

Attacks Against the Cloud: Combating Denial-of-Service

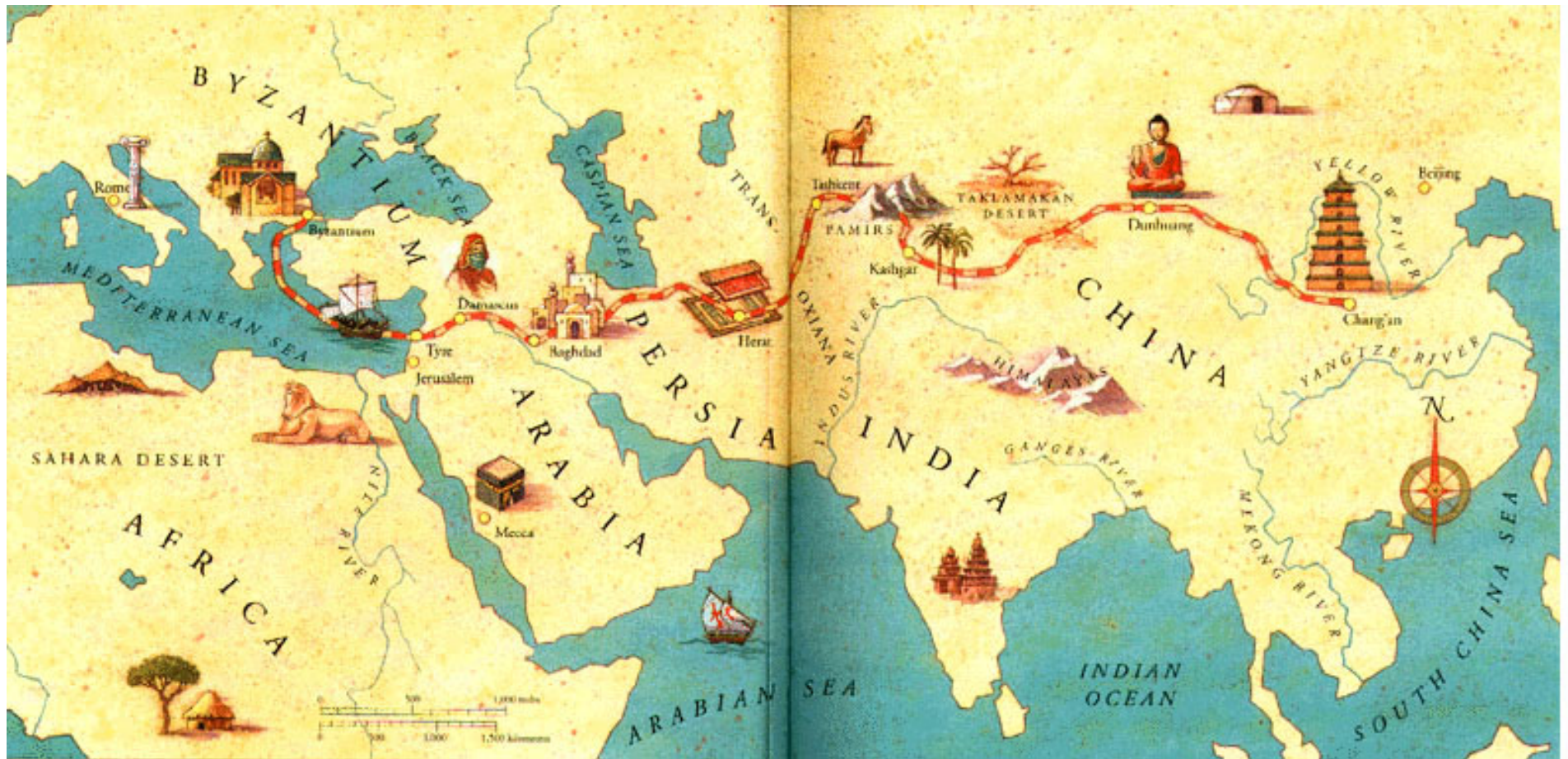


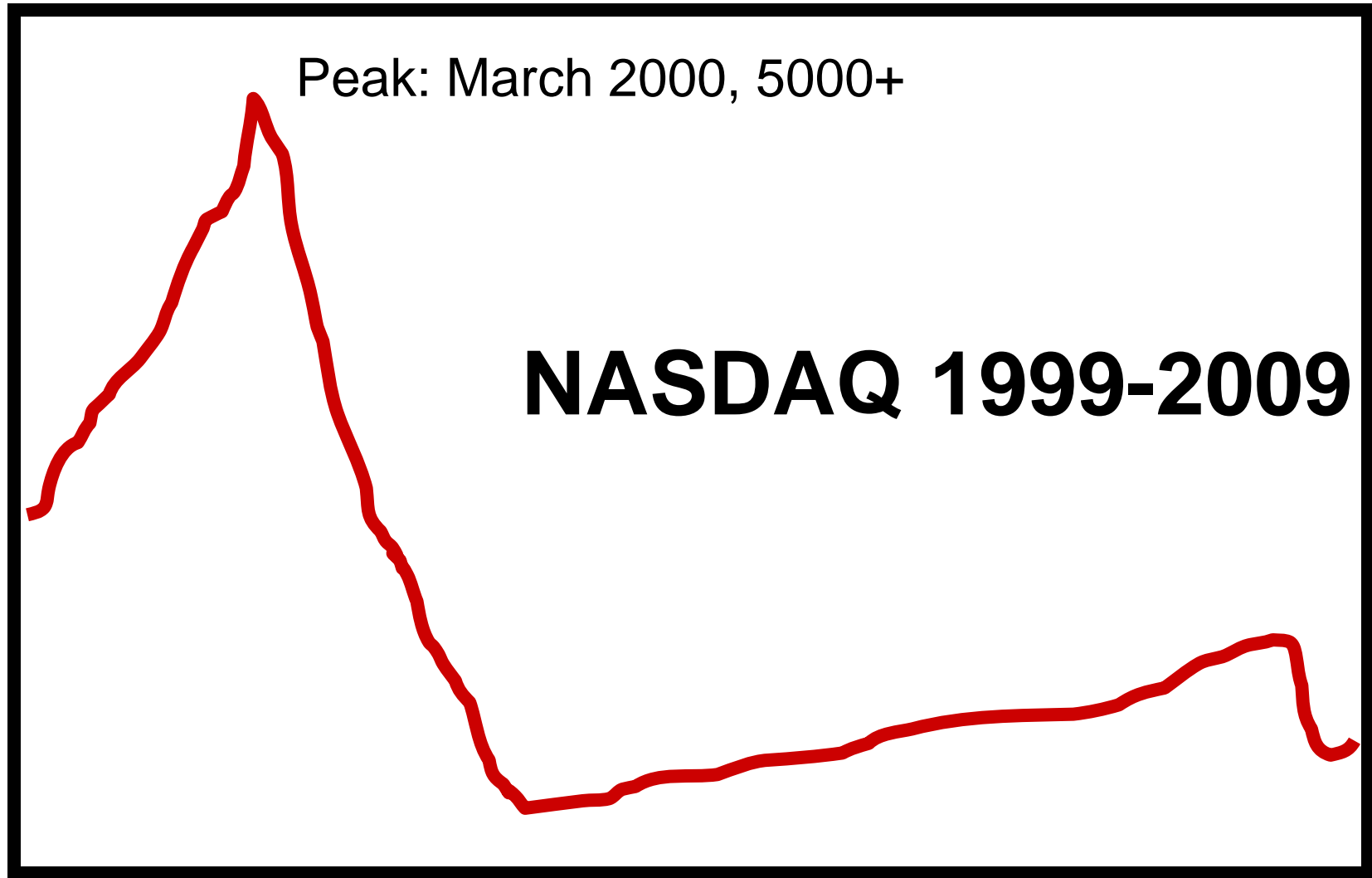
R. Malan, Ph.D.

Presented by: Jose Nazario,
Ph.D.

FIRST 2009

Kyoto Japan



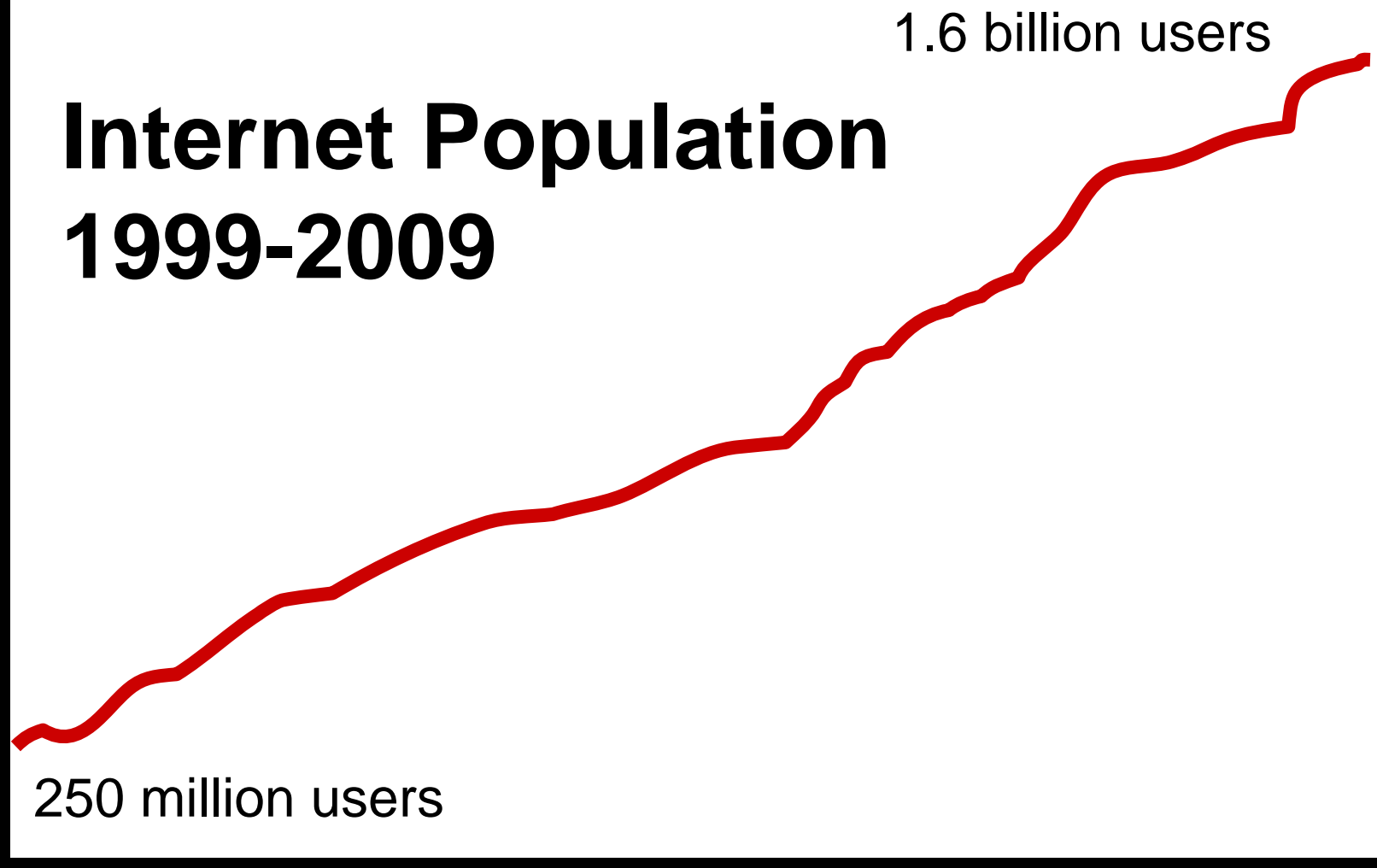


1999

2009

ARBOR[®]
NETWORKS

Internet Population 1999-2009



1999

2009

ARBOR[®]
NETWORKS



Video



Voice



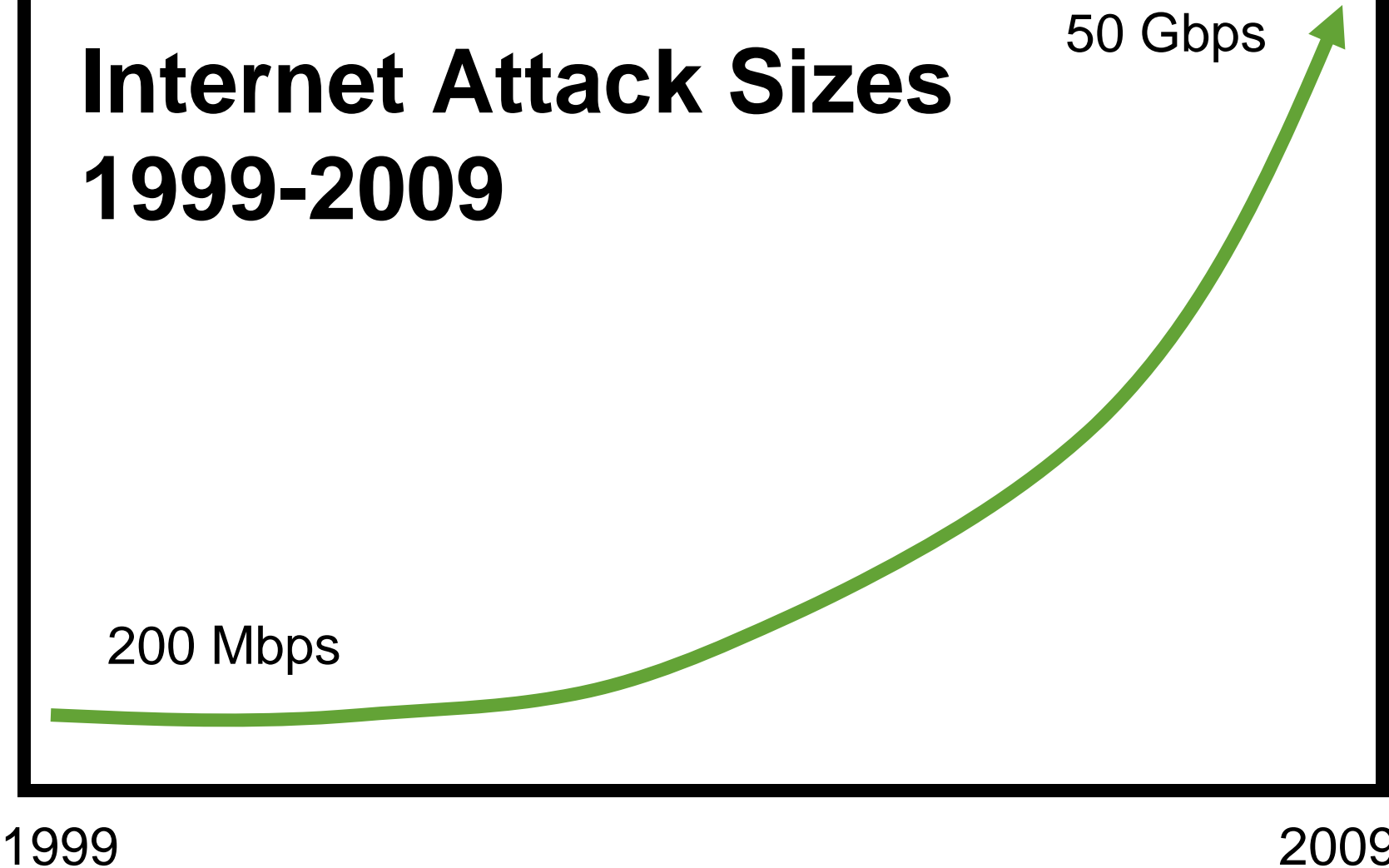
Social Media

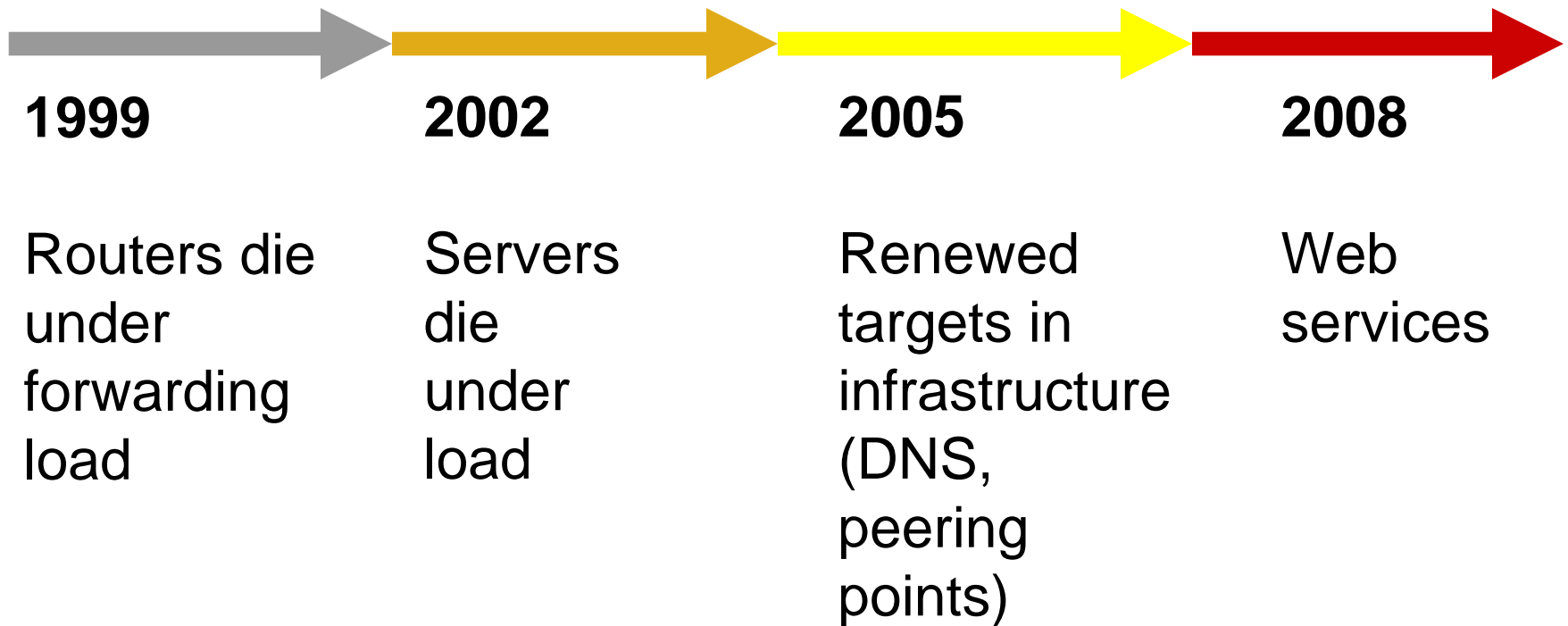
Cloud

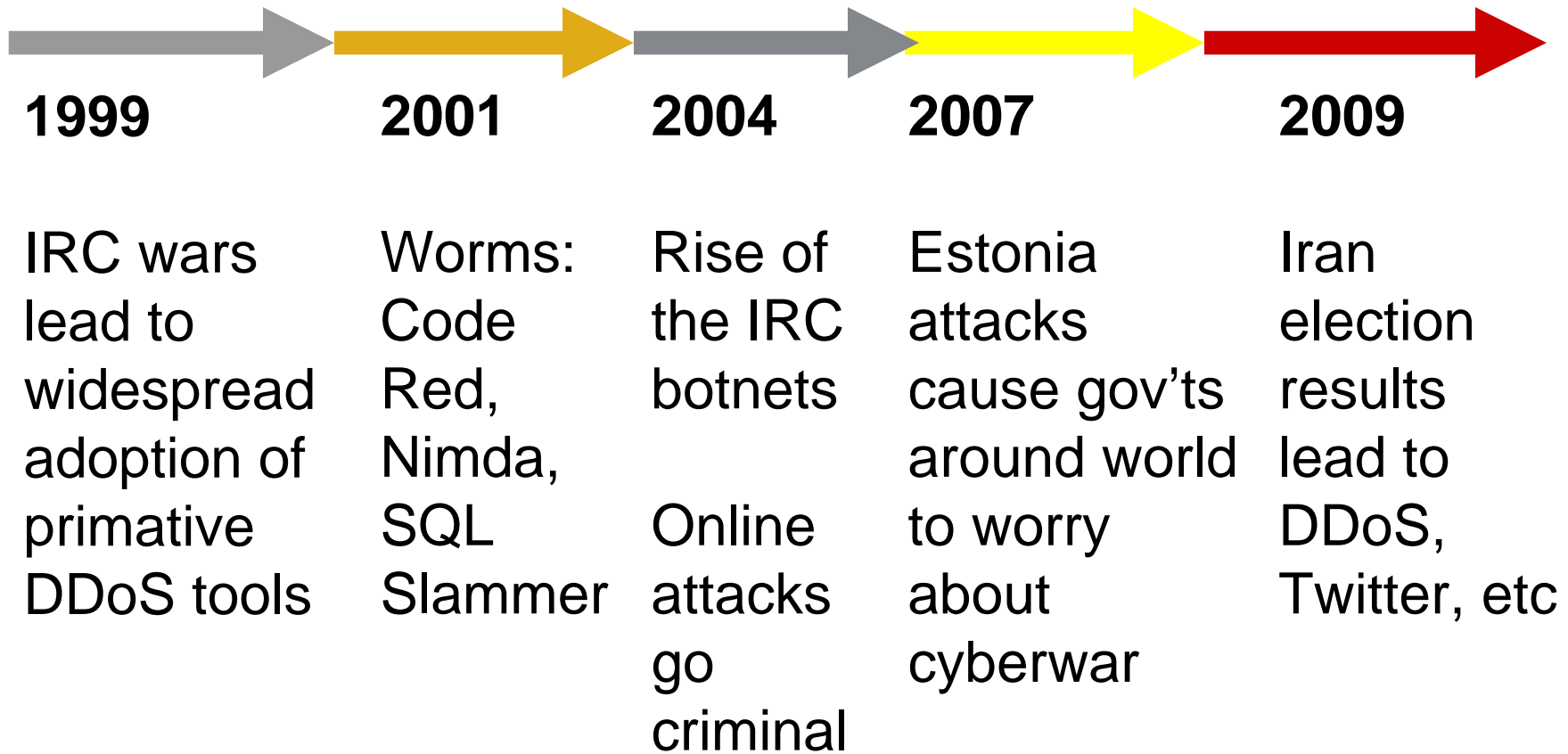
Mobile



Internet Attack Sizes 1999-2009









2001

Providers start to protect their own infrastructure

Blackhole routing

2003

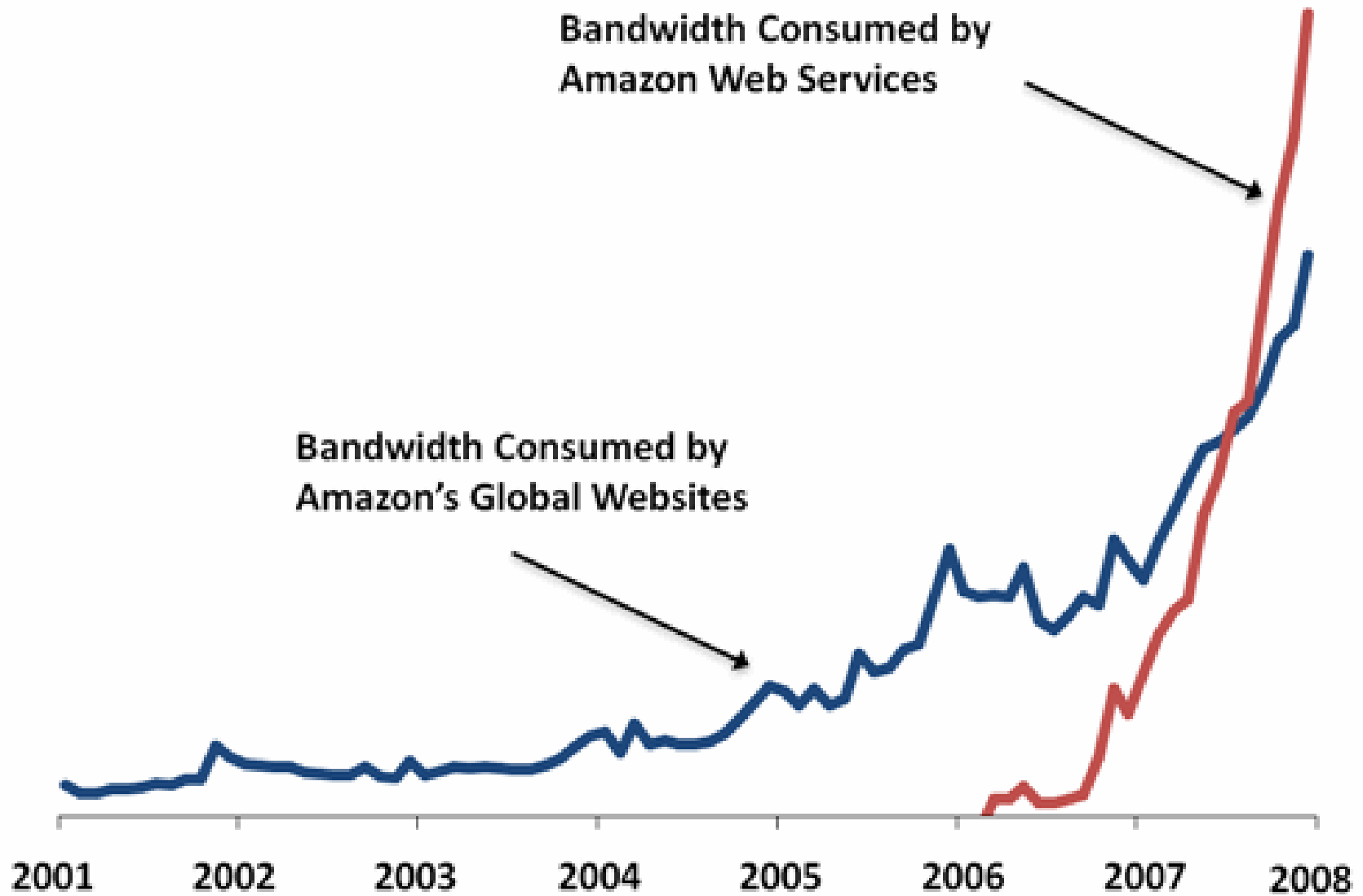
Providers start to offer DoS protection as a service

BGP injections

2007

Protecting key converged services (VoIP, IPTV)

Multi-GBbps inline filtering deployed



Thank you

どうもありがとうございます