The Underwater Revolution: How submarine telegraph cables changed the course of globalisation

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On 1st August 1866, the Aberdeen Journal proclaimed that "one of the greatest works of the present age has just been completed" (Anonymous, cited in Müller, 2016, p. 507). The newspaper was of course writing of the transatlantic telegraph cable which had just been laid across over two thousand miles of ocean. This was not the first cable, as another had been laid in 1858, but the connection had been broken relatively quickly, and so the 1866 cable was its successor. More durable and permanent, the cable instantly revolutionised world trade, and thus marked the beginning of globalisation as we know it today. Subsequent submarine cables were laid from Great Britain to far-flung corners of the world. The Anglo-Indian cable was completed in 1870[1], reducing the time taken for the average message to be sent from London to Calcutta from approximately six days down to just six hours, reducing further still to one or two hours by the end of the century (Headrick, 2010). Cables were connected to Australia, South Africa, and Asia, and all reaches of the world could be contacted from anywhere in the world within a matter of hours. A new age of communication was dawning, and globalisation would soon follow in its footsteps. This essay will analyse how the submarine telegraph cable contributed to globalisation and the world of communication as we know it today, and shall address the question: did the world change because of it? Great Britain dominated cable networks at this time, so it follows that most communication was for the benefit of the British Empire. Therefore it is not coincidental that there is a particular focus on this, as the Empire became inextricably linked with submarine telegraphy.

Most sources agree that the submarine cable had four main usages: Governance and Diplomacy; Trade and Finance; Military Strategy; and the Press and News agencies[2]. Consequently, each of these areas was impacted by the submarine telegraph cable.

International governance at this time was particularly pertinent to the British Empire. The Empire "on which the sun never sets" (Anonymous, no date) required significant intervention from the British Government, and the telegraph enabled this in a way never before seen. By 1892, Great Britain (or British companies) owned 66% of all telegraph cables worldwide (Griset & Headrick, 2001), allowing her to remain connected to all areas of the world. India, being the jewel in the crown of the Empire, was central to this. The British Raj, having succeeded the governance of the East India Company after its nationalisation, was governed on three levels: The Imperial Government; based in London; the Central Government in Calcutta; and the Provincial Governments (Moore, 2001). Prior to 1870, whilst communication was frequent between Calcutta and the provinces, there was no efficient method for a message to travel from the Imperial government to the Central government, and so

[1] The Suez Canal was opened in 1869, allowing the cable to be fully submerged throughout its route.
[2] Such limited usage is due to the expense of the telegraph. A message sent through the transatlantic cable of 1866 would cost £20 (approx. £1800 today), with a minimum word count of 20 words (Müller, 2016). This was simply too expensive for the general public to afford.

power was concentrated within the subcontinent, much to the chagrin of politicians in London. The East India Company poorly managed the Indian Rebellion of 1857, and this was due largely to a lack of communication between offices in London and India (ibid.). News of the rebellion reached London forty days after the event, a significant delay. (Headrick, 2010). This delay would of course soon be effectively removed by submarine telegraphy, and it was therefore seen as imperative to effective governance in the British Raj. The 1870 cable allowed a direct connection between all three levels of government in the subcontinent, and British rule was strengthened significantly. A quick adaptation to the submarine telegraph system was vital for the continuation of effective imperial control over India, and this task was undertaken with great haste. No sooner than the cable had been laid in 1870, the first messages were travelling through it, concerned with issues of a primarily political nature. From the example of India alone, it is clear that submarine cables were embraced by the British Empire. This does not, however, mean that the Empire profited from them in the long term. The telegraph eventually led to the spread of anti-imperial sentiment throughout the Empire and played a significant role in its downfall in the mid-20th century[3] (Headrick, 2010). For the British Empire, submarine telegraph cables were, as Headrick (2010, p. 51) aptly puts it, "A Double-Edged Sword", but the Empire's communications certainly played a key role in globalisation.

The use of the submarine cable in governance was not, however, limited solely to the British Empire. Two similar scenarios occurred in 1848 and 1870. In both situations, Paris was the centre of chaos and political disturbance. In the first instance, Richard Rush, the United States (US) ambassador to France, sent a letter to the US secretary of state, James Buchanan, expressing his concerns. He subsequently took controversial action in recognising the four-day old provisional government, who had taken power after Louis XVIII was dethroned. A minister recognising a provisional government was a direct contravention of International Law. Rush had sullied his, and by extension the US government's reputation. As Nickles (1999) highlights, whilst eventually the US administration supported Rush's decision, had they not his autonomy may have proven detrimental to the US government in that they would have appeared to be indecisive. Several years later in 1870, Elihu Washburne was now the US ambassador to France, was placed in the same position as Rush. After the surrender of Napoleon III in the Franco-Prussian war, a new French Republic was declared. Washburne recognised this government three days after the announcement of the regime, drawing almost a perfect parallel with the situation in 1848. However, with the 1866 transatlantic telegraph cable Washburne had been officially permitted to recognise the government, (ibid.). This ensured that the reputation of both Washburne nor the US government could be upheld and allowed for decisive action. Submarine cables were vital to effective diplomacy and revolutionised the approach to this.

In addition to Governance and Diplomacy, the submarine telegraph system would also prove to dramatically alter the world of finance. The 1866 transatlantic cable connected Wall Street in New York to the rest of the world, and market information could be transmitted within a day, where once it would have taken weeks. In fact this held true for all of the major financial centres worldwide and hence financial globalisation had begun. This was noted by Kieve (1973, p. 55), who stated that "the cables were laid along principal trade routes", which was much to the benefit of merchants. With the new system, the accuracy of demand and supply forecasting was overwhelmingly improved, with

[3] Mahatma Gandhi was very conscious of the impact of the telegraph and used it frequently when campaigning for Indian independence. The telegraph made Indian nationalism possible and dissolved the divides between cultures within the country (Headrick, 2010).

merchants now able to predict the amount to pay their supplier, depending on the supply sent from Great Britain. Suddenly, information became much more symmetric, and as a result the market became more competitive. An excellent example of this was the cotton market, a lucrative and important commodity, often traded between Great Britain and the United States of America (USA). Figure 1 shows how the price of cotton stabilised in 1866-1867 as a direct result of the transatlantic telegraph system. This not only demonstrates how competition increased, but also how much fairer the markets became. It was no longer possible to charge extortionate prices for goods, as the consumer was now able to be well informed. Not only did the telegraph increase the efficiency of the financial market, it also increased the efficiency of cargo transport throughout the world. Those who owned shipping companies owed much to the telegraph, as it enabled their ship's routes to be demand-driven, contacting ships in port via the telegraph and communicating their next destination. Steamships were built and maintained at great expense, and therefore to remain profitable they needed to travel using the most efficient routes and to the most lucrative destinations, loaded with the maximum amount of cargo possible (Scholl, 1998). As highlighted by Lew and Cater (2006), the shipping industry entirely changed its method of operation as a result of the new technology, sending ships out for longer periods of time, thus increasing the profit made. Submarine cables became essential to the efficient and profitable operation of global trade and financial markets, and entirely changed the way that they worked. The link between a rise in the usage of submarine cables and a rise in trade is evident in Figure 2, which demonstrates the correlation between the two. Along with the steamship and the railroad, submarine telegraph cables catalysed financial globalisation.

Figure 1: Price difference of US cotton between New York and Liverpool, before and after the telegraph (Viera, 2018)

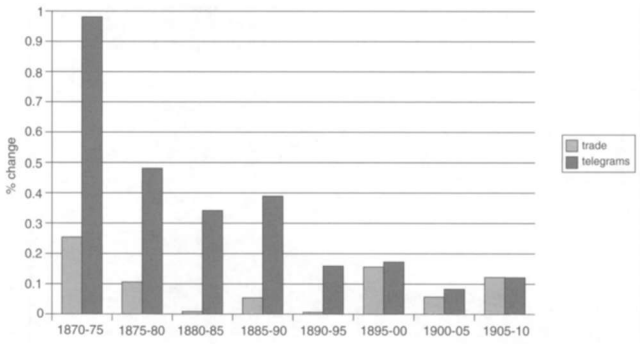

Figure 2: Growth of Telegraph usage and trade, 1870-1910 (Lew & Cater, 2006)

The submarine telegraph cable also had a notable impact on military strategy and coordination. For those engaged in conflict, submarine cables rapidly became almost a necessity. Land cables were susceptible to being sabotaged and messages were liable to being intercepted. In time of war, secret and effective communication of information is invaluable. Submarine cables could now to relay a message efficiently and without risk of foreign espionage (Kennedy, 1971). Indeed, the Colonial Defence Committee proposed "an efficient and secure network of submarine cable communications…linking every part of the Empire without touching foreign soil" (Burroughs, 1999, p. 336). As with reference to diplomacy, the majority of usage was by Great Britain in the defence of her Empire. Military coordination could be undertaken with ease, and the British fleet could be managed more effectively and discreetly than ever before. This is supported by the Colonial Defence Committee statement that "The maintenance of submarine cable communications throughout the

world in time of war is of the highest importance to the strategic and commercial interests of every portion of the British Empire" (Colonial Defence Committee memorandum, 1910, cited in Kennedy, 1971, p. 729). Following the end of the Indian Rebellion (also known as the Sepoy Mutiny) in 1856, the telegraph network (albeit over land and significantly slower than its successors) was able to relay a message that reserve regiments were no longer needed. Embarkation was halted, and the British government saved over £50,000 (equivalent to approx. £4 million today) (Kennedy, 1971). In addition to this, the use of submarine cables also took a significant amount of individual responsibility from the Commanding Officer or General, allowing wars and battles to be strategically planned and directed from a central command centre, far away from the conflict. This revolutionised how future wars would be fought by all global powers, especially the First World War, which heavily relied on submarine telegraphy (although radio telegraphy was beginning to take over at this point (Griset & Headrick, 2001, p. 567)).

Another major customer of cable companies were news agencies. Julius Reuter, the founder of Reuters News Agency, laid a cable from Great Britain to Germany in 1866, and subsequently sponsored and invested in a cable from France to the USA in 1869 (Griset & Headrick, 2001). He then established offices in Australia, Calcutta, Singapore, and other major cities around the world, utilising the high-speed cable network to further develop what was certainly one of the first global news network[4]. He had notable success in India, in which Reuters employed one in four correspondents (Headrick, 2010), and the 1870 Anglo-Indian cable was undoubtably key to this success. Reuters, along with the Associated Press, Havas, Wolff-Continental, and other news agencies, took great advantage of submarine cables. Although telegrams were very costly to send, global news agencies were still able to make significant profit. National newspapers such as *The Times* and the *New York Herald* were ground-breaking in subscribing to a service provided by global agencies that ensured effective news transmission across the ocean. As Bakker (2007) explains, transmitting news faster than competitors proved incredibly lucrative for these news agencies. This is demonstrated by the fact that the *New York Herald* offered $500 ($11,200) for every hour that European news arrived in advance of its competitors (ibid.). The spread of news was a major part of globalisation, and it is clear that submarine telegraphy heralded a new age for the press.

Taken collectively, the four main uses of submarine cables that have been presented made remarkable contributions to the rise of the interconnected world. It is of significant note that the information available through the communications network remained much the same after the introduction of the telegraph. Submarine telegraphy's primary boon was to make the world more efficient in the transfer of information. This is central to the analysis of the debate over whether the world actually changed as a result of submarine telegraphy. In order to resolve said debate, we must also realise that the telegraph system was no "Victorian Internet", as Standage puts it (1998). In a letter to the editor of *The Times* in 1909, MP for Canterbury John Henniker-Heaton wrote that, even if a 50% reduction in tariffs of submarine telegraphy to Australia were implemented, "the relief to the princely merchant would be very great, but social or family messages would be beyond the means of 99% of the population". It was simply not feasible for anyone aside from corporations and extremely wealthy individuals to use the submarine telegraph network. It is now possible to address the question of whether the world *really* changed as a result of the submarine cable. While the implementation of the submarine telegraph cable did revolutionise globalisation and its spread, but these effects were not

[4] Havas was the first, founded in 1832; Reuters was established in 1851 (Bakker, 2007, p. 7)

experienced by the vast majority of the world population until well into the 20th century. The lack of accessibility to the global telegraph system is a major weakness, and is an important reason why, despite having begun the process of globalisation, it quickly faded into obscurity in favour of inexpensive, more widely used methods of communication. Kieve states that "the period when the telegraph was in widespread use was brief. It declined rapidly when the telephone became available, especially after 1911" (1973, p. 236), and by 1913, there were already ten times the amount of telephone calls than telegrams sent annually (Mitchell, *British Historical Statistics*, 1988, cited in Hamill, 2010). Despite their brevity of use, the literature strongly suggests that the transatlantic cable of 1866, the Anglo-Indian cable of 1870, and their many successors all played an indispensable role in the building of an interconnected global society.

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