出國報告(出國類別：國際會議)

2014年國際傳播協會管制者論壇
及
年會會議
（International Institute of Communications(IIC) International Regulators Forum 2014 & IIC Annual Conference 2014）
出席報告

服務機關：國家通訊傳播委員會
姓名職稱：主任委員 石世豪
簡任技正 梁伯州
專門委員 曾柏升
專門委員 喬建中
派赴國家：奧地利維也納
出國期間：103年10月4日至103年10月11日
報告日期：103年11月14日

出國報告摘要表

出國日期：103 年 10 月 4 日至 103 年 10 月 11 日

地　　點：奧地利維也納

內容摘要：國際通訊傳播協會成立於 1969 年，目的係提供全球通訊傳播產業的資深專家，針對產業議題，分析市場和政策發展，會員及參與者來自世界各國地區，如美國、新加坡、法國、南非、香港、馬來西亞、克羅埃西亞、百慕達、愛爾蘭、瑞士、牙買加、德國、印尼、比利時、波紮那、英國、泰國、墨西哥、瑞典、葡萄牙、印度、義大利、西班牙、澳大利亞等電信、廣播電視、網際網路和內容產業，以及監理機關與其他公共政策機構，探討在變化迅速的環境中市場與政策如何變化。2014 年國際傳播協會管制者論壇及年會會議分別於 10 月 6 日至 10 月 7 日、10 月 8 日至 10 月 9 日在奧地利維也納舉行。四天的會議討論重點，包括配合數位世界調整法規、合併或競爭、資料使用與隱私之平衡、匯流下文化保護、公眾利益、社會利益、經濟利益間維持平衡、基礎設施問題、網路電視、頻譜政策等議題。透過 IIC 論壇與年會的參與，期望可掌握通訊傳播的最新發展，並與世界各國監理機關代表接觸交流，瞭解世界各國面臨通訊傳播類似議題之因應策略與作法，作為我國通訊傳播管理政策制訂的借鏡。

關鍵詞：IIC International Regulators Forum 2014 & IIC Annual Conference 2014

目錄

壹、考察目的

國際通訊傳播協會（The International Institute of Communications, IIC）1968年經由福特基金會贊助，在美、日、加、歐洲等國家的資深傳播業界人士支持下，創立於英國的民間組織，是一個獨立、非營利、採會員制的機構，會員及參與者多來自電信、廣播電視、網際網路和內容產業，以及監理機關與其他公共政策機構，提供機會探討市場與政策在變化迅速環境中如何改變；目前總部設於倫敦。

該協會的宗旨在藉由出版品及國際會議，結合業界決策階層及學者專家，針對全球電信傳播資訊的發展整合、管理架構、所面臨議題暨對經濟、文化、社會及公共政策領域帶來的衝擊與影響，進行經驗交流與研討，提供全球通訊傳播產業資深專家，針對電信與媒體產業議題，以開放和令人深思的討論方式，分析全世界各地的市場和政策發展前景，作為討論的論壇。IIC是全世界唯一聚焦全球電信與媒體政策及管制業務的獨立會員組織： IIC國際管制者論壇（IRF）為僅限管制機關參加的獨特年度會議，討論新興的政策議題與管制機制；IRF為邀請制，邀請對象為IRF會員的各國管制機關代表。

IIC每年至少辦理5個活動，包括年會（the IIC Annual Conference）、電信與媒體論壇系列會議（the IIC Telecommunications and Media Forum meetings series）、召集國際管制者論壇（the International Regulators Forum），並出版IIC定期刊物Intermedia。

IIC的年度會議（Annual Conference）是二天的活動，邀請電信、資訊科技、線上服務與電子媒體的資深專家參與。來自全球的政策制訂者、管制者、產業代表及其他的利益團體，共同討論大家有興趣的議題、分享對於近期發展的預想、市場公共政策與相關管制的論辯及對於未來制訂規劃與建議方針。

至於IIC的國際管制者論壇（International Regulations Forum, IRF），係由通訊傳播領域的法定監理機構所組成專業論壇，在IIC中是一個充滿活力的社群。每年舉行一次非公開會議，讓資深管制者分享經驗和做法，建構一個獨特的學習環境。

本次年會及管制者論壇訂於10月6日-9日，於奧地利維也納舉辦，以「全球通訊傳播發展趨勢：打破疆界擁抱匯流（Trends in Global Communications: Breaking down silos to embrace convergence）」為主題，6日至7日國際管制者論壇，於地主國管制機構RTR舉行，限各國管制機構代表參與，第二階段8日及9日IIC正式年會，則於奧地利文化遺產美泉宮（Schönbrunn Palace）會議中心舉行，由各國代表及通訊傳播領域學者、專家共同參與。

本會參與 IIC，與世界各國的監理機關代表接觸，除結交國際友人，進而能維持聯繫，亦希望能透過相關議題的討論，掌握通訊傳播的最新發展，瞭解世界各國面臨通訊傳播議題的困境或解決問題的觀點，借鏡他國經驗，作為我國通訊傳播管理政策制訂的重要參考。

貳、考察過程

一、行程安排

會議時間：2014年10月6日至10月9日

會議地點：奧地利維也納

管制者論壇第 1 天會議議程（會議日期：10/6（星期一））

舉辦地點：The Austrian Regulatory Authority RTR, Vienna, Austria

行程	時間	議題與說明	備註
1	09:45	RTR 郵電部門總裁致歡迎詞	
2	10:00	Session 1 數位世界的法規調整 1.通訊傳播管制者是否適合作為資訊科技管制者？ 2.在數位世界中，降價、增加選擇、普及近用等傳統管制目標是否多餘？ 3.公共廣電的價值是否應帶入數位世界？是否仍需要法規捍衛這些價值？ 4.日益匯流的電信媒體與科技業是否需要法規匯流？ Adapting regulation to a digital world 1. Should communications regulators really be information technology regulators? 2. Are the traditional objectives of regulation such as lowering prices, increasing choice, universal access redundant in a digital world? 3. Are the values of public service broadcasting carried forward into the digital world, and do we still need regulation to safeguard them? 4. Does the increasingly converged world of the TMT (telecommunications, media and technology) sector demand converged regulation?	
3	11:45	Session 2 合併或競爭？ 1.發生在匯流市場的議題，是否與昔日在電信或媒體的議題一樣？ 2.多永遠比較好嗎？管制者是否應該鼓勵新業者加入？應採取何種標準？ 3.改變的形態為何？管制者應如何保持足夠的彈性應變？ 4.處理跨境問題-國家通傳管制機構要如何回應？ Consolidation or competition? 1. Are the issues the same for converged markets as they were for telecommunications or media?	

行程	時間	議題與說明	備註
		2. Is more always better? Should regulators be encouraging new entrants – against which criteria? 3. What is the pattern of change and how can the regulator remain flexible enough to respond? 4. Dealing across borders – how can the NRA respond?	
4	14:15	Session 3 管制者應如何平衡資料使用的關切與經濟進展的渴望？ 1.隱私、個人資料保護與言論自由-是否彼此相關？是否會阻礙經濟成長？ 2.管轄問題-在有其他機關處理以上事宜的地區，可採取何種模式？這些模式是否成功？ 3.追求言論自由是否需要設備的間互容與互聯？ 4.若要保護兒少與其他弱勢團體，空間在哪裡？ --標示與其他制度的功效 How can the regulator balance concerns about the use of data vs. the desire for economic progress? 1. Concerns about privacy, the protection of personal information, freedom of expression – are they part of one continuum? And will they stifle economic growth? 2. Jurisdictional issues – where there is another body that deals with the above issues, what models can be applied – and are they successful? 3. Does a desire for freedom of expression require interoperability and interconnection? 4. Where does the protection of minors and other vulnerable groups sit? --The efficacy of labelling and other systems	
5	16:00	Session 4 匯流世界中的文化保護？ 1.國家價值 vs.全球內容--在全球化環境中鼓勵國內產製的模式 2.OTT 或內容及應用軟體提供者-管制者面對的問題 3.社會媒體／應用軟體-是誰的責任？ 4.近用內容與盜版-相容性與合法性 5.聯網電視的規範(硬體、軟體、傳輸）與定價 Cultural protection in a converged world? 1. National values vs. global content (1) Models to encourage domestic production in a globalised environment 2. OTT or Content and application providers – issues raised for the regulator 3. Social media/apps – whose responsibility? 4.Access to content and piracy – interoperability and legality 5. The regulation of connected TV – hardware, software, delivery – and pricing.	

管制者論壇第 2 天會議議程（會議日期：10/7（星期二））

行程	時間	議題與說明	備註
1	10:00	Session 5 通訊傳播管制者如何在公眾利益、社會利益、經濟利益間維持平衡？ 1.通訊傳播管制者對消費者應扮演何種角色？這和通訊傳播管制者對「國民」應扮演的角色是否相同？「公眾利益」是否永遠和「國民」利益一樣？ 2.在哪些議題上我們需要管制者？為什麼？考量的事項可能包括： (1)頻譜分配 (2)定價與購買能力 (3)普及服務 (4)近用資訊權 (5)緊急服務 (6)遵行與糾正 (7)其他事項？ 3.對所有管制對象最有利的管制模式為何？ How should regulators maintain a balance between public good, social good and economic good? 1. What is the regulator's role regarding the consumer? Is that the same for 'the citizen'? And is the 'public interest' always the same as the citizen's interest? 2. For which issues do we need the regulator? Why? Issues to be considered could include: (1) Spectrum allocation (2) Pricing and affordability (3) Universal service (4) Right to access information (5) Emergency services (6) Compliance and redress (7) What else? 3. What models of regulation serve all the regulator's constituents the best?	
2	11:45	Session 6 基礎設施問題 1.尋找永續-競爭永遠是最好的答案嗎？ 2.在數位時代要求對下列傳輸作齊一的管制是否實際？ (1)內容傳輸 (2)語音傳輸 (3)資料傳輸 3.什麼樣的規管措施可以促進投資？ (1)財務誘因：是否有公眾集資的空間 (2)法令假期：是否有效？ 4.確保核心基礎設施可以持久的模式-競爭有多重要？ 5.固網、行動通訊、Wi-Fi 無線區域網路或其他？單一的管制模式是否能滿足社會、產業及政府的要求？ Infrastructure issues 1. Looking for sustainability – is competition always the right answer? 2. Are calls for a level regulatory playing field realistic in a digital age? (1) For the delivery of content (2) For the delivery of voice (3) For the delivery of data 3. Which regulatory measures foster investment? (1) Financial incentives – is there a place for public funding?	

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		(2) Regulatory holidays – do they work? 4. Models to ensure that the backbone infrastructure is built to last – how key is competition? 5. Fixed or mobile or WiFi or?? Can one model of regulation fit the requirements of society, industry and government?	
3	13:00	會議結束謝詞 Closing Remarks	
4	14:00	M2M 政策研討會 M2M POLICY WORKSHOP	

IIC 年會主題是「全球通訊傳播發展趨勢：打破疆界擁抱匯流（Trends in Global Communications: Breaking down silos to embrace convergence）」

IIC 年會第 1 天會議議程（會議日期：10/8（星期三））

舉辦地點：Schönbrunn Palace Conference Centre, Vienna, Austria

行程	時間	議題與說明	備註
1	09:00	主席致歡迎詞 Welcome Address	
2	09:10	Session 1 主題會議：在投資、創新、刺激需求與競爭的間求取平衡-美國、歐盟與其他國家的迷思與實踐 1. 誰在那些方面領先？我們能同意是誰領先或落後的事實基礎指標：零售價格、投資、成本基礎、零售業的競爭、涵蓋率、運營商的營業額、市佔…等？ 2. 比較結果與目標－在固網與行動的結果顯示，迄今是否所有政策都已貫徹？ 3. 確認跟隨美國或歐盟模式的後果－什麼是各模式的產業重心與政策目標？ 4. 尋找超越美國和歐盟的靈感和基準 KEYNOTE SESSION: Balancing investment, innovation, demand stimulation and competition- myths and realities from US, EU and beyond 1. Who is leading and in what? Can we agree on a fact base for who is leading/lagging behind based on the choice of indicator: retail priced, investment, cost base, retail competition, coverage, operator turnover, take-up...? 2. Comparing targets with outcomes - what have all the policies so far delivered? Outcomes in the fixed and mobile space 3. Getting clarity on the consequences of following US versus EU models - what are the industrial pillars and policy objectives of each model? 4. Looking beyond US and EU for inspiration and benchmarking	
3	11:00	Session 2 合併與競爭－匯流環境中的目標與實踐，何者最符公眾利益？ 1.競爭/合併控制規則在美國，歐盟和其他地區是如何實施？有何差異？ 2.什麼是合併的關鍵趨動力？什麼是未來趨勢？ (1)本國與跨國的競爭/合併 (2)單一批發網路，如巴西、墨西哥、土耳其、南非，澳洲 3.如何走出近用與服務競爭的相同二分法僵局？ 4.在匯流與搭售服務的世界應如何定義市場與決定市場主導者？ Consolidation & competition – objectives versus realities in a converged environment. What’s best for public	

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		interest? 1. How does the enforcement of competition/ merger control rules in the US, EU and other regions differ? 2. What are the key drivers of consolidation and what are the future trends? (1) In country versus cross country competition/ consolidation (2) Single wholesale networks eg Brazil, Mexico, Turkey, South Africa, Australia 3. How do we move out of the impasse of discussing the same dichotomy of access vs. service competition? 4. How do we define markets and assess Significant Market Power in a world of convergence and bundled offerings?	
4	14:00	Session 3 OTT 媒體匯流模式－競爭是否為消費者帶來好的結果？公平競爭的爭辯是否過度強調？ 1. OTT 如何影響固網與行動業者的事業計畫？ 2. OTT 能從傳統內容供應商將客戶搬走？ OTT 是一個破壞性威脅？亦或是創新機會？ 3.垂直整合是前進的方向？從管制者角度來看應如何達成？ 4. 軟體定義網路（SDN）在傳統內容供應商與 OTT 間是否會找到新的機會？ 5. 設備製造商如何調整營運模式與政策以因應迅速發展的 OTT 生態系統？ 6. 市場匯流下管制者生態系統的中長期影響:國家是否須要將管制者整併？ OTT media convergence models - is competition delivering good consumer outcomes? Is the level-playing field debate being overplayed? 1. How are the activities of OTTs affecting fixes and mobile incumbent business plans? 2. Will customer ownership move away from legacy providers? Is OTT a disruptive threat or innovative opportunity? 3. Is vertical integration the way forward? How to approach from a regulatory point of view? 4. Will SDN deliver new opportunities between OTT and legacy players? 5. How are device manufacturers adapting their business and policy models in the face of the rapidly evolving OTT ecosystem? 6. Impact of sector/ market convergence (medium-long term) on regulatory ecosystem: do states need mandatory convergence of regulators?	
5	16:00	Session 4 分組討論 Breakout Groups	
		A1 企業焦點：更新策略反映不斷變化的市場需求 1.在逐漸數位化與全球化的市場，什麼是企業營運重要考量？ (1)普及、無差別、高品質的寬頻近用。 (2)無疆界的國際行動服務。 (3)消除線上貿易的跨國障礙。 (4)安全、可靠、符合目的的雲端服務。 (5)迅速崛起物聯網/ 機器對機器的通訊傳播服務。 (6)網路中立的開放性網際網路。 (7)企業服務品質－對稱頻寬、低延遲、應變能力。 (8)企業與跨國服務的相關市場個別認定。 2.政策制訂者與管制者須為促進特定通訊傳播多做什麼事？ Business & enterprise focus: updating policies to reflect	

行程	時間	議題與說明	備註
		changing market needs 1. What are the main concerns of businesses operating in an increasingly digital and global market? (1) ubiquitous, non-discriminatory, high quality broadband access (2) borderless international mobile services (3) removal of transnational barriers to online trade (4) secure, robust, fit-for-purpose cloud services (5) rapidly emerging IoT/ M2M communications (6) network neutral open internet (7) business grade service quality- symmetric bandwidth, low latency, resilience (8)separate recognition of relevant markets for business and international services 2. What more should policy makers and regulators do to promote their specific communications	
		B1 電子遊戲和娛樂應用程式：轉變到「體驗經濟」－接下來的政策和規管為何？ 1.手機和應用程式經濟的崛起：遊戲是成長的動力？ 2.智慧型手機/平板電腦現象如何為內容創新和一系列新的應用程序開創商機？ 3.訂閱模式與免費任玩－政策制定者的影響。 4.隨著新中介人（應用程式商店、網際網路服務供應商、社交網路）正在承擔以前經銷商所扮演角色，部分基於玩家個人資料的貨幣化，是否有需要規管？ 5.沉浸式、互動式、體驗式娛樂－營運、政策和法規模式發展為何？ Electronic games and entertainment apps: Transitioning to the 'experience economy' - where next for policy and regulation? 1. Mobile and the rise of the app economy: are games the engine of growth? 2. How is the smartphone/tablets phenomenon paving the way for the creation of new content and an array of new applications? 3. Subscription models versus free-to-play (F to P) - implications for policy makers. 4. As new intermediaries(app stores, ISPs, social networks) are taking on the role previously played by distributors, partly based on the monetization of players' personal data, is there a need for regulation? 5. Immersive, interactive, experiential entertainment- how are business, policy and regulation models evolving?	
		C1 緊急救難通訊－什麼是公共和專用服務最佳組合？ 1.緊急救難通訊已由原本透過傳統專用關鍵/國家基礎設施網路，正逐漸轉向尋求利用公眾網路（如 LTE）提供服務，以降低成本。 2.公眾是否已準備好不可避免的妥協？ 3.政府是否應在行動網路上增加「藍光」（反恐單位）服務的近用義務？ 4.在什麼環境下，商業網路可應付「藍光」（反恐單位）服務的需求？ Safety of life communications- what is the right mix of public and dedicated service? 1. Safety of life communications, traditionally served by dedicated Critical/ National Infrastructure networks are increasingly looking to reduce costs by utilising	

行程	時間	議題與說明	備註
		public networks, such as LTE 2. Are the public ready for the inevitable compromises? 3. Could/should governments impose access obligations for "blue light" services onto cellular networks? 4. In was circumstances can commercial networks meet the needs of 'blue light' services?	

IIC 年會第 2 天會議議程（會議日期：10/9（星期四））

行程	時間	議題與說明	備註
1	09:30	Session 5 數據保護、網路安全和人權－平衡及管理政策反應、網路營運商的責任和風險 1. 網路運營商發現正處於數個混成議題的中心－後斯諾登啟示、數據保護、網路安全和人權。比較以及對比全球各種司法管轄權下的系統。 2. 釐清生態系統所有成員就資料蒐集與使用的責任－網路營運商、網際網路服務供應商、網路服務公司 3. 隱私與安全的平衡－知的權力對抗個人權利 4. 攔截的正當法律程序為何？ 5. 當內容被加密，誰有責任？ 6. 誰負擔成本？直接是政府負擔？或間接由私人公司承擔？如何在競爭環境收回成本？ 7. 定義「必要」和「按比例」回應－在保護消費者和遵守國家規則間怎麼尋求平衡？ Data protection, cyber security and human rights - balancing and managing policy responses, network operator responsibilities and risks 1. Network operators find themselves at the centre of several conflated issues- post-Snowden revelations, data protection, cyber security and human rights. Comparing and contrasting the systems in place in various jurisdictions globally 2. Clarifying the responsibilities of all the players in the ecosystem- network operators, ISPs, web service companies- in terms of data collection and data use 3. Balancing privacy and security- need to know vs individual rights 4. What is due process for lawful intercept? 5. Who has responsibility when content is encrypted? 6. Who bears the cost? Direct to government, or indirect via private companies? How to recover the costs in a competitive environment? 7. Defining 'necessary' and 'proportionate' responses- what is the balance between protecting consumers and obeying the rules of the state?	
2	11:20	Session 6 全球頻譜政策－資源分配最佳化及促進無線寬頻效能 1. 頻譜服務的最新需求 2. 政府和管制者應如何最佳激勵公共頻譜擁有者發現並釋放未充分利用的頻譜？ 3. 最佳拍賣設計的“構成要件”為何？ 4. 頻譜共享解決方案，與授權/免授權典範－全球基準是甚麼？ 5. 機器對機器的發展對於頻譜資源與分配，有何額外壓力？ Global spectrum policy – optimising resource allocation and promoting efficiencies for broadband wireless rollout 1. Latest demand figures for spectrum based services 2. How should governments and regulators best incentivise public spectrum owners to identify and release underused spectrum? 3. What are the right "components" of an optimal auction design? 4. Shared spectrum solutions and licensed / unlicensed paradigms – what are the benchmarks globally? 5. What additional pressure will M2M put on spectrum resources and allocation?	

行程	時間	議題與說明	備註
3	13:50	Session 7 Choice of 3 Interactive Breakout Sessions	
		A2 變遷中的廣播電視－在互聯網電視環境下，匯流所創造的機會與挑戰 1. 匯流對於公共服務和商業廣播電視公司引起了什麼特定挑戰？公共服務廣播電視機構在匯流世界有什麼義務被豁免？ 2. 有什麼新服務在發展？如何與消費者和公民保持關聯？ 3. 今天有效概念在明天將需要更明確定義:什麼是傑出－是電子節目表單或使用者界面的議題？誰對此負責？ 4. 線性廣播電視的應變能力：IPTV 和第二螢幕容易增加到現有觀看行為，而無需調撥，但能持續多久？ 5. 廣電業者創新與走出疆界的新營運模式－政策與管理有何作用？ Broadcasting in flux – convergence opportunities and challenges in a connected TV environment 1. What particular challenges does convergence pose for public service and commercial broadcasters? What is the remit of a public service broadcasting organisations in a converged world? 2. What are the new service to grow into? How to stay relevant to the consumer and the citizen 3. Valid concepts for today will need clearer definitions tomorrow: what is prominence- is it a matter of EPG or user interface? Who is responsible for it? 4. The resilience of linear broadcasting: IPTV and second screening tends to add to existing viewing, not cannibalise it, but for how long may that continue? 5. New business models for broadcasters to innovate and move out of sector silos- what role for policy& regulation?	
		B2 完成寬頻普及－新興市場與成熟市場的考量 1.「數位鴻溝」成本越來越高，這負作用鞏固了許多倡議（如 EU2020 目標），有顯著比例家戶達到數位須付出非常昂貴代價。 2. 各國政府是否應確保消費者可由其他管道（如衛星或 LTE 寬頻）代替呢？或放棄他們？如何說服/教育消費者誰可以使用寬頻？ 3. 如果寬頻是一個真正實用工具，監管機構/政府應實施什麼社會寬頻資稅？我們有什麼證據？ 4. 內容和內容創作在擴大近用和擴大成長上扮演什麼角色？特別是在開發中經濟體？ 5. 普及服務在行動、數位世界的意義為何？最小連接、速率、網路涵蓋、服務品質－如何被使用影響消費者選擇？ 6. 我們可以從新興市場學到什麼？ Achieving universal broadband - considerations in emerging and mature markets 1. The cost of being on the wrong side of the “digital divide” is becoming greater all of the time, which underpins many initiatives (such as the EU2020 target), yet a significant percentage of households are often highly expensive to reach 2. Should governments ensure those consumers get something else (e.g. satellite or LTE broadband) instead? Or leave them be? How to persuade/educate those consumers who could take up broadband, but haven’t? 3. If broadband is truly a utility, where are the social broadband tariffs imposed by regulators/government?	

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		What evidence do we have? 4. What role does content and content creation play in expanding access and growth, particularly in developing economies? 5. What does Universal Service mean in a mobile, digital world? Minimum connectivity, speed, network coverage, quality of service- how will they be used to inform and engage consumer choices? 6. What can we learn from emerging markets?	
		C2 日益增多無疆界數位化環境下的著作權授權與執行政策 1. 強化著作權政策與條件,使其在創意內容所有權人和使用者間順利和透明。 2. 集中授權與著作權對於政策制定者和監理者的挑戰,特別是在單一市場背景下 3. 在新興市場上的內容生產商與經銷商如何創新保護和貨幣化其內容？ 4. 國際案例研究－著作權政策是刺激數位市場創新與成長發展的工具 Copyright licensing and enforcement policy for an increasingly borderless digital environment 1. Strengthening copyright policies and conditions so they are smooth and transparent for both rights-holders and users of creative content 2. Content rights clearance and copyright challenges for policy makers and regulators, particularly in the context of the single market 3. How are content producers and distributors in emerging markets innovating to protect and monetize their content? 4. International case studies - copyright policy as a stimulus to the development of digital markets, innovation and growth	
4	15:20	Session 8 閉幕全體專題討論：網際網路的治理－達成共識？ 1. 明確治理的不同層次，及確認什麼是網際網路治理的生態系統？ 2. 技術社群的關鍵議題為何？市民社會和網際網路使用者？政府和非官方部門？ 3. 機構和程序必須有更大包容性和代表性方向,特別是在發展中國家，但應如何避免重複和複雜不必要的層級？ 4. 什麼是有效而有包容性的多方利益主體模式？什麼變化是必要的？ 5. ，應發展何種以透明基準的原則？ Closing Plenary Panel: Internet governance- reaching consensus? 1. Clarifying the different layers of governance and what we mean by it- what is the internet Governance ecosystem? 2. What are the key issues for the technical community, civil society and internet users, Government and private sector? 3. Institutions and processes have to go in the direction of greater inclusiveness and representation - with developing countries in particular - but how to avoid duplication and unnecessary layers of complication? 4. What does an effective and inclusive multi-stakeholder model look like? What changes are needed? 5. How to develop principles against which transparency can	

行程	時間	議題與說明	備註
		be benchmarked?	
5	16:40	致閉幕詞 Concluding Remarks	

二、會議重點

四天的會議討論重點，主要從數位匯流後各國目前面臨之共同問題為出發點進行意見交流，包括數位化後管制、全球化後帶來的競爭或合併、文化保護、頻譜政策、寬頻普及等議題，報告者就其國家處理通訊傳播相關議題時，所面臨的問題或相關作法，供與會者參考。茲將其中會議重點摘述如下：

（一）配合數位世界調整法規

資通訊（ICT）產業在過去二十年經歷了爆炸式成長，全球已有超過 45 億行動電話用戶、網際網路成長用戶超過 10 億人、高速寬頻網路超過 4 億用戶。資通訊科技已滲透社會、政治和經濟等面向。這麼多令人振奮的發展，可能係因合宜的資通訊產業政策和監管架構刺激了投資、自由化與競爭；而持續動態的市場和技術發展，則導致匯流現象。復考量匯流的強大市場趨動力量，相信只要政策制定者創造有利條件，將促使相關產業持續成長。

匯流技術讓多媒體通訊傳播打破原有垂直架構，並在本質上完全改變傳統資通訊業務分類：基礎設施、服務、企業、內容和設施現在可以互動、結合，以新的、前所未有的方式，打破市場藩籬，挑戰現有的結構，並且允許創新的營運模式。匯流使許多社交和商業服務正在網路平臺上應運而生，而且正在加速繁衍中，如行動銀行。

政府如果理解匯流的力量，創造適合的條件，將會使經濟更加繁榮，讓國家大有收穫。雖然匯流可能增加市場結構的複雜性，但會有助於擴展更廣泛資通訊服務經濟，支持創新及開拓新的機會。事實上，在開發中國家，許多優點已經被實現。

部分營運商能獲得較大的收益係來自於匯流業務：語音、網際網路與媒體。然而，儘管匯流的力量是巨大的，變化的速度和幅度對管制者是相當大的挑戰，如果缺乏即時的策略回應將會阻礙競爭、阻卻投資。監管者提供明確的政策方案選擇和指導原則，可以減緩匯流所帶來的風險，同時給予最大化的利益和機會。許多管制者認為，應開放市場，盡所能的促進競爭與技術發展。

匯流沒有通用的或全球性的解決方案，因此，任何資通訊技術政策和企業解決方案，應根據當地的環境和具體情況的特殊性而定。管制的傳統目標，在未來不太可能失去意義。自由化不意味著管制者將職責退位，也不是監管者缺席讓市場自行運作。即使朝向數位化，管制者的任務是不受時間影響的。

在這議題上，與談人之一南非管制機關（Independent Communications Authority of South Africa, ICASA）代表 Nomvuyiso Batyi 認為他們的工作是「精進數位社會的建設」，政府政策是促進競爭，以確保公平的零售價格及瓶頸設施的評估；採用 1998 年的競爭法和 2005 年修訂的電子通信法案作為工具。ICASA 繼續為公眾利益和促進通訊傳播的競爭而努力，這雖有助於鼓勵創新，對於消費者遭受不公平待遇及面臨非基於成本價格時，仍是需要被保護的。

（二）合併與競爭

與談人之一香港通訊事務管理局辦公室（Office of The Communications Authority, OFCA）通訊事務總監利敏貞 （Eliza Lee）對此議題分享二個香港最近所做的決定。香港在 1,100 平方公里土地上有 700 萬人口，在電信市場經過充分自由化 10 年後，有 21 家固網營運商、4 家行動業者（從今年 5 月由 5 家變為 4 家）激烈競爭提供電信設施與基礎建設服務。21 家固網營運商中的 15 家提供零售服務。透過激烈的競爭，香港的電信費是世界最高實惠之一，滲透率也是世界最高之一。

香港的固網電話普及率已達 101%，83%家庭用戶使用固網寬頻服務，透過 FTTH（Fibre-To-The-Home）或 FTTB（Fibre-To-The-Building）連接；87%家庭有機會近用至少 2 條自建固定網路、78%家庭有機會近用至少 3 條自建固定網路。每月收費 20 美元左右可享受 100 Mbps 的網際網路服務是司空見慣的事，或是 25 美元提供 1000 Mbps 的網際網路服務，也是普遍可行的事。根據 Akamai 出版的 Internet Report，2014 年第 1 季香港際網路的 66 Mbps 的平均峰值連接速度，是世界第二高的。從外部看，香港每位用戶可使用 1.4 Mbps 國際網際網路頻寬，也是世界最佳互連經濟之一。

截至 2014 年 6 月，香港有超過 1,700 萬行動用戶。行動通訊服務滲透率已達 237%，移動寬頻則是 176%。4G-LTE 服務在 2010 年首次登場，現在香港民眾隨處可使用。當部分 4G-LTE 網路數據下載速度峰值為 150 Mbps 時，用戶還可通過遍布全香港的 28,600 WiFi 熱點使用網際網路。行動服務每月可使用 1GB 數據服務約 16 美元，而每月可使用 5GB 數據服務，約 28 美元。平均來說，每個 3G 或 4G 行動用戶每個月使用比 1GB 數據稍多些。2014 年 6 月總計每月行動數據使用量激增至 13600 TB，比去年同期高出 30%。

事實上，香港的規管方法，是不做任何的市場干預。這樣尊重市場力的政策已經成功地在網際網路時代為固定與行動寬頻網路的鋪設帶來所須的大量投資。這些投資是營運商基於自己商業考量所決定的，絕對沒有任何政府補貼，這可能是香港與世界其他地區不同的地方。香港管制者不參與市場，但努力為市場建構有效運作的便利環境。不會對任何電信市場運營商數量做限制，理由很簡單，因為沒有神奇的處方適合所有的人；相信滿足電信服務需求的營運商最佳數量，應該是市場公平和有效競爭的結果，是由市場力量所決定。

基於前述的背景說明，說明發生在香港有關在電信市場競爭與合併二個最近所做決定的基本哲學與理由：一個是重新分配 1.9 - 2.2 GHz 頻段頻譜（3G 頻譜），其將在 2016 年期限屆滿；另一個就是兩個行動網路營運商申請合併，經香港通訊事務管理局辦公室事先同意。

到目前為止，總計約有 600 MHz 的頻譜已被分配給營運商提供行動服務。回顧即將於 2016 年 10 月執照屆滿的 120 MHz3G 頻譜分配，2001 年透過拍賣方式分配給 4 個行動網路營運商，每家 30 兆赫，為期 15 年。至於沒有被分配到任何 3G 頻譜的其他行動網路營運商，仍可藉由租用其他 3G 營運商容量提供 3G 服務。

在重新分配 3G 頻譜上，香港通訊事務管理局辦公室至少有三個選項：第一，將這些頻率重新分配給 4 位既有 3G 營運商；第二，重新拍賣所有頻譜；第三，兩者的混合。根據香港政府的頻譜分配政策，除非有特別重要的公共政策理由不這樣做，不然香港通訊事務管理局辦公室應採用市場法則頻譜管理方法為基礎，讓市場的競爭需求決定。香港通訊事務管理局辦公室在決定 3G 頻譜重新分配安排的四大基本目標是：

1、確保客戶服務的連續性，當 120 MHz 的 3G 頻譜已全面部署提供服務，會特別關注室內接收（例如在所有的地鐵站，車站機場中央大廳，購物中心等）保證不中斷；

2、確保頻譜的有效利用，因為無線電頻譜是稀有公共資源，香港通訊事務管理局辦公室有法定職責促進其有效分配和使用。在這種關係中，香港通訊事務管理局辦公室相當確信頻譜分配給予永久使用權，並非確保頻譜持續地有效利用的最好的分配方法。拍賣，反而可以將頻譜交予最珍惜資源，並能最有效使用的人手上；

3、為促進有效競爭，應有允許既有行動營運商有機會根據自己商業考量，重新檢討所持有頻譜的措施，以及同樣重要的，要有讓新進者進入行動市場的機會；

４、鼓勵投資與促進創新服務，讓消費者可繼續享受最先進的技術和服務。

香港通訊事務管理局辦公室的使命是重新分配頻譜找到最能滿足這四個目標的方案。在香港法律上有義務進行公眾諮詢；在這案子上進行了兩輪諮商，來自業者的意見，並沒有令人驚訝的地方。既有業者希望頻譜永久指配，好讓維修服務有連續性並做為合法期待頻譜重新分配的理由。沒有 3G 頻譜的行動業者和其他提倡自由競爭者則要求採用拍賣方式重新分配頻譜。考慮並研析所有收到意見後，香港通訊事務管理局決定採用行政分配附帶市場基礎的混合方法，將每位既有業者所擁有頻率的三分之二，即 20MHz，透過優先購買權重新指配給既有業者；剩餘的三分之一頻率，即每家業者各 10 MHz，將聚集一起採用公開拍賣方式分配。香港通訊事務管理局辦公室對這樣的方式相當滿意，因為這種混合方法有助於行動市場更有效的競爭，業者將有機會考慮網路基礎設施的投資，讓頻譜的持有合理化；同時，也提供新進入者以 3G 頻譜拍賣的競價方式，有進入市場的機會。

香港通訊事務管理局辦公室在 2013 年 11 月發布這個決定，大約進行實際重新分配的三年前。拍賣定於今年十二月舉行，這個時間表可讓既有 3G 業者和新進入者（如果有的話）為網路重新配置做準備，尤其是涵蓋室內區域（如地鐵和車站機場中央大廳）提供服務的既有射頻系統整合。所有既有 3G 業者剛剛接受了優先購買權的行政重新分配頻譜，從 2016 年 10 月開始 15 年效期。

2013 年 10 月，大約香港通訊事務管理局辦公室決定 3G 頻譜重新分配決定的一個月前，5 個行動網路業者之一－HKT（香港電訊）提出併購另一行動網路業者 CSL（香港移動電訊）的申請。如果合併案被允許的話，香港行動業者將由 5 家變成 4 家。HKT 和 CSL 都是有分配 3G 頻譜的 4 個既有業者之一，合併後，兩家合併後市場佔有率達 37%和 39%的無線電頻譜，將成為市場上四家行動業者中最大家業者。

身為香港電信部門競爭管理機構，什麼是香港通訊事務管理局辦公室處理電信市場併購的方法？香港通訊事務管理局辦公室長期以來採取市場導向政策，認為合併和收購是正常的商業活動，而且對於市場高效率運作有重要功能在，所以只有當併購對於市場競爭有潛在不利影響時，香港通訊事務管理局辦公室才會進行干預，採取防止併購的進行，或當對競爭其他補救措施無法設計、不符合要求時，將要求分開。HKT 與 CSL 的併購案，就是實踐政策立場的活生生例子。

香港通訊事務管理局辦公室依據香港電信法著手審理 HKT 與 CSL 併購交易案，按規定的法律標準，即併購後是否有實質減損電信市場的競爭效果？（所謂的 SLC 效果）如果這樣合併的決定確定對公眾沒有好處，香港通訊事務管理局辦公室將拒絕同意併購，或當相關業者可以提出消除 SLC 效果的補救措施，就可能允許併購。

考慮到公眾諮詢結果及另一個顧問研究發現，香港通訊事務管理局辦公室認為此一併購案會在零售電信服務市場和批發網路接用市場具有 SLC 效果；而合併後控制的頻譜集中度將會惡化 SLC 的效果。香港通訊事務管理局辦公室發現了這一 SLC 效果，並採取補救措施中和 SLC 效應，香港通訊事務管理局辦公室以指導 HKT 和 CSL 實施補救措施抵消關聯的 SLC 效果為條件許可合併：

１、合併後必須放棄共 30 MHz 的 3G 頻譜，即效期至 2016 年 10 月的原持有 60MHz 一半，換句話說，合併後將只被重新分配一半目前的 3G 頻譜，而非每家三分之二的頻率；並且五年禁止參與任何 3G 頻譜拍賣。這些措施將減少合併後頻譜從原持有 39%降至 33%；

２、合併後必須繼續履行公司與行動虛擬網路商（the mobile virtual network operators， MVNO）和目前沒有 3G 頻譜的既有行動網路業者 3 年批發行動網路近用的現有協議；

３、合併後預期 HKT 和 CSL 的網路也會合併，將會減少一些重疊的基地臺，合併後任何基地臺關閉計畫必須公開，便於競爭對手或潛在的新進業者如果有意願時可繼續使用這些地點。

補救措施旨在增強相關市場既有競爭對手或潛在新進入者的競爭地位，例如，這些措施可以對合併者提高價格或減少輸出或服務質量的動機和能力形成有效的抑制力量。香港通訊事務管理局辦公室同意合併的結果和相關補救措施的實施，已將總計為 50MHz 的 3G 頻譜，而非原先的 40 MHz，做為 3 位既有行動業者（即除了合併者一方外）及任何有意新進入行動市場者的競爭標的。

競爭激烈的香港電信市場。合併可能隨時發生，畢竟是市場力量的正常反應活動。香港通訊事務管理局辦公室在管制電信市場一貫採用輕管制方法，這是鼓勵競爭、鼓勵投資和保護客戶利益的方式。以努力確保促進有效競爭環境的監管框架，給予消費者利益最好的保護，始終是行事的信念。非常堅信，市場的有效競爭會找到自己的平

衡。這樣一來，香港電信市場將繼續充滿活力、激烈地競爭，使消費者繼續以合理的價格、豐富的選擇，得到優質的服務。

（三）匯流世界下的文化保護

基於歐洲及法國視聽監理機關的觀點來看，全球化的通訊傳播發展，讓來自世界各地、任何國家、任何人、隨時提供的大量內容隨時擁現，對消費者而言，能舒適的使用是極佳的經驗，的確是一個非常好的消息。對世界公民、世界文明和文化來說，這是一場真正的革命，應要避免一些預期外的負面效果。

在全球化的環境底下，影音匯流的關鍵問題：

1、變化的競爭：傳統的經營者被強大的、或歐洲以外的新進入者挑戰（例如 YouTube，谷歌，亞馬遜，阿里巴巴，樂天，Netflix，蘋果等）；

2、傳統視聽服務者，即使曾在自己國家領域強大過，現今亦面臨既有規範和營運模式無效率，甚至面臨更大市場下全球競爭者的問題；

3、創作的財源：傳統視聽服務者的財務狀況預期持續弱化；

4、線性和非線性的服務已逐漸在同一螢幕，相互競爭相同閱聽眾的注意；

5、從消費者的觀點來看，線性和非線性服務的差別日漸模糊；

6、差別性管理制度係基於連接設備：在同一螢幕上對於視聽服務的管制規範多於其他服務。

保護文化多樣性為何重要：

1、文化多樣性具有高社會價值，文化產品和服務帶來的身分認同、價值觀及各式才能；

2、語言是主要文化結構，文化多樣性需要保持語言的多樣性和豐富性，即使是在新途徑上的多語言創作亦然。

3、成長和就業永續發展的財務問題：在許多國家有成千上萬的人在視聽節目、影音表演上工作。

聯合國教科文組織的促進與保護文化表現多樣化公約在 2005 年已被 132 個國家和歐盟簽署採用。在公約裏，承認文化財物品和服務具有文化和經濟價值雙重性質，而國家主權權利，涉及文化政策，應包括支持對文化產品和服務的積極差別待遇。

儘管美國沒有簽署公約，這是對任何國家都非常重要的文本。然而，公約也沒有

提供任何法律強制機制，其應用係基於各會員國在商業談判落實的意願與能力。

歐洲內容法律架構－2007 年視聽媒體服務指令，是現在所有歐盟成員國共同的法律框架。從 1989 年第 1 版開始，該指令即要求會員國在可行情況下，確保廣電業者應保留大部分比例播送歐洲作品（廣電配額）。另一方面，鼓勵生產獨立作品，要求廣電業者保留至少 10%的節目預算，或 10%的播送時間。自 2009 年以來，該指令已經擴充支持歐洲創造隨選視訊服務的原則，該指令要求各會員國促進生產、近用這些服務的歐洲作品。由於非線性服務的特色，對於廣電配額當然不被視為相關，而且指令指定其他方式來促進歐洲的作品：財政捐助、權益取得、持股或分享強調作品特色等。該指令也同意，基於執行 UNESCO 的文化多樣性，會員國得在其管轄範圍採取支持特定語言的積極政策，並可在符合歐盟法規下，施行更嚴格的規定。

法國對相關法語作品採取具體配額。為了達成支持歐洲和法語視聽服務的發展，法國有兩大原則：廣電配額和作品的財務贊助。在法國對於使用者捐助創意作品是十分重要的原則：下游用戶支付上游創造者費用。這些原則（曝光率和資金）構成法國電影和影音經濟的主要基礎，目的是創造一個良性循環，在價值鏈的所有參與者都可以從創意作品中受益。此外，歐洲和法語內容的曝光率十分有價值，鼓勵觀眾消費這些作品。

相同邏輯已轉換到無線廣電業務的配額申請上。在 2012 年，電視頻道投資約 13 億歐元在視聽和電影製作上，約 4.4 億元是電影和 8.5 億元的電視作品。相較之下，隨選服務仍未成熟，因此負擔的義務較低，已投資 150 萬歐元的影音製作和 2,600 萬歐元的電視作品。

歐盟國家需要平衡國家和歐盟層面的文化多樣保護，與建立業者間一個公平競爭的環境。公司盈餘應基於公平的實行原則對創意有所贊助的：首先是繳稅，特別是增值稅（VAT）。我們迫不急待等待著 2015 年到來，從這一年開始，每一個國家有客戶的網際網路業者應該繳納增值稅。

現在的問題是，應否擴大視聽媒體指令的手段到對媒體服務的義務。如果所有歐盟國家可完全統一內部規定當然較佳，但遺憾的是這很難達到。然而，歐盟國家間對於視聽媒體指令的執行，也有所差異，所以業者，特別是非歐盟的業者常見 forum

shopping 的情況。因此，「目的地國」的概念不僅僅是稅收考量，也是為創意投資義務的考慮。

歐盟必須選擇合適工具，將規則現代化及建立單一市場。舉例來說，當今智財權的「屬地主義」概念（意味著權利所有人應逐國允許使用其影音作品）是否必須廢棄，就是一個極大的爭議。來自歐洲本土公司擁有影音作品的歐洲權利所有人、製作人和編輯者，非常清楚知道怎麼處理著作權的屬地主義問題；但可以肯定的是對來自歐洲以外全球的業者的確是個問題。所以，在建構共同歐洲市場的絕佳目標下，廢除屬地主義，將可能導致歐洲企業間更多的不平等。

美國和歐盟間的跨大西洋貿易和投資夥伴關係（TTIP）計畫當前正在談判。自從里斯本條約生效，歐盟會員國已經授權歐盟與其他國家在世界貿易組織（WTO）的框架內進行自由貿易協定。與美國的自由貿易協定對雙方是經濟的實質機會，必須成功，但也將危及歐洲文化多樣保護政策。因此在所有的自由貿易協定談判，包括法國和歐盟都必須持續：

１、要求視聽服務的排除，包括電影、電視、隨選視訊。這些服務是文化的一部分，不能被視為其他貨品處理；

２、文化服務僅在不會受國際競爭傷害應予自由化，例如書籍，新聞，建築。

確實，在世界貿易組織的自由貿易協定原則下，歧視性或保護主義措施都是禁止的。所以在歐盟機構和成員國間的激烈辯論後，決定視聽服務將被排除在自由貿易協定談判外，好讓歐盟或各國家可保持文化多樣性政策，歐盟各國必須對此保持警惕。

在歐洲建立共同市場需要加強合作與交換意見，歐盟管制機構間要密切合作（以其他方式存在於 EPRA，歐洲理事會的層級，或在全球的範圍，像 IIC），以促進執行指令上會有更調和的作法。為了視聽產業的利益，也要鼓勵歐盟法令的採行及歐盟委員會和會員政府間的合作。歐洲國家和管制機關必須繼續團結合作，在全球化的環境下鼓勵國內生產和影音作品、節目的流通。文化多樣性和生物多樣性的一樣必須受到保護，但不是採防守方式，是在開放的世界裏對未來所需知能的保存。

（四）M2M Policy Workshop

物連網(Internet of Things, IoT)與機器對機器(Machine to Machine, M2M)為目前最受產業界矚目，發展最迅速的新興產業。本次M2M政策研討會由AT&T公司主辦，

邀請電信管制者、電信業者、設備製造商共同討論目前發展 M2M 所遇到的包括持續漫遊(permanent roaming)、頻譜供應(spectrum availability)、以及資料權歸屬(data soverignity)等三項主要政策議題。以下分別就各報告人簡報作摘要說明：

１、Matt Hatton：開場由科技顧問公司 Machina Research 經理 Matt Hatton，報告目前 M2M 對於電信管制者所造成的挑戰。Matt Hatton 表示，M2M 被形容為對於舊電信產業的喪鍾(final nail in the coffin)。依據該公司之預測，M2M 設備將由目前的 30 億，在 10 年內迅速增長到超過 220 億。而基於此項新技術的發展，由非電信業者所經營的 OTT、IoT 改變了傳統電信業生態。對管制者而言，主要挑戰來自於三個方向：

（１）漫遊：因為 M2M 設備需要在國際間移動，例如智慧汽車，故管制者應該制定確保通訊持續的漫遊規則；

（２）號碼與頻率：基於 M2M 通訊所需要多樣性的頻率需求，以如何基於不同的 M2M 功能訂定優先使用順序；

（３）通訊安全與個人資料保護：M2M 的通訊將造成大量的資料，如何確保其安全以及資料所有權之歸屬。在上述議題無法妥適處理前，產品的創新將因為外部風險而受到阻礙。

２、Robert Pepper：網路設備商 Cisco 全球技術副總裁報告該公司對於 M2M 未來 5 年的預測。Robert Pepper 表示，至 2018 年全球將有 200 億個互連設備，而其中 35%為 M2M 設備。M2M 發展快速，但在開發中與已開發國家的發展速度有顯著的不同，預計日本將是發展最迅速的國家，M2M 佔所有戶連設備的比例將達 65%，美國及西歐類似為 47%，中國與東歐接近世界平均 40%。相對於電視及個人電腦，M2M 對於網路流量的需求較小，但是基於其設備的多樣性，安全、標準、互通性及頻率為影響 M2M 設備發展的主要政策關鍵。在頻率議題上，低功率免許可頻率將是重要的因素。

３、Thomas Engel：農機製造商 John Deere 歐洲區經理 Thomas Engel 報告該公司的 M2M 發展策略。該公司的農機設備早在 15 年前即發展衛星導引系統，目前的技術以發展到「精密耕作(precision farming)」，亦即播種、灌溉、施肥，均透過與包括天氣預報、其他糧食生產者及盤商之資訊系統連結，以達成生產最佳化。目

前該公司大約有 20%的客戶採用此種系統,未來該公司並將採用巨量資料的技術，進一步的提昇生產效能。目前該公司的 M2M 農機是透過 SIM 卡與網路連結，所遭遇到最主要的法令障礙為部分國家要求該公司登記為電信供應者，或者因該公司的設備具有連網功能而限制二手銷售。

4、Eric Loeb：AT&T 公司國際業務資深副總裁主要從通訊技術與成本的關係，討論發展 M2M 設備所遭遇的問題。由於 M2M 設備適用在交通、能源、物流、醫療等許多產業，各國的管制者因此會依據其需要設計不同的平台，而 M2M 設備如果需要在跨國的平台間移動，在缺乏國際漫遊協定的情況下，將會大幅增價成本與複雜性，進一步影響設備的安全性與可靠性。

5、Robert MacDougall：Vodafone 公司企業關係部門主管 Robert MacDougall 報告該公司 M2M 的發展與挑戰。Robert MacDougall 表示，Vodafone 公司 M2M 部門的人力，在過去 5 年間由 7 人發展到 1300 人。顧客的主要需求是裝置 SIM 卡的 M2M 設備可以在跨境時確保訊息無縫傳遞,因此 Vodafone 公司為這些 M2M 設備建置了特殊的平台。Robert MacDougall 認為，政府應了解到 M2M 技術對於社會經濟的重要價值，並且思考技術中立性的問題，基於 M2M 設備所提供的不同服務，某些關鍵服務應享有較優先的傳輸權。

6、Leong Keng Thai：新加坡 IDA 副局長梁景泰報告新加坡對於 M2M/IoT 的發展策略。梁景泰表示，新加坡體認到 M2M/IoT 是發展智慧城市的起點，M2M/IoT 可應用於自動駕駛、都市設計，可以幫助建構環保而永續的環境。新加坡為了發展 M2M/IoT 提供了許多政策誘因，包括指派 1 億個號碼專供 M2M 設備使用，開放電視 white space 大約 180MHz 供免許可使用，以及建構各資保護、網路安全等法制基礎。因為 M2M/IoT 還處於初期發展早期階段，對於這個創新與法令間的競賽有必要給予更大的空間,因此新加坡將 Jurong Lake 區規劃為政策與技術實驗區(sandbox for policy and technology)，並且徵詢多數利害關係人的意見。

（五）達成寬頻普及

圖說：左一為本會石主委由其主持本場次會議，其餘為本場次相關與談人。

本場次由本會石主委擔任主席，與談人包括華特迪士尼公司全球公共政策副總裁 James Filippatos、芬蘭 Oulu 企業執行董事 Juha Ala-Mursula、威瑞森公司國際運營和管理部副總裁兼法律總顧問 Thomas M. Dailey、千里達及多巴哥電信管理局企業大臣 Nievla Ramsundar 等人。本會石主委於開場致詞中，特別介紹臺灣推動寬頻普及服務的政策考量與歷程，並將臺灣寬頻普及服務的實施成效，與來自全球的與會者分享。以下為本會石主委發言重點摘述：

完善寬頻服務的好處已被充分認知，本會在推動寬頻普及服務時的政策考量，係

包括寬頻普及服務的可利用性、可近用性及可負擔性。當業者提供寬頻服務予居住於都會區的民眾時，可有較高的每用戶平均收入（ARPU），及較低成本的網路涵蓋；但對於偏遠地區的民眾和低收入，為使其獲得完善寬頻服務的好處，我們希望業者也能提供服務。對此，不同的經濟體依其政策目標及市場條件，會採用不同的策略來提供寬頻普及服務，以臺灣為例，2007 年我們開始推動「村村有寬頻」、「部落有寬頻」，以確保偏遠地區的民眾，可取得至少 2Mbps 以上的網際網路上網速度，同時為確保業者擁有足夠的基礎設施以接受任務，我們要求其以擴充和升級基礎設施的方式來提供普及服務。普及服務的建設經費來自於虛擬基金，由主要業者根據市場佔有率來分擔。縮小數位落差並非單一目標，為滿足偏遠地區持續的需求及人才的培育，我們並結合其他政府機關的努力，在偏遠地區的村落與部落建立「數位機會中心」，以擴大和深化數位素養。

在臺灣完成全面廣泛涵蓋後，管制機關（NCC）在 2012 年推出一個為期 4 年的「村村有高速寬頻」計畫，目標要將偏遠地區的寬頻速度，由 2Mbps 提升到 12Mbps，預估 2015 年前，涵蓋率將超過 95％以上的偏遠地區。此外，在去年臺灣 100Mbps 寬頻涵蓋率，已達所有家庭的 97％，伴隨著 4G 涵蓋範圍的擴增，臺灣已進入融合固定和行動（FMC）網路的新世代寬頻生態系統，而整體電信和有線電視產業的總營收預期會比以往都高。

與談人 Filippatos 副總裁首先分享在地內容（local content）對於促進網際網路的使用及建構健全的數位生態（digital ecosystem）之重要性，並認為有效的電子商務、消費者保護機制及合宜的政策，可進一步帶動在地內容的發展與消費。Dailey 副總裁則以其公司的觀察角度，分享美國的寬頻發展經驗，其表示在偏遠地區要推動寬頻普及，特別是業者基於商業考量無意願提供服務的區域，首先必須由政府創造投資誘因，並建立透明的監理法規，創新及投資才會相應產生。Ramsundar 女士表示，其來自一個很小的國家，惟在非都會區推動寬頻普及仍是一大挑戰，3 年前其國內透過實施小學生上網寫家庭作業（do homework online），並由國家負擔網路費用之方式，來促進網路的使用，未來則將持續推動社區中心免費上網，以及設立普及服務基金等方式，來推動寬頻普及。Ala-Mursula 執行董事則從過去市話網路發展的角度切入，表示技術的進步有可能使未來的通信全部採用無線方式，而寬頻服務則已成為吾人生活的一部分，

故寬頻普及是一條必走的路；據此，監理機關應確保未對寬頻服務提供者收取過高的費用，否則消費者將需負擔昂貴的通信費用。

會議隨後開放提問，與會者及與談人間旋即展開熱烈的討論，相關意見大致可歸納包括：像電子商務、社交媒體和其他線上應用與內容等活動，是成熟市場高速寬頻服務的成長和擴大的主要驅動力；而在新興市場，基礎建設尚未完成佈建，更多的資源和推動措拖是必要的。

參、建議及心得

本會石主委藉由此次參加管制者會議、國際傳播年會，積極與世界各國管制機關出席者交流當前重要的通訊傳播議題，如香港通訊事務管理局辦公室總監利敏貞、新加坡資訊通訊發展管理局副局長梁景泰、新加坡媒體發展管理局助理局長黃紹文、馬來西亞通訊傳播與多媒體委員會主席 Dato' Mohamed Sharil Mohamed Tarmizi、墨西哥聯邦電信學院委員 Adolfo Cuevas Teja、印度電訊管制管理局主席 Dr. Rahul Khullar、泰國通訊傳播委員會主席 Dr. Natee Sukonrat、瑞典郵政電訊管理局局長 Göran Marby、澳大利亞通訊傳播與媒體管理局主席 Chris Chapman、蒙古通訊傳播監督委員會主委 BALGANSUREN Batsukh、ÍIC 主席 Fabio Colasanti 等人，除有效增加臺灣管制機關的國際能見度外，並就管制經驗進行廣泛的分享、交流，也為他日彼此互動留下良好基礎。

圖說：上圖為主委與香港通訊事務管理局辦公室總監利敏貞交流；
下左圖為主委與馬來西亞通訊傳播與多媒體委員會主席 Dato' Mohamed Sharil Mohamed Tarmizi 交流；
下右圖為主委與新加坡資訊通訊發展管理局副局長梁景泰(圖左)、新加坡媒體發展管理局助理局長黃紹文(圖中)交流。


圖說：左圖為主委與印度電訊管制管理局主席 Dr. Rahul Khullar 交流；
右圖為主委致贈禮物給 IIC 主席 Fabio Colasanti。

本次會議之各項議題因均屬當前重要之通訊傳播政策及監理議題，復因產官學研對議題之觀察角度與所扮演角色有所差異，故各場次之會議討論均極為熱烈，基於匯流技術的快速發展與市場動態的諸多不確定性，無法就各項議題獲致單一共識或提出一體適用於各國之建議解決方案，惟藉由經驗分享、政策闡述、意見剖析與辯論之過程，確能引發與會者更深層、更廣面向之政策思考；而多數與談人也均強調，身處這個快速變化的通訊傳播產業，惟有不斷透過多方利益相關者(multi-stakeholder)間的合作及對話，才能妥善面對科技與人文所帶來的相關挑戰，把握及創造未來永續發展的契機。

整體而言，此行石主委率同仁主動積極與國際同儕團體進行密切交流，有效強化對世界通訊傳播產業發展現況與監理政策方向轉變趨勢之瞭解，一方面藉此宣揚我國產業發展的優勢與獨特性，另一方面亦期借鏡他國經驗並兼顧我國產業發展上異於其他國家之問題，作為未來施政的參考，此等積極作為實為後進應學習的典範。身處當前數位匯流發展的十字路口上，世界各國仍在如何有效因應此重大典範移轉的起跑點上做準備，蓄勢待發，相信只要我國持續落實前瞻政策的廣泛對話與制定並推動市場深耕，復保持與他國密切互動，必能使我國在數位匯流發展下與世界各國齊頭並進，有效實現全民、產業及政府多贏的政策目標，一同站穩數位匯流之巔峰，共享全球化下數位匯流所帶來之多樣豐富成果。

Adapting Regulation to a Digital World

Presented by Leong Keng Thai

Director-General (Telecoms & Post)

6 Oct 2014

iDA SINGAPORE

Intelligent Nation and Global City

that is powered by infocomm

2006 - 2015

iN2015 Strategy

- To establish an ultra-high speed, pervasive, intelligent and trusted infocomm infrastructure
- To develop a globally competitive infocomm industry
- To develop an infocomm-savvy workforce and globally competitive infocomm manpower
- To spearhead the transformation of key economic sectors, government and society through more sophisticated and innovative use of infocomm

Starting from a position of strength

Next Gen Nationwide Broadband Network

Wireless @SG

Infocomm Media Masterplan

Building Hard and Soft Infrastructure to enable a Smart Nation

Personal data protection

Consistent application of Principles

1. Does the increasingly converged world of the TMT (telecommunications, media and technology) sector demand converged regulation?

The information and communication technology (ICT) sector has experienced explosive growth over the past two decades. There are over 4.5 billion mobile phone subscriptions globally, the Internet has grown to include more than a billion people, and high-speed broadband networks reach more than 400 million subscribers. In short, ICT now permeates every aspect of social, political, and economic relationships. Many of these exciting developments were possible because of policy and regulatory frameworks that spurred investment, liberalization, and competition in ICT. Continuous dynamic market and technology developments have led to a phenomenon called “convergence”. Coming from a developing country, I find that we have benefitted tremendously from the forces of convergence provided that policy makers create the same types of favourable conditions that promoted the initial growth of the sector.

The ICT convergence phenomenon entails different aspects. At the technology level, convergence allows delivery of multimedia communications across a range of networks that were traditionally vertically separated. This fundamentally alters the business of ICT: infrastructure, services, companies, content, and devices can now interact and work together in new, unprecedented ways, opening markets, challenging existing structures, and allowing innovative business models. At a different level, we are witnessing cross-sector convergence, whereby many social and business services are being superimposed and enabled over the rapidly proliferating cellular network platforms, such as mobile banking.

My view is that countries have much to gain if they understand and recognize the emerging forces of convergence and if they create the appropriate conditions for it to flourish. Although convergence may increase the complexity of market structures, it will nevertheless help extend access to a broader range of affordable ICT services, support innovation, and open new, unforeseen opportunities. Indeed, some of these benefits are already being realized in the developing world.

For example, mobile phones now offer traditionally underserved populations an opportunity to access Internet services, especially where I come from where we have underserved rural areas. Some operators are able to get greater revenues from converged services: voice, Internet, and media. Yet, while the promise of convergence is tremendous, the pace and magnitude of change are challenges for people like us who are tasked with regulating the ICT sector. The absence of a timely strategic response can hamper competition and discourage investment.

Regulators should have certain policy options and guiding principles that could help governments explore strategic ways to mitigate some of the risks associated with convergence while maximizing the benefits and opportunities that it can offer.

Regulators should liberalize their markets further, by promoting competition and allowing technologies to deliver all that they can. At the same time, I recognize that there are no universal or global solutions, with convergence occurring across such a wide range of ICT networks and markets. As such, any ICT policy or business solution should be tailored to the local environment and to the peculiarities of the specific situation. In all my talks, I like to relate to the issue of context, especially in matters of regulation.

2. Are the traditional objectives of regulation such as lowering prices, increasing choice and universal access redundant in a digital world?

The traditional objectives of regulation are unlikely to ever become irrelevant in the near future. Liberalisation does not necessarily mean abdication of regulatory responsibilities nor does it mean absence of regulation to let the market run itself. While I acknowledge our movement towards digitalisation, my view is that the objectives of regulation are timeless. I will talk about the issue in a South African context.

Our vision as the regulator of the South Africa ICT sector is "To advance the building of a digital society."

This is supported by Government Policy which is to ensure fair retail prices through promotion of competition. We use tools such as the Competition Act of 1998 and the Electronic Communications Act of 2005 (as amended).

- ICASA is mandated to:
  - regulate electronic communications, broadcasting and postal sectors in the public interest
  - Ensure affordable services of high quality for all South Africans.
  - Protect consumers from unfair business practices and poor quality of services
  - Enforce compliance with rules and regulations

ICASA implements policy and evaluates bottlenecks to competition. Such bottlenecks are prevalent in supply chains, e.g. telecommunications, etc.

We used to have a benign regulatory regime supported high penetration of mobile services and this achieved the following:

Population coverage > 98%
Geographic coverage > 88%

The benign regime changed in 2005 with more players coming on board. It brought about change and there was also a need for greater competition and lower prices as well as increased regulation of termination rates

ICASA continues to regulate in the public interest and facilitates and fosters competition in the electronic communications and broadcasting sectors. This helps to encourage innovation in all sectors it regulates. All this is going on despite the increasing digitalisation of our ICT sector. Consumers still require protection from unfair practices and non-cost based prices.

International Regulators Forum
6 – 7 October 2014, Vienna, Austria

Session 2 : Consolidation or Competition?

Speech by Miss Eliza Lee
Director-General of Communications, Hong Kong

Fabio, Wolfgang, fellow speakers, distinguished guests, ladies and gentlemen,

It is my pleasure to share with you today two recent decisions of the Hong Kong's Communications Authority ("CA") that pertain to "competition and consolidation" in our telecommunications market.

Market Overview

2. Allow me to first bombard you with some statistics, to give you a quick snapshot of how intensely competitive our telecommunications market is like. Hong Kong is small and compact. We have a population of 7 million plus with an area of 1 100 square kilometres. Fully liberalised for more than a decade now, we have 21 local fixed carriers and 4 mobile network operators (reduced from 5 in May this year) competing keenly on the provision of telecommunications facilities and infrastructures. Among these 21 local fixed carriers, 15 of them are providing retail services. We have 41 external fixed carriers providing facilities for external telecommunications services, and over 5 hundred service-based operators making use of the facilities and infrastructures to provide local and external services. Driven by intensive competition, our telecommunications service charges are among the most affordable, and our penetration rates among the highest in the world.

3. On our local fixed telecommunications services, while Hong Kong's teledensity stands at 101%, 83% of households are using fixed broadband services. With 83% of residential housing units being connected by FTTH[1] or FTTB[2], 87% of our households have access to at least 2 self-built fixed networks and 78% have at least 3. The speed of

[1] FTTH stands for "Fibre-To-The-Home".
[2] FTTB stands for "Fibre-To-The-Building".

100 Mbps internet service at a monthly charge at around US$20 is commonplace and offers at speed up to 1 000 Mbps at about US$25 are also widely available. According to the State of the Internet Report published by Akamai, for the first quarter of 2014, Hong Kong has an average peak internet connection speed of 66 Mbps, which is the second highest in the world. Externally, Hong Kong is also one of the most connected economies with an international internet bandwidth of 1.4 Mbps per user.

4. As at June 2014, we have over 17 million mobile subscribers. The penetration rate for mobile telecommunications services has reached 237%, and that for mobile broadband is 176%. 4G-LTE services were first introduced in 2010 and are now commonly available to the Hong Kong population. While some 4G-LTE networks offer a peak data download speed at 150 Mbps, users may also access the internet via the 28 600 WiFi hotspots available throughout the city. Mobile service plan with 1GB data per month is commonly available at around US$16, and that with 5GB data per month at around US$28. On average, each 3G or 4G mobile subscriber uses slightly more than 1GB mobile data in a month. The total monthly mobile data usage surged to 13 600 terabytes in June 2014, which was 30% higher year on year.

5. By now, you should have a good grip over the vibrancy of our telecommunications market. In fact, under our light-handed regulatory approach, we forbear from any market intervention. Our pro-market policy has successfully brought about the much needed private sector investments for the roll-out of the fixed and mobile broadband networks in the internet age. These investment decisions are made by operators based on their own commercial considerations. There is absolutely no government subsidy to speak of, which probably sets Hong Kong apart from the rest of the world. Instead of participating in the market, we strive to provide a facilitating environment for the market to operate effectively. We do not prescribe any limit on the number of operators in any telecommunications market, for there is simply no magic formula that fits all. We believe that the optimal number of operators to meet the demand for telecommunications services should be the outcome of fair and effective competition in the market, and be determined by the market forces.

6. With the above backdrop, let me share with you the underlying philosophy and reasoning of two recent decisions made by the CA that concern competition and consolidation in our telecommunications market. One is on the re-assignment of the

spectrum in the 1.9 – 2.2 GHz band ("3G spectrum") upon expiry of the existing term of assignments in 2016; and the other concerns an application to the CA for prior consent in respect of a merger of two of our mobile network operators.

Re-assignment of 3G Spectrum

7. So far, a total of some 600 MHz of spectrum has been allocated to operators for the provision of mobile services. I mentioned at this forum last year that we were reviewing the assignments of the 120 MHz of 3G spectrum as the existing assignments would expire in October 2016. Such spectrum was assigned through auction in 2001 to four mobile network operators, each with 30 MHz, for a period of 15 years. For the remaining mobile network operator which has not been assigned any 3G spectrum, it may still provide 3G services by leasing the capacity from the other 3G operators.

8. The way we see it, the CA has at least three options in re-assigning the 3G spectrum. First, to re-assign it all to the four incumbent 3G operators; second, to re-auction all the spectrum; and third, a hybrid of the two.

9. According to the policy of the Hong Kong Government on spectrum assignment, the CA should adopt a market-based approach in spectrum management when there are likely to be competing demands from the market, unless there are overriding public policy reasons to do otherwise. In mapping out its decision on the arrangement for 3G spectrum re-assignment, the CA's four underlying objectives are:

(a) *First*, to ensure customer service continuity, as the 120 MHz of 3G spectrum has been fully deployed for service provisioning and we are particularly concerned about ensuring uninterrupted indoors reception e.g. in all the underground stations and concourses, in shopping malls etc;

(b) *Second*, to ensure efficient utilisation of the spectrum, as radio spectrum is a scarce public resource and the CA has the statutory duty to promote its efficient allocation and use. In that relation, the CA is quite convinced that a perpetual assignment of spectrum is not the most effective way to ensure an efficient use of spectrum continually. Auction, on the other hand, would put the spectrum into the hands of those which value it the most and use it most efficiently;

(c) *Third*, to promote effective competition. We are looking for an arrangement which allows the existing mobile operators the chance to review their spectrum holdings according to their commercial considerations and, equally importantly, an opportunity for new entrants to enter the mobile market; and

(d) *Fourth*, to encourage investment and promote innovative services, so that consumers will continue to enjoy the state-of-the-art technology and services.

10. Our mission is to find a solution that best meets these four objectives in spectrum re-assignment. In Hong Kong, we are obliged under the law to conduct public consultation on way forward. We did so, and conducted two rounds of consultation, and the responses received from the operators were not that unexpected. The incumbents of course favoured a perpetual assignment of spectrum, citing maintenance of service continuity and their legitimate expectation on spectrum re-assignment as grounds. The mobile operator with no 3G spectrum assignment and other advocacy for free competition asked for re-assignment through auction. Taking into account all views received, and the findings of a consultancy study, the CA decided to adopt a hybrid administratively-assigned cum market-based approach, whereby two-thirds of each incumbent's current holding, i.e. 20 MHz, would be re-assigned to it through right of first refusal and the remaining one-third, i.e. 10 MHz each would be pooled together for assignment through an open auction. The CA is satisfied that this hybrid approach will facilitate further effective competition in the mobile market, as operators will have the chance to rationalise their spectrum holdings by taking into account their investment in the network infrastructure. Meanwhile, it provides an opportunity for new entrants to enter the market through bidding for the 3G spectrum in auction.

11. The CA promulgated the decision in November 2013, about three years ahead of the actual re-assignment. The auction is scheduled for December this year. This timeline enables the incumbent 3G operators, and new entrants, if any, to prepare for network reconfiguration especially for the existing integrated radio systems which provide service coverage in the indoor areas, such as the underground trains and concourses. All the incumbent 3G operators have just accepted the offer of right of refusal for the re-assignment of the administratively-assigned spectrum for a term of 15 years commencing October 2016. Just last month, we have issued an Information Memorandum on our webpage,

inviting interested parties to participate in the auction. New entrants as well as the existing mobile network operators except one, which I will explain why later, may participate in the auction.

Merger in the Mobile Telecommunications Market

12. In October 2013, about a month before the decision of the CA on the arrangement for the 3G spectrum re-assignment, one of our then five mobile network operators, HKT, submitted an application to acquire another mobile network operator CSL. If the merger were allowed to go through, the number of mobile operators in Hong Kong would be reduced by one, from five to four. HKT and CSL are among the four incumbent operators assigned with the 3G spectrum. Post-merger, the two combined would become the largest player among the four mobile network operators in the market with a combined market share of 37% by subscribers and 39% by radio spectrum.

13. As the competition authority for the telecommunications sector in Hong Kong, what is the CA's approach to mergers and acquisitions in the telecommunications market? We have long adopted a market-driven policy, and consider that mergers and acquisitions are normal business activities, as they perform an important function in the efficient operation of the market. It is the CA's policy only to intervene in a merger and acquisition activity if there is a potential adverse effect on competition. The CA will only prevent a merger or acquisition from going ahead, or require it to be unwound, where other remedies to address the competition concerns cannot be devised or are considered unsatisfactory. The CA's decision on the HKT/CSL merger is a vivid example of how such long standing policy stance is implemented in practice.

14. So the CA proceeds to review according to the Hong Kong telecommunications law the HKT/CSL merger transaction following the legal test that has been prescribed, viz. whether the merger in question would have the effect of substantially lessening competition, the so-called SLC effect, in a telecommunications market. If SLC effect is identified and there is no benefit outweighing such detriments to the public, the CA may refuse to give consent to the merger, or it may allow the merger to go through if remedies are undertaken by the concerned licensees to eliminate the SLC effect.

15. Taking into account the outcome of a public consultation process and the findings of yet another of our consultancy study, the CA

concluded that the merger would likely have SLC effect in the retail telecommunications service market and the wholesale network access market. Spectrum concentration under the control of the merged entity would further exacerbate the SLC effect. In view of the finding of SLC effect, and the existence of remedies to neutralize the SLC effect, the CA gave conditional consent to the merger, and directed HKT and CSL to implement remedies to offset the identified SLC effect as the conditions to the consent of the CA to the merger:

(a) *First*, the merged entity had to divest a total of 30 MHz of 3G spectrum, i.e. half of their combined holdings of 60 MHz, upon expiry of the existing assignment in October 2016. In other words, the merged entity would only be re-assigned half of their current 3G spectrum holding, rather than two-thirds each, and is prohibited from taking part in any 3G spectrum auction for five years. Such measures would reduce the spectrum holding of the merged entity from 39% to 33%;

(b) *Second*, the merged entity had to continue to honour the existing agreements entered into with the mobile virtual network operators and the incumbent mobile network operator which currently has no 3G spectrum for wholesale mobile network access for three years; and

(c) *Third*, with anticipation of reducing some overlapping base stations after amalgamating the networks of HKT and CSL, the merged entity had to make known any plan of closure of any base stations post-merger, to facilitate rival operators or potential new entrants to take up those sites if they wish.

16. The remedies imposed aimed at enhancing the competitive positions of the existing rivals or potential new entrants in the relevant markets, such that they could serve as effective restraining forces on the merged entity's incentive and ability to raise prices, or reduce output or service quality post-merger. As a result of the merger consent of the CA and the remedies imposed, we have altogether 50 MHz of 3G spectrum, instead of the original 40 MHz, for competitive bidding by three of our incumbent mobile operators (i.e. other than the merged party) and any new entrant(s) interested in entering the mobile market.

Concluding Remarks

17. To conclude, competition is keen in the telecommunications market in Hong Kong. Consolidations may take place from time to time and these are afterall normal activities reactive to market forces. We have all along adopted a light-handed approach, which is pro-competition, pro-investment and pro-customer interest, in regulating the telecommunications market. It is always our belief that consumer benefits are best safeguarded with a regulatory framework which strives to ensure a facilitating environment for effective competition. We firmly believe that the market with effective competition would find its own equilibrium. In this way, the Hong Kong telecommunications market would continue to be vibrant, to be keenly competitive, and our consumers would continue to have access to ample choices of quality services at affordable prices.

Thank you very much.

IRF 2014 Vienna – Notes

"Consolidation or Competition?"

- Competition – what did it bring to us so far? Lower prices, customer satisfaction, but also, decrease in margins, less incentives for investments.
- Consolidation – what did it bring to us so far? Higher margins for operators on the market (the lower the number of the operators on the market, the higher the margins), more incentive for investments, but also, decrease of competitive constraints - monopolization/duopolization of the market higher prices, lower customer satisfaction, lack of willingness to invest (despite created incentive to invest) due to lack of competition.
- A lot of consolidation on European mobile markets (Austria, Ireland, Germany, Norway, etc.)
- Telecoms companies claim that they need to merge to gain the required scale to make those investments, but it must be kept in mind that key drivers for the investments were competition and customer satisfaction.
- Therefore, each case of consolidation must be assessed separately, in the context of specific national competitive forces, bearing in mind a need to safeguard competitive pressure on the market on the one hand, and to allow sufficient margins for operators in order to obtain revenue necessary for further investments.
- From my point of view each consolidation is not the same. Namely, consolidation between mobile operator and fixed (cable) company can bring added value for market and can increase competition. On Croatian market 2nd mobile operator bought main cable provider so the new company was able to compete with the incumbent offering 2play, 3play, 4play services on benefits of the end customers.
- The other thing which is important is that the exclusive rights for premium TV content (e.g. sport event rights) will probably become more important question than consolidation in near future because the content is becoming the most important way of differentiation between the operators offers.
- Not just consolidation but new OTT services (as Netflix) combined with content exclusive rights will become most important topics to deal with in future which can affect the competition more than consolidation.
- Consolidation could be ok on national level, to certain extent higher margins for operators on national markets will contribute to higher margins of EU operators present in several Member States, thus giving them more incentive for investments and increasing their competitiveness on global level.

Presentation by Cordel Green Executive Director of the Broadcasting Commission - Jamaica At International Regulators Forum (IRF) Vienna October 6, 2014

(These views are not necessarily those of the Broadcasting Commission)

How can the regulator balance concerns about the use of data vs. the desire for economic progress?

In looking at the power to be harnessed from big data, the World Economic Forum in a 2012 paper suggested that "by analysing patterns from mobile phone usage…we [could]… predict the magnitude of a disease outbreak half way around the world, allowing aid agencies to get a head start on mobilizing resources and therefore saving many more lives."

Four years ago a study of 2400 banks in 69 countries, found that greater information sharing among the banks led to greater profitability in the banking sector, reduced bank risk, a reduction in the possibility of a financial crisis and ultimately, economic growth (Houston *et al.*).

So, there is no question that data use is having a far reaching impact on economic growth and development by facilitating the improved delivery of services and better productivity performance.

However, there needs to be a balance between access to data, on the one hand, and meaningful use and dissemination of data, on the other.

We are each guaranteed the inalienable right to communicate ideas and opinions freely and also to be free in our ability to receive such communication (freedom of expression/communication). But we also expect that the ideas and opinions we have should be free from interference by persons who are not intended to be recipients of those ideas and expressions (“Data privacy”) (see Guy Berger *et al.*).

But, in a world where persons download applications which disclose their every location and where they post every shred of information about themselves, what does privacy mean?

I believe if you were to ask, most people might agree to willingly “surrender” or “sell” their private information but not have it “taken” or “stolen” from them.

So, our concept of privacy is predicated on the expectation that we should have an inviolate ability to “determine for ourselves when, how, and to what extent information about us is communicated to others” (Westin).

However, our expectation of privacy is being made unrealistic by technological advances. Information is being amassed on an unprecedented scale and most

people have no knowledge of when, the nature or extent to which information about them is being stored, access and shared.

At the moment, information is being gathered and stored largely as a machine to machine activity. But, if transhumanists such as Ray Kurzweil, chief engineer at Google, are right, we are moving towards a singularity and in

that process, people and machines will merge. What does that portend for privacy?

The transhumanist author Gennady Stolyarov, would have us not be concerned. Very few consumers, he says, would agree to purchase any kind of machine augmentation if they saw it

to have severe risks to their privacy (Guardian).

This is nothing short of incredulous.

If we agree that the use of technology and concept of privacy are shaped by the norms of society, then trans-humanist expectations that privacy will be protected by human behavior, is highly questionable, since the use of

technology today lacks attachment to many traditional values.

I believe that a categorization of privacy policy considerations is one useful route to a just and proportionate response to concerns about infringement of privacy.

One important policy consideration is whether personal information should be

treated as property. The law recognizes the distinct tort of misappropriation of personality but this is limited to the commercial value of the image and likeness of celebrities. But we are all now celebrities. Regular folk amass legions of “followers” and “friends” who are really “fans” in twitter-land, Facebook, Instagram and other social media.

It is therefore not an unreasonable proposition that in a world where there is increasing commercial value in information about ordinary persons, and "…a strong tendency to 'propertize' everything in the realm of information" (Mark Lemley), ordinary people should be assigned a property right in personal information about themselves (Lessig).

Some would argue that this will create an impossible situation, for example, news agencies being prohibited from publishing information about persons without their prior permission. But there can be exceptions to and limitations on property rights in personal information.

There is also the question of whether data protection legislation is an appropriate framework for protecting

privacy. I am inclined to the approach that focuses on regulating the “use” of data and not “protection of privacy”, simply because of the reality that “preventing data processing is no longer valid in the current networked database society” (Jaap-Koops). So, data protection should “be focused on decent treatment in the data usage stage” rather than “prevention in the data collection stage” (Jaap-Koops).

A related point is that in a networked database society, many individuals readily agree to ‘privacy policies’ in order to be and to stay ‘connected’. These policies give data controllers access to location, contact files, browsing history and personal details posted online.

The privacy agreements oftentimes give the data controller the right to share data collected and to combine information from different services such as Google Maps and Google Chrome, all in an effort to provide improved services to the data users. (See Google Privacy Policy)

Studies have shown that a majority of internet users either do not read privacy

policies before agreeing to them, have little or no idea what the policies actually mean, or see no need to read privacy policies since it is assumed that legislation would not allow data collectors to misuse their data. (Morran, Dachis)

Researchers at Carnegie Mellon University found that the average privacy policy is 2500 words and take an

average 10 minutes to read. (Out-Law.com)

These privacy policies are not only lengthy, but difficult to read and therefore do not support rational decision making.

Adapting Lord Denning's ‘Big Red Hand Test’, some of the privacy clauses would need to be printed in red ink, with a red

hand marked “danger” pointing at each line, before they could be held to be sufficient (Spurling v Bradshaw).

Moreover, it is those on the underside of the digital divide who are most vulnerable to exploitation and violation of privacy. Social justice requires the society to develop policies and practices for their protection.

Approaches such as those crafted in the European Commission's Data Protection Regulation and The UK's Data Protection Act are worthy templates for how data protection can be undertaken within a framework of regional co-operation and in a manner that is consistent with the ideals of human rights. However, they presume a level of digital literacy that does not exist in every country.

We must therefore take care to avoid the tendency to apply other country systems in a “one size fits all mode” to developing country contexts.

There is also justifiable consternation and skepticism about the extent to which the state should or can be extended in a digitalized, database, networked world.

In these matters, the regulator's role is to craft or influence policy and regulations that are fit for purpose: realistically responsive to the realities of the modern information eco-system and framed around the primacy of the ordinary citizen as data creator.

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附件：2014IRF年會M2M資料

IIC International Regulators Forum

Vienna, 6-7 October 2014

Session 4: Cultural protection in a converged world

a. National values vs. global content

i. Models to encourage domestic production in a globalised environment

b. OTT or Content and application providers – issues raised for the regulator
c. Social media/apps – whose responsibility?
d. Access to content and piracy – interoperability and legality
e. The regulation of connected TV – hardware, software, delivery – and pricing.

****

Introduction

I will speak from a European and French point of view, and from the French audiovisual regulator's point of view.

Globalized communications world, huge offer of contents from everywhere in the world towards anybody of any country, at any time, is a very good news indeed. Comfort of use for consumers is excellent. It is a real revolution for the world citizens, for the world culture and cultures. We just have to prevent some undesirable lateral effects.

Key issues of convergence for the audiovisual sector in a globalized environment:

- Competition distortion: traditional players challenged by new entrants, sometimes powerful and/or established outside Europe, whatever their names (YouTube, Google, Amazon, Alibaba, Rakuten, Netflix, Apple);
- The inefficiency of existing rules and even business model of classical audiovisual actors traditionally strong in their national area but now confronted with global actors already grown in very big markets.
- Financing of creation: foreseen weakening of traditional audiovisual players.
- Linear and non-linear services increasingly competing on the same screen, to the attention of the same audience.
- Difference between linear and non-linear services from the consumer's point of view is blurring.

- Different regulatory regimes revealed with connected devices: regulated audiovisual services and less regulated services on the same screen.

Why is it important to protect cultural diversity?

- Cultural diversity is of very high social value. Cultural goods and services bring identities, values, variety of talents.
- Among the main cultural constructions are the languages. Cultural diversity needs to keep the diversity and richness of languages, even in new ways of multilanguage creation.
- There is a question of sustainability of the financing system for growth and jobs: hundreds of thousands people work for audiovisual programs, audiovisual performances in many countries.

2. What is the legal framework for the protection of cultural diversity in a converged world ?

A few words about the UNESCO convention for diversity, about the European frame, and the French system.

2.1 A common agreement on the value of cultural diversity in modern society

The UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions adopted in 2005 has been signed by 132 countries and the European Union. It recognizes the double nature of cultural goods and services, which are both sources of cultural and economic value, and the sovereign right of countries to engage into cultural policies, including positive discrimination in favour of cultural goods and services.
It is a very important text that any country should use, despite the USA did not sign it.

Nevertheless, it does not provide for any legal compelling mechanism and its application only lays on the capability and the will of Parties to impose it in commercial negotiations.

2.2 A European legal framework on content: the Audiovisual Media Services Directive (AVMSD)

For now, all EU Member States share a common legal framework, namely the Audiovisual Media Services Directive, adopted in 2007. Since its first version in 1989, the Directive asks Member States to ensure, where practicable, that broadcasters reserve a majority proportion of their transmission time to European works (broadcasting quotas).

On the other hand, it encourages the production of independent works by demanding that broadcasters reserve at least 10% of their programming budget or 10% of their transmission time to that kind of programmes.

Since 2009, the Directive has extended the principle of supporting European creation to on-demand services. The Directive asks that Member States promote the production and access to European works on those services. Due to the characteristics of the non-linear services, broadcasting quotas have of course not be considered as relevant, and the Directive names other ways to promote European works: financial contribution, rights acquisition, share or prominence of these works in the catalogues.

2.3 The French system of protection of cultural diversity

The Directive admits, in line with the UNESCO Convention on cultural diversity, that Member States may adopt measures which are specific to the operators under their jurisdiction to conduct active policies in favour of a specific language. Member States may also adopt more detailed or stricter rules as long as they are in conformity with Union law.

In that respect, France has adopted, aside to quotas related to European works, specific quotas related to French-speaking works. To achieve the support and the development of both European and French-speaking works on audiovisual services, the French system lies on two major principles: broadcasting quotas and financial contributions to the production of works. Financing the creation by its users is a very important principle in France: “L’aval rémunère et finance l’amont” (users downstream pay for creators upstream). These principles (exposition and financing) constitute the main basis of cinema and audiovisual economy in France.

The aim of this system is to create a virtuous circle in which all players of the value chain can benefit from the creation of a work. In addition, a valuable exposition of European and French-speaking content to viewers is a means to encourage the consumption of these works.

The same logic has been transposed to radio services, on which quotas apply.

In 2012, TV channels have invested around €1.3 billion in audiovisual and cinematographic production, around 440 million for cinema and 850 million for TV works.

In comparison, on-demand services, which are still nascent and thus subject to a lower level of obligations, have invested €1.5 million in audiovisual production and €26 million on TV works.

4. Challenges and perspectives for countries and for regulatory authorities

(I point out five of them, they are more numerous).

4.1 The EU countries need to find a balance between the protection of cultural diversity at national and European level and building a level-playing field between operators.

It is fair to apply the principle according which any company making money out of a work should contribute to the financing of creation.

The first step is the payment of taxes, especially value added tax (VAT). We are impatiently waiting for 2015, the year during which the internet players should pay VAT in each country where they have customers. This is a harsh but necessary exception to the economic European principle that a firm pays taxes to the state in which it is established.

4.2 The question is now to decide if the Audiovisual Medias Directive should extend this method to the obligations of media services. Of course it would be better if all the EU countries would completely harmonize their internal rules, but this is difficult to reach.

Nevertheless, there are distortions between EU countries in the implementation of the Directive. So that operators, European or not, but especially not European grown operators, decide on the country which is the most welcoming for them. This forum shopping is increased by practices of tax and various obligations optimization in the digital industry. So maybe the notion of the “destination country” has to be considered not only for taxes but also for investment in creation obligations.

4.3 The EU must not make mistakes in choosing the appropriate instruments to modernize its rules and build the single market (*le marché unique*).

For instance, it is a great debate at the present time to know if the notion of “territorial” rights in intellectual property (which means that the rightholders allow the use of their audiovisual works country by country) must be abandoned or not. The President of the European Commission recently said something in that direction. But the European rightholders, the producers and editors of audiovisual works, of films which come from European native firms, know very well how to cope with this. The “territoriality” of author rights is not a problem for them. But it certainly is for global and already very strong players from outside Europe. So that in the excellent aim to build our common European market, letting down this territoriality could possibly create once more an inequality between European companies.

4.4 The negotiation between the EU and the USA for Trade and investment partnership.

The project Transatlantic Trade and Investment Partnership (TTIP) is negotiated at the present time between the USA and the European Union. Since the entry into force of the Lisbon Treaty, EU Member states have delegated their competence to enter into free trade agreements with other countries in the framework of the World Trade Organisation (WTO): the European Commission is in charge.

While this free trade agreement with the USA represents real economic opportunities for both Parties, and must succeed, it is also a danger for the protection of cultural diversity in Europe.

In all free trade agreements negotiations, both France and the EU have constantly:

- asked for the exclusion of audiovisual services, including cinema, TV, VOD. These services are part of culture, which may not be considered as other goods;
- engaged in liberalisation only in cultural services less likely to suffer from international competition, such as books, press and architecture.

Indeed, under the principles which govern the conclusion of World Trade Organization free trade agreements, discriminatory or protectionist measures are forbidden.

After a very intense debate within EU institutions and the Member States, it was decided that audiovisual services would be excluded from the negotiations of the free trade agreements so that it remains allowed to engage into cultural diversity policies at EU or national levels. The EU countries must remain vigilant about this.

4.5 Building common positions in Europe needs increasing cooperation and exchanging ideas within Europe.

This is the reason why ERGA was created this year.

First of all, the intense cooperation between the EU regulators (which exists in other ways in EPRA, at the Council of Europe level, or in a worldwide distinguished circle like IIC) could lead to more and more harmonized habits in enforcing the Directive.

And it should encourage the adaptation of the European legal instruments, in cooperation with the Commission and the governments, for the benefit of the audiovisual field.

The European countries and regulators have to keep together to encourage domestic production in our globalized environment and for the circulation of audiovisual works and programs.

Cultural diversity is like biodiversity: it has to be protected, not in a defensive way, but because it is the reservoir of future talents in an open world.

How to protect our children on all digital platforms and devices?

Session 3

IIC International Regulators Forum, October 6th, 2014

Prof. mr. dr. Madeleine De Cock Buning, President of the Board of Commissioners Dutch Media Authority; Vice-Chair of the European Regulators Group for Audiovisual Media Services (ERGA)

Challenges

High levels of protection and safeguards for traditional linear TV, but:

- Increasing amount of video is:
  - consumed on-demand
  - offered and watched (exclusively) online
- Potentially harmful video content is offered exclusively online (UGC)
  - by parties who are traditionally unregulated

Basic requirements

- Technique neutral and platform independent
- Non-discriminating traditional and new players
- Incentives to increase participation
- Clear objectives to gain trust from audience
- Universal concepts classification process
- Respect for cultural differences in rating

A possible example: Kijkwijzer in NL

- Sector classify their products according Kijkwijzer criteria to inform parents and audience about content and age
- Age Rating

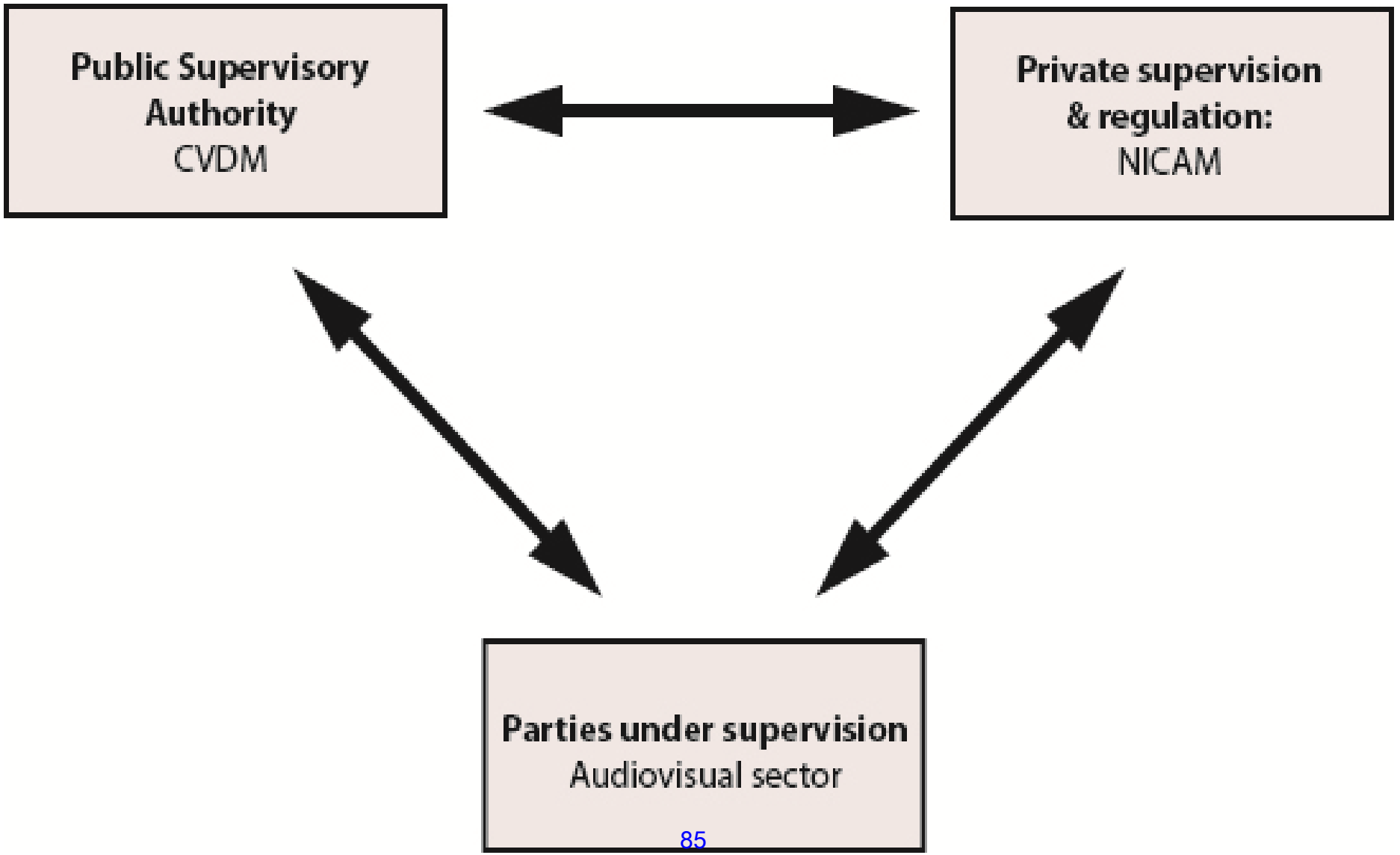
- Classification of content categories

Incentives to join

- Public and private media that intent to broadcast (linear) audio-visual content, are obliged by law to join an officially acknowledged classification organization = Netherlands Institute for Classification of Audiovisual Media (NICAM www.kijkwijzer.nl)

- Strong incentive for self-regulation: Those which are not affiliated can only broadcast programs for all ages under supervision the Dutch media authority

Kijkwijzers' co-regulatory design



Compliance to Kijkwijzer

- Public service broadcasters
- Private broadcasters
- Film distributers
- Cinema operators
- Producers, importers and retailers retailers of DVD, video and games

Recent developments

- 2012: agreement with HBO
- 2013: agreement with VodNed
- 2014: agreement with Netflix NL

A possible example: YouRateIt

- International qualification Tool
- Rating of User Generated Content (UGC)
- Introduced by the Britisch Board of Film Classifictions (BBFC) and NICAM

- Simple uniform tool to qualify UGC on UGC platforms on the basis of several simple questions

- Ratings can differ from country to country to reflect different national sensitivities and concerns over content.

Language and appearance can be fully customized to any website or national rating system.


Ratings can be translated to local ratings.
11
12
you rate it
FSK
12
Based on the location of the viewer, a national recognizable or tailored rating can be displayed.

Challenges for a pan EU co-regulatory system

- How can we safeguard freedom of expression?
- How can we get full commitment of the industry?
- How can we obtain the trust of the audience?
- How can we encourage the participation of all EU member states and even outside the EU?
- How can we stimulate a permanent development of the system?

Requirements for pan EU co-regulation

- Provide constitutional guarantees
- Align public and private interests
- Create checks and balances
- Arrange for high level of organization and low administrative burden
- Guarantee the basic principles of good-regulation
- Take account of the cultural differences build in the rating system
  - Provide for universal concepts during the classification process
- Arrange for frequent and adequate evaluation

Telefónica

Balancing investment, innovation, demand and competition – myths and realities from US, EU and Beyond _

IIC Vienna. 08/10/2014

Carlos López Blanco
Public Affairs & Regulation
Telefónica, S.A.

BE MORE_

1. Objectives & Regulatory approaches_

2. Comparing targets with outcomes_

3. A new policy needed in Europe_

In the last decade, each region in the world has adopted different objectives

附件：2014IRF年會M2M資料

Present Telecom Policy objectives

USA

- Push infrastructure & Financial returns

- Favours infrastructure competition
- Unbundling abandoned
- No unbundling of fibre

ASIA*

- Make broadband accessible for everyone

- Government subsidized deployments

EUROPE

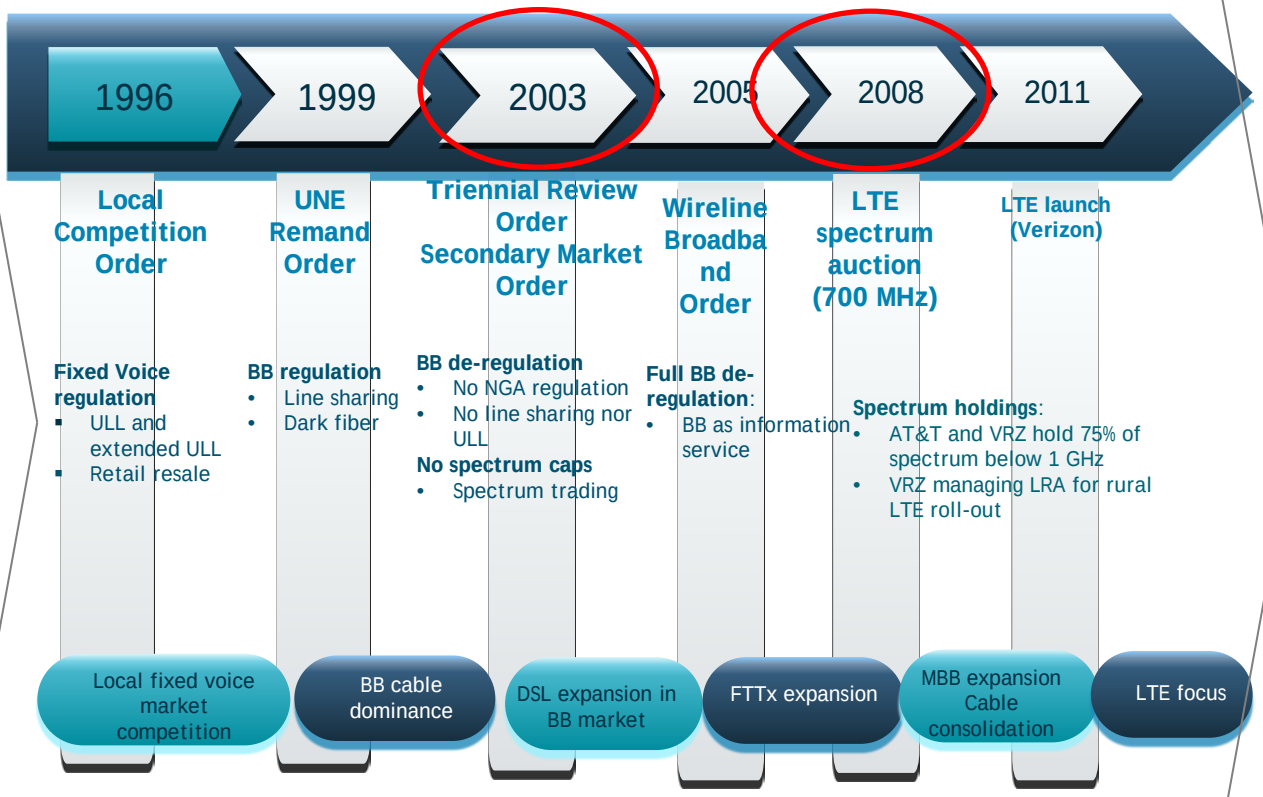
- Priority on competition in services & prices

- High degree of network unbundling
- Favours some soil of fibre unbundling/access

* China, Japan & Korea

USA has evolved from the first years' objective of ensuring competition, to a light touch regulation since 2003...

- **BB Unbundling established in 1996** to open up markets to competition
- **Spectrum** caps were originally viewed by the FCC as one mean to "*ensure effective competition in early stages of mobile market development*"



- **Light touch regulatory approach**
- **Market led**

And a never ending discussion on net neutrality

… USA adopting a market led regulatory approach.

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Market led

Flexible regulatory framework: Light touch

Minimum ex ante regulation, guaranteeing financial returns for investors and market innovation

- Commercial roaming & MVNO
- No broadband unbundling or NGA regulation
- Lighter spectrum control: no time limit, no CAPS, partitioning and disaggregation allowed, dynamic secondary market

Technology agnostic

No operators or technologies prioritizing : same services same rules:

- Same rules cable vs traditional operators
- Technology neutral spectrum

Consolidation friendly regime

More "laissez faire" approach to consolidation

- Mergers & acquisitions focus on preserving "Americanism". Companies with a foreign ownership are scrutinized by the US Committee on Foreign Investment

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Europe had the same starting point than US, but evolution has been different, and has delivered "different" results

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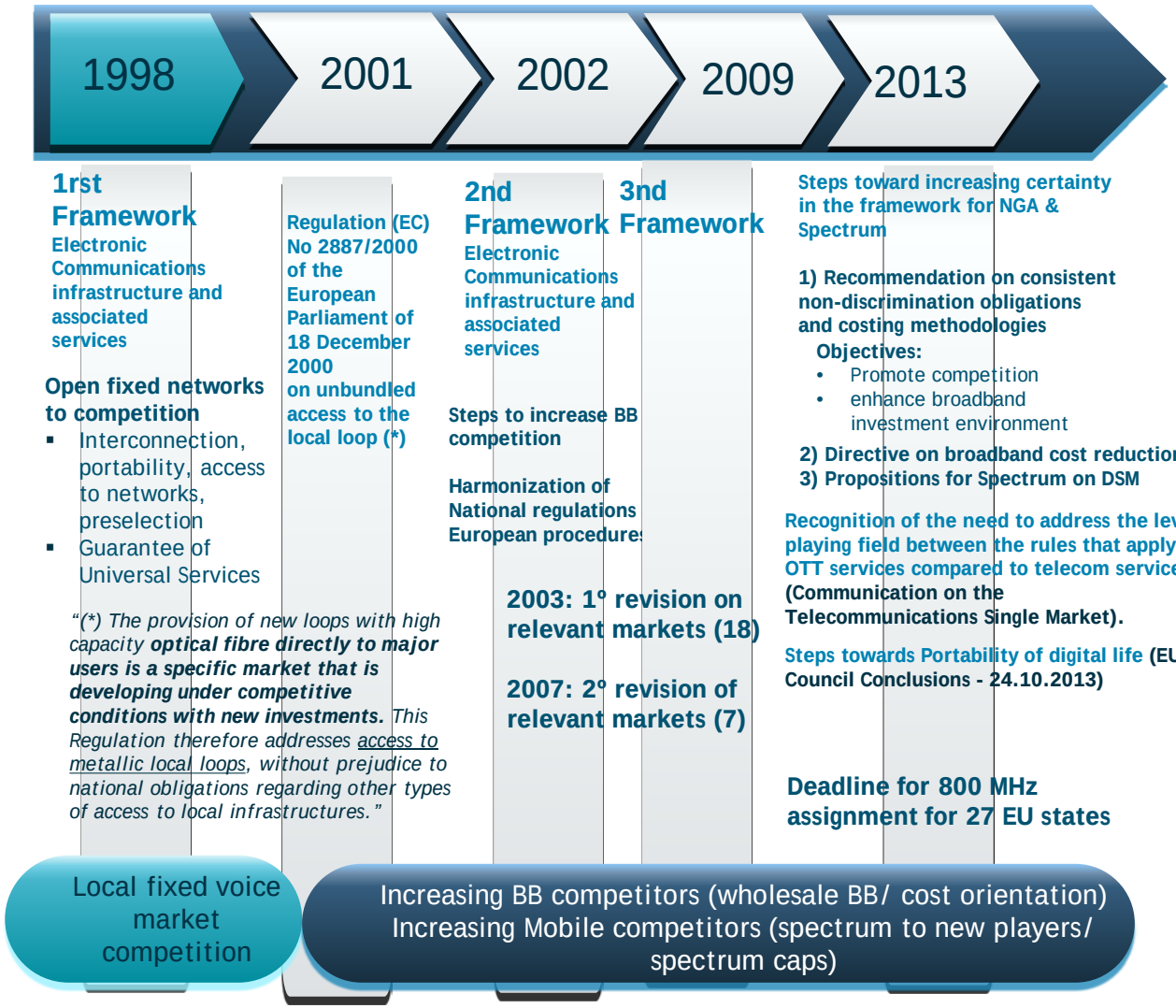
EUROPE

- Priority on competition in services, number of competitors & prices



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Europe maintains a prescriptive regulatory approach

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Prescriptive regulation

Ex-ANTE regulatory framework

Regulatory approach favouring competition in services & prices:

- Wholesale obligations (different levels of BB unbundling, MVNO, roaming) and price control
- Tight national spectrum control: CAPs, time limits, limit to spectrum trade, late allocation of digital dividend spectrum, etc.

Technology dependent. Unequal level playing field

Unequal level playing field

- Different treatment for cable vs traditional TELCOs
- No technology neutral spectrum
- OTTs and operators with different rules

Strict Consolidation Rules

Unflexible consolidation rules

- Market shares & number of competitors in each European country as proxy
- Spectrum awarding to new challengers

Today Europe is at a crossroad

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EUROPE

Good Diagnosis	Lack of Delivery
Need of pro-investment & level playing field framework	**Maintaining prescriptive regulation**

The new European Commission brings a new opportunity

- How to continue the Digital Agenda
- Regulation for investment
- Spectrum Policy
- Net neutrality
- Level Playing Field
- Consolidation

Hot Topics

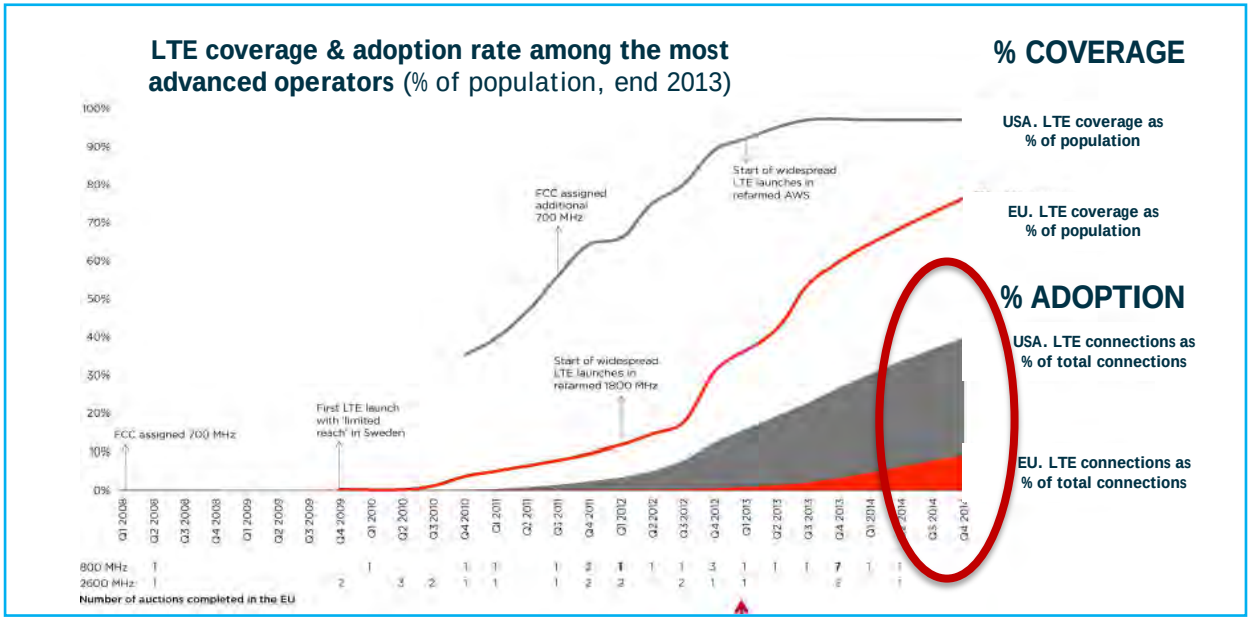
1. Objectives & Regulatory approaches_

2. Comparing targets with outcomes_

3. A new policy needed in Europe_

Europe is lagging behind in LTE coverage & adoption rate

2013	North America	Japan/Korea	W.Europe
4G coverage	>90%	>90%	64%
4G adoption	26%	>30%	3%



- Europe is lagging behind in LTE coverage, but catching up.
- High speed roll out in USA: 3 years to reach 4G coverage 90% pop
- Europe is clearly behind in LTE uptake or adoption rate (EU5:3%; USA: 26%; S.Korea 52,5%; Japan 29,2% -end 2013-)

US
- No spectrum caps
- Spectrum trading and sharing
- Technologic neutrality

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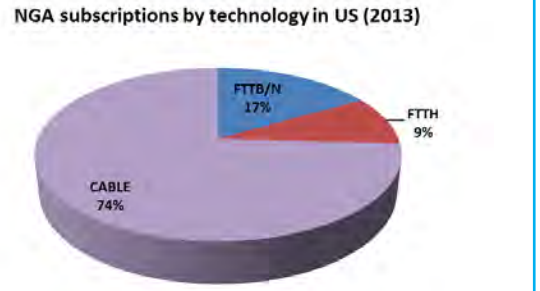
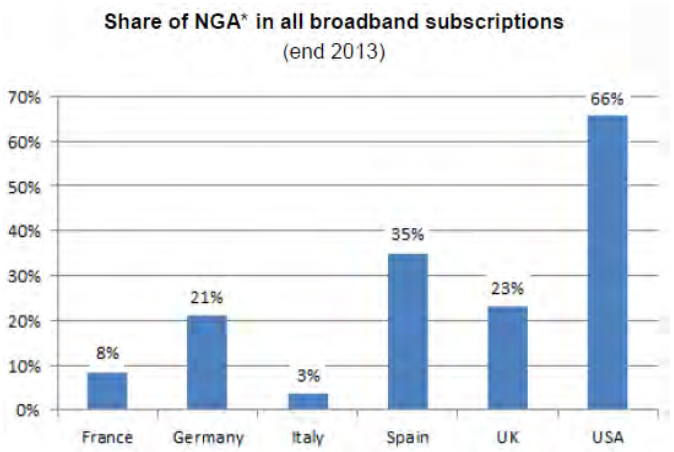
Source: GSMA intelligence

USA is outpacing Europe in fixed NGN coverage & adoption

2013E	North America	Japan/Korea	W.Europe
NGA coverage[1]	85%	>90%	65%
FTTH coverage[2]	15%	60%	10%





(*) FTTH/B+FTTN+VDSL, Docsis3. Source: IDATE estimates

Source: Analysis Mason FTTx roll-out and capex worldwide 2014–2019

- USA is outpacing Europe in NGN coverage & adoption rate
- Cable operators are leading NGA penetration: Incumbents no longer leading the fixed NGA market
- Still with differences among European countries

(1) *Includes cable DOCSIS 3.0 and FTTx technologies*
(2) *Source: Analysis Mason; FTTx roll-out and capex worldwide 2014-2019*

This digital gap is not caused by a lack of willingness of the European industry to invest revenues

Similar Investments/ Income

… same willingness to invest revenues

2013

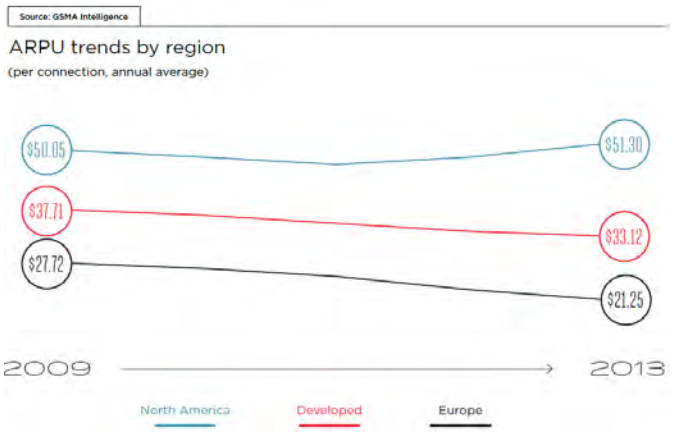
USA	ASIA-Pacific	Europe
16%	20%	15%

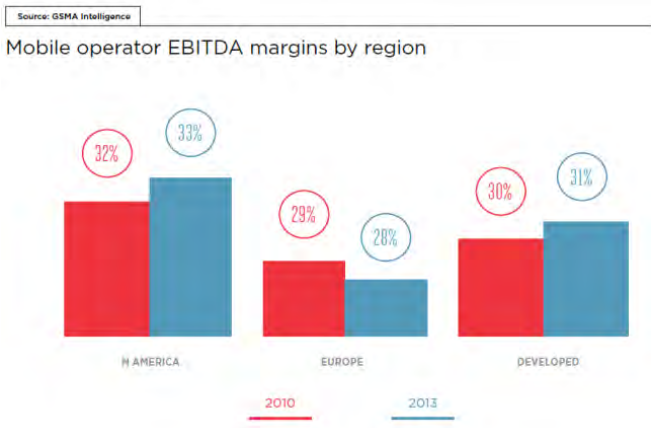
CapEx/Income

Source: OVUM 2013

Different Investment/ Hab

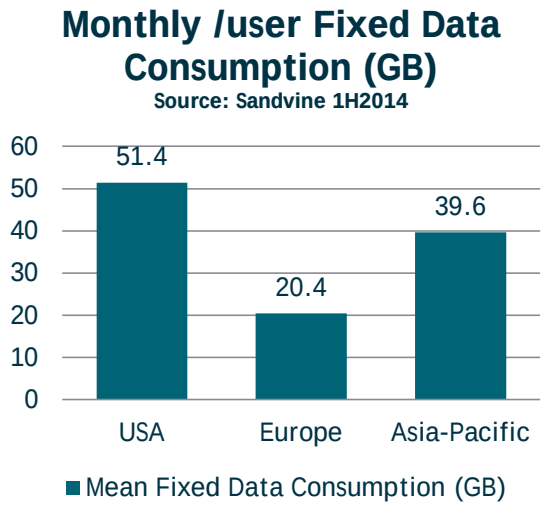
… different incentives, income & financial returns

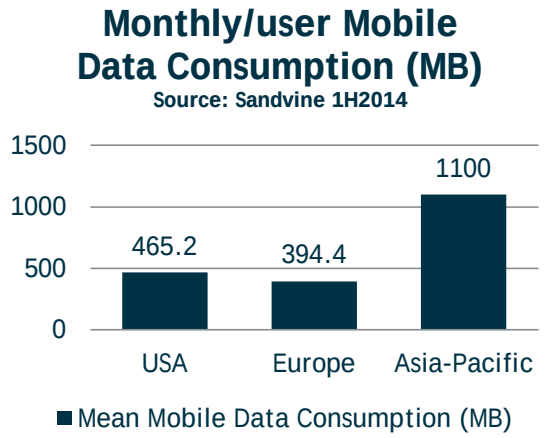


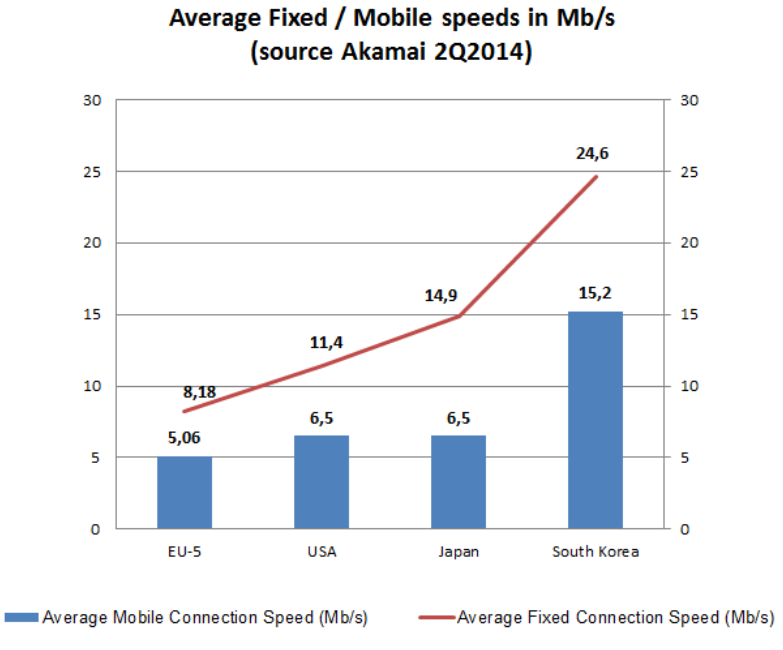


American users enjoy better speeds than European and consume far more data

附件：2014IRF年會M2M資料







- Europe is lagging in Internet connection speeds in fixed & mobile connections.
- American users spend on average more money than European counterparts, but consume essentially more data

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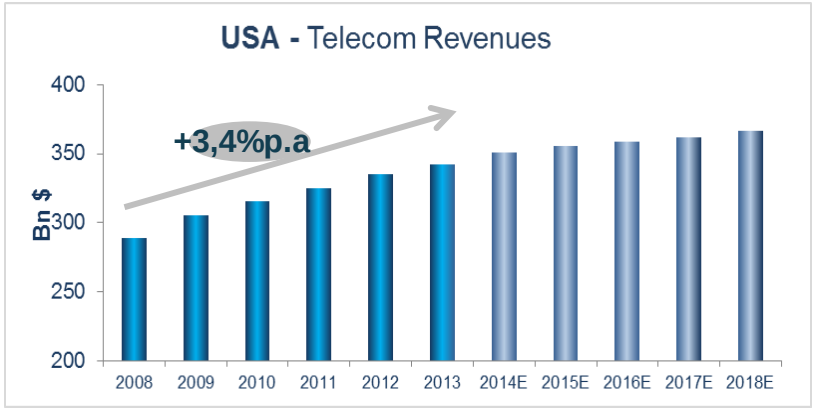
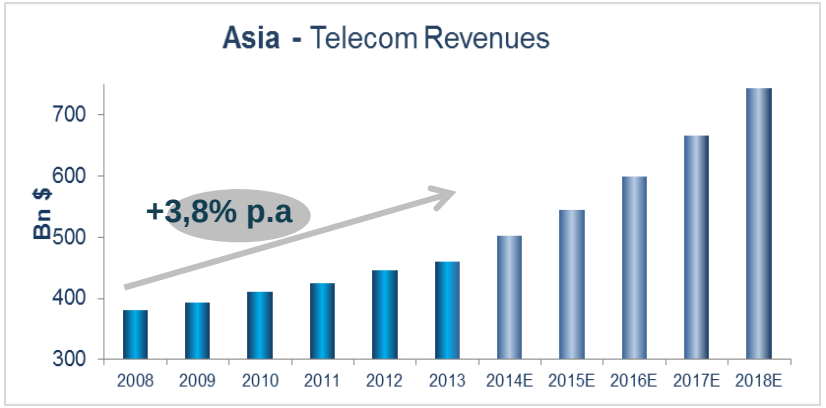
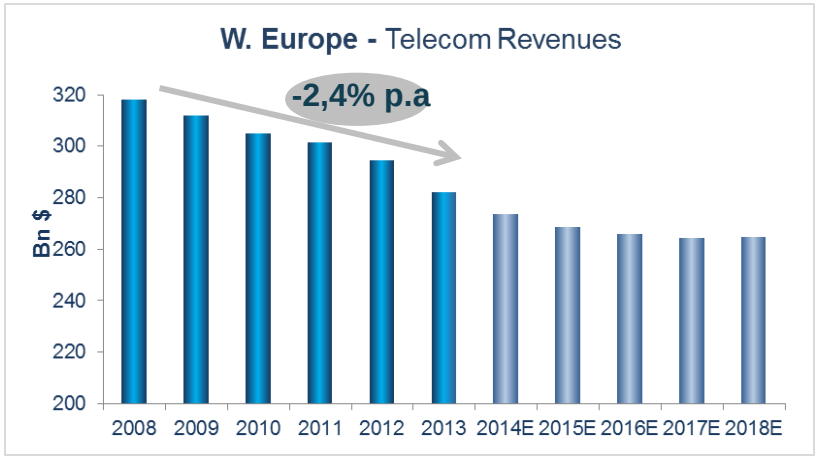
Europe is the only region in the world decreasing revenues







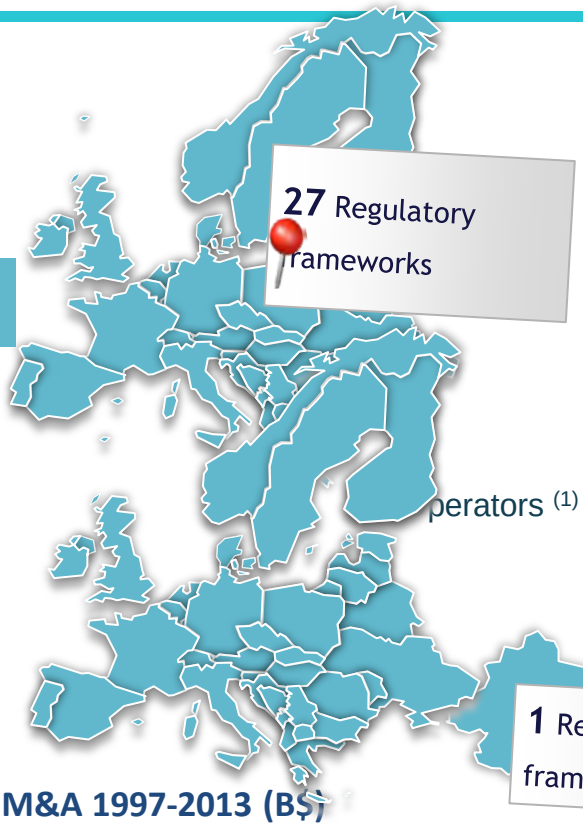
- Negative outlook on telecom revenues despite strong traffic increase which reveals a structural problem in Europe

Source: IDC Worlwide Blackbook 2014

Europe is a crowded space and very fragmented, compared to its peers

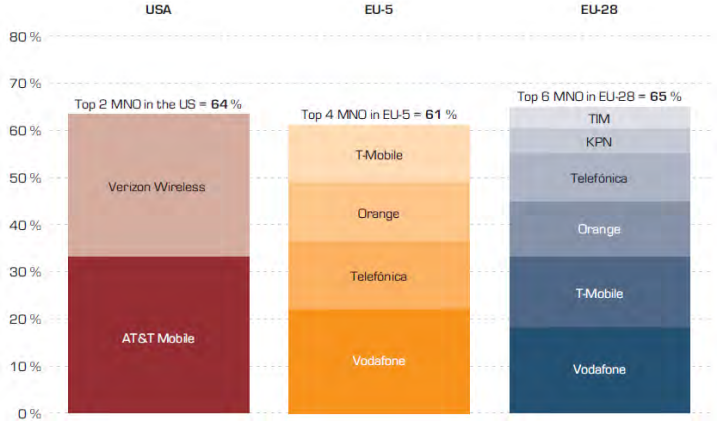
Operators 16 9

Operators 80 339



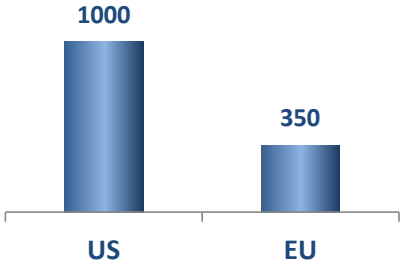
Operators (1) 2 3

Mobile leaders' market share (in volume) in the USA and Europe (EU-5, EU-28), at the end of 2013



Source: IDATE 2013

M&A 1997-2013 (B$)



(1) Excluding Hong Kong and Macao

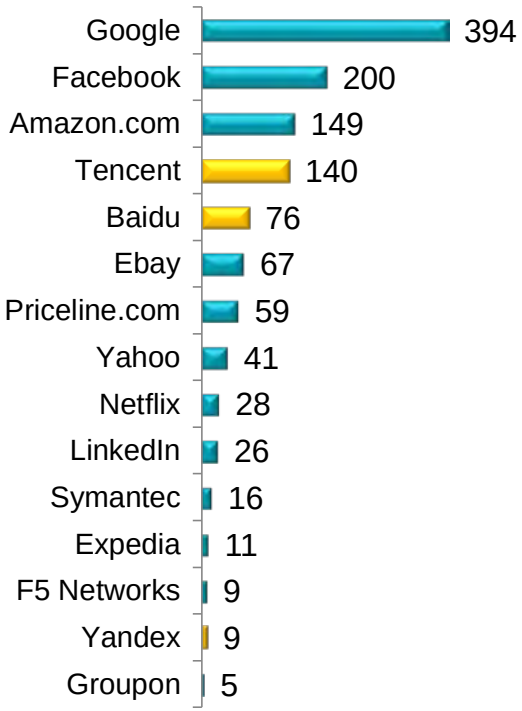
附件：2014IBF年會M2M資料

TELCO sector and Europe are falling behind digital industry

C

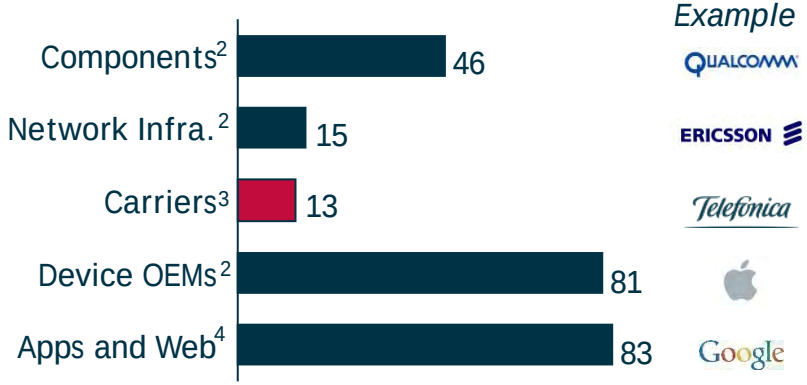
Internet

US	EU	EM	RoW
12	0	3	0



NOTE: Data Market Cap (in USD Bn. as of October 2014 and number of companies per region in each sector). US (United States); EU (Europe); EM (Emerging markets); RoW (Rest of the World)

- Value of Return on Invested Capital in the Internet (2012)[1]



- Return on invested capital is falling behind in TELCO industry
- Europe has no presence in the Internet Service Business. TELCO sector contribution to ICT growth is falling in Europe

(1) Source: Capital IQ, CPAT, GSMA analysis
(2) 5 Biggest players
(3) 20 Top telcos by revenues
(4) 7 Biggest players

1. Objectives & Regulatory approaches_

2. Comparing targets with outcomes_

3. A new policy needed in Europe_

The need for a new policy

A daunting situation

- Situation in Europe is not very encouraging
- A real change is needed to go from diagnosis to delivery

Europe must deliver

- USA was in a similar situation in 2002, and it was able to successfully solve the crossroad
- Europe has the conditions to also overcome the challenge, but political will is needed

Time to face the challenge

It's time to deliver, to accelerate Europe's transformation with clear focus on supporting European networks and digital services

Innovation & Investment friendly area

More market led, less regulatory driven. Remove excessive exante regulatory pressure

- Adapt regulation to new market structures, **fostering investment** (e.g. avoid NGN access regulation, same rules for former "incumbents" than for cable)
- Value-based pricing: **Break out of the deflationary price spiral** (e.g avoid cost orientation)
- Provide more room for **innovative commercial solutions** (e.g. timely & neutral spectrum in global market, avoid strict net neutrality rules)

Efficient market structure

Consolidation & competition framework revisited. Speed to scale: Allow efficiencies when competing with global champions, in new digital industry.

- Allow **players find the market structure that better serves the consumer & facilitates cost saving** in capital-intensive industries
- Review **Competition framework** on account of **new digital business models** with effective enforcement both to local and global players
- Foster **R&D framework, entrepreneurship, demand and digital skills**

Level Playing field

Same services-same rules to all elements of value chain (&with other regions)

- Adapt regulatory framework to new ecosystem: **Telecom operators subject to same rules than OTTs,** when competing on same services on customer's perspective.
- **Strong digital confidence rules**: privacy & security & interoperability & portability of digital life.

Regulation needs to evolve with market & industry

Telefonica's proposal for a better Digital Ecosystem

附件：2014IRF年會M2M資料

10 policy recommendations to create an open and safe Internet experience for all and unleash the full potential of the Digital Economy

1. **Build Digital Confidence through a safer Internet experience** and by empowering citizens to be in control of their personal data.

2. **Create a Portable Digital Life** for consumers by allowing them to use their data, information and applications regardless of their devices or platforms

3. **Open up mobile Operating Systems, App Stores and other digital platforms** to increase users' freedom, choice and competition

4. **Promote interoperable Internet applications, communication and messaging services** to improve consumer experience and foster competition

5. **Improve transparency** about the conditions of use for Internet services and the distinction between information and advertisement in online search results

6. **Transform education, learning and teaching** by widely adopting digital technologies and services based on Open Resources and Standards.

7. **Promote Open Innovation and Open Standards** principles and prevent that undue Intellectual Property protection restricts innovation in the Digital Economy

8. **Create fairer policy frameworks by establishing the same rules for the same digital services** and smarter regulation by relying more on outcome-based policy making and case-by-case supervision

9. **Make Internet available to everyone** by establishing adequate conditions for private investment in broadband infrastructure

10. **Evolve the policy models of Global Internet Governance** by building on its existing foundations and through involvement of all stakeholders in an open manner and on equal footing

http://www.digitalmanifesto.telefonica.com

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Recent EU practice in telecoms mergers

Sophie Moonen
Head of Unit
C5 – Information, Communication and Media
DG Competition
European Commission

The views expressed in this presentation are personal and do not necessarily reflect the views of the European Commission

European Commission

Consolidation trends

➢ By type of infrastructure

- Mobile + mobile
- Mobile + cable E.g. M.7231 *Vodafone/Ono* (2014); M.6990 *Vodafone/Kabel Deutschland* (2013)
- Fixed: cable + cable E.g. M.7000 *Liberty Global/Ziggo* (2014); leased lines; retail business connectivity E.g. M.7109 *Deutsche Telekom/GTS* (2014)

➢ By geography

- Cross-country

  E.g. M.6948 *Telenor/Globul/ Germanos* (2013)

- In-country

  E.g. M.7018 *Telefonica Deutschland/E-Plus* (2014), M.6992 *H3G/Telefonica Ireland* (2014)

European Commission

Past mobile telecom cases of the Commission

Case	Description / Outcome
T-Mobile/tele.ring (2006)	• 5 to 4 in Austria • Cleared with remedies in Phase II
T-Mobile/Orange NL (2007)	• 4 to 3 in the Netherlands • Cleared unconditionally in Phase I
T-Mobile/Orange UK (2010)	• 5 to 4 in the UK • Cleared with remedies in Phase I
H3G Austria/Orange Austria (2012)	• 4 to 3 in Austria • Cleared with remedies in Phase II
H3G UK/Telefónica Ireland (2014)	• 4 to 3 in Ireland • Cleared with remedies in Phase II
Telefónica Deutschland/E-Plus (2014)	• 4 to 3 in Germany • Cleared with remedies in Phase II

Issues examined

- Market definition
  - *mobile v. non-mobile; segments*
  - *national dimension*
- Market positions
  - *market shares, also at segment level*
- Closeness of competition
- Important competitive force
- Counterfactual
- Coordinated effects
- Efficiencies (verifiability, merger-specificity and pass-on)
- Remedies

H3G/O2 Ireland

Overview

Vodafone [~40]%

Three [~10]%

O2 (incl. Tesco Mobile) [~30]%

Merging Parties

Eircom [~20]%

- Non-coordinated effects ("gap" case)
- Existing network sharing agreements (O2/Eircom and Three/Vodafone)

Main findings

- Three is an important competitive force (e.g. attractive data offers)
- Counterfactual: the parties would continue to invest and compete absent the merger
- Competitors likely to follow price increases
- MNO entry highly unlikely (high investment costs and low profitability)
- Weakening of Eircom due to degradation of network sharing
- Efficiencies not proven to a large extent (in particular could be generated with the existing network sharing agreements)

Telefonica DE/E-Plus

Overview

T-Mobile (DTAG)	[20-25]%
Vodafone	[20-25]%
E-Plus	[15-20]%
O2 Deutschland	[15-20]%
Merging Parties	
Freenet	[10-15]%
Drillisch	[0-5]%
1&1	[0-5]%

Main findings

- E-Plus and O2 are close competitors with a focus on pre-paid customers
- Loss of competition between E-Plus and O2
- Both E-Plus and O2 are important competitive forces (especially E-Plus growing)
- Competitors would likely follow price increases
- Entry of MNOs post-merger depending on entry conditions
- Efficiencies not proven (e.g. in particular could be generated with network sharing agreements)

Remedies

- Innovative capacity-based MVNO model: MVNOs commit to purchase a fixed share of the merged entity's network capacity for an upfront fee:
  - Incentive to compete aggressively: no incremental cost to acquire new customers
  - Access to new technologies
  - Flexibility to offer retail products
- Option for MVNO entrants to become an MNO by acquiring spectrum from the merged entity
- Other remedies: offer to prolong the network sharing agreement with Eircom (H3G/O2 Ireland) and improving commercial terms for MVNOs (Telefonica/E-Plus)

Conclusions and outlook

- Case-by-case analysis showing there is no “magic number” of mobile network operators
- Markets can be usefully analysed by zooming in on different segments
- In oligopolistic markets such mobile telecoms markets, the Commission is attentive to closeness of competition and the particular important role of some mobile operators – such as recent entrants keen on gaining market share – for the competitive dynamics
- Although each case is reviewed based on its specific facts, recurring issues likely to arise in the context of future mobile telecoms merger; useful experience gained

附件：2014IRF年會M2M資料

CONSOLIDATION AND COMPETITION
HOW TO FOSTER INVESTMENTS AND ACTIVE INFRASTRUCTURE COMPETITION?

Gabrielle Gauthey – President, Government and Public Sector

IIC Annual Conference – Vienna – October 8th 2014

VARIOUS COMPETITION MODELS AROUND THE WORLD

• 2 platforms countries

- Competition between cable and telecom platforms
- This competition model has been adopted in the US and in a few Northern European countries and in Portugal
- Infrastructures are rolled-out in parallel and sometimes do not geographically overlap (e.g. US)
- Debate on competition model , and on coverage of less dense areas

• 1 platform countries

- Active infrastructure competition on top of common passive network
- Model adopted in France, UK, Italy, Spain for copper. On-going debate on right model for NGA.
- Slow roll out, focused on dense areas
- Leads to patchwork segmentation /fragmentation of the territory between dense and non-dense areas
- Other copper enhancing technologies considered to ease the cost (e.g. vdsl/vectoring)

• 0 platform countries

- Case of developing/emerging countries where fixed infrastructure (access, backhaul, backbones) is poor and limits mobile and fixed internet access expansion
- Governments step-in to ensure coverage, speed, networks openness and services affordability
- Open Backbones (South America, Africa, ..), shared LTE access (Mexico, Kenya)

BROADBAND POLICY & REGULATORY TRENDS

AMERICAS

Vertical integration , platform competition, open backbones & LTE

- US : Unregulated broadband markets in the No public intervention outside rural areas; Pro-active spectrum allocation policy
- CALA countries (Mexico, Colombia, Peru, Argentina) focus on open backbones; Digital Dividend allocation for LTE in APT band plan; Open access wireless and Major regulatory reform in Mexico

EMEA

Infrastructure based competition and limited public Intervention

- EU : high fragmentation of markets; difficult balance between active infra competition and passive sharing; On going regulatory reform for NGA but lack of investment; State Aid in rural and medium density areas/infra sharing; On going debate on Telecoms Single Market
- MEA : Open access backbones (Ghana, Burkina Faso), Open access wireless networks in digital dividend bands (Kenya); Nation broadband plans (Morocco, South Africa)

APAC

Network separation, broadband plans & rural coverage

- Pacific Asia :heavy influence of government and regulation (SG, Aus, NZ); Structural separation, growth through premium connectivity and bitstream wholesale; open backbones & universal coverage lead network transformation
- Chinese market remains dominated by integrated operators
- South Asia : Focus on Broadband plans and rural coverage

CHANGES AHEAD !

附件：2014IRF年會M2M資料

A RANGE OF SCENARIOS

Survivor Consolidation – Revenue decline , industry loss of confidence, leading to consolidation of Telcos	**Worst case scenario !**
Clash of giants – competition between integrated giant carriers, increased competitive threats from OTT	**US scenario**
Market Shakeout – Structural separation, growth through premium connectivity sold to third parties	**APAC scenario**
Generative Bazaar – Scattered initiatives, passive infrastructure sharing, valorization of active infrastructures	**Europe scenario**

HOW CAN GOVERNMENTS MANAGE THE TRANSITION AND ENSURE NEW INVESTMENTS IN NETWORKS?

DATA CONSUMPTION IS BOOMING

NEED FOR INVESTMENTS

3.9Bn
CONNECTED PEOPLE TO INTERNET IN 2017

720%
INCREASE IN VIDEO TRAFFIC 2012–17

30%
YoY INCREASE IN MISSION-CRITICAL SERVICES IN DC

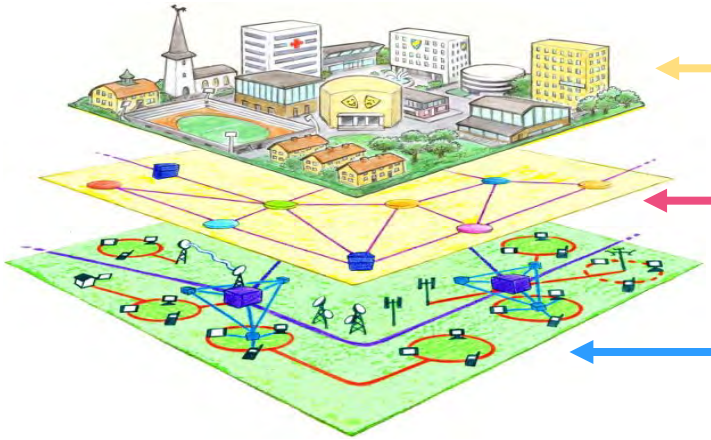
>70Bn
CONNECTED 'THINGS' TO INTERNET IN 2020

440%
INCREASE IN CLOUD AND DC TRAFFIC 2012–17

3x
INCREASE IN AVERAGE BROADBAND SPEED 2012–17

TELECOM NETWORK STRUCTURE

A LAYERED MODEL

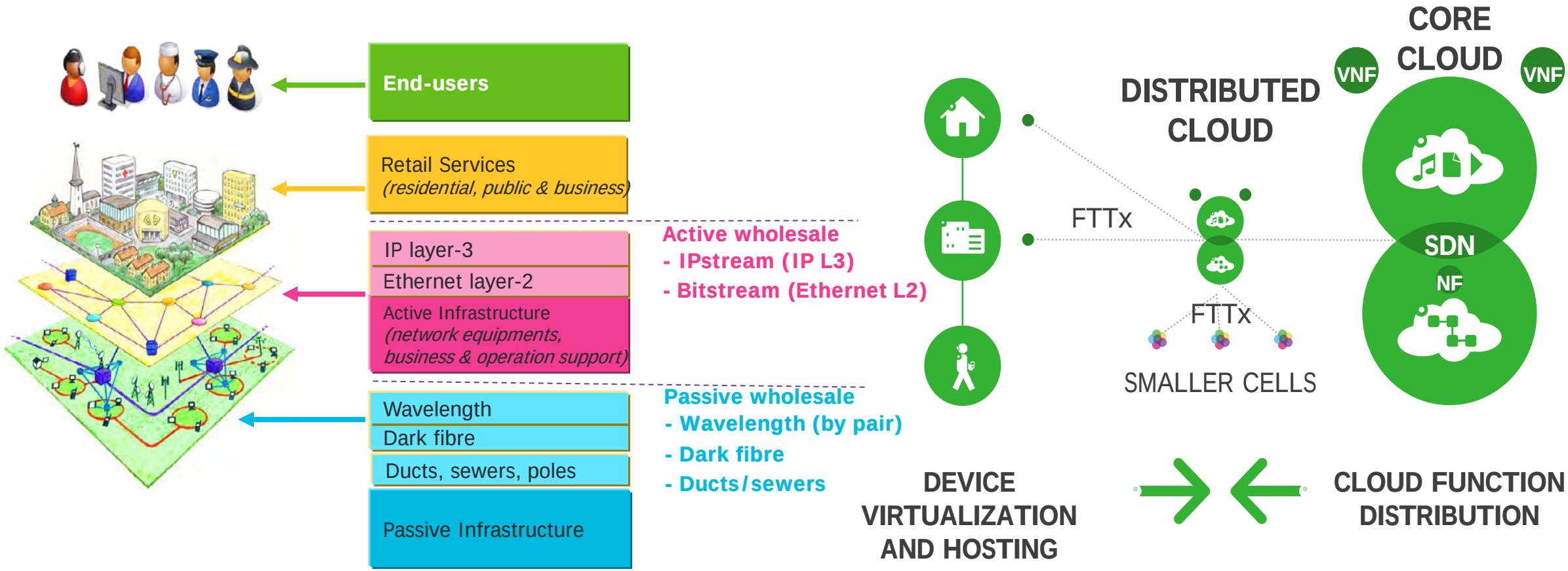


	Investment needed	Payback
End-user		
Services, Content & Apps *(residential, public & business)*		**Few m-3 y**
Active Network *(network equipments, business & operation support)*	20% ﹀ **>200 B€** ﹀ 80%	**5-7 y**
Passive Infrastructure *(trenches, ducts, fibre)*		**10-15 y**

Each layer has very a different financial profile and need to be addressed adequately

NETWORK EVOLUTION TO IP & CLOUD BASED ARCHITECTURES

A COMBINATION OF ACTIVE WHOLESALE, SOFTWARE-DEFINED NETWORKING (SDN) AND NETWORK FUNCTIONS VIRTUALIZATION (NFV)



www.alcatel-lucent.com

Consolidation & competition in a converged world

A view from Liberty Global

Chris Hutchins

8th October 2014

LIBERTY GLOBAL

Liberty Global: active in 12 European countries

LIBERTY GLOBAL

- Revenue: $17.3 billion[1]
- Employees: 35,000
- Active in 14 countries, including 12 in Europe
- 47 million homes passed
- 24.5 million customers
- 48.3 million RGUs (video, internet, and voice subscribers)
- 4.1 million mobile subscribers

Virgin media · upc · unitymedia kabel bw · telenet · vtr.com · LIBERTY

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(1) As per 31 December, 2013

Consolidation driven by growing customer demand and to compete with new OTT players

附件：2014IIR年會M2M資料

LIBERTY GLOBAL

Supplier trends (NL)

I Consolidation of industry

- Telecom and cable industries across developed markets are consolidating to:
  - Increase footprint to maximise return on investments
  - Lower relative costs of service delivery
  - Gain new capabilities and technical know-how, e.g., FTTH

II Infrastructure investments

- Industry players will continue to invest in core network infrastructure to meet customer demands, including:
  - Faster speeds – fuelling growth in usage
  - Innovative services , e.g., enabling M2M

III Triple/quad play bundling

- Players are developing bundled offers to compete across multiple products, e.g.,
  - KPN launches quad play bundles over own network
  - Vodafone offers consumers internet, TV and fixed telephony alongside its mobile products

IV New competitors

- Traditional telecom players have to now compete with
  - Global OTT players, e.g., YouTube, Netflix
  - Local OTT start-ups offering innovative products, e.g. NLziet, RTL Videoland

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European markets will see further consolidation in fixed networks

LIBERTY GLOBAL

USA

13 Fixed operators[1]

…serving **10 million subscribers** each

…generating on average annual **revenues of USD 6.9 billion**

Europe

174 Fixed operators

…serving **1.7 million subscribers** each

…generating on average annual **revenues of USD 450 million**

Consolidation in Europe could increase as

- Operators seek to leverage higher economies of scale
- Investments in network infrastructure are needed

"Telecom market is too fragmented…operators can't reach the size and scale needed to invest, innovate and compete globally"

Neelie Kroes, European Commissioner for Digital Agenda

1 Operators with network covering at least 20 states

SOURCE: Telegeography; Analysys Mason; Ovum; European Commission: http://ec.europa.eu/commission_2010-2014/kroes/en/blog/european-council-ict-single-market; Press search

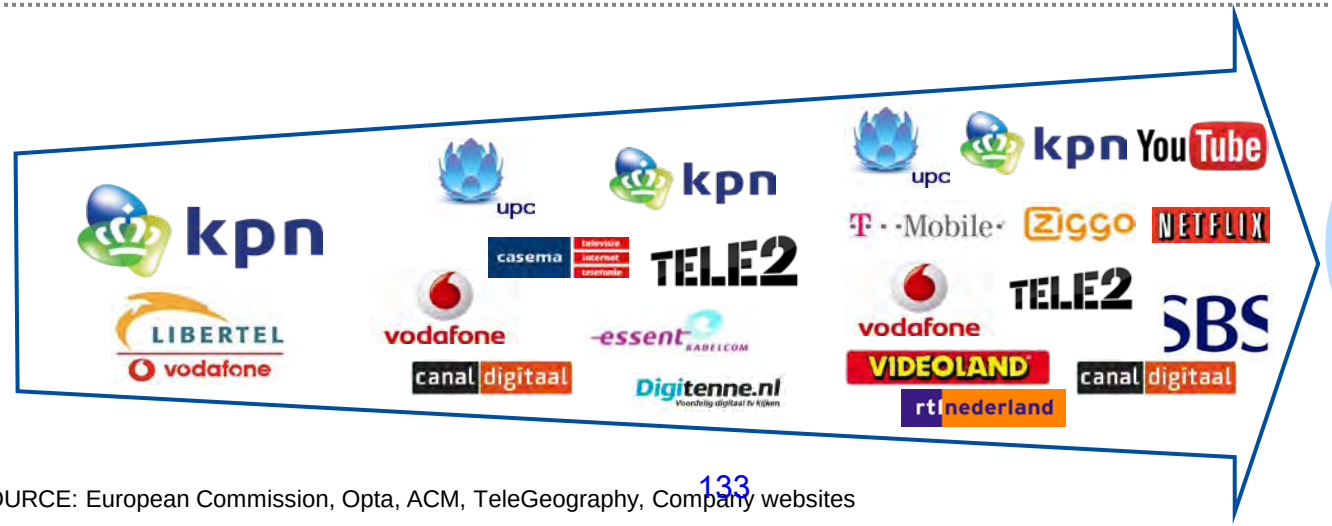
Dutch regulation has transitioned from regulating a single incumbent to fostering competition amongst diversified players

附件：2014IRE年會M2M資料

LIBERTY GLOBAL

	Initial regulation to encourage new entrants *1992 - 1998*	Introduction of ex-ante regulation to drive competition/investment *2002 - 2007*	Working towards Digital 2020 *2008 - 2014*	The future? *2014 onwards*
Scope and objective of EU telecoms regulation	• 1987: **EC liberalises telecom services** leading to open markets for equipment, services, value-added data services, satellite, mobile and voice • **Including regulation of predefined markets** with market shares of 25% resulting in SMP[1] and a fixed set of remedies	• **EC introduces ex-ante regulation** to strengthen competition/investment • **Dynamic system of regulation** based on competition law principles providing system for market assessment, SMP finding and appropriate remedies • 2004 and 2007: Predefined recommended **relevant markets reduced from 18 to 7 markets** due to competitive changes	• 2009: Amendments to 2002 framework (**transitioning from sector specific regulation to ex post competition law**) • 2014: **EC again reduces the set of predefined recommended relevant markets**	**Competitive regime?** • Drive new entrants, especially in the OTT space • Increase investments to achieve 2020 digital agenda, e.g., reach ultrafast broadband penetration of 50%

Competition increases in the Dutch telecom market



Consumers benefit

- Increased product choice
- Greater innovation and investment

SOURCE: European Commission, Opta, ACM, TeleGeography, Company websites

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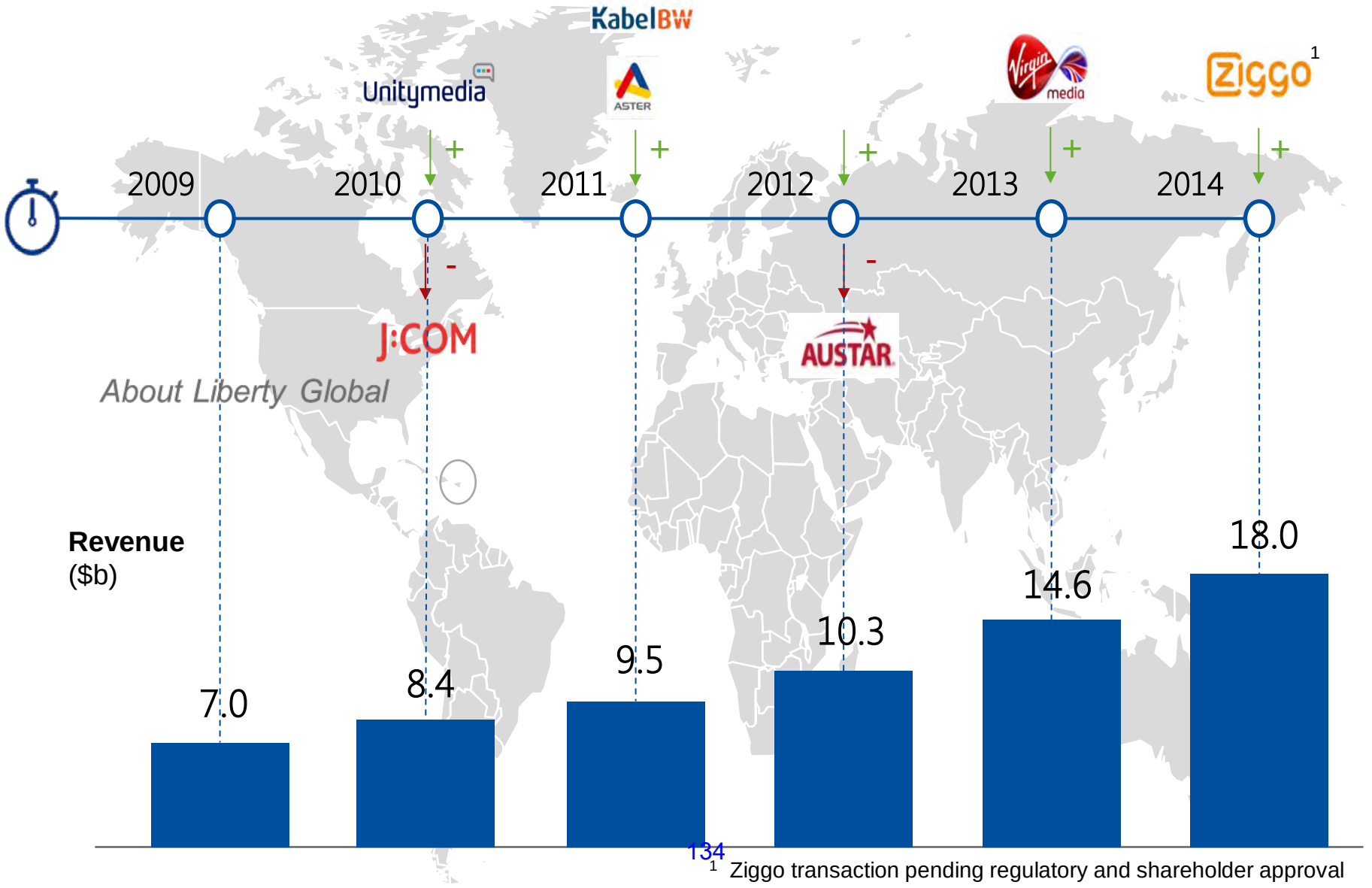
166 acquisitions over the last 10 years

LIBERTY GLOBAL



1 Ziggo transaction pending regulatory and shareholder approval

Conclusions

LIBERTY GLOBAL

- Building scale is crucial to compete in world markets
- OTT disruption mean more infrastructure consolidation is inevitable
- Ex ante regulation should reform its assessment of effective competition
- Ex post merger control needs strong EU harmonisation by DG COMP *and* national competition authorities
- There will be more converged sector and competition law regulators in the future

Workshop A2

Broadcasting in Flux –

Convergence Opportunities and Challenges in a Connected TV Environment

Summary of Key points

The session had two speakers – Magnus Brooke, Director of Policy and Regulatory Affairs at ITV plc, U.K. and Dr. Bahrat Vagadia, Director Regulatory Advocacy and Policy, Ooredoo, Qatar. Each of the speakers made short ten minute presentations and these are summarised hereunder.

1. **Magnus Brooke** spoke about some of the key changes in the European audiovisual market and the implications of these changes for audiovisual policy, particularly as it affects free to air television and public service broadcasting. With regard to market change, while noting the new methods of delivery of content, Magnus spoke of the resilience of linear TV and that we will exist in the hybrid world of the consumption of content through traditional and new media for some time to come. He saw this as an opportunity rather than a threat for content producers.

   He went on to highlight a number of key themes the first of which was increasing competition arising from the delivery of content online; the second spoke of the increasing value of successful audiovisual content while the third highlighted the increasing importance of scale and a bundled offer in broadband and television distribution markets.

   Magnus then moved on to address the implications for audiovisual policy as it concerns free to air TV and public service broadcasting. While indicating that there is no crisis in free to air TV, he emphasised that there was no room for complacency. Policy makers need to start focussing on how to sustain investment in original European TV content and he identified three areas in which this policy focus should concentrate. Firstly, he suggested a more equitable flow of funds between content providers and platform operators suggesting that the current policy was skewed in favour of the platform operators. The second area was around ensuring that consumers can easily find free to air and PSB content in the new ecosystem while the third was a plea for greater deregulation of TV advertising and commercial messaging. He concluded by saying that current investment in free to air content will not be sustainable unless there are changes in these policy areas.

2. **Bharat Vagadia** provided a perspective and explored what the future might hold for the Telco sector. He spoke about the need to re-examine old assumptions about content, the customer relationship and connectivity with the advent of Connected TV, HDTV and other forms of IPTV. Players in the digital ecosystem were moving beyond their traditional boundaries into new areas resulting in the blurring of traditional lines.

   Bharat provided some insight into the thinking of Telco's who were toiling with the idea of open or closed systems but were placed in the latter primarily due to a heavy regulatory environment. He contrasted this with other players such as TV manufacturers and content aggregators who he felt were getting a pretty easy ride.

   He moved on to describe OTT as being still very much a niche application and not a significant threat to Telco's. He spoke about the potential benefits of the IPTV player for Telco's provided that they get smarter about having a greater understanding of their consumers and their entertainment habits. The question of whether revenue can be generated by Telco's from IPTV players was also explored here.

   Bharat then considered TV manufacturers who were developing Connected TVs but did not see these as a significant threat to Telco's and also outlined how these groups might work in co-operation with each other to the benefit of all players. In the new battleground for consumers many

players have the potential to be winners but he envisaged the big battle to be between traditional aggregators and new ones such as Apple and YouTube.

He concluded the presentation by posing a series of questions concerning potential business models for Telco's in the Connected TV world and raised the issue of the level and nature of regulation for Telco's in contrast to light or no regulation for content aggregators and TV manufacturers.

3. Question and Answer

Following the presentations a lively question and answer session ensued which touched on the challenges for broadcasters and telco's in the converged world; strategies for innovation and for ensuring financial success; the place for local content; prominence on the EPG and the levels of regulation appropriate for traditional and new services.

Breakout B1
Workshop summary - Electronic Games & Entertainment Apps - Where next for policy and regulation?

On line games and apps are a huge growth area. The industry is a trailblazer for digital innovation. It is ushering in novel business models such as freemium and virtual items, while enabling more immersive experiences for diversified demographics. The market for digital games and apps is global, with China now holding the lead as the top supplier. The industry is now valued at €80 billion, with an estimated 52% of games players being women. The popularity of online games and apps is fueling demand for mobile devices; at the same time, the digital games industry is benefitting from the proliferation of mobile devices and increased access to high-speed connectivity. Mobile tablets are becoming the device of choice for games players, but the availability of different platforms (devices and formats) has enabled smaller games developers ("microstudios") to enter the market.

There are many complex policy issues relevant to the sector, which has until now largely operated largely on the basis of self-regulation. Many of the relevant policy issues are the same as those that apply to on-line content providers more generally (for example, the industry's support for rules on net neutrality). But there are several important policy concerns that will need to be addressed in relation to the games industry more generally, and which are becoming the focus of attention of regulators in the US, the EU and elsewhere. These include, for example:

- compliance with national content restrictions and geo-fencing requirements
- the protection (and identification) of children
- transparency and informed consent in respect of "freemium" offers and in-app purchases, the activation of direct debit payments, etc.
- data protection and privacy (particularly relating to the collection and processing of data that is not necessary for game delivery/use) and secondary uses of the data collected
- the respective responsibilities/liabilities of app stores and other intermediaries, versus games app providers
- the availability of effective recourse by consumers when dealing with global games app providers.

These issues are currently being considered by the EU Commission and national consumer protection bodies, which in July 2014 issued their Common Position on in-app purchases; the UK Office of Fair Trading (now the Competition and Markets Authority), which in January 2014 published Principles for Online and App-based games; and the US Federal Trade Commission, which has been conducting a number of investigations in this area and in September 2014 entered into a landmark settlement agreement with Google requiring the company to fully refund all unauthorized in-app payments made by children through the Google Play store totalling over $19 million. While stakeholders agree that these policy issues will need to be dealt with if self-regulation is not effective, the impact of any regulatory measures on innovation needs to be taken into account, and the public interest in innovation itself should not be overlooked.

Workshop B2

Achieving universal broadband – considerations in emerging and mature markets

The convergence of fixed and mobile networks, the convergence of telecommunication and cable industries will expand to encompass universal availability, accessibility, and affordability of broadband services.

The benefits of broadband service are well established and while the market serves those who live in urban areas representing higher ARPU and, at the same time, costing less for network coverage, those who live in remote areas and with lower incomes should also be served.

Different strategies are adopted in different economies to provide universal broadband service; in Taiwan for example, inititiaves were adopted in 2007 called **'Broadband for All Villages**' and '**Broadband for All Tribal Territories**' to ensure that citizens in remote areas can access the internet with speeds of at least 2Mbps. Operators with sufficient infrastructure accepted this task and expanded as well as upgraded their infrastructure to provide universal service. Universal service as such is financed through a virtual fund contributed to by large operators according to their market share. Narrowing the digital divide is not the only goal. Subsidy also serves to breed sustainable demand in remote areas in combination with the government's effort to establish "Centers of Digital Chance" in villages and tribal territories to broaden and deepen digital literacy.

After achieving fully comprehensive coverage in Taiwan, the regulator (NCC) launched a four-year plan of '**High-speed Broadband for All Villages and Tribal Territories**' in 2012, aiming to upgrade broadband speed from 2Mbps to 12Mbps in remote areas. We estimate that coverage at this higher speed will reach more than 95% of remote areas by 2015.

Meanwhile, coverage of 100Mbps broadband reached 97% of all households last year in Taiwan and, along with the expanding 4G coverage, Taiwan argues it is entering a new stage of development in the broadband eco-system with fixed and mobile convergence (FMC), with total revenues of the converged telecom and cable industries expected to be higher than ever.

The session recognized that activities such as e-commerce, social media and other on-line applications and content are key driving forces of the growth and expansion of high-speed broadband services in mature markets, while in emerging markets where the infrastructure is yet to be deployed, more resources and initiatives are required.

Breakout Session C2:
Copyright Licensing and Enforcement Policy for an Increasingly Borderless Digital Environment

Philosophical Overview

- We live in an IP world (the knowledge based economy): intellectual property and Internet protocol.
- Copyright is territorial but the digital world is borderless.
- Copyright Market is characterized in main by low value transactions. The key is how to get transaction costs down to get a very high volume of low value transactions (long tail of users)
- Reform should focus on 4 pillars:

1. Copyright education(industry and government);
2. Higher levels of enforcement to stop piracy (government);
3. Simplified copyright licensing:
   - ✓ Make copyright licensing mechanisms easier to use e.g. (a) Digital/Meta data project: designed so users across the world can carry out a quick search to identify owner, obtain permission and use simple 'payment' options including acknowledgment; (b) a single licence for educational use/make educational use a general exception;
   - ✓ reduce the number of administrative/collection agencies and multiple licences/fees;
   - ✓ best antidote to piracy is not enforcement but easier licensing
4. Legislative Changes:
   - ✓ small/incremental to avoid major war between consumers and creators e.g. create a universally recognized right to move music from one player to another;

Music Industry Perspective

- Model of music consumption moving from ownership to access/streaming : 2 models - free streaming supported by advertising and subscription based.
- Ad supported streaming services are paying very little relative to subscription streaming.
- There is an increase in listeners but revenue declining.
- Better partnership needed between creators and distributors.

Publishing Perspective

- When copyright matters are shifted to lower courts the interest of content owners tend to be devalued.
- Canadian Copyright Modernisation Act should not be used as a model (publishers moving out of Canada/ Act being interpreted as open season for teachers to make multiple copies and

hand out for free)

- Streamlined Open Access Publishing offers a solution to cumbersome rights clearance.

General Comment

- The 'legal' way must also be the 'coolest' way of accessing content.

Key Issues to Think About Going into 2015

1. A Robust legislative framework;
    - But a note of caution; bring a halt to legislation that erodes the interest of rights holders.
2. Simplified licensing system.
3. Copyright education (including the judiciary).
4. Shift in ICT strategy at the governmental level worldwide
    - Rather than seeing tech innovation as a silo governments must foster 'tech' innovation and also protect the fuel of tech innovation, which is 'content'. At the moment tech companies are not helping sufficiently to protect, respect and value rights.

附件：2014IRF年會M2M資料

AUTORITÀ PER LE GARANZIE NELLE COMUNICAZIONI

M2M: Policy issues

Antonio Nicita

AGCOM - *Commissioner*

AGCOM
AUTORITÀ PER LE GARANZIE NELLE COMUNICAZIONI

M2M services

- Data trasmitted between many different types of devices
- Driver of investement and innovation in the communications sector
- Goals: new services – costs decrease
- Including:
  - Energy: gas metering
  - Transport: vehicles management, logistics
  - E-commerce: transactions security
  - Emergency: e-call
  - Healthcare: patient monitoring and remote management

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Agcom's proactive role

- Berec group chairman
- Publiv investigation (det. 708/13/CONS)
  - Call for input: July 2014

- Agcom's aim: understand how rules in force will be applicable to M2M and whether there is «anything new» we need to do in order to:
  - Promoting investment
  - Supporting development of innovation

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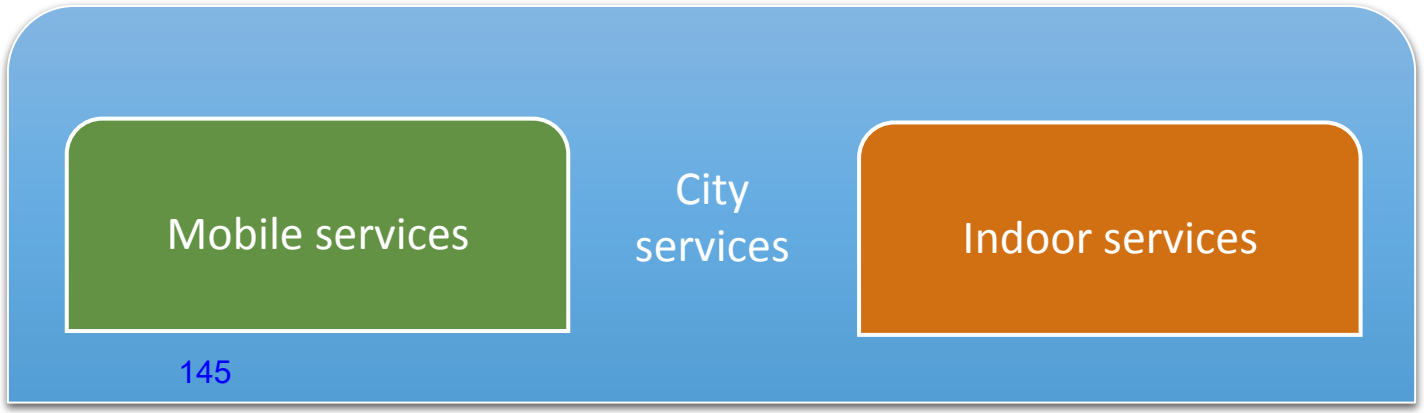
New policy issues /1

- Network technology
  - Wireless data collect: spectrum
    - mobile and «wireless fixed» public network
    - Smart Urban Infrastracture (SUI): short-range network sharing
    - new spectrum requirement
  - Network infrastructure
    - Public net vs. private net
    - Access to public net
  - Operational requirements
    - Range
    - Battery timelife
    - Network and data security



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New policy issues /2

- Interconnectivity and competition
  - Roaming (Permanent roaming)
  - MVNO agreements
  - Embedded SIM
  - Interoperable IoT standards (M2M platform – services/apps)
  - Security and resilience of net
  - Telephone numbers (personal communications)
  - IP address (IPv4 or Ipv6)
  - Big data: barrier to new services development
- Consumers
  - Need to be sufficiently digitally literate
  - Privacy

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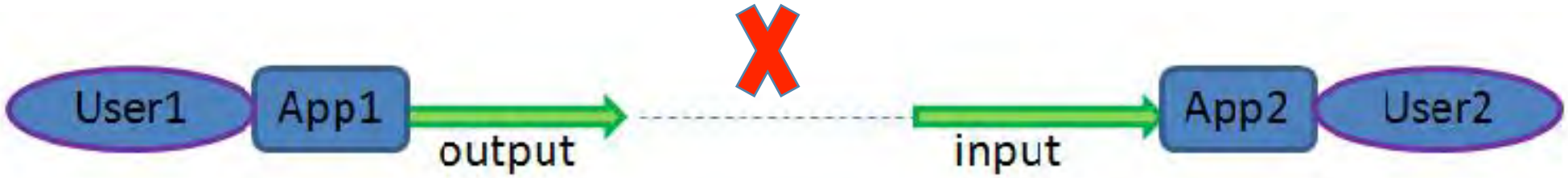
Integrability

Apps allow comunication between users with the same software.

Infact, content produced by an app cannot be recieved by another app.



An integrated system allows to translate the output of an app in a different format that can be recieved by another app.

In order to integrate different apps it's necessary they are based on the same standard rules.

附件：2014IRF年會M2M資料

Global M2M Solutions: Societal Benefits and Business Models

AT&T – IIC Workshop

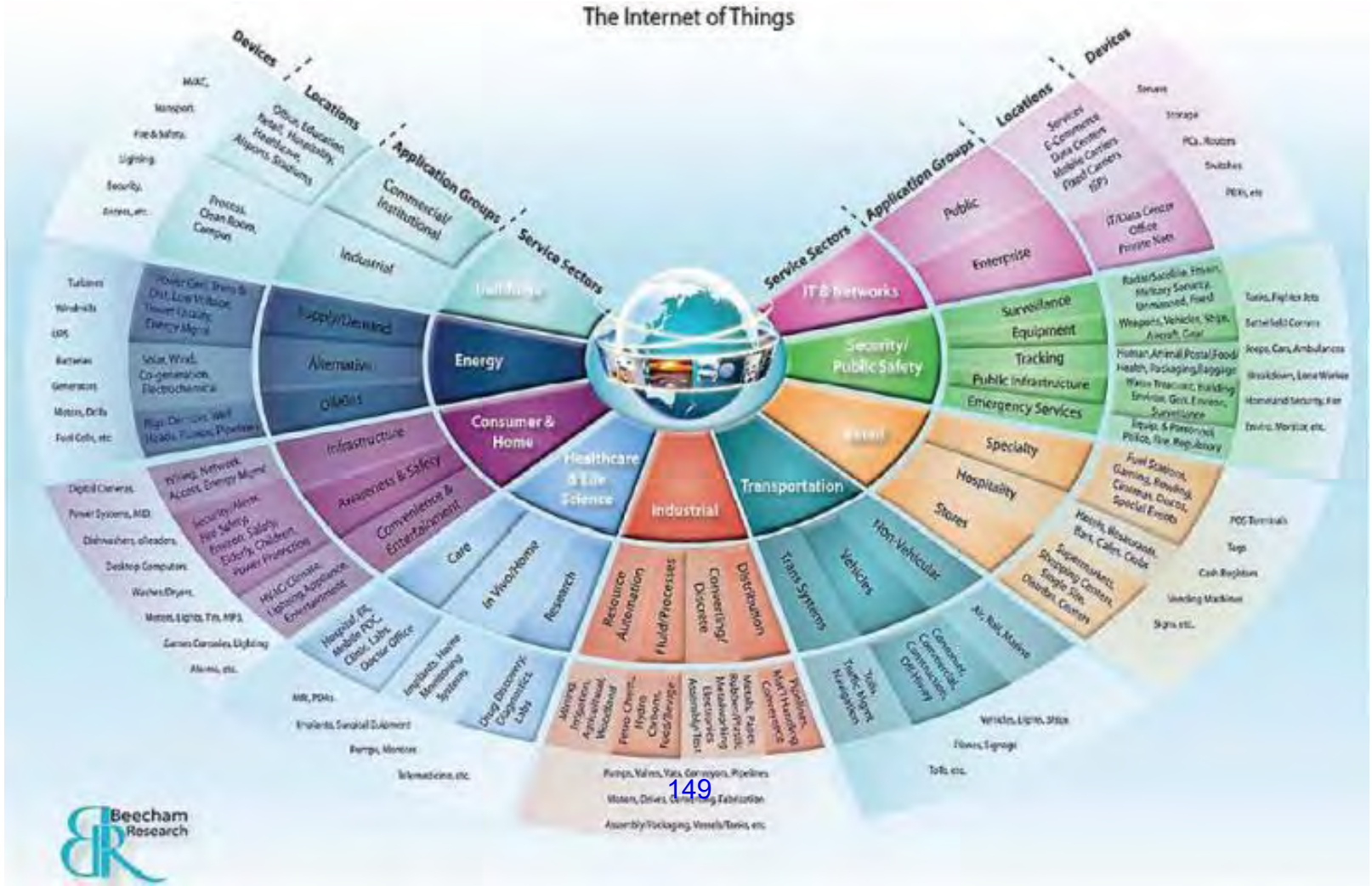
October 2014

at&t

附件：2014IRF年會M2M資料

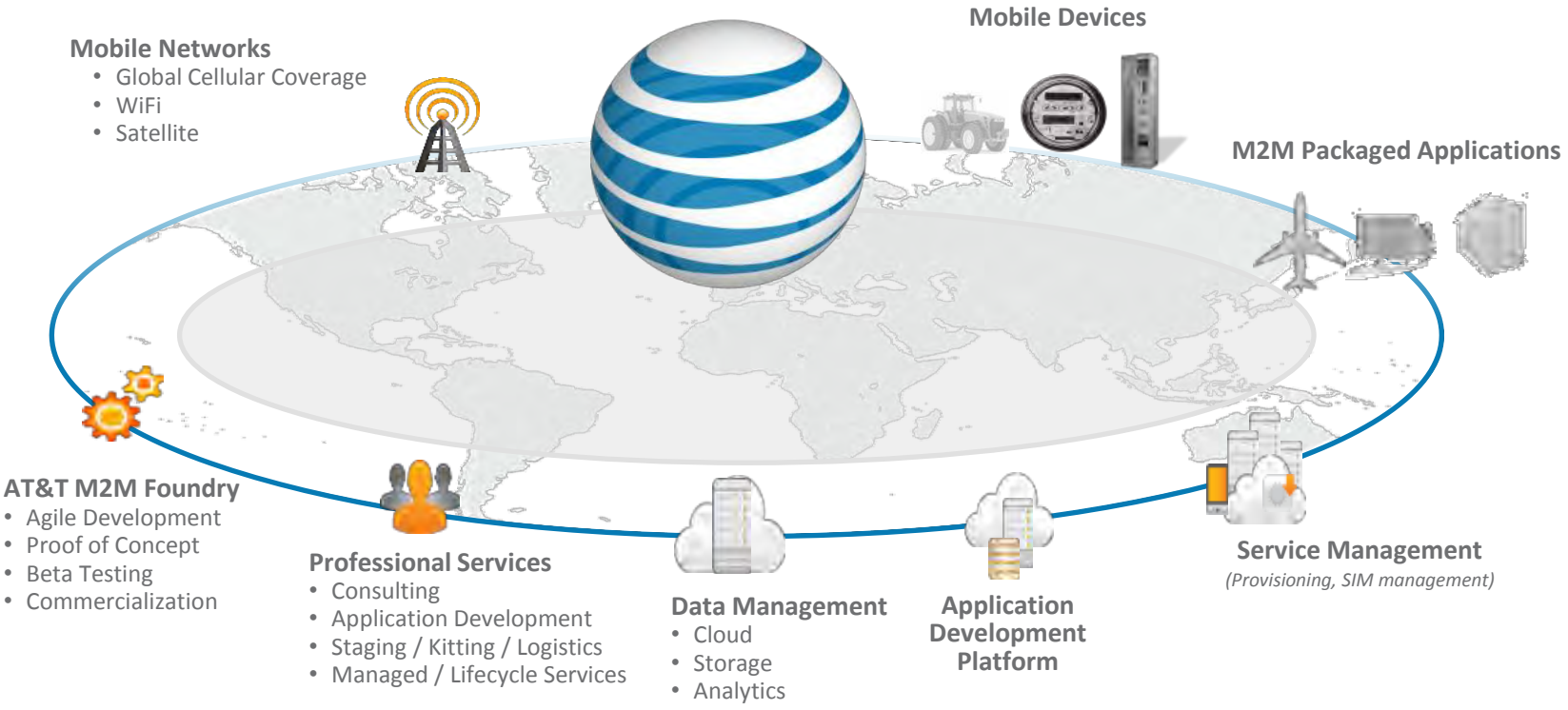
M2M Driving Innovation in Multiple Industries

1. Early phase with large potential growth across industries
2. Business models entirely different from handsets
3. High volume, low-margin devices = input costs extremely sensitive
4. Innovative payment models with manufacturers = no bill shock



Global M2M Integrated Solutions: More than Connectivity

附件：2014IRF年會M2M資料



Single SIM
that can operate Globally

2,100+
Approved Devices

17.2 Million
Devices on network

Manufacturer Perspective:

M2M Platform Requirements for Economic and Operational Viability

Streamline Manufacturing

Embed single SIM in product.

Manufacturing site test for deployment anywhere in the world.

Global Distribution

Track device location and condition pre sale when shipped to and from warehouse.

Test before shipping.

Consistent Worldwide Operations

Build once, works everywhere

Automatically activate SIM and initiate billing upon sale.

Upgrade software and security on one platform worldwide.

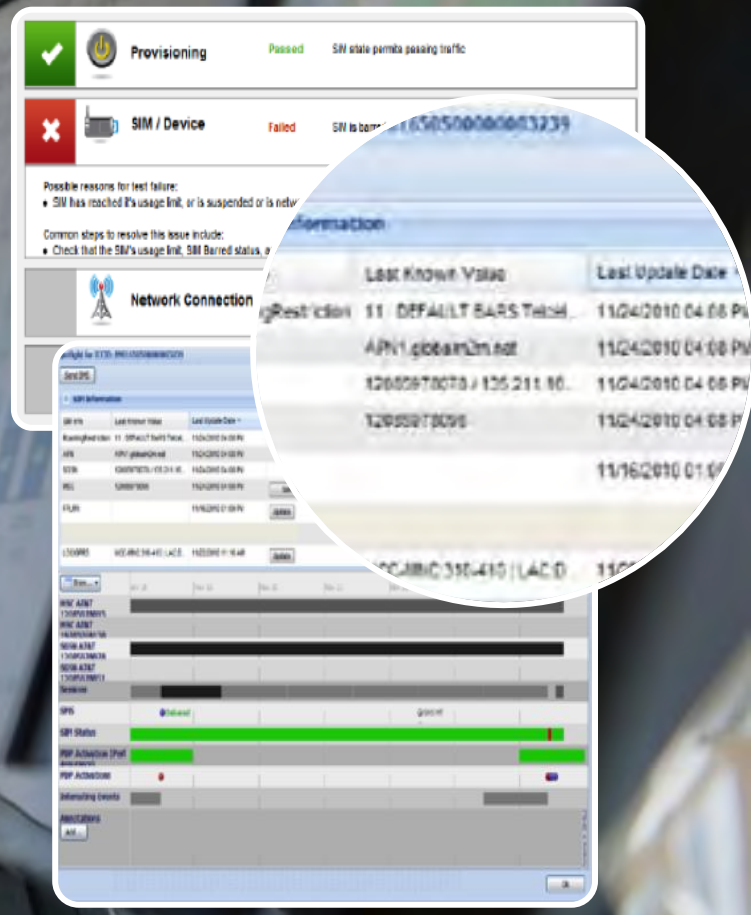
Minimize points of vulnerability.

Manage through a single service device platform.

Service Delivery and Operations Platform

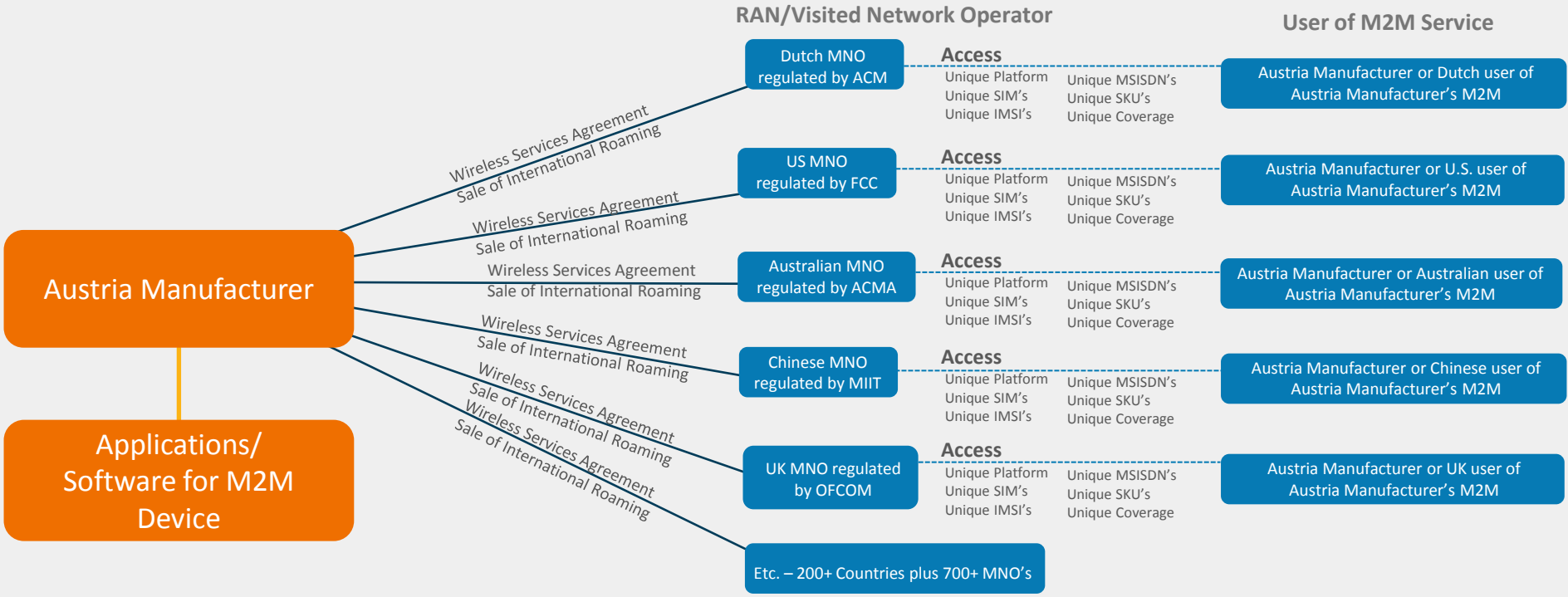
附件：2014IRF年會M2M資料

- **Real-Time Provisioning**
  - Automated SIM activation
  - Select and change rate plans
  - Set roaming permissions
- **Real Time Usage and Automation Rules**
  - Lowest-cost data routing with roaming permissions controls
  - Usage alarms & Powerful reporting tools
- **Diagnostics Wizard**
  - Can speed triage process: Network vs. device/application
  - Visibility, including IP address, PDP context, Bytes up/down, recent history
- **SpotLight real-time status tool**
  - Automated detection of suspected anomalous sessions
  - Visual behavioral analysis of new customer devices and applications



Not Using International M2M Roaming

- Restriction on extra-territorial use of numbers would stifle M2M roaming
- Manufacturers would need to build between 200-700 platforms to have global coverage
- Each platform costs between $500,000 to $1 million

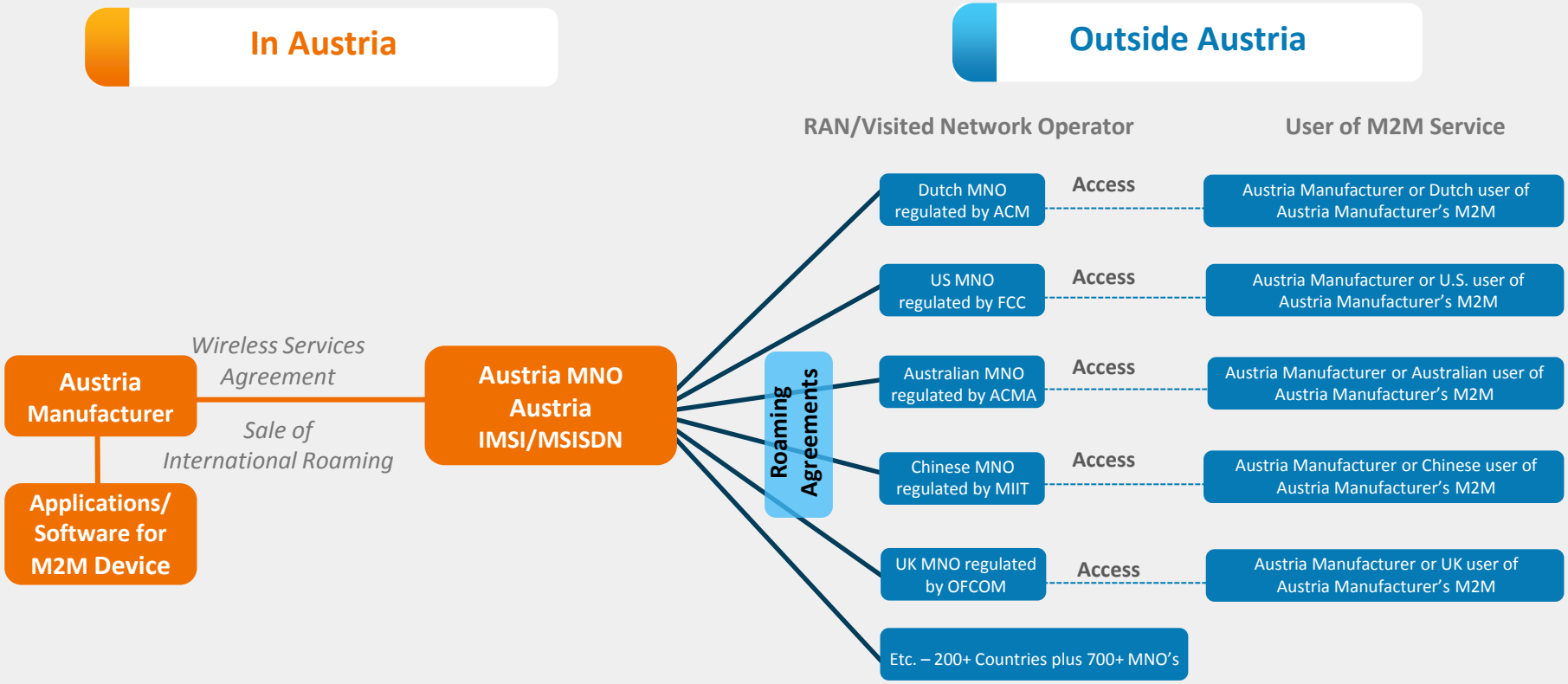


Using International M2M Roaming

One agreement makes global expansion economically and logistically viable

Eases expansion and provides predictability

Critical for MNC and SME alike, both exporting and importing from Austria



Thank you.

M2M Policy Issues

Presented by Leong Keng Thai
Director-General (Telecoms & Post)

7 Oct 2014

iDA SINGAPORE

Improving lives

IoT@Home

Sensor to monitor food intake

Smart shirt to measure vital signs

Mobile app to analyse health over time

iDA SINGAPORE

Benefits and Applications of TV White Space Technology

Environment

- Remote environment monitoring
- Remote waste management

Wireless Broadband

- Extend WiFi connectivity
- Rural broadband

Smart Metering

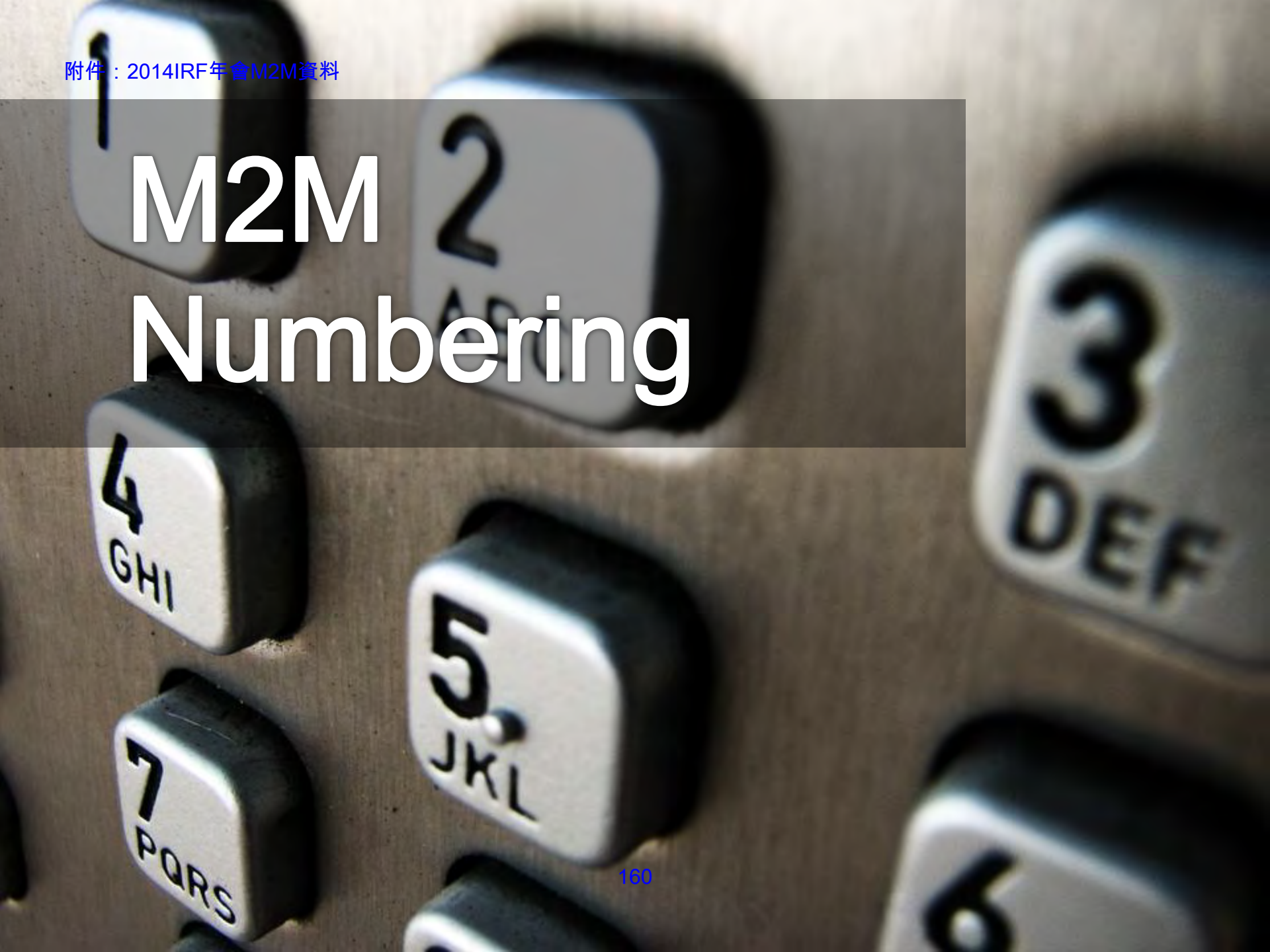
- Utilities management
- Automated meter reading

Machine to Machine

- Internet of Things
- Telemetry and data acquisition

iDA SINGAPORE

M2M Numbering




Enabling a
Smart Nation

Machina Research

M2M Communications for Policy Makers

Vienna, October 2014

About Machina Research

Machina Research services overview

Market/demand side

- **Quantifying the opportunity for M2M**
  - **Forecast Database** providing 10 year forecasts across 201 countries for 61 application groups
  - **Sector Reports** annually updated reports on our 13 sectors (including Automotive, Healthcare and Utilities)

Provider/supply side

- **Addressing the issues that determine success**
  - **Research Notes** - 3 per month on major qualitative issues such as platforms, value chain roles, big data, NFC, and security
  - **Strategy Reports** - covering areas such as Big Data, platforms, modules/devices, CSP best practice, etc.

Machina Research Analyst Team

Godfrey Chua, Principal Analyst
Focus areas: Americas, carrier strategies, connected home and workplace

Jim Morrish, Director
Focus areas: Enterprise IoT, M2M application software, M2M & IoT platforms

Andy Castonguay, Principal Analyst
Focus areas: Americas, M2M/IoT devices & modules, wearables, healthcare

Emil Berthelsen, Principal Analyst
Focus areas: big data, mobile enterprise application platforms, M2M procurement, SLAs, QoS

Jeremy Green, Principal Analyst
Focus areas: Automotive, M2M and IoT technology ecosystem, key IoT players

Emma Buckland, Principal Analyst
Focus areas: M2M forecasts, consumer electronics, connected living

Matt Hatton, Director
Focus areas: Operator M2M and IoT strategies, channels, M2M technologies, regulation

Alex Chau, Principal Analyst
Focus areas: smart cities, privacy and security, the Asia-Pacific region

Some of our clients

Introduction to M2M and IoT

Many motivations for connecting devices

Regulation

Features

Smart Meters

eCall

PS Vita

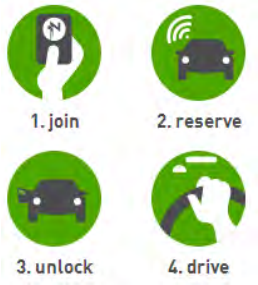
Connected Car

Big Belly Solar

Tractors

Sealed Air

Zipcar



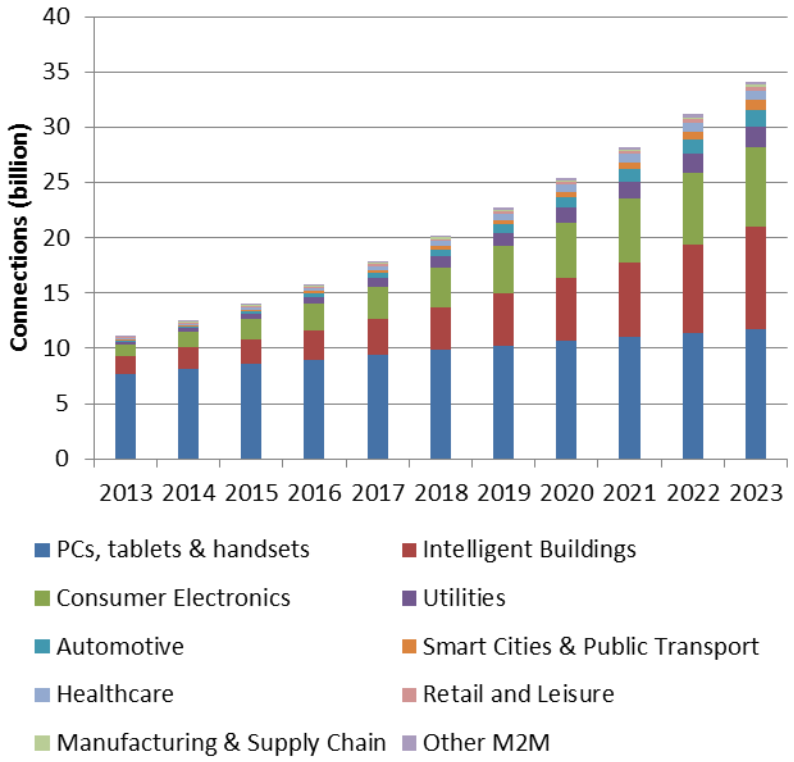
Efficiency gains

New business models

M2M connections will grow from 3 billion in 2013 to 22 billion in 2023

Global machine-to-machine connections 2013-23

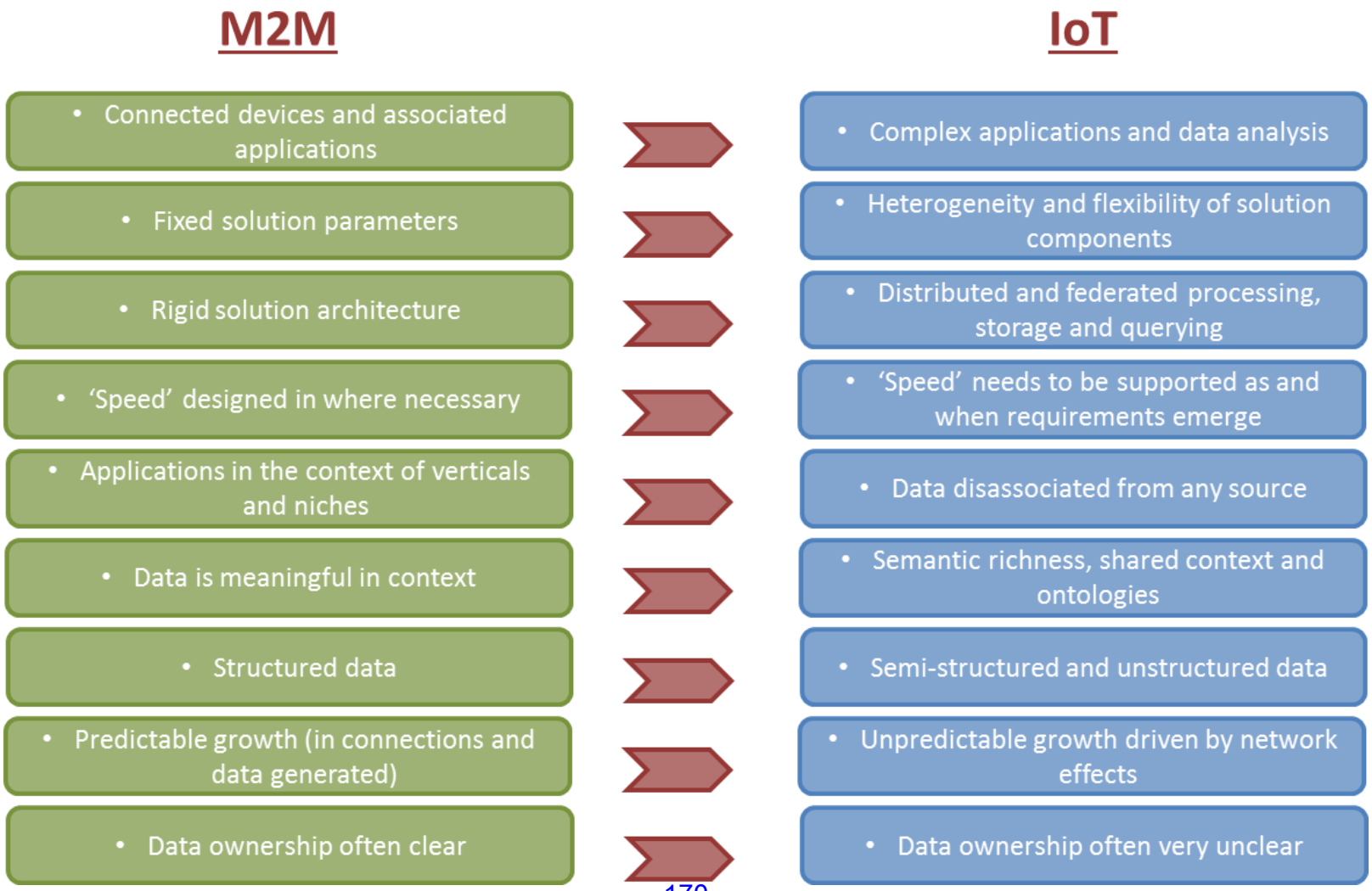
Source: Machina Research 2014



- Machina Research defines M2M as **"Connections to remote sensing, monitoring and actuating devices, together with associated aggregation devices"**
- Based on this definition there are over 3 billion M2M connections today and this will grow to 22 billion in 2023

附件：2014IRF年會M2M資料

Evolution from M2M to IoT



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M2M and IoT Regulation

Our M2M and IoT regulation research

Our M2M and IoT Regulation Database provides country-by-country analysis of the legal and regulatory position regarding the provision of M2M and IoT services:

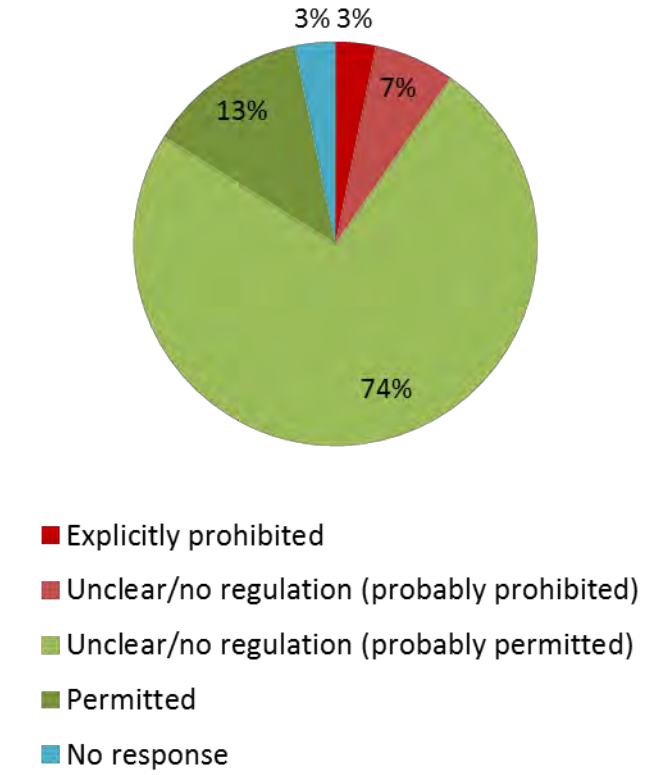
Permanent roaming	The ability to offer services globally is a critical one for supporting many vertical sectors including automotive and consumer electronics. Regulatory prohibition of permanent roaming will fundamentally influence how connectivity is provided.
National roaming	The ability to make use of multiple networks within a territory will be useful for many M2M and IoT applications. However, regulatory positions vary with some countries prohibiting the use of national roaming.
Spectrum licensing	Technology choices may depend on what, how, and how much, spectrum is made available. Availability of White Space might have an influence of how M2M/IoT evolves. There are licensing issues related to the use of unlicensed spectrum, e.g. for LPWA.
Data sovereignty	Different countries have starkly different rules about how data needs to be managed, for instance restrictions on whether the data can leave the country, and if so, which elements.
Other regulations	There are a number of other regulatory issues, including service provider licensing, mandating of technology choices, subscriber registration and taxation, that will have an impact on M2M and IoT.

Permanent roaming

- Probably the thorniest issue in M2M regulation today
- Supporting overseas connections is critical
- Existing large installed base of permanent roaming SIMs
- Regulatory situation is unclear, and changing
- Likely to get tougher, particularly in Europe

Regulation of permanent roaming around the world

Source: Machina Research 2014

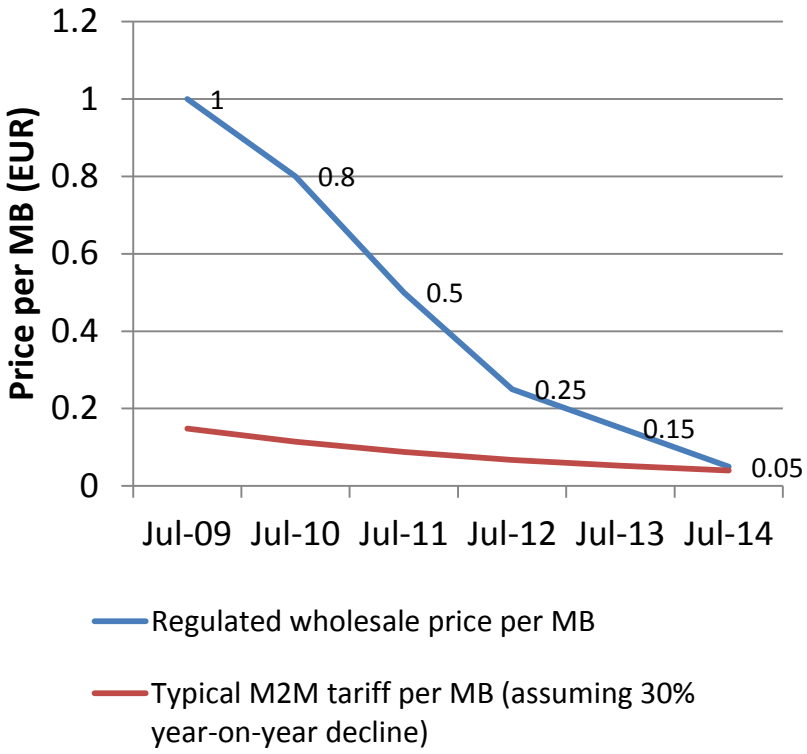


Permanent roaming: the EU challenge

- Regulated wholesale per-MB rates are approaching commercial M2M tariffs
- Roaming SIMs can demand lower charges than the commercial norm for domestic providers
- Operators can't bypass
- Solutions?
  - Sliding scale of roaming rate for low MB usage
  - Distinguish M2M devices
  - Ban permanent roaming
- Pressure on number resources

Wholesale data caps for 1MB of data within the EU

Source: Machina Research 2014



Conclusions

- CSPs and enterprise end users are unsure on how regulation should be implemented and how it might change
- It generates a risk premium – this limits product innovation, and slows service deployment
- There is a further challenge over the vertical-specific regulations that will have implications for M2M
- The industry needs clarity above all things

Thank you

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John Deere M2M Strategy

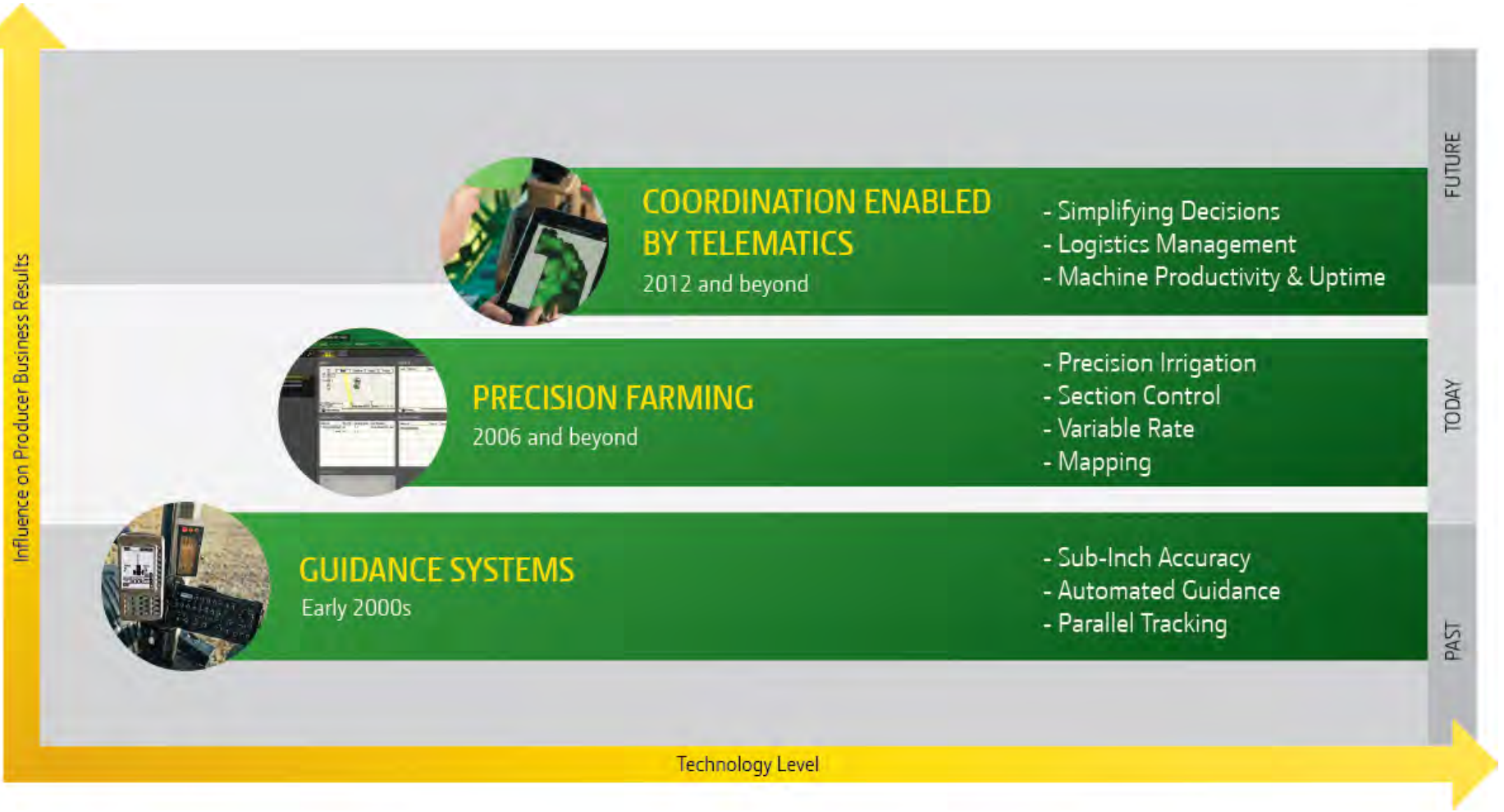
Opportunities and Challenges

Dr. Thomas Engel
Manager Intelligent Solutions Group

JOHN DEERE


JOHN DEERE
FarmSight™

Technology Evolution



Wirelessly Connected Machines

附件：2014RF年會M2M資料

- MTG in base machine since 2012
- > 100.000 Ag machines with cellular modem

7R Tractors

S-Series Combines

8R Tractors

7050 Self-Propelled Forage Harvester

9R Tractors

4940 Sprayer

Cloud-based Connectivity

附件：2014IRF年會M2M資料









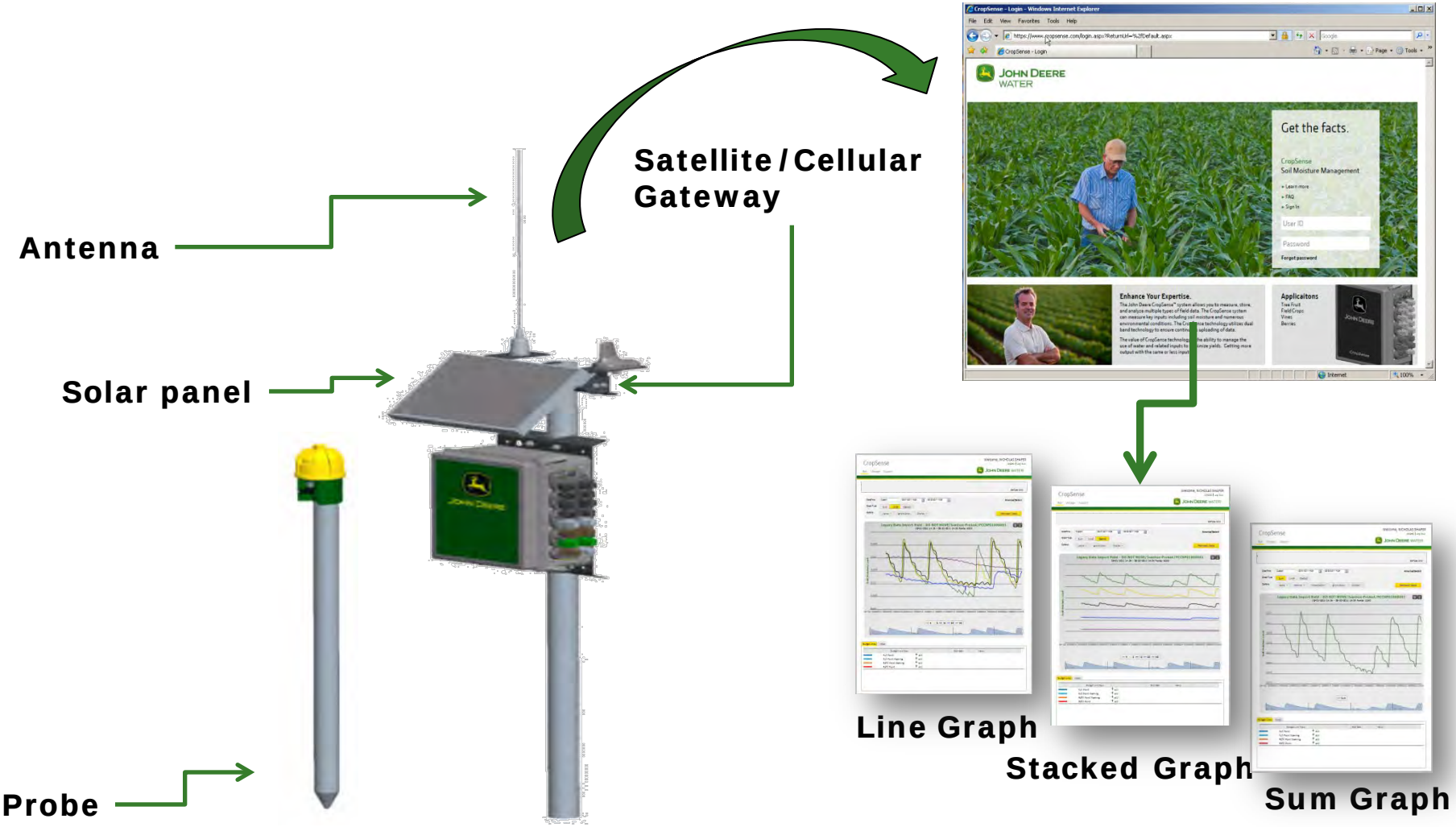

Value Chain Partners

JohnDeere Dealers

- Seed
- Chemicals
- Weather
- Consultants
- Food Processors
- Food Retailers

Connectivity of Soil and Environmental Data

附件：2014IRF年會M2M資料



* Graphs show moisture use in the soil.

Use Cases and Benefits

- Transfer of machine data to improve machine performance and durability
- Remote diagnostics and preventive maintenance to reduce down time
- Controller software updates without driving to the machine
- Fleet management and logistics to avoid inefficient machine routing
- Transfer of GNNS correction data for highly accurate autonomous machine steering
- Diagnostics of pests and diseases to minimize crop protection treatments
- Optimization of fertilization to reduce N impact on surface and ground water

Actual Implementation Model

- Technical solution
  - Built-in SIM cards with roaming model
  - One telecom service partner
  - Activation by dealer
  - Yearly all-inclusive flat rate for data transfer, analysis, storage and value-added services
- Challenges
  - No truly global solution due to roaming limitations
  - Registration as telecom provider required
  - Cell coverage limitations
  - Used equipment business

Actual regulatory environment significantly limits the success and global distribution of our M2M solutions


JOHN DEERE

附件：2014IRF年會M2M資料

The Internet of Things is Now: M2M Devices Forecast 2013-2018

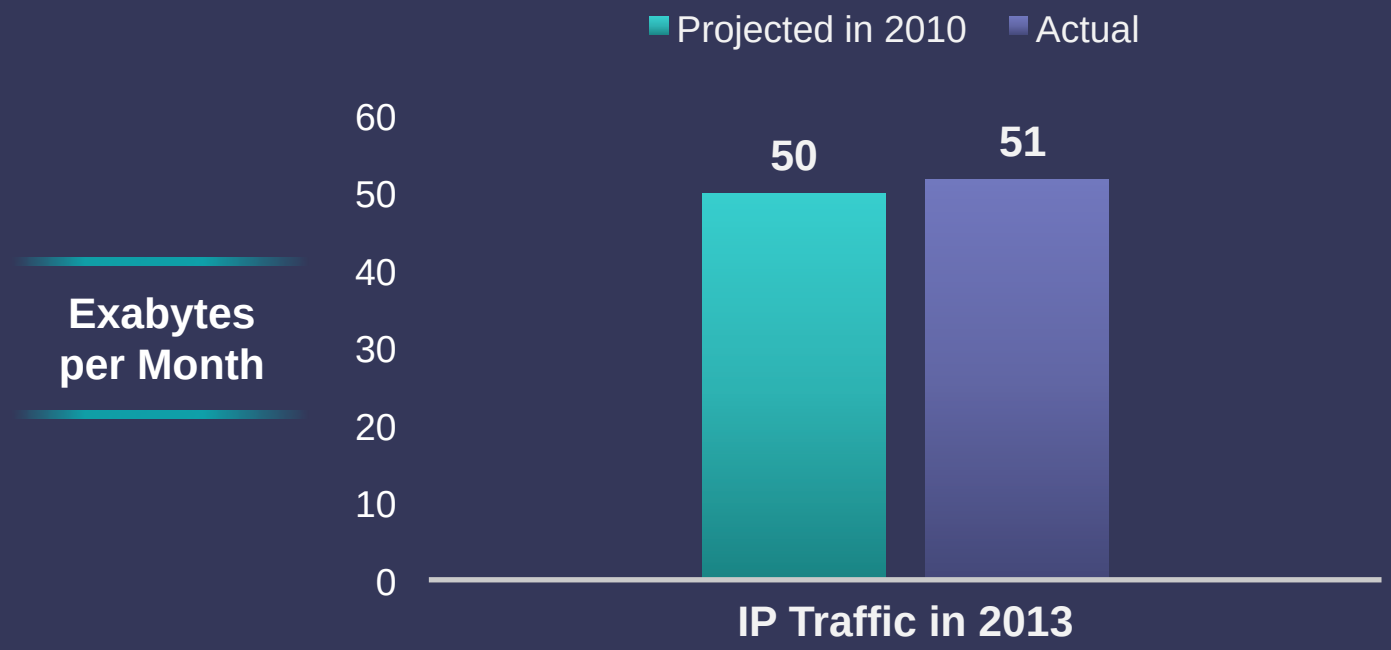
Cisco Visual Networking Index 2014 Forecast

Robert Pepper
Vice President, Global Technology Policy

October 2014

VNI Projections and Actuals (Global)

Actual Growth Has Been Within 10% of Projected Growth



Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

Average Global Traffic per Device Growth

		2013	2018
M2M Module	=	78 MB	514 MB
Smartphone	=	1.0 GB	5.4 GB
Tablet	=	4.0 GB	18.0 GB
Laptop/PC	=	22.7 GB	39.2 GB
Ultra High Definition TV	=	22.9 GB*	26.3 GB*

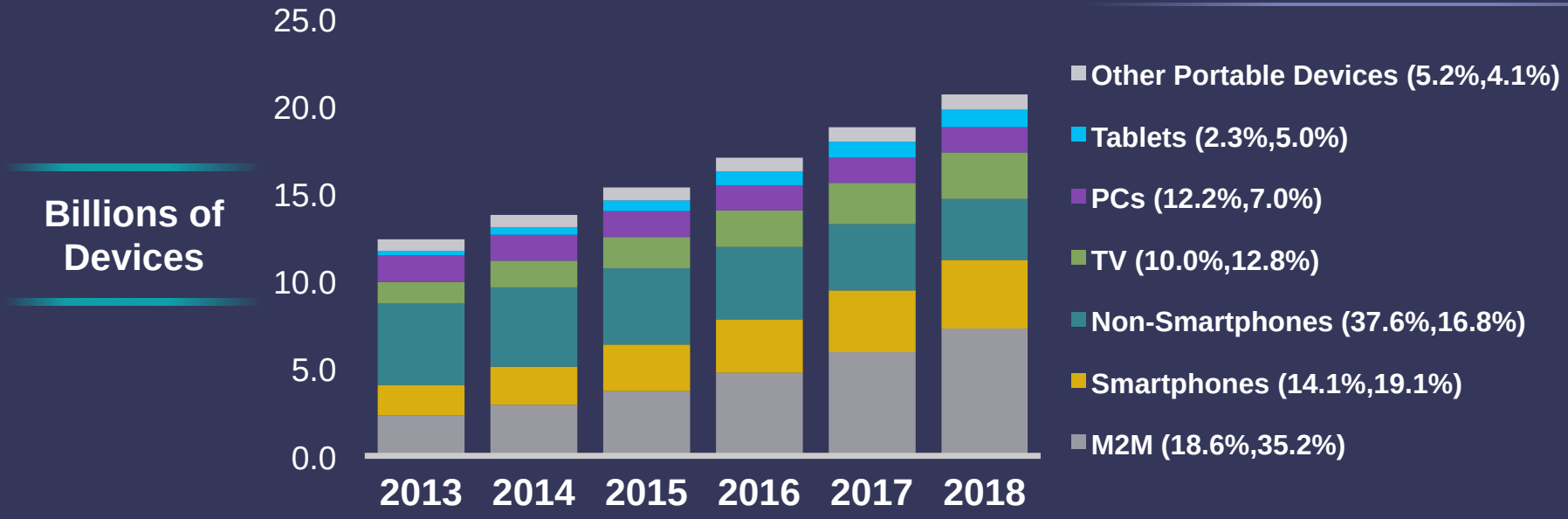
* Includes IP VoD Traffic

Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

Global Connected Devices Growth by Type

By 2018, M2M More than a Third of the Total Connections

11% CAGR



* Figures (n) refer to 2013, 2018 device traffic share

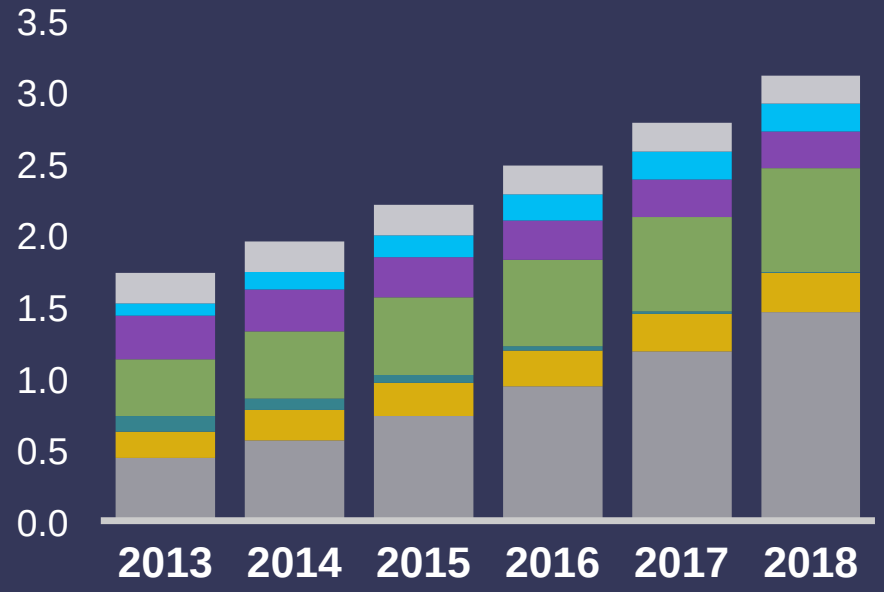
Source: Cisco VNI Global IP Data Traffic Forecast, 2013–2018

US Connected Devices Growth by Type

Fastest Growing Devices: M2M and Tablets

12% CAGR

Billions of Devices



* Figures (n) refer to 2013, 2018 device traffic share

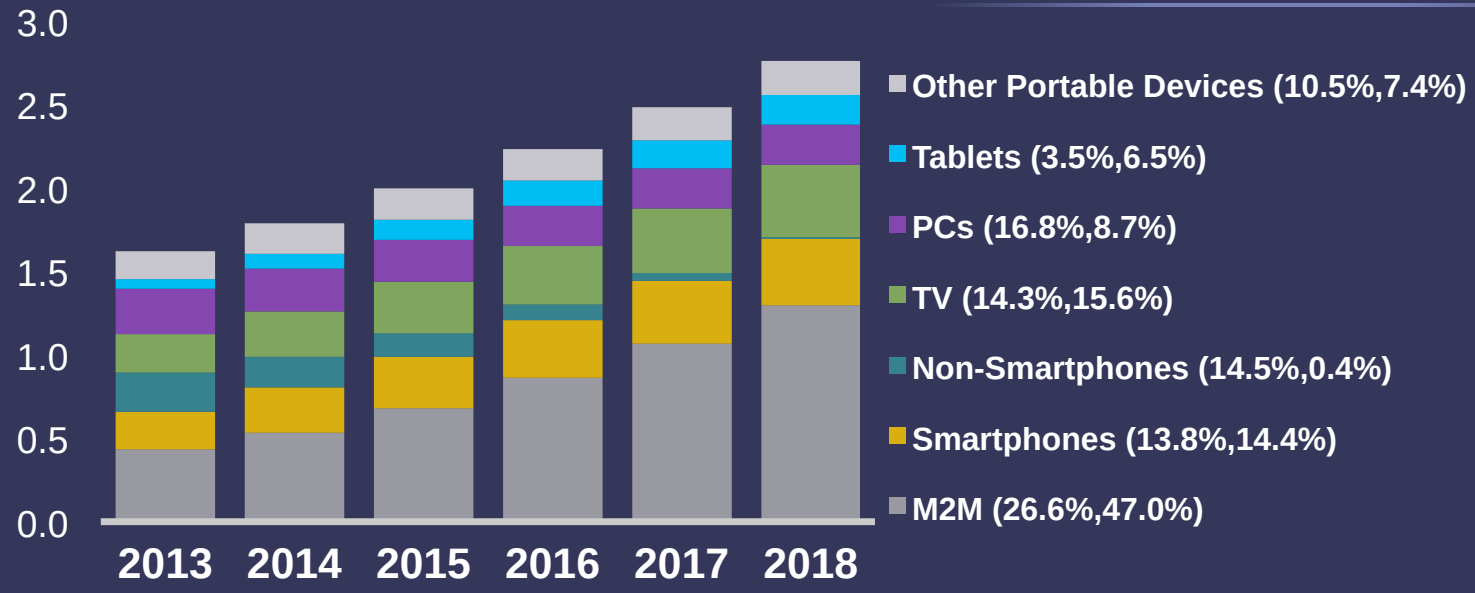
Source: Cisco VNI Global IP Data Traffic Forecast, 2013–2018

Western Europe Connected Devices Growth by Type

By 2018, M2M Nearly Half of the Total Connections

11% CAGR

Billions of Devices



* Figures (n) refer to 2013, 2018 device traffic share

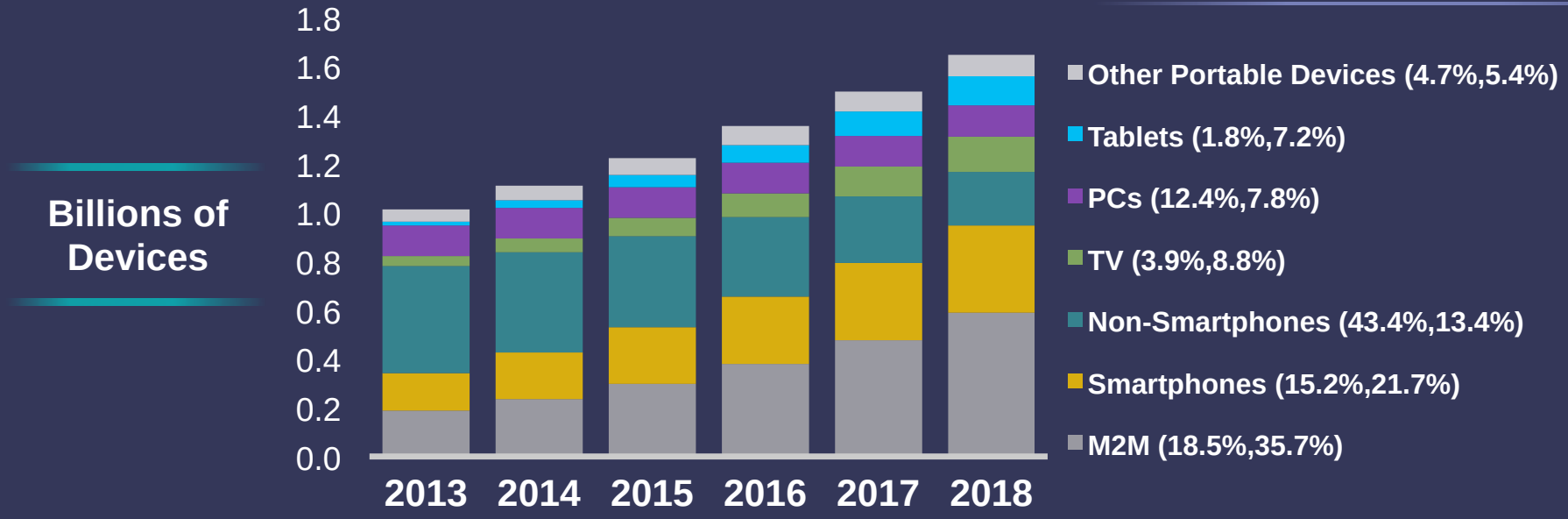
Source: Cisco VNI Global IP Data Traffic Forecast, 2013–2018

CEE Connected Devices Growth by Type

By 2018, M2M Over a Third of the Total Connections

附件：2014思科全球M2M资料

10% CAGR



* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Data Traffic Forecast, 2013–2018

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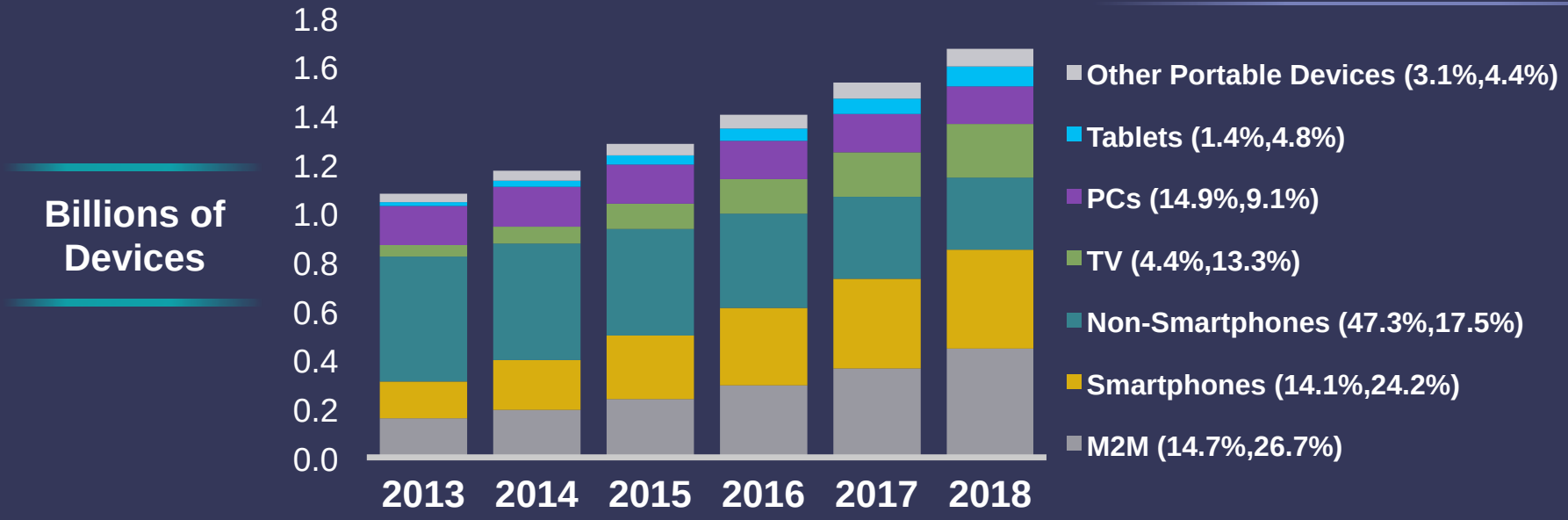
附件：2014思科全球M2M报告

Latin America Connected Devices Growth by Type

By 2018, M2M and Smartphones Over Half of the Total Connections

9% CAGR



* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Data Traffic Forecast, 2013–2018

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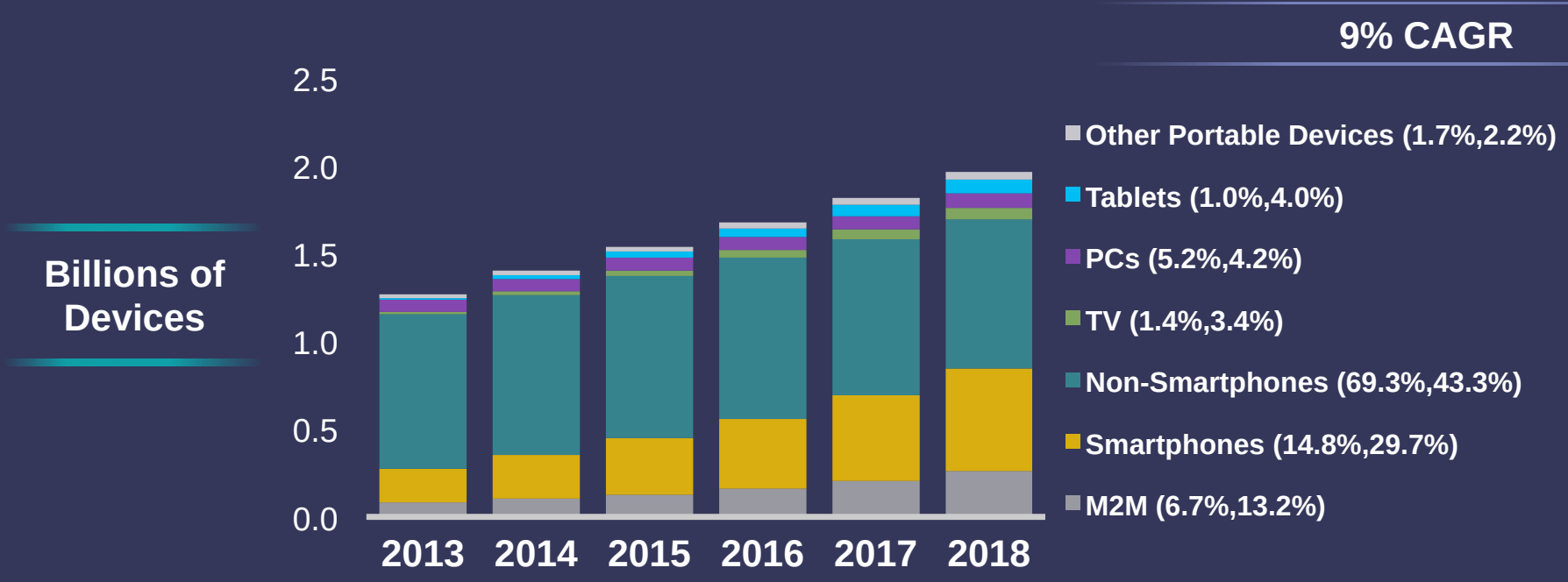
MEA Connected Devices Growth by Type

By 2018, Smartphones Nearly A Third of the Total Connections



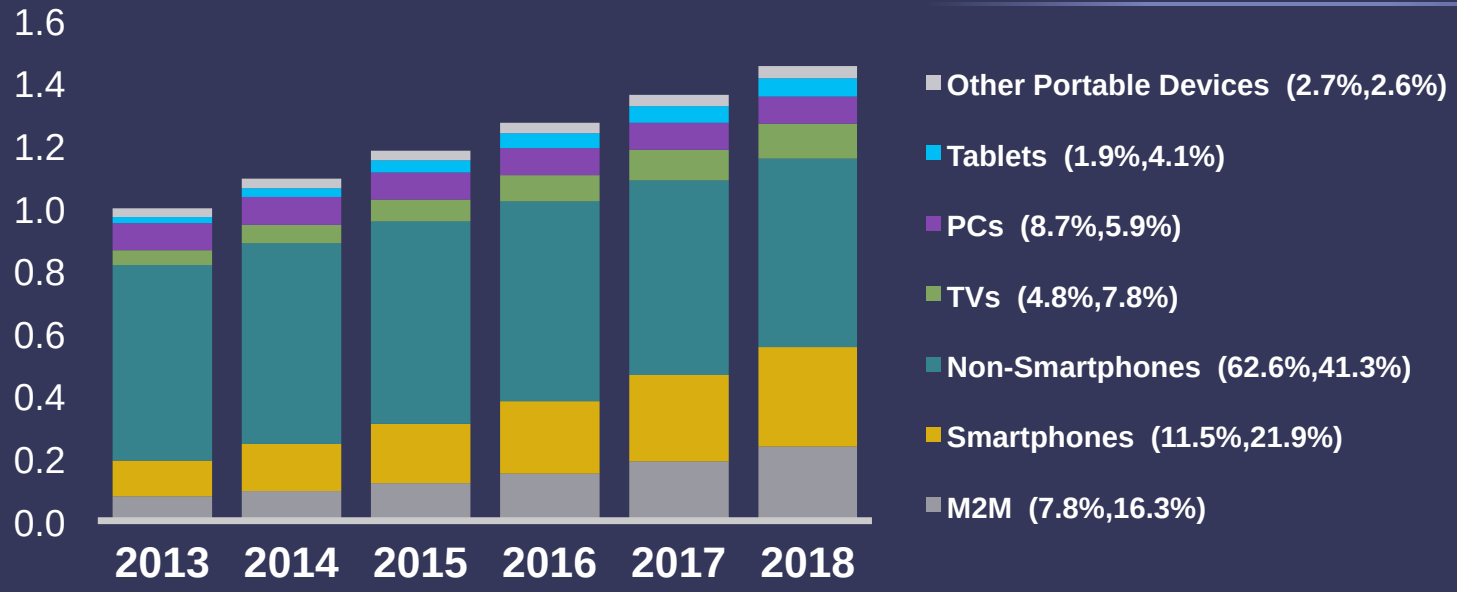
* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Data Traffic Forecast, 2013–2018

Emerging Asia Connected Devices Growth by Type

By 2018, Non-Smartphones Dominate; But Growth in Smartphones, M2M

8% CAGR



* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Data Traffic Forecast, 2013–2018

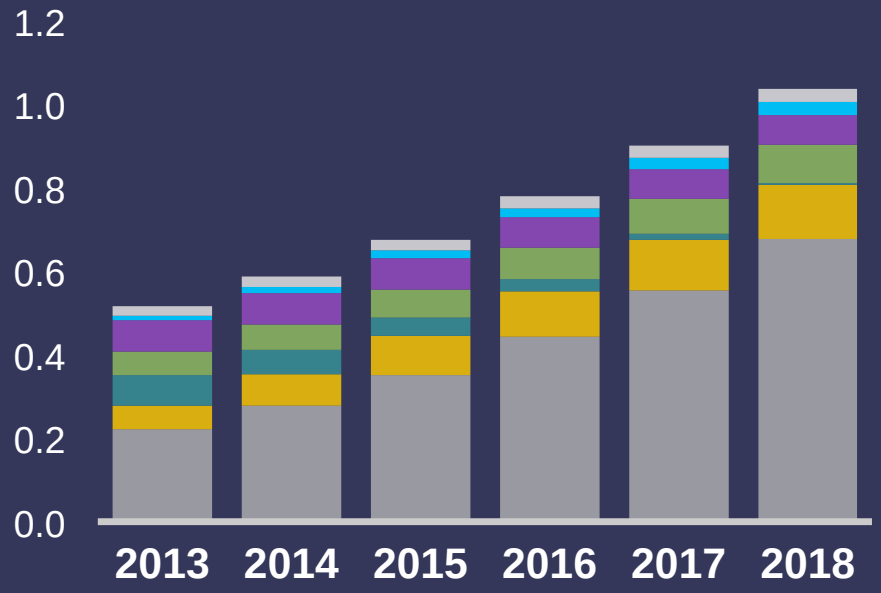
Note: Emerging Asia covers Asia but excludes the largest economies (China, Japan, Korea, India, Indonesia)

Japan Connected Devices Growth by Type

By 2018, M2M and Smartphones Over 77% of the Total Connections

15% CAGR

Billions of Devices



- Other Portable Devices (4.4%,3.1%)
- Tablets (1.9%,3.0%)
- PCs (14.6%,7.0%)
- TVs (10.8%,8.8%)
- Non-Smartphones (14.2%,0.3%)
- Smartphones (11.1%,12.7%)
- M2M (42.9%,65.3%)

* Figures (n) refer to 2013, 2018 device traffic share

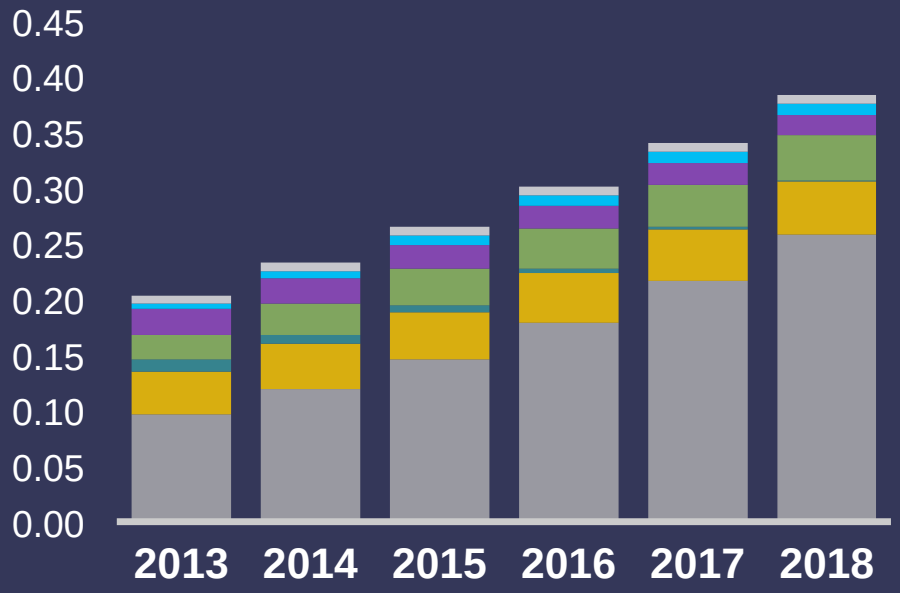
Source: Cisco VNI Global IP Data Traffic Forecast, 2013–2018

Korea Connected Devices Growth by Type

By 2018, M2M Over Two-Thirds of Devices

14% CAGR

Billions of Devices



- Other Portable Devices (3.5%,2.0%)
- Tablets (2.4%,2.8%)
- PCs (11.6%,4.7%)
- TVs (10.7%,10.7%)
- Non-Smartphones (5.4%,0.1%)
- Smartphones (18.9%,12.4%)
- M2M (47.5%,67.3%)

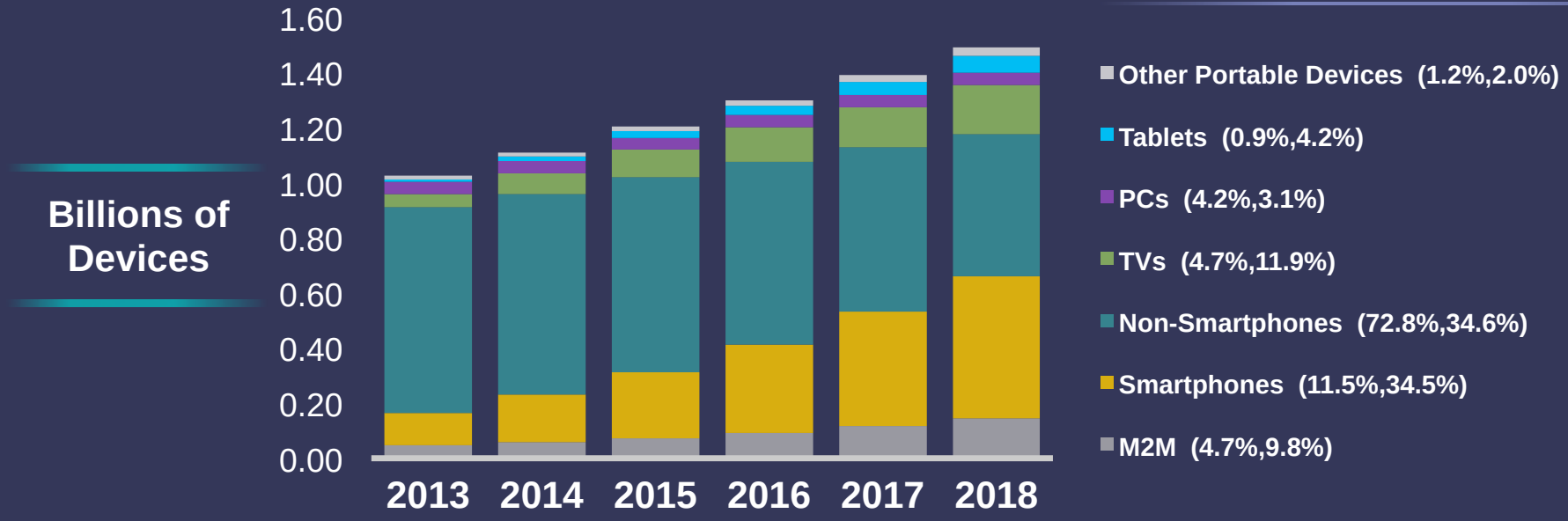
* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Data Traffic Forecast, 2013–2018

India Connected Devices Growth by Type

By 2018, Smartphones, Tablets and M2M Growing Fastest

8% CAGR



* Figures (n) refer to 2013, 2018 device traffic share

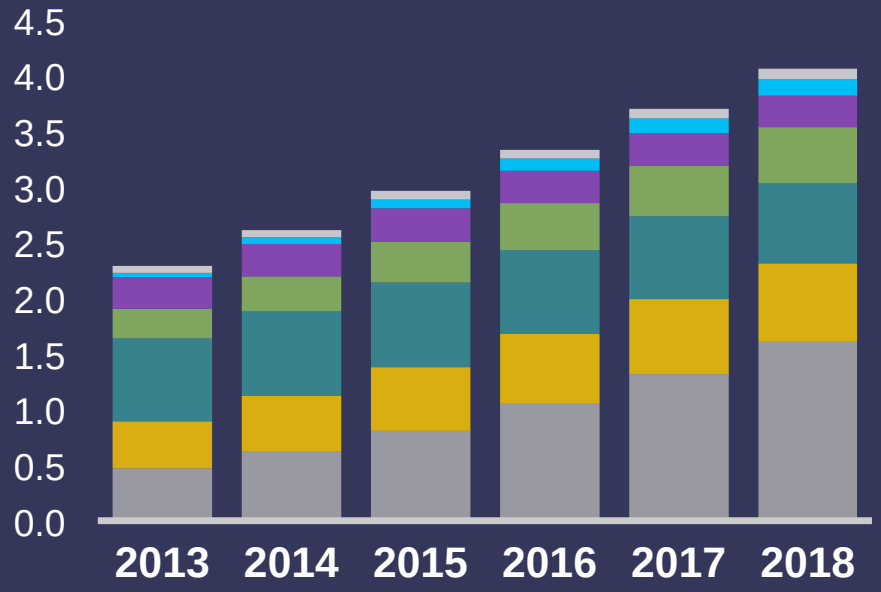
Source: Cisco VNI Global IP Data Traffic Forecast, 2013–2018

China Connected Devices Growth by Type

By 2018, M2M Growth Fastest

12% CAGR

Billions of Devices



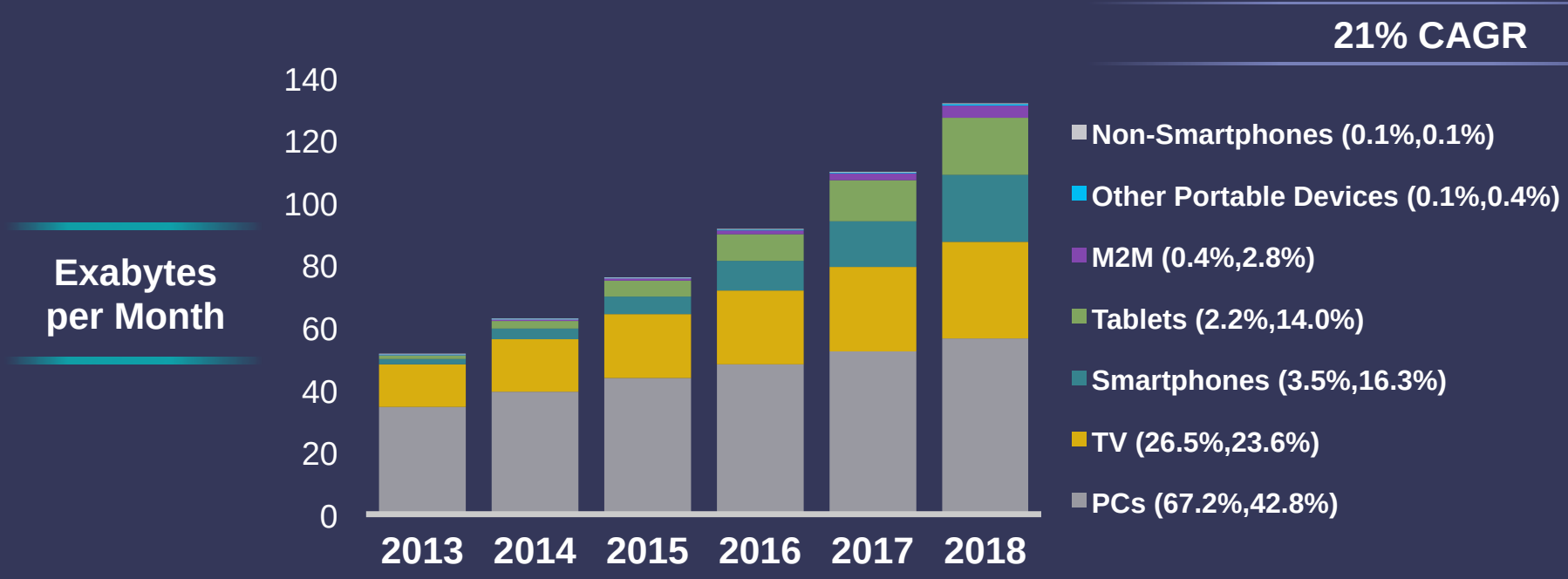
- Other Portable Devices (2.6%,2.3%)
- Tablets (1.6%,3.7%)
- PCs (12.4%,7.0%)
- TVs (11.7%,12.2%)
- Non-Smartphones (32.7%,17.8%)
- Smartphones (18.5%,17.4%)
- M2M (20.5%,39.6%)

* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Data Traffic Forecast, 2013–2018

Global IP Traffic by Device Type

By 2018, Non-PC Devices will Drive 57% of Global IP Traffic



* Figures (n) refer to 2013, 2018 device traffic share

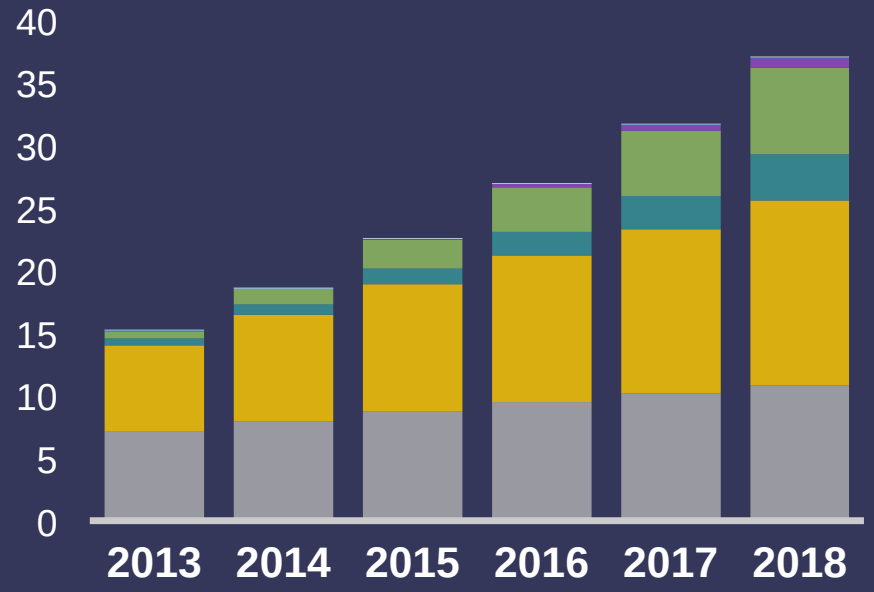
Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

USA IP Traffic by Device Type

By 2018, Non-PC Devices will Drive 71% of US IP Traffic

20% CAGR

Exabytes per Month



- Non-Smartphones (0.0%,0.0%)
- Other Portable Devices (0.0%,0.2%)
- M2M (0.2%,2.0%)
- Tablets (3.9%,18.8%)
- Smartphones (3.5%,9.9%)
- TV (45.5%,39.9%)
- PCs (46.9%,29.1%)

* Figures (n) refer to 2013, 2018 device traffic share

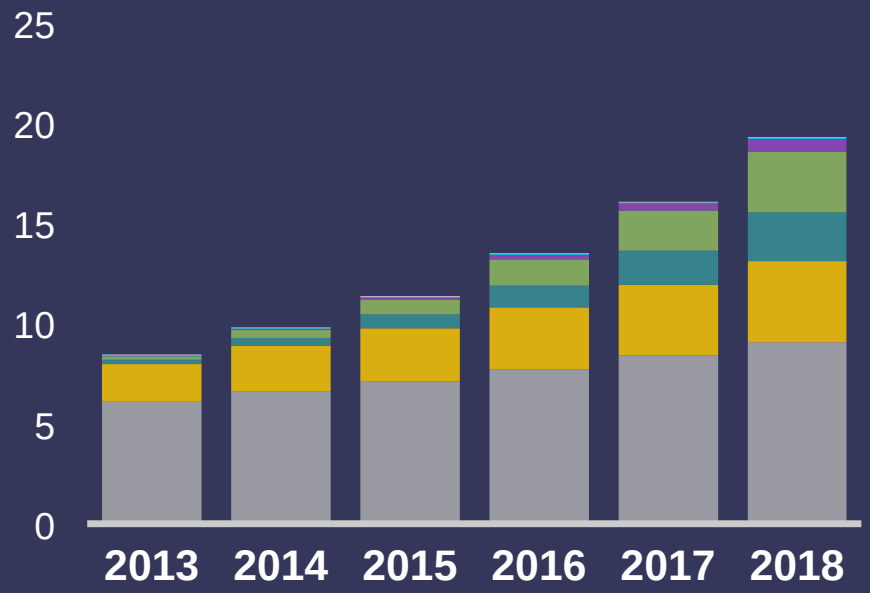
Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

WE IP Traffic by Device Type

By 2018, Non-PC Devices will Drive Over Half of WE IP Traffic

18% CAGR

Exabytes per Month



- Non-Smartphones (0.0%,0.0%)
- Other Portable Devices (0.1%,0.4%)
- M2M (0.4%,3.4%)
- Tablets (1.9%,15.4%)
- Smartphones (2.7%,12.8%)
- TV (22.4%,20.9%)
- PCs (72.4%,47.1%)

* Figures (n) refer to 2013, 2018 device traffic share

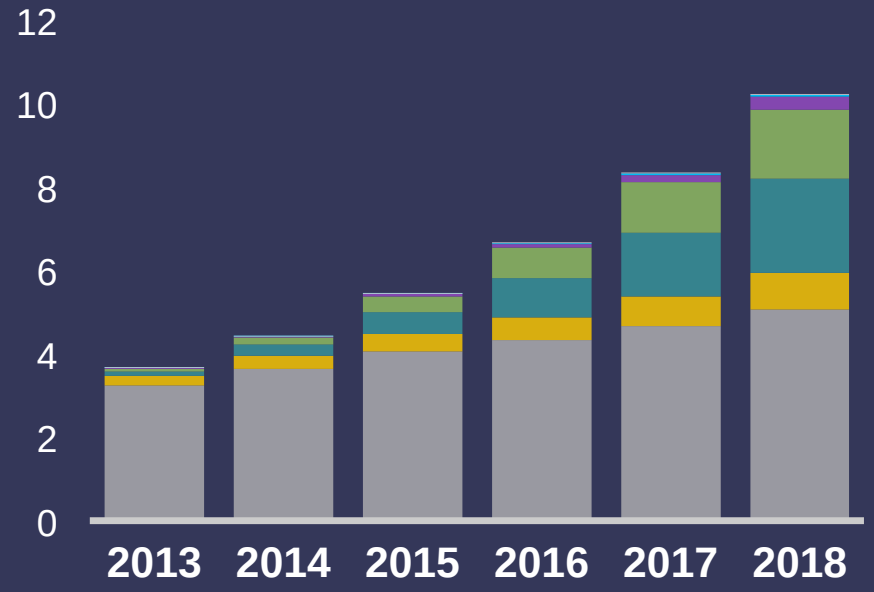
Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

CEE IP Traffic by Device Type

By 2018, Non-PC Devices will Drive 50% of CEE IP Traffic

23% CAGR

Exabytes per Month



- Non-Smartphones (0.1%,0.2%)
- Other Portable Devices (0.0%,0.5%)
- M2M (0.3%,2.9%)
- Tablets (1.5%,16.3%)
- Smartphones (3.4%,21.9%)
- TV (6.1%,8.6%)
- PCs (88.6%,49.5%)

* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

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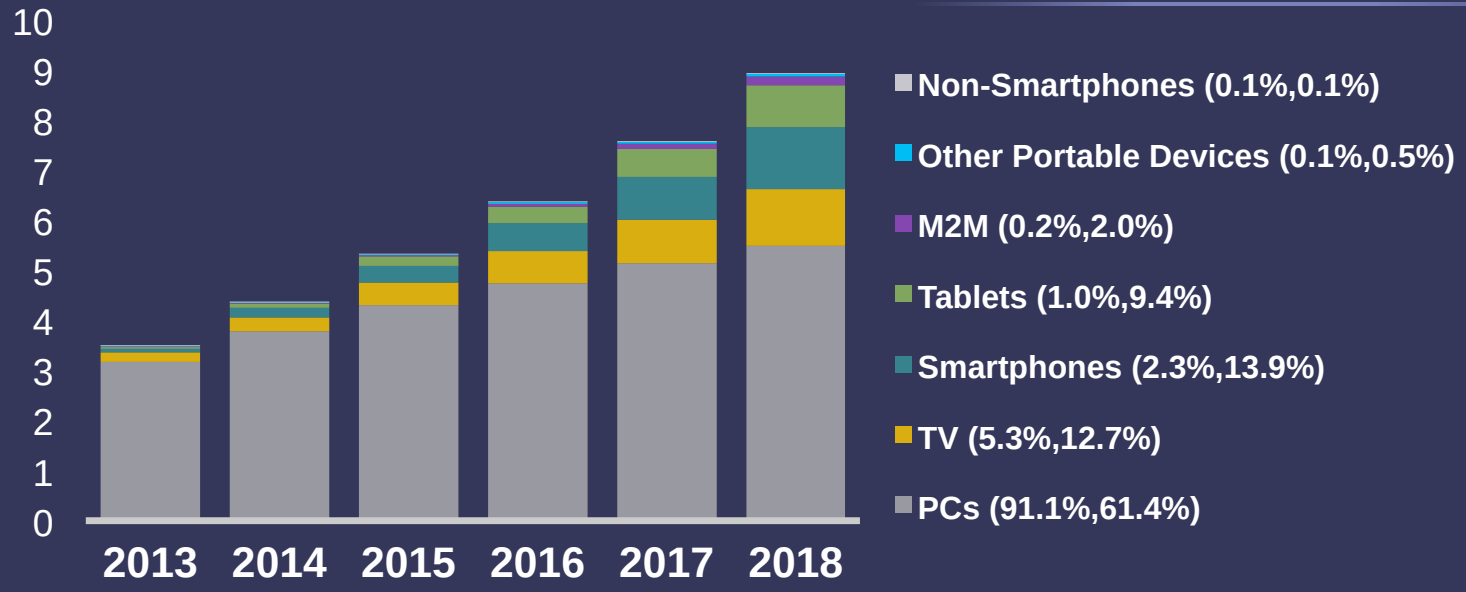
Latin America IP Traffic by Device Type

By 2018, Non-PC Devices will Drive Nearly 40% of LATAM IP Traffic

21% CAGR

Exabytes per Month



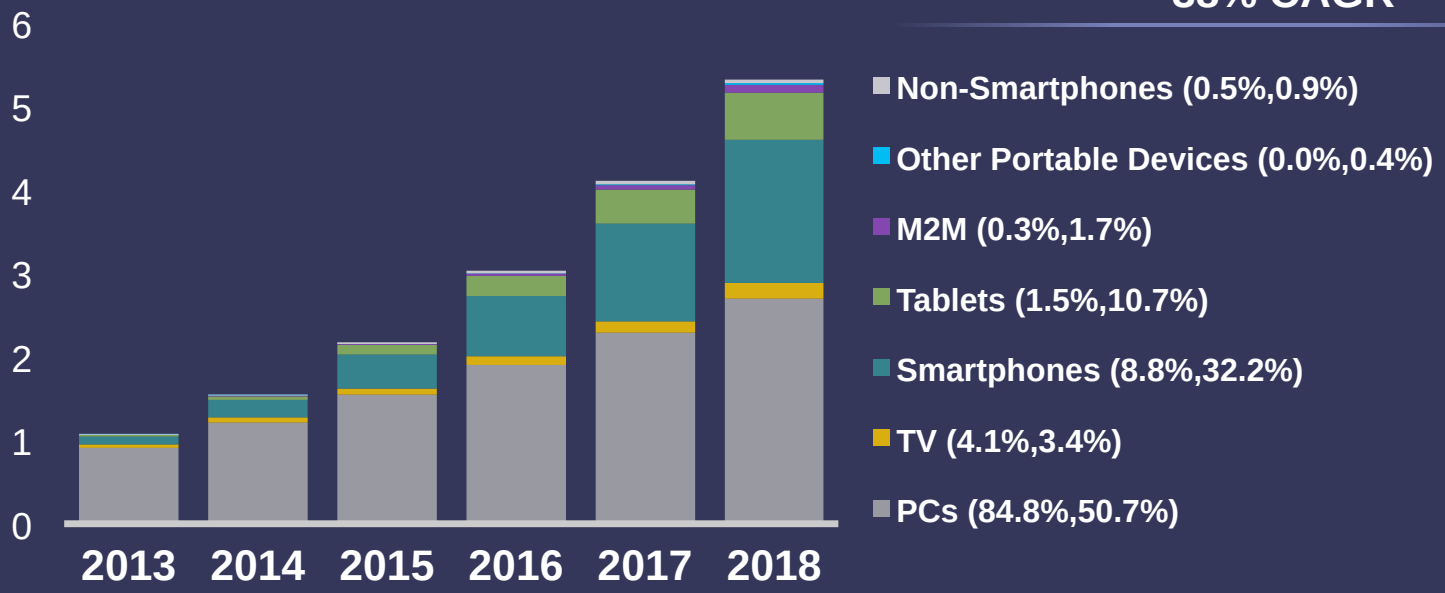
* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

MEA IP Traffic by Device Type

By 2018, Non-PC Devices will Drive Nearly Half of MEA IP Traffic

Exabytes per Month



* Figures (n) refer to 2013, 2018 device traffic share

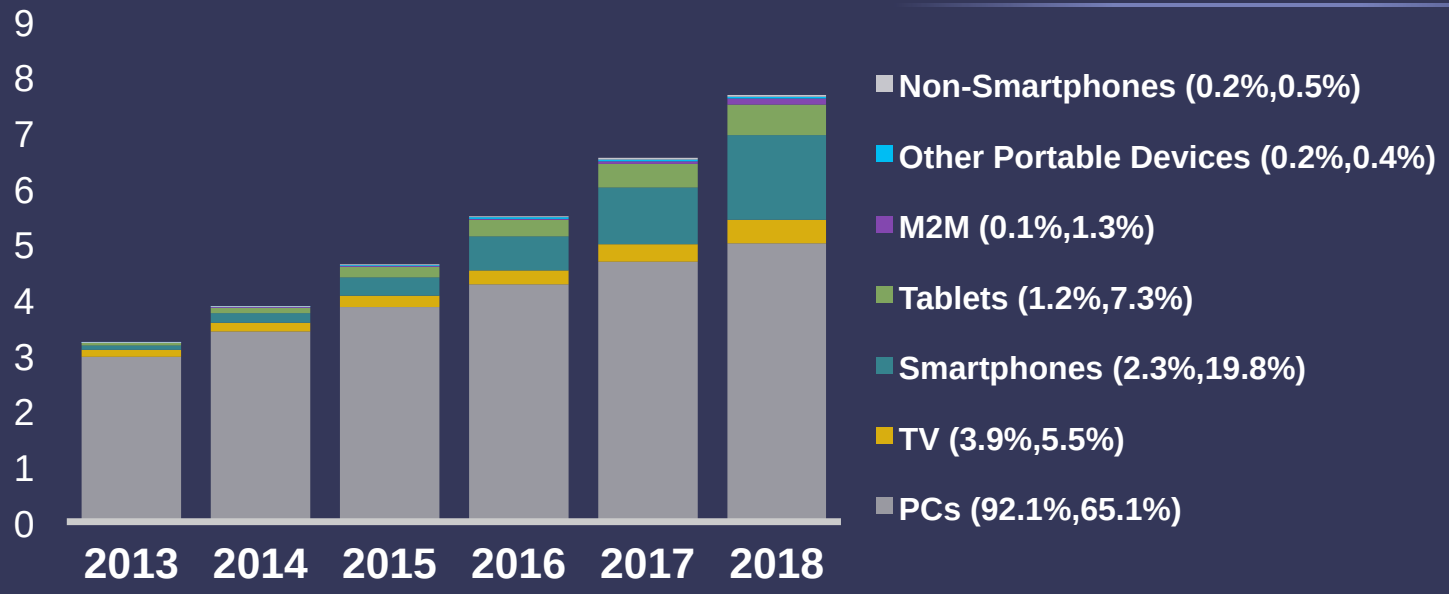
Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

Emerging Asia IP Traffic by Device Type

By 2018, PCs Still Driving two-thirds of Emerging Asia's IP Traffic

19% CAGR

Exabytes per Month



* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

Note: Emerging Asia covers Asia but excludes the largest economies (China, Japan, Korea, India, Indonesia)

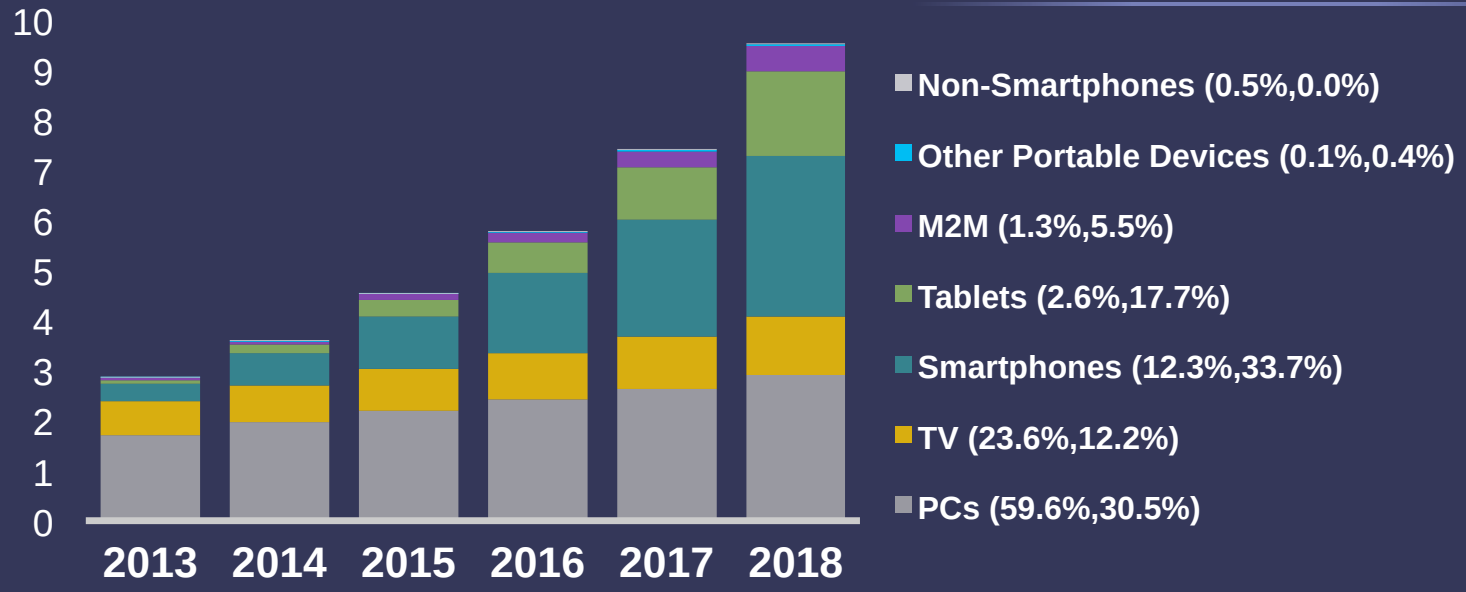
Japan IP Traffic by Device Type

By 2018, Non-PC Devices will Drive Nearly 70% of Japan's IP Traffic

附件：2014IIR年會M2M資料

27% CAGR

Exabytes per Month



* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

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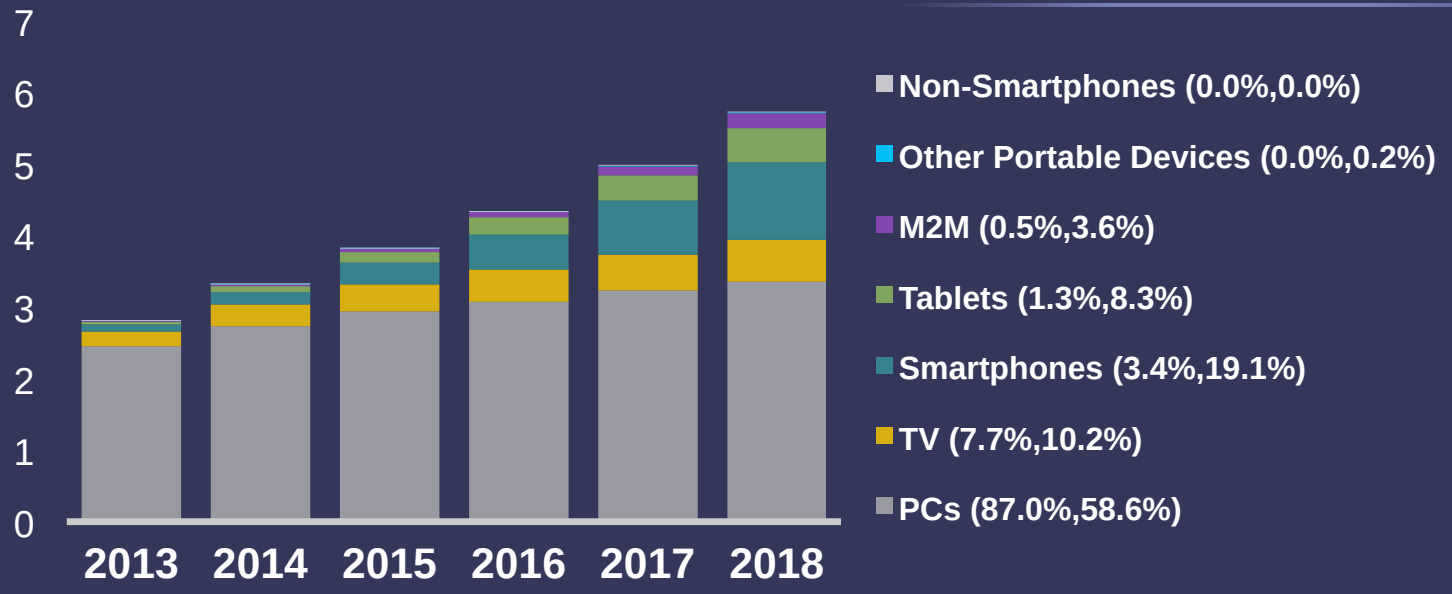
Korea IP Traffic by Device Type

附件：2014RFP年會M2M資料

By 2018, Non-PC Devices will Drive Nearly Two-Thirds of India's IP Traffic

15% CAGR

Exabytes per Month



* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

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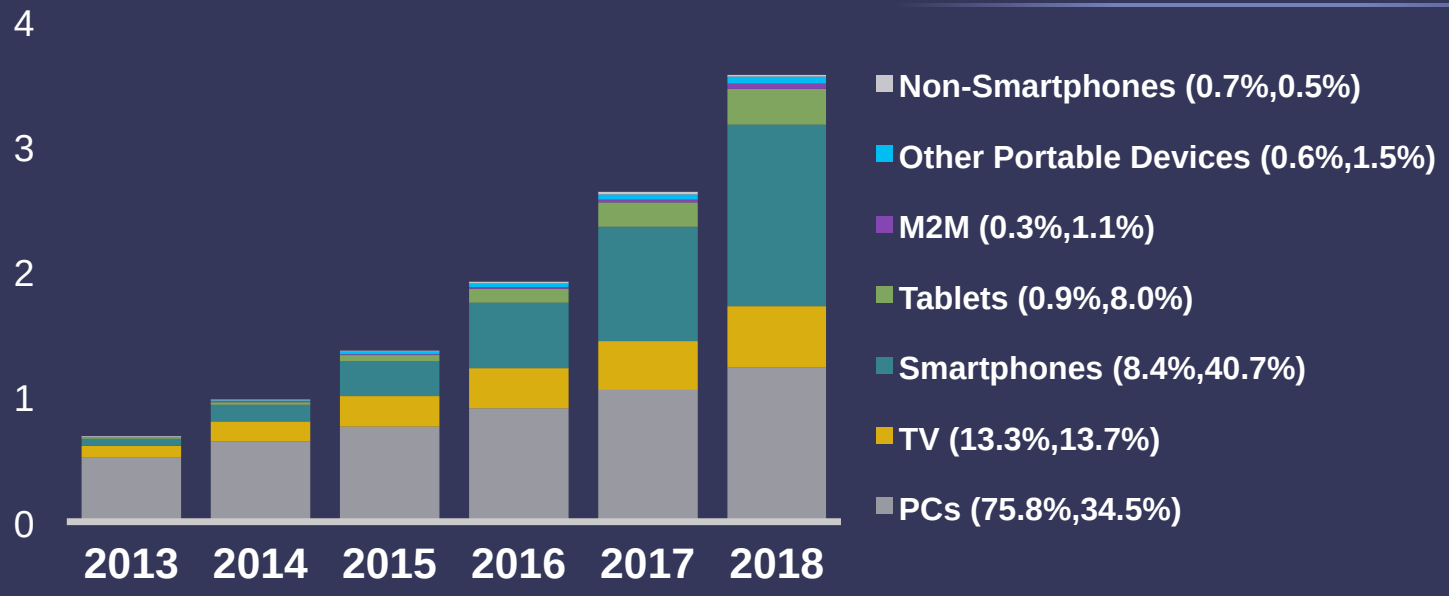
India IP Traffic by Device Type

By 2018, Non-PC Devices will Drive Nearly Two-Thirds of India's IP Traffic

39% CAGR

Exabytes per Month



* Figures (n) refer to 2013, 2018 device traffic share

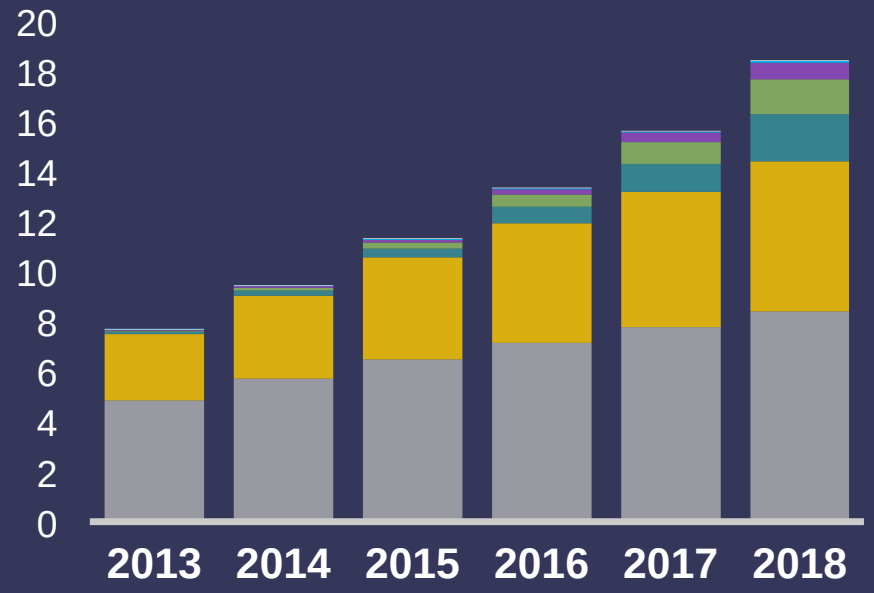
Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

China IP Traffic by Device Type

By 2018, Non-PC Devices Over Half of Traffic

19% CAGR

Exabytes per Month



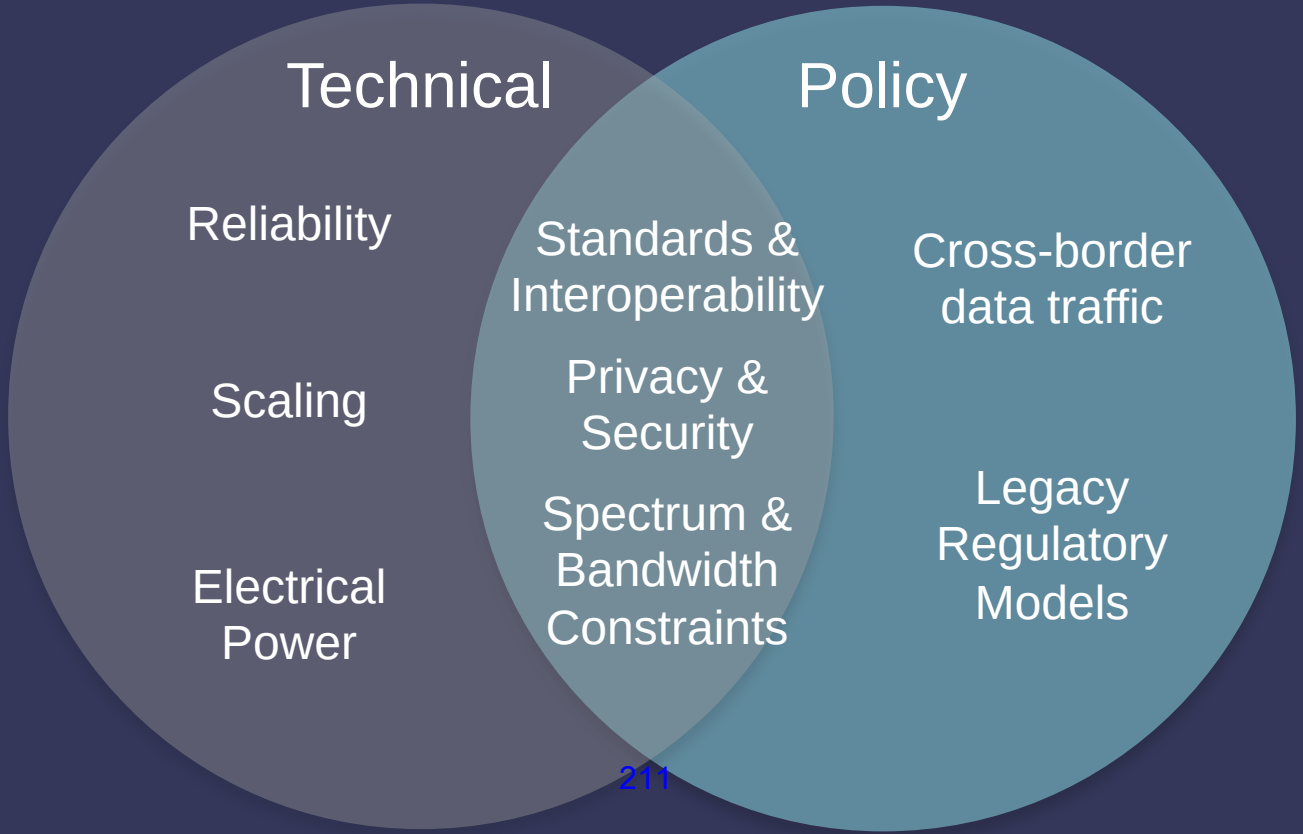
- Non-Smartphones (0.1%,0.1%)
- Other Portable Devices (0.1%,0.3%)
- M2M (0.4%,3.6%)
- Tablets (0.6%,7.6%)
- Smartphones (1.4%,10.2%)
- TV (34.3%,32.7%)
- PCs (63.2%,45.5%)

* Figures (n) refer to 2013, 2018 device traffic share

Source: Cisco VNI Global IP Traffic Forecast, 2013–2018

Technical and Policy Issues Remain…
Some More Relevant to Cities than Others

附件：2014IRF年會M2M資料



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Thank you.