Corporate social responsibility: the case of the telecommunications sector

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Abstract

Purpose – *The paper aims to examine the reporting of corporate social responsibility (CSR) in the telecommunications sector and to consider how the obligations and regulations imposed on operators affect what is considered as CSR compared to other sectors.*

Design/methodology/approach – *The paper provides a review of the academic literature on CSR, relating this to developments in the regulatory state and the adoption by governments and intergovernmental bodies of CSR instruments. Also, the paper conducts an analysis of coltan, greenhouse gas emissions and privacy as short case studies where CSR issues and regulations meet.*

Findings – *Many activities that in other sectors would be considered CSR are required by licence or legislation, together with much more detailed scrutiny and reporting.*

Originality/value – *The paper provides a review of existing literature on CSR in telecommunications, related to theories about CSR and the regulatory state.*

Keywords *Corporate social responsibility, Universal service, Greenhouse gas emissions, Privacy, Telecommunications, Coltan*

Paper type *Research paper*

Introduction

Corporate social responsibility (CSR) has no agreed definition and remains a contested term, with claims it has been superseded by responsible business conduct (RBC) (Nieuwenkamp, 2016). CSR has been used to refer to actions above and beyond those required by law and the financial concerns of shareholders – voluntary efforts encompassing both the direct and indirect effects of a firm on society (Carroll, 1999). Some firms have been attacked by non-governmental organisations (NGOs) and journalists for their failure to manage environmental and social issues, causing reputational damage, for example, for the poor working conditions of employees at Foxconn (assembling devices for Apple) and suicides at Orange in France. A popular approach to CSR has been the triple bottom line (3BL), an accounting mechanism that incorporates measurements for: environment (or ecology); finance; and society (Elkington, 2009).

In management research, CSR and corporate political activity (CPA) are the principal components of the non-market strategy (NMS), a set of direct and indirect corporate interactions with the institutions that govern its markets, aimed at improving conditions and, thus, the performance of the corporation (Baron, 1995; Baron and Diermeier, 2007a, 2007b). In economics, it is treated as part of regulation, of the rules that firms arrange with governments to apply to themselves (Stigler, 1971). CSR is usually viewed in terms of all corporations, though some are additionally subject to significant sector regulations (e.g. banking, energy, transportation and water), for which there are higher levels of obligation and of scrutiny, raising the bar on activities that would be considered extra- or supra-legal. The research question is how CSR differs in a regulated sector, specifically telecommunications, and what light that might throw on theories about CSR.

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In 1991, the Committee on the Financial Aspects of Corporate Governance (the Cadbury Committee) was established by the Financial Reporting Council, the London Stock Exchange (LSE) and the UK accountancy profession to address the lack of investor confidence in the honesty and accountability of listed companies (Cadbury, 1992)[1]. The resulting code of best practice addressed the control and reporting functions of boards and the role of auditors. It was reinforced by being required of companies listed on the LSE, a mechanism held to be more effective than a statute. Cadbury (2006) contrasted CSR with the stark, if deceptively simple, position of Friedman (1962) that firms need only maximise their profits, preferring the view that the long-term fate of companies was based on implied agreements with society. Moreover, the position taken by Friedman was that firms observe the rules of the game, whereas they have invariably and extensively been engaged, through CPA, in the formulation, revision and enforcement of those rules (Grant, 1991).

In South Africa, four successive King Reports have provided codes for corporate governance, compliance with which was made binding on firms listed on the Johannesburg Stock Exchange[2]. The King Committee was first set up in 1993 by the Institute of Directors in Southern Africa, at the time of a unique historical transition. Its first report was recognised as the most comprehensive international publication, embracing an inclusive approach to corporate governance (Vaughn and Ryan, 2006; Ackers and Eccles, 2015). However, there was a concern that:

Business is powerful enough to construct discourses of its own, even within the terms of "sustainability" (itself a highly elastic concept). It has used important global moments (Rio, WSSD)[3] to set up irresistible notions of partnership, accommodation, win–win situations, synthesis and compromise. The discourse overemphasises the extent of its voluntary contribution to socio-economic and environmental progress while continuing to mask malpractice and seducing South Africans into forgetting, absolving, effacing old scars and – most resonant here – reconciling. (Fig, 2005)

Although CSR initially comprised voluntary activities, above and beyond legal obligations, it was taken up by governments and intergovernmental organisations, which have variously endorsed CSR, encouraged its adoption or made it binding on firms. For example, the Organisation for Economic Cooperation and Development [(OECD) 1976, 2011] adopted guidelines for multinational enterprises (MNEs), now in their fifth version, supported by a Working Party on RBC, which monitors developments and produces specific guidelines. The United Nations (UN, 2011), published its own guiding principles for MNEs, setting out the duties and responsibilities of governments and businesses to respect, protect and remedy violations of human rights. The International Labour Organization (ILO, 2014) adopted its tripartite declaration of principles concerning MNEs and social policy. These are all voluntary, without enforcement mechanisms, which may conflict with national legal requirements, themselves conflicting with the treaty obligations of individual countries.

The European Commission (EC, 2001) has long promoted CSR and encouraged firms to conform to guidelines and principles, raising its status closer to that of legislation and making it easier to turn elements of CSR into law, if the need arises. In parallel, the EC (2016a) has expanded the range of instruments it uses to achieve policy objectives, under the banner of "better regulation", including the use of communications, recommendations and self-regulation, all supported by consultations and impact assessments. The actions of the EC (2011) currently include:

- enhancing the visibility of CSR and disseminating good practices;
- improving and tracking levels of trust in business;
- improving self and co-regulation processes;
- enhancing market rewards for CSR;
- improving company disclosure of social and environmental information;

- further integrating CSR into education, training and research;
- emphasising the importance of national and sub-national CSR policies; and
- better aligning European and global approaches to CSR.

There are also specific policy actions, for example, improving energy efficiency (EC, 2010, 2014a) and developing a "circulating economy" (EC, 2015).

In the telecommunications sector, the regulated requirements are considerable, including:

- geographical coverage (e.g. remote and rural areas);
- social inclusion (e.g. services for the disabled and tariffs for the poor);
- resilience (e.g. services during disasters and, if lost, their timely restoration)[4]; and
- national security (e.g. wiretapping for the police).

Operators are required to report to national regulatory authorities (NRAs) details of their networks and their commercial activities, with more intrusive data being required in market analyses, aimed at identifying competition bottlenecks and market failures. NRAs encourage alternative dispute resolution (ADR), for example, the UK regulatory authority is required to promote and facilitate self-regulation to address the interests of citizens and consumers (OFCOM, 2008; GFK-NOP, 2013)[5]. Thus, many actions that in other sectors would count as CSR are obligations required by law, licence or regulation, and their implementation is monitored by NRAs. Such regulations far exceed the purpose of substituting for competition argued by Laffont and Tirole (2001), reflecting the status of telecommunications as something that should be universally available and affordable.

Electricity, like telecommunications, is often supplied on liberalised markets, subject to detailed economic and social regulation, to which have been added environmental regulations, especially concerning greenhouse gas (GHG) emissions. For example, in the EU, firms are subject to the directive on environmental liability and to the 20:20:20 energy targets (EU, 2004; EC, 2016b)[6]. Although European electricity companies adopted CSR policies, these were not agreed with trades unions, with firms apparently reluctant to inform and consult these stakeholders (Bakhtina and Goudriaan, 2011). In Spain, the four major electricity companies voluntarily joined the UN Global Compact (see Table I) and maintained multi-level dialogues with and regulators at provincial, Spanish and European levels, the last primarily through Eurelectric, an industry association. These firms had been sufficiently profitable to pay for CSR activities, which they were able to use improve their images when faced with regulatory changes that increased competition (González, 2010). Some manufacturers of generating systems voluntarily developed services for low-income households in Africa, both in pursuit of a new market, and as a CSR activity (Egels, 2005).

The next section examines the evolving concept of CSR and the related theories. This is followed by an examination of the use of the concept of universal service in the governance of telecommunications markets. The following section examines the use of CSR by manufacturers and operators in the telecommunications sector, together with the related academic literature. Specific issues from the sector are then explored, firstly Coltan or "blood on your mobile", then electronic waste, carbon footprint or GHG emissions and the collection of metadata and wiretapping. Finally, conclusions are drawn, and issues are identified for further research.

Corporate social responsibility

The NMS describes a set of policies and a programme of activities to improve corporate performance by influencing the institutional, political, regulatory and social contexts of competition (Mellahi *et al.*, 2016). Research is subdivided into distinct areas, primarily:

- CSR;
- CPA (Hillman *et al.*, 2004; Lawton *et al.*, 2013);

Table I CSR initiatives

Initiative	*Scope*	*Annual reporting*
UN Global Compact (2016)	A voluntary initiative based on CEO commitments to align strategies and operations with universal principles on human rights, labour, environment and anti-corruption, and take actions that advance societal goals (Williams, 2004; Coulmont and Berthelot, 2015)	Each CEO makes a statement expressing continued support and renewing commitment; a description of practical actions taken or planned to take to implement the ten principles; and A measurement of outcomes
World Business Council for Sustainable Development (WBSCD, 2016)	A CEO-led organization of "forward-thinking" companies that galvanises the global business community to create a sustainable future for business, society and the environment; provides members with a toolbox	n/a
Global Reporting Initiative (GRI, 2016)	An international independent organization that helps businesses, governments and other organizations understand and communicate the impact of business on critical sustainability issues such as climate change, human rights, corruption and many others (Moneva *et al.*, 2006; Isaksson and Steimle, 2009; Dennis *et al.*, 2015)	G4 (fourth version) of integrated reporting; the GRI Sustainability Reporting Guidelines offer reporting principles, standard disclosures and an implementation manual for the preparation of sustainability reports

- anti-corruption programmes; and
- environmental strategies.

One area that has been poorly researched is corporate litigation, only touched on in CPA. Nonetheless, many firms spend considerable sums on lawyers, some of which must be considered strategic (e.g. antitrust), rather than purely tactical.

Corruption was notionally added to CSR, as item ten of the UN Global Compact (Table I). Oddly, this followed the adoption of the UN Convention against Corruption (UNCAC, 2003) in which governments bound themselves to make corruption a criminal offence, both when committed in their own and foreign jurisdictions, though few countries have enacted the necessary legislation, and fewer still apply it conscientiously. Anticorruption treaties arose in part from lobbying by US industry, which having failed to get the extraterritorial provisions in US legislation withdrawn, sought to extend it to other countries. Anti-corruption programmes are almost mandatory in the UK and USA, as they can be used in mitigation in the event of a prosecution. Nonetheless, anti-corruption is almost systematically ignored in CSR reporting, except for comments on the adoption of codes of practice, despite there being collective initiatives (PACI, 2016).

Carroll (1999) described the long and varied history of CSR, of the proliferation of definitions in the 1970s, of the efforts to measure its effects and of the application of, *inter alia*, business ethics and stakeholder theory to examine CSR and corporate social performance. Reviewing subsequent research, Aguinis and Glavas (2012) defined CSR as a combination of the expectations of stakeholders with 3BL. They found the literature to be highly fragmented by the use of different theoretical frameworks and by a failure to integrate three levels they termed: individual, organisational and institutional (i.e. the politico-social environment). Through stakeholder theory, firms are seen as creating externalities for a variety of individuals and communities (Roberts, 1992; Donaldson and Preston, 1995), including: consumers; employees; suppliers; and members of the community, often represented by: bloggers; journalists; and NGOs.

In turn, these stakeholders can exert pressure to mitigate negative externalities, such as pollution, and to enhance positive externalities, such as charitable donations.

In a regulated sector, the externalities and the views of stakeholders are expressly considered by governments in formulating legislation and policies and by regulatory authorities in implementing various rules. In developed economies, this has been formalised by the use of tools such as public consultations and impact assessments, made more rigorous by appellate systems and parliamentary oversight.

From one perspective, CSR is little more than a moderately subtle means of profit maximisation. The economic argument for enlightened self-interest being that CSR can be used to create differentiation or advantage on the market is to boost a brand or a firm. A halo effect has been described, improving a competitive position through actions on the natural, social, political or economic environment within which the firm operates (Porter and Kramer, 2006). It is argued that "philanthropy can often be the most cost-effective way for a company to improve its competitive context", whereas the financial case for spending on CSR is as a means to:

- reduce risk;
- improve market reputation;
- improve brand image;
- improve stakeholder relationships; and
- improve long-term strategic interests.

CSR is also seen as a means to avoid reputational damage, for example, trying to pre-empt the discovery by NGOs that factories use child or slave labour.

In contrast, an ethical or normative argument is put in which CSR is "the right thing to do", because the corporation is also a citizen of the various communities in which it operates. However, complications arise in distinguishing the different groups of stakeholders and the obligations towards each group and also in separating ethical obligations to do what is right, just and fair, creating a philanthropic responsibility to contribute to cultural, educational, recreational and social purposes (Joyner and Payne, 2002; Kolk, 2016).

Attitudes towards and practices of CSR differ between the EU and the USA, with significant delays in the former in the adoption of the terminology (Matten and Moon, 2008). Differences in scope arise from the politico-social systems, with European governments performing or regulating the performance of many activities that in North America are left to charities, individuals and markets, most notably medical insurance for employees and their families. Corporate motivations are reflected in differences in the language used to describe CSR-related activities, offering insights into both the audience being influenced and the means to do so. USA-based corporations have been primarily concerned with financial justifications (McWilliams and Siegel, 2000; Orlitzky *et al.*, 2003), whereas European firms additionally emphasised sustainability, though this term seems to have been rendered almost meaningless, since:

> With regard to the usage of the term "sustainability", the vast number of ways in which the term is used across the board is extraordinary. It is used as a buzzword in every possible meaning (Hartman *et al.*, 2007, p. 384).

NGOs are more influential in the EU, with a growing number of multi-domestic or networked NGOs addressing issues across its single market, some of which are concerned with global socio-environmental challenges. Over the past two decades, the EU institutions have become the key locus of policy-making in Europe and a significant international actor in its own right in which interest groups have a formal place in the policy-making process at both EU and national levels:

> The communitarian tradition in Europe, as compared to a more individualistic culture in the USA, means that non-governmental interests are almost always "given a seat at the table" (Doh and Guay, 2006, p. 53).

China, despite its poor environmental, social and working conditions, has also taken up CSR, but in its very different political environment, with the state often the controlling shareholder and with many enterprises having within them a committee of the Communist Party of China (CPC). Although the CPC-state promotes CSR, it is with Chinese characteristics, excluding human rights and permitting censorship (Lin, 2010). It is also developing its own, allegedly weaker, environmental standards in competition with those of developed countries. Companies selling on the Chinese domestic market are less affected by CSR, as consumers have yet to demonstrate a strong demand for products made in a socially and environmentally responsible manner.

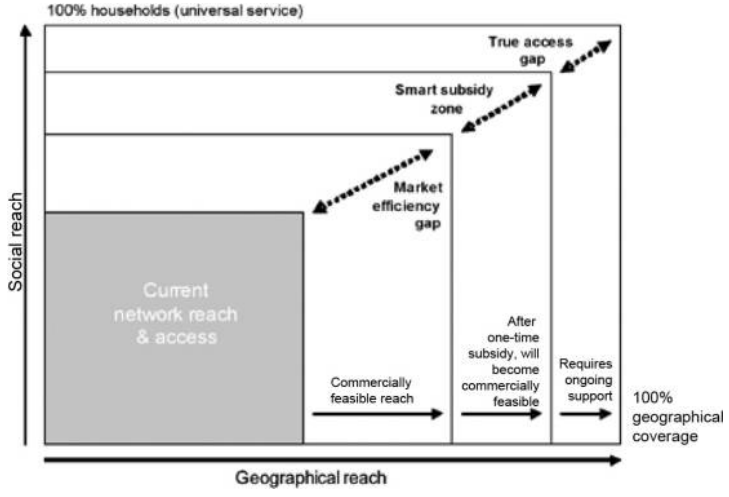
Firms have come together to create initiatives that coordinate CSR activities and present them to governments and UN agencies (see Table I). There are also sectoral initiatives, for example, ETNO (2004) Sustainability Charter for telecommunications[7].

CSR has been used in many different ways by different researchers, depending on their focus and the theories they adopt, though it is broadly seen as engaging with a wide range of stakeholders and addressing environmental and social issues. Different political systems mean it is seen differently in China, Europe and North America, variations that can also be seen between sectors depending on the type of regulation. Firms have colluded to lobby for governmental interventions and have coordinated to simplify their reporting, though with the inevitable free rider problems. The coordination of CSR between countries is much less challenging than for CPA.

Universal service

The framework offered by the international financial institutions for telecommunications policies (Figure 1) was drawn from practice in the EU and OECD member states and aims to drive operators to extend their coverage by intensifying competition and, where that is insufficient, to use legislation, licence conditions, regulations and subsidies to the same effect. Together, these should push operators to find more customers, both geographically in remote and rural areas, and socially amongst the poor. Where it is essential, state aid is used to support capital expenditure to expand geographic coverage, after which subsidies and vouchers are used for consumers to enable them to pay rates that are viable for the

Figure 1 Regulations and policies for universal service Social reach



Source: Navas-Sabater *et al.* (2002)

operators, but which consumers could not otherwise afford. An extreme case is Australia, where two satellites have been launched to provide broadband in remote areas, funded by taxpayers, whereas, more modestly, UK taxpayers have paid for 19 undersea cables to enable broadband on various small islands. Cross-subsidies, taking money from less price-sensitive customers to fund poorer customers, are also used, both directly through licence conditions and indirectly through universal service funds. In too many countries, regulatory authorities fail to use sophisticated tools before applying these techniques, for example, not measuring affordability.

Many mechanisms have been proposed to increase protection for consumers, to supplement those provided by oligopolistic or monopoly markets. In the USA, the FCC (2016) has acted against cramming and slamming and in support of privacy (O'Rielly, 2016), while the EC introduced legislation to contain and reduce charges for international mobile roaming, including the associated "bill shock" (Sutherland, 2010).

Following the introduction of competition by licensing new entrants and, in many countries, by privatisation of the former government telecommunications department, a number of relatively crude pro-competitive measures were introduced. Over time, these were refined, with the EU adopting a process of market analyses, based on competition law, to identify bottlenecks that needed to be addressed (de Streel, 2005; Nihoul and Rodford, 2011). The push for universal broadband led to the adoption of complex regulatory solutions, such as spinning off Chorus in New Zealand and the functional separation of Openreach in the UK (Sidak and Vassallo, 2015). Developing countries tended to use simpler instruments, such as issuing additional licences and lowering interconnection rates, though consolidation is obliging some to apply merger control techniques.

Research into telecommunication services for the disabled, whether regulatory or CSR provisions, was made more complex by the liberalisation of the market for handsets (Jaeger, 2006). Policies have addressed mandatory provision, compatibility with general assistive technologies (e.g. voice synthesizers, alternate keyboards and voice-activated software) and the development of standards, most of which obscure the costs of provision, by requiring manufacturers and operators to make cross-subsidies from other users. Australia has attracted the most attention, with the first programmes beginning in the 1980s (Goggin and Newell, 2004, 2007). The introduction of competition is claimed to have begun a corporate discourse on disability in which operators sought to manage the problems of disability with lobbying by both NGOs and operators. Although its Telecommunications Act 1997 included the functional requirements of the disabled in universal service, this was only given effect by the non-binding guidelines written by the Australian Communication Industry Forum (ACIF, 2015). It remains unclear what are the characteristics and size of the market for customised services, what manufacturers and operators should be compelled to do by law, regulation and mandatory standard or what they should do "voluntarily", which would then be funded by opaque cross subsidies. As yet, there is little research on disability and fixed and mobile internet (Goggin, 2015).

Mechanisms exist to improve affordability and availability of services, both pro-competitive and more interventionist, all subject to lobbying and litigation. However, only the most advanced regulatory states could realistically claim to having measured the need for specific interventions or their effectiveness. It has been too easy for weaker regulatory authorities to copy, without appropriate adaptation, regulatory instruments and techniques from developed countries and to avoid the consultations and impact assessments that are essential to capture the social benefits.

Corporate social responsibility reporting in telecommunications

CSR is complicated by outsourcing, for example, operators contracting network management to vendors, and tower management to third parties, with responsibilities spread over complex value chains or ecosystems (Peppard and Rylander, 2006; Li, 2009;

Hearnshaw and Wilson, 2013). This exposes firms to risks, for example, one operator in South Asia was told by NGOs that there were children working for suppliers of galvanised metal components for its towers (Heinemann, 2008; Trautwein, 2015). Long supply chains increase the risk of public scandals, which are also harder to manage.

Research on CSR reporting by telecommunications firms has focused on measuring the economic benefits of policies and reports, more for operators than manufacturers. These include a wide range of activities, notably use of renewable energy, community use of information and communication technologies (ICTs) and diversity in the workforce. Looking at firms in the USA, superior financial performance was found by those implementing CSR measures, including workforce diversity, employee relations and human rights[8], whereas those implementing CSR reporting were those with better financial performance (Wang *et al.*, 2014). In Turkey, CSR activities had been used to generate additional benefits by communication with stakeholders, notably customers (e.g. use of social networks), with the four largest operators seeing CSR as important in constructing their identities for customers (Ozdora-Aksak, 2015). Of 22 operators in Greece in 2009, only the 4 largest had adopted GRI format reporting, and then with variations in the detail and scope, with operators generally finding CSR reporting to be "demanding" (Giannarakis and Litinas, 2011; Giannarakis *et al.*, 2011).

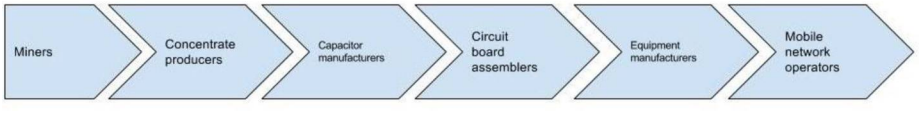
Corruption has been shown to be commonplace in the sector, with examples at all levels and in all forms, though primarily in licensing and procurement, where the latter still involves government (Sutherland, 2012). Nonetheless, a study of three major operators found there had been neither direct nor indirect reporting on corruption, observing only that the firms had codes of conduct (Runhaar and Lafferty, 2009). An analysis of firms in France reached a similar conclusion (Cézanne and Rubinstein, 2012). An account of bribery and CSR at China Mobile and ZTE noted the rise of press comments and of reporting by the firms (Islan *et al.*, 2015). However, this seems to be based only on prosecutions, just the cases uncovered by an expanding domestic campaign against corruption, consequently, it may be incomplete. Despite a variety of cases of corruption in telecommunications, CSR reports are silent on the matter (e.g. Orange on nepotism in Tunisia).

The CSR reports for the telecommunications sector are strongly influenced by prevailing global trends, with emphasis on diversity of staff, energy efficiency, green energy and volunteering activities by staff, whereas they say little about the different circumstances, of the activities they are obligatory, under the various regulations. Firms have been unforthcoming on weaknesses, notably corruption.

Blood on your mobile phone

Coltan is a mineral found in fist-sized nodules in eastern Democratic Republic of the Congo (DRC), linked to militias and renegade units of the army, which control or "tax" much of the mining (Taka, 2010; Bleischwitz *et al.*, 2015; Akiwumi and Hollist, 2016). It is mined in an "artisanal" fashion by small teams removing vegetation and soil to locate nodules in old river beds and soft rock deposits. Once refined, it yields Niobium and Tantalum, a principal use of the latter being in the manufacture of small capacitors used in mobile phones and tablet computers (Figure 2).

Figure 2 The Tantalum capacitor value chain



Source: Global Advanced Metals

The African Great Lakes region has replaced Australia as the largest source of Tantalum (see Figure 3), with DRC and Rwanda together rising from 51 to 70 per cent of global production between 2009 and 2014. There are no accurate statistics on trading in tantalum concentrates, with around half the exports from DRC believed to go unrecorded, partly because of evasion of an export tax (DFID, 2007).

The DRC had major wars between 1996 and 1997 and again between 1998 and 2003. Since 1998, about 6 million people have died from lack of health care, nutrition and sanitation, and with about 1.2 million internally displaced persons and 300,000 refugees in neighbouring states (UNHCR, 2015a, 2015b). DRC is considered a fragile state with limited capacity to govern (Fund for Peace, 2015), in particular, it cannot control and does not pay regularly its army, allowing military groups to fill the governance vacuum, some from its own army. Since 1999, the UN has deployed peacekeeping forces, presently the Mission de l'Organisation des Nations unies pour la stabilisation en République démocratique du Congo.

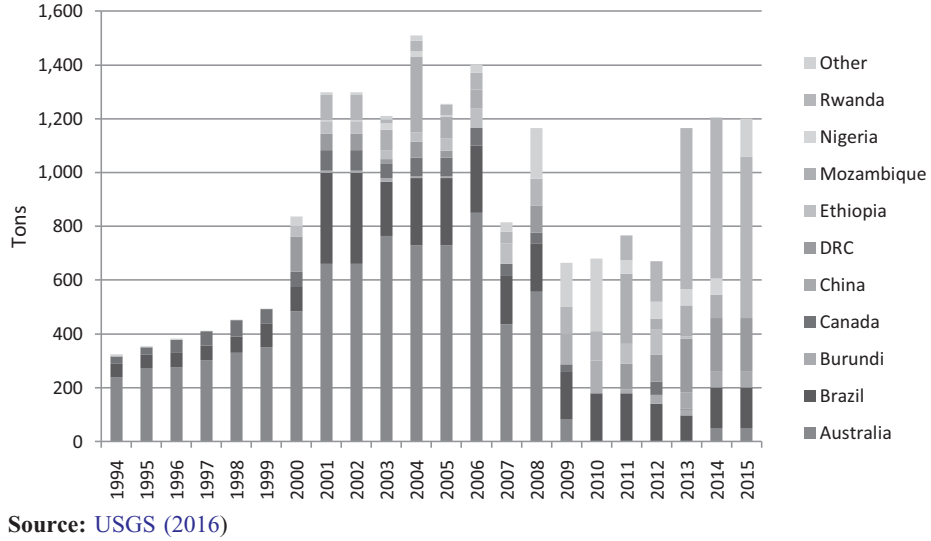
NGOs have publicised the links between coltan, human rights abuses and wars in DRC[9]:

- Global Witness (2004, 2009a, 2009b, 2010, 2011); and
- Enough Project (Lezhnev and Hellmuth, 2012; Bafilemba and Lezhnev, 2015; Dranginis, 2015).

Campaigns were run against "blood Coltan" calling for "No Blood on My Mobile Phone", arguing that it was being used to finance rebel groups that systematically violated human rights as part of the continuing armed conflict in DRC (Namujimbo, 2014). They attacked the failure of manufacturers to block Coltan from DRC from their supply chains for electronic goods.

Investigations by the UN (UNSC, 2008) led to Security Council resolutions that imposed sanctions on individuals and called for restrictions on the mineral trade (UNSC, 2015). These recognised links between the illegal exploitation of natural resources, their illicit trade and the money used to purchase arms as exacerbating conflicts in the region. All governments were encouraged to raise awareness of the OECD guidelines to reduce financing of armed groups and recommended that governments publish import and export statistics for the relevant metals and ores to enable investigation and combating of criminal networks and armed groups.

Figure 3 Worldwide Tantalum production



Source: USGS (2016)

The OECD (2015a) developed due diligence guidance for sourcing, based on its *Guidelines for Multinational Enterprises* (OECD, 2008). MNEs were expected to:

- not source from parties linked to serious abuses (e.g. torture, forced labour, the worst forms of child labour and gross human rights abuses);
- not provide direct or indirect support to non-state armed groups;
- mitigate direct or indirect support to public or private security forces; and
- mitigate bribery, fraud or misrepresentation; money-laundering; non-payment by suppliers of taxes, royalties or fees; and non-disclosure of payments under the EITI.

Suppression of the Coltan trade threatened the income of about 250,000 miners, who lacked alternative sources of income, for whom mining was an occupation "of last resort", which was hazardous to their health and safety. Although the volume of conflict-free minerals from the DRC has increased, criminal networks within the DRC army and the militias continue to extract money, but have also taken more interest in gold mining and trading.

Following the UN Security Council resolutions, the US Congress moved to have products certified as "conflict free"[10]. It required the Securities and Exchange Commission (2012a, 2012b) to adopt rules on due diligence for companies that might use metals sourced from the African Great Lakes region. After public consultations, the Conflict Minerals Rule (CMR) was adopted. Then, three business associations unsuccessfully applied to overturn various parts of the CMR. On appeal, the public disclosure requirement was struck down, though not information collection, record keeping and reporting[11]. The court accepted that the disclosures were not "purely factual and uncontroversial", given the complexity of the value chain, and that the statements required were "compelled speech", thus violating the First Amendment – a subject of extensive litigation (Post, 2000, 2006; Dhooge, 2014). Although the European Parliament has sought a similar measure (EP, 2010, 2014), all that has been proposed is a self-certification scheme (EC, 2014b), which has yet to be adopted.

Coltan is a complex problem, with an extended value chain that makes identification of the origins of the Niobium and Tantalum in end products very difficult, not least because of the weak governance in DRC. It is aggravated by the involvement of the Rwandan Government, facilitating trade in Congolese Coltan, passing some of it off as its own, and by some smelters obscuring their sources. Manufacturers of electronic equipment are expected to certify conflict-free metals for consumers, requiring detailed audits along their value chains. Focusing on mobile phones, only one of many uses of Tantalum, raised awareness of the problem, but risked shifting illicit Tantalum to products less likely to hold the attention of the public while pushing militias to alternative illegitimate activities, notably gold mining.

Carbon footprints

The following are amongst the environmental effects of telecommunications:

- electromagnetic fields from base stations and handsets;
- carbon dioxide (CO_2) emissions related to: network operations, offices and shops, vehicles and business travel;
- chlorofluorocarbons from: air conditioning and refrigeration;
- perfluorocarbons from fire suppression systems;
- solvents from installation processes;
- lead and beryllium oxide from components;
- noise from base station generators;
- visual and aesthetic effects of masts and base stations;

- waste phones, network and office equipment[12];
- waste recharge vouchers; and
- water used for sanitation and irrigation of grounds.

Of the GHG emissions, CO_2 arises from the electricity purchased or generated to power shops, offices, exchanges and base stations and the fuel consumed by fleets of vehicles and executive air travel, as well as the emissions from purchased goods and services (Kishita *et al.*, 2016).

The Global e-Sustainability Initiative (GeSI; GeSI, 2016) is a specialised trade association for the ICT sector. Although it has estimated the sectoral footprint, it concentrates on forecasting gains from downstream applications of ICTs (GeSI, 2008, 2015), where the innovations and transformations are performed by firms in other sectors and which have the right to claim any reductions in GHGs. GeSI estimated that the ICT sector emissions would reach 1.43Gt by 2020 (Table II), about 2.7 per cent of global emissions, later revised down to 1.97 per cent in 2020 based on improved energy efficiencies. It broke the emissions down into three areas of activity (Table III), with a substantial footprint for the telecommunications sector, which it further divided (Table IV). It is important to note the exponential growth of traffic, from widening access to the internet for people and things (Cisco, 2015), with corresponding requirements for energy and, thus, GHG emissions.

Additionally, there is the energy used by end-customers. The number of network-enabled devices in homes and offices was expected to rise from about 14 billion in 2013 to 50 billion by 2020, with demand from always-on devices, used for only a few minutes or hours each day, estimated to be 400 TWh/year in 2014 (IEA, 2014). Overall demand for energy was forecast to be 1,140 TWh/year in 2025.

Table II CO_2 equivalent emissions for the ICT sector (Gt)

Year	*Embodied CO_2*	*CO_2 from use*	*Total*
2002	0.11	0.43	0.53
2007	0.18	0.18	0.64
2020	0.35	1.08	1.43

Source: GeSI (2008, p. 17)

Table III CO_2 equivalent emissions for the ICT sector (Gt)

Year	*Telecommunications infrastructure and devices*	*Data centers*	*PCs, peripherals and printers*	*Total*
2002	0.15	0.07	0.30	0.53
2007	0.31	0.12	0.41	0.83
2020	0.36	0.26	0.82	1.43
2030	0.30	0.36	0.59	1.25

Source: GeSI (2008, p. 17; 2015, p. 19)

Table IV Emissions from telecommunications sector (Mt)

Technology	*2002*	*2020*	*CAGR (%)*
Mobile	66	179	6.4
Fixed–narrowband	64	70	0.6
Fixed–broadband	4	49	17.0
Devices	18	51	6.7
Total	151	349	6.4

Source: GeSI (2008, p. 22)

The telecommunications total can be checked against reports from the major operators, which have gradually improved in quality, though inconsistencies remain (Table V). Given these data, it is possible to generate comparative indicators, such as kilograms per million units of revenue, allowing customers to determine how much CO_2 they are buying. AT&T and Telstra also disclose CO_2 per petabyte of data carried, respectively 119 and 42 kg or the same number of milligrams per gigabyte, which is helpful to consumers knowing their monthly downloads. Some large operators have not reported their emissions, notably América Móvil (2015), Bharti Airtel Ltd (2015), China Unicom (2015), Comcast (2015) and Etisalat (2015)[13].

The Fifth Green Standards Week, organised by the ITU (2015), declared the usual adherence to global goals but did not comment on the footprint of the sector. Oddly, there was no statement of the GHG emissions associated with an event held in the Bahamas, despite the substantial distances flown by the many delegates[14].

The operators emphasise not their own GHG emission, which have been quantified only slowly, but the savings made by their customers. Methodologically, this is indefensible, as companies are expected to account for all their own emissions, which they are expected to reduce. Unlike their other aspects of their business, telecommunications operators are not subject to special rules for emissions, with regulatory authorities having taken no interest, not even publishing their own emissions. Thus operators are left to address their carbon footprints as CSR.

The right to a private life

In the USA, the right to privacy emerged in a series of legal interpretations, initially in response to gossip columns and much latter *paparazzi* (Warren and Brandeis, 1890; Posner, 1979; Rubenfeld, 1989). Although privacy had not been included in the US Constitution, the common law protected against trespass, other than by the state, for which the Fourth Amendment required a warrant before search or seizure. The right to privacy was later codified in the Universal Declaration of Human Rights, in similar regional treaties, and in the jurisprudence of various constitutional and treaty courts (Beckley, 2004; Wacks, 2015). In the UK, the intrusions turned into the hacking of voicemail accounts associated

Table V Total emissions as stated by major operators (tonnes of CO_2 equivalent)

Operator	*2010*	*2011*	*2012*	*2013*	*2014*
AT&T	8,925,724	9,144,648	8,912,080	9,165,124	9,313,886
Axiata				680,810	1,073,535
BCE–Bell Canada Enterprises	238,841	270,881	383,790	401,610	411,980
BT		4,512,000	4,286,000	3,623,000	4,800,000
China Mobile	9,020,000	10,050,000	11,110,000	11,670,000	13,110,000
Deutsche Telkom	3,549,000	3,510,000	3,504,060	3,730,091	3,965,268
France Telecom (Orange)	1,509,283	1,377,282	1,620,800	1,602,000	1,435,600
KDDI	1,108,282	1,218,659	1,056,614	947,253	4,740,493
Korea Telecom	1,176,147	1,173,257	1,098,470	1,098,991	1,098,991
MTN	1,126,894	950,564	1,040,722	1,520,895	1,531,527
NTT	4,010,000	3,830,000	3,791,000	4,411,000	4,852,000
Singtel	180,462	187,887	186,105	189,107	186,303
SK Telecom	576,363	608,055	673,742	707,963	742,884
Softbank	245,033	248,166	348,603	506,605	540,707
Telecom Italia	993,964	937,675	887,998	999,624	297,010
Telefonica	1,778,316	1,780,316	1,859,986	1,881,903	1,731,619
Telenor	1,085,000	1,118,000	1,147,000	1,036,000	1,069,000
TeliaSonera	197,980	212,538	303,813	395,228	356,307
Telstra	1,687,777	1,659,714	1,676,925	1,633,712	1,592,376
Verizon	6,062,598	5,642,686	5,855,570	5,543,033	5,939,095
Vimpelcom				1,350,000	1,380,000
Vivendi	296,900	399,000	438,720	447,706	87,229
Vodafone	1,540,000	2,290,000	2,590,000	2,670,000	2,860,000
Total	45,308,564	51,121,328	52,771,998	56,211,655	63,115,810

with mobile telephones of celebrities and victims of crime recently examined by a judicial inquiry (Leveson, 2012).

Historically, direct state providers of telecommunications had provided the police and security services with wiretapping capabilities. Where it was not merely the occasional targeted effort, but was extensive and well known, as in the Union of Soviet Socialist Republics, it was intended to suppress certain uses of telecommunications (Zeldes, 1978). Privatisation of operators and the liberalisation of markets required governments to make the rules for wiretapping more explicit (e.g. in licence conditions and statutes), as it was no longer two cooperative arms of the state. Occasionally, this became more public, for example, with provisions in the foreign acquisition of undersea cables landing in the USA (Bressie, 2008). In general, the subject was given little attention, much as governments and operators wished.

A few, more transparent countries now publish reports on their use of wiretapping. For example, the US Courts (2015) began the practice of annual reports in 1997, but appear to omit foreign and some domestic wiretaps approved by the FISA Court. The UK began reporting more recently through its Interception of Communications Commissioner's Office (IOCCO, 2016). At the time of writing, there is considerable controversy over draft UK legislation intended to consolidate a number of previous legal instruments[15].

The Electronic Frontier Foundation (EFF) sued the US National Security Agency, challenging its right to operate the Orwellian sounding "Room 641A", an interception facility at AT&T. The case was dismissed by the Court of Appeals, because of retroactive immunity granted by the US Congress (FISA, 2008), which the US Supreme Court subsequently declined to hear[16]. A further case by the EFF was dismissed by the District Court, then reinstated by the Court of Appeals, but has yet to reach judgement[17].

The issue of official access to servers came to prominence with Blackberry, which encrypted its Blackberry Messenger service. Governments in, for example, India and the UAE tried to persuade Blackberry to place servers in their jurisdictions so that they might have access to the contents (Brady, 2012; Abraham and Hickok, 2012). Reporting by over the top provides pre-dates network operators and is more extensive, though these firms are unhindered by national licensing constraints (Access Now, 2016).

As part of its voluntary efforts on transparency, Vodafone (2014) issued a report on its provision to governments of wiretapping and metadata, with omissions where it was not permitted to report even the existence of such obligations. There has since been a modest growth of transparency reports[18]. However, some operators are going to be very reticent about such information, where their licensing governments have particularly bad human right records (e.g. the MTN Group is present in Sudan and Syria).

The provision of data about customers to governments presents ethical challenges to operators and service providers, especially in countries such as Egypt and South Africa, where they are even forbidden to report the terms, let alone details, of such obligations. The issue becomes more extreme in, say, Syria where the data are likely to be used to identify customers to be tortured, jailed and executed. As a good corporate citizen, licensed by the state, support for the police and security services is an ethically justifiable and legitimate obligation. However, the protection of the privacy of customers is also ethically justifiable and an implied part of a contract. In the more repressive autocracies, citizens understand the nature of the regime and are correspondingly circumspect in their use of the internet and telecommunications. Operators have the option to walk away, but it seems autocracies are increasingly able to take on network operations themselves.

Conclusion

The idea of Friedman (1962) that firms should just obey the rules of the game is never observed, they insist on substantial inputs into their formulation and enforcement, whether general or sectoral, mandatory or voluntary. Also, CSR is not any longer, if it ever was,

defined in terms of being voluntary – firms operate under a range of guidance, nudge, "soft law" and reporting standards from governments and inter-governmental bodies.

The regulation of telecommunications includes activities that in another sector would be left to voluntary action by firms or would be performed by charities or the state, instead of which they are mandated by governments, overseen by regulatory authorities and subject to public accountability and scrutiny. The desires and needs of societies have been codified by governments and regulators into binding measures with which operators must comply, made more complicated by the operators lobbying about those measures and, sometimes, contesting them in court. These regulations are far more extensive and intrusive than the mere substitution and supplementing of competition suggested by Laffont and Tirole (2001), as they reflect the requirement for the near universal provision of telecommunications and, more recently, broadband.

Governments and inter-governmental bodies have adopted a wide range of instruments, from treaties and statutes to recommendations and standards, many originally formulated by commercial players. Not only is this found in the regulation of telecommunications but also more generally in CSR, eliminating the compulsory/voluntary dichotomy, creating a continuum on which levels of compulsion are agreed to achieve specific policy goals.

Reports by some operators on GHG emissions are the primary activity that is outside sector regulation and, thus, voluntary, though these are also useful in lobbying, in protecting their brands and projecting their values. The issue of metaphorical blood on mobile phones reflects a problem of globalisation in which the value chain stretches back into the far distance. The misuse of natural resources to fund abuses of human rights and wars has required the use of complex multi-level governance mechanisms, with the resulting instruments mandating declarations by firms a poor second best to resolving the problems in the DRC.

A few operators have begun to publicise a long-standing and severe ethical dilemma, how to balance the privacy of customers with their security obligations to the governments licensing their services, based on their duty to protect citizens from foreign powers and terrorists. The issue has been kept in the background, with operators reaching private deals with governments about the services they provide and the benefits or payments they might obtain in return. Equally discretely, the major manufacturers have provided technical facilities, supplemented by a range of yet more discrete high-technology firms offering specialist hardware and software (e.g. Stingrays). Exposure of such deals to daylight can present difficulties, as in the MTN executive who admitted his firm shared customer data with the Iranian authorities on a "collegial basis" (Naidoo, 2012).

Over recent years, corruption has been made a criminal offence in developed and, some, developing countries. To fill the gaps created by the reluctance of many governments to prosecute, it has been made an extra-territorial offence. Although corruption is notionally included in CSR, it seldom features in reports, other than in statements that paying bribes would be against corporate policies. Prosecutions are rarely, if ever, reported as CSR violations.

There is scope for further research in a number of areas, not least in case studies of CSR in specific countries and operators. The data on greenhouse gas emissions appear inconsistent, suggesting a need to better understand the variations to improve the methodologies, both to enable customers to be better informed and to put pressure on operators to reduce emissions. Substantial work needs to be undertaken concerning wiretapping, including its use by non-state actors, including criminals and terrorists.

Notes

1. The triggers included the sudden collapse of Coloroll and Polly Peck, neither of which had been foreshadowed in apparently healthy financial accounts.
2. King I 1994, II 2002, III 2009, with IV underway. available at: www.iodsa.co.za/?page=AboutKingIV

3. The 2002 World Summit on Sustainable Development and UN Conference on Environment and Development held in Rio de Janeiro, 1992.
4. See, for example, the work of the International Telecommunication Union on emergency communications: available at: www.itu.int/en/ITU-D/Emergency-Telecommunications/Pages/default.aspx
5. See s.3(4)c of the Communications Act 2003.
6. 20:20:20 represents 20 per cent reduction in GHG emissions, 20 per cent increase in renewables in energy sources and 20 per cent cut in energy consumption, all by 2020.
7. There has been very little recent activity on this charter.
8. These are defined as the rights of current and potential employees, but neither customers nor communities.
9. Aided by two documentary movies (Forestier, 2007; Poulsen, 2010).
10. Public Law 111-203, 124 Stat. 2213-2218.
11. *National Association of Manufacturers, et al.* v. *SEC, et al.,* No. 13-5252 (D.C. Cir. April 14, 2014; August 18, 2015; November 9, 2015).
12. See, for example, Widmer et al. (2005), Schmidt (2006) and Grant and Oteng-Ababio (2012).
13. América Móvil claims to emit no fluorocarbon compounds, which would require it to have neither fire suppression nor air conditioning systems.
14. A return flight from Geneva to Grand Bahama would be 1.11 and 3.21 tonnes in economy and business class, respectively. At AT&T's 119 kg per PB, that is equivalent to 9 or 27 PB of data (c.f. 2.6 TB in the Panama Papers).
15. Investigatory Powers Bill. available at: http://services.parliament.uk/bills/2015-16/investigatorypowers.html
17. *Jewel* v. *NSA* (Northern District of California). Case No.: 4:08-cv-04373.
16. *Hepting* v. *AT&T* (Supreme Court of the USA). Case 11-1200 (October 9, 2012).
18. See, for example, Orange (2014), TeliaSonera (2015) and Verizon (2015).

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