1 Introduction

1.1 An address in global space

On Monday 9 October 1933, the London firm Agile (Electrodes) Limited submitted a memorandum of complaint to the General Post Office (GPO). Over the weekend, two telegrams dispatched in Berlin and addressed to the overseas telegraphic address Agile London had been received at the company's office. Alas, both telegrams had not been intended for Agile (Electrodes) Limited but for another London firm which happened to be a direct competitor. This raised suspicion with the managing director, Mr Simonis, and he wrote to the Postmaster:

> Over the weekend the enclosed two telegrams have arrived here, which are not in our opinion intended for us. We are not aware that any other telegraphic address Agile exists, for we applied for such several years ago and could not get it. On the other hand, the word 'Agile' is our registered trade mark and that being so we do not think that anybody else can be allowed to use the word for any purpose whatsoever. We shall be glad if you will make an investigation into the position forthwith and let us know what the explanation of the instance is. We may add that on the only other occasions that telegrams addressed Agile have reached us, they have been properly intended for us.[1]

Indeed, in an internal communication the controller at the Central Telegraph Office revealed that the two telegrams 'were erroneously sent for trial to that firm [i.e. Agile (Electrodes) Limited], owing to the fact, that through an unfortunate oversight the registration "AGILE" had not been recorded at all the necessary circulation points in the Central Hall at this Office'.[2] This means that at one of the relay points, through which the

[1] British Telecom Archives, POST 33/2000, 'Registered Telegraphic Addresses. Firms with Similar Names or Businesses, etc. Memorandum Agile (Electrodes) Limited to General Post Office', 9 October 1933.
[2] British Telecom Archives, POST 33/2000, 'Registered Telegraphic Addresses. Firms with Similar Names or Businesses, etc. Letter from the Controller Central Telegraph Office to the Secretary General Post Office', 17 November 1933.

telegrams from Berlin had to go, the overseas telegraphic address in question had not been registered and linked with the postal address of the actual addressee, A. Arc Limited. Following the principle of trial and error, the messages had then been directed to Agile (Electrodes) Limited as the telegraphic address and the company name matched perfectly. Replying to their enquiries, the General Post Office had to reveal to Agile (Electrodes) Limited that the address Agile London had in the meantime been granted to another company. With obvious indignation, Mr Simonis replied,

> We believe that in reply to our memo of the 9th October you informed us that some firm in Barnes used the word 'Agile' as telegraphic address. Will you please answer our letter in writing and give us correct information on the subject? The writer understands from the telephone conversation that you are aware of the fact that we originally applied for 'Agile' as our telegraphic address and that it is an ordinary English word, but that the regulations have been eased, of which we have not been aware. If, indeed, it were possible with a competitive firm to use our Trade Mark as their telegraphic address, it would be a very serious matter to us against which we would have to strongly protest.[3]

In fact, so serious a matter was it for Mr Simonis that, when he did not receive immediate clarification from the General Post Office, he sent only a few days later another no less indignant memo, stating that 'we shall be obliged by your reply by return as this matter is of some importance to us'.[4] The matter now being investigated in some more detail, an intricate situation unfolded. Although they could not find any papers on the subject, the General Post Office conceded that Agile (Electrodes) Limited had, indeed, applied for the telegraphic address Agile at an earlier date. The address, however, had been refused on the grounds that it was too similar to the already existing address Facile. The required difference of three letters was not fulfilled. These regulations were later changed to the effect that a difference of only two letters sufficed for addresses of up to eight letters. Under these new conditions, the competitor A. Arc Limited had successfully applied for Agile London – and to add to the confusion, Agile had not been a registered trademark at that point in time. What to do? Everyone's claims somehow seemed understandable and justified. Owing to the hard fact of the trademark registration by Agile (Electrodes) Limited, it was eventually decided to withdraw the telegraphic address

[3] British Telecom Archives, POST 33/2000, 'Registered Telegraphic Addresses. Firms with Similar Names or Businesses, etc. Memorandum Agile (Electrodes) Limited to General Post Office', 8 November 1933.
[4] British Telecom Archives, POST 33/2000, 'Registered Telegraphic Addresses. Firms with Similar Names or Businesses, etc. Memorandum Agile (Electrodes) Limited to General Post Office', 17 November 1933.

Agile London from A. Arc Limited, and the controller at the Central Telegraph Office sent the respective letter to the firm on 8 December 1933.[5] Unsurprisingly, this led to some consternation on the part of Arc's managing director, Mr Neumann. His request to 'reconsider this matter', however, yielded no fruit.[6] Bitterly accepting the withdrawal of the telegraphic address, the other director of A. Arc Limited, E. W. H. Fairbairn, wrote to the Central Telegraph Office on 22 December 1933:

> We however, make this request, that this address is not registered by any other firm for foreign telegrams, particularly as we have already explained that this is our trade-mark throughout the world with the exception of the United Kingdom. In the meantime, as you will understand that it is necessary for us to register an address, we suggest that the word 'Agile' should be transformed and that this address should read 'ELIGA' instead of 'Agile'.[7]

The General Post Office complied in both cases. A. Arc Limited was assigned the address Eliga – simply the anagram of Agile and, therefore, still carrying old associations – and Agile (Electrodes) Limited was refused the address Agile, London on the grounds that outside the United Kingdom this was the trademark of A. Arc Limited. However, the General Post Office was not immediately able to close the file. Among other things, Agile (Electrodes) Limited filed a complaint against the continued use by A. Arc Limited of the old telegraphic address on their stationery and tried again (and were again refused) to register the old address for themselves. The matter was finally resolved when Mr Simonis 'purposely sent a telegram from Copenhagen addressed "Agile London" and this was duly returned as insufficiently addressed, proving to our satisfaction that the address "Agile London" has now been cancelled'.[8] Grudgingly, Agile (Electrodes) Limited finally accepted the GPO's decision, stating, 'We are unable to follow [the GPO's] argument ... However, we have been looking for a satisfactory alternative ... and make application for the registration of our telegraphic address [of] the

[5] British Telecom Archives, POST 33/2000, 'Registered Telegraphic Addresses. Firms with Similar Names or Businesses, etc. Letter from Controller Central Telegraph Office to A. Arc Limited', 8 December 1933.
[6] British Telecom Archives, POST 33/2000, 'Registered Telegraphic Addresses. Firms with Similar Names or Businesses, etc. Letter from A. Arc Limited to Controller Central Telegraph Office', 12 December 1933.
[7] British Telecom Archives, POST 33/2000, 'Registered Telegraphic Addresses. Firms with Similar Names or Businesses, etc. Letter from A. Arc Limited to Controller Central Telegraph Office', 22 December 1933.
[8] British Telecom Archives, POST 33/2000, 'Registered Telegraphic Addresses. Firms with Similar Names or Businesses, etc. Letter from Agile (Electrodes) Limited to the Telegraph & Telephone Department General Post Office', 13 September 1934.

word "Agilerods" or alternatively "Agiletrode".'[9] The latter address was eventually assigned to the firm and the file was closed.

From the middle of the nineteenth century, a global telegraph network had come into existence that linked places and people all over the world via an elaborate system of cables, wires and relay stations. The dispute over Agile London and the many similar cases archived by the General Post Office illustrate how important it was for internationally operating businesses to be visible and reachable in the global telecommunication network. Although the cases that survive in the archives usually date from the 1930s, it can safely be assumed that businessmen in preceding decades shared similar notions as to the recognizability of their telegraphic addresses. After all, it was this very combination of letters that rendered their businesses reachable by telegraph from all over the world, and therefore reserved them a permanent and easy-to-remember place in the global communication network. Securing the company name as one's telegraphic address avoided such confusion as in the example above. Correspondence could simply be addressed to the company name. But more than that: matching telegraphic addresses were symbols of status. Due to the strict regulations guarding the assignment of addresses, which were meant to secure accurate delivery in case of a faulty transmission, boasting the company's name as telegraphic address implicitly signified that the bearer had been internationally active for a long time and had applied for the address early on. Carrying the fitting telegraphic tag was, therefore, a matter of appearance, status and pride just as much as it secured easy recognition. This was the motivation behind Agile (Electrode) Limited's complaint against A. Arc Limited's still carrying the old address on their stationery.

Interestingly, the emergence of the World Wide Web in the early 1990s and its rise to importance for businesses later in that decade led to very similar conflicts. A good number of companies had been a little too slow in realizing the potential of the Internet for both self-representation and customer contact and had not registered a suitable second-level domain in time,[10] while other entrepreneurs – who had been quicker on the uptake – had secured many internationally recognized brands as domain names and now wanted to capitalize on this by selling these domains to the

[9] British Telecom Archives, POST 33/2000, 'Registered Telegraphic Addresses. Firms with Similar Names or Businesses, etc. Letter from Agile (Electrodes) Limited to the Telegraph & Telephone Department General Post Office', 5 October 1934.

[10] In what is colloquially called an Internet address, a second-level domain is usually the part between the two dots. For example, in www.companyname.com, 'companyname' is the second-level domain.

respective companies and brand-name holders. So widespread was this practice and so pronounced was the interest of the companies to hold suitable domains – or, more colloquially, Internet addresses – that many cases have been taken to court. Trademark, name and competition law all apply in such disputes over domain names and safeguard established companies or individuals against the registration of their names or trademarks by third parties. While, with the help of World Wide Web search engines, it makes little practical difference whether a company's website can be found at www.companyname.com or at some variation of the name, it remains a question of status to own the one perfectly fitting second-level domain name. In short, practicability and recognizability have long ceased to be the principal considerations in selecting a call sign in global telecommunication space. So important has this space become since the late nineteenth century that the status of the placeholder reflects the status of its owner. There is no better signifier for the transformative impact of telecommunication technology – in our case, of telegraphy – on processes of globalization.

1.2 Functions and structures

Globalization thrives on the expansion of global trade and migration and, therefore, on the increasing global movement of goods and people. The effortless movement of information and knowledge, however, might have grown even more important as the example of domain names suggests. The emergence of the Internet as a near-universal telecommunication medium has become a prime symbol of globalization and has pushed forward the global division of labour with hitherto unprecedented force. It has done so by connecting computers across the globe and, thereby, allowing for the exchange of all sorts of digitized information, most of which had previously been transferred via material carriers. While the Internet is not the first telecommunication technology to detach long-distance information flows from the physical movement of a carrier medium, it has pushed such dematerialized information exchange to new extents. This is primarily due to the fact that almost every piece of information can now be digitized (or at least digitally represented) and transmitted via the Internet, with considerations of data volume becoming less and less an issue. Global communication space has thus been transformed in such an incisive way that entirely new spaces anticipated by early observers – such as *cyberspace*,[11] *virtual space*

[11] The term was first introduced by author William Gibson in his science fiction novel *Neuromancer*, published in 1984. William Gibson, *Neuromancer* (New York: Ace, 1984).

or the *space of flows*[12] – have in the meantime actually come into existence in one way or another. The social, economic and cultural impact of these new spaces has been so pronounced (at least in the well-connected regions of the world) that in the eyes of many a prominent researcher they have given rise to a new form of social organization – the so-called information society.

Manuel Castells, who coined the term 'information society' in the closing years of the last millennium,[13] emphasizes the uniqueness of the information revolution that has allegedly transformed many (mostly Western) societies since the 1970s. He argues that three initially unrelated developments – 'the crisis and restructuring of industrialism . . .; the freedom-oriented, cultural social movements of the late 1960s and early 1970s; and the revolution in information and communication technologies'[14] – had to coincide and combine forces in order to allow for an information revolution to unfold. To Castells, this is an unprecedented development. But he concedes that there have been historical precursors when he states that the ability

> of networks to introduce new actors and new contents in the process of social organization, with relative independence of the power centers, increased over time with technological change, and more precisely, with the evolution of communication technologies. This was particularly the case with the possibility of relying on a distributed energy network that characterized the advent of the industrial revolution: railways, ocean liners, and the telegraph constituted the first infrastructure for a quasi-global network with self-reconfiguring capacity.[15]

The journalist Tom Standage also acknowledged the continuities between the emergence of a nineteenth-century global telegraph network and the Internet revolution, when he titled his book on the former subject *The Victorian Internet*. Of course, Standage's book was written for a general audience and needed a catchy title to attract readership, but the author is explicit about the similarities between telegraphy and the Internet beyond the book cover. In the preface he writes,

[12] The concept of the *space of flows* is employed in several of Manuel Castells's works. For instance, Manuel Castells, *The Informational City: Information Technology, Economic Restructuring, and the Urban-Regional Process* (Oxford: Basil Blackwell, 1989); Castells, 'Epilogue: Informationalism and the Network Society', in *The Hacker Ethic and the Spirit of the Information Age*, ed. Pekka Himanen (New York: Random House, 2001); Castells, 'Informationalism, Networks, and the Network Society: A Theoretical Blueprint', in *The Network Society: A Cross-Cultural Perspective*, ed. Manuel Castells (Cheltenham and Northampton: Edward Elgar, 2004).

[13] Manuel Castells, *The Rise of the Network Society* (Malden: Blackwell 1996); Castells, *The Power of Identity* (Malden: Blackwell, 1997); Castells, *End of Millennium* (Malden: Blackwell 1998).

[14] Castells, 'Informationalism, Networks, and the Network Society', 15.

[15] Ibid., 5.

Today the Internet is often described as an information superhighway; its nineteenth-century precursor, the electric telegraph, was dubbed the 'highway of thought.' Modern computers exchange bits and bytes along network cables; telegraph messages were spelled out in dots and dashes of Morse code and sent along wires by human operators. The equipment may have been different, but the telegraph's impact on the lives of its users was strikingly similar.[16]

The historian's urge to find precursors and continuities even in the most unlikely corners can easily lead to the construction of similarities and straight lines of evolution where ruptures and discontinuities should actually be emphasized and made visible. What Standage discounts as a mere difference in equipment is not irrelevant at all. Much of the working logic of a particular technological system stems from the machinery and the techniques accordingly employed. Therefore difference in equipment can often lead to discrepancies in the socioeconomic and cultural significance of a technology as well. In the case at hand, differences that immediately spring to mind revolve around public access to the network, the cost of transmission, the nature of the transmitted content or the need for specialized mediators between the customer and the technology. While Internet access is still far from being evenly distributed around the globe,[17] within well-connected countries it has become affordable for almost everyone and is, therefore, fairly pervasive. Sending a private telegram, on the other hand, for a long time remained the privilege of the well-to-do. Also, distance did still matter in telegraphy. A telegram from London to India took longer to be delivered than a telegram from London to Manchester. And, what is more, it was much more expensive to send. In modern email communication, the time difference in delivery has been reduced to seconds (or less) and there is no difference in cost whether an email is sent to a next-door neighbour or the business partner at the other side of the globe, whether it is sent to one addressee or several

[16] Tom Standage, *The Victorian Internet: The Remarkable Story of the Telegraph and the Nineteenth Century's On-Line Pioneers* (New York: Walker and Co., 1998), viii.

[17] See, for instance, Matthew Zook, 'Old Hierarchies or New Networks of Centrality? The Global Geography of the Internet Content Market', *American Behavioral Scientist* 44, no 10 (2001); Zook, 'Being Connected Is a Matter of Geography', *Networker* 5, no 3 (2001); Zook, 'Hubs, Nodes and Bypassed Places: A Typology of E-commerce Regions in the United States', *Tijdschrift voor economische en sociale geografie* 93, no 5 (2002); Zook, 'Cyberspace and Local Places: The Urban Dominance of Dot.Com Geography in the Late 1990s', in *The Cybercities Reader*, ed. Stephen Graham (London: Routledge, 2004); Matthew Zook et al., 'New Digital Geographies: Information, Communication, and Place', in *Geography and Technology*, ed. Stanley Brunn, Susan Cutter and James W. Harrington (New York: Kluwer Academic Publishers, 2004); Martin Dodge and Rob Kitchin, *Mapping Cyberspace* (New York: Routledge, 2000); Dodge and Kitchin, *Atlas of Cyberspace* (Harlow: Addison-Wesley, 2001). Edward Malecki, 'The Economic Geography of the Internet's Infrastructure', *Economic Geography* 78, no 4 (2002).

thousand recipients at once. Furthermore, digitization and high-capacity connections allow Internet users to exchange much more than just brief text-based messages. Pictures, sounds or videos can all be converted into binary code and then transmitted via electric or fibre-optic lines. Telegraphy only allowed for brief and to-the-point messages that were often transmitted separately from longer and more detailed information sent by post. Also, people who wanted to send telegrams depended on trained specialists to encode, transmit and decode their messages. They had only human-mediated access to the global network, while Internet users today need only basic computer skills (and a computer) in order to send and receive information. The most fundamental difference, however, probably rests in the on-demand nature of the World Wide Web. Although the terms 'Internet' and 'World Wide' *Web* are often used synonymously, they do not signify the same thing. In simple words, the Internet is a network of computers and enables the exchange of information between them (and their users). The World Wide Web, on the other hand, is an application of the Internet that turns some of the computers into data storage devices that can be accessed from other computers in the network. While telegraphy – similar to email today – only enabled the transmission of a message from a sender to a recipient (or several recipients, in the case of email), the World Wide Web stores information and makes it accessible on-demand at any time and from any (connected) place. No matter how hard we look, there is no nineteenth-century equivalent for this killer application of modern telecommunication.[18]

These eclectic differences and discontinuities between nineteenth-century and current telecommunication networks illustrate how hard both systems are to compare and how cautiously such diachronic comparisons have to be handled. In many regards, the essential qualities of the systems differ so pronouncedly that their study does not allow for the same guiding questions – a prerequisite for meaningful comparison. This is, however, not to say that the two telecommunication systems had nothing in common and that nothing can be learned from analytically putting the two next to each other. There are, of course, continuities between the two technologies as the similarity of interests informing both the telegraphic address case and the domain example already suggests. While Standage detects a comparable 'impact on the lives of users', one could also say that telegraphy and current communication technologies fulfil very similar functions in the context of globalization in their respective times. Both network technologies in varying degrees detach the flow of information

[18] The term 'killer application' refers to a specific application for an already existing but not particularly successful technology that brings the breakthrough for this technology.

from the physical movement of people or goods, and therefore foster the dematerialization of information flows. As shall be seen in the following chapter, dematerialization creates a number of new global spaces and significantly transforms others. All these spaces share their actors and objects with customary space, but put them in very different relations to each other – generally attaching less importance to questions of geographical distance. In doing so, dematerialization contributes essentially to the creation of a global sphere through the connection of innumerable locales. In practice, both the telegraph and the Internet (representing all telecommunication media of the day) allow for a closer integration of global markets and the further expansion of capitalism around the globe. Both transform the collection and reporting of news and the participation of those connected in distant affairs. And, of course, both networks were and are of great strategic and administrative value for all those who need to control far-flung territories, remotely stationed troops or globally operating merchant ships. Both networks were and are also used for entertainment purposes. While this is self-explanatory in the case of the Internet, which offers all sorts of digital distractions, it might be less well known that the telegraph has often been used for entertainment purposes as well – for instance, in betting on horses (see Chapter 7) or to allow for telegraphic chess matches, amongst other things, between members of the House of Commons and the Australian Commonwealth House of Representatives.[19]

Both systems thus share a good number of functional similarities in the way that they are or have been used to similar ends and fulfil comparable functions in the globalization processes of their day – mainly thanks to the power over geographic space that the dematerialization of information flows provides. And, of course, both telecommunication systems are based on networks. Networks have a particular logic of working – a particular rationale – that has a strong influence on the nature of relations between those connected in the network. In the case of technology-based networks, to which both the telegraph and the Internet belong, the particular working logic of the mediating technology has also to be considered in this regard and becomes part of the network rationale. The functional similarities as well as the shared network rationale are to a large extent mirrored in the structure of both networks. This means that the functions that a global telecommunication system has to fulfil impact on the structure of its network just as this structure in turn facilitates some courses of

[19] British Telecom Archives, POST 33/1997, 'Anglo-Australian Beam Service. Proposal Chess Match between House of Commons and Australian Commonwealth House of Representatives', 25 June 1926.

action within the system and makes others harder to follow. Following Castells, 'structures do not live by themselves; they always express, in a contradictory and conflictive pattern, the interests, values, and projects of the actors who produce the structure while being conditioned by it'.[20] In other words, the symmetry or asymmetry, the tightness or looseness, the inclusiveness or exclusiveness – to name but a few network dichotomies – of a network are shaped by the tasks and functions that a network has been designed to fulfil, while the network structure, on the other hand, preselects the ways in which any given function is fulfilled. In addition, the network rationale – combining the working logic of networks in general and that of the specific network technology in particular – also impacts on the network structure and vice versa. For instance, the pull to become a member of a network usually grows with the number of other members (remember the growing pressure to own a mobile phone in the 1990s or the insurmountable urge to join Facebook or MySpace in the late 2000s). Also, contrary to Manuel Castells's views,[21] networks do have centres[22] – but they also have an in-built tendency to connect their members in more than one way in order to provide alternative routes and backups. Such inherent qualities and requirements become visible in the physical structure of a network – just as the qualities and requirements of the technology behind the network do. If, for instance, proper insulation against seawater is difficult to achieve, electric telegraphy will be confined to landlines and the network structure will mirror this. Or if – after the insulation problem has been solved – even the biggest ships available can only transport a certain length of submarine telegraph cable, the production of such cables is expensive and the electric signal weakens with the length of cable, then the choice of cable landing sites will reflect this technological need for short submarine connections. The network structure reflects the network rationale (of which the technological rationale is part and parcel). The structural analysis of a network, therefore, tells us more than just which connection – in our case which cable, which wire – went from where to where and how much capacity it had. If done with the right questions in mind, it provides an entry point for the in-depth analysis of the functions, the usage and the rationale of a particular network – issues that are otherwise hard to get an analytical hold on.

[20] Castells, 'Informationalism, Networks, and the Network Society', 24. [21] Ibid., 3.
[22] See, for instance, Roland Wenzlhuemer, 'London in the Global Telecommunication Network of the Nineteenth Century', *New Global Studies* 3, no 1 (2009); Wenzlhuemer, 'Metropolitan Telecommunication: Uneven Telegraphic Connectivity in 19th-Century London', *Social Science Computer Review* 27, no 3 (2009).