



# The New Mobile World Order

## Perspectives on the Future of the Mobile Industry

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### Introduction

There is no longer any doubt about it: the world has definitely gone mobile. Close to 80 percent of the world's population now enjoys access to a mobile phone. In 97 countries around the world, there are now more mobile devices than people.<sup>1</sup> Exciting new devices, including iPhones, Android-based smartphones, tablets, and eReaders, are flooding the market and creating large amounts of mobile network traffic. Compelling video, social networking, and other innovative applications running on these latest devices are clogging mobile networks with massive new sources of data. People now expect to lead untethered, “anytime, anywhere” lives. Increasingly, they rely on wireless networks instead of wired networks in their homes, offices, and “on the go” to support their fluid lifestyles.

The net result of all of this increased mobility and technological innovation is phenomenal growth in mobile network traffic. Cisco's Visual Networking Index (VNI) predicts that global mobile data traffic will increase 26-fold between 2010 and 2015, reaching 6.3 exabytes per month by 2015.<sup>2</sup> Global mobile traffic will continue to explode, growing at a rate three times faster than that of fixed IP traffic over this same period. The VNI study also predicts that there will be more than 10 billion mobile-connected devices in 2016, including machine-to-machine (M2M) modules—exceeding the world's expected population by that time (7.3 billion).

### The Mobile Paradox

Despite this phenomenal growth and insatiable consumer demand, many key players in the mobile industry are struggling. Mobile operators are watching as average revenue per customer (ARPU) flattens or declines. Despite uptake in data, minutes of use in their cash-cow voice business are falling off sharply, and usage of text messaging is peaking. Much of this business is being lost to substitute over-the-top (OTT) services and to major shifts in usage behaviors. While there are a few winning device manufacturers, most companies are grappling with intense margin pressure, shrinking market share, and the constant challenge of delivering the next “big thing.”

As a result, we have seen many companies exit the mobile device business (Dell, HP, Palm) or significantly restructure to fight these challenges (Nokia, RIM). Content providers continue to seek a viable business model to monetize their content on mobile devices, while at the same time guarding the digital rights of their content. While there may be more than 1 million apps available through the Apple and Android app stores, market research by the Cisco Internet Business Solutions Group (IBSG) reveals that more than three-quarters of mobile consumers either never buy an app, or purchase only one or two.<sup>3</sup> Developers struggle with how to make money and to get any visibility in a massive, hypercompetitive market. Lastly, traditional companies that provide the equipment and infrastructure that make the mobile

system work are facing aggressive, new competitors and technology alternatives, eroding a once stable and lucrative market.

This mobile paradox—huge growth and customer demand, yet significant business and market challenges—is causing many companies in the mobile value chain to question where the industry is heading. They're struggling to understand the key drivers that will shape the industry and what this new world will mean for them in terms of new challenges *and* opportunities. Most of all, they want to know the winning strategies for achieving success in this new mobile world order.

This paper provides a perspective on the key disruptors and tipping points that will redefine mobility while producing two plausible scenarios for the future of the mobile industry. These scenarios and industry segment assessment provide a framework for mobile industry executives to evaluate their future and rationally assess strategic options under different conditions.

## Redefining an Industry

A number of major disruptors or strategic inflection points are radically altering the entire mobile ecosystem as we know it. Some of these disruptors have been gaining momentum over the last couple of years, while many others are in their early stages and, as such, have not played out. However, these strategic inflection points are causing—and stand to cause even greater—disruption and uncertainty in the industry.

The following eight key strategic inflection points will be instrumental in redefining the mobile ecosystem:

- 1. Explosive Demand for Mobile Data—a 26-fold Increase Between 2010 and 2015**
  - Cost challenges of building mobile networks to meet explosive demand
  - Monetization challenges—how to make money from increased demand?
- 2. The Rise of Software Platforms—from “Walled Gardens” to “Walled Ecosystems”**
  - From a battle of devices to a battle of “ecosystems” (e.g., Apple, Android, Windows)
  - A world increasingly dominated by Apple and Android ecosystems
  - The mobile user is interested in the ecosystem and its capabilities (e.g., apps, functionality) rather than network connectivity, which they see as a given
- 3. Availability of New, Fast Mobile Networks**
  - LTE Everywhere—the quest to identify new LTE services to get ROI and differentiate LTE from 3G networks
  - Rise of Wi-Fi—quickly becoming a viable alternative or complement to mobile networks, as it is often free, provides good coverage and a better user experience, and fits well with the rapid growth of nomadic devices. Could Wi-Fi be a viable competitor to LTE?
- 4. More Active Regulators in Many Countries**
  - Spectrum gatekeepers—most operators are hungry for more spectrum, which is controlled by the regulator
  - Public policy—desire to have universal broadband coverage for all citizens

- Net Neutrality—promoting the openness of the Internet, which helps strengthen the OTT (over-the-top) model
- Protecting the mobile customer—concerns over pricing, data caps, and roaming fees
- Industry structure and policy—more discerning about acquisitions and consolidation to encourage competition and protect the consumer

#### **5. Changing Industry Structure**

- Industry consolidation in every segment of the value chain—each segment is now dominated by two to three key players
- Major mergers and alliances (e.g., Nokia-Microsoft, Google-Motorola)
- Limited opportunities for most companies to expand in a dominant way into other segments of the value chain
- Market and innovation leadership concentrated in few major companies (e.g., Apple, Google)

#### **6. Growth of Network Connected Devices—Internet of Things**

- New constantly connected devices (e.g., tablets, eReaders, gaming devices, machine-to-machine)
- Everything is becoming connected (e.g., home, healthcare, transportation)

#### **7. Move to Cloud Delivery Models—“Everything as a Service”**

- Happening much faster than anyone expected
- App store model (application client) versus the mobile cloud model (service)—many apps are actually now just front ends to cloud services

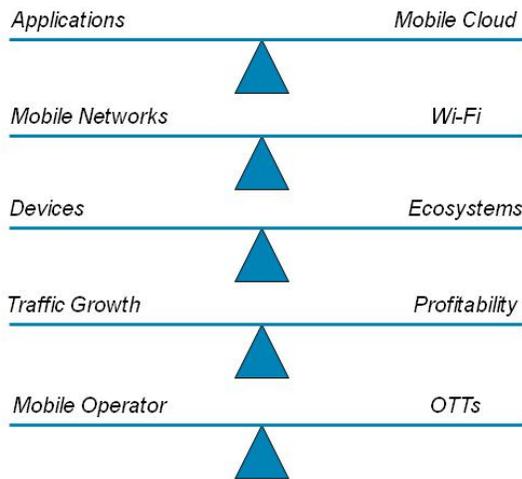
#### **8. The Rise of the OTT Threat—the Battle for Distribution of Video and Services**

- Threat to existing video providers and traditional business and delivery models (e.g., Netflix and Hulu vs. cable TV and MNO video offerings)
- Monetization for network providers—how do they get a piece of the OTT pie?
- Economic balance of the ecosystem—network providers need a return to invest; OTTs have been successful largely based on a cheaper operating model built on low network distribution costs. How sustainable is this economic model?

### **The Mobile Seesaw**

The eight industry disruptors, or inflection points, are creating a number of tipping points in the mobile industry—the outcome of which could radically alter the mobile ecosystem as we know it. These key strategic issues are defining the future framework of how the mobile industry looks and operates. Responses to these disruptors fall along a continuum, strongly tipping the industry in one direction or another like a child's seesaw. Cisco IBSG believes that five tipping points, or key strategic questions, are fundamental in framing the future characteristics of the mobile ecosystem. Figure 1 illustrates the end points along the strategic continuum of each of these key inflection points.

Figure 1. Mobile Industry Tipping Points.



Source: Cisco IBSG, 2012

### Tipping Point #1: Applications Versus Mobile Cloud

- Will services continue to be delivered from an application resident on the device, or will they be delivered *on-demand* through the cloud?
- Will the business model switch from purchasing per application to paying for a service per usage or subscription?

### Tipping Point #2: Mobile Networks Versus Wi-Fi

- Will the explosive growth of data traffic require that mobile operators increasingly use Wi-Fi to meet demand?
- Will the cost to the user and improved experience force people to increasingly use Wi-Fi over mobile networks for connectivity?
- Will the rise of Wi-Fi-centric devices, increased Wi-Fi availability, and technology advances create an alternative “mobile” Wi-Fi network?

### Tipping Point #3: Devices Versus Ecosystems

- Will users purchase the device for its own value, or simply as a means to access a broader ecosystem?
- Will we have a universal, interoperable mobile ecosystem or a number of powerful, closed systems?
- Will mobile operators continue to exert power to control and subsidize devices and functionalities on their networks, or will all devices be equally welcome on all networks?

### Tipping Point #4: Traffic Growth Versus Profitability

- Will mobile operators find ways to increase revenue per MB, or will they be forced to focus largely on cost containment to maintain network profitability?
- Will mobile operators continue to make significant network investments, or will they drastically scale back because they can't get adequate returns on their investments?

## Tipping Point #5: Mobile Operators Versus OTTs

- Will OTTs displace significant revenues from mobile operators' core services (e.g., voice, SMS), or will they be niche players?
- Will mobile operators control or collaborate with OTTs, or will they be relegated to principally transporting OTT services on their mobile networks?
- Will end users consume services beyond connectivity from mobile operators, or will they see OTTs as the key providers of these services?

## A New Mobile World

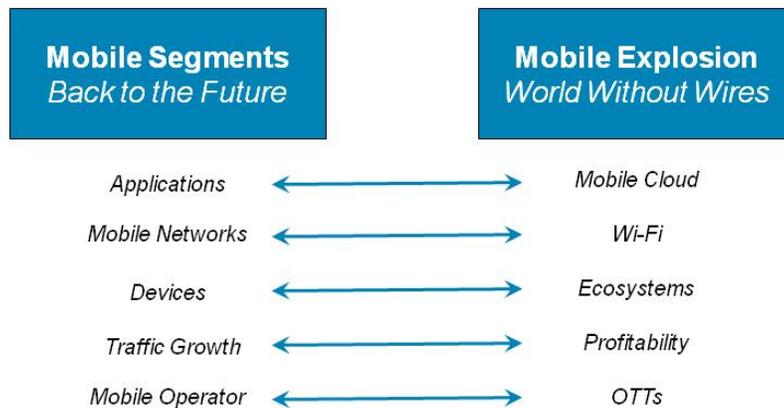
"Prediction is very difficult, especially about the future."

Niels Bohr  
Physicist and Nobel Laureate

The key tipping points—*The Mobile Seesaw*—are ultimately redefining the mobile ecosystem. These tipping points, or key strategic questions, serve as a useful framework for developing scenarios for the potential future of the mobile industry. The creation of industry scenarios provides a valuable means to comprehend and envisage a multitude of uncertain and interconnected factors in a tangible and actionable way. These scenarios paint a picture of plausible future worlds in five years time.

While there are several plausible future mobility scenarios, Cisco IBSG believes that two scenarios in particular are both more likely to transpire and more instructive for making the choices that will help in developing winning strategies. These scenarios describe the two competing worlds—"Mobile Segments" and "Mobile Explosion"—defined by the end points in Figure 2.

Figure 2. Key Scenarios for the Future of the Mobile Industry.



Source: Cisco IBSG, 2012

## Mobile Segments—Back to the Future

This is a world not that dissimilar to that of today, or to the industry over the past five or so years. It could be thought of as “Mobile 2.5” or “Mobile 3.0.” Industry consolidation continues, with large players dominating each segment of the value chain. The large players focus on core strengths in their respective segments of the value chain, seldom venturing into other parts of the ecosystem. The traditional application-to-device-to-connectivity model continues, although it is dominated by three largely independent operating platforms: Apple, Android, and Windows. Mobile operators retreat to a role of largely providing connectivity, leaving other aspects of the customer experience to be delivered by the dominant players in other relevant parts of the value chain. Through this *détente*, or “coopetition,” all of the players seek ways to create extra value by using their core strengths and capabilities (e.g., network, channels, advertising) to augment each other’s offers. Most of the industry innovation in this scenario occurs in start-ups, the most successful of which are quickly gobbled up by behemoths seeking innovation in the consolidating industry.

The key attributes of the tipping point continuum that characterize the Mobile Segments scenario are:

1. **Applications**—applications resident on the device and purchased through a traditional app store
2. **Mobile Networks**—traditional mobile, licensed spectrum networks rule and continue to explode; alternative networks largely remain for niche uses
3. **Device-Centric**—largely independent and non-interoperable devices, based on three independent operating platforms, continue to be subsidized by MNOs. How can schools scale best practices and reuse technology?
4. **Traffic Growth**—as they focus primarily on being connectivity providers, operators cope with continued explosive growth by lowering network costs and improving efficiencies
5. **Mobile Operators**—core mobile services (e.g., voice, SMS, email) will continue to be largely delivered by MNOs

## Mobile Explosion—A World Without Wires

This is a world where everything is wireless. Aside from large pipes to big-screen TVs and other fixed devices, everything is connected over a wireless network. Access type doesn’t matter—end users are completely unaware as to which of the multiple interrelated, licensed and unlicensed networks they’re using to connect their devices to the Internet. Although three large platform ecosystems still dominate, there is good interoperability between devices, networks, and applications or services. Much of this interoperability is driven by the mobile cloud, which drives the most compelling mobile services—finally delivering on the long-awaited promise of services delivered anywhere, anytime, on any device.

Competition increases within and across parts of the mobile value chain as the number of networks increases, platforms and devices become interoperable, and services are easily delivered at scale through the mobile cloud. The lines between the segments in the value chain begin to blur as each of the players both competes and seeks ways to partner or collaborate with others to enhance and differentiate its offering. Once archrivals, mobile operators and OTTs now seek collaborative opportunities to leverage their core capabilities to create new value for themselves.

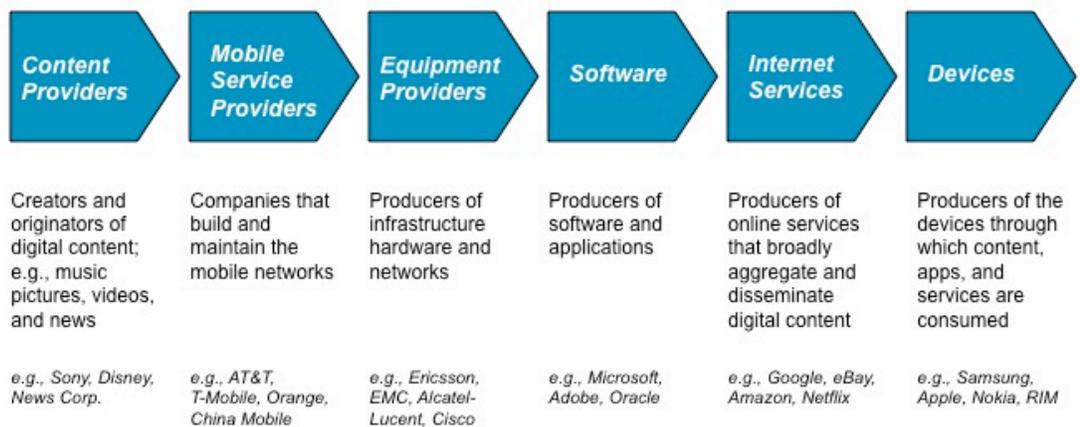
The key attributes of the tipping point continuum that characterize the Mobile Explosion scenario are:

1. **Mobile Cloud**—while applications will not completely disappear, innovative and integrative services will largely be delivered through the mobile cloud
2. **Mixed Networks**—a HetNet (heterogeneous network) of licensed and unlicensed access will provide the most cost-efficient and effective network at time of need
3. **Ecosystems**—interoperative ecosystems will allow people to use what they want, on whatever network, without any control from mobile operators
4. **Profitability**—players will seek new sources of value and revenue enhancement strategies as the scope of competition increases
5. **OTTs**—with multiple networks and platforms available, OTTs find new ways to connect with their customers; they will, however, value collaboration with MNOs for competitive differentiation

### Succeeding in the New World Order

The Mobile Segments scenario is largely a continuation of the world today—large players dominate each segment of the value chain, focusing on their core strengths and capabilities, and cooperating with their fellow segment giants. Conversely, Mobile Explosion is a world where most things are wireless, interoperable, and cloud-based, with increasing competition and blurring of the lines previously separating the value chain segments. Cisco IBSG describes the key segments in the mobile value chain as shown in Figure 3.

Figure 3. Segments of the Mobile Value Chain.



Source: Cisco IBSG, 2012

While it is impossible to predict the future, some of the current trends and early indicators suggest that the tipping points are pushing the industry in the direction of the world of Mobile Explosion. This potential world is also the most unknown and requires further exploration and understanding to position for success. Given this trend, players in the mobile value chain are rightly asking, “What are the solutions to the key challenges and business choices that this new world presents?” And, most important, “What are the key strategies and considerations to ensure success in this new mobile world order?”

Following are the top strategic considerations to ensure future success for each of the six key segments of the mobile value chain.

### **Content Providers**

- Multiplatform—ensure all content works on all devices, platforms, and networks
- Multi-Rights Ownership—link content ownership to the person, not device or network
- Cloud-Based Lockers—create protected cloud lockers to store and access owned content
- Alternative Business Models—e.g., targeted advertising, subsidized devices, or connectivity
- New Distribution Models—e.g., direct to users, through Internet service companies

### **Mobile Service Providers**

- Wi-Fi Integration—embrace Wi-Fi as an integral part of the mobile network architecture
- Advanced Pricing—use pricing and bundling to optimize network use and increase revenues
- OTT Collaboration—open up APIs and network intelligence to benefit from improving the OTT offering
- Big Data—use advanced data analytics as a business tool and new source of revenue
- Network Costs and Performance Optimization—e.g., CDNs, cloud, IP consolidation
- Mobile Cloud—develop and sell new, innovative cloud offerings
- Vertical Solutions—incorporate M2M and other capabilities to target unique solutions to mobile relevant segments (e.g., healthcare, retail)

### **Equipment Providers**

- Cost Reduction—e.g., rationalize product features, lower overheads, focused and efficient development, lean manufacturing
- Network-Data Center Integration—develop integrated products/operations and management tools to capitalize on the convergence of networks and data centers
- Small Cell—this is the future of radio access growth; need low price, innovative products
- Multi-Network Access—integrated network access modes (e.g., LTE and Wi-Fi) in single products
- Lower Price—combat low-cost competitors and changing business practices with new GTM models, emerging market-centric products, and lower cost structure

### **Software**

- Mobile Enablement—make software easily accessible and usable on all mobile devices/platforms
- Mobile Cloud—create new services combining device capabilities, applications, and cloud delivery
- Security—move security beyond the software to the network, device, content, and access

- Vertical Solutions—solutions created from software plus other relevant components and features

### Internet Services

- SP Collaboration—partner with or pay MNOs to enhance offer through access to their network capabilities and intelligence
- Cloud—fundamental delivery model and new customer opportunities
- Value-Chain Integrators—become the “glue” linking networks, content, devices, and apps
- Innovation—new services, business and operating models, and routes to customers

### Devices

- Innovation—devices, form factors, and beyond (e.g., cloud, new business models)
- Beyond Handsets—nonhuman-centric devices (e.g., M2M, sensors)
- Connected Home—integration of devices, cloud, content, and services
- Cloud Extension—make cloud services an integral part of device (e.g., services, storage, content)
- Alternative Networks—put intelligence in the device to allow seamless optimization across heterogeneous networks

## Charting a New Course

The growth of mobility—and the way it has changed our lives—is unprecedented. The rise of mobility presents a huge business opportunity to companies in all segments across the mobile value chain. However, success is by no means guaranteed. Many companies will face the “Mobile Paradox” of not being able to capitalize on the huge business opportunities.

The industry is currently undergoing tremendous change and disruption that will ultimately result in a New Mobile World Order. While it is never easy to predict the future, the New Mobile World Order will probably resemble the Mobile Segments or Mobile Explosions scenarios presented in this paper (or, more likely, a hybrid of the two). However, a completely new world could emerge.

Analyzing the key industry drivers and tipping points provides a valuable framework for understanding what the future holds for the mobile industry. Continually monitoring and assessing changes in these drivers and tipping points over time provides a valuable tool and insights to help companies in the mobile industry better prepare for the future—and respond more quickly as conditions deviate from the industry norm. The scenarios’ true value comes from encouraging companies to map out a strategy that helps them to shape their future and achieve success in the New Mobile World Order, rather than having the future shape them.

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“All of our knowledge is about the past, but all of our decisions are about the future.”

Anonymous

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## Endnotes

1. International Telecommunication Union, October 2010.
2. Cisco Visual Networking Index, 2012.
3. "Mobile Consumers Reach for the Clouds: Cisco IBSG Research Uncovers Opportunities for SPs," Cisco IBSG, July 2011.

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### More Information

Cisco IBSG (Internet Business Solutions Group) drives market value creation for our customers by delivering industry-shaping thought leadership, CXO-level consulting services, and innovative solution design and incubation. By connecting strategy, process, and technology, Cisco IBSG acts as a trusted adviser to help customers make transformative decisions that turn great ideas into value realized.

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