Smart Energy for Smart Cities Webinar
28 March 2012

Geoff Sarney, Head of Smart Metering, Telefónica O2 UK

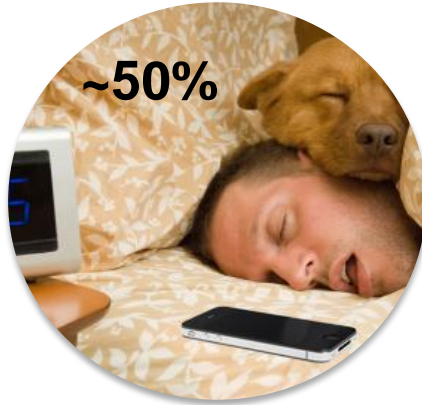# Smart Architecture

A Review of Smart Enablement & Impact

Geoff Sarney

'smarter living' the power of mobile

75%

~50%

2013

5 years

Three quarters of mobile phone users will not leave home without their device

Nearly half go to bed with their phone nearby

There will be more smartphones in the world than PCs by 2013

Half a billion people accessed the mobile Internet worldwide in 2009: Usage expected to double within five years

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'smart society' driven by evolving mobile networks

1

1. The first wave of mobile was connecting people

2. The strength of mobile was its ubiquity, underpinned by its global interoperability

2

1. The second wave of mobile is connecting the world's population to the Internet

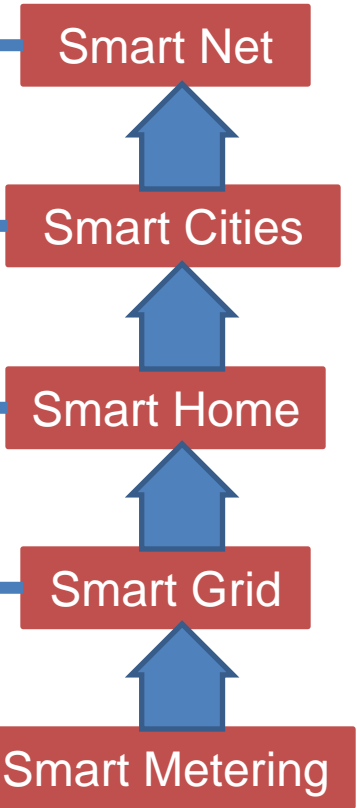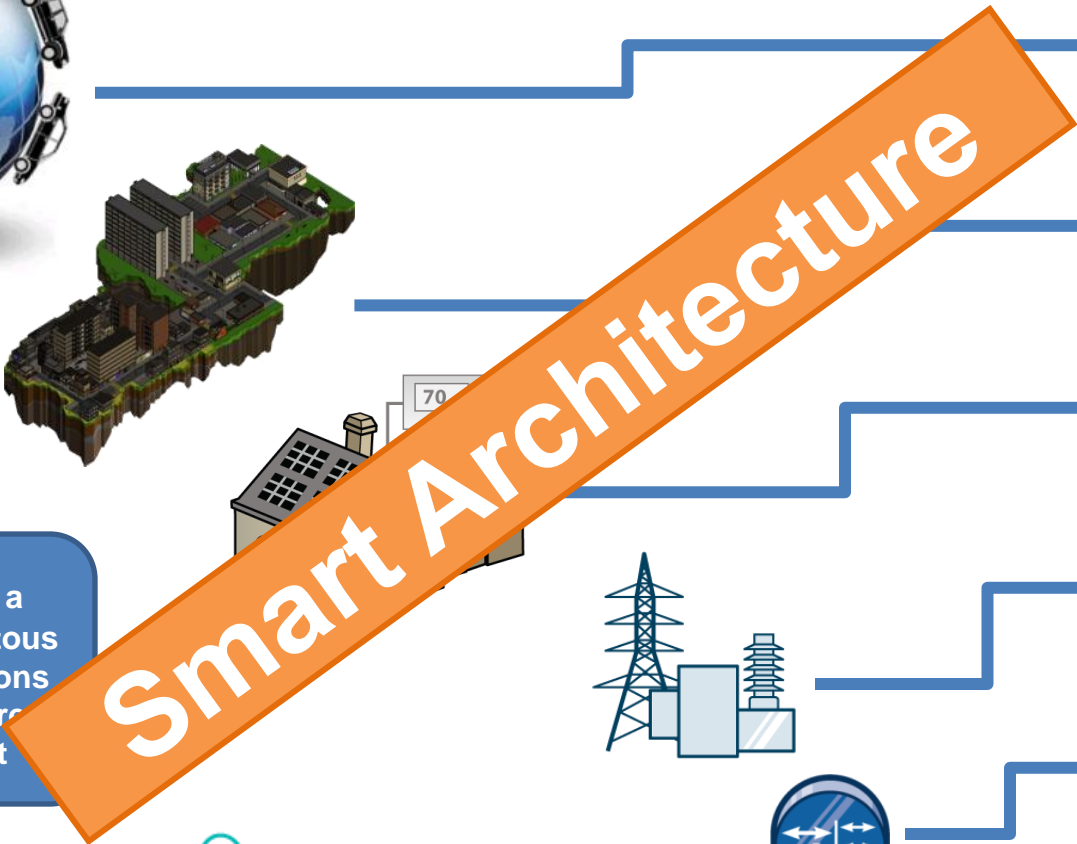2. The strength of mobile was the exponentially increasing power of its networks

3

1. The third wave of mobile is connecting everything in our lives

2. The strength of mobile is its ubiquity, its interoperability and the increasing power of its networks
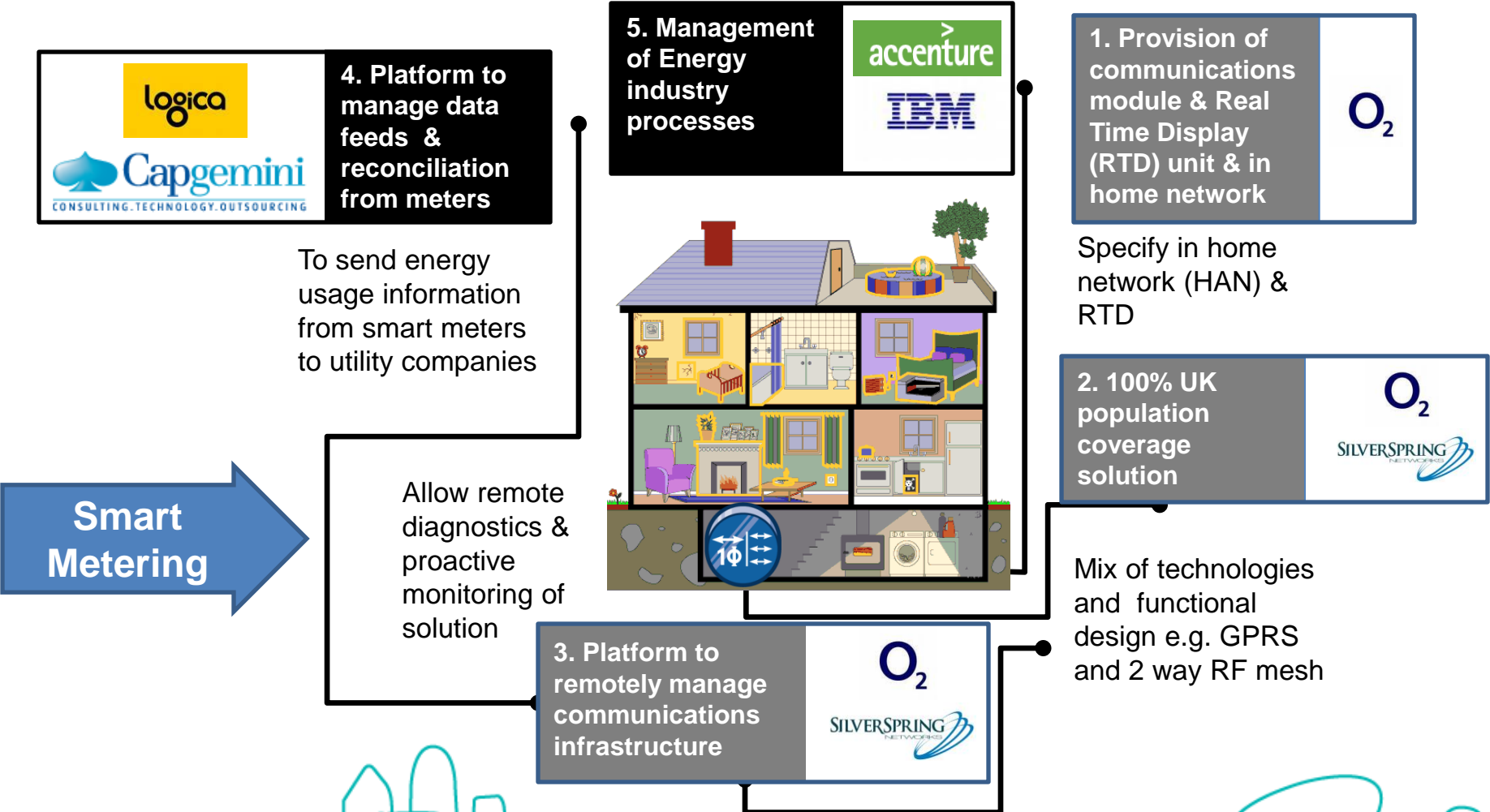
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'smart planet' driven by smart net

We're better, connected O₂

Smart Architecture

Smart Net

Smart Cities

Smart Home

Smart Grid

Smart Metering

All require a robust ubiquitous communications infrastructure throughout

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smart metering - 'the essentials'

4. Platform to manage data feeds & reconciliation from meters

To send energy usage information from smart meters to utility companies

5. Management of Energy industry processes

1. Provision of communications module & Real Time Display (RTD) unit & in home network

Specify in home network (HAN) & RTD

Smart Metering

Allow remote diagnostics & proactive monitoring of solution

2. 100% UK population coverage solution

Mix of technologies and functional design e.g. GPRS and 2 way RF mesh

3. Platform to remotely manage communications infrastructure
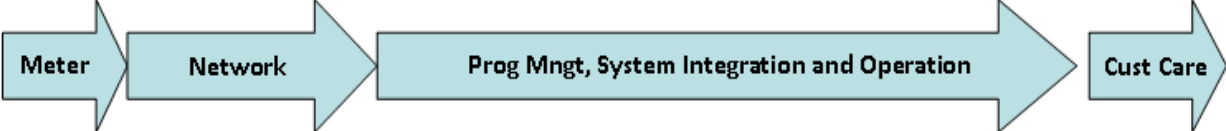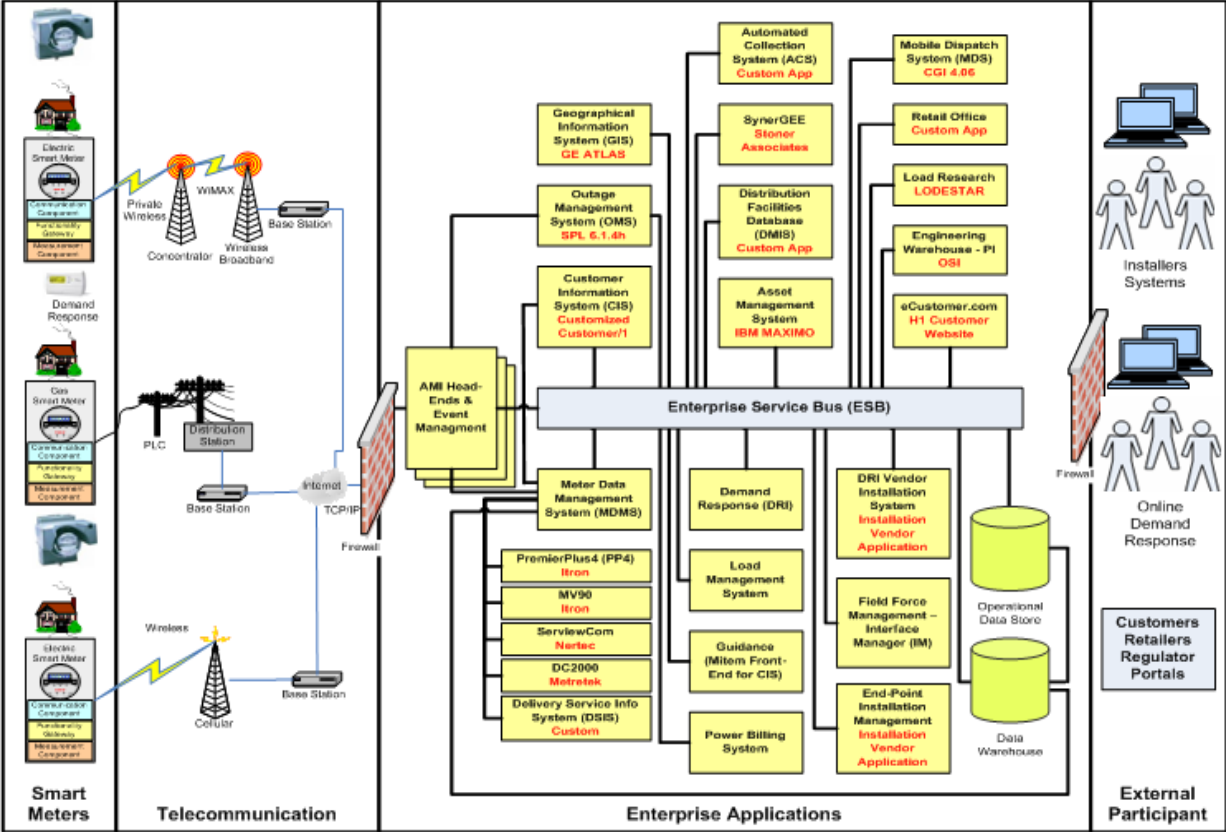
'solutions' to facilitate SMI

This typical smart meter architecture shows how SMI is an opportunity to bring together the full range of services

Consulting
Transformation/change mgmt, customer care

Technology
Large-scale prog mgmt, architecture design, systems integration

Outsourcing
Infrastructure mgmt, applications mgmt, BPO

In the EU, there are 253 million electricity meters and 109 million gas meters – most have not yet been replaced

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'O2 space' a lot more complicated - but seamless

We're better, connected O2
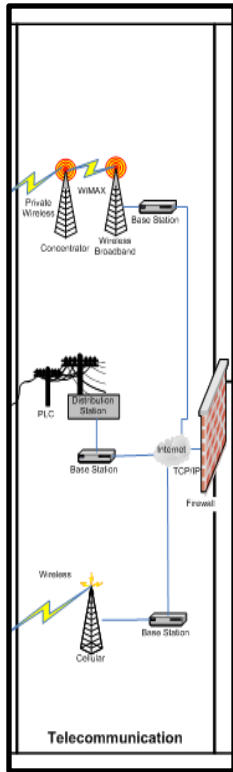
'smart metering (SMI)' immediate cause & effect

We're better, connected O₂

Smart Grid

Smart Metering

Smart Home
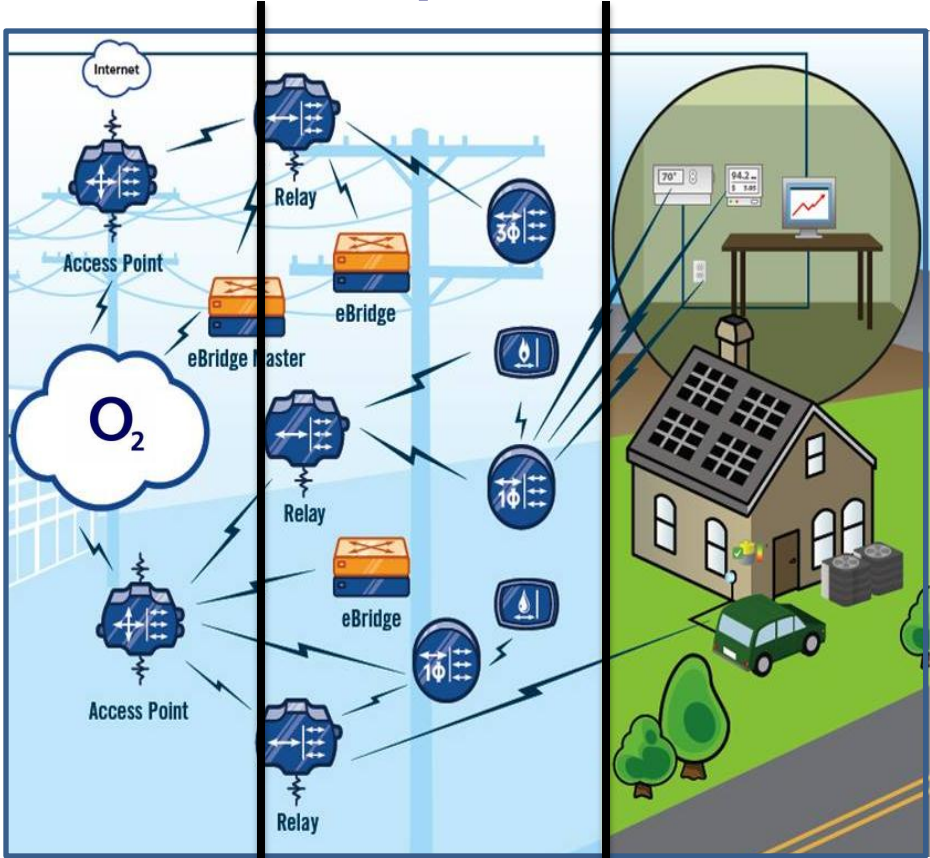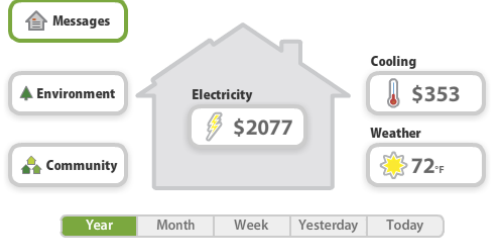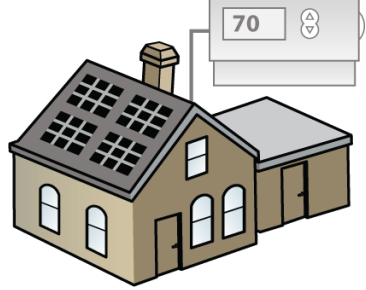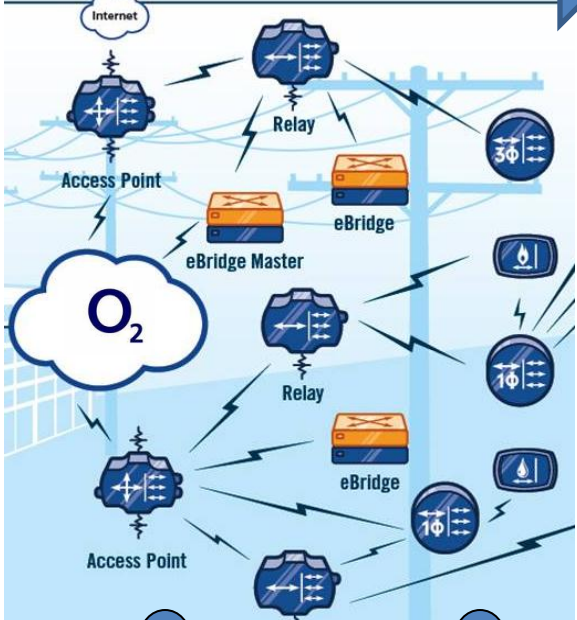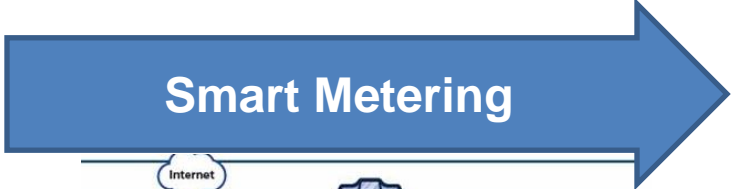
1. **Provides Communications Backbone**
2. **Enables Two Additional Markets**
3. **Supports Strategic Markets for TEF**
4. **Facilitates New Industry**
5. **Converges Communications With Utilities**

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'smart metering (SMI)' immediate cause & effect

We're better, connected O2

Smart Grid	Smart Metering	Smart Home

Efficiencies Into the Network

O2

Access Into The Home

70

Messages
Environment
Community

Electricity $2077

Cooling $353
Weather 72°F

| Year | Month | Week | Yesterday | Today |

1 Access Into 'Closed Network'

2 Incremental Revenue Streams For All

3 White Label Products & Services

4 'Power Play' To The Consumer

5 Long Term M2M Security

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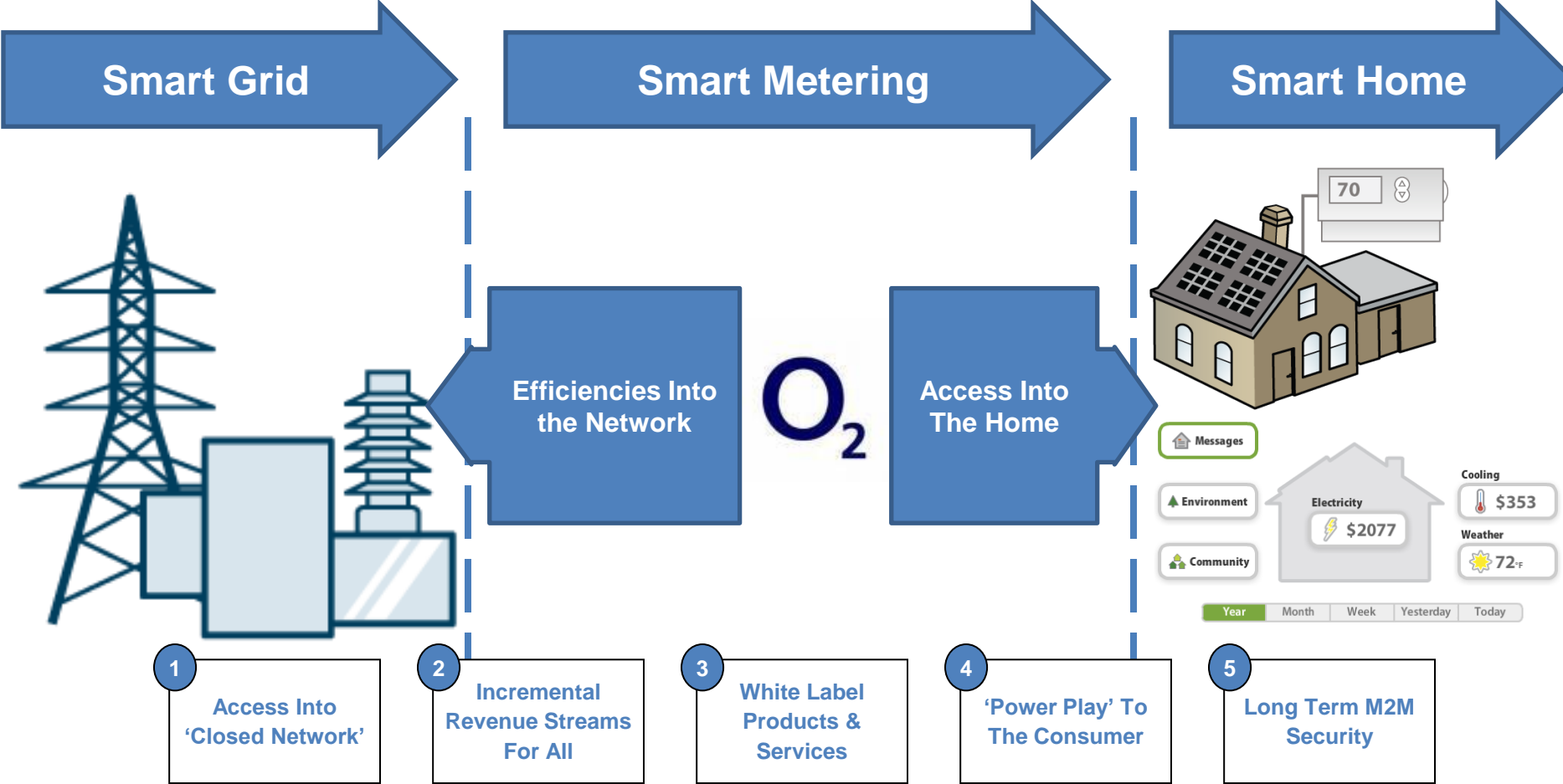
'smart architecture' - the connectivity landscape

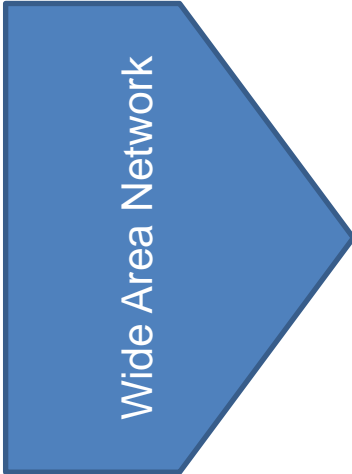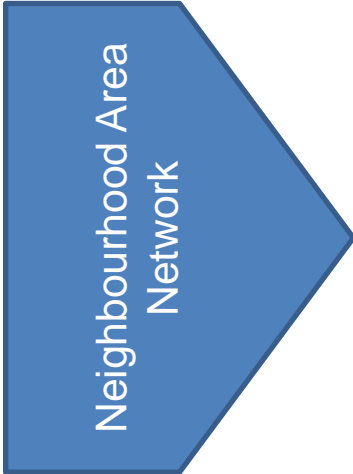Facilitated by technology integration; innovation; partnerships

Carrier Area Network

Wide Area Network

Neighbourhood Area Network

Home Area Network

O₂

O₂

SRC/SRD

O₂
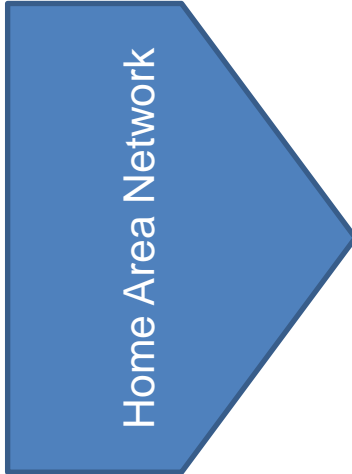
SRC/SRD

MyEnergy Apps

O₂

O₂

Underpinned with Services; Processes; Support

'smart architecture' - business opportunities

eVehicle Charging ③

Smart Grid ②

Smart Devices ③

Mobile Device Clients

M2MSmart Home Services ②

Home Broadband ③

Smart Metering ①

Smart Metering **will** provide many future business opportunities

DCDA* ②

*Data Collection/Data Aggregation

Global Platform & SIM

O2 **Smart Architecture**

think big FOR PEOPLE AND PLANET

Welcome to O2 VILLE
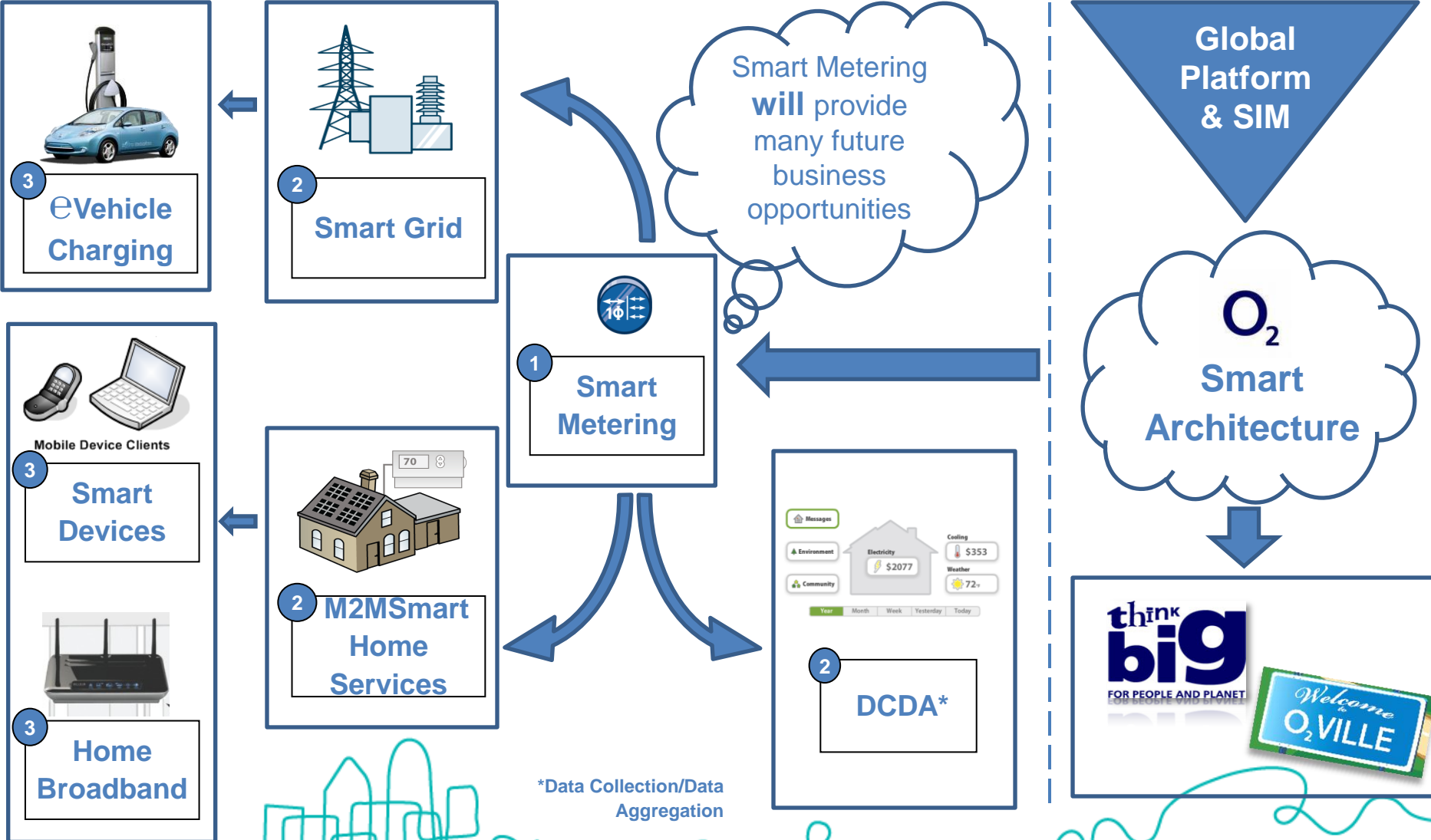
This digital revolution offers endless opportunities...

We're better, connected

O₂

Knowledge is power
Enabling consumers to make better informed choices and citizens to hold governments to account

Time is money
Making B2B transactions quicker, easier, and more efficient

Spreading best practice
Much easier for the public and private sector to learn about best practice elsewhere

An all digital world
From smart phones to smart homes – everything becomes connected

Empowering communities
New opportunities to create communities and bring about positive change

Entertainment
The ability to create and consume content – from ebooks to the iPlayer

Improving public services
Improving access and delivery of public services – and saving money

IET
The Institution of Engineering and Technology

...these are just a few

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Sustainability

Devices

Inspire our customers to choose devices which help them to lead easier and sustainable life-styles (and incentivise them to retain and recycle devices)

Services

Be recognised as the market leader in services that connect for good and help reduce the impact on the environment of O2 and our customers

Community

Inspire young people to join together to make a positive change to their community

O2 People

Inspire our people to lead sustainable life-styles both inside and outside work

House in order

Care for the environment by having the most efficient network and operations

We think big O2
FOR PEOPLE AND PLANET

Start small

The Big Six

Our sustainability goals for 2012

- **1st** for sustainable products and services
- **10%** less energy used
- **20%** less water used
- **30%** reduction in travel impact
- **40%** of our people involved
- **50%** less waste produced

A POCKET GUIDE TO O₂VILLE
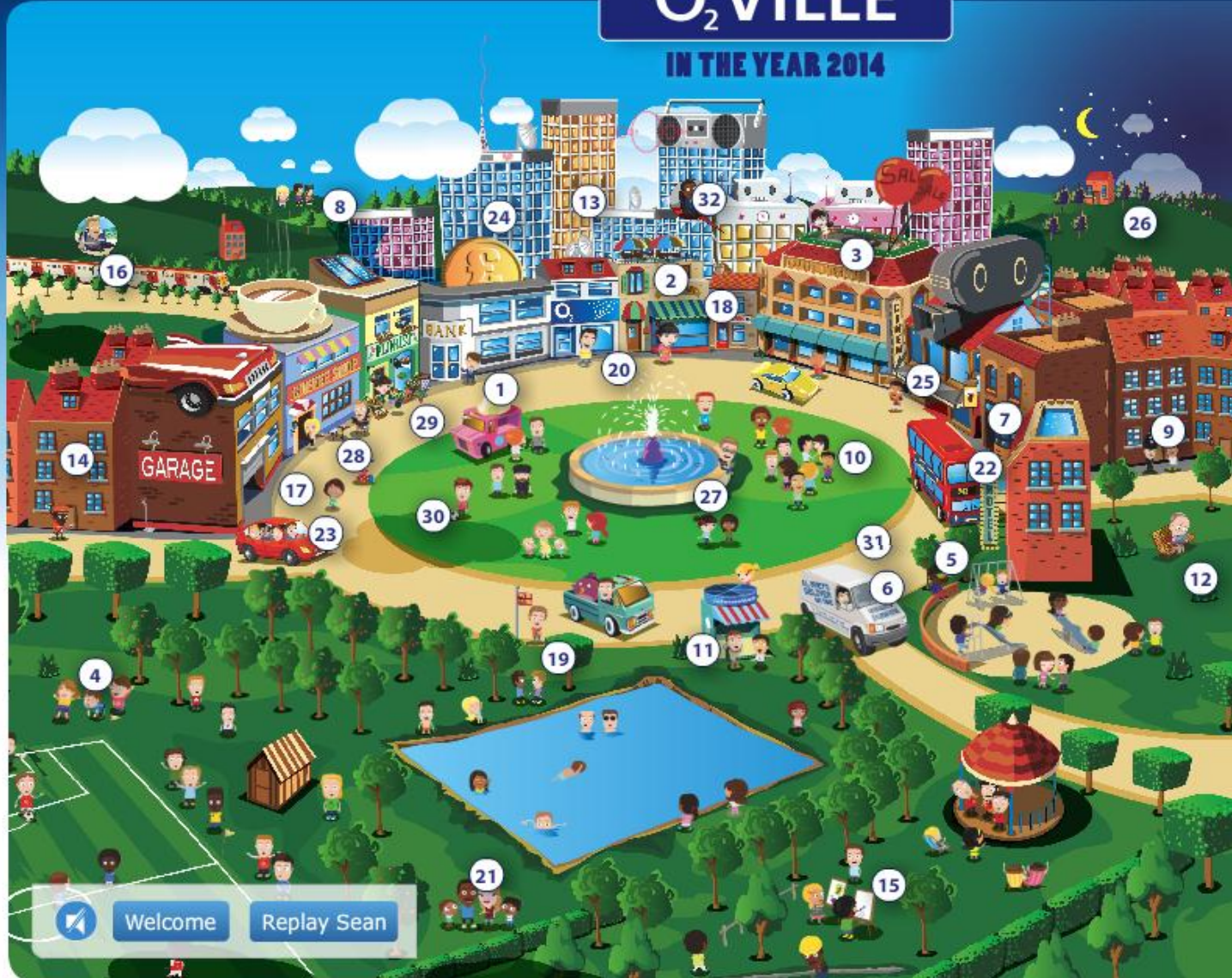
IN THE YEAR 2014

KEY

1. O2 Money
2. O2 Concierge Service
3. Professional Services
4. Health and Fitness
5. Gaming
6. In Car & Car Insurance
7. M-Wallet "Text-a-tenner" Service
8. Personal Page
9. Security and Open
10. Location Based Social Networking
11. Translate
12. e-Paper Reader
13. Telepresence
14. Health
15. Think Big
16. O2 Music
17. Access Packages
18. Managed Services
19. O2 TV and Joggler
20. Experience Store
21. Intelligent Phone Book
22. Bite Size Entertainment
23. Car Club
24. Total Corporate Connectivity
25. O2 More
26. Intelligent Download
27. Customer Service
28. Digital Assistant and Help
29. WristWorn Device
30. Easylessons
31. Loyalty Program
32. O2 Joined up Communications

Welcome   Replay Sean

Conclusions

1. The only constant is change

2. Ease of use / Human factors remain vital

3. Wireless and Internet solutions will both have a growing role

4. With an ageing society we will need new models for social care

5. Smarter homes, smarter cities, smarter services

6. By 2020 estimates vary - between 20 and 50 Billion Internet capable devices

Thank you

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