



18th EACO Congress, Kigali
23rd May 2011

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Director - Energy & Sustainability

Cable&Wireless
Worldwide

C&W WORLDWIDE

AGENDA

- Introduction + Cable & Wireless
- Bandwidth Demand & Capacity Drivers
- Market Forces – Driving Consolidation
- Leveraging Utility Assets – Overhead Networks
- Operating Network Environment
- Simplification in Optical / IP Solutions – Getting to a Competitive Cost Base

Providing a Practical Insight to Networks & Challenges

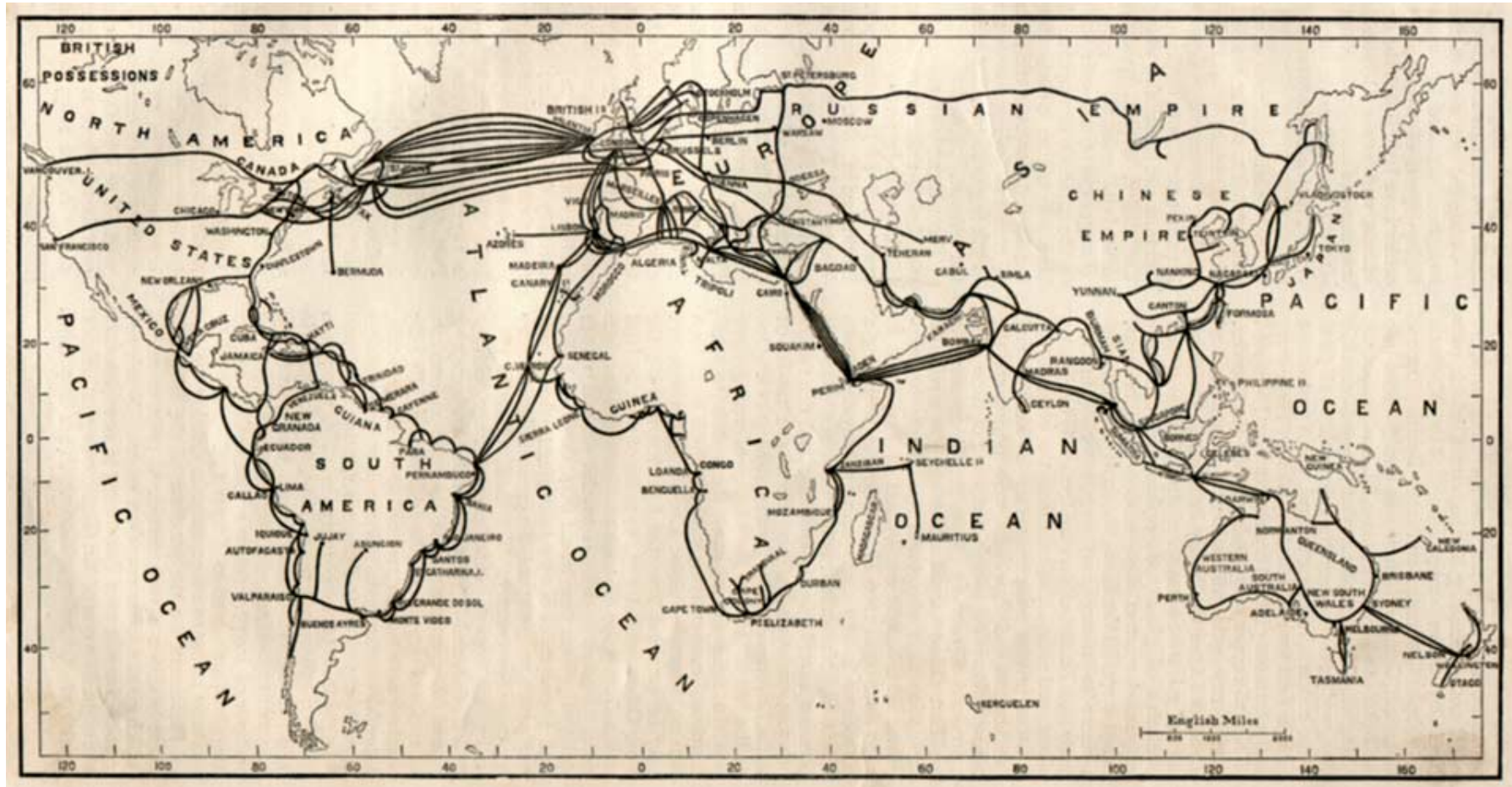
Facilitating Collaboration is Key to Effective Cost Base

C&W WORLDWIDE INTRODUCTION



C&W WORLDWIDE

ENABLING COMMUNICATIONS FOR OVER 100 Years



GLOBAL SUBMARINE TELEGRAPH CABLES 1895
Eastern Telegraphy Company

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MISSION CRITICAL COMMUNICATIONS INTEGRATOR



2nd LARGEST NETWORK IN THE UK

- Ubiquitous UK access through combination of direct fibre, digital microwave, radio, leased circuits
- £100m investment in Next Generation Network (NGN)
- 1000 Unbundled exchanges across the UK
- High capacity IP core full MPLS Multi-Service Platform (MSP)
- 270 Interconnects with BT
- 20,500km core backhaul network
- 205,000 sq feet of hosting space



AND ONE OF THE LARGEST GLOBALLY

- 67 Submarine cable systems across the globe
- Connectivity to 153 countries
- N+2 capability on key routes
- 128 Points of Presence in 35 countries
- Network Operations Centres in UK, Hong Kong and India

C&W WORLDWIDE UTILITIES AT OUR HEART

MARCH 5, 1999

ENERGIS AND VIRIDIAN TO LAUNCH TELECOMS COMPANY IN NORTHERN IRELAND

Energis plc, the UK telecommunications company and Viridian Group plc, the parent company of Northern Ireland Electricity, today announce a 50:50 joint venture to build a major new telecommunications network, and launch services in Northern Ireland, focusing initially on the business and Government telecom market.

FEBRUARY 12, 2002

SCOTTISHPOWER THUS DEMERGER TERMS

ScottishPower announces the terms and timetable for the proposed demerger of ScottishPower's interest in THUS Group plc ("THUS Group") ("Demerger").

"Energis demerged from National Grid"

DECEMBER 9, 1997

nationalgrid

VIRIDIAN

United Utilities

enw
Electricity North West Limited

XOserve

WALES&WEST
utilities

Thames Water

Southern Water

e.on

CE Electric UK

npower

SCOTTISHPOWER

centrica

EDF
ENERGY

Scotia
Energy Services Ltd

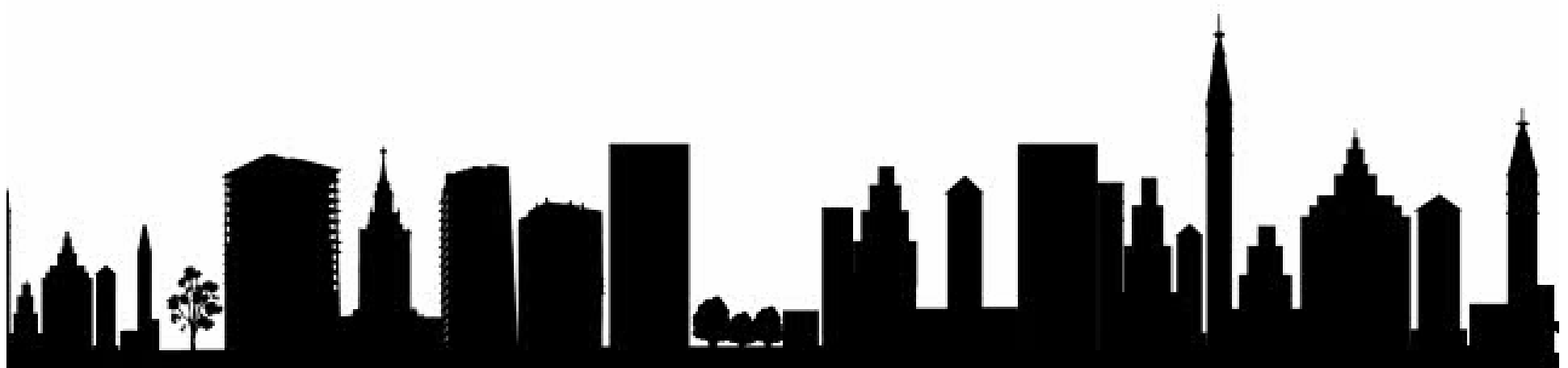
Southern Electric
energy made better

C&W WORLDWIDE BANDWIDTH DEMAND & CAPACITY DRIVERS



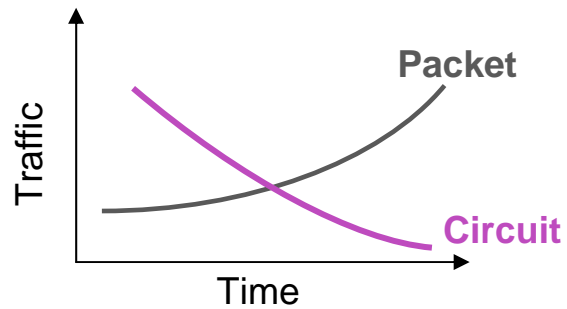
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Video 1

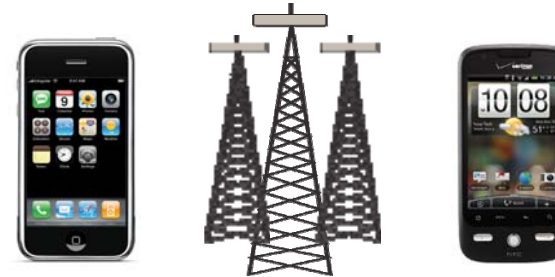


C&W WORLDWIDE MARKET FORCES

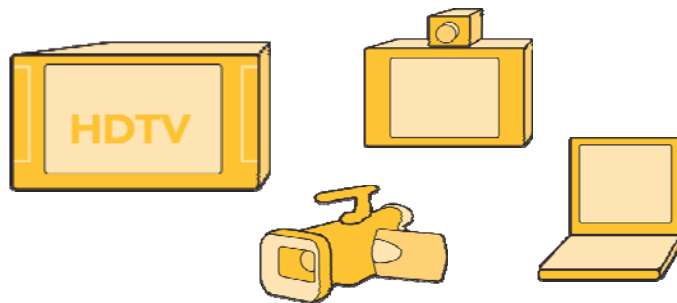
The majority of traffic is now packet



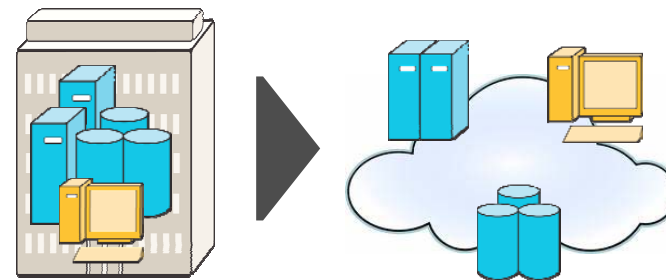
The proliferation of mobile broadband



Video, video and more video

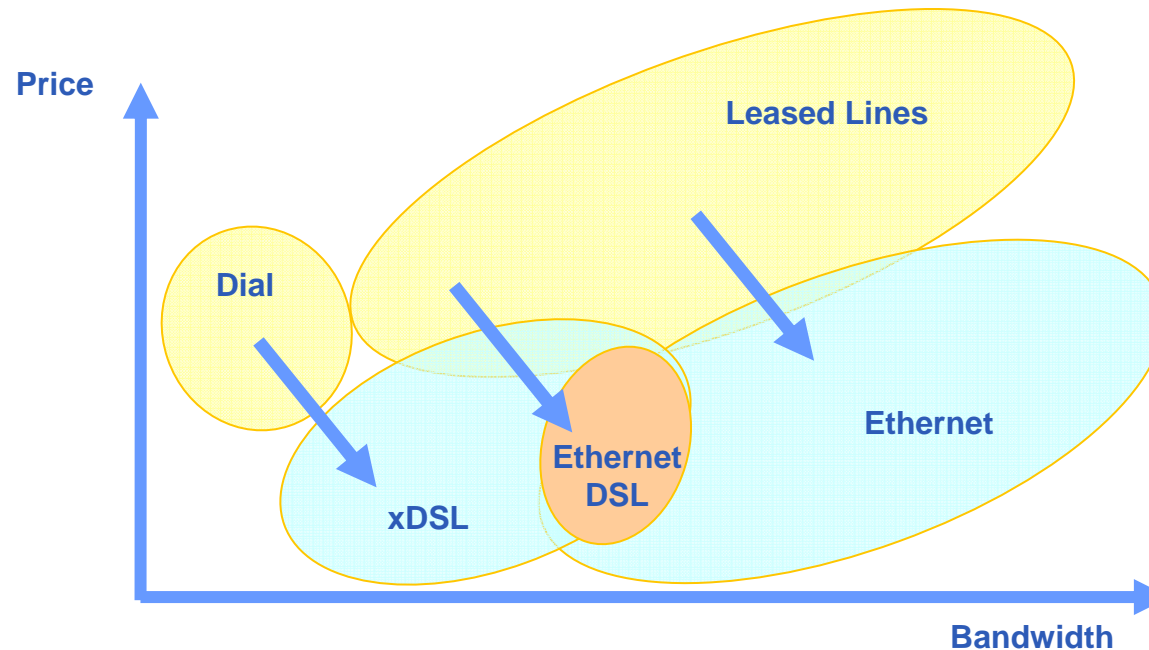


Enterprise IT shift to the cloud



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CHANGING SERVICE DYNAMICS & COST PRESSURES



The price point and advancement of technologies is resulting in existing dial and leased line connections migrating to packet based service technologies.

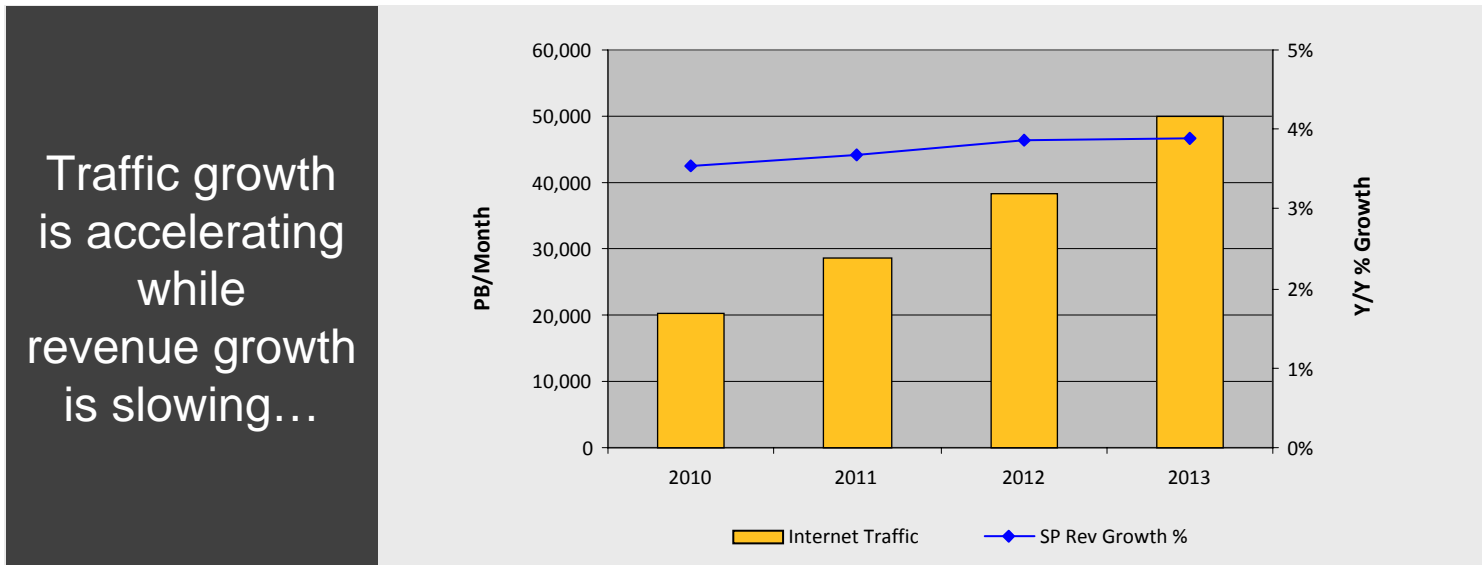
2000 – 2MB Circuit...£18k 2010 - 2MB circuit £ < 2k

2005 – 10G Ethernet .£48K 2010 –10G Ethernet £19k

Investment costs for access – drive regulation to enable competitive environment

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DECLINING PROFITABILITY IN NETWORKS?



...because value is shifting from the service provider to the application provider

Enterprise

Consumer

C&W WORLDWIDE LEVERAGING ASSETS – OVERHEAD NETWORKS

Power line fibre systems - installed in challenging environments across the globe with outstanding results

Arctic	Sweden, Finland, Canada
Tropical	Colombia, Vietnam, Venezuela
Desert	Oman, UAE, Pakistan
Coastal	Iceland, New Zealand, Ireland
Mountains	Switzerland, Chile, Norway
High Winds	Hong Kong, Florida
Urban Pollution	Los Angeles, Kuala Lumpur, China

1991 - National Grid/Energis builds first National Network



C&W WORLDWIDE LEVERAGING ASSETS – OVERHEAD NETWORKS

First installation	1982	Kent, UK
Oldest SkyWrap in operation	1987	Cheshire, UK
Largest SkyWrap network	5000km	RTE, France
Longest span	1708m	Alps Maritimes, France
Steepest gradient	29%	Reunion Island (291m in 996m span)
Tallest towers	221m	Suez Canal crossing, Egypt
Highest installation	4600m	Andes, Peru
Hottest installation temperature	52°C	Multan, Pakistan
Coldest installation temperature	-22°C	Trondheim, Norway
Highest service temperature	>50°C	Oman
Lowest service temperature	-55°C	Manitoba, Canada

C&W WORLDWIDE SKY WRAP INSTALLATIONS



C&W WORLDWIDE SELECT THE RIGHT OPTION

Choosing the Right Optical Fibre Solution is Essential

Effective evaluation is essential

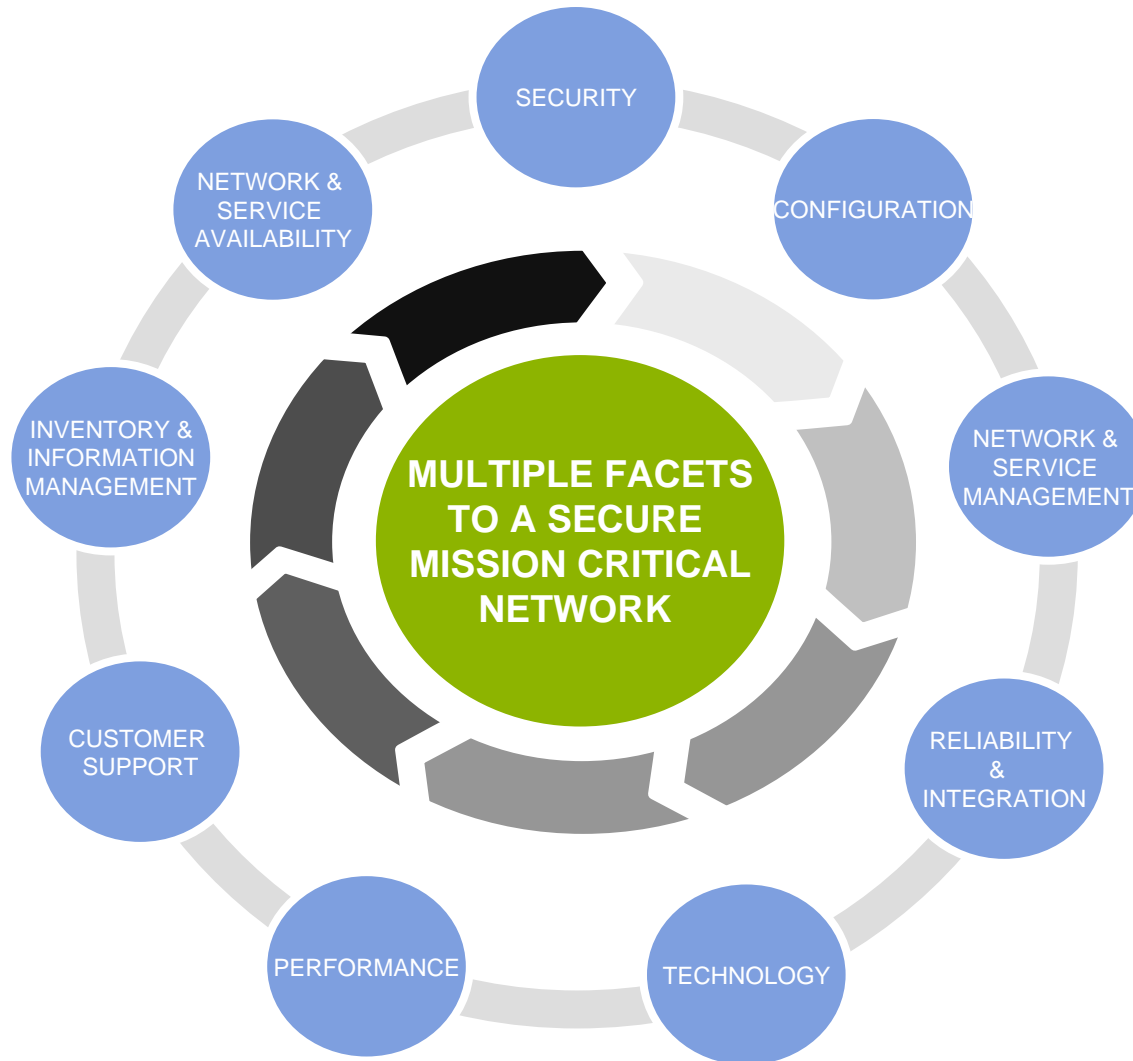


OPGW - Optical Path Groundwire

Wrap - Phase or Earth Wrap

ADSS - All Dielectric Self Supporting

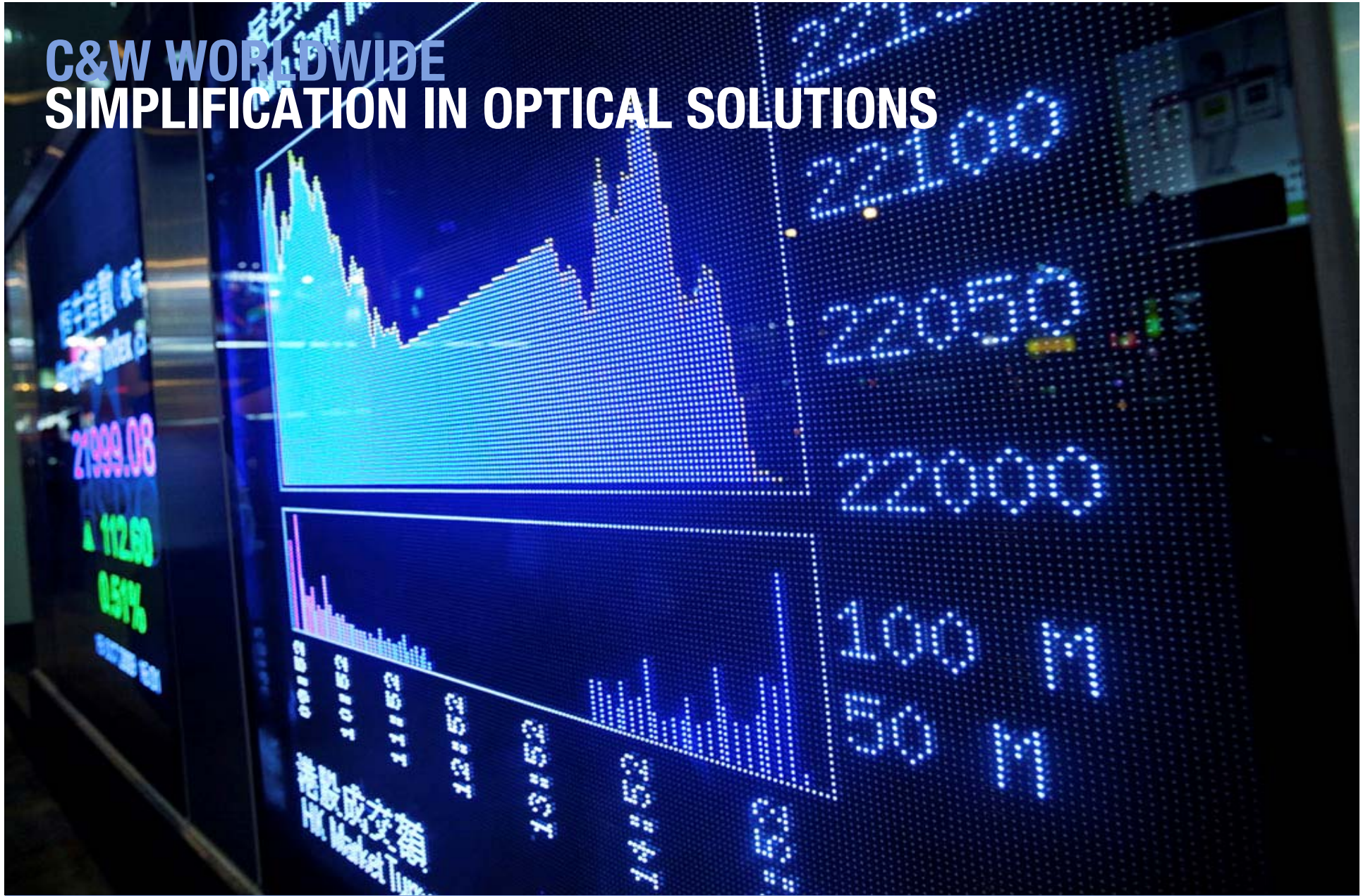
C&W WORLDWIDE CRITICAL OPERATIONAL NETWORK ENVIRONMENT



Regulation & Standards Must:

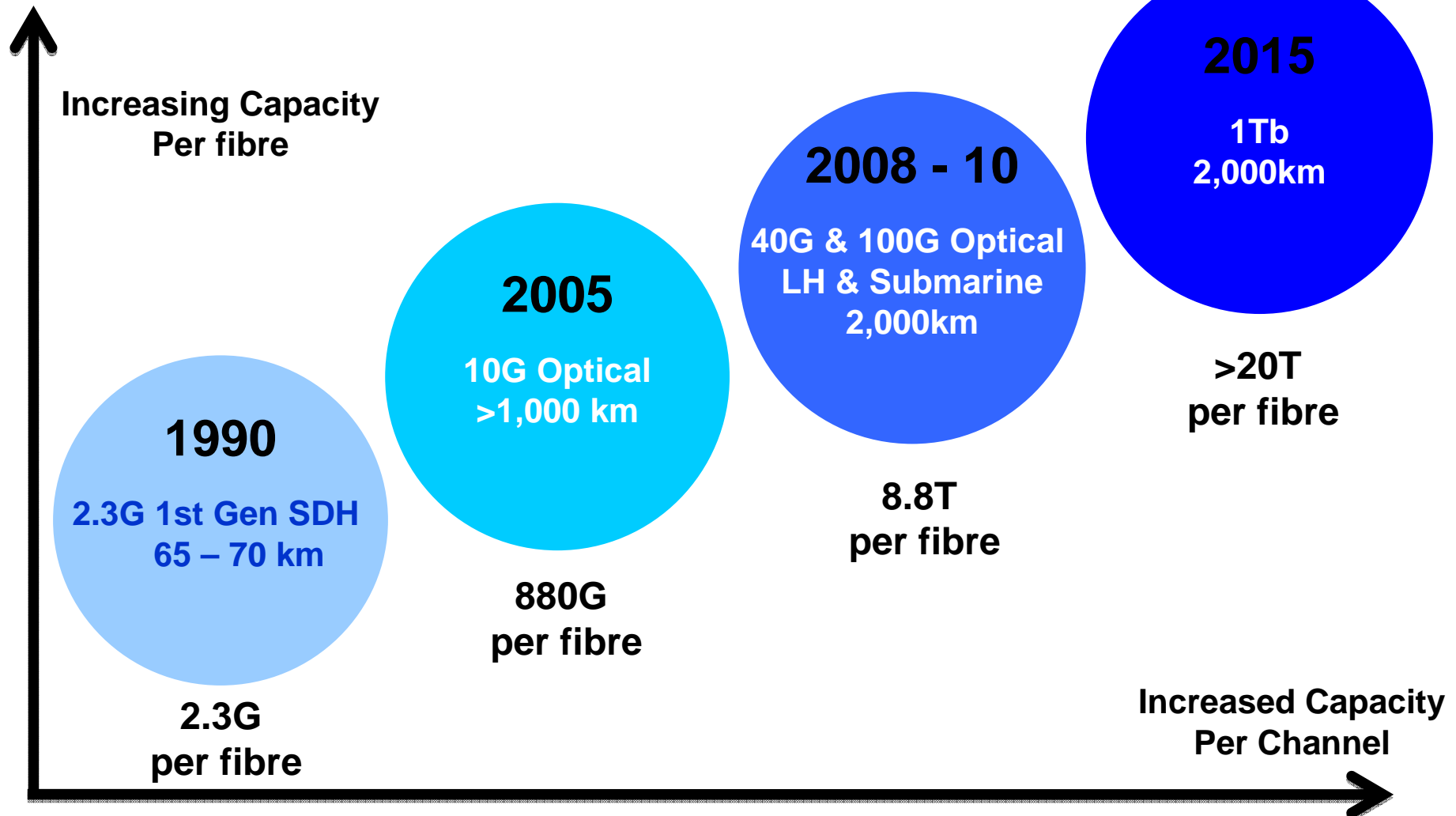
- Drive consistency of approach
- Establish common performance criteria
- Enable Build, Repair & Design Standards
- Remove ambiguity
- Particular when working across teams/boundaries

C&W WORLDWIDE SIMPLIFICATION IN OPTICAL SOLUTIONS



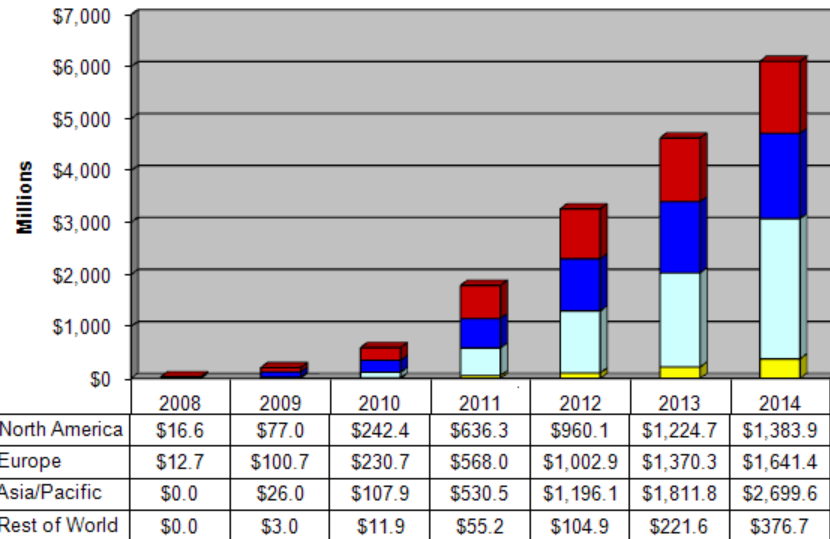
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C&W WORLDWIDE SIMPLER TOPOLOGIES – LARGER CAPACITIES



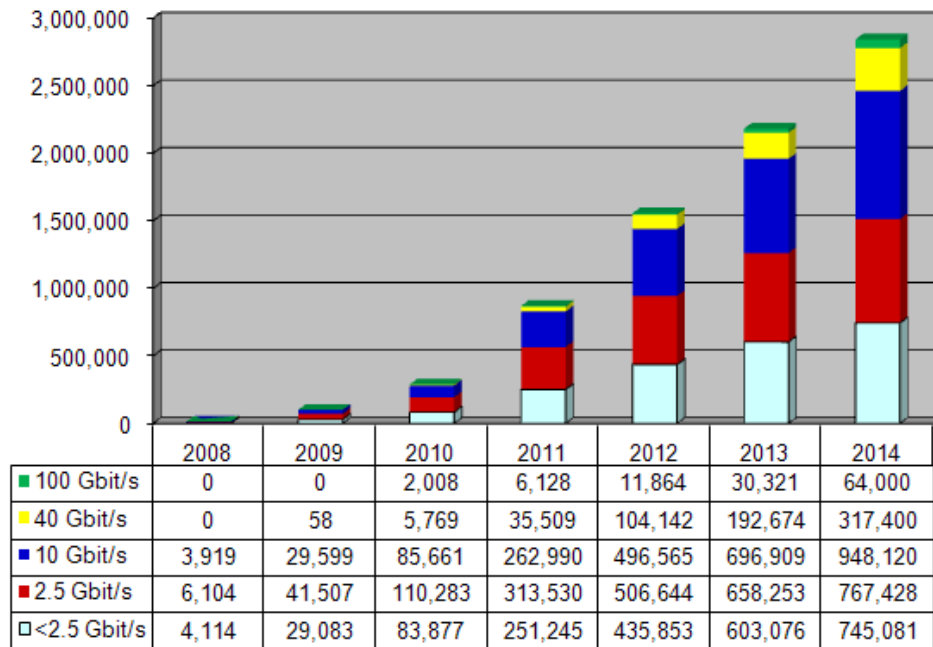
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PACKET OPTICAL – MEETING NEEDS – MAKING IT SIMPLE



Source: Heavy Reading Packet Optical Market Tracker 12/09

Worldwide Packet-Optical Transport System Revenue by Region (2008-2014)

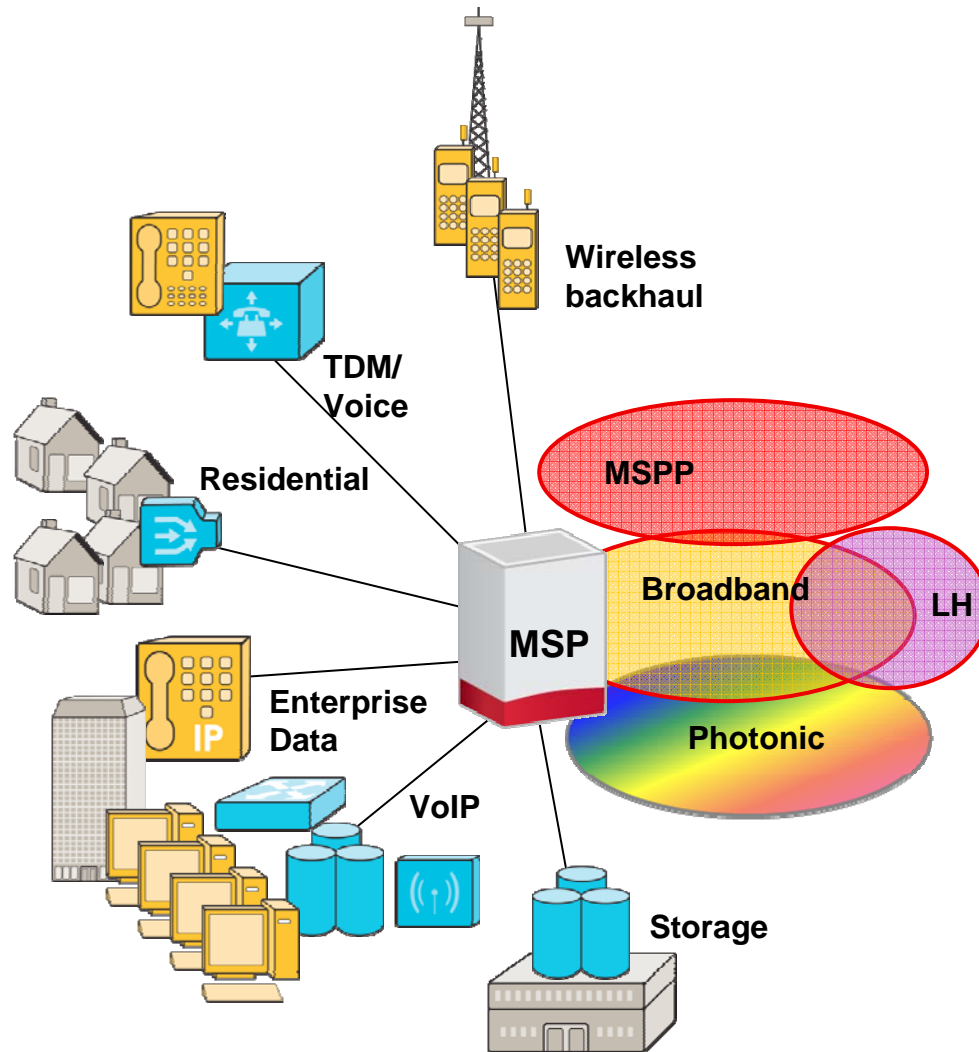


Source: Heavy Reading Packet Optical Market Tracker 12/09

Worldwide Packet-Optical Transport System Port Shipments by Port Speed (2008-2014)

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THE MULTI SERVICE PLATFORM - AGGREGATION



Needs

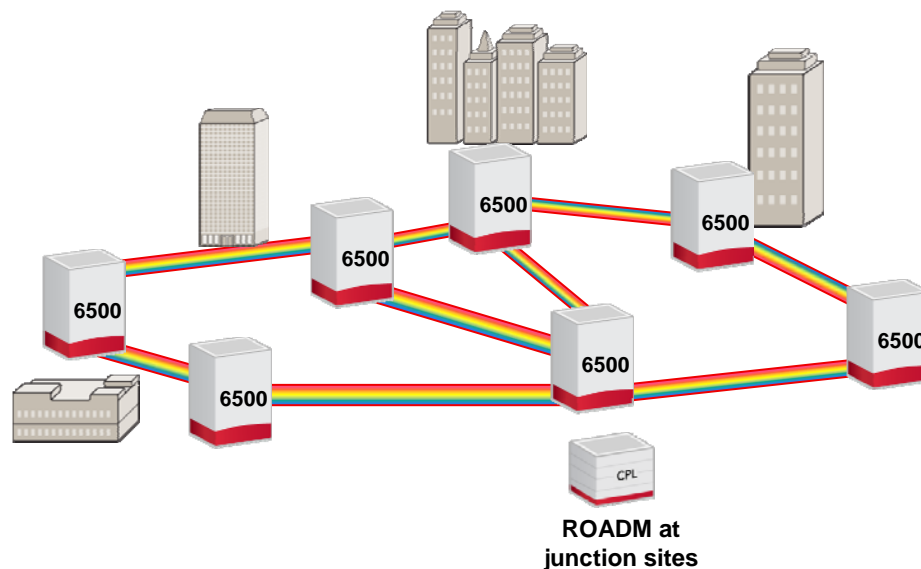
- Remove networks service specific architectures
- Improve transport costs
- Enable new services
- Deliver operational simplicity
- Provide deterministic performance and resilience

How

- Single converged, packet based multiservice network
- Agree working interfaces
- Revenue generating emerging services

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THE MULTI SERVICE PLATFORM – REGIONAL DWDM



Needs

- Enable long term growth
- Move away from fully protected SDH and mesh protected networks
- Enable Capex & Opex reduction
- Remove complex compensation devices
- Automation from edge to core

How

- Technology enabled growth without network re-engineering
- ROADM
- Colourless optics
- Connection orientated ethernet

Video 2

C&W WORLDWIDE SUMMARY

- RELENTING DEMAND
- PACKET TECHNOLOGIES WILL DOMINATE FUTURE
- LEVERAGE EXISTING ASSET – KEY OPPORTUNITY
- KEEP IT SIMPLE - INTEROPERABILITY
- NEW TECHNOLOGY - OPPORTUNITY TO MAKE STEP CHANGE