

Future of 4G Technologies

This report defines 4G and provides an overview of the trends and drivers behind the shift towards the new technologies. It explains how regulatory factors and industry actions are shaping the deployment and adoption of the technology. It examines different 4G technology candidates and identifies the threats and opportunities for ICT players. Finally, it examines how leading ICT players are exploiting 4G.

Features and Benefits

- Review the current technologies, regulatory factors and industry support impacting the adoption of 4G technologies.
- Identify key changes in consumer usage behavior that drive the need for the greater speed and spectral efficiency afforded by 4G.
- Review the current technologies, regulatory factors and industry support impacting the adoption of 4G technologies.
- Identify the technology family best suited to a chosen 4G strategy based on each technology's characteristics and individual corporate circumstances.
- Identify the various initiatives in support of each technology candidate in order to revise considered.

Highlights

Consumers are generating increasingly high volumes of mobile data traffic, which is leading to congestion and network performance issues. 2G still accounts for most mobile connections worldwide but increasingly high pockets of data traffic in some markets, combined with changing user needs, are rendering current mobile technologies inadequate.

Industry and consumers have a strong interest in pre-4G technologies such as Mobile WiMAX and LTE that can increase data rates and capacity dramatically. Both technologies are marketed as 4G despite not meeting the IMT Advanced requirements. While Mobile WiMAX is already available in places, deployment of LTE is only just starting.

A number of established network operators, handset manufacturers and infrastructure providers have opted for a flexible 4G strategy tailored to their different markets. Real 4G is still at least 2-3 years away from full commercial deployment but when it hits full swing 4G will have a lasting impact on the ICT environment.

Your key questions answered

- What are the major trends and drivers behind the adoption of 4G, what are the main 4G protocols and what is their appeal?
- What technologies, products and services will influence the rollout of 4G, who are the key players and how do they position themselves?
- What are the main threats posed by the deployment of 4G and how can companies protect themselves?
- How can ICT vendors and consumer electronics companies exploit the opportunities afforded by 4G?
- How will 4G impact the ICT market in the next 3-5 years?

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Chapter 2 Competitive landscape

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- Long Term Evolution (LTE) provides a temporary solution
- Support for LTE translates into support for LTE Advanced
- Mobile WiMAX offers an acceptable interim solution

Support for Mobile WiMAX translates into support for WiMAX 2
Legacy technologies will dictate the roadmap to 4G
Key trends and drivers
Mobile Internet fuels demand for faster service delivery
Mobile broadband substitution compounds network congestion
Increased mobile Internet usage also impacts devices and applications
Data traffic is skyrocketing
Current technologies are under mounting pressure
Industry support and regulatory factors will influence the adoption of 4G
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M Taiwan
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Backward compatibility
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Ecosystem
WiMAX
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WiMAX strives to reproduce a full computing environment

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WiMAX

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Summary: LTE and WiMAX share many similarities

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Summary

Introduction

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EU regulations drive 4G development but favor LTE

The EU welcomes next generation networks (NGN)

The EU backs LTE and LTE Advanced

Beyond Next-Generation Mobile Broadband (BuNGee)

Spectrum issues could jeopardize 4G

Spectrum allocations will impact operators and manufacturers

WiMAX

LTE

Allocation of the digital dividend would benefit 4G

The spectrum (re)allocation process is under way

Europe:

Middle East: Bahrain frees up spectrum for LTE

Africa is allocating the 790-862 MHz band to mobile broadband

Central & Latin America (CALA): Mexico may open up the 700MHz band

Asia-Pacific

4G deployments in the world

WiMAX has a head start on LTE but lower coverage

Mobile WiMAX

WiMAX 2

Current WiMAX deployments

Asia-Pacific

Western Europe

Eastern Europe and Russia

Middle East

Africa

USA

Central & Latin America

LTE and LTE Advanced deployments

The first phase of LTE deployment will occur in 2010-2011

What is in the pipeline?

WiMAX Forum is gearing up efforts to finalize WiMAX 2

WiMAX 2 should be commercially available on a larger scale in 2011-2012

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The iPhone 4's features offer better support for rich media communications
Apple's edge in the MID segment is confirmed
Apple offers multifunction devices with one predominant use
Changes to the iPhone's operating system makes the iPhone more 4G compliant
Apple's dominance of the apps market in all form factors continues

Apple wants a share of the mobile advertising market

Vendor summary - Samsung, LG, Motorola, Apple

Zain Group

The departure of Zain's CEO derails Zain's development plans

Zain's expansion is put on hold and its African assets are sold off

Zain brings next generation mobile technology to emerging markets

Zain will be launching LTE in the Middle East first

Zain chooses LTE to assert its position as a global player

Zain is also investing in WiMAX technology

Clearwire

Clearwire opts for aggressive and fast deployment across the US

Clearwire looks set to switch allegiance from WiMAX to LTE

Clearwire may enter an agreement with T-Mobile to create an MVNO

Clearwire opens up the ecosystem with its "best-of-breed" strategy

Clearwire's gamble has paid off so far

ZTE

ZTE aims for continued rapid growth

ZTE goes from late entrant to innovator

ZTE's High Performance Product Development program increases its competitiveness

ZTE is ready for 4G

ZTE has a double 4G offering

ZTE targets the US for 4G deployment

ZTE claims to have found the killer service: interoperability testing

ZTE is keen to increase investments in LTE

ZTE makes a bid for technology independence

ZTE pursues an aggressive internationalization strategy

ZTE will raise awareness of its brand in the terminal segment

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Leading players and organizations will influence the choice of 4G technology

The choice of technology depends on the business model

All roadmaps lead to 4G

The GSM and CDMA roadmap

The WiMAX roadmap

LTE and WiMAX are not mutually exclusive

The deployment of 4G will change the ICT market

Impact on networks

Impact on the ecosystem

Devices will become multimode

Ultra mobile device adoption will increase

CE devices will turn into mobile Internet devices

Impact on content

Increased data usage could raise copyright issues

Impact on applications and services

4G will accelerate three-screen convergence

Adaptability and personalization will be the key words
 4G will enhance the gaming experience
 Location-based services (LBS) will drive network traffic up
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