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The Bermuda Agreement on telecommunications 1945.

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Abstract.

The end of the Second World War saw global telecommunications governance renegotiated. The dominant British Imperial (later Commonwealth) network experienced multiple changes: the tightly integrated and collaborative imperial governance system fell away as the governing partners increasingly pursued their own, rather than a collective agendas and as the “imperial” company, Cable and Wireless’, dominance gave way to a competition and interconnection based regime as American firms and their networks entered markets hitherto closed to them. Though key elements of the Bermuda Telecommunications Agreement 1945 were soon to be renegotiated, the Bermuda Conference, at which the imperial partners and the new hegemonic power, the USA, bargained, was the fulcrum transitional event. Drawing on archival sources (notably in Canada and the UK) the author tells of the tensions within the fragmenting Imperial partnership, of an American mix of interest and idealism and of this episode in telecommunications liberalisation foreshadowing later changes.

Keywords.

Telecommunications, British Empire, United States, Post WWII, liberalisation, governance.

The Bermuda Agreement 1945.

In spite of the differences of philosophies – with the United States of America nailing its flag to private enterprise and the British Commonwealth to public ownership – it has been possible to reach a very solid and practical measure of agreement and understanding.... I hope it will be a good omen for our co-operation in other fields¹.

Introduction: the legacy of war.

As the end of WWII came in sight, the negotiations on the post-war world began, meetings at Yalta (February 1945) and Potsdam (July-August 1945) determined the macro-political shape of Europe; the United Nations Conference on International Organization (San Francisco, April-June 1945) agreed the UN Charter and in telecommunications the fulcrum event was the Bermuda Conference of November 21st to December 4th 1945. At Bermuda, the world's two dominant systems of international communications, the UK's (and its Commonwealth partners Australia, Canada, India, New Zealand and South Africa) and the USA's negotiated how the world's two most important communications systems henceforth would be coordinated. The new regime, negotiated by yesterday's global power the British Empire, and tomorrow's the USA, was cemented in the Bermuda Agreement (UN 1947).

Bermuda came about both because users and (at least some of) the UK's partners in the imperial system (notably Australia) were looking for change and because the

USA, exiting WWII with augmented power, refused to be excluded from access to the world's major telecommunication network. But change to post WWII global communications was not quite as Hills (2002) constructed it – a neo-mercantilist tale of growing United States and private sector hegemony as a notable “tool of Empire” (Headrick 1981) slipped from Britain's palsied grip into Uncle Sam's firmer hand. Rather Bermuda tracks a narrative of the UK (with its imperial/Commonwealth partners) bargaining with the USA and together shaping the new global communications regime of joint hegemony. This new regime both included the USA and, on the imperial side, was characterised by a change in governance with private ownership falling away as the “British nations” (Menzies 1956) nationalised their global telecommunication assets.

The imperial communications system and its decline.

The imperial “legacy” system was operationally based on the Cable and Wireless companyⁱⁱ and overseen by a supervisory body, first named the Imperial Communications Advisory Committee (ICAC), 1928-44, then the Commonwealth Communications Council (CCC), 1944- 1949, and later the Commonwealth Telecommunications Board (CTB), 1949-1968ⁱⁱⁱ. These bodies were dominated by what Menzies^{iv} (1956) called the “old Commonwealth”. Cable and Wireless’^v network was, as the company name states, based on two distinct technologies - wireless and cable. Development of wireless telegraphy (particularly the Marconi “beam” system in the 1920s) made possible a bypassing the legacy “all red” cable system linking the imperial centres. Moreover, when atmospheric conditions permitted^{vi}, wireless was considerably cheaper than cable. The cable system had been

built (and was maintained) at great cost and the combination of the interests of the operating company (though incorporating wireless telegraphy, as the name “Cables and Wireless” adopted in 1929 testifies, was dominated by the cable interest), the perceived superior security of cable over wireless and the preponderance of a cable interest in policy and supervisory institutions meant that wireless had, prior to the second World War, not developed as rapidly as its proponents hoped.

Chief among wireless’ sponsors was the Australian government which saw in wireless both a way to advance its native national champion, the AWA – Amalgamated Wireless Australasia - company, (in which the Australian Government had a significant shareholding) and to reduce the price of telegraphic communication, notably with Australia’s main trading partner - the UK. Wireless’ importance grew with America’s entry into WWII (at the end of 1941) as the USA rapidly built a significant wireless infrastructure – not least in Australia which became a major base for the Pacific campaigns dominated by the United States’ forces.

The end of the war posed the question of what to do with the wireless infrastructure built during hostilities – absurd to decommission and waste it – this, coupled with the United States’ increased political weight meant that the “all red” system could no longer resist American (and Australian) pressure to establish new circuits interconnecting the legacy imperial and emergent US global networks. From the UK’s (and Cable and Wireless’) point of view, radio circuits made possible both bypassing the integrated, cable based, legacy system and cherry picking the most profitable traffic to the detriment of the legacy system as a whole. Whereas for the USA, and Australia, radio offered entry to a market which had, hitherto, been largely closed,

realisation of value from the infrastructure it had constructed during hostilities and opening up of access to communications thus benefitting people across the globe.

America's post-war dominance certainly stimulated change in the imperial, legacy, system but no less important was the Dominions' (and India's) aspirations to autonomy in the management and organisation of their international communications. As Frederic Soward,^{vii} a member of Canada's delegation to the 1945 London Conference and the de facto leader of Canada's Bermuda delegation (who chaired the key Bermuda Rates and Circuits Committee), wrote, in the late 1940s, Canada and the other Dominions enacted "in telecommunications" a shift congruent with that "in foreign policy and defence, the same tendency towards greater decentralization and voluntary co-operation" (Soward 1950: 237).

The USA: interest and idealism.

The United States' objectives in post-war telecommunications were, as Hills (2002, 2007) and others have represented it, to obtain entry for American businesses to the global electronic communications market but also to reshape global communications in the image of American liberal values. The latter objective has been somewhat underplayed in the dominant contemporary neo-mercantilist *real politik* narrative which Hills has so much influenced but was far from negligible.

In 1944^{viii} Chairman of the Federal Communications Commission (FCC) from 1939-1944, James Fly stated that the US policy objective was "complete freedom for all peoples of the world to communicate directly with each other"^{ix}. To be sure, Fly's

gloss on this aspiration defined the UK's exclusion of US business from its networks as a principal obstacle in the way of unfettered global intercommunication - "England now is able to dictate the terms and conditions upon which American communications with important points in its empire can now take place"^x Fly's diagnosis was supported by a US carrier's, Mackay Radio^{xi}, failure to secure the UK's permission for new wireless services between the USA and Burma and the USA and the Malay States.

Fly's arguments were formally escalated in the diplomatic hierarchy through the US Ambassador^{xii} to London's letter to the UK Foreign Secretary, Anthony Eden. The US Ambassador urged an early meeting to negotiate "the future right of the USA to establish "direct radio telegraph and radio telephone circuits from the United States to points in the British Empire and agreement on low uniform telecommunication rates covering all communications between places in the United States and places within the British Commonwealth..... particular attention should be given to low rates for press communications and to the reallocation of certain American and British cables"^{xiii}. Eden dragged his feet and the Foreign Office responded only on 12 October 1944, claiming that the Secretary of State was away and that the complexities of the issue meant that the UK could not concur with the American desire for speed: only "next year" would the UK (and Dominions and India) be ready to enter discussions^{xiv}. Nonetheless, US pressure (coupled with the Australia's discontent) resulted in the UK and its partners agreeing to work out a new global communications order with the USA in Bermuda late in 1945.

Fly's favoured policy promised to do no harm to US business and accordingly his rhetoric may be interpreted as disingenuous but it need not be so. After leaving the FCC, Fly became Chairman of the American Civil Liberties Union and was subsequently denounced as a Communist. It's not necessary, therefore, to interpret his advocacy of the communicative freedoms of the peoples of the world as simply camouflage for a hard nosed pursuit of American corporate interests.

Cable and Wireless' diminishing legitimacy.

In contrast to the Americans' warm words, Sir Edward Wilshaw, Chairman and Managing Director of Cable and Wireless, saw the US' aspiration to foster "good will between peoples and communities" as a trojan horse presaging "the ruination of Cable & Wireless Ltd., as a consequential reversion of traffic from the Company would so reduce its revenue that it would be unable to maintain itself"^{xv}.

However, Wilshaw received little support in the UK or the wider empire. Not only did the imperial partners want to run their own shows, in telecommunications no less than in government, but Cable and Wireless had won few friends during wartime. Wilshaw had alienated many by not turning up to the 1942 Canberra Commonwealth Telegraphs Conference and the Conference's censure of his absence was echoed by his British superior, Clement Attlee (when Secretary of State for Dominion Affairs^{xvi} – a bad man to alienate given that he was to become Prime Minister the following year) who echoed the Conference's regret at "your inability to accept the invitation of the Australian Government"^{xvii}. Moreover, Cable and Wireless had fierce and influential critics amongst its customers. For example, Reuters' News Manager, Walton Cole, wrote to the Cable and Wireless Press Liaison Office with "very grave

complaints” and “great dissatisfaction”^{xviii}. Wilshaw’s lack of diplomacy in dealing with key stakeholders meant there was little dissent from, or debate about, the desirability of nationalising the company (which took place in 1946)^{xix} and restructuring its business by opening its reserved markets to American competitors.

The Bermuda Conference.

The Bermuda Conference of 1945 thus marked a watershed in a complex and multi faceted transition from separate global communications infrastructures (among which the British Empire’s was by far the most significant) with limited interconnection to an integrated global system (with predominance passing to the USA). In this transition the imperial partners remarkably found common cause when faced with the USA - despite their dissatisfaction with the UK based Cable and Wireless company; their drives towards greater national independence and autonomy; and the close relationships forged with the USA (particularly by Australia and Canada) during WWII.

In the Cable and Wireless view of things, centralised hierarchical control of the legacy system made eminent sense. But that was neither the only way to look at the global telecommunications infrastructure (it left out other routes and nodes – notably those related to the USA) and did not acknowledge the potential of new wireless routes to establish a more networked, decentred and interconnected system which increased connectivity and reduced costs (though articulating power differently). A new system architecture was attractive to those disempowered by legacy arrangements. Here was a classic manifestation of the problem of the “network externality”: all parties

benefitted from new users interconnecting with an established network. But not all users benefitted equally: new entrants benefitted more than did incumbents. For interconnection provided new entrants with connections to many other users whereas incumbents benefitted only from connections to the relatively fewer connections provided by the new entrant(s). Cable and Wireless were doubtless right to assert (as the company did in underlined typescript) that “the Americans desire to substitute New York for London as a telegraphic centre to their own advantage and to the detriment of the Empire system”^{xx} but more was at stake than this. Cable and Wireless effectively controlled global connectivity and it sought to retain this monopolistic power – even though its network’s utility would be enhanced by access to the connections controlled by the US firms.

Though tainted by the obvious interest of the source, a paper received by the Cable and Wireless Court of Directors in 1944^{xxi} testified to the reality of concerns about competition from American radio: a table, dated 21 January 1944, estimated the Company’s annual losses (and losses experienced by other British interests) consequent on the direct radio circuits established by the USA during WWII to be, in round numbers, around £200,000pa.^{xxii} However, Cable and Wireless’ interests had come increasingly to diverge from those of the imperial partner governments. The “Empire system” was no longer serving optimally the interests of all participating parties. As Barty-King rightly observed, in this context “technical efficiency was not the only criterion; there had to be an awareness of the sensitivities of an era in imperial history in which the watchword was self-determination” (Barty-King 318). Though there is room for doubt whether Cable and Wireless actually had provided technical efficiency (and whether its control model was that best adapted to securing

efficiency in a fast changing environment), Cable and Wireless was right to make the network externality argument. The USA did stand to gain more than Cable and Wireless and once the USA was networked, there was little to prevent further descent down a slippery slope of interconnection: as Cable and Wireless argued (in underlined typescript) “The French, the Belgians, the Dutch and the Portuguese..... would also like to share in the Empire traffic..... In each case the gain to them is unilateral”^{xxiii}.

But Cable and Wireless’ argument neither recognised the post-war displacement of Britain by the USA, nor the diverging interests of the partner governments (Australia in particular) nor the network externality benefits, albeit unequally enjoyed, that interconnecting with “The French, the Belgians, the Dutch and the Portuguese” potentially afforded. Neither did it appropriately acknowledge the benefits of wireless in expanding global interconnection by establishing new routes and reducing prices. The company’s arguments were from the past rather than to the future and fittingly came from a man, Wilshaw, who, during WWII, had travelled around London in a horse drawn carriage.

The United States’ objectives at Bermuda were, as Paul Porter the FCC Chairman (who had recently replaced Fly)^{xxiv} stated in his closing address to the Conference, “to participate fully and effectively in the sphere of international communications”^{xxv}. For the UK, rates and pricing was the key concern. The leader of the UK delegation (and spokesperson for the Commonwealth), Sir Raymond Birchall, said in his opening address to the Conference that “rates is in our opinion the most fundamental of all”^{xxvi}, for him rate setting depended on network capacity and the intensity of

competition both issues bearing directly on the role and legitimacy of the direct radio circuits sought by the USA.

The core of the Bermuda Conference: The Rates and Circuits Committee.

Four separate committees were established to progress the Bermuda Conference's business, notably:

- i) rates and circuits chaired by Frederic Soward (Canada).
- ii) technical developments chaired by Major-General F.E. Stoner (USA).
- iii) Exclusive arrangements chaired by R.A. Gallop (UK).
- iv) Cables chaired by Rear-Admiral J.R. Redman (USA).

Of these, the Rates and Circuits Committee was by a long way the most important as was reflected in the duration and number of its sittings and the length of its report^{xxvii} to the final Conference plenary. Soward had been appointed Chairman of the Rates and Circuits Committee, ostensibly because Canada was “the country less directly affected by the issues”^{xxviii} but doubtless also in recognition of the outstanding competence of the Canadian delegation. Like the other Committees, Rates and Circuits reported to a Conference sitting as a Committee of the whole (also chaired by Soward) which adopted and approved the Rates and Circuits report on the closing day, 4 December 1945.

The USA argued that there should be no obstacles to new radio circuits and, further, that such circuits should be able to carry transit traffic (thus opening up competition

even further by potentially “bypassing” other, direct, routes not directly subject to competition). The UK opposed the US proposals, arguing that new routes should be authorised only where capacity constraints in the legacy infrastructure could be demonstrated and that such new routes should not handle transit traffic. The contradiction between these positions expressed a deep, fundamental, disjuncture – between a (with qualifications and exceptions) planned, hierarchically ordered and integrated system (freighted with the weight of history, habit and the Empire’s waning hegemony) and a more flexible, responsive, interconnected network of networks governed by market principles. Loosely mapped onto this contradiction were the rival claims of proponents of the “old” technology of wired, cable, circuits and those of the “new”, wireless, technology of radio circuits.

Recommending a compromise, the Rates and Circuits Committee proposed that three of the wartime radio circuits established by the USA should be discontinued but that others, notably those between the USA and Australia, India and New Zealand, be retained and that rates should fall. Further, new radio circuits between the USA and Ceylon, Greece, Hong Kong, Jamaica, Palestine, Saudi Arabia, South Africa and Singapore were permissible. But that “traffic normally handled over direct radio circuits will be restricted to traffic originating in and destined for the countries operating the radio circuits. Transit traffic may be handled over the direct circuits. where it is agreed that it would otherwise be subject to excessive delay”^{xxxix}. Whilst agreeing that rates should fall (one of the USA’s chief objectives), Commonwealth delegates argued that the cost base on which pricing decisions were made should include both cable and wireless infrastructures - thus preserving the viability of the legacy cable infrastructure^{xxx}. However, Soward reported, “at no time did the

American delegation object to the Empire preferential rates, much to our surprise^{»xxxix}. Soward's surprise is understandable given that, on November 9, the Canadian Ambassador in Washington had sent a teletype to the Secretary of State External Affairs reporting that a State Department official, Mr Radius, "obviously without the prior knowledge of Mr deWolf proposed nothing less than the British give prior assurances that the Imperial preferential rate system be abolished"^{»xxxix}.

Bermuda outcomes.

The outcome, as with any successful international negotiation was a compromise, largely worked out in the rates and Circuits Committee, salted with abundant compliments to and from the negotiating parties. The Rates and Circuits Committee dutifully testified to the "efficiency of the United States radio carriers" and, reciprocally, to the "efficiency.... likewise recognised of the world-wide cable network"^{»xxxix}. Some radio circuits were retained, the development of others endorsed, some rate reduction embraced, transit traffic permitted under certain conditions and so on. The US had opened up the system to competition and interconnection, the Commonwealth had limited the extent to which the hegemony and operating principles of the legacy imperial system was compromised.

The Bermuda Conference marked a classic incumbent versus new entrant disagreement which was to be reprised in countless analogous instances: such as MCI's entry into United States' trunk telephony; the UK's post-liberalisation transition from British Telecom's monopoly to, first, duopoly and then full liberalisation; the European Union's liberalisation package of the early C21st; and so

on. It was also a significant milestone in the process whereby, as Hills observed, the USA supplanted the UK (and its imperial partners) as the world's dominant international telecommunications provider. And Bermuda was a milestone in the process of imperial decoupling triggered by WWII and which accelerated during the 1950s and 1960s. However, the Bermuda Conference was also striking for Commonwealth/imperial solidarity for, when faced with the United States as a bargaining partner, the Commonwealth acted with almost complete unanimity.

Negotiating style and strength.

Soward wrote an informal report, dated 12 December 1945, on the conduct of the Bermuda Conference. This circulated only among Canadian officials (notably in External Affairs and Transport and was classified "Secret"^{xxxiv}). Soward stated, "The British Commonwealth countries presented a united front on almost every question"^{xxxv} although "The Commonwealth delegates, except those from the United Kingdom, did not play a conspicuous part in the Conference" not least because the "chief differences concerned the United Kingdom and the United States". Conference records generally show first the UK's response to the US and, equally generally, follow by recording the Dominions' and India's chorus of agreement with the UK. In response, for example, to the US' proposals on rates the Secretariat recorded that "Australia concurred generally in the comments of the United Kingdom"; New Zealand "Agreed with the United Kingdom comments"; South Africa "Also concurred with the United Kingdom comments"; Canada "Concurred generally in the views expressed by the United Kingdom and India"^{xxxvi}. Faced with the US "other"

the Commonwealth's internal conflicts and its members' concurrent independentist moves fell away in favour of a habitual imperial solidarity.

Doubtless the trust and mutual knowledge built up over decades of joint management of the imperial system, coupled with the hammering out of a shared negotiating position between many of the Commonwealth delegates during a shared trans-Atlantic voyage counted for much. As Soward conjectured, "It was obvious that they had worked together in London and on board ship to draft their campaign". He testified that, despite the UK delegation's initial attitude of "suspicion and condescension" and treating "the Americans as irresponsible children in telecommunications matters", by the end of the Conference US representatives had become "most impressed by the capacity and skill of the United Kingdom delegation"^{xxxvii}.

In contrast, Soward found that the US delegation "was too large, did not function effectively as a group, and had not carefully thought out its plan of operations. It was much less effective than the United Kingdom group". Indeed, though US objectives seemed clear and had been forcefully set out by Fly, there were contradictions in the American stance which the UK had earlier identified: "There is evident divergence of policy between the State Department and the F.C.C." And further, "the United States Government machinery is such as to make it extremely difficult for one body whether State Department, F.C.C., or any other to give a decision which will be accepted by all the various telecommunications interests"^{xxxviii}. Lack of full and effective co-ordination between the US delegates was notable and provided opportunities for the Commonwealth delegations. The State Department and FCC's lack of co-ordination foreshadowed what, forty years later, a Canadian

Ambassador to Washington, Allan Gotlieb^{xxxix}, saw as a structural feature of US political life: how Gotlieb asked “do we settle our differences..... with a country in which political power is so broadly diffused?”^{xl}

Bermuda consequences.

A triumphalist Press Release, dated 26 March 1946 issued by RCA Communications, followed the Conference closure. RCA claimed the Bermuda Agreement was “one of the most significant moves for the benefit of the public ever made in the field of international communications” and that the “drastic reductions” in prices were a tribute to “American methods of scientific research and technological development under private enterprise”^{xli}.

The US objectives – competition, enhanced entry of radio and wider participation “in the sphere of international communications”, as Porter stated in his closing address, were, at least in part, achieved. Despite the unanimous Commonwealth desire to protect and preserve the cable system: “All, including Canada, felt the need of protecting the operation of the Cables System against unnecessary and uneconomic competition from direct radio circuits”^{xlii}. A significant degree of liberalisation and rate reduction was set in train but entry was limited and the sunk costs of the cable infrastructure acknowledged in the rate base for pricing decisions. Both incumbents and new entrants could point to successes. Porter testified to the Commonwealth’s “substantial departure from traditions” and to having “made concessions.... to the new technology”^{xliii}. *The Economist* of 4 May 1946 estimated that the Bermuda Agreement realised benefits of £1.5m for the USA and £260,000 for British Empire

interests – just the unequal order of benefits that might be expected to accrue to entrant and incumbent when a network externality is present.

In the event, RCA's joy did not last long, and the American methods touted triumphally proved less durable than RCA hoped. American companies found it difficult to operate profitably under the new rate regime. Again, the experience of post-Bermuda liberalisation of global telegraphy foreshadowed later telecommunication liberalisations. Incumbents are able, once they treat infrastructure as sunk costs, to reduce prices whereas new entrants have to fund the build out of a new network infrastructure. Paradoxically, successful liberalisation may require relatively high prices for a period before a durable competitive regime is established. Accordingly, in 1949, at US request, the parties met again – this time to raise rates.

Bermuda renegotiated. Bermuda Revision Meeting London 8-12 August 1949.

The tensions arising from the Bermuda liberalisation were formally addressed in 1949 at a London Bermuda revision meeting held “at the request of the United States which had found that the ceiling rates agreed at Bermuda were insufficient to “bring United States carriers a fair return”^{xliv}. The combination of significant capacity increase, consequent on infrastructure building during WWII, and reduction in traffic after the war's end (forces mail, official communications, war management communications all fell away) forced a cost/revenue squeeze on US companies. These pressures were amplified both by the devaluation of several currencies, not least the pound sterling - the response of the USA to the UK's devaluation of the pound from \$4.03 to \$2.80 to the pound on 19 September 1949, shortly after the revised agreement had been signed

on the basis of a pre-devaluation exchange rate, can readily be imagined - and by a move away from the pre-war norm of pricing international telecommunication settlements in gold francs.

The Bermuda Revision Meeting further liberalised direct, country to country, radio circuits - subject to maintaining a prohibition on transit traffic (ie no “by-passing”) - and recognised that “the trans-Atlantic cables form an integral part of a world telecommunication system” and that “uniform procedures and techniques” were required for their successful operation^{xlv}. Parties agreed that establishing new circuits was a matter for the two governments concerned and revised telegraph rates upwards, (standard ceiling rates rose from 30 cents to 40 cents a word and rates for coded and press telegrams also rose). Finally, the parties committed themselves to mutual consultation on all matters governed by the terms of the agreement – rather as the imperial/Commonwealth partners had been doing for the preceding twenty years^{xlvi}.

Conclusion.

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Despite later price rises, the Bermuda Agreement triggered a general reduction of global rates as other countries, exchanging traffic with parties to the Agreement, secured comparable terms. Moreover, transit rates, which strictly should not have benefitted from the reduced rates for traffic carried over direct, country-to-country, circuits, also fell in response to novel arbitrage and routing possibilities. Bermuda was a transitional, fulcrum, moment – an ordered, rule governed and more or less monopolistic system changed into a less ruly interconnected network of networks

with more possibilities for arbitrage, more anomalies and more incentive for operators to price competitively and for governments and firms to act opportunistically^{xlvi}.

Post-Bermuda, co-ordination of the Commonwealth system became more complicated, involving more and more consultation and exchanges of paper between the (growing number) of parties (as the contents of contemporaneous files show).

What had been facilitatory co-ordinating arrangements became ever more cumbersome and costly. Why should, for example, Canada be consulted, and have to decide, on the pricing of telegraph traffic between Australia and Dutch Timor? Why, when Canada had no forces occupying Japan, did it have to consult on rates for forces telegrams^{xlvi} to and from Japan? Why did the USA have to notify Canada (and Canada respond) of changes to RCA's rates between Sweden and Guam? Why consult Canada on a direct wireless link between India and Egypt? All this, and more, faced the growing number of partners in the Commonwealth system. The answer to these questions was, of course, an institutional and historical one:

By the mid 1950s the merits of the "networked" non-hierarchical, consultative, imperial/Commonwealth system of governance of the Commonwealth system had become outweighed by the disadvantages of the grotesque amounts of work required to make the legacy consultative system work. Masses of paper circulated noting changes of rates, asking which compound words should be permitted (is "hindquarterofbeef" acceptable as a single word?), how should pricing anomalies be resolved? What should be done about accounting when exchange rates were changing? The growing costs of co-ordination, as well as the entry of the US carriers into what had formerly been a *chasse prive* for the imperial insiders, led to the gradual

falling away of the imperial habits, a growing bilateralism in the management of infrastructure and pricing, a supplanting of networked by market relationships and an increasingly *ad hoc* set of alliances and consortia collaborating case by case in building out a global telecommunications infrastructure^{xlix}.

The Bermuda Agreement marked the first big wave of change - showing that the new, de-centralised, interconnected and networked, global telecommunications system characterised by ever increasing capacity might more efficiently and economically be governed through markets and prices. This transition was halting, uneven, marked by two-steps-forward-one step-back changes and was never total or complete but, henceforth, co-ordination of global telecommunications was increasingly effected through government to government¹, firm to firm relationships with (generally falling) prices set through market competition rather than administrative decree.

This process has, in retrospect, an inevitability about it. The suppression of demand, braking of technological innovation, incentivisation of excessive capital expenditure by the incumbent and over-centralisation of governance which characterised the imperial system seem, more than 60 years on, hard to credit. No wonder both external forces, of which the USA was emblematic, and internal forces, embodied by Australia, eventually subjected the legacy system to pressures it could not accommodate. But the process whereby imperial hegemony in telecommunications, embodied in the single system Cable and Wireless oligopoly, gave way to a more pluralised, more competitive, more innovative, less centralised, interconnected network of networks - governed neither hierarchically (as a focus on the autocratic internal governance of Cable and Wireless centred on a sulky abstaining Wilshaw

suggests) nor co-operatively, through the (tight and white) imperial family, in the modern governance jargon, networked governance - but increasingly through markets is not well explained by the established heuristic model of a successful neo-mercantilist coup (see Hills 2002). Power in global telecommunications certainly shifted from the British Empire to the US superpower but it did so incompletely as a consequence of shifts in both macro and micro global governance paradigms. In macrocosm from imperialism to a combination of bi-lateralism and globalisation and in microcosm from the networked, imperial “family” governance of the ICAC, CCC and CTB to market governance embodied in prices and contracts. The Bermuda Agreement saw the first formal expression of this transition – it was thus a fulcrum moment in the evolution of global communications and in the unravelling of the ties of empire.

ⁱ Closing statement at Bermuda Conference by Sir Raymond Birchall, Chair UK Delegation, Annex G to Minutes of 2nd and Final Meeting of the Conference. National Archives of Canada, Ottawa hereafter NAC. BTC (45) in RG97 114. 4000-14-8 pt 1.

ⁱⁱ Cable and Wireless was formed in 1929 through the merger of the Eastern Telegraph company (and associated companies) and the Marconi company into two companies: a holding (investment) company known as Cables and Wireless Ltd and an operating company known as Imperial and International Communications (the latter came to be known as Cable and Wireless in 1934). See Barty-King 1979.

ⁱⁱⁱ In 1968, the CTB was replaced by the Commonwealth Telecommunications Organisation which included the Commonwealth Telecommunications Council.

^{iv} Sir Robert Menzies (1894-1978) was Prime Minister of Australia from 1939-41 and from 1949-66.

^v The first transatlantic telephone call was made in 1926 but international telephony grew very slowly until the 1950s and 1960s. In Australia, for example, it was only in the 1950s that growth in international telephony revenues began to outpace growth in telegraphy revenues (see OTC 1958: 3).

^{vi} This was not a trivial consideration. For example, in 1951 Australia’s Overseas Telecommunications Commission reported that “during some periods of the 1950-51 summer.... ionospheric disturbances, combined with serious interruptions in different sections of the United Kingdom-Australia cable.... gave rise to much difficulty” (Commonwealth of Australia 1951: 5).

^{vii} From 1943 until 1946, Frederic Hubert Soward was Special Assistant in the Department of External Affairs and became Acting Chairman of the Interdepartmental Committee on Telecommunications Policy. After leaving public service he became Professor of History at the University of British Columbia. He was the author of “Canada’s Growth in External Status” published (p 74-79) in the Canada Year Book 1945 (Soward 1945). Here, Soward presented an account of Canada’s progress to the status as a “‘middle’ power” bearing “increased responsibility” and enjoying a status “a far cry from [that signified by] the appointment of a High Commissioner in London more than 60 years ago” (Soward 79). Soward rooted his claim for full Canadian sovereignty in the blood sacrifice of “Canadian troops [who] bought with their blood on European battlefields the title deeds to Canadian nationhood” (Soward 75).

^{viii} At a dinner in his honour given by the National Lawyers Guild on November 19 1944. Senator Green of Rhode Island placed Fly’s speech in the Congressional Record on November 22 1944.

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- ^{ix} NAC. Cited in note from Lester Pearson, at the Canadian Embassy in Washington, to Canada's Secretary of State for External Affairs 29 May 1944. Department of Transport file 4000-14 at RG12 2367, 702-5.
- ^x Cable and Wireless Archive Porthcurno, hereafter CW. CW. DOC/CW/1/209. A five page verbatim extract from Fly's speech, accompanied by a fourteen page Cable and Wireless critique and rebuttal, was circulated to the Cable and Wireless Court of Directors' meeting on 29 February 1944.
- ^{xi} Mackay Radio, a subsidiary of the American Cable and Radio company, was ultimately controlled by ITT (International Telephone and Telegraph) the majority shareholder in American Cable and Radio.
- ^{xii} John Gilbert Winant.
- ^{xiii} NAC. Winant to Eden 29 August 1944 in Department of Transport file 4000-14 at RG12 2367, 702-5.
- ^{xiv} NAC. Hull to Winant 12 October 1944. Department of Transport file 4000-14 at RG12 2367, 702-5.
- ^{xv} NAC. Report of second session of the first meeting of the Commonwealth Communications Council in London 3 April 1944 to 23 May 1944 by Rush and Laurie dated 6 June 44. Department of Transport file 4000-14 at RG12 2367, 702-5.
- ^{xvi} Attlee was to become Lord President of the Council, effectively Deputy Prime Minister on 24 September 1943, less than two weeks after his note to Wilshaw and became UK Prime Minister on 26 July 1945.
- ^{xvii} CW. Attlee to Wilshaw 15 September 1943. DOC/CW/1/473.
- ^{xviii} NAC. Cole to Wellingham 16 August 1944. Department of Transport file 4000-14 at RG12 2367, 702-5.
- ^{xix} Among UK policymakers, only Lord Beaverbrook opposed nationalisation when it was considered at a UK Cabinet meeting in November 1944 – ie before the Labour government took office in 1945 UK National Archives, Kew hereafter NA. WP.44. 657. 2 ii of 16 November 1944 at Cab 66/58/7). Indeed, the UK National Archives states that nationalisation was “uncontroversial” see <http://www.nationalarchives.gov.uk/cabinetpapers/themes/bank-coal-aviation-telecommunications.htm>
- ^{xx} NAC. see page 7 of CTC paper (45) 8 dated 18 July 1945 in file RG25 377 1.
- ^{xxi} CW. DOC/CW/1/209 and DOC/CW/1/210. *Papers submitted to Court Meetings 1944.*
- ^{xxii} It is not clear whether the estimates referred to revenues foregone, reductions in revenues or actual losses.
- ^{xxiii} NAC. CTC paper (45) 8 p 7 dated 18 July 1945 in file RG25 377 1.
- ^{xxiv} Described by Soward as the US “spokesman on every occasion whether public or private”. 12 December 1945. NAC Department of External Affairs file 8085-40C pt 1. RG25 3784.
- ^{xxv} Institute of Commonwealth Studies Archive. Held at Senate House University of London hereafter ICS 118/2/1/3. B.T.C. (45) Minutes of the 2nd and final meeting. Annex A p 1.
- ^{xxvi} ICS 118/2/1/3. B.T.C. 45 Minutes of the Opening Meeting Annex A p 3.
- ^{xxvii} A measure of this is the length of each committee's report: the Rates and Circuits Committee's was thirty seven pages (and eight pages of introduction) long – this despite the resolution, recorded in the Minutes p 2, that “documentation should be kept as low as possible”. Whereas the Exclusive Arrangements Committee required only a single page; the Technical Developments Committee seven pages and the Cables Committee a page and half. Moreover, the Conference timetable provided five sessions for the Rates and Circuits Committee whereas each of the other Committees had only one session. Timetabling permitted all delegates to attend all meetings of all Committees (except the single instance of concurrent timetabling of the Technical and Exclusive Arrangements Committees) see ICS 118 2/1/3 Annex to a Note of a Preliminary Meeting of Heads of Delegations of the Bermuda Telecommunications Conference 1945.
- ^{xxviii} NAC. Memorandum to the Deputy Minister. Report of the Canadian Delegation concerning progress of the Bermuda Conference. 3 December 1945 signed by G C W Browne, Assistant Controller of Radio Canadian Department of Transport. RG97 114. 4000-14-8 pt 1.
- ^{xxix} ICS 118/2/1/2. B.T.C. (45) 1 Report of the Rates and Circuits Committee p 9.
- ^{xxx} Ibid.
- ^{xxxi} NAC. Department of External Affairs file 8085-40C pt 1. RG25 3784.
- ^{xxxii} NAC Department of External Affairs file 8085-400 pt 1 RG25 3784. WA 5720.
- ^{xxxiii} ICS 118/2/1/4. p 2.
- ^{xxxiv} NAC Department of External Affairs file 8085-40C pt 1. RG25 3784. The initial classification was “Confidential” (in original typescript and overwritten in manuscript “Secret”).
- ^{xxxv} The rule proving exception identified by Soward was Canada's and the UK's more liberal attitude, than India's, South Africa's and the British Colonies' (he did not identify Australia's and New Zealand's), towards “multiple press radio communications”.

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- ^{xxxvi} ICS 118/2/1/4. Minutes of the 2nd meeting of the Rates and Circuits Committee: 7-8).
- ^{xxxvii} NAC. Department of External Affairs file 8085-40C pt 1. RG25 3784.
- ^{xxxviii} ICS 118/2/1/1. Proceedings of the Commonwealth Telecommunications Conference 1945 p 45-46.
- ^{xxxix} Gotlieb was Canada's Ambassador to the United States from 1981 to 1989. He also served as Canada's senior official in both the Department of External Affairs and the Department of Communications.
- ^{xl} Gotlieb 1991: viii.
- ^{xli} NAC. Department of Transport file RG12 v 2367 702-5. January 1942-October 1946 renumbered 4000-14.
- ^{xlii} NAC. Soward 12 December 1945. Department of External Affairs file 8085-40C pt 1. RG25 3784.
- ^{xliii} ICS 118/2/1/3. B.T.C. (45) Minutes of the 2nd and final meeting. Annex A p 1.
- ^{xliv} NAC. Department of State Press Release N 524 of 2 July 1952 in Department of External Affairs file 8085-400 pt 2 RG25 3784.
- ^{xlv} *Commonwealth – United States Governments Telecommunications Meeting (London, 1949) Final Act and Text of Agreement*. Cmd.7810. (London. HMSO. 1949) Article IV. Section 13.
- ^{xlvi} ICS 118 2/1/5. Final Act of the United States-Commonwealth Telecommunications Meeting, London, 1949.
- ^{xlvii} India, for example, established a second direct radio circuit (operated by Mackay Radio) outside the Commonwealth system provoking the comment (Bowie to Browne 19 December 1951) by Bowie (President and General Manager COTC) that India's action undermined "one of the foundations on which the relations between Partner Governments in the C.T.B. have been built". NAC. Department of Transport file RG12 v 2367 702-13. April 1951-December 31 1951. renumbered 4000-14.
- ^{xlviii} "Troops Traffic".
- ^{xlix} For example, the UK partnered with the USA and Canada in building the Trans Atlantic Telephone cable (TAT-1) in 1956, with Canada on the CANTAT in 1961, with Australia, Malaysia, on SEACOM in 1967, COMPAC with Australia, Canada and New Zealand in 1963 and so on.
- ¹ NAC. Tudhope to Browne 27 April 1951. Department of Transport file RG12 v 2367 702-13. April 1951-December 31 1951 renumbered 4000-14. Note refers to discussions in the CTB concerning revision of the Bermuda Agreement during which "the South African Member of the Board has submitted that the only solution..... would be through bilateral agreements between the Commonwealth countries and the U.S.A." and that this view commanded the general support of the Board.

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