Voice over Internet Protocol: Enemy or Ally?

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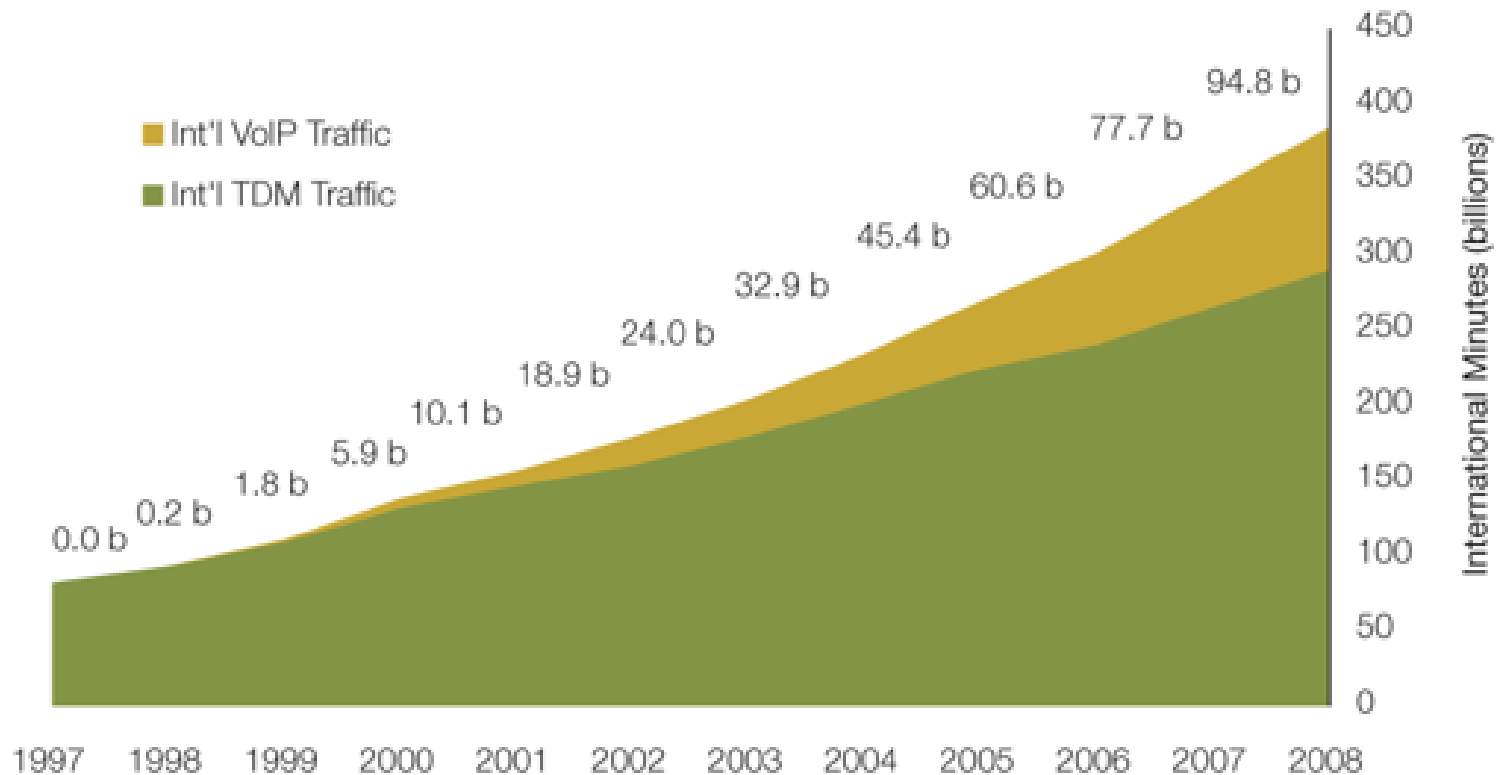CSD/SPM, ITU

Agenda

- VoIP is growing strongly
- In traffic…
- …And Subscribers…
- …And National Regulation.
- Regulatory Issues – in Summary!
- Defining VoIP
- (Tentative) Conclusions
- Measures to grow (VoIP) market

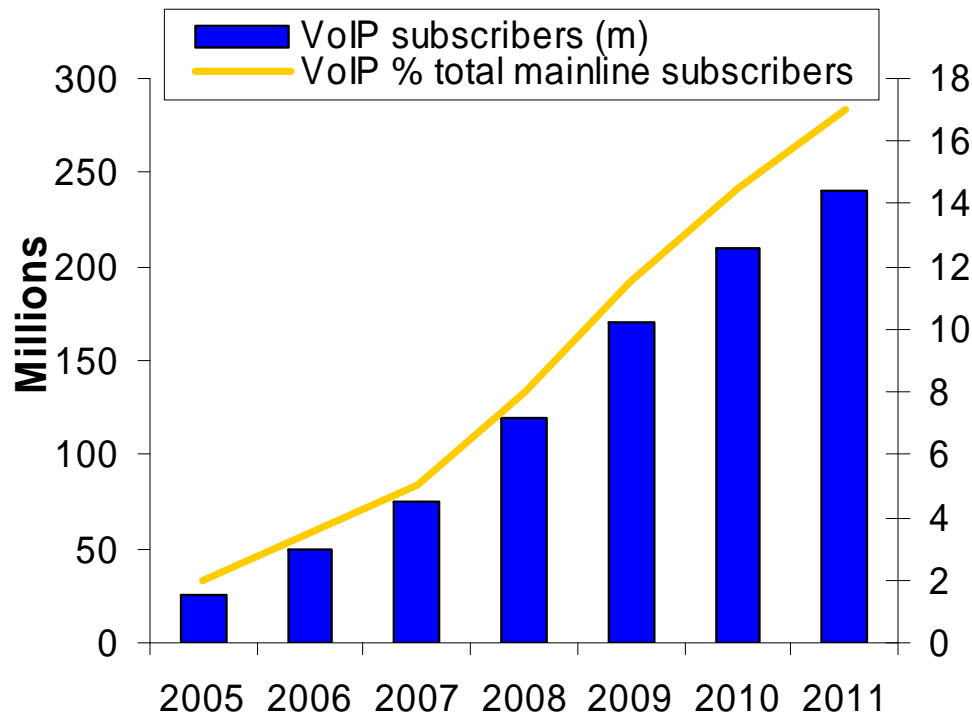# VoIP is growing strongly – Quarter of all int'l traffic in 2008

International and Time Division Multiplexing (TDM) Traffic, 1997-2008

Legend:
- Int'l VoIP Traffic
- Int'l TDM Traffic

Data labels (VoIP traffic by year): 0.0 b (1997), 0.2 b (1998), 1.8 b (1999), 5.9 b (2000), 10.1 b (2001), 18.9 b (2002), 24.0 b (2003), 32.9 b (2004), 45.4 b (2005), 60.6 b (2006), 77.7 b (2007), 94.8 b (2008)

Y-axis: International Minutes (billions), scale 0 to 450

X-axis: 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008

Source: Telegeography 2008.

....And in Subscribers....

VoIP Subscribers

Legend:
- VoIP subscribers (m)
- VoIP % total mainline subscribers

Y-axis (left): Millions — 0, 50, 100, 150, 200, 250, 300
Y-axis (right): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18
X-axis: 2005, 2006, 2007, 2008, 2009, 2010, 2011

Regional distribution of VoIP Subscribers, Q1 2009

- Asia-Pacific 26%
- E.Europe 1%
- Latin America 3%
- N.America 27%
- SE Asia 5%
- W.Europe 38%
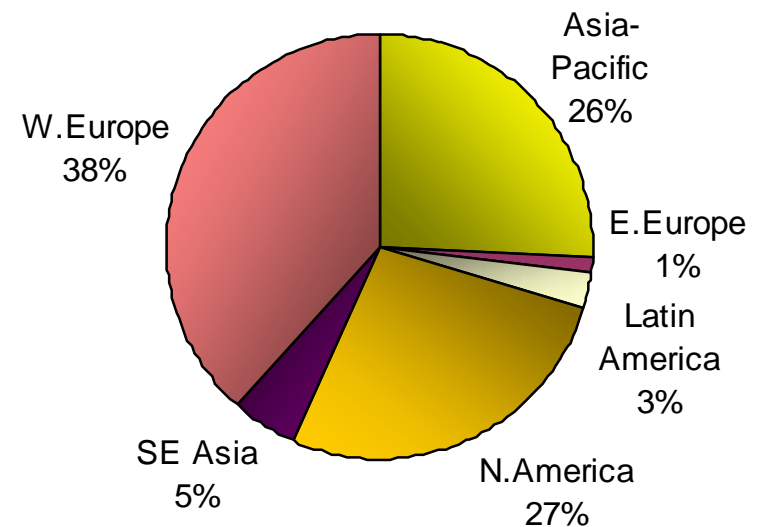
Sources: iDATE (left), Point Topic (right graph).

...And National Regulation

Worldwide regulation of VoIP, 2004-2009

Legend: ■ Banned ■ Closed ☐ No framework ■ Allowed

Year	Banned	Closed	No framework	Allowed
2004	80	8	57	46
2005	71	10	51	59
2006	64	12	46	69
2007	58	12	42	79
2008	53	11	39	88
2009	49	11	39	92
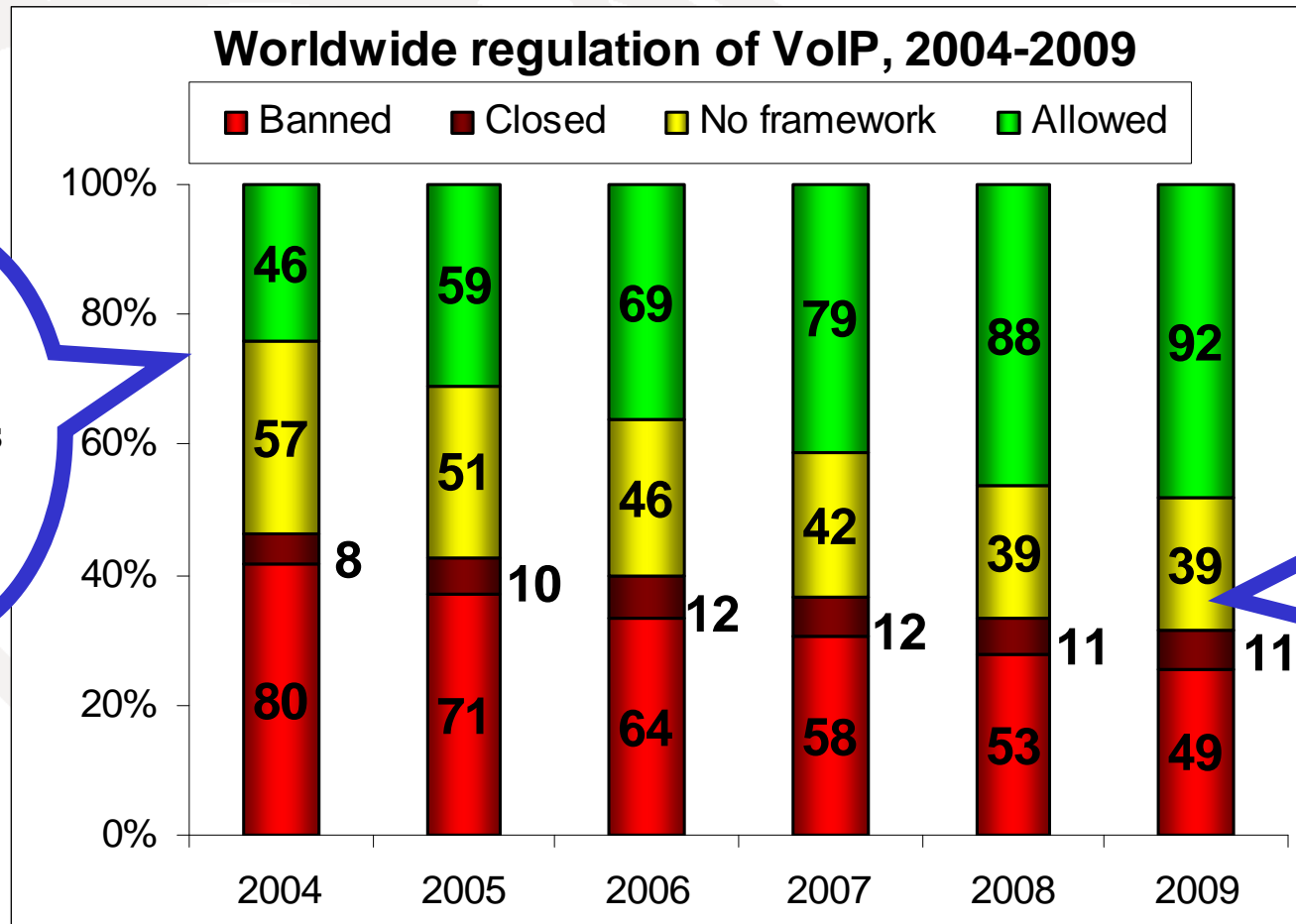
2004 - Half all countries allowed VoIP

2009 – Two-thirds permit VoIP

Source: ITU.

Americas (North & South)

Americas, 2004-2009

Legend: ■ Banned ■ Closed ■ No framework ■ Allowed

Year	Banned	Closed	No framework	Allowed
2004	8	1	21	5
2005	8	1	21	5
2006	7	2	18	8
2007	6	2	17	10
2008	6	2	17	10
2009	5	2	17	11

Source: ITU.

Europe & CIS

Europe & CIS, 2004-2009

Legend: ■ Banned ■ Closed ■ No framework ■ Allowed

Category	2004	2005	2006	2007	2008	2009
Allowed	27	29	34	37	40	40
No framework	17	15	12	10	8	8
Closed	1	2	3	2	1	1
Banned	5	4				
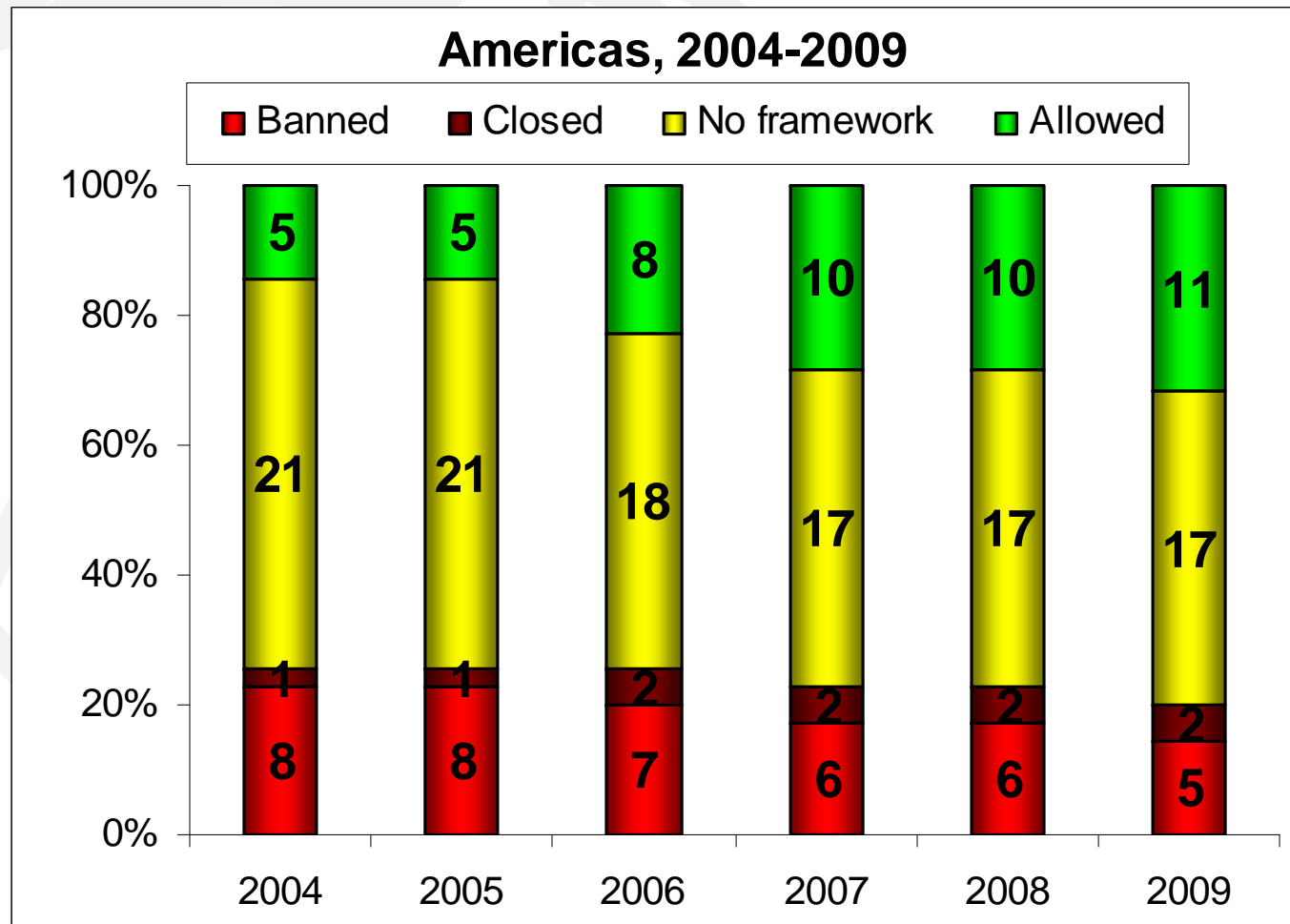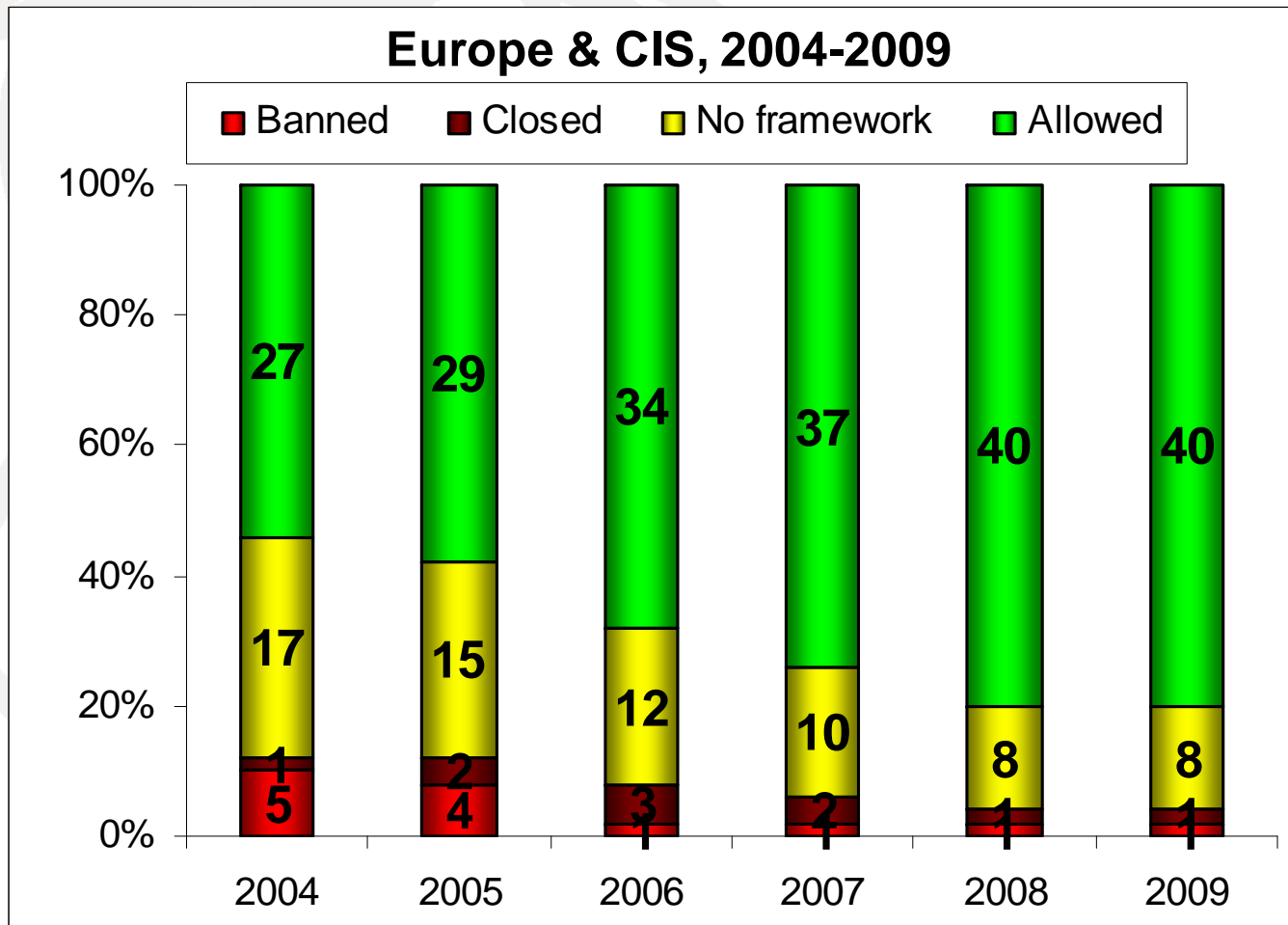
Source: ITU.

Sub-Saharan Africa

Sub-Saharan Africa, 2004-2009

■ Banned ■ Closed □ No framework ■ Allowed

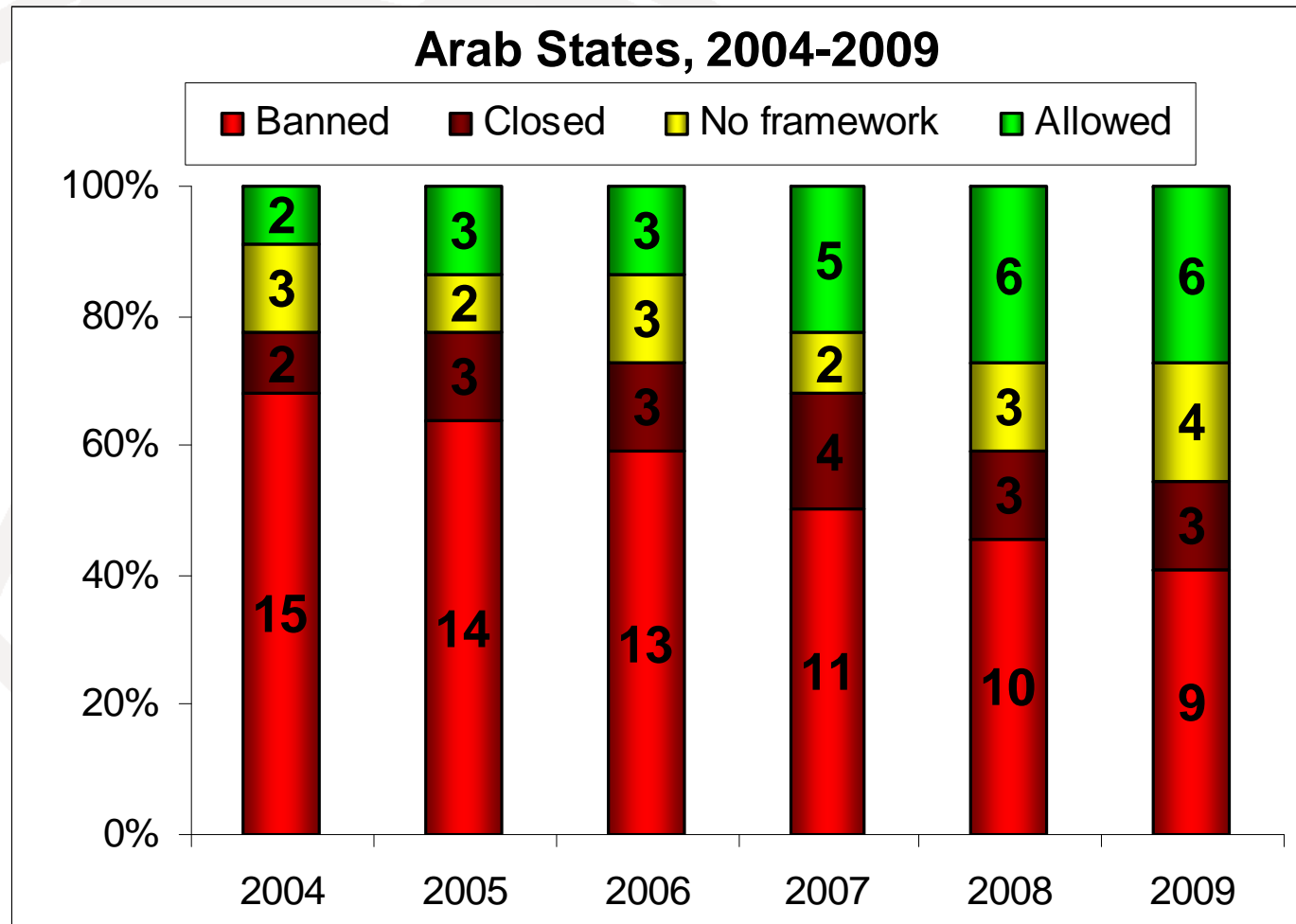| Year	Banned	Closed	No framework	Allowed
2004	35	0	5	2
2005	29	1	5	7
2006	29	1	4	8
2007	29	1	4	8
2008	26	1	4	11
2009	24	1	4	13
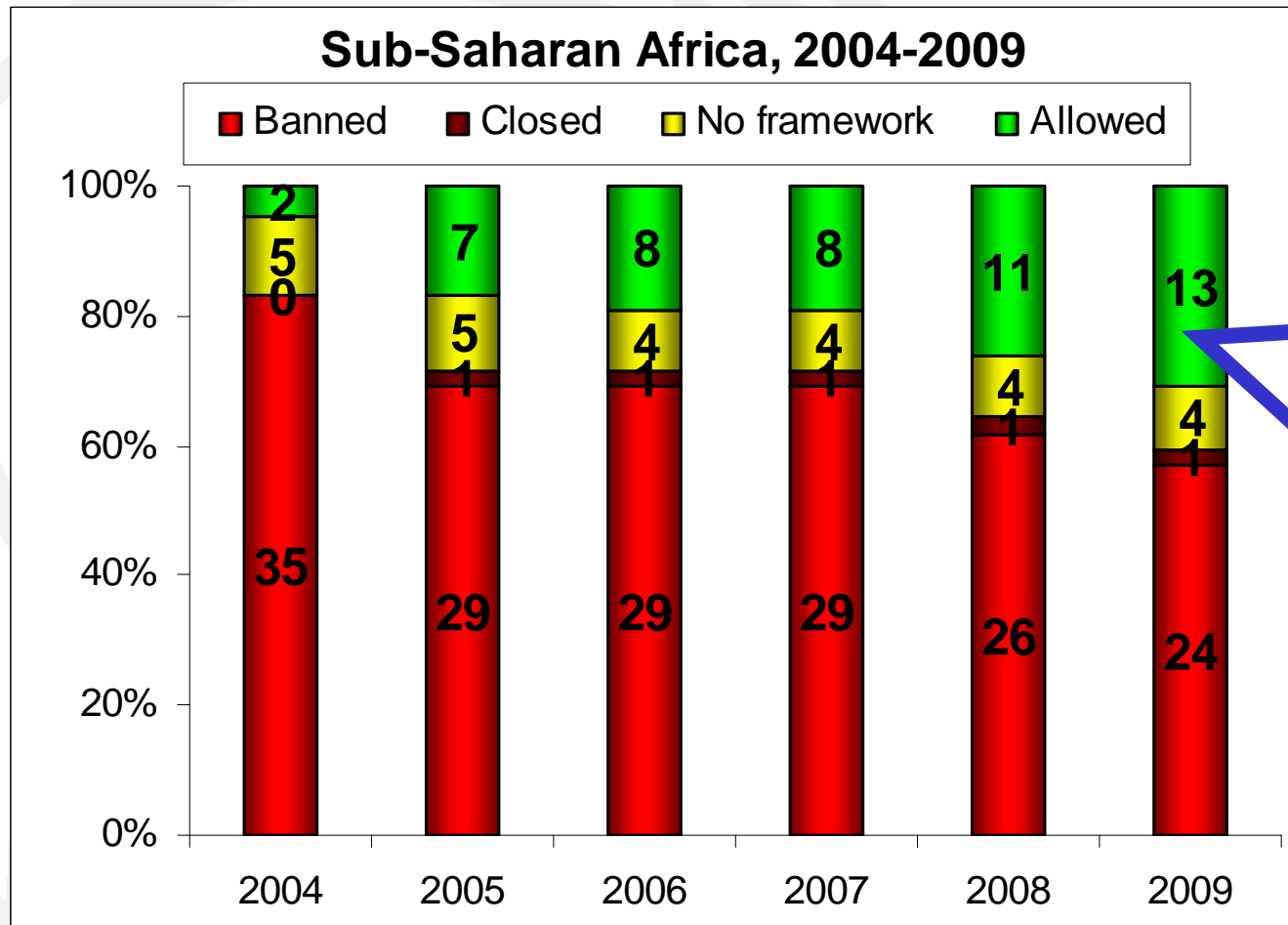
2009 –13 countries explicitly permit retail VoIP – but nearly 20 countries using IP-based transmission for international traffic
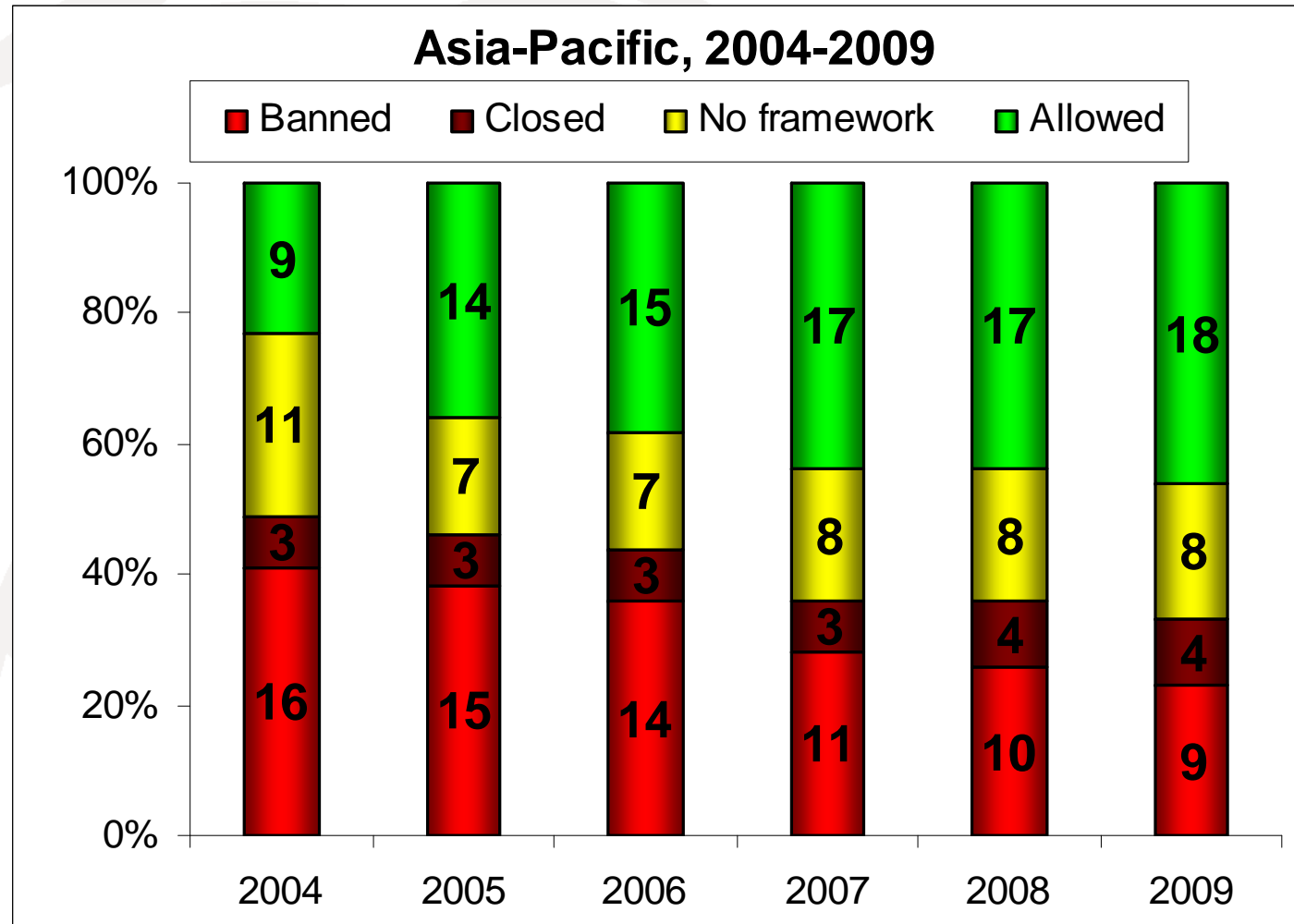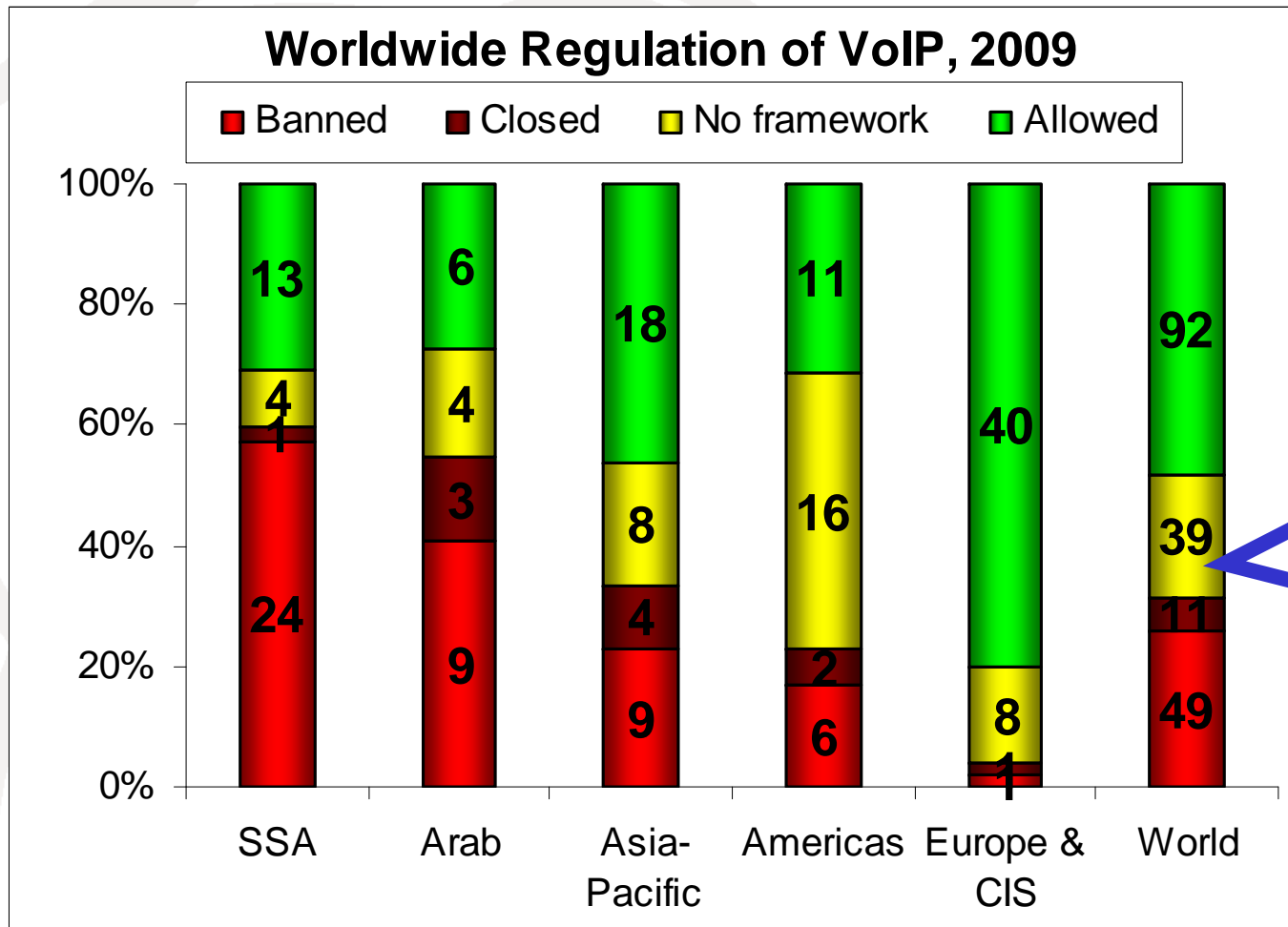
Source: ITU.

Arab States

Arab States, 2004-2009

Source: ITU.

Asia-Pacific

Asia-Pacific, 2004-2009

Legend: ■ Banned ■ Closed □ No framework ■ Allowed

Year	Banned	Closed	No framework	Allowed
2004	16	3	11	9
2005	15	3	7	14
2006	14	3	7	15
2007	11	3	8	17
2008	10	4	8	17
2009	9	4	8	18

Source: ITU.

Regional Picture in 2009

Worldwide Regulation of VoIP, 2009

Legend: ■ Banned ■ Closed □ No framework ■ Allowed

Region	Banned	Closed	No framework	Allowed
SSA	24	1	4	13
Arab	9	3	4	6
Asia-Pacific	9	4	8	18
Americas	6	2	16	11
Europe & CIS	1		8	40
World	49	11	39	92

2009 – Two-thirds permit VoIP

Source: ITU.

Regulatory Issues

- Defining VoIP – often a challenge
- 'Pure' QoS: wireless VoIP & VoWiMAX
- Network Management & "Net Neutrality" – QoS & blocking
- Universal Service – 43% VoIP states
- Numbering & number portability
- Access to Emergency Services – 47%
- Security is a growing issue.

Defining VoIP

Definition	Selected countries
Functionality	Japan, Hong Kong (China)
Numbering	Japan, Taiwan (China)
Vo-Broadband	Austria, France, Netherlands
Degree over PSTN	Bahrain, Barbados, Brazil, Chile, Israel, Jordan, Kenya, Norway UK
Service	Barbados, Bolivia, Czech Rep. Egypt, Indonesia, Jordan, US
Nomadic	Iceland, Italy, Portugal, Spain
Users	Chile, Ghana, Tunisia

Outlook & Conclusions (1)

- Developing countries and SIDS still struggling with convergence & VoIP regulation –difficult & raises big issues;

- So is Europe! Diversity in regulatory approach, despite efforts by EU & ERG.

- Market structure and incumbent's revenue structure have a big impact on willingness to embrace (retail) VoIP - as do political realities.

- Wholesale VoIP widely adopted.

Outlook & Conclusions (2)

- The overall market direction is clear.
- Smaller slice of growing comm. market? Bahraini players thought so!
- Opening up VoIP could help industry, market liberalization & new services.
- Regulators (largely) know this – question of time & making the transition
- Better to move fwd & work with industry to embrace future
- Cheaper voice service = digital inclusion

Measures to Grow (VoIP) market

- National BB policy and backbone
- Promote competition & market entry
- Technological neutrality
- Liberalize international gateways
- Promote unbundling & infrast-sharing
- Number portability incl. VoIP providers
- Simplify licensing procedures & rules
- Regular monitoring and consultation with the industry

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