

CAPACITY PROCUREMENT

Yesterday and Today



PACIFIC
TELECOMMUNICATIONS
COUNCIL



Who are we ?



Cambridge Management Consulting

Cambridge Management Consulting is a boutique telecoms management consultancy based in Cambridge, London and Paris. Cambridge Management Consulting brings together the talents of its leadership team, partners and associates to tackle the business challenges that our clients invite us to help them solve. We assist client with;

Sales Transformation, Executive Search, Strategic Advice, ICT/Telecoms Procurement and Optimization, and Leadership Assessment, Coaching and Development.

THE CARRIERCLUB

a Cambridge MC group company

The Carrier Club is now a member of the Cambridge Consulting group of companies. The Club offers a “Procurement-As-A-Service” model for Telecoms Carriers, working with an understanding of our Member’s supply base and helping Members manage the large number of suppliers that many find themselves working with.

The Carrier Club also supports and resources the Procurement, Cost Management and Cost Optimization activities that Cambridge MC carries out for its Clients.



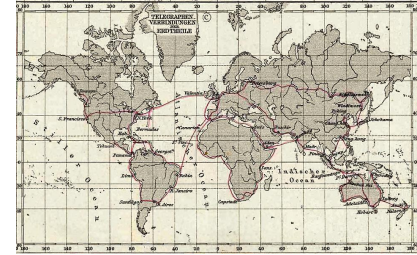
Eric Green is an Owner/Director at The Carrier Club as well as a Senior Consultant and advisor to the Partners at Cambridge Management Consulting.

Starting his career with OTC Australia (now Telstra) managing IDD, ITU-T Voice settlement and the development of Audiotext arrangements, Eric has gone on to manage teams around the world focused on procuring wholesale third party telecoms services for companies including SITE/EQUANT/ORANGE BusSvcs, COLT Technology Services, AT&T Global and Level 3 (now CenturyLink). In a 30+ year career, focused on procurement Eric has been responsible for budgets in excess of \$1bn p.a and has procured services on every continent of the world except the Arctic and across platforms such as Voice, Data, Cable Systems, Satellite, mobile and telecoms infrastructure.

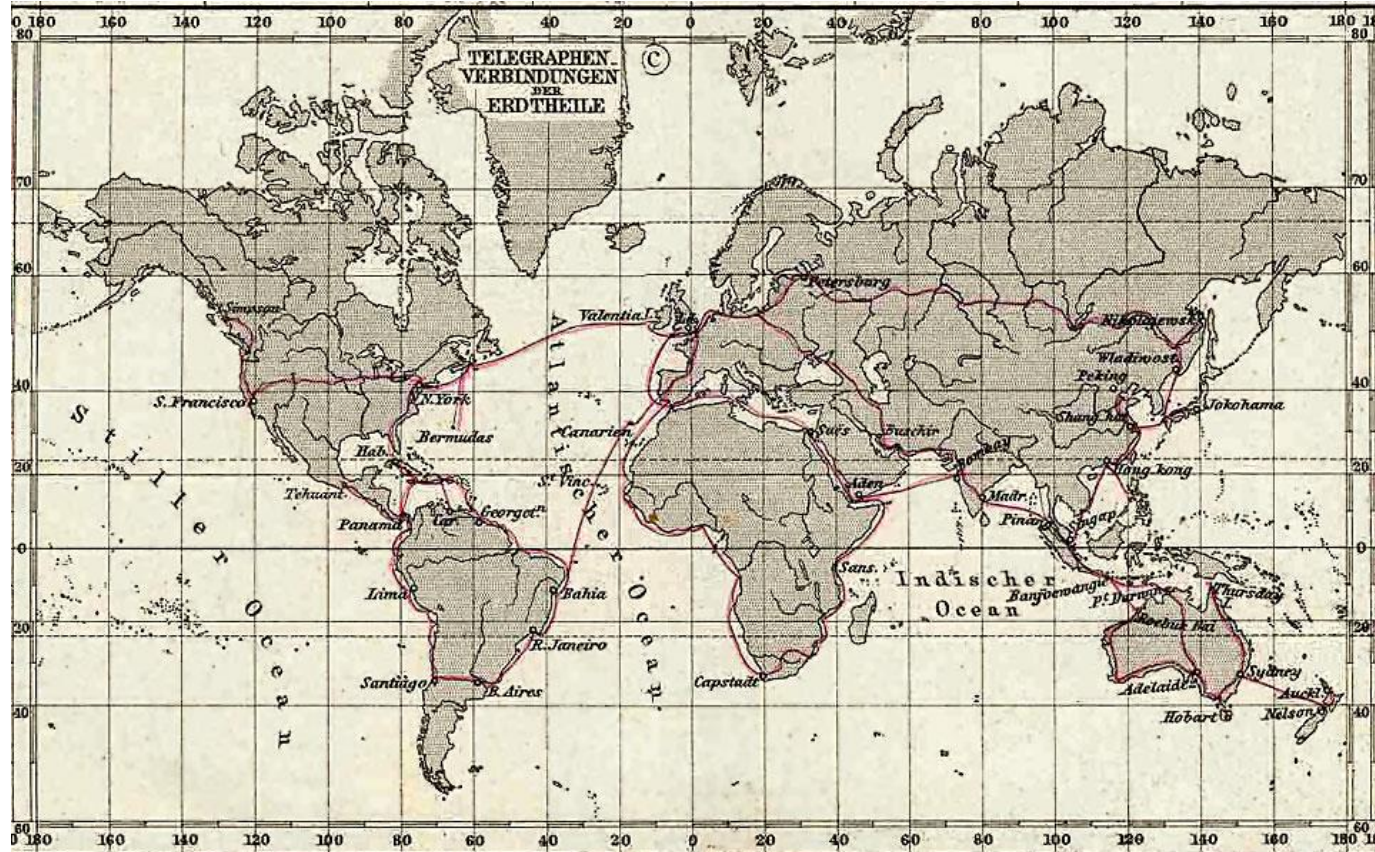
A long time ago

Though in a galaxy much closer to home:

- ❖ **The telegraph was the key method of transmission.**
- ❖ **Connectivity was dominated by monopoly carriers, many government owned.**
 - International service providers had local 'distribution' agreements.
 - Bilateral agreements stopped unreasonable prices (sort of).
- ❖ **International cables were expensive to plan and deploy (especially submarine cables).**
 - Between 1850 and 1911 submarine cables were dominated by the British.
 - From the end of WW2 the US focused on trying to liberalize and dominate international telecoms.
 - This saw a growth in private and consortia cables.
- ❖ **Rules for buying/selling capacity.**
 - Though founded in 1865, the ITU started to branch out to be more than just a technical standards agency and in 1947 is recognized as the specialized agency for global Telecommunications, an official organ of the United Nations.
 - ITU-T Recommendation Series D gives a structure for tariff and accounting principles as well as international telecoms/ICT economic and policy issues.
 - The world today moves faster than standards bodies can keep up with. Many arrangements today are purely economic and market driven in nature. More and more the economic models are diverging from the network element/cost lease models of the past.



Major Telegraph Lines in 1891:

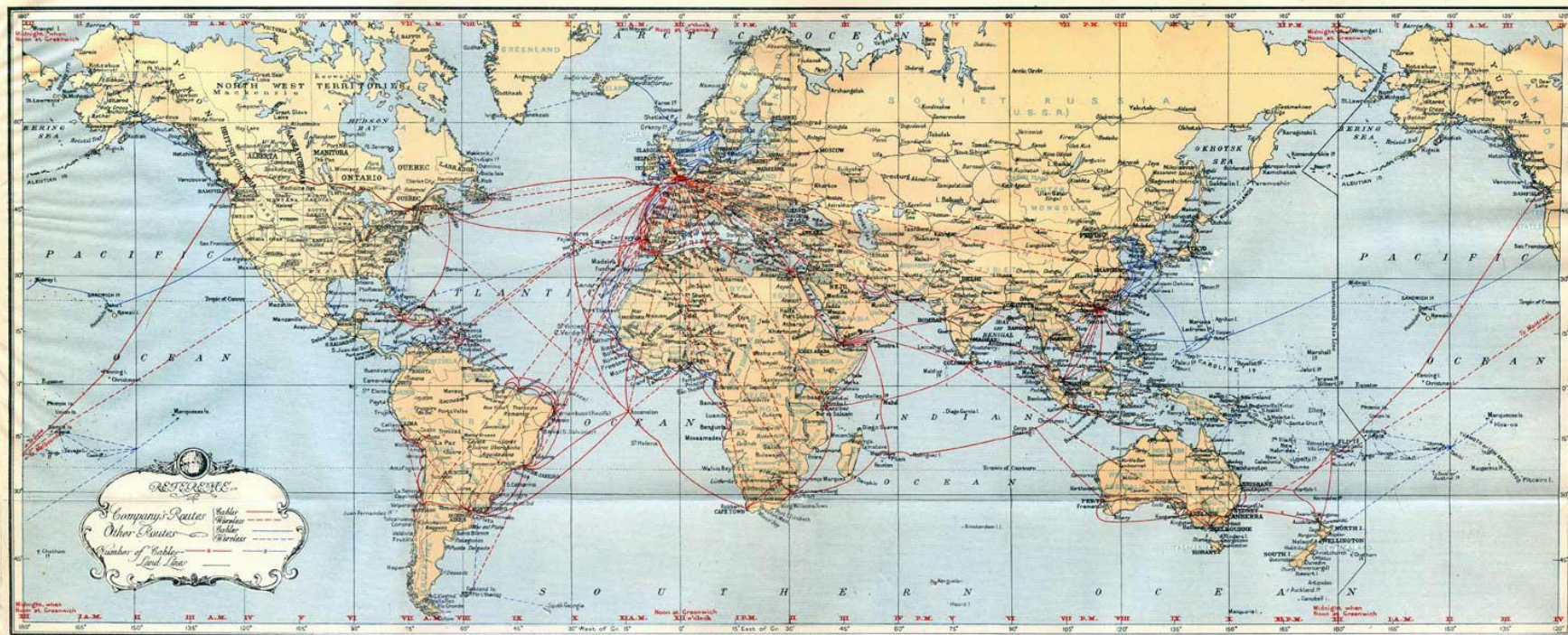


Source: https://en.wikipedia.org/wiki/Electrical_telegraph#/media/File:1891_Telegraph_Lines.jpg

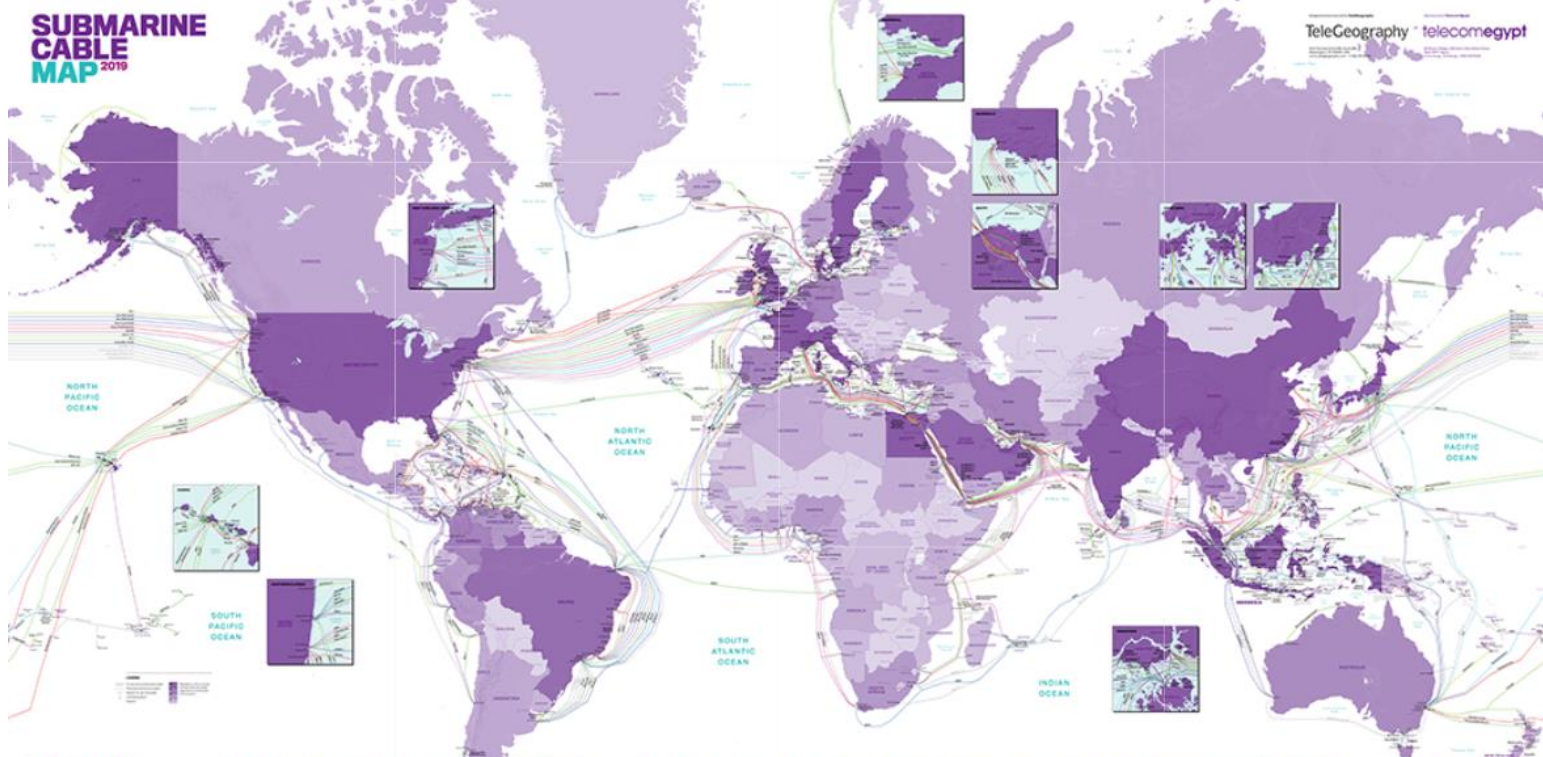
C&W Cable Systems 1947:

CABLE AND WIRELESS VIA IMPERIAL

LIMITED



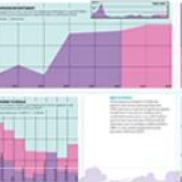
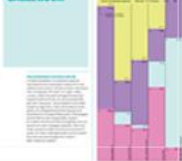
DIRECT CABLE ROUTES, IN WHICH INSTANTANEOUS AUTOMATIC RETRANSMISSION ONLY IS USED AT INTERMEDIATE STATIONS, ARE PROVIDED FROM LONDON TO CAPETOWN, HONG KONG, ADELAIDE, SINGAPORE, RIO DE JANEIRO, BUENOS AIRES, MONTREAL, BOMBAY, COLOMBO AND EGYPT.



A NEW BUILDING BOOM

As many as 107 new submarine cables totalling over 400,000 kilometers will be deployed from 2016 to 2020 with a value of over \$13.6 billion.

BEHIND THE CABLE BOOM



Multi-User cables

- ❖ **ITU-T Rec. D.1 – D299 highlights the principles for charging – like the WTO.**
- ❖ **National Consortia – the concept of the ½ circuit.**
 - Each national consortia member owned from the cable station to the cable midpoint.
 - The 2nd half was bought from the reciprocal partner either by the end user directly or through a one-stop-shop arrangement that may exist.
- ❖ **The last mile was dominated by monopoly carriers, many government owned.**
 - International service providers needed to buy the last mile from the incumbent.
 - Bilateral agreements stopped unreasonable prices (sort of).
- ❖ As cable consortia grew more complex and capacity expanded with cable systems being upgraded, a market developed for cable owners to sell capacity as a key focus rather than holding capacity for their own use. Now capacity owners owned capacity end-to-end on systems.
- ❖ The circle of life – the return to single ownership cable systems. Today we are seeing “mega” capacity users like Google returning to single owner cables in addition to “professional” cable systems such as Hibernia (not GTT), Aquacom and the like built for capacity resale only.

What about Satellite?

- ❖ **Satellite capacity procurement has more commonly mimicked circuit procurement.**
 - Of course the last mile is part of the delivery.
 - Biggest decision is whether to go for a 'spot' or a global beam.
- ❖ **National Consortia – the concept of the ½ circuit.**
 - Each national consortia member owned from the base station to the orbital satellite.
 - The 2nd half was bought from the reciprocal partner either by the end user directly or through a one-stop-shop arrangement that may exist.
- ❖ **Some of the new models – bandwidth in the sky..**
 - Models today include buying an 'allowance' of capacity, a pool of bandwidth that can be shared amongst a number of ground stations.



IRUs – Making an asset of leased capacity.

Why buy an IRU:

- ❖ Indefeasible right of use is a permanent contractual agreement, that cannot be undone, between the owners of a communications system and a customer of that system. The word "indefeasible" means "not capable of being annulled, or voided, or undone. (with thanks to Wikipedia)
- ❖ More importantly no restrictions should be applied to the asset with respect of any sub-lease or who the service can/cannot be sold to – thought a number of carriers try this.
- ❖ IRUs used to be for discrete physical assets. This has changed with technology and so now IRUs can be structured around Dark Fibres, Wavelengths, Spectrum, Satellite capacity and can include systems of services rather than point to point.
- ❖ In some circumstances an IRU can be booked as a Finance Lease / Capital Lease where the value of the lease is seen as an asset on the balance sheet of the company (which reflects on EBITDA).
- ❖ IRU's have been traditionally bought as a single upfront payment with the obligation to pay a contribution to the operation and maintenance of the asset (as each lessee cannot do this direct) but, as accounting rules change so too has the IRU and now IRUs are bought with 'stage payments' with O&M included as a fixed fee, etc

IRUs – rules for capitalising the spend.

Much depends on the accounting rules that your country/company follows; GAAP or IFRS

Currently, under IFRS and UK GAAP, leases are treated in one of two ways, depending on the balance of risk and reward of ownership of the underlying asset under the lease contract:

- ❖ **Finance lease:** when substantially all the risk and reward transfers to the lessee, the present value of lease payments is recognised as a liability on the balance sheet with a corresponding asset;
- ❖ **Operating lease:** when significant risk and reward remains with the lessor, the lessee recognises the rental or lease expense in the profit and loss account, as it falls due, with no balance sheet impact.

To be recognised as an asset the IRU needs some basic elements that are common to all accounting treatments;

- The arrangement has to define a right-of-use over specific assets. They can be over defined wavelength(s), over specific fibre(s) or even over a sub-segment of spectrum (overall, in an area or even over a specific point-to-point path).
- The arrangement has to confer an exclusive right to use those assets.

IRUs – rules for capitalising the spend.

UNDER the GAAP Rules (one or more need apply)

- ❖ There is ownership transfer to the lessee at the end of the lease;
- ❖ The lease contains a bargain purchase option;
- ❖ The lease life exceeds 75% of the asset's economic life; and/or
- ❖ The present value (PV) of the lease payments exceed 90% of the asset's fair market value.

Most IRUs are considered Finance Leases on the basis of the IRU being 75% of the asset's economic life which is why with a NEW cable having an estimated life of 26.5 years* IRUs are 20 years long.

* Based on IRS Publication 946 – How to Depreciate Property

Table of Class Lives and Recovery periods – 48.33 - TOCSC—Cable and Long-line Systems: Includes assets such as transmission lines, pole lines, ocean cables, buried cable and conduit, repeaters, repeater stations, and other related assets. Does not include high frequency radio or microwave systems = 26.5 years

UNDER the IFRS – IAS16

- ❖ **Property, plant and equipment are tangible items that:**
 - are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes; and
 - are expected to be used during more than one period.
- ❖ **The cost of an item of property, plant and equipment is recognised as an asset if, and only if:**
 - It is probable that future economic benefits associated with the item will flow to the entity; &
 - the cost of the item can be measured reliably.

IFRS 16 introduces a single lessee accounting model and requires a lessee to recognise assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value. A lessee is required to recognise a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments.

IRUs – “rules of thumb”.

From experience (but it will depend on what the market will bear):

- ❖ **An upfront for an IRU varies from 7.5x the yearly lease to 10x the yearly lease rate.**
- ❖ **The Operate and Maintain costs.**
 - Should be between 2.5% and 3% of the cost of the IRU upfront cost per annum OR your percentage of the total system repair costs as they happen (can be risky).
 - Should adjust no more than the rate of inflation that is relevant in the country where most of the work is to take place (if at all).
- ❖ **When negotiating your IRU make sure you define;**
 - Exactly what it is you are getting.
 - if a Dark Fibre mark every repeater, splice point (long/lat) end-to-end.
(are you responsible for signal repeating or is this done on the system as a whole)
 - if a wavelength be as technically detailed (frequencies, ports, etc) in describing the offer. If you just state this as wavelength on system X and there is an implication that the capacity can be moved to any wavelength on the system it may not define as an asset.

IRUs – The risks of an IRU.

You are buying an “asset” over a long period of time. As with any Finance Leased Asset there are risks.

- ❖ **The Network Operator’s Bankruptcy:** in the event of a bankruptcy the “debtor-in-possession” or Administrator is incented to cancel/reject IRU agreements as “executory agreements”. As the system, if sold, will only generate income from new sales it is in their interest to ‘free up capacity’. Make sure that any IRU you agree has language seeking to minimize the risk of rejection in bankruptcy.
- ❖ **Loss of Underlying rights:** the easements, rights-of-way, leases, etc. that grant the network provider access to real property to occupy, construct and extend its fiber network (underground or aboveground or both) over or under real property. Your agreement should have language stating that the provider has all these rights on entering the agreement AND if the system needs to be changed due to some exercising of say eminent domain or third-party action that your rights will transfer to any new system. The agreement should compel the Network operator to provide as much notice as possible to the grantee and establish a process to accommodate the route relocation, keeping the agreement intact and providing an allocation of costs of the relocation. Network operator-determined relocations are typically addressed, as well, with the network operator bearing all costs.
- ❖ **Fibre Cuts** – the SLAs on restore are usually backed off against the O&M but as these payments are relatively small there is little to recover. Make sure that all the relevant contact details are in the agreement and that there is a defined technical criteria for the service to operate under on restoration – or the Network operator will need to go back and rework the fix (not just declare the service fixed).



The Modern Model for Procurement.

Will the loss of monopolies, the general rule seem now to be “charge what the market will bear”.

- ❖ **Regional considerations:** no all regions of the world trade telecoms as an “almost monopoly” The model for procurement can still be government controlled. Take the cost of DIA services where in Europe and North Americas monthly rates can be <\$10/Mbps while in the Middle East and Africa the cost can be > \$250/Mbps. In some market the initial rate is always high as there is an expectation you will negotiate a final rate.
- ❖ **The Law of ‘Supply and Demand’ rules:** The lower the latency the higher the costs. The more suppliers in a building the lower the costs (remember here too the ‘Landlord factor’). The level of competition that exists has an inverse impact on price and some suppliers will price “per building” to make best used of this.
- ❖ **Make sure you are looking at Apples vs Apples** – if the price is “too good” question it. Business Broadband and “Super Fast” access are marketing terms. Check the performance characteristics and SLAs that are being offered for the price and see if that meets your need.
- ❖ **Remember the time-value-of-money** – if you are getting a zero install it is only being amortised across the life of the contract. What “value” is the supplier applying to this benevolence (in one case it was 35% more than a credit card). For term commitment my rule of thumb is at least 10% discount on MRC for 24mths and 15% on MRC for 36mths but, be aware of how fast the prices in a market are moving. You could end up in year 3 with a service that is far more expensive than the market of the day.



Procuring Access – Stages of involvement

BUY

- Buy services one-by-one from a range of suppliers.
- Have the services delivered to your PoP.
- Higher cost of access but least commitment from you.

BULK

- Seek discount schemes for buying in bulk.
- Buy “virtual hubs” and consider NNIs to bring capacity back to your network.

BUILD

- Build out to reach network access POIs.
- Includes building out to Exchanges.
- Leasing dark fibre to “build” network.

OWN

- When the volumes get significant it is time to consider owning your own network.
- Build your own last time, buy failing networks or sub-lease.

Procuring Access – Where to pick up your purchases

Meet Me or Meet You (always from the seller's point of view):

- ❖ Meet Me is where you build network to a distribution point where the access service can be obtained.
- ❖ Meet You provides the capacity back to your nearest PoP – this could even include long-haul.
- ❖ If you decide to meet the access capacity, then there are a number of options (not all available everywhere);
 - Reducing the long-haul by connecting with key Local Exchange Carriers (LECs)
 - Meeting at “capacity exchanges” such as Internet Exchanges (IX), Ethernet Exchanges and the new generation of SD WAN exchanges (the likes of ngena).
 - Even the larger Data Centres (e.g. Equinix) can be a platform for collecting last mile capacity to your network. (watch the cost of cross connects).

The main question here is to invest strategically, gaining access to those models of supply that give you a breadth of options / competition as a return on the cost of building to these points.



Procuring Access – Buying through 3rd Parties

The wonderful world of Aggregators, Agent and PaaS/CaaS suppliers;

- ❖ **Aggregators come in two key formats – Network Aggregators (like Epsilon) and Operational Aggregators (like Brodynt, AirX, Globalinter.net) – and some hybrids like Expereo.**
 - ✓ they make the procurement easier by having the downstream relationships.
 - ✗ they become an extra layer in the supply / operations chain.
 - ✗ Network Aggregators may add an additional layer of network (and element of risk).

- ❖ **Agents (aka brokers) use their knowledge of the market.**
 - ✓ they have good knowledge of markets and the benchmark rates.
 - ✓ they do not become part of the operational chain.
 - ✗ they are paid a % of the sale – so there can be some question on where their loyalties lie.

- ❖ **PaaS/CaaS ;**
 - ✓ a more neutral alternative to an Agency.
 - ✓ they do not become part of the operational chain.
 - ✓ their incentive is making the sale so there is an incentive to find the price that will close the sale.

Here we go again renewals

There will come a time when you may wish to renew your initial contract.
Here are some thoughts for your next renewals:

- ❖ **With a few exceptions, some element of the network hardware used to deliver a service is amortised across the life of the initial term.**
 - When renewing an agreement the cost should be able to reduce by the amount being carried as amortization by the supplier. Experience has show this can be as little as 5% up to 15%.

- ❖ **As bandwidth increases the unit cost decreases.**
 - Check that the unit cost is less for the new, larger bandwidth.
 - The ratios are not as standard as they were with SDH but if you have a large inventory you can derive your own ratio tables.

- ❖ **Term Liabilities with renewals.**
 - Wholesale commitments need to understand that the end-user may not be part of the renewal process (nor might it be desired). A renewal should have a clause that, if the end-user cancels the contract with you then the lease can be cancelled without penalty.
 - Where this is an OnNet service this should be easy to negotiate as there is no “real cost” and ETLs are really a revenue protection mechanism.

Supporting Slides/Info



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Procuring Telecoms – Life Cycle model for Carrier Management

Stage 5: Mature Inventory Management

For a time in the life-cycle of a service cost can be achieved through the renegotiation of the cost of the service.

There will come a time when, in order to further reduce costs, a paradigm change is required in order to service the Level(3) Product through a different access technology. That decision then needs to feed the strategy

Stage 4: Inventory Optimisation

For the current strategy, is the inventory at the right market price ? Is it connected to the most cost efficient node ? Are our nodes in the right place ?

If the answer to any of the above is no then a project needs to be established (a) to look at improving the current inventory and (b) to change the BAU environment to maximise all future service orders.

Stage 3: Inventory /Financial Management

Make sure that the inventory is properly recorded, that the invoices meet expectation and that the cost matches current negotiations. Ensure financial planning aligns with the inventory trends.

Stage 1: Procurement Strategy

- this should be focused on the Level(3) Product that is being supported by the access strategy not a shopping list.

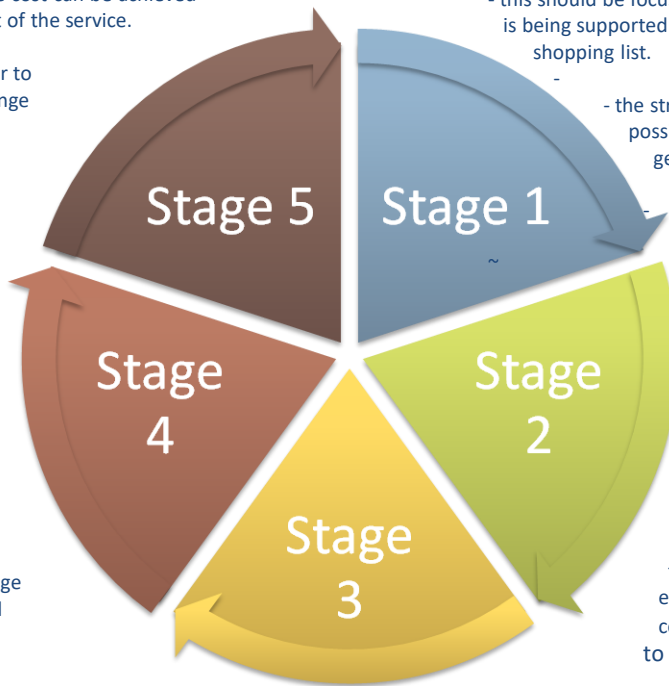
- the strategy should be as granular as possible being dependent on geography speed and the product supported.
- the strategy should also give time-lines for “validity” of each ~ decision taken (1yr, 3yr)

Stage 2: Deployment

- a strategy is purely theoretic until it is realised. There are two key avenues to deploying an access strategy; presales & implementation

PreSales => ensuring that the buying strategy is known to Sales (through the programming of tools and education programs) and that these costs factor into the pricing offered to our customer.

Implementation – ensuring that the strategy, started at presales is actually implemented.



ITU-T Recommendations - D001-D299

- D.1-D.9 : Private leased telecommunication facilities
- D.10-D.39 : Tariff principles applying to data communication services over dedicated public data networks
- D.40-D.44 : Charging and accounting in the international public telegram service
- D.45-D.49 : Charging and accounting in the international teletext service
- D.50-D.59 : Principles applicable to GII-Internet
- D.60-D.69 : Charging and accounting in the international telex service
- D.70-D.75 : Charging and accounting in the international facsimile service
- D.76-D.79 : Charging and accounting in the international videotex service
- D.80-D.89 : Charging and accounting in the international phototelegraph service
- D.90-D.99 : Charging and accounting in the mobile services
- D.100-D.159 : Charging and accounting in the international telephone service
- D.160-D.179 : Drawing up and exchange of international telephone and telex accounts
- D.180-D.184 : International sound- and television-programme transmissions
- D.185-D.189 : Charging and accounting for international satellite services
- D.190-D.191 : Transmission of monthly international accounting information
- D.192-D.195 : Service and privilege telecommunications
- D.196-D.209 : Settlement of international telecommunication balances of accounts
- D.210-D.260 : Charging and accounting principles for international telecommunication services provided over the ISDN
- D.261-D.269 : Economic and policy factors relevant to the efficient provision of international telecommunication services
- D.270-D.279 : Charging and accounting principles for next generation networks (NGN)
- D.280-D.284 : Charging and accounting principles for universal personal telecommunication
- D.285-D.299 : Charging and accounting principles for intelligent network supported services

IRUs – Case Study – Dark Fibre into Turkey.

To expand the network for a Carrier from Europe into Turkey an IRU is sought for Dark Fibres.

The requirements of the buying Carrier.

- ❖ **Finance lease:** the service needs to be procured as an asset under GAAP rules.
- ❖ **Interpretation of the “asset” life vs IRU:** the need for the dark fibre to be an IRU of 20 years duration.

The challenge – the Turkish cable owner laid their cable some time ago. To them there was only 15 years of economic life left in this terrestrial cable.

- The concern from the provider was that if they signed a 20 year IRU then they would be contractually bound to maintain / keep the cable for 5 years further than the economic life of the cable.
- The buyer was tied to 20 years by an old IRS advisory* that cables were typically 26.5 years in economic life (but that is from new) and so to meet the 75%+ rule the safest IRU needed to be 20 years.
- After much debate internally and with Accounting/Audit authorities in the US the decision was to agree an IRU equal to the remaining economic life of the asset (but was this necessary) of 15 years.

* Based then (2014) on IRS Publication 946 – How to Depreciate Property

Table of Class Lives and Recovery periods – 48.33 - TOCSC—Cable and Long-line Systems: Includes assets such as transmission lines, pole lines, ocean cables, buried cable and conduit, repeaters, repeater stations, and other related assets. Does not include high frequency radio or microwave systems = 26.5 years



Questions?



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Thank You



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