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An analysis of the recent restructuring of network assets by the largest international mobile operators

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Abstract

Purpose – *This paper aims to examine the extent to which the largest international mobile operators are restructuring their network assets to adapt to a rapidly changing environment.*

Design/methodology/approach – *A number of original databases have been constructed that identify the relevant operators, both current and over an eight-year period, where they operate on a regional basis, their purchases and sales of network assets during those eight years and their unfulfilled aspirations to buy and sell network assets.*

Findings – *It is reasonably evident that operators have clear strategic objectives when deciding where and when to expand their empires, and that they have a clear preference for regional clustering of assets. However, the paucity of desirable networks for sale means that asset buying has to be opportunistic and that operators come up against problems such as an unwelcoming government or a corrupt regime which makes operators come to regret their initial enthusiasm. In recent years, the emphasis has switched from building empires consisting solely of mobile networks towards the development of multi-play capabilities within a limited number of countries.*

Practical implications – *Databases are compiled by many organisations for their own purposes. They are usually difficult to interpret because of a lack of explanatory footnotes and often contain mistakes. The authors compile their own unique databases and, therefore, have a better understanding of the reasons why strategic decisions are made that affect the buying and selling of international assets.*

Originality/value – *The existence of these databases mean that the authors' work is highly original, even though it is, of necessity, based upon public domain sources.*

Keywords *Networks, Mobile communications systems, Restructuring, International investments, Multi-play*

Paper type *Research paper*

Introduction

In any given year during the past decade, there have existed somewhere between 25 and 30 mobile operators that could reasonably claim to control an international group of assets. Producing a yardstick which determines whether an operator is qualified to belong to this category is necessarily a subjective matter, but for the purposes of the discussion which follows the minimum qualification is set at ownership of all or part of five networks (including the domestic one) and 20 million proportionate subscribers – that is, the gross number of subscribers multiplied by the equity stake held in each network.

Although this yardstick cannot be based upon a universally agreed definition – if for no other reason than that, aside from the authors, the matter does not even appear to have been given consideration by anyone in the public domain – it has the virtue of including most of the well-known operators. Furthermore, the reasons why others do not qualify for inclusion can readily be added in with the result that analysis of the sector need not be confined purely to those operators that currently qualify.

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However, the purpose of the paper is not simply to provide a list of international mobile operators. The behaviour of the (dis)qualified operators will be analysed over the greater part of the past decade to understand how they evolved into the structures existing at the end of 2015. In addition, their behaviour during the period 2014-2015 inclusive will be analysed in detail to determine how they see their structures evolving during the latter part of the decade. Throughout the analysis, a consistent name will be used for each operator, although it should be recognised that they are not necessarily the sole owners of each network and that they may not be marketing their services under their own names in every case.

It should further be noted that this paper does not contain a conventional literature review. There are several reasons for this, but one is crucial. This topic (restructuring/consolidation) has not attracted all that much attention overall because most industries evolve slowly, often as a result of occasional key mergers and takeovers. In comparison, the mobile communications industry is evolving on a constant basis, as its structure struggles to keep up with, in particular, technological developments – for example, "quad-" or "multi-" play and the Internet of Things are constantly in the news yet even five years ago their role was fairly peripheral. Hence, any lengthy review of historic drivers of structural change has little relevance to what follows.

The excluded

The starting point of our analysis is Table I which lists the 24 operators that satisfied the two criteria of five or more networks and over 20 million proportionate subscribers at the end of 2015. The table does several things. Firstly, it counts the number of networks worldwide[1] – bearing in mind that this does not distinguish between the relative size of the networks nor whether the assets are held directly or indirectly. In total, there are 405 networks, so the average holding is 17. Secondly, it counts the net change in the number of networks on an annual basis – occasionally there are both acquisitions and disposals in the same year (as shown in Table III) – during a seven-year period, commencing with the number held at the end of 2008. Thirdly, it allocates the networks in accordance with a regional framework devised by the authors and set out in detail in Curwen and Whalley (2013).

China and the USA

Table I lists the operators that qualify for inclusion at the end of 2015 using the yardstick described above. It is immediately apparent that many well-known operators are not present, particularly those based in China and the USA that are among the largest in the world as a result of the scale of their domestic operations. Accordingly, it is useful to start with these companies.

There are only three national operators in China as a result of a decision made by the state. This is by no means the same thing as allowing regulators to have a say in the number present, and given the immense size of the world's largest market, it is perhaps surprising that Chinese operators have not built up overseas empires. To explain this, it may be argued, for example, that the domestic market has grown rapidly, that the scale of investment required to roll out 3G and long term evolution (LTE) across China has absorbed the bulk of the available funds, that Chinese operators lack the managerial skills to control overseas subsidiaries and that by no means all countries, especially in Asia, are keen on Chinese involvement in their telecommunications sector.

Whatever the combination of reasons, the Chinese operators have rarely looked overseas for the opportunity to expand. China Telecom, much the smallest network, has never shown any real interest in investing overseas in contrast to China Unicom which did at least agree a share swap worth $1 billion with Telefónica in September 2009. The two companies continue to share joint ventures, but it is noteworthy that the China Unicom investment represented a mere 0.9 per cent of Telefónica's total equity and that, after a period of expanding its stake in Unicom, Telefónica has been progressively selling it off on the grounds that it is a "non-core" asset.

Table I Presence in countries. End-2015 and annual changes [2015/2014, 2014/2013, 2013/2012, 2012/2011, 2011/2010, 2010/2009 and 2009/2008]

		Number of countries by region						
Company	*Number of countries*	*Western Europe*[a]	*Eastern Europe*[b]	*Middle East*[c]	*Asia Pacific*[d]	*Latin America*[e]	*North America*[f]	*Africa*[g]
France Télécom	38 [−1, −2, −2, −1, +2, +2, +1]	9	1	2	1	5[s]	1	19
América Móvil	30 [−1, −1, +1, +7, +6, 0, +1]	8	4	–	–	16	2	–
Telefónica	30 [0, −1, −1, 0, −1,−2, 0]	7	–	–	4	15	–	4
Singapore Telecom[h]	27 [0, 0, −1, +1, 0, +16, +1]	2	–	–	8	–	–	17
Telenor	27 [−1, 0, 0, −2, +7, +1, +3]	6	11	–	6	–	1	3
Vodafone[i]	27 [0, −2, 0, 0, −4, −3, +1]	12	1	3	3	–	–	8
Etisalat	23 [+3, 0, 0, −1, +1, +1, +2]	–	–	4	4	–	–	15
MTN	22 [0, 0, 0, +1, 0, 0, 0]	1	–	3	1	–	–	17
Bharti Airtel[j]	21 [−1, 0, 0, +1, 0, +17, +1]	2	–	–	3	–	–	16
TeliaSonera[k]	21 [0, 0, 0, −1, +1, −1, 0]	9	9	1	2	–	–	–
Deutsche Telekom	16 [0, 0, −1, −1, 0, 0, 0]	10	5	–	–	–	1	–
VimpelCom[l,p]	15 [−1, −1, −1, −2, +9, +1, +2]	1	8	–	3	–	–	3
Hutchison Whampoa	13 [0, 0, 0, +1, −1, 0, −1]	6	–	1	6	–		–
Ooredoo[m]	13 [0, 0, 0, 0, 0, 0, +1]	–	–	5	6	–	–	2
Millicom	12 [0, −1, 0, 0, −1, 0, −3]	–	–	–	–	6	–	6
NTT DoCoMo[n]	10 [0, 0, 0, 0, 0, −1, +1]	–	–	–	9	–	1	–
Axiata[o]	9 [0, −1, 0, 0, 0, 0, 0]	–	–	1	8	–	–	–
Saudi Telecom	8 [0, −1, 0, 0, 0, +1, −1]	–	1	4	2	–	–	1
Telekom Austria	8 [0, 0, 0, 0, 0, 0, 0]	4	4	–	–	–	–	–
Zain[j]	8 [0, 0, 0, 0, +1, −14, 0]	–	–	5	–	–	–	3
Altice	7 [−1, +3, +5, 0, 0, 0, 0]	4	–	1	–	2	–	–
Global Telecom[p,l]	7 [−1, −1, 0, −1, −2, −1, +2]	–	–	–	3	–	–	4
Turkcell[q]	7 [−1, 0, 0, 0, +1, 0, 0]	–	6	1	–	–	–	–
Mobile TeleSystems[r]	6 [0, +1, 0, −1, 0, 0, 0]	–	6	–	–	–	–	–
Total	405	81	56	31	69	44	6	118

Notes: [a]Includes the 28 European Union current member states plus residual Western Europe; [b]includes the Balkans, Belarus, Moldova, Russia and the Ukraine; [c]includes the Arabian Peninsula and Turkey; [d]includes Australia and New Zealand; [e]Central and South America plus most of the Caribbean; [f]mainly constitutes Canada, Puerto Rico and the USA; it is notable that no operator from these countries currently appears in the table; [g]defined geographically to include Egypt; [h]because SingTel is a significant minority shareholder in Bharti Airtel, with 32%, the stakes acquired by Bharti in 2010 are credited in this case as indirect holdings; [i]there are issues with this total because in early 2010 there were technically a further 15 stakes held indirectly via Bharti Airtel, even though the stake in Bharti itself had been reduced to a small residual of less than 5%, which could more appropriately be treated as a financial investment without control (as with AT&T's stake in América Móvil), especially given the stake in Vodafone Essar, also in India; the inclusion of Bharti's stakes had not previously created a distortion of any consequence, but now appeared to do so because of Bharti's acquisitions in 2010; at the same time, the removal of Bharti's stakes would include the other four Bharti stakes previously credited to Vodafone; the Bharti stake has now been sold; Vodafone also owns a majority stake in Vodacom which is accordingly not counted; it should be noted that Network Partnership Agreements are not included within the Vodafone total as no shareholding is involved; [j]Zain was formerly The Mobile Telecommunications Co. In May 2005, it acquired 85% of Celtel, a pan-African operator with 14 networks; in 2010, it sold 15 networks in Africa (essentially Celtel) to Bharti Airtel; it also has a management contract in Lebanon; [k]TeliaSonera's home market is defined as Finland plus Sweden; [l]in 2011, VimpelCom acquired a majority stake in Orascom Telecom Holding (now Global Telecom Holding) as well as Wind in Italy; [m]prior to 2013, known as Qatar Telecom; [n]the use of DoCoMo is so pervasive that it is included here, although it is technically a majority-owned subsidiary of NTT; NTT is unusual in that it has two stakes in mobile networks that are separate from those held by DoCoMo, but only one is held in an independent network; the total number of countries for NTT is accordingly 11; [o]prior to 1 April 2009, the company was known as Telekom Malaysia International, which had been split off from Telekom Malaysia; [p]Orascom Telecom Holding (OTH) was based in Egypt; in 2010 it was 50% owned by Weather Investments which also owned two stakes in Western Europe, the first of which, in Italy, it bought in 2006 and the second of which, in Greece, it acquired in 2007 but sold in 2010; in 2011, it mostly became a majority-owned subsidiary of VimpelCom; its previous owner, now renamed Wind Telecom, acquired a minority stake in VimpelCom as part of the merger (treated as a financial investment) as well as retaining its existing stakes in Egypt and North Korea; in September 2013, Orascom Telecom Holding was renamed Global Telecom Holding; [q]North Cyprus is included within Turkey; [r]MTS had its licence revoked in Uzbekistan in 2012; the network appears to have been re-opened in 2014; [s]in some sources several separate islands are aggregated as the French West Indies to which can be added Dominicana and French Guiana

China Mobile is a more interesting case. China Mobile owns a network in Tibet and the former Peoples in Hong Kong (acquired in 2006), but they are small-scale and – especially in the case of Tibet – arguably "domestic". The major excursion overseas was the purchase of 88.9 per cent of Pakistan's Paktel in February 2007 (subsequently raised to 100 per cent)[2]. In September 2014, China Mobile completed the purchase of 18 per cent of Thailand's True Corp. for $880 million, but it still appears for now to fail the five-network test for inclusion in the table. It is noteworthy that it attempted unsuccessfully to acquire a 20 per cent stake in Malaysia's Axiata in August 2014 at a cost of $3.7 billion (Wu *et al.*, 2014), but its cash reserves are very large, so further attempts to expand within Asia may be forthcoming.

The North America column in Table I contains very few entries. The fact that there are so few national operators in the USA can be ascribed to precisely the opposite reason to that in China – it is a market structure essentially determined by the forces of the free market, albeit one constrained by regulatory considerations. However, the reasons why AT&T (with the exception of Mexico), Sprint Corp., T-Mobile US and Verizon Wireless (with the exception of Italy) do not have overseas assets other than in countries closely associated with the USA itself – Puerto Rico and the US Virgin Isles – has its roots in the decision made many years ago by all bar T-Mobile US – because it was owned at the time by a European parent – to concentrate upon investment in the home market with, in particular, a view to enhancing scale by acquiring regional networks and in rolling out LTE (Whalley and Curwen, 2007).

In more recent times, given that Verizon Communications had at least temporarily used up its financial firepower in February 2014 completing the purchase of Vodafone's stake in Verizon Wireless – although it maintained an interest in entering Canada on a modest scale (The Globe and Mail, 2013) – and that both Sprint and T-Mobile US were involved in convoluted tie-ups of unknown outcome (Lawson, 2013; Middleton, 2014), this effectively left only AT&T in a position to contemplate a major move back into the international arena. The take-over of Leap Wireless in 2013 (Cellular-news, 2013) suggested that it remained focused on the USA, but it promptly made a take-over bid for Telefónica only for the Spanish Government to indicate that its presence would not be welcome (Caplinger, 2013).

Having discarded the idea that it might make a move to acquire Vodafone – given that this was now unlikely to cause regulatory concerns in the absence of the latter's stake in the USA (Thomas, 2013) – and having briefly toyed with the idea of acquiring a stake in Telecom Italia, AT&T's thoughts duly turned to a different neighbour. No longer attributing any significant value to holding on to its stake in América Móvil and denied the opportunity to enter Mexico via a stake in Telefónica, AT&T first acquired Iusacell in January 2015 (Telecompaper, 2014), while in April, it acquired Nextel Mexico (Wood, 2015).

However, it was reported in May 2014 that AT&T was preparing a bid worth over $50 billion for DirecTV, the largest US satellite-television (TV) provider, which would provide AT&T with a fully nationwide footprint, much improved service bundles and a foothold in Latin America. It is significant that, to improve its prospects for regulatory clearance given that DirecTV had 18 million pay-TV customers in Latin America, AT&T promptly sold back to companies controlled by the Slim family its 8.3 per cent stake in América Móvil – this may have indirectly given it access to an international portfolio of assets but always looked more like a straightforward investment because it came with no operational control (Lennighan, 2014). In effect, AT&T was swapping one set of assets in Latin America for another, but in the process it was effectively admitting that the stake in América Móvil had not been an integral part of any strategy to become a force on the worldwide mobile playing field. In July 2015, the FCC provisionally approved the takeover of DirecTV subject to specified conditions (Telecompaper, 2015a) and the deal was immediately closed (Telecompaper, 2015b), so AT&T has got its hands full for the time being, integrating its various assets in Mexico.

The markets were caught on the hop when, at the end of 2013, SoftBank announced that it was in advanced negotiations with T-Mobile US to take a stake of up to 70 per cent in T-Mobile US (Lawson, 2013). The take-over bid, if successful, would in effect have made SoftBank the clear majority owner of both Sprint and T-Mobile US because it intended to use Sprint as the vehicle for financing the takeover via the US bond market (MarketWatch, 2013). What the takeover would have done, in effect, was to create a third national operator of a size that would much more closely have matched that of Verizon Wireless and AT&T and, hence, in principle, set the scene for tougher competition between three more or less equals. But there would have been very little left of the regional structure that had previously provided competition in most markets given that both Leap Wireless (taken over by T-Mobile US to form T-Mobile US) and MetroPCS had already been absorbed by the "big four", so the eventual rejection of the deal by regulators came as no surprise (Hammond and Chan, 2014).

Softbank, the majority owner of Sprint, currently appears anxious to sell it off but is predictably struggling to find willing buyers given its modest performance. Understandably, therefore, it has no interest in using Sprint as a platform to acquire overseas assets. Whether Verizon Communications will get around to shedding its minority stake in Italy is a moot point, but its recent efforts to acquire other overseas assets have been half-hearted at best.

In summary, what the above suggests is that there is likely to be little more than cursory interest among the major US operators in acquiring further overseas assets for the foreseeable future. This is especially true given Verizon Communication's evident priority to scale up its quad-play operations in the USA (Lennighan, 2015a).

Elsewhere in the world

It is useful to begin by noting the three operators that have qualified at various points in time by virtue of the number of networks but not in respect of the number of proportionate subscribers:

1. *Batelco*: In 2011, Batelco, a fairly modest Middle Eastern operator, had five networks and roughly five million proportionate subscribers. It subsequently withdrew from India, but in November 2012, it provisionally acquired something of a rag-bag of networks from Cable & Wireless. Nevertheless, it remains a long way from attaining the target of 20 million proportionate subscribers.
2. *Digicel*: Prior to its recently abandoned IPO, Digicel was a private company and remained tight-lipped about its performance[3]. It revealed in the flotation document that it operated in 30 countries with almost all in the form of islands located in either the Caribbean or South Pacific, but so far as one can determine its gross – let alone its proportionate – subscriber numbers remain well short of 20 million.
3. *NII Holdings*: Better known for its use of the Nextel brand, NII Holdings operated five networks in Latin America over a good number of years while generating both gross and proportionate subscriber numbers in the region of 10 million. It has largely been dismantled.

Next, we can turn to consider those operators that have qualified at various points in time by virtue both of the number of networks and also in respect of the number of proportionate subscribers, but which are currently ineligible for inclusion. There are six such operators[4]:

1. *OTE*: At the turn of the decade, trading for the most part as CosmOTE, OTE satisfied the network yardstick with seven networks and generated just over 20 million proportionate subscribers. Deutsche Telekom (which operates in most mobile markets as T-Mobile US) had acquired a large minority stake in 2008, subsequently raised to 40 per cent, but OTE could qualify in its own right until 2012 at which point it owned only four networks and generated roughly 15 million proportionate subscribers.
2. *Tele2*: It is rare for an operator to have exceeded both criteria by a wide margin in the past, yet currently not be eligible for inclusion. The most obvious example is Tele2 which five years ago operated ten networks and generated 30 million proportionate subscribers. Today, it still operates nine networks, but the crucial difference is that in

March 2013, it agreed to sell its Russian assets, which generated more than 20 million proportionate subscribers, to the VTB Group (which still uses the Tele2 brand).

3. *Maroc Télécom*: The circumstances surrounding Maroc Télécom are complicated and revolve around Etisalat and Vivendi Universal. Technically, Etisalat owns just under half of Maroc Télécom, but to all intents and purposes Maroc Télécom is its subsidiary. In this respect, it should be noted that Etisalat transferred to Maroc Télécom all of its holdings in Africa in January 2015, at which point, therefore, Maroc Télécom owned a stake in 11 networks and generated comfortably over 30 million proportionate subscribers.
4. *Portugal Telecom*: At the end of 1999, Portugal Telecom had stakes in eight networks and generated a little over 20 million proportionate subscribers. In addition to its domestic network, it had a stake in Brazil – although the process of transferring its stake from Vivo to Oi meant that its proportionate subscriber numbers temporarily halved in 2010 – and some stakes in Africa via its 75 per cent ownership of Africatel. It was proposed that Portugal Telecom would merge with Oi and become a minority shareholder (Bloomberg, 2013), which went through after some complications. However, in November 2014, Altice made a bid for Portugal Telecom's domestic network which closed in June 2015. This meant that there was now a company – renamed Pharos (TeleGeography, 2015b) – holding the minority stake in Oi, and that Oi was left holding the Africatel stakes which it set out to sell but so far without success (TeleGeography, 2015a).
5. *Vodacom*: Vodacom is based in South Africa. Vodacom has long been one of the powerhouses of the African mobile sector. However, it has also long been 65 per cent owned by Vodafone and has had only limited control over its own strategy. This is borne out by the fact that it continues to operate in the same five countries and (unlike MTN) has made only rare and tentative efforts to seek out new licences. Furthermore, the number of proportionate subscribers that it generates has grown very little since 2010.
6. *Vivendi Universal*: Until 2013, Vivendi qualified by a comfortable margin by virtue of its ownership of France's Société Française du Radiotéléphone (SFR) and its majority stake in Maroc Télécom. Indeed, at that point, its continued presence in the table seemed secure, as it generated comfortably in excess of 50 million proportionate subscribers. However, a number of complicated transactions subsequently took place, of which one involved a subsidiary in the form of Brazilian fixed-wire network Global Village Telecom (GVT) (TeleGeography, 2014). This was sold to Telefónica in May 2015. Vivendi received cash together with a 12 per cent stake in new Vivo (Telefónica/GVT) with 4.5 per cent of this to be exchanged for an 8.3 per cent stake in Telecom Italia held by Telefónica. A second share swap took place in September whereby Vivendi swapped its (by now) remaining 3.5 per cent stake in new Vivo for 0.95 per cent of Telefónica – this small stake is effectively best treated as an investment generating few subscribers.

Meanwhile, in France, Vivendi sold an 80 per cent stake in SFR to Numericable, thereby forming Numericable-SFR (N-SFR). However, Vivendi subsequently sold its residual stake in N-SFR. In January 2015, Vivendi transferred its majority stake in Maroc Télécom to Etisalat and thus ceased to have an equity stake in any of the eight networks in which it had previously had an interest. What it now had left, therefore, in operational terms, was its voting stake in Telecom Italia which Vivendi raised to 14.9 per cent in June 2015, and it was accordingly delisted from Table I for failing to have an operational interest in five networks.

The included

Before proceeding to an exploration of the restructuring and consolidation that has occurred in recent times, a brief comment is warranted on some of the entries in Table I. On only a very small number of occasions have as many as ten assets been acquired or divested during a single year. The exceptions are Bharti Airtel's acquisitions in 2010 – and hence those of Singapore Telecom, as it was (and remains) a significant shareholder in Bharti – and Zain's disposals in 2010 which, in the form of Celtel/MTC, are predictably the opposite sides of the same transaction. The somewhat smaller but still significant transfers involved the following:

- *América Móvil*: In 2011, it took a stake in KPN, and in 2012, in Telekom Austria. Although it is now the latter's largest shareholder, the state-owned holding company, ÖIAG also owns a large stake, and hence, it is sensible to retain Telekom Austria as a separate table entry for the time being.
- *Telenor*: In 2011 as a shareholder in VimpelCom.
- *VimpelCom*: In 2011, it acquired control over Orascom Telecom Holding – now known as Global Telecom Holding – causing its previous parent Orascom to cease to qualify for the table. The reason that Global Telecom Holding also appears in the table is that it owns some network assets independently of VimpelCom.
- *Altice*: The only operator to enter the table in recent years, Altice – like Iliad, also based in France but more interested in cable than mobile assets – is an operator which evokes memories of the entry into mobile of Hutchison Whampoa (albeit without access to the same scale of finance). Its growth (trading as Numericable) can largely be traced to taking a stake in French network SFR – see Vivendi above.

It may be noted that there are no negative offsets to the acquisitions by América Móvil because the stakes in question did not constitute 100 per cent of the equity and the operators in which it invested retained their identity.

As constituted, Table I contains 405 networks, some of which are duplicated because of common ownership, so this equates to a slightly lower number of unique networks. There are (depending on definition) some 225 countries in the world and in the region of 800 unique networks, although it is not possible to be precise because not all are necessarily operational and some are really too small to warrant inclusion in the count. However, it is reasonable to claim that the operators in Table I account for roughly one half of all the networks worldwide.

It follows from this that a significant proportion of any restructuring and consolidation of the mobile operator sector should show up in Table I, especially given that activity elsewhere in the sector tends to involve small-scale changes. On that basis, Table I does not appear to suggest that the sector has been a hotbed of restructuring activity during the period under analysis, although consolidation within a country via mergers and acquisitions (M&A), as illustrated in Table II, does not show up because the operators in question have not altered the number of countries in which they operate, merely the scale of their operations. One prominent example of this in very recent times is evident in Sri Lanka where, in December 2015, Axiata announced that it was negotiating to buy the much smaller Airtel which would, in turn, end up with a stake in Axiata. Meanwhile, Sri Lanka Telecom has agreed to acquire Hutch Lanka but has yet to finalise the transaction and Etisalat is for sale. There has also been a lot of (potential) M&A activity in European countries such as France and the UK since the beginning of 2015.

To understand where activity has been taking place, it is necessary to examine Table III which also includes some of the operators that have dropped out of Table I in recent years. This also allows us to examine the hypothesis that operators prefer to consolidate in countries which are neighbours, where they are already highly regionalised or where there is some sort of cultural affinity.

Table III reveals a rough balance between entries and exits, partly because of the large transfers between operators discussed previously. Nevertheless, it is noteworthy that some prominent operators are essentially to be found on one side or other of the table. Thus,

Table II Illustrative major[a] takeovers by/of operators. January 2013 to January 2016[b]

Bidder	*Targetv*	*Date*	*Value $billion*
Vodafone	Kabel Deutschland	February 2013	9.3 + 3.6 debt[c]
VTB Group	Tele2 Russia	March 2013	2.4 + 1.2 debt
Dish Network	Sprint Nextel	April 2013	25.5[d]
AT&T	Telefónica	June 2013	95.3 + 69.5 debt[e]
Liberty Media	Kabel Deutschland	June 2013	9.9 + 3.6 debt[c]
AT&T	Leap Wireless	July 2013	1.2 + 2.8 debt
Telefónica	KPN Germany	July 2013	10.7[f]
América Móvil	KPN	August 2013	13.5[g]
Etisalat	Maroc Télécom	October 2013	5.7[h]
PPF	Telefónica CR	October 2013	3.5[i]
PCCW-HKT	CSL	December 2013	2.3
Vodafone	Ono	February 2014	4.8 + 4.7 debt[j]
Bouygues Group	SFR	March 2014	[k]
Altice Group	SFR	March 2014	[l]
AT&T	DirecTV	May 2014	48.5 + 18.6 debt[m]
Iliad	T-Mobile US	July 2014	15.0[n]
Telefónica	GVT	August 2014	9.8[o]
Telecom Italia	GVT	August 2014	9.2[p]
Algerian government	Djezzy	August 2014	2.6[q]
Orange	Jazztel	September 2014	4.4
AT&T	Iusacell	November 2014	2.5
Altice Group	Portugal Telecom	November 2014	8.8[r]
Apex Ptnrs/Bain Cap.	Portugal Telecom	November 2014	8.8[r]
BT	EE	December 2014	19.6[s]
NJJ Capital	Orange Switzerland	December 2014	2.9[t]
Hutchison Whampoa	Telefónica UK	January 2015	15.4[u]
Verizon Communications	AOL	May 2015	4.4[v]
Altice Group	Suddenlink	May 2015	9.1[w]
Altice Group	Bouygues Télécom	June 2015	11.4[x]
Altice Group	Cablevision Systems	September 2015	17.7[y]
Liberty Global	CWC	November 2015	5.5 + 2.7 debt
Orange	Bouygues Télécom	January 2016	10.9[z]

Notes: [a]Valued at over $2 billion including debt taken over; the figures quoted are mostly those that applied at the end of the first day of the offer and, hence, may differ from the value of the offer either as finally agreed and/or at the time when the assets are transferred; [b]not all recent bids have yet received regulatory approval; [c]Vodafone responded to Liberty Media by raising its own cash offer to $10.1 billion; it was successful in October and by December had acquired 76.6% of the shares; [d]bid for a 78% stake, causing SoftBank to raise its own offer to $21.6 billion; [e]a friendly take-over bid blocked by the Spanish Government; [f]€5 billion in cash plus a 17.6% stake in post-merger Telefónica Deutschland–this was raised to 20.5% in late August; the deal was approved by the European Commission in August 2014; [g]value of whole of KPN at price offered for outstanding 70.1%; subsequently withdrawn; [h]successful bid for a 53% stake to be followed by a mandatory bid for minorities; [i]successful bid for a 65.9% stake which included 65.9% of subsidiary in Slovakia; mandatory bid for minorities with Telefónica to retain 4.9% in re-named O_2 Czech Republic; [j]Rejected; raised in March to $9.9 billion in total which was accepted subject to regulatory approval; [k]comprising $14.5 billion in cash plus 46% of the merged entity with Bouygues Group to control 49% of the merged entity; to be followed by an IPO; this was revised upwards to provide $15.5 billion in cash plus 43% of the merged entity, equivalent to $21.4 billion; rejected; revised to $18.1 billion in cash plus 21.5% of the merged entity with Bouygues Group to control 67%; rejected; revised to $20.7 billion in cash plus 10% of the merged entity; rejected; revised to $21.1 billion in cash plus 5% of the merged entity; rejected; [l]acting via subsidiary Numericable and comprising $15.3 billion in cash plus 32% of the merged entity; the cash element was raised to $16.2 billion; this was accepted subject to regulatory approval; later revised to $18.6 billion in cash plus 20% of the merged entity; successfully completed in November 2014; Altice is buying the Vivendi stake in the new entity in February 2015, with the first 10% costing $2.18 million; [m]DirecTV would end up with between 14.5% and 15.8% of the equity in AT&T; [n]for a 56.6% stake; Softbank was alleged to be preparing a higher counter-bid but it was never officially tabled; the Iliad bid was rejected; [o]the deal, agreed in September 2014, was worth a total of €7.7 billion ($9.8 billion) and comprised a combination of cash, Vivo shares and a stake in Telecom Italia, The share element was increased in March 2015; [p]consisting of a 20% stake in Telecom Italia worth roughly $4 billion and the rest in cash; [q]for a 51% stake; however, other matters associated with the transaction are expected to produce a net $4 billion for Global Telecom Holding, a majority-owned subsidiary of VimpelCom, which was the direct owner of Djezzy; [r]for the domestic network only; raised to $9.1 billion and closed in June 2015 when €5.8 billion ($6.5 billion) was handed over in cash + debt repayment; [s]the sale was finally cleared in January 2016; [t]approved in February 2015; [u]£1 billion of which depends upon meeting specified cash flow targets for the combined entity; once the takeover is authorised by the European Commission a one-third stake in the combined entity is to be sold to five institutional investors for up to $4.7 billion; [v]completed in June; [w]for a 70% stake; [x]immediately rejected; [y]in October 2015, a 30% stake was sold to BC Partners and the Canada Pension Plan Investment Board for $1 billion; [z]Bouygues would receive the bulk of the payment in Orange shares

Table III Country entries and exits 2009-2016[a,b,c]

Operator	*Entries*	*Exits*
Altice	Dominican Rep., French West Indies, Israel, La Réunion, Mayotte [13] Belgium, France, Luxembourg [14] Portugal [15]	La Réunion, Mayotte [15]
América Móvil	Panama [9] Belgium, Costa Rica, France, Germany, Netherlands, Spain, Switzerland [11] Austria, Belarus, Bulgaria, Croatia, Liechtenstein, Macedonia, Serbia, Slovenia [12] Spain [13]	Jamaica [11] Switzerland [12] Spain [14]
AT&T	Mexico [15]	–
Axiata	–	Thailand [14]
Bharti Airtel	Sri Lanka [9] Bangladesh, Burkina Faso, Chad, Congo-Brazzaville, DR Congo, Gabon, Ghana, Kenya, Madagascar, Malawi, Niger, Nigeria, Seychelles, Sierra Leone, Tanzania, Uganda, Zambia [10] Rwanda [12]	Burkina Faso[e], Sierra Leone[e][15]
Deutsche Telekom	–	Serbia [12] Bulgaria [13]
Etisalat	CAF, Sri Lanka [9] India [10] South Sudan [11] Mauritania, Mali, Morocco [15]	India [12] UK [16]
France Télécom	Armenia [9] Morocco, Tunisia [10] DR Congo, Iraq [11] Burkina Faso[e], DR Congo[e], Liberia, Sierra Leone[e] [16]	Switzerland [12] Austria, Portugal [13] Dominicana, Uganda [14] Armenia [15] UK [16]
Global Telecom	Canada, Namibia [9]	Greece [10] Tunisia [11] Namibia [12] Canada [14] Burundi, CAR[e], Egypt, Zimbabwe[e] [15]
Hutchison	Israel [12]	Israel [9] Thailand [11]
KPN	–	Switzerland [12] Spain [13]
Maroc Télécom	Mali [9] Benin, CAR, Côte d'Ivoire, Gabon, Niger, Togo [15][d]	–
Millicom	–	Cambodia, Sierra Leone, Sri Lanka [9] Laos [11] DR Congo[e] [16]
Mobile TeleSystems	Uzbekistan [14]	Uzbekistan [12]
MTN	South Sudan [12]	–
NTT DoCoMo	India [9]	Malaysia [10]
Ooredoo	Palestine [9] Myanmar [14]	Saudi Arabia [14]
OTE	–	Macedonia [9] Bosnia, Montenegro, Serbia [12] Bulgaria [13]
Portugal Telecom	Brazil [11]	Brazil, Morocco [10] Macau [13]
Saudi Telecom	Bahrain [10]	Romania [9] Indonesia [14]
Singapore Telecom	Sri Lanka [9] As for Bharti Airtel less Bangladesh [10] Rwanda [12]	Pakistan [13]
Telecom Italia	–	Cuba [11]
Telefónica	–	Isle of Man, Morocco [10] Cuba [11] Macau [13] Ireland [14]
Telekom Austria	–	–
Telenor	Cambodia, India, Vietnam [9] Kyrgyzstan [10] Algeria, Burundi, CAR, Italy, Laos, Namibia, Zimbabwe [11] Bulgaria [13] Myanmar [14]	Namibia, Vietnam [12] Cambodia [13] Canada [14] Burundi, CAR[e], Zimbabwe[e] [15]
Tele2	Kazakhstan [10] Germany [11] Austria [15]	Russia [13]
TeliaSonera	Germany [11]	Philippines [10] Cambodia [12]
Turkcell	Germany [11]	Germany [15]
Verizon	–	–
VimpelCom	Cambodia, Vietnam [9] Kyrgyzstan [10] Algeria, Bangladesh, Burundi, CAR, Italy, Laos, Namibia, Pakistan, Zimbabwe [11]	Namibia, Vietnam [12] Cambodia [13] Canada [14] Burundi, CAR[e], Egypt, Zimbabwe[e] [15]
Vivendi[d]	Mali [9] Argentina, Brazil, Italy, Paraguay [15]	Burkina Faso, Gabon. Mauritania, Mali, Morocco [15]
Vodacom	–	–
Vodafone	Qatar [9]	China, Hong Kong, Pakistan [10] France, La Réunion, Mayotte, Poland [11] Fiji, USA [14]
Zain	Morocco, Sudan [10] South Sudan [11]	Burkina Faso, Chad, Congo-Brazzaville, DR Congo, Gabon, Ghana, Kenya, Madagascar, Malawi, Niger, Nigeria, Seychelles, Sierra Leone, Tanzania, Uganda, Zambia [10]

Notes: [a]To end-February 2016 together with those agreed in 2015 with a potential completion date of 2016; [b]the relevant year appears in a square bracket; [c]including indirect holdings; [d]transferred from Etisalat which retains controlling stake; [e]provisional

América Móvil and Bharti Airtel (and more recently, Altice) are seen to be significant net buyers, while Vodafone is seen to be a significant net seller. Interestingly, France Télécom (which operates in the mobile sector as Orange) is seen to be active on both sides of the table, reflecting the point that it – like Vodafone – is in the process of switching non-core mobile assets for non-mobile assets in the pursuit of multi-play provision (Gabriel, 2015). This is a phenomenon that is particularly visible in Europe and is still in its early stages. In practice, the likes of cable assets are proving difficult to acquire, especially in the face of competition from other cablecos seeking to scale-up such as Liberty Global – it is of interest that the move to acquire cablecos has recently escalated in the USA and involves some European operators such as Altice, as shown in Table II.

At this point, it is useful to reiterate a further point made on many previous occasions, namely, that regulators have a considerable role to play in restructuring and consolidation. For example, in the USA, there is the FCC, and in Europe, the European Commission which operates in tandem with national operators and competition authorities but which normally insists on taking total control over cases that have cross-border aspects. After a period during which the Commission seemed to be mellowing in relation to M&A activity in Europe, the appointment of a new Commissioner to take responsibility for competition in telecoms appears to be going hand-in-hand with a much tougher approach to consolidation (Handford, 2015), and this may well influence future interest in tie-ups. If so, there is likely to be even more interest in a phenomenon that has become increasingly visible, namely, the sharing of infrastructure, driven in part by the massive cost of gearing up for the provision of LTE and LTE-Advanced.

Let us now return to Table I to assess a factor much discussed in the literature, namely, the tendency for operators to acquire assets in neighbouring countries and/or where they are culturally comfortable. As can be seen – albeit using a regional breakdown that is unique to the authors – most operators do tend to be regionally focused. There are a significant number of operators in the table that are in essence uniregional concerns, for example, Axiata, Mobile TeleSystems, NTT DoCoMo and Turkcell, while there are also several cases of a strong biregional bias, for example, Deutsche Telekom, Global Telecom, Millicom and Zain. Furthermore, although France Télécom has only one-half of its networks in Africa, they are mostly present in the French-speaking nations often with former colonial links to France.

However, one must be careful not to push the regional and cultural aspects too far. It is simply not the case that countries in Asia, for example, necessarily share common cultures which partly accounts for why, other than in Guam, NTT DoCoMo's stakes are very much minorities. Equally, Central Asia may not be far away for Telenor, TeliaSonera and VimpelCom, but the culture of bribery and corruption in the likes of Kazakhstan and Uzbekistan is increasingly undermining the operators' credibility (Lennighan, 2015b).

It used to be claimed that Vodafone was the only global operator, but Table I demonstrates that even if that claim was once true – and in reality, it never was (Curwen and Whalley, 2014) – the sale of its stake in Verizon Wireless has fatally undermined it. France Télécom appears to be present in every region, but again that is somewhat of an illusion as in North America its involvement is confined to a tiny island network off the Atlantic coast of Canada, and in the Asia-Pacific region it is confined to tiny Vanuatu. As for Latin America, the presence on a number of islands accounts for a very small number of proportionate subscribers. Hence, in many ways, it is also best viewed as essentially a biregional operator, especially as in recent months it has expressed its desire to expand in Europe (Telecompaper, 2015c).

The unfulfilled

It is easy to neglect a factor that is very rarely mentioned in the literature about new entry and consolidation – but which renders much of it irrelevant when applied to mobile telecommunications – which is the point previously made on numerous occasions by the authors that a transaction requires a willing buyer and seller. It is no use trying to acquire networks if none are for sale, and it is no use trying to sell networks if there are no buyers. However, it is generally possible to find buyers – albeit not necessarily in the form of other operators – if the price is reduced to an absolute minimum. It may equally be argued that there is always a willing seller if the price is right, but this is not altogether straightforward. In the first place, no potential buyer may value an asset at a level that would induce a desire to sell even if the seller was willing in principle to consider a disposal. Secondly, there is a political aspect because governments in certain countries actively discourage the entry of overseas-controlled companies – Italy, for example, has been a serial offender in this regard (Curwen, 2003).

The above is important because it helps to account for an approach to asset acquisition across almost all of the 24 operators being analysed that can plausibly be termed "opportunity-driven" as against "strategically driven". If one considers only the deals, listed in Table III, that come to fruition then mostly they conform to what might be expected of a strategically driven operator. América Móvil's rather sudden switch of focus towards Europe is superficially hard to justify in this context, but it can reasonably be argued that it was a reaction to increased competition in Latin America and that its approach encompassed the acquisition of stakes in other international operators rather than attempting the more or less impossible feat of acquiring a cohesive collection of European networks on a piecemeal basis. On the other hand, this meant that it acquired a package of networks over which it had no discretion and could not pick and choose where it ended up, and it clearly had little inkling of the adverse response to be expected from the Stichting Preferente Aandelen KPN – an independent foundation set up to protect the interests of KPN's shareholders – which ultimately caused América Móvil to list KPN as "available for sale" (Lennighan, 2015c)[5].

But if one wants to get a sense of opportunity-driven strategies, then one needs to examine the deals that never reached the negotiating table or which failed to reach fruition for a variety of reasons. These are listed in Table IV which contains some operators that have dropped out of Table I in recent years.

By its very nature, Table IV is based in part upon media speculation, unofficial leaks and the like. By and large, companies are going to keep their initial negotiations under wraps and may well even be prepared to deny that they are taking place. Nevertheless, for what it is worth, every item in the table has been given an airing in the public domain and it must be recognised that companies are generally forced to clarify their intentions if unusual market activity in their shares is noticed, so they can only keep things secret for short periods of time.

Not surprisingly, Table IV is heavily skewed towards acquisitions. Given that most operators only own a limited number of stakes and that putting them up for sale may be viewed as a sign of failure, the number of networks alleged to have been offered for sale is predictably modest – although the fact that 17 of the 33 listed operators have shown no desire to dispose of anything at all for the past six years is perhaps a little surprising. Interestingly, this can be compared with the much lower number of operators that in practice sold nothing at all – a mere six according to Table II of which all bar one (Vodacom) did not even try to sell anything – which indicates that a significant proportion of the proposed disposals did indeed reach fruition.

As noted previously, there is no necessary mirror image in terms of acquisitions because the acquirer is by no means always another international operator. However, Table IV shows a much bigger list of alleged interests than deals that were closed. In other words, either the proposed deals were simply vague expressions of interest – possibly the sort of thing a new chief executive officer might tend to come up with – or negotiations were initiated that never came to fruition. The only three operators that have no entries – KPN, OTE and Telecom Italia – were all in poor shape during the period in question and viewed as take-over targets, so they

Table IV Strategic interests 2009-2016[a,b]

Operator	*Interested in stake or licence (L)*	*For sale*
América Móvil	Serbia [10] India [15]	KPN [15]
AT&T	Pakistan (3GL), Romania (L) [12] Germany, Netherlands, Telecom Italia, Telefónica, UK [13] Eircom [14]	–
Axiata	Cambodia [9] Bangladesh, Myanmar, Sri Lanka [13]	Iran [13]
Bharti Airtel	Bhutan (L) [10] Cameroon (L), Mali (L), South Africa [12] Comium Côte d'Ivoire/ Gambia/Liberia/Mauretania/Sierra Leone [13, 14] Etisalat Lanka [14] Tanzania [15]	Bangladesh, Sri Lanka [13, 15] Chad, Congo-Brazzaville [15]
Deutsche Telekom	Moldova [9] Croatia, Kosovo, Serbia, Ukraine [10] Cameroon (L) [12] Belgium [13] KPN, Telekom Slovenije [15]	UK [13] Netherlands [15]
Etisalat	Morocco, Nigeria [9] Syria (L) [10] Cameroon (L), Iraq (L), Turkmenistan [11] Libya [12] Bangladesh, Tunisia [13] Benin [14] Airtel Bangladesh, Sri Lanka [15]	Sri Lanka, Tanzania [14]
France Télécom	India [09] Cameroon, Mozambique, Serbia, Syria (L) [10] Kosovo, Morocco, Spain [12] Burkina Faso, Gabon, Mauretania, Myanmar (L), Vodacom [13] Algeria, Benin [14] Belgacom, Bharti Airtel/Millicom Africa, Bharti Airtel Bangladesh, Burkina Faso, Chad, Congo-Brazzaville, KPN, Mauritania, Proximus, Sierra Leone, Sri Lanka, Telecom Italia [15]	Dominicana [13] Uganda [14] Armenia, Belgium [15]
Global Telecom	Egypt, Kosovo, Telekom Srbija [10] Austria, Switzerland [11]	–
Hutchison	Poland, Serbia [10] Italy[c] [13] Sri Lanka [14] Telefónica UK [15]	Denmark [13]
KPN	–	Belgium [15]
Maroc Télécom	Cameroon (L) [12] Côte d'Ivoire [13]	–
Millicom	Costa Rica (L) [12] Myanmar (L) [13] Tanzania [14, 15] Mexico [16]	–
Mobile TeleSystems	Azerbaijan [9] Telekom Austria [10] Czech Rep. [13] Telekom Slovenije [14]	–
MTN	Angola (L), Ethiopia (L), Kenya [09] India [10] DRC, Iraq (L), Zimbabwe [11] Morocco [12] Mauretania, Myanmar (L) [13] Angola, Tata Teleservices [14] Zimbabwe [15]	–
NTT DoCoMo	Cambodia [9] Pakistan [10] Pakistan (L) [12] Myanmar (L) [13]	India [13] USA [16]
Ooredoo	Syria (L) [10] Libya, Morocco, Pakistan (L), Syria [12]	–
OTE	–	Albania, Romania [12]
Portugal Telecom	Mali, Zambia [9] Cameroon (L), Mozambique (L) [12]	Angola [14]
Saudi Telecom	Morocco [9] Syria (L) [11] Morocco [12]	–
Singapore Telecom	Bangladesh [9] Myanmar (L) [13]	–
Telecom Italia	–	–
Telefónica	Cuba, Georgia (L), Nigeria [9] Mexico (L), Serbia [10] Poland, [11]	UK [15]
Telekom Austria	Kosovo [10] Telekom Srbija [11] Telekom Srbija [15]	–
Telenor	Bangladesh [9] Italy [10] Poland [11] Romania [12] Croatia [13] Vietnam [14]	–
Tele2	Albania [9] Vietnam [14] Latvia, Lithuania [15]	–
TeliaSonera	Kyrgyzstan, Poland [11] Denmark [12]	Spain [14] Azerbaijan, Georgia, Kazakhstan, Moldova, Nepal, Tajikistan and Uzbekistan [15]
Turkcell	Libya (L), Macedonia, Tunisia, Ukraine [09] Poland, Serbia, Syria [10] Iraq (L) [11] Belarus, Bosnia, Bulgaria, Kosovo [12] Tunisia [13] Pakistan (L), Azerbaijan, Georgia, Kazakhstan, Moldova, Telekom Slovenije [15]	–
Verizon	Iraq (L) [11] Canada [13]	–
VimpelCom	Sri Lanka [9] Serbia, Zambia [10] Myanmar (L) [12] Azerbaijan, Bangladesh, Belarus, Moldova, Turkmenistan [13]	Cambodia, Zimbabwe [12]
Vivendi	Algeria [09] Brazil, Mexico (L) [10] Cameroon (L) [13]	–
Vodacom	Angola (L) [9] Malawi, Nigeria [10] Sierra Leone, Zambia [12] Angola, Zambia (L) [14] Liberia (L), Tanzania [15]	DRC [11]
Vodafone	Brazil [10] Italy [11] Myanmar (L) [13] Algeria, Brazil, Comium Côte d'Ivoire, RCS&RDS Romania, Tanzania, Uganda [14] Algeria [16]	Australia, New Zealand [10] Australia, Czech Republic, Hungary [15]
Zain	Algeria, Iran (L), Palestine, Syria [9] Mozambique (L) [10]	–

Notes: [a]To end-January 2016. This table is exclusive of Table III; this table is best regarded as illustrative rather than comprehensive; although all of the table entries have been discussed in the media or on telecoms websites, some of the items may best be regarded as rumours rather than hard facts and some have officially been denied (which may or may not reflect the reality); [b]the relevant year appears in a square bracket; [c]a mooted merger between Hutchison and Telecom Italia

had neither the time nor the interest to expand their international portfolios. As for the others, only four show at least ten expressions of interest – Bharti Airtel, France Télécom, MTN, Turkcell with AT&T and Vodafone also quite active. A comparison with Table III is enlightening because it demonstrates that the first two also completed quite a lot of deals, although this was not true of the latter four. Indeed, MTN and Turkcell appear to have spent a good deal of effort working their way through unfulfilled wish lists.

AT&T, in particular, seems for a period to have been using a somewhat piecemeal approach to potential acquisitions but ultimately ending up in its backyard – if Mexico can be so termed – after running its rule mostly over networks in Europe. Much the same might be said of Vodafone, although it was clearly embarked upon a programme of disposals. In comparison, América Móvil appears to have largely set its heart on building an empire in Europe to mirror that in Latin America. If so, its failure to complete deals together with its chastening experience with KPN may cause it to have a strategic re-think.

Conclusions

This article has not gone into all that much detail about each of the individual examples of consolidation that have taken place over the past eight years because that would have bogged down the narrative and drawn attention away from the basic message of the article. In any event, much of the detail can be found in Curwen and Whalley (2004, 2008 and 2014).

What the article has shown is that if you scratch beneath the surface, you discover a constant stream of aspirations to build bigger and – at least in the potential buyers' eyes – better international empires. However, the number of potential purchasers far exceeds the number of potential sellers, both of licences and assets, so the majority of aspirations remain unfulfilled. On the whole, international operators have largely restricted their interests to regions and countries which make sense in terms of their existing holdings, but they have not been able to pick and choose with a free hand – there always has to be a willing seller and if you buy a stake in another operator you obtain indirectly what it already owns irrespective of whether you only want part of it, necessitating a subsequent attempt at disposals. Partly, as a result, there is generally very little actual buying activity by a given operator in any given year.

It is true that there has been the occasional wholesale shift of an asset portfolio, but as shown in Table I, this has been a rare event and has involved very few operators. This would suggest that building an international empire is normally a long, slow grind, and that some of the assets acquired are the result of opportunistic buying – the "grab what is going or someone else (possibly a rival international operator) will" principle – that operators may well come to regret in later years.

So does this undermine the view that the sector is undergoing a period of consolidation? In practice, this is not the case. Firstly, it is significant that mobile operators are not joining the list of those that are internationalised in Table I – and bear in mind that Altice is not a traditional mobile operator – but they are certainly departing – for example, KPN, OTE and Telecom Italia in recent years. Secondly, the last year or two has seen an unexpected shift from a focus on the aggregation of mobile assets to multi-play which often involves acquiring non-mobile assets in countries where an operator already has a mobile presence.

Thirdly, the attitude of regulators appears to be in something of a flux, as noted above in the case of the European Union. On the face of it, this has more to do with consolidation within a given country rather than internationalisation as such, but once the number of networks within a country is allowed to shrink, then by definition, the number of potential takeover targets also shrinks and the residual networks are likely to be owned by better-funded operators with less need to sell. Overall, therefore, the prognosis for the near future involves a reduction in consolidation activity defined exclusively in terms of mobile network operators acquiring all or part of one another and rather more a case of consolidation among different activities within markets.

This indicates the need for research into the structure of the mobile industry to switch increasingly towards the behaviour of individual companies in national markets or towards those companies linked together by specific events such as M&A activity within a national market. Some recent work in this area can be found in Curwen and Whalley (2015), Whalley and Curwen (2014 and 2016) and Curwen *et al.* (2015). Not surprisingly, the role of regulation and the problems faced by operators in saturated markets which nevertheless still require massive investments because of the speed of technological change – which itself opens up opportunities for a different types of company, for example, Google, to intrude into the space traditionally occupied by mobile operators at a time when new entry by aspiring mobile operators barely registers (Curwen and Whalley, 2015) – are currently very much at the forefront of debate.

This article is not going to conclude with the traditional look to the future. Any forecast made even five years ago would have been mistaken in several important respects, and the mobile industry is not going to be the same in five years' time. This article has attempted to review the forces at work at the present time, and some of them are clearly somewhat contradictory. This would seem to indicate that companies within the mobile industry have different views about what the future will bring and, hence, what strategies to adopt. However, it does seem to be the case that solving problems by picking up international mobile assets on a piecemeal basis is a strategy that has had its day.

Notes

1. Not all of these are mentioned in annual reports.
2. Although, oddly, this is not listed as a subsidiary in the China Mobile financial reports.
3. According to Digicel, the IPO was abandoned because of general uncertainty and volatility in financial markets as against a lack of interest in buying the shares (TeleGeography, 2015c).
4. Technically seven but Altice was not involved in mobile communications until very recently.
5. However, it has been much more successful in respect of Telekom Austria.

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