

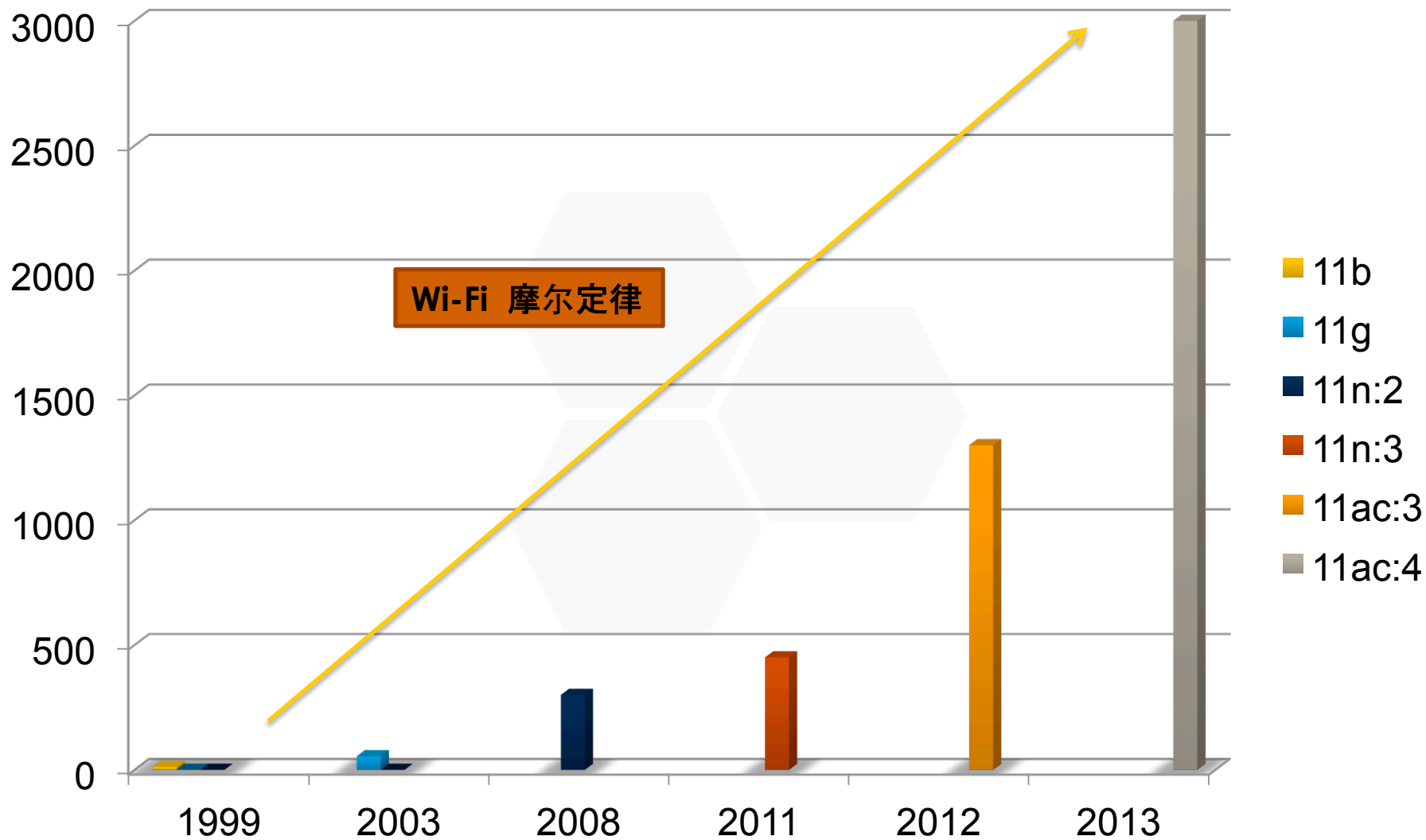


千兆无线网(11AC)来临 - 现行无线网络何去何从

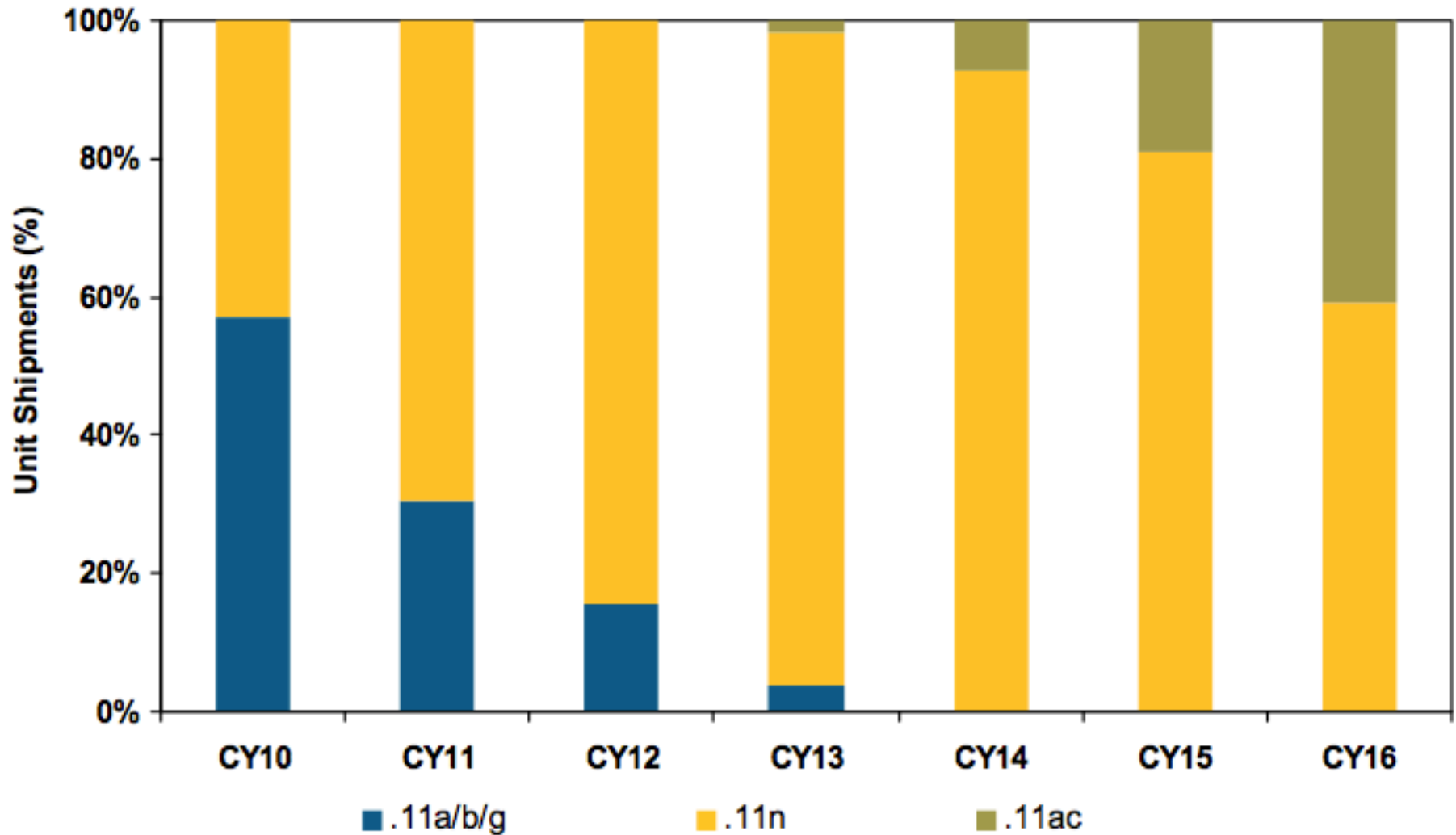
刘长明

AEROHIVE(艾诺威)创始人及首席技术官

9/12/2012

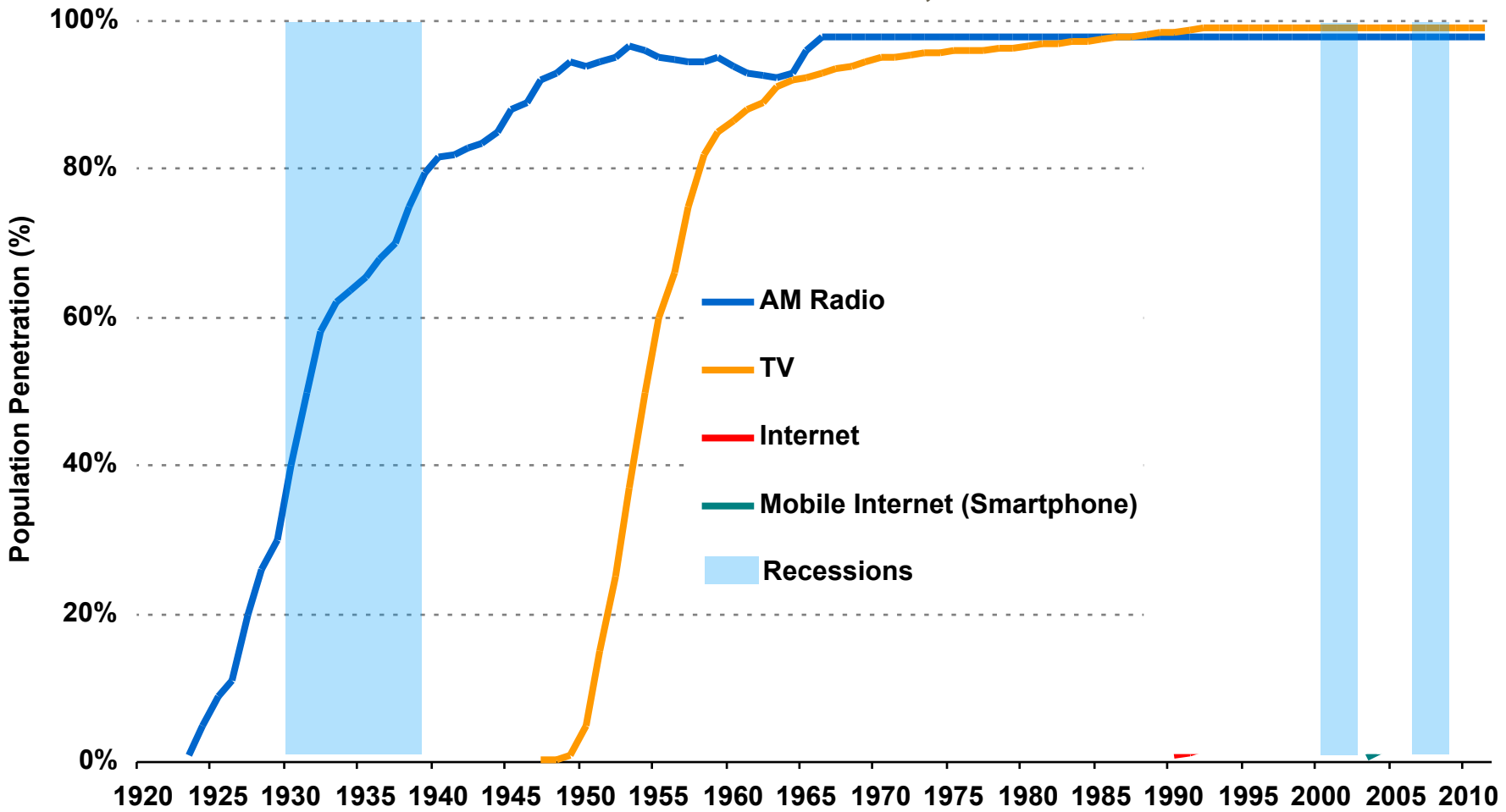


11ac又一次重演11n的历史



通讯技术的4大突破 – 惊人的相似之处

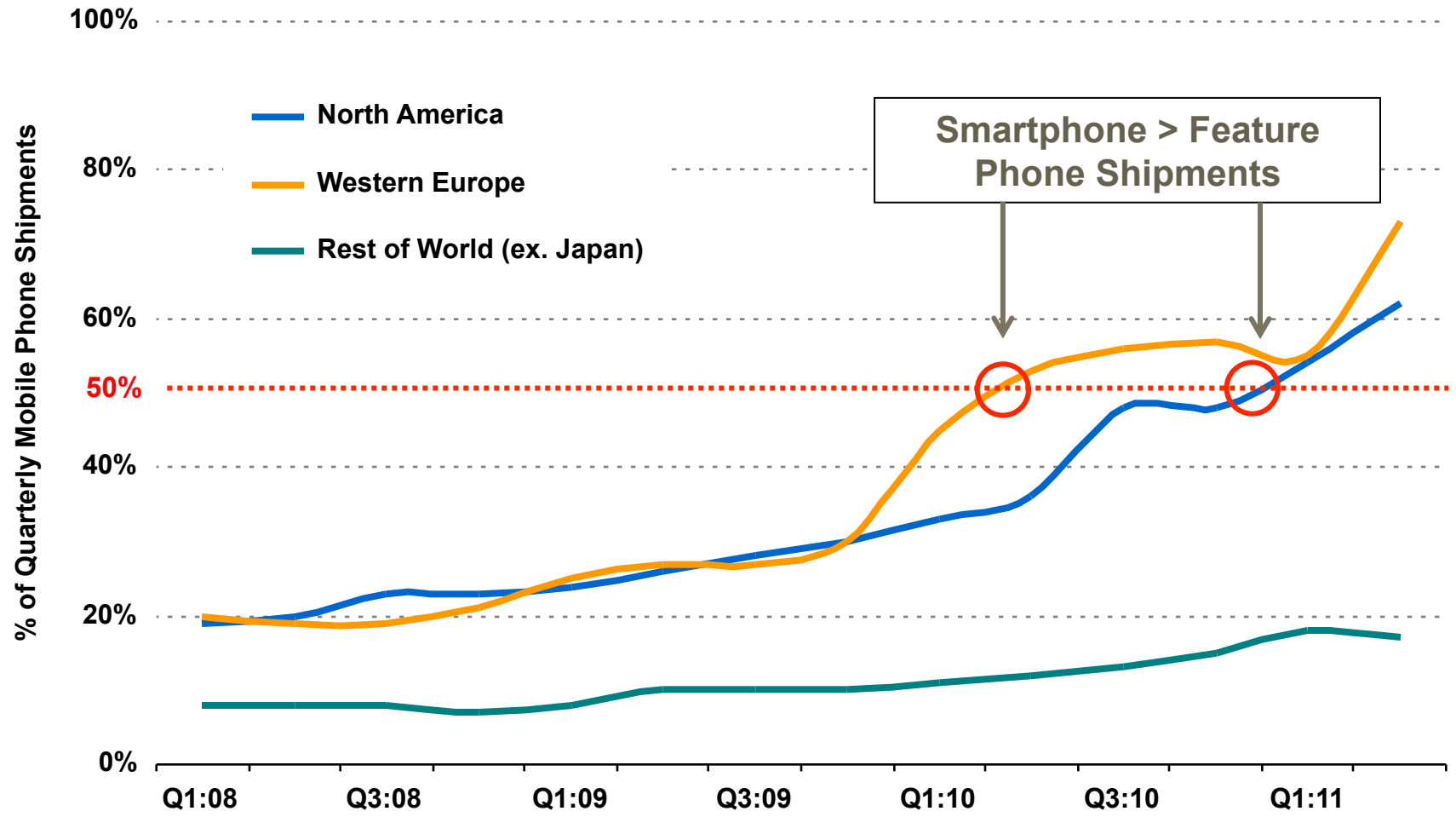
通讯技术在美国的普及(占总人口比例)
收音机, 电视, 互联网, 移动互联网, 1920 – 2011



智能手机在日 / 欧 / 美销量早以超越普通手机



智能手机在所有手机销售中的比例 Q1:08 – Q2:11

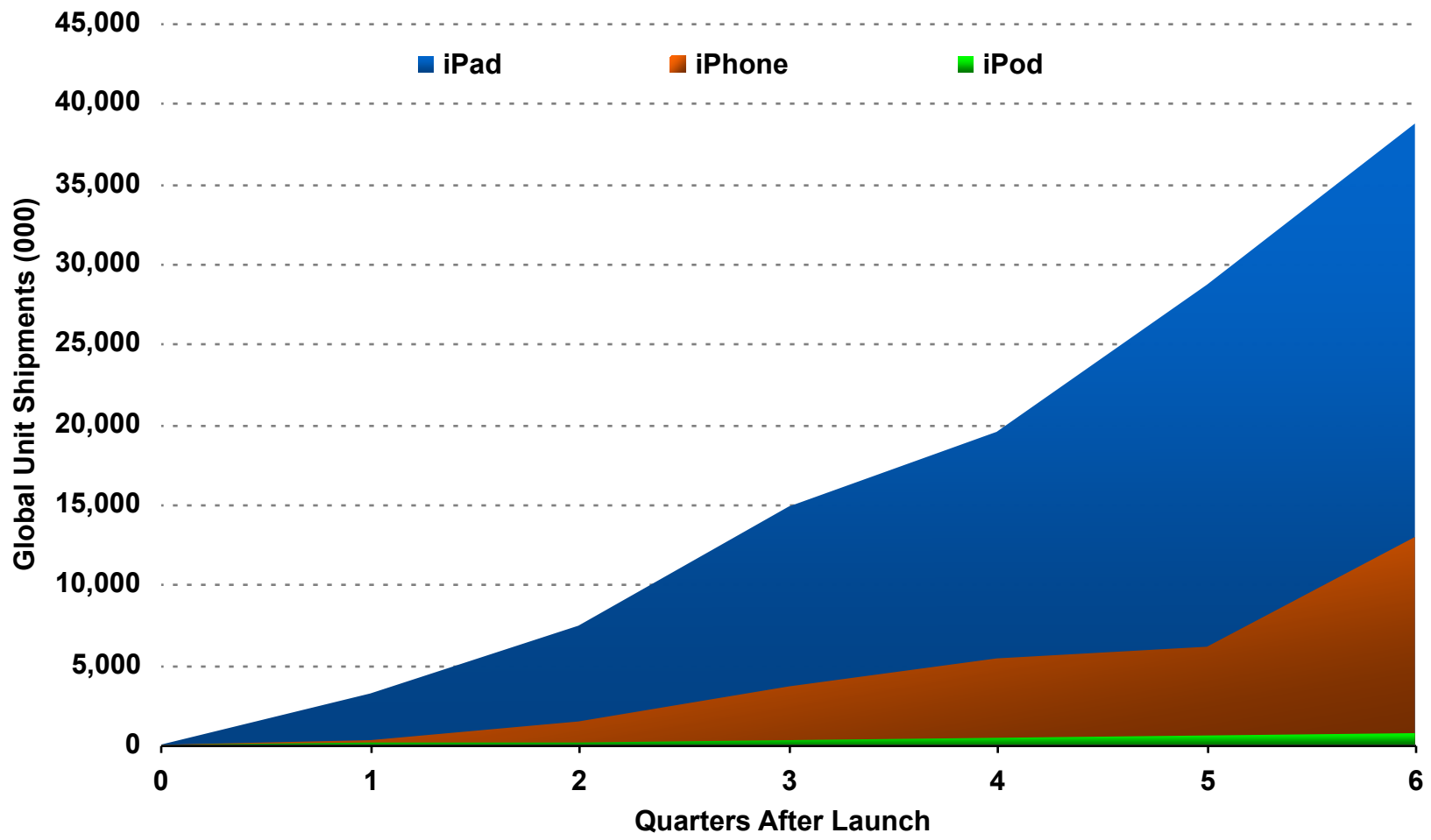


Note: In Japan, smartphone exceeded feature phone in Q4:08.

平板电脑 (iPAD) 更来势汹汹



最开始6个季度的累计销售数量 iPod vs. iPhone vs. iPad

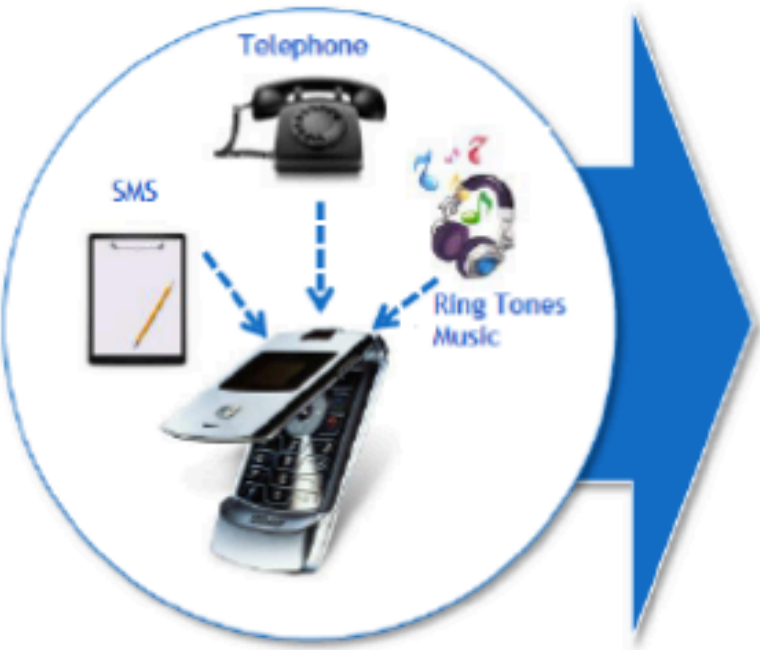


Source: Apple, as of Q2:11 (6 quarters post iPad launch).

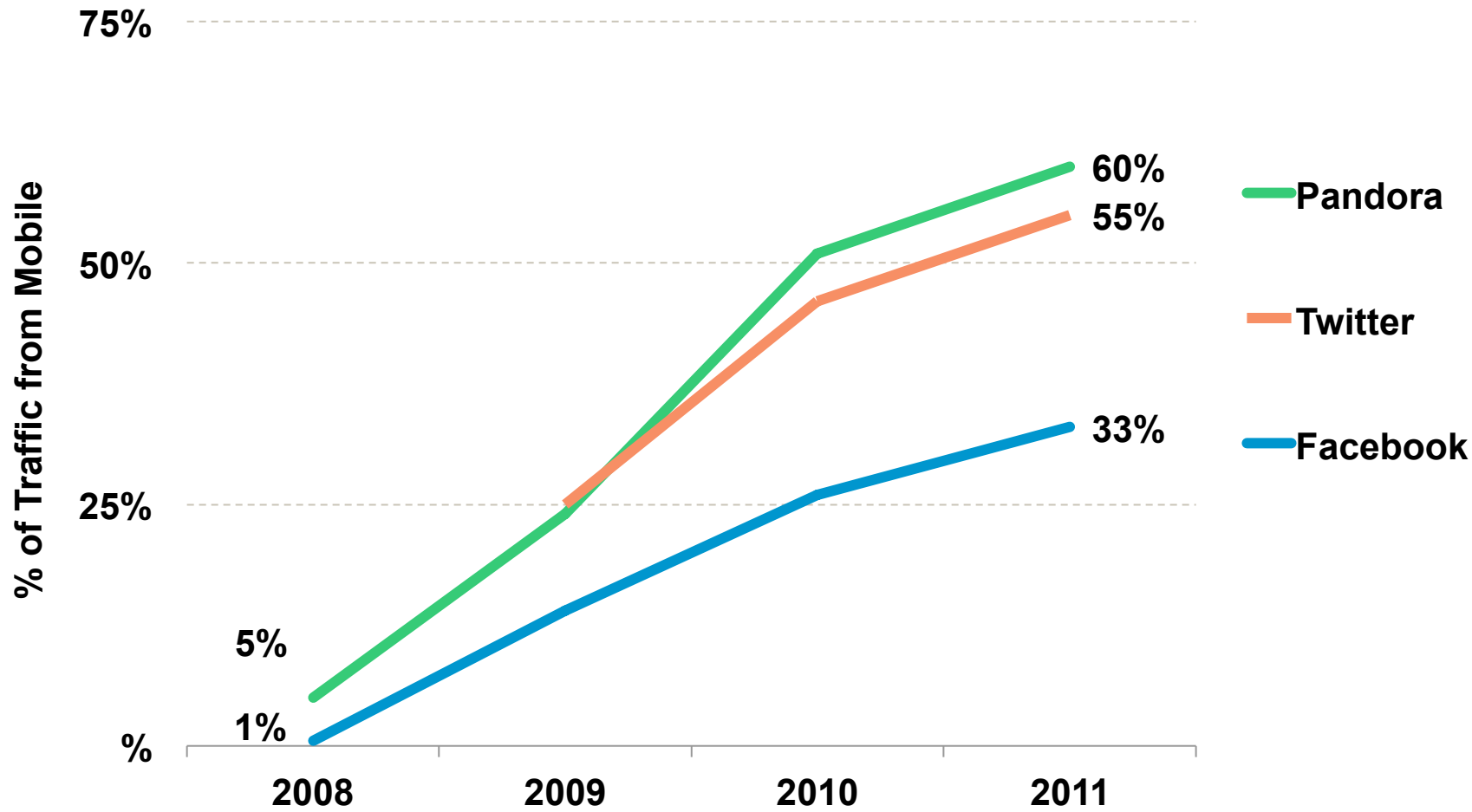
2012新款尖端手提电脑缺什么？



移动应用大爆炸



移动数据量的百分比, Pandora, Twitter & Facebook, 2008 – 2011



Region	Quarterly Revenue (US\$ Millions)			% Change	
	1Q11	4Q11	1Q12	QoQ	YoY
North America	\$334	\$431	\$415	-4%	24%
EMEA	\$203	\$255	\$244	-4%	20%
Asia Pacific	\$125	\$173	\$166	-4%	33%
CALA	\$23	\$33	\$34	3%	49%
Total	\$684.2	\$892.0	\$858.9	-4%	26%

Region	Quarterly Revenue (US\$M)			% Change	
	2Q11	1Q12	2Q12	QoQ	YoY
North America	\$425	\$415	\$541	30%	27%
EMEA	\$204	\$244	\$268	10%	32%
Asia Pacific	\$151	\$166	\$162	-2%	7%
CALA	\$16	\$34	\$22	-35%	38%
Total	\$796.0	\$859.7	\$993.4	16%	25%

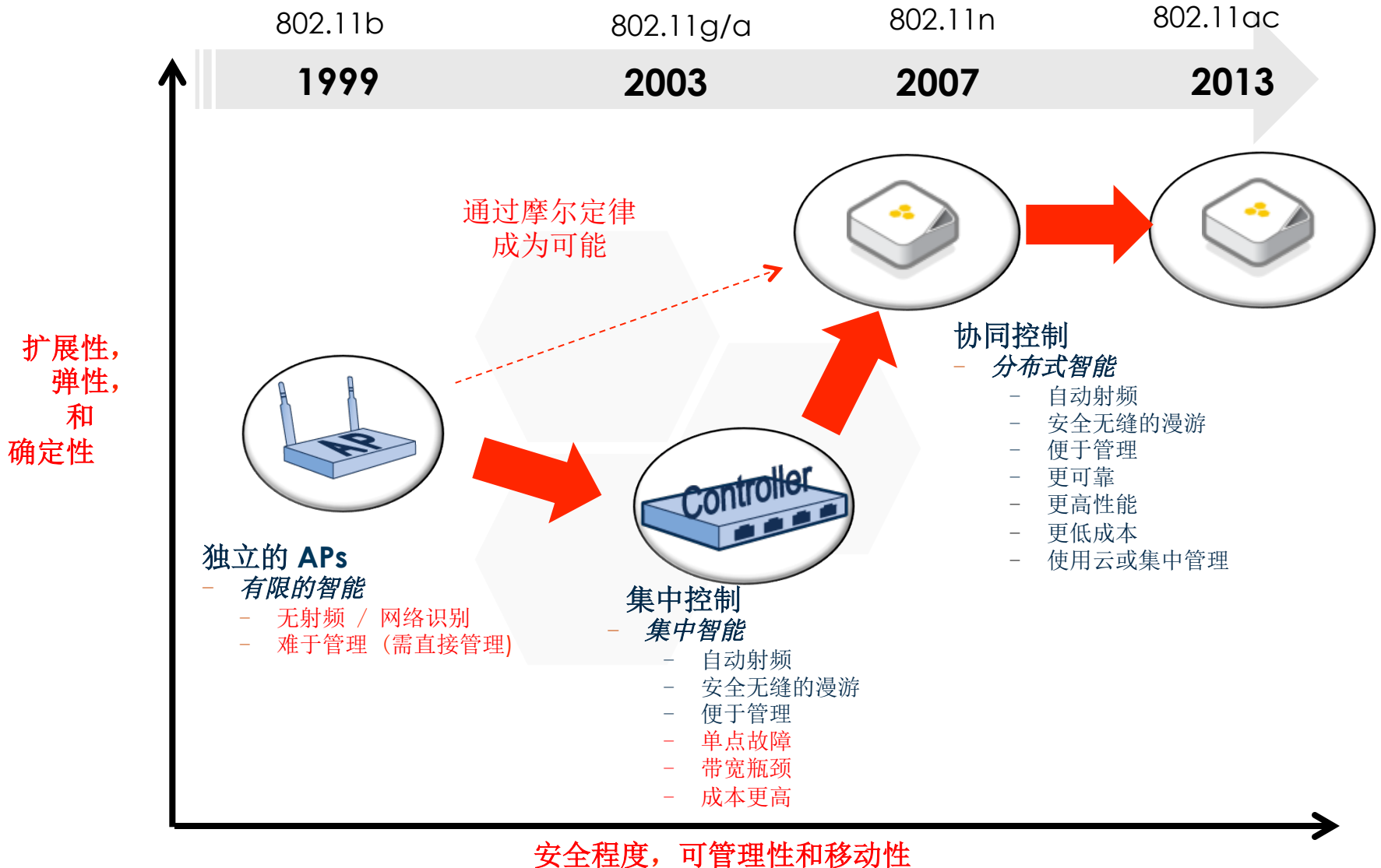
多快是快?

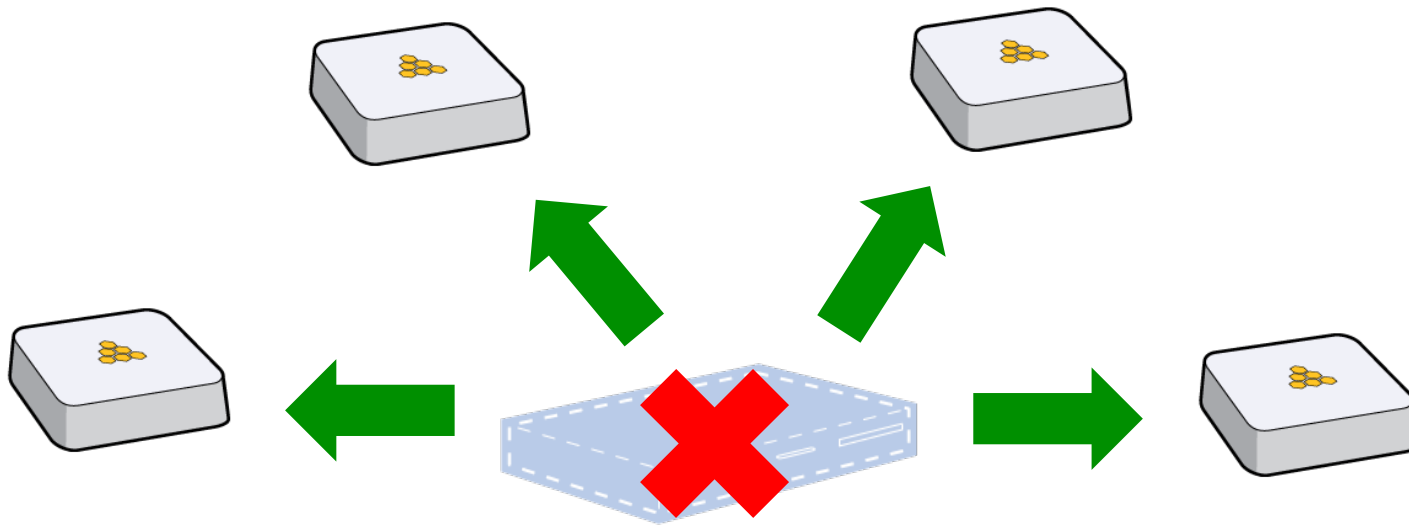


- 现在的11n: ~300/450 Mbps
 - › 802.11n 2x2:2 @ 40 Mhz: 300 Mbps
 - › 802.11n 3x3:3 @ 40 MHz: 450 Mbps
- 11ac一开始: **1.3Gbps**
 - › 3 streams @ 80 MHz: 1.3G Mbps
 - › 3倍于11n!
- 11ac将来可达到的峰值: **7Gbps**
 - › 8 streams @ 160 MHz: 6,933 Mbps

现在基于控制器的WLAN架构还能行吗?

Wi-Fi 网络发展的弯路

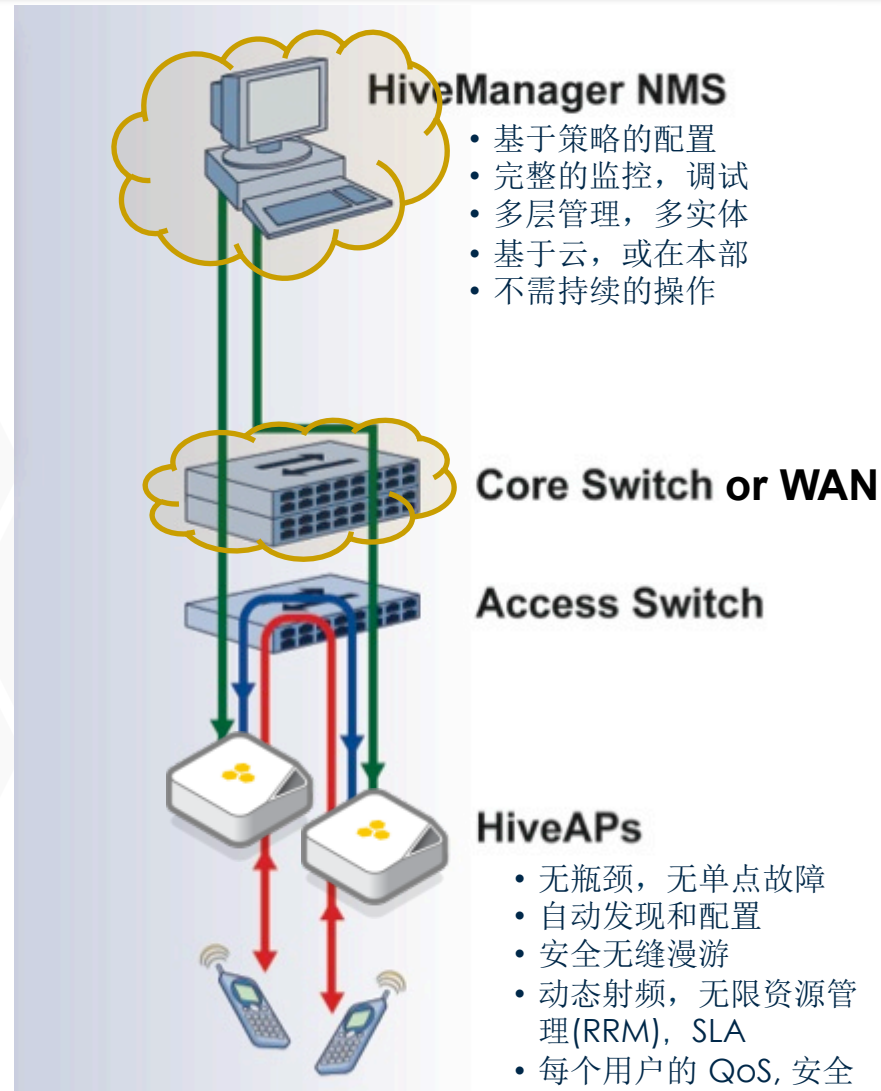
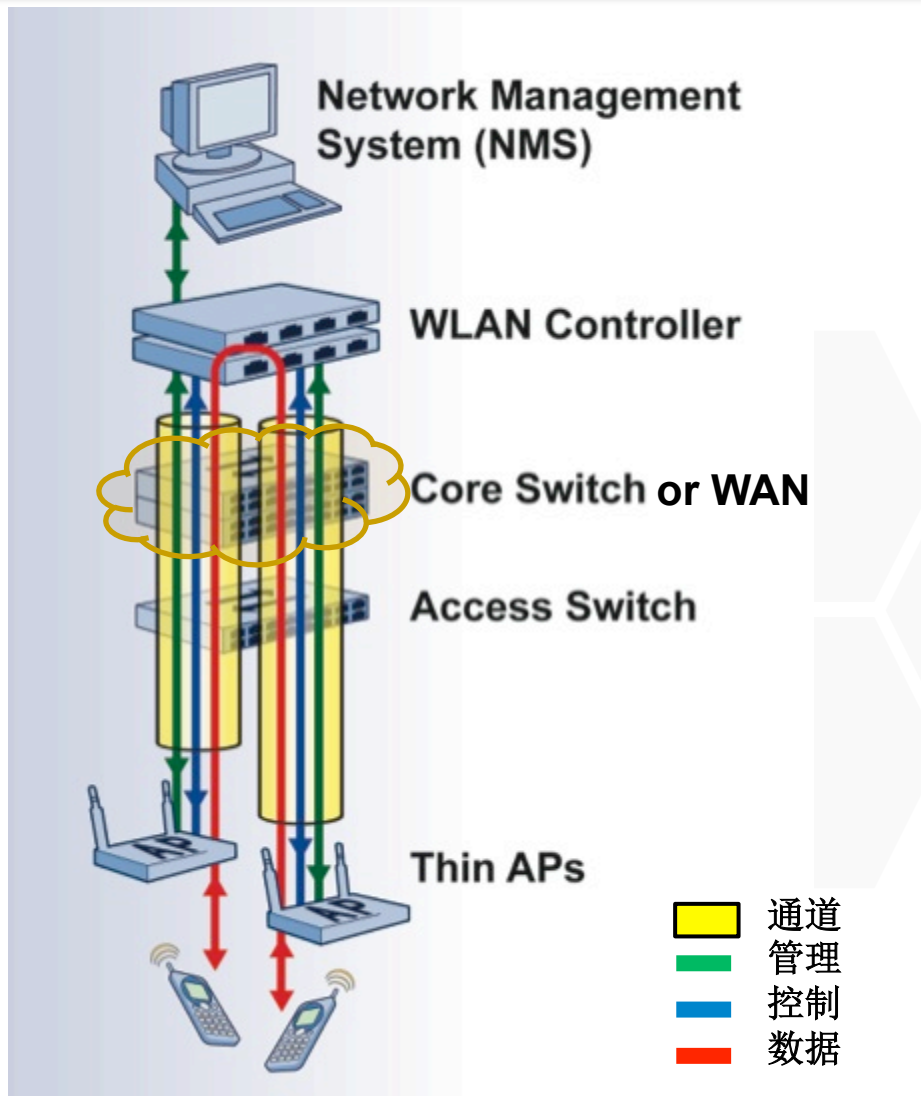




WLAN技术正在向带智能的全分布式转型：将功能从控制器移到AP上.

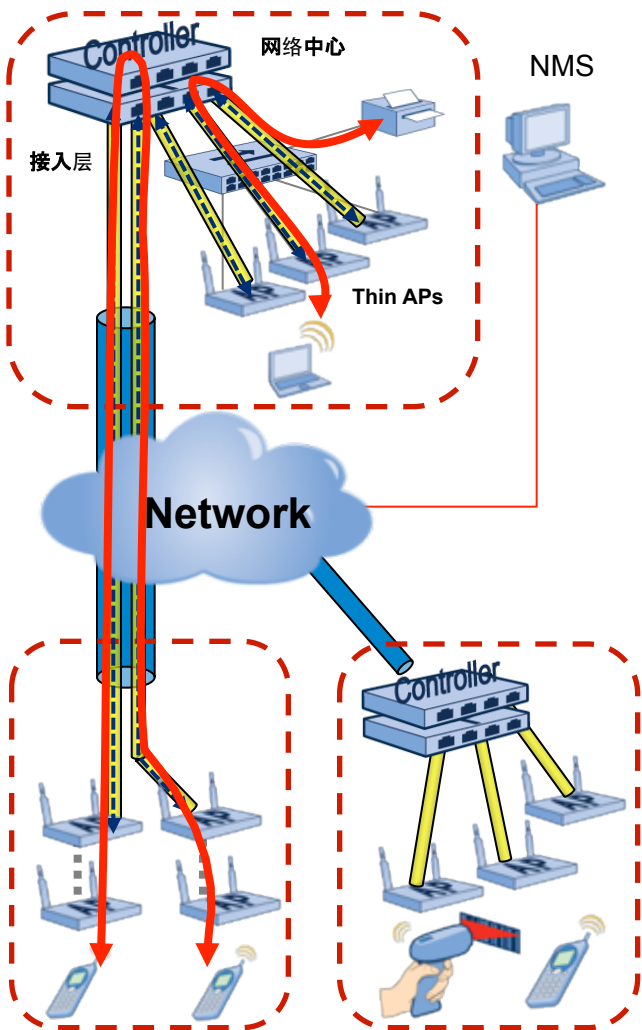
- ✓ 大大提高扩容性和吞吐量大大提高
- ✓ 给可靠性带来质的飞跃
- ✓ 建网既灵活又简单
- ✓ 降低设备和运营成本

两种WLAN构架的数据流的对比

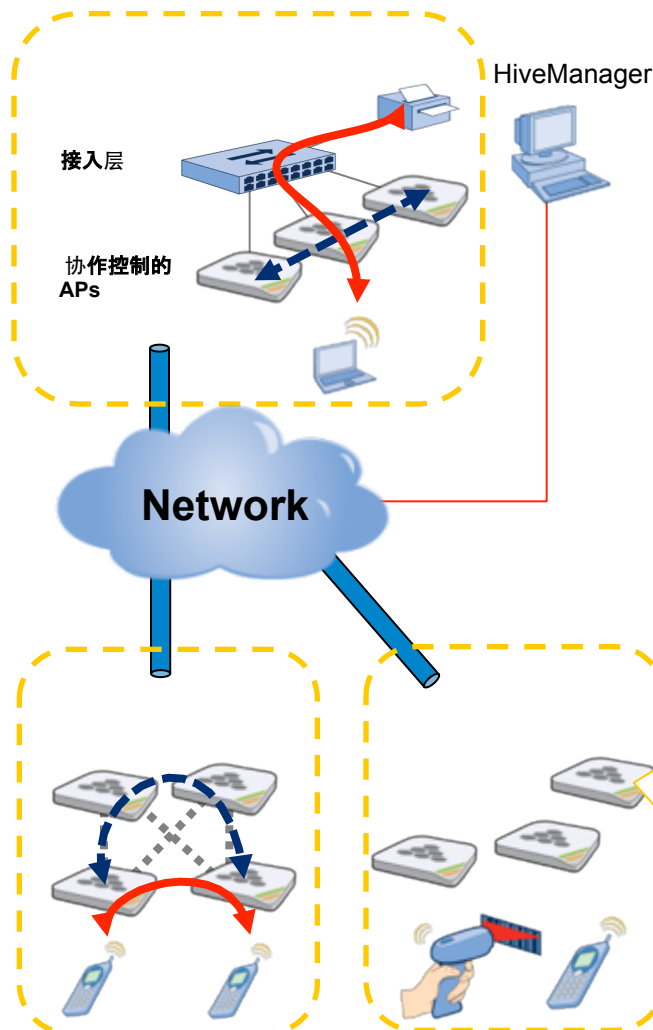


两种WLAN构架的企业网络比较

基于控制器的集中控制

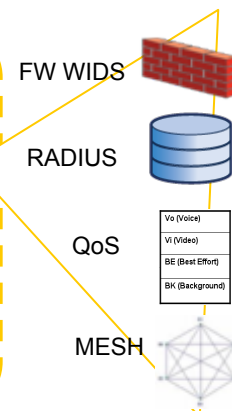


无控制器的协同控制

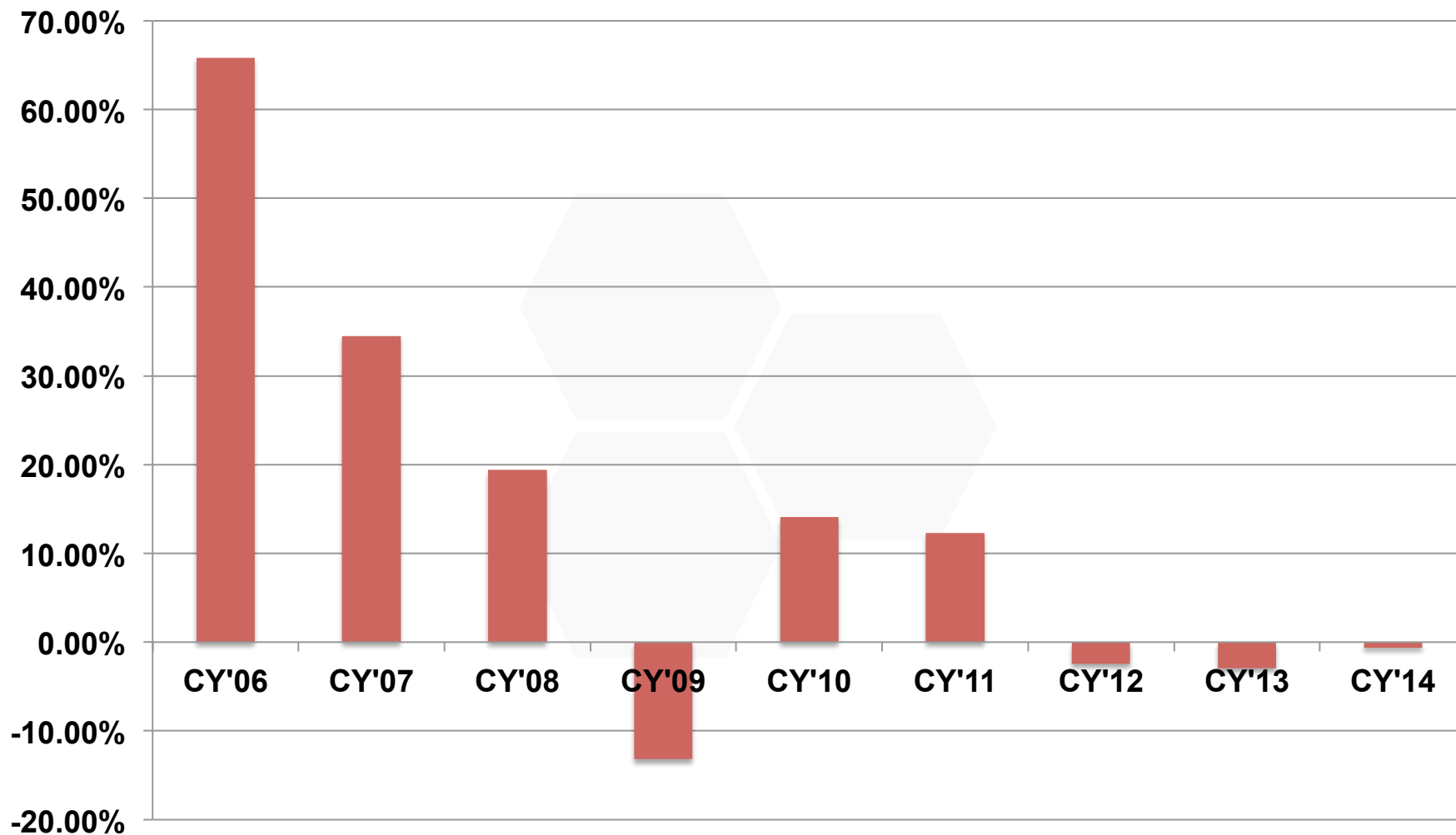


协同控制系统构架

- 没有 U型转弯、性能瓶颈、或单点故障
- 扩展灵活
- 优越的分支机构性能和生存力
- 真正的Mesh支持
- 高可靠性、低成本(没有控制器的成本)
- 丰富的增值功能



控制器的年销量的增长趋势大幅下滑





大型无线网络的缺陷 (The Downsides by Big Wireless)

By Lee Batman

September 11, 2012

<http://www.networkcomputing.com/wireless/the-downsides-of-big-wireless/240007139>

WLAN协同控制架构的缔造者

WLAN云网络管理的先驱

连续三年(2009, 2010, 2011)被其评为WLAN的远见者(Visionary)
在2011年更被其评为创新领袖:(最靠右侧)

Aerohive Networks

- Aerohive Networks is one of the smaller vendors covered in this report that has been **an innovation leader** (创新领袖) with products such as its Bonjour Gateway **and its cooperative control architecture** (协同控制架构), which eliminates the need for a dedicated controller and **provides a cost competitive solution without sacrificing functionality** (并无功能损失). Aerohive primarily sells in North America and EMEA. Its focus has been on WLANs, but it currently ships switching platforms for its small, midsize and remote office solutions, and will introduce a line of larger switches in 2H12.
- Aerohive should be considered for any overlay WLAN enterprise opportunities in North America, Western Europe or Australia/New Zealand, especially in the education, healthcare and retail markets. **Its controllerless, mesh-based architecture** provides an **easy-to-use** (易用) and **robust** (可靠) solution with **lower operational costs** (低运营成本), which makes it a standard bearer for market pricing of equivalent functionality.
- Aerohive's innovation and market messaging are driving annual growth of **~130% higher than the 30%** compound annual growth rate (CAGR) the WLAN part of the access layer market is currently experiencing. Network service applications for security, guest access, network management and policy enforcement can be defined on an appliance or in the cloud before being deployed to the edge of the enterprise network.



As of June 2012

Aerohive的起源



- **2006年创建于美国硅谷**
 - › 我和一个华人朋友创办
 - › 和几位华人工程师从我的车库起家
 - › 由著名硅谷华人企业家邓锋(Feng Deng)先生/
NorthernLight(北极光创投) 投资
- **同年在中国杭州设立研究所**
 - › 为其人才和丰富的文化所吸引
 - › 现有100多位优秀的工程师和技术支持人员
- **2011底在中国开始销售**
 - › 已取得了傲人的业绩



- 增长速度最快的Wi-Fi公司之一
 - › 每年增幅大于两倍
 - › 几千家满意客户
- 全球企业
 - › 总部位于美国硅谷
 - › 遍于美国，欧洲，亚太的销售和技术支持
 - › 中国杭州的开发和技术支持中心
- 成功的团队
 - › 来自于NetScreen/Juniper
 - › 从Cisco / Airespace, Aruba and Trapeze, Meru的吸引的精粹（Airespace 和Meru的创始人做技术顾问）
 - › 几百员工，且在增长中
- 硅谷顶尖风险投资和雄厚的资金
 - › KPCB, NEA, Lightspeed, NorthenLight(北极光创投)



802.11无线网络权威指南

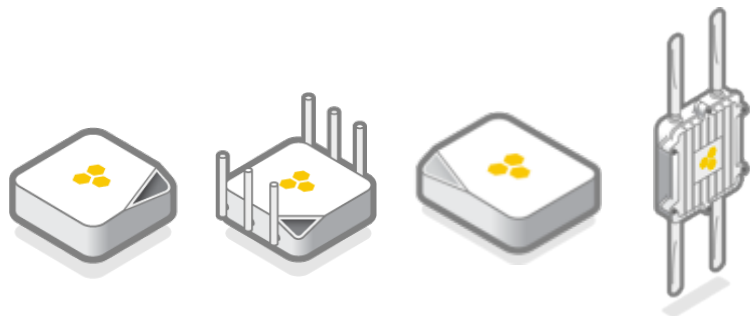
Matthew S. Gast 著
O'Reilly Taiwan公司 编译
出版时间：2008年02月
页数：604

- 少系统部件
- 易扩展, 简单, 可靠, 低价格
- 云管理

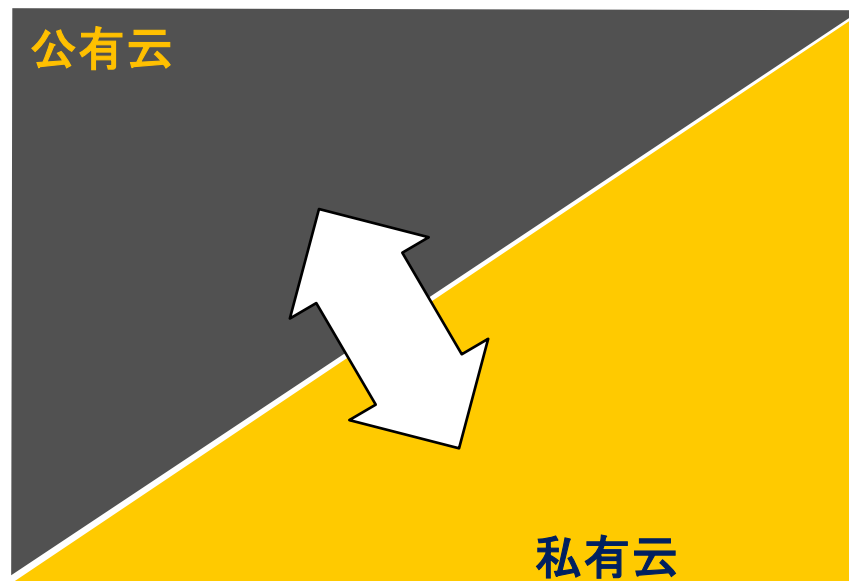
HiveManager NMS



HiveAP & Routers



Cooperative Control Protocols





AEROHIVE
Just Bee.

Thank You !
多谢 !