

MOBILE COMMUNICATIONS CONNECTING THE WORLD

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ITU WORKSHOP ON HUMAN EXPOSURE TO ELECTROMAGNETIC
FIELDS – TURIN MAY 9 2013

IT'S HOW
WE CONNECT



MOBILE COMMUNICATIONS CONNECTING THE WORLD

Presentation overview

- Radio communications in the community
 - Overview of wireless technologies
 - Example radio spectrum plot
 - Benefits of good mobile network coverage
 - EMF safety standards
 - Mobiles in today's society
 - Global connection statistics
 - Smart phones capturing our history
 - Summary, conclusion & recommendations
-
- Wireless Quiz – test your general knowledge



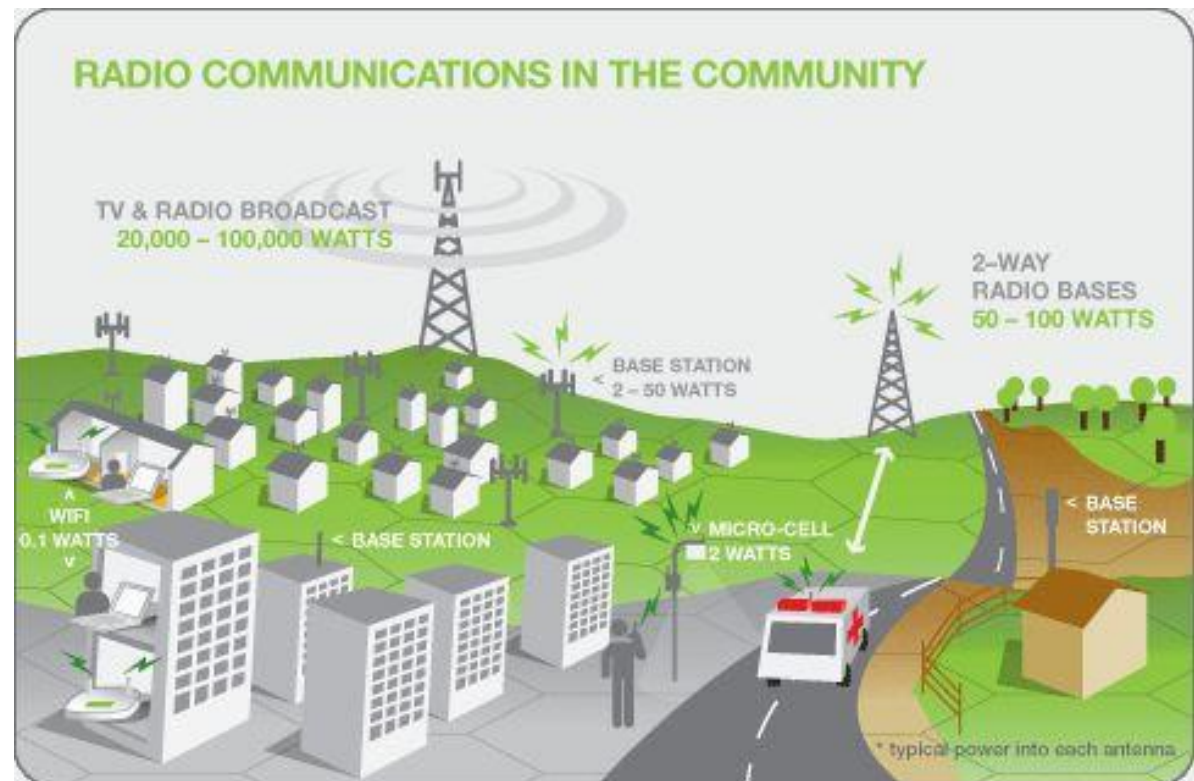
Acknowledgements

- GSM Association – www.gsma.com
- EMF Explained Series – www.emfexplained.info

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Communities rely on wireless communications

- TV & Radio Broadcast
- Emergency Services
- 2-Way radio
- Mobile phones.
- Mobile broadband
- WiFi.
- WiMax.
- Blue tooth
- Walkie Talkies
- Baby Monitors



WiFi – ‘Wireless Fidelity’

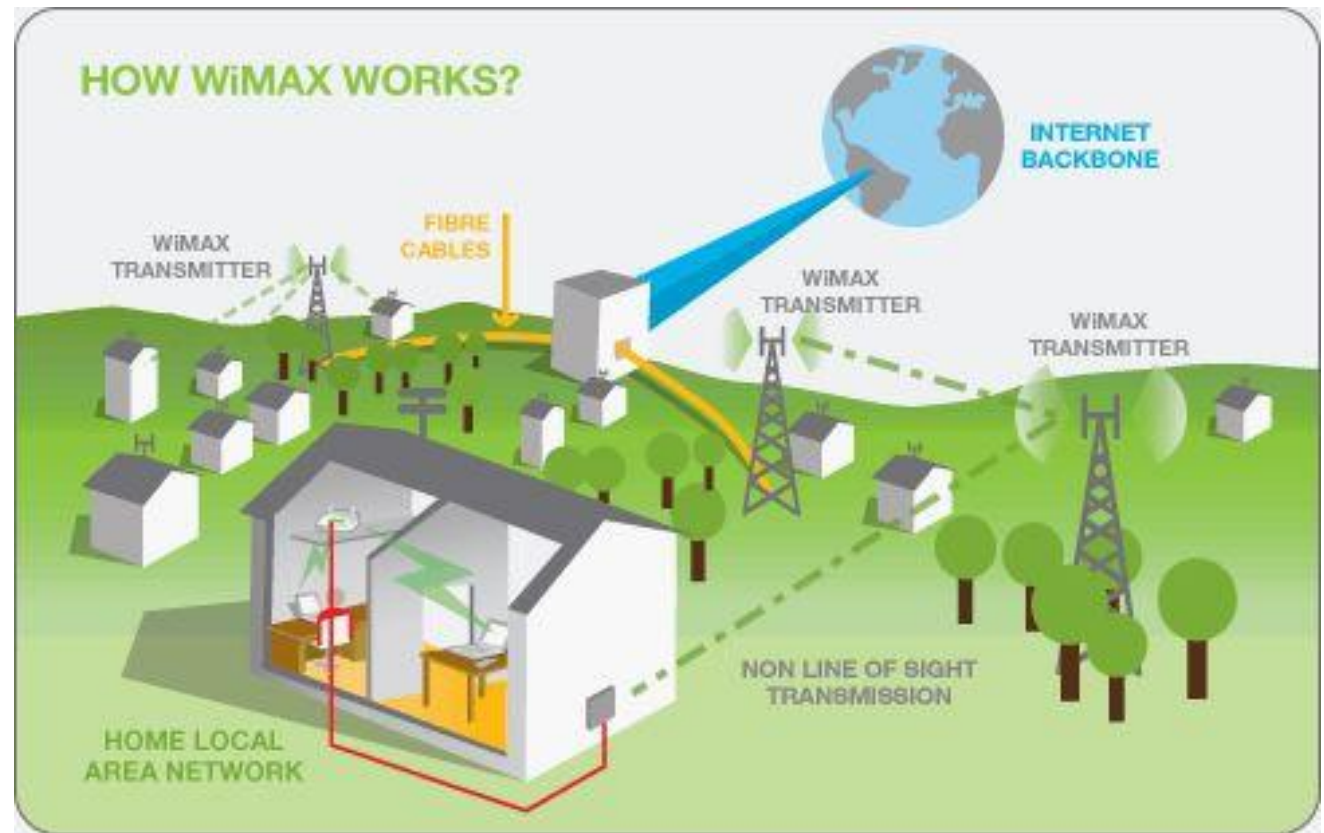
- High speed data communications
- Internet connection for mobile & fixed devices
- Short distance
- Low power
- 2.4GHz & 5GHz



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WiMax – ‘Worldwide Interoperability for Microwave Access’

- Wireless metropolitan-area network standard
- High speed data communications
- broadband internet access
- 2.3GHz, 2.5GHz
3.5GHz & 5.8GHz
- ‘last mile’ internet connection

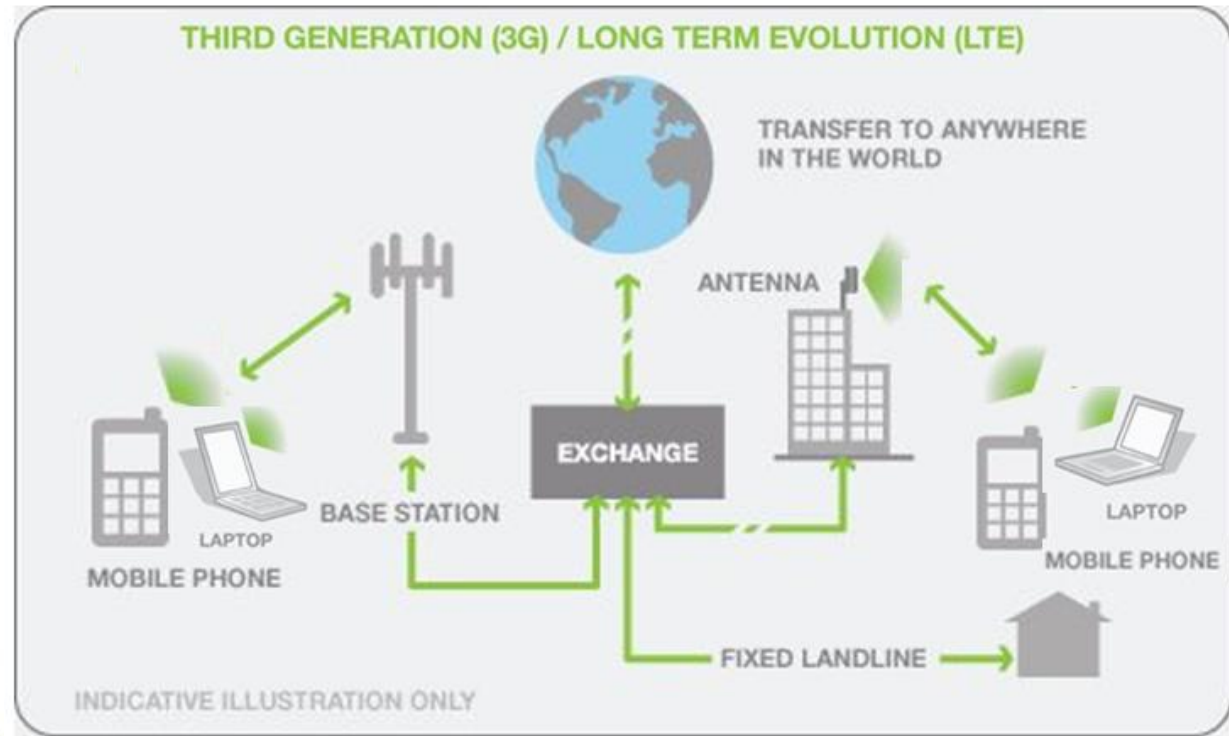


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Mobile networks

- Cellular network of radio base stations
- Pico cells
- Micro cells
- Macro cells
- In building systems

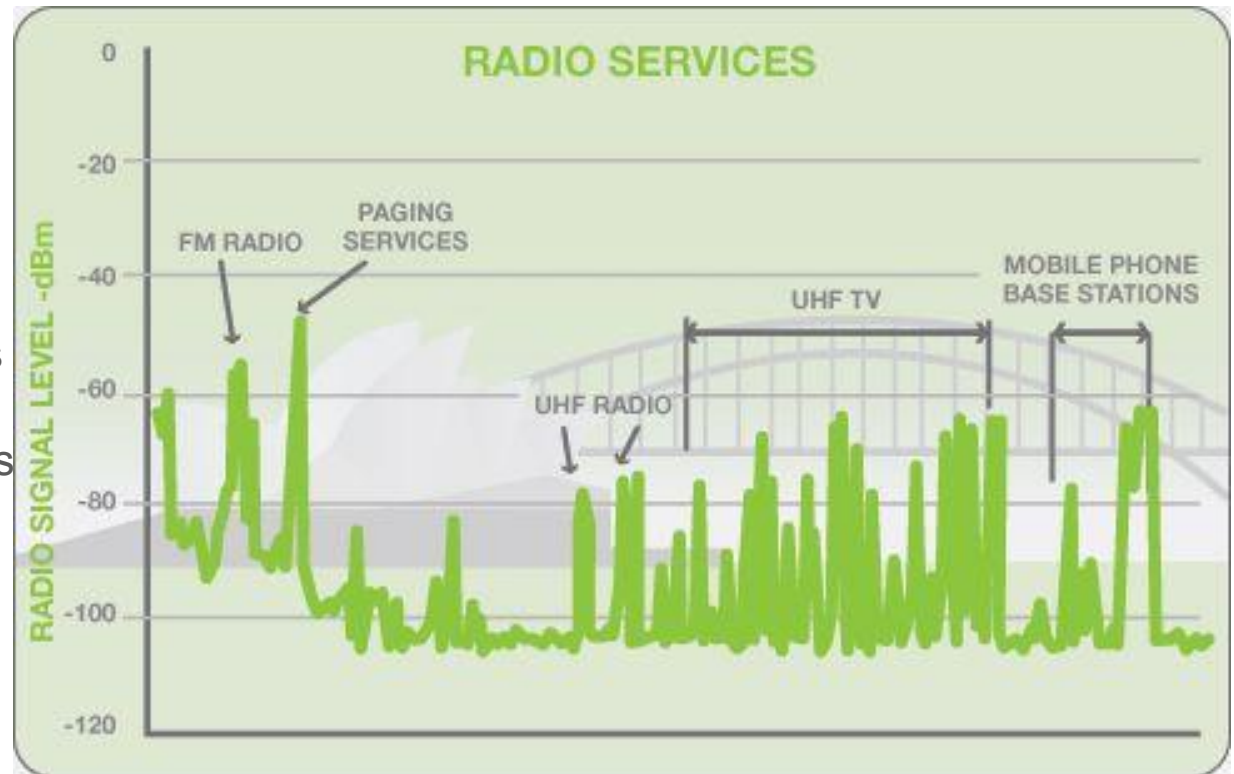
- Phone and internet connection for mobile's tablets, PC's & devices



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Example spectrum plot in Sydney

- Snapshot of radio the frequency spectrum in Sydney 1MHz – 1GHz
- Many radio services
- Hundreds of base stations
- Thousand's of connections
- Low levels of EMF

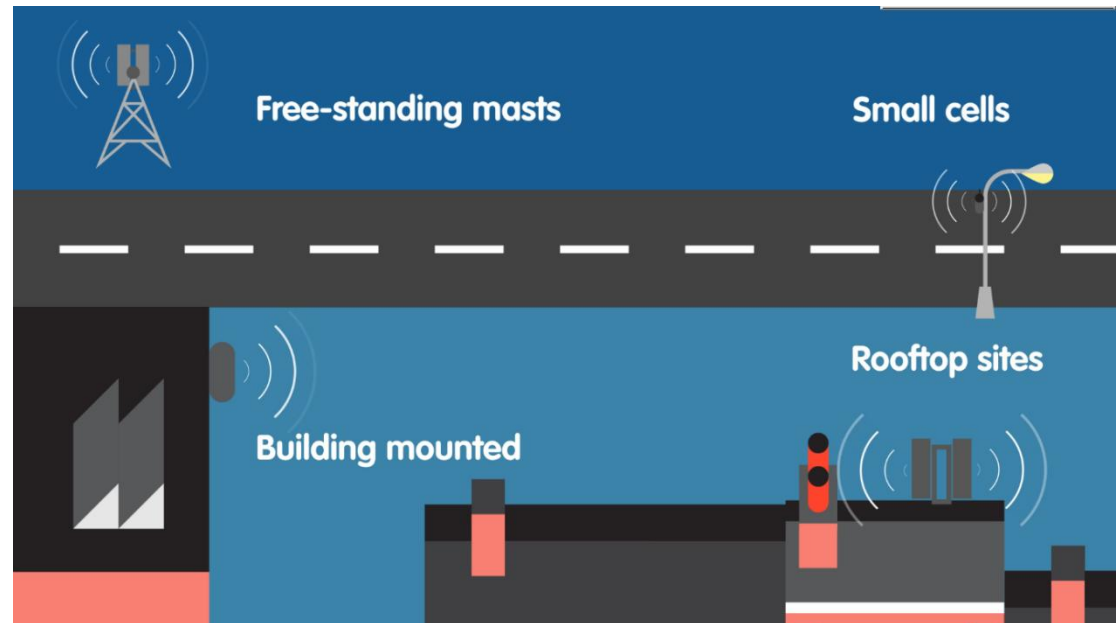


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Mobile network coverage

A better signal means

- Good quality reception
- Fewer dropped calls
- Faster data
- Longer battery life
- Lower EMF



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EMF safety standards

Safety limits have been developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

The World Health Organization recommends that governments adopt the ICNIRP limits.



EMF safety standards

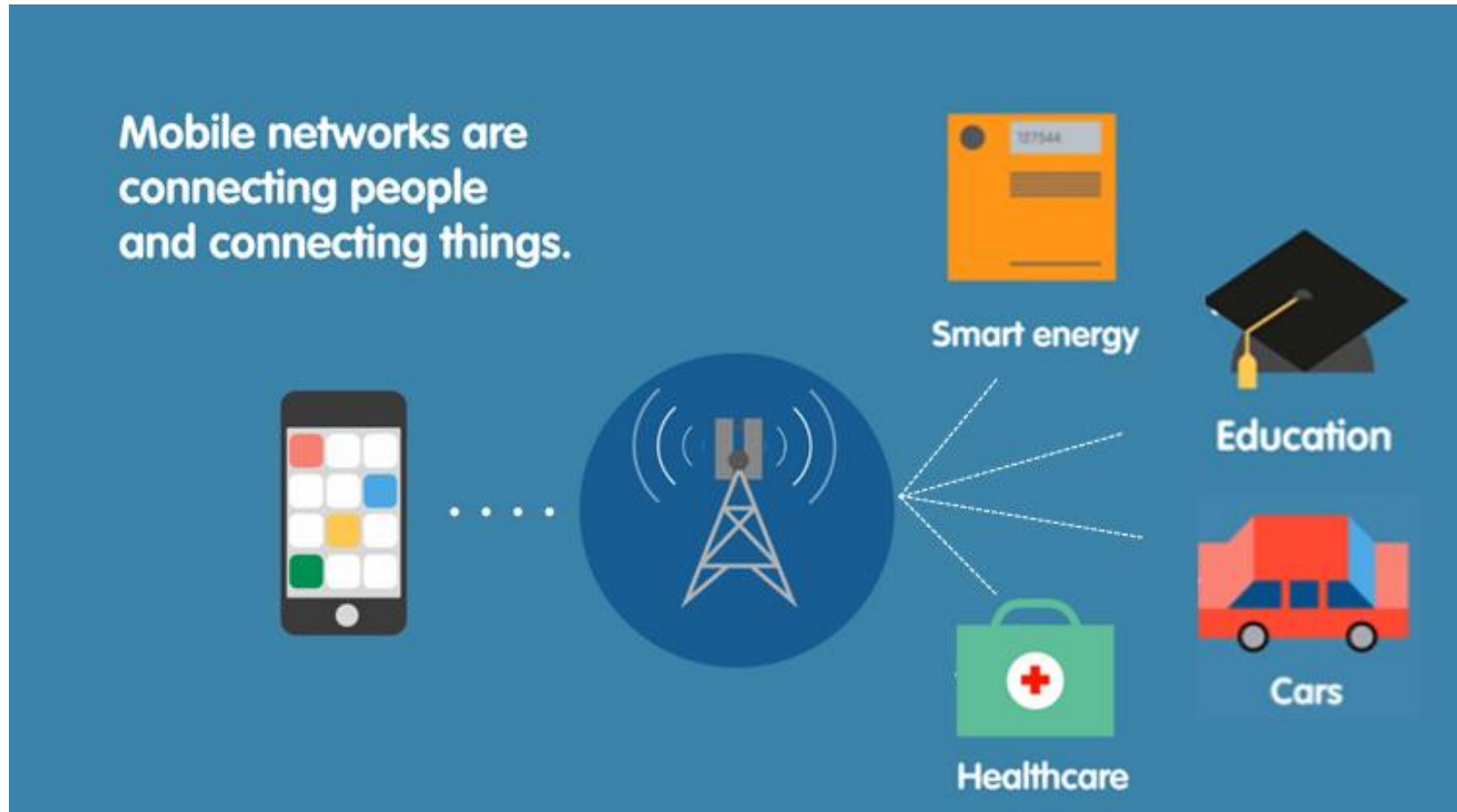
Network antennas and mobile devices use low power radio signals.

Mobile networks are designed to comply with strict limits.



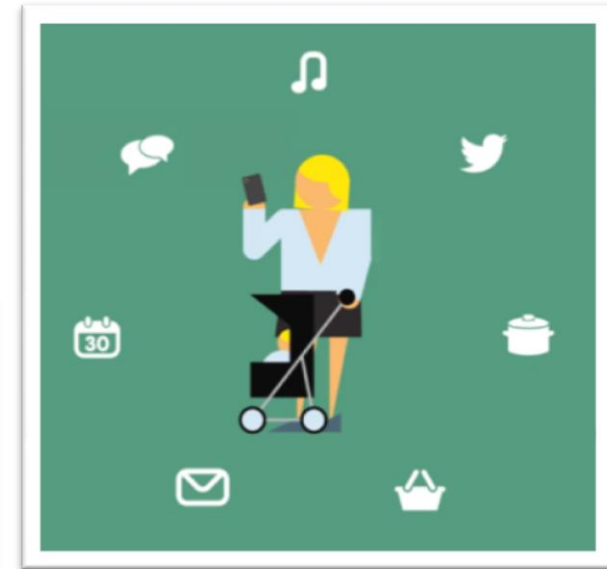
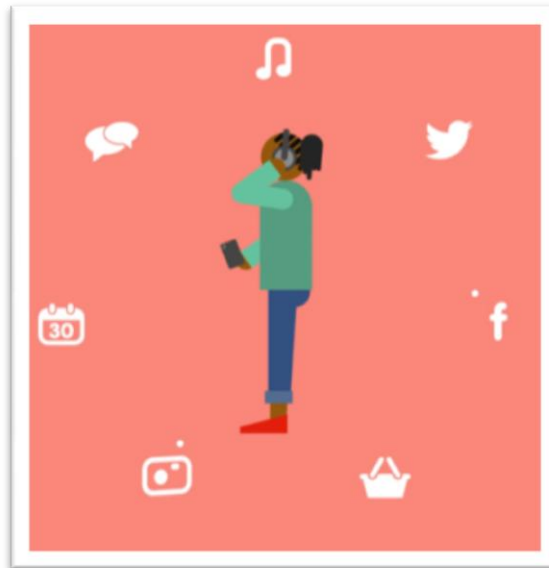
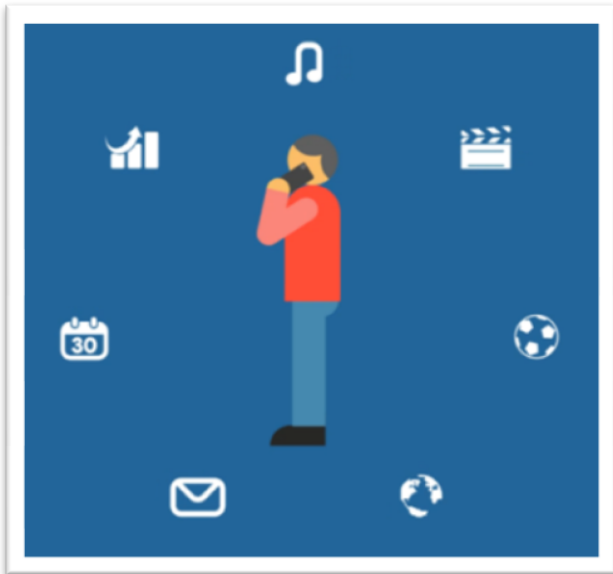
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Mobiles in today's society



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Mobiles have changed the way we live



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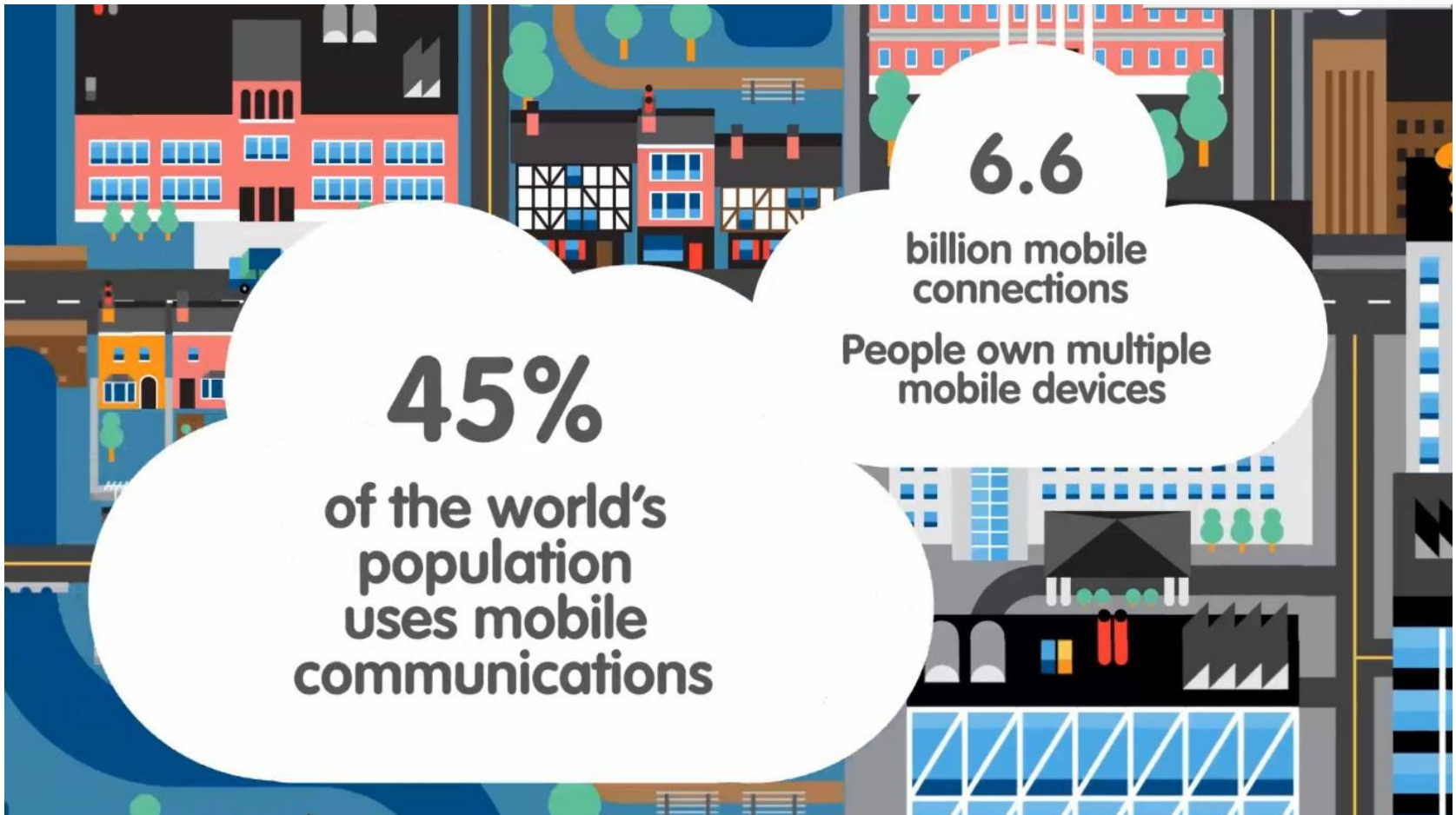
Mobiles connecting machines



**Global machine-to-machine
connections forecast to rise
from 2 billion in 2011 to
12 billion in 2020.**

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Global connections

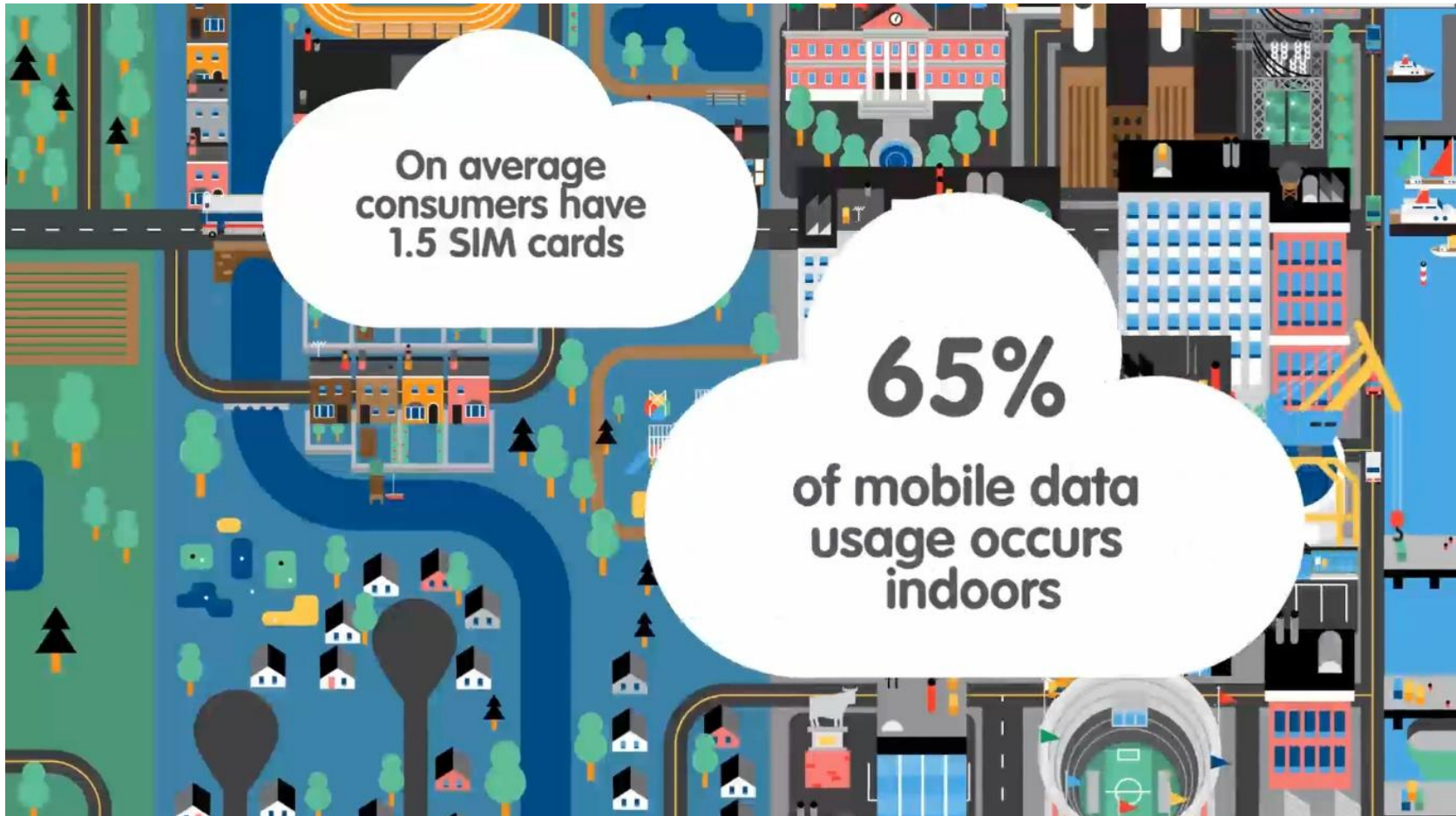


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Global connections



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Smart phones – capturing our history

St Peters Square 2013

- smart phones capturing photos and video
- auto upload to cloud servers, social networks
- huge demand on mobile network capacity
- people expect real time & fast connection



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Changing times - crowds at
smart phone launches



HOW TIMES HAVE CHANGED

The kitchen phone once advertised as

'one of the most useful appliances you can have'



1959

PRINCESS® TELEPHONE

"It's little, it's lovely, it lights . . ." The desk set gets a smart new look. Compactness, attractive styling and illuminated dial (it lights up when you lift the handset or you can keep it on as a night light) contributed to the all-round usefulness of the PRINCESS telephone which comes in white, beige, pink, blue and turquoise.



A color telephone is so beautifully practical in your kitchen

Your kitchen telephone looks so bright and beautiful on your kitchen wall. But it's better than just good-looking—it's one of the most useful appliances you can have. Color telephones make your most-lived-in rooms so much more *livable*. They let you pamper yourself . . . save you time and steps. And they speak so well of your good taste. Drop by or call your telephone business office and ask your Service Representative about them. Learn how little it costs to put color extensions where you need them. Think how very convenient it will be *then* when you make or answer calls.



*Enjoy your home
with color telephones*

Pacific Telephone

Wall phones come in these 7 colors with matching springcards.

Summary & Conclusions

Usage

- People are using wireless more and more in everyday life
- Mobile networks provide essential communications for communities
- Data over wireless is growing exponentially

Networks

- Networks must continue expanding to meet consumer & community demand for coverage & capacity, especially for data

Safety

- Networks are designed to meet the safety limits and minimise EMF
- Harmonised standards deliver most efficient networks and lowest EMF

mobile networks - necessary to deliver a connected world

Recommendations & Ideas

Responding to WTSA-12 Resolution 72

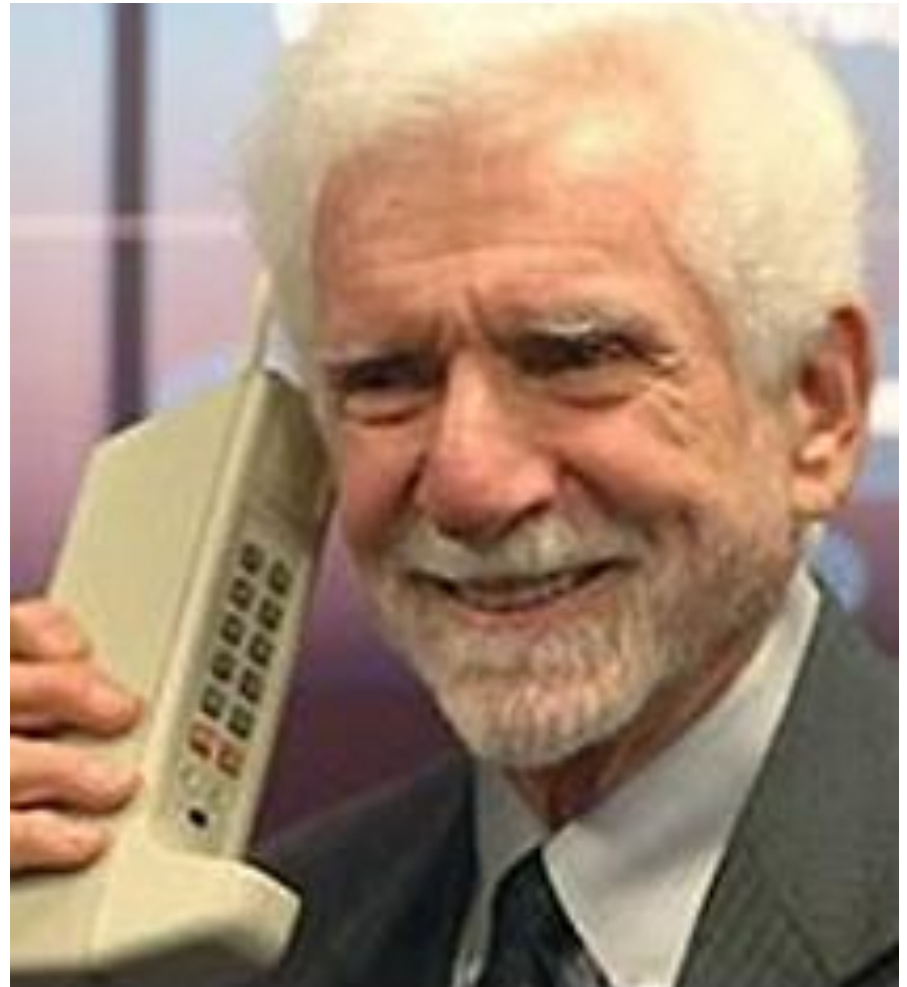
1. Guidelines for developing countries
2. Raise awareness through the creation of a website & app on EMF
3. Provide a regional portal for the website – access to simplified and local information, Q&A
4. Training workshops in developed and developing countries on EMF compliance standards and ITU recommendations
5. Online EMF training resources – inc local / regional options
6. Guidelines and assistance with EMF monitoring & compliance systems

WIRELESS QUIZ

Test your wireless general knowledge

Questions:

1. When did the 1st radio transmission occur?
2. Who made the 1st mobile phone call?
3. Globally, how many mobile connections are there today?
4. When was the 1st iPhone launched?
5. When was the 1st SMS sent?



Test your wireless general knowledge

Questions:

- 1. When did the 1st radio transmission occur?** Guglielmo Marconi, an Italian inventor, proved the feasibility of radio communication. He sent and received his first radio signal in Italy in 1895
- 2. Who made the 1st mobile phone call?** Martin Cooper, an engineer with Motorola, made the first call from a mobile phone on 3 April 1973,
- 3. Globally, how many mobile connections are there today?**
6.6 Billion
- 4. When was the 1st iPhone launched?**
June 2007
- 5. When was the 1st SMS sent?**
December 3, 1992, the first text went from a PC to a mobile device over Vodafone's U.K. network and expressed the simple message "Merry Christmas."



References

EMF Information Sources

- EMF Explained Series
- Mobile Networks delivering a connected world (GSMA)

Industry Associations

- GSM Association
- Mobile Manufactures Forum

Standards Associations

- ITU-T SG5 Environment & Climate Change
- IEC TC106 Assessment of EMF with human exposure

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THANK YOU