

Service Oriented Networks

John Wittgreffe, ICT Chief Researcher



Agenda

- **Service Oriented Networks Overview**, John Wittgreffe BT
- **SON Application Development Environments**, Sean Moore, Avaya
- **SON Security Gateways**, David Brossard, BT
- **Application Level QoS**, John Wittgreffe BT

Change: Cisco AXP, apologies from Dave Bornstein

SON - Drivers



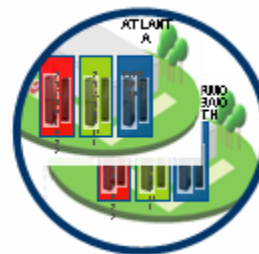
- Enterprises driving down cost and increasing flexibility
 - Software Re-use
 - Server consolidation
 - Rapid response to rise and fall in demand



- Web 2.0
 - Pervasive software
 - Compelling web offerings
 - Collaboration and sharing



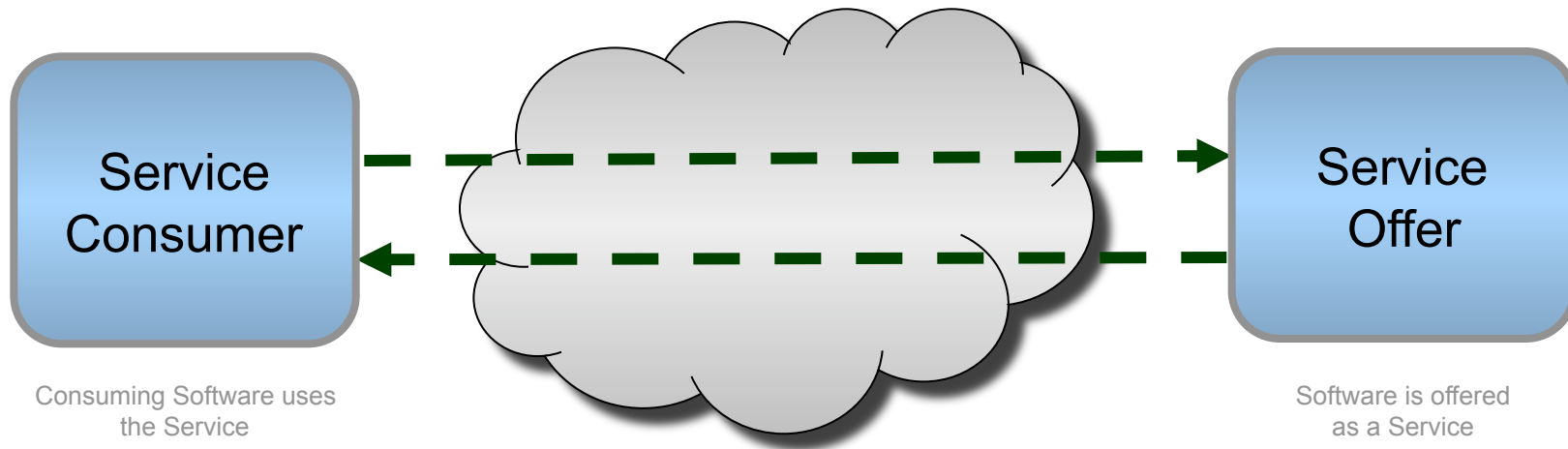
- Web Standards
 - Growing adoption of primary Web standards



- IT Virtualisation
 - Flexible delivery of underlying IT resources



First We Define “Service Oriented Architecture”



Key Principles

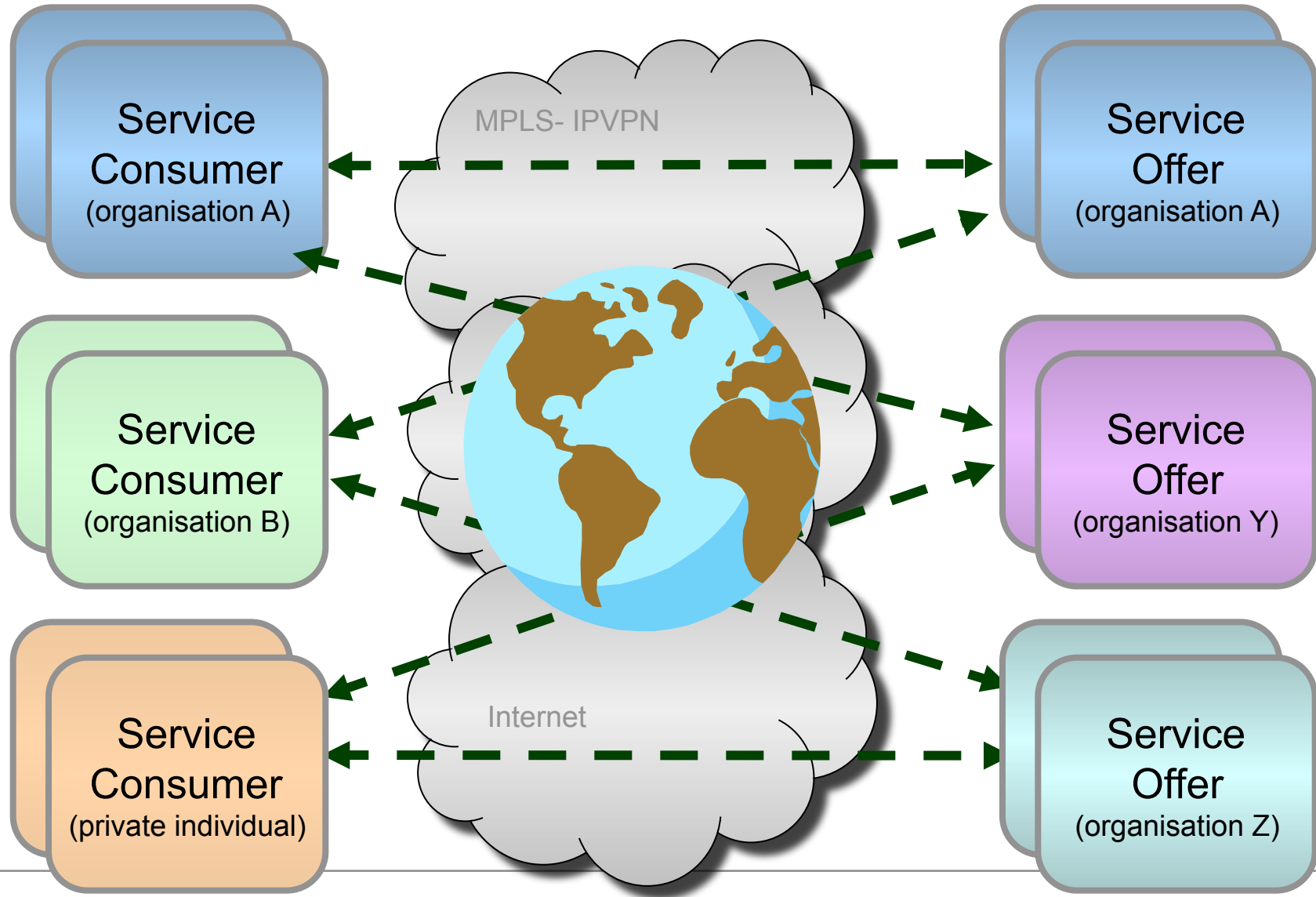
- Loose Coupling – not bound to a specific application runtime/compilation
- Re-use – software functionality exposed in an SOA is re-used in multiple applications
- Standards based – previously Corba, DCOM, ... now increasingly Web standards
- Operating Environment - service discovery, inter-operation, monitoring, governance, ...

Now we can define “**Service Oriented Networks**”:

- *The enabling Network and IT infrastructure for secure and reliable communications in an SOA*

- *The **hosting and exposure of telecoms and application capabilities** for re-use in customer applications, via application development and assembly environments*

SONs - Extend this to a Global View – multiple offers, consumers, and organisations



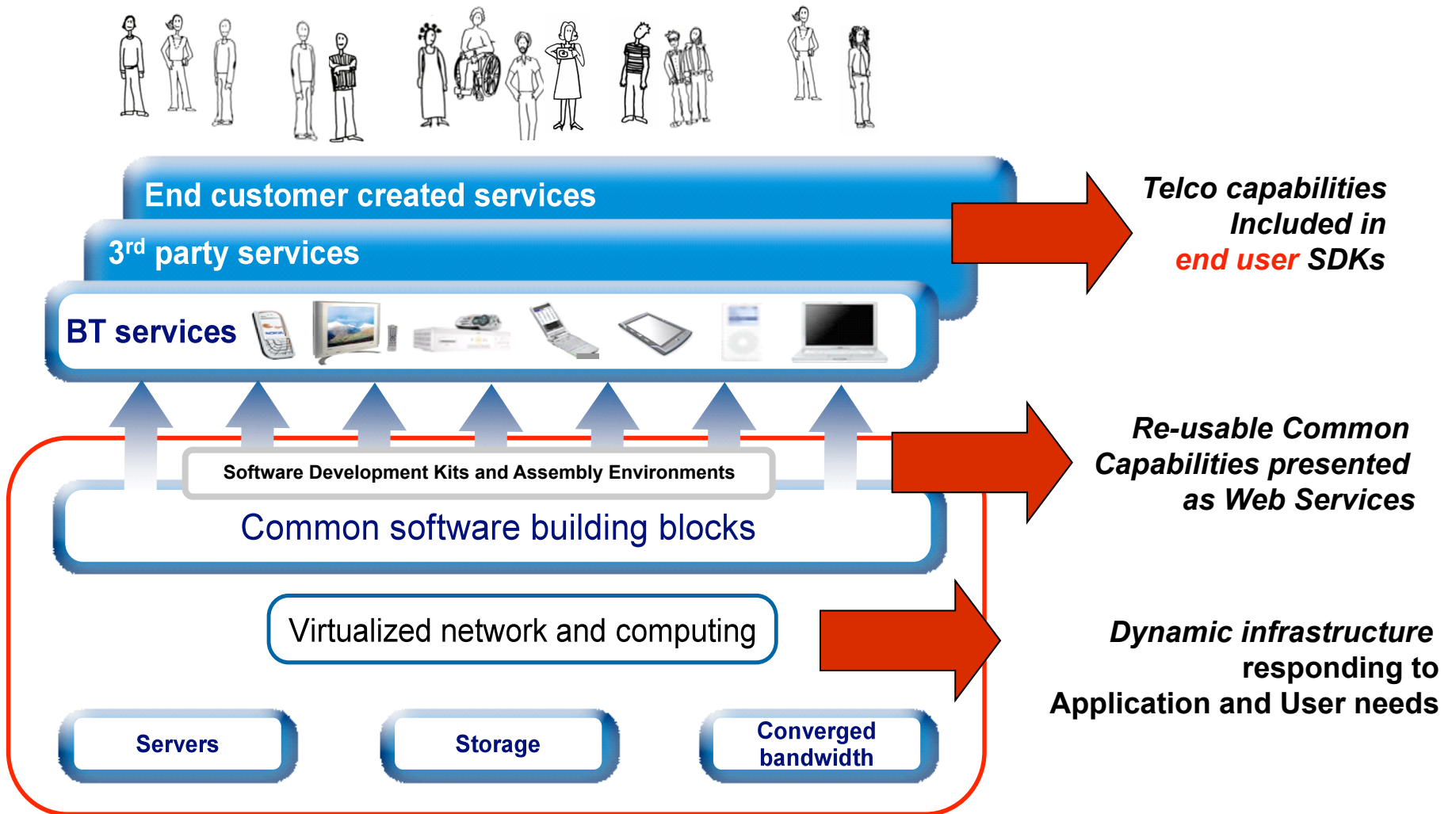
This Forces Key Design Questions for SON to Address

Service
Consumer
(organisation A)

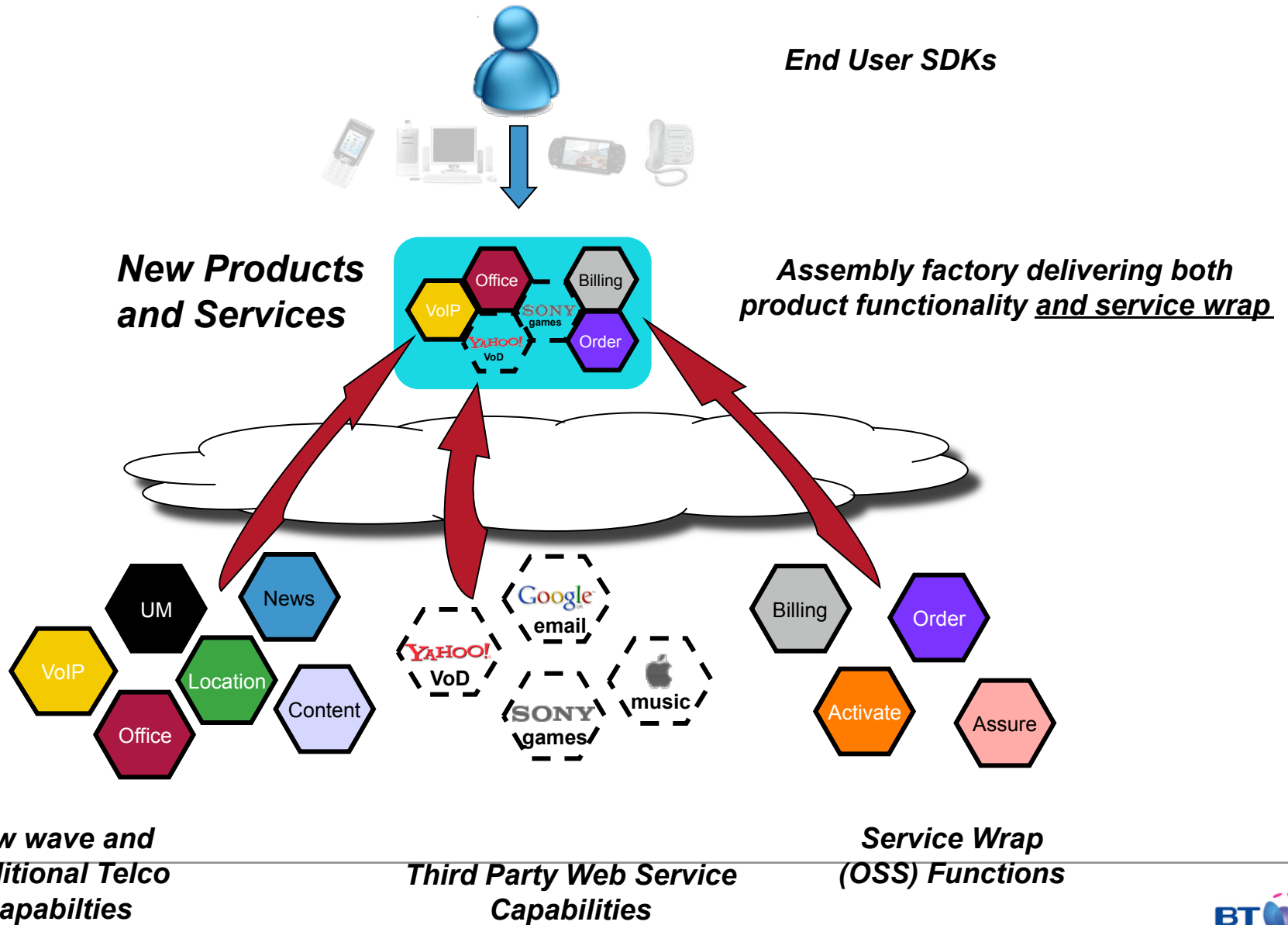
- How can the network and IT resources rapidly adapt and scale to my needs?
- How can we ensure QoS/application performance between consumers and suppliers?
- How can we ensure Security across organisational perimeters?
- How can we address WAN delays when functionality may be globally distributed?
- How can we assemble services into reliable applications?
- How do we ensure inter-operation between software services and consumers?

Service
Offer
(organisation Z)

BT's Web 21C Development is an Example of a SON Initiative



Service Assembly Vision



Standards

In addition to underlying network standards (IETF, ETSI/TISPAN, etc.), Service Oriented Networks may use:

- **OASIS** (Organisation for the Advancement of Structured Information Standards)
 - WSDM, UDDI, CAM, WS-BPEL, etc.
- **W3C** (World Wide Web Consortium)
 - SOAP, WSDL, XML, XSD, WS-Addressing, WS-Security, etc.
- **OGF** (Open Grid Forum)
 - OGSA, INFOD, WS-AGREEMENT, CDDLM, etc.
- **TMF** (Telemanagement Forum)
 - SDF (Service Delivery Framework), PSA (Product and Service Assembly architecture), etc.

Also of Importance:

- **ATIS** – SON Working Group- Identifying SON gaps across the standards bodies
- **ITU, OMA** (Open Mobile Alliance), **OMG** (Object Management Group)

ATIS SON Working Group – paul.muschamp@bt.com

IEEE SON Activities (See Service Oriented Internet, Service Oriented Networks, see at this conference)

Full Details

“Service Oriented Infrastructure”, by John Wittgreffe and Paul Warren

A collection of 20 papers covering Service Oriented Networks and associated infrastructure, in two volumes.

Available **free** online at:

<http://www.btplc.com/Innovation/Journal/>

Volume 1 available now, volume 2 expected January.

... or paper copy to order.

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Thank you

