors
▪ 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	▪ 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

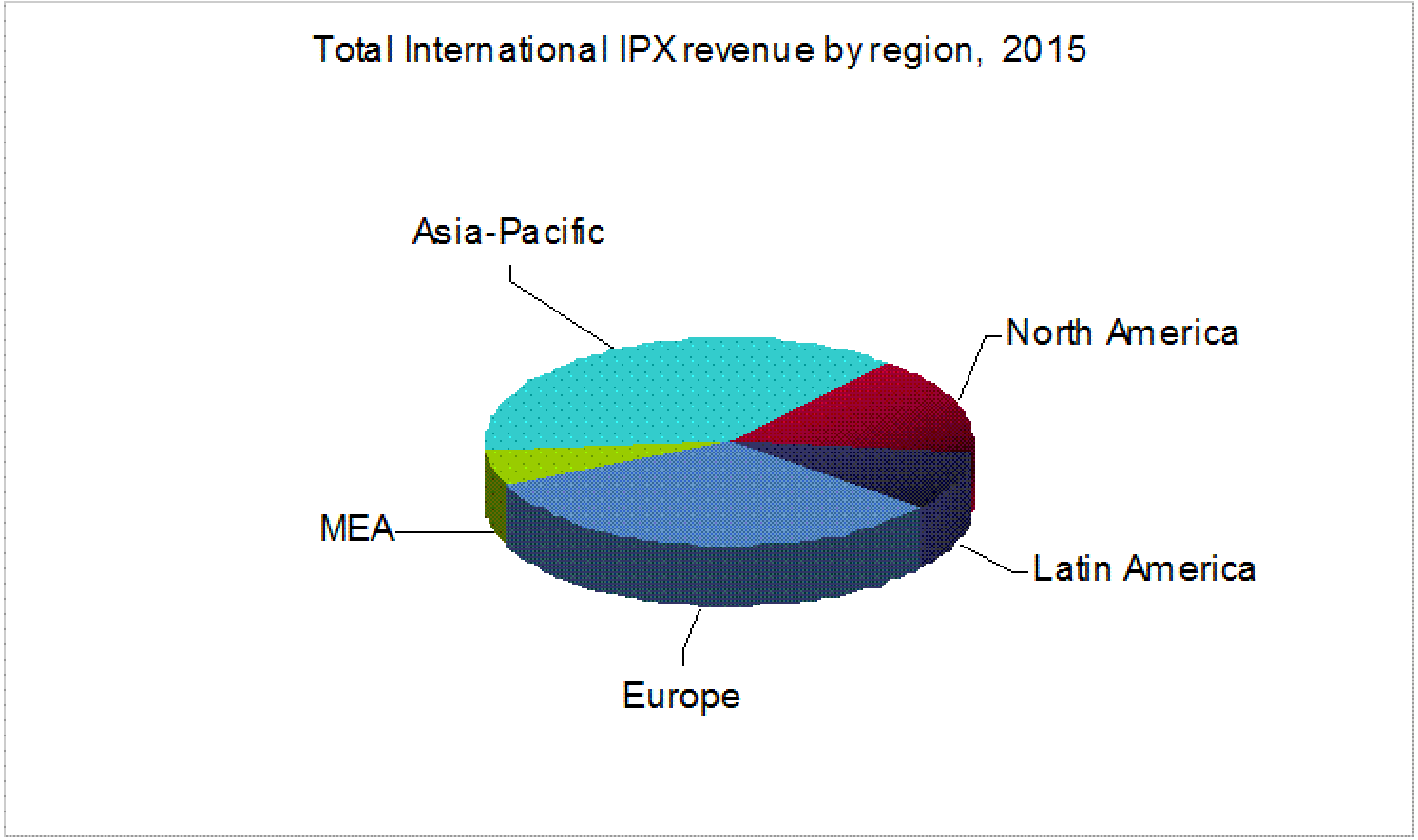
Expected IPX market evolution – Supply position

2010	**Fixed customers drive early growth**	- National implementations - Bilateral interconnect between IPX providers starts
2011	**Mobile operators' usage grows for voice**	- Increasing international implementations - IPX providers partner to increase reach and service capability - Some wholesaling of white label IPX service capabilities
2012-2013	**Mobile operators' usage for data emerges**	- 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
2014-2015	**LTE drives growth**	- 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 Int'l IPX revenue forecast, 2011-2015



Total Int'l IPX revenue forecast by region, 2015



More information

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- For more information on our IPX market revenue analysis please visit:

  http://www.hottelecom.com/ipx-revenue-analysis.html

- Read our article on IPX and it opportunities at:

  http://www.hottelecoms.com/cp-article-january2012.htm

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