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**COMPARING NEW ENTRANTS' STRATEGY
AND PERFORMANCE IN THE UK
TELECOMMUNICATIONS SERVICE
INDUSTRY: 1991-1997**

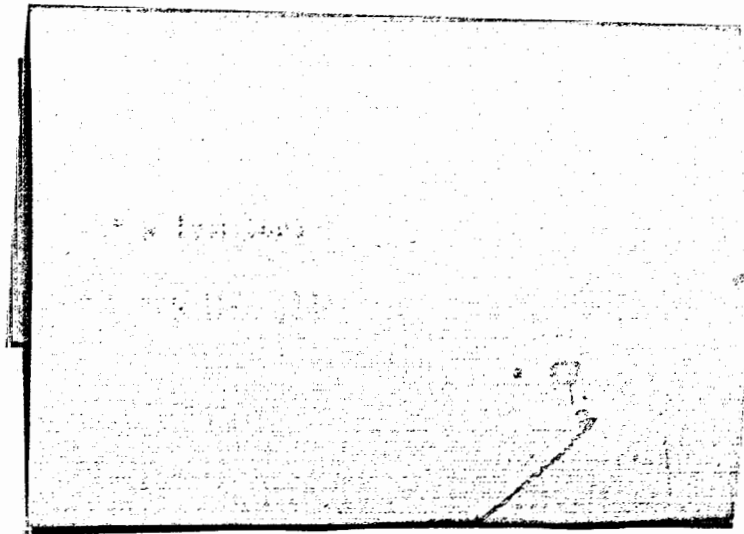
by
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ABSTRACT

The relationship between entry strategy and performance has been widely studied. Most of these studies were conducted or modelled in the context of free-competition industries. Little research has been conducted to study new entrant strategies in industries which were formerly natural monopolies industries. For this reason, this study is intended to compare and examine the relationship between new entrants strategy and performance in the newly liberalised industries, particularly in the UK telecommunications service during the period 1991-1997.

The study found that entry into newly liberalised industry has not automatically resulted in the success of new entrants. In particular, the study has shown that all new entrants' losses were severe in the first three years of entry. All new entrants had a negative ROI, ROS, RONA, and Cash Flow. The new entrants also had a very small market share. Nevertheless, a half of the sample performed relatively better than another half of sample. Among the better performers, three were an entry by diversifying companies (Cable-TV Companies) and one was an entry by a newly created company.

A diversifying company has benefited from its ability to capitalise existing customer base, skills and resources, and achieve economies of scale in network investment, operation and maintenance, and advertising and marketing. A newly created-innovative entrant has benefited from its proprietary of technological (i.e. fixed radio access) advantage to avoid a high level of *sunk cost*, less investment per new subscriber, and faster network deployment. A better performer has also achieved a greater strategic flexibility as result of lower *invested slack resources* (i.e. capital expenditure, working capital, and marketing and administration costs) and higher *generated slack resources* (i.e. cash flow and ratio of current asset/current liabilities).

The results of the study support the thought that type of entrants, magnitude of investments - *generated slack* and *invested slack resources* -, and competitive positioning are likely to have a significant relationship with the performance of new entrants, while timing of entry is only considered to be a contingent determinant of entry success. The results also suggest that pioneering advantage and competitive reaction to entry of the incumbents still became potential barriers to entry.

competitive background. The Entry Strategy Performance model provides a useful framework to analyse the relationship between entry strategy and performance of new entrants.

The data and information regarding the UK telecommunications service are collected from secondary data available in the public domain. These are company reports, industry and market survey reports, official statistic and specific journals in the telecommunications industry during the period 1991-1997. The data is then examined and analysed using the above frameworks and quantitative methods used in business and social science.

The report is organised into six part. The first part concerns with general introduction. The second part reviews the literature on entry strategy and performance. This particularly examines the framework of entry strategy and performance measurement. The third part discusses and examines the evolution of the UK telecommunications service industry. The opportunities and challenges are explored as a result of liberalisation, technological development and convergence, and market size and growth of the UK telecommunications service industry.

The findings are presented in Part Four. It includes discussion of the type of new entrants, entry strategy, and performance of each new entrant. Part Five concerns the discussion and analysis of new entrants' strategy and performance. And finally, a conclusion presents lesson from the previous discussions.

II. LITERATURE REVIEW AND THEORITICAL FRAMEWORK

The probability of successful entry is likely to be determined by type of entrant, timing of entry, new entrant strategy and positioning, the behaviour of the incumbent, the effect of demand uncertainty. There is a great risk of failure that may arise when the entrant is introducing a product with new and untested attributes. The behaviour of the incumbent is determined by the incentives that they face and the product-market characteristics of the industry - the number and resources of the established competitors, the physical nature of the market, and the legal and informational environment of the industry.

2.1 Type of Entrant

There are numerous distinct types of entrant. Therefore, entry can be defined in a variety of ways. It is might be useful to define entry in term of new source of supply, regardless whether this involves new sources of production, entry by foreign producers through import, or entry by acquisition of an old-established firm.

Several studies have noted the considerable heterogeneity that exists in the characteristics of the companies that enter the market (Geroski and Schwalbach, 1991). At least five distinction have been found to be important: (a) entry by newly created company or *de novo* company; (b) entry by an existing company that develop and launch a new product in the market; (c) entry by an existing company that diversify its business; (d) entry by an existing company that alters the product mix in an existing market; (e) entry by a foreign-owned company in one of the above ways as opposed to a domestic company. From the point of view of survivability, Geroski (1991) categorised two distinct types of

Mitchell (1991) found that the effects of being early or late varied with the type of entrants studied. *De novo* entrants face a market share-survival trade off. When a new market emerges, a newcomer to the industry will be more likely to gain market share if it enters early, but will be more likely to survive if it enters late. An established firm, which diversifies its business to a new market, will perform better if it waits while newcomers launch the product or service into the new market.

The conflicting evidence reported above suggest that competitive advantage is not automatically endowed by being an early entrant. There are other important determinants and a broader context of entry strategy to be consider. Green et al (1995), as shown in Figure-1, have proposed four core managerial decision components as determinants of entry strategy - *timing of entry*, *magnitude of investment* and *area of competitive emphasis*, and *competitive positioning* - and two moderating variables - *product-market characteristics*, and *source of advantage* - in an integrative framework of entry strategy - performance. This framework allows us to integrate the various issues associated with the entry strategy - performance relationship, thereby providing a mechanism for conducting research and analysis of the performance of new entrants.

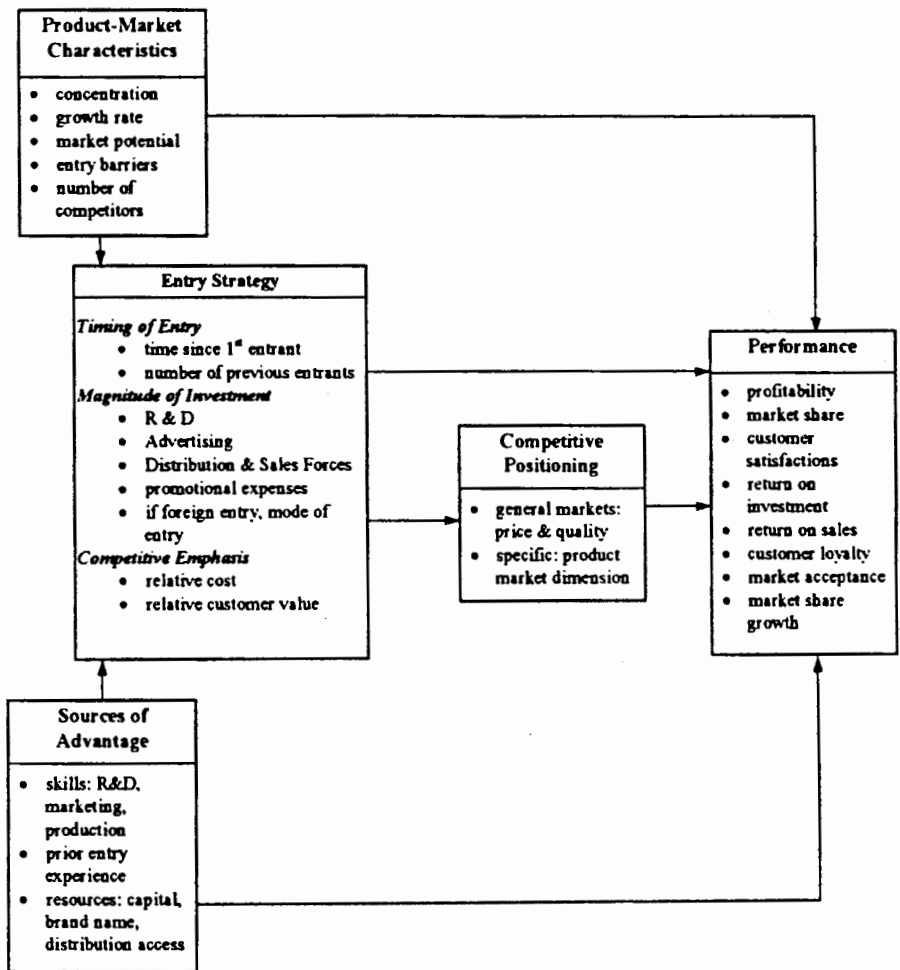


Figure-1: Entry Strategy Performance Model (adapted from Green et al, 1995)

The first determinant, timing of entry, concerns the decision of when to enter a new or existing market, which affects the competitive positioning of the product/ service at entry, because the mix of competitor and customer expectations differs. As discussed

product line strategy), (b) business unit level strategy (distribution strategy and output or capacity signalling), and (c) corporate level strategy (multi market pre-emption and stakeholders relationship) (Gruca and Sudharshan, 1995). Which appropriate subset of variables taken for entry deterrence depends upon the incumbent's perception that new entrants depress the incumbent's profitability and the levels of company resources to be dedicated for its competitive entry reaction.

A quickly reaction by incumbents blunts the potential new entrant advantage. This reaction is likely to limit the new entrant's ability to reshape preference, any association between the new entrants and a revised ideal point, and lowers the likelihood of consumer trial for a new product or service attractiveness (Carpenter and Nakamoto, 1989).

The second dimension of competitive reaction, strategic and marketing mix employed, are commonly an increase in advertising/sales force/distribution channel expenditure, product innovation and quality, and price decrease (Cubbin and Domberger, 1988; Gatignon et al, 1997). A study by Gatignon et al, (1997) shows that the first two strategies were particularly associated with the success of reaction strategy to new product or service, while the third strategy was not positively related to the success of reaction. It may very well be that lowering price is the default option when an incumbent is unable to cope with the innovativeness of the new product or service.

The third dimension of competitive reaction, breadth of reaction, is shown to be related negatively to the success of the competitive reaction. Gatignon et al (1997) found that companies which react on multiple dimensions of strategic and marketing mix report less success.

2.4 Measuring Strategic Performance

Measuring and comparing strategic performance is unlikely to provide a single comprehensive result. There is no commonly accepted list of performance variables or methods by which business strategies should be evaluated. However, there are some common performance variables that have been used in studies of examining corporate or business strategies, and among these are summarised in Table 1.

The majority of studies used financial (profitability) performance measures. Of these, the most commonly used were ROE and/ or ROI, ROA and/ or RONA, ROCE, and ROS. If the primary interest in measuring financial performance is to determine the return to shareholder and shareholder investment, ROE attempts to provide returns to the equity capital in the firm. ROE is typically higher than ROI when the company utilises amount of debt in its financial structure. ROE equals ROI for an all-equity firm.

Return on net assets (RONA) is a slightly more sophisticated measure that attempts to correct for the fact that many of the firm's current assets and current liabilities are spontaneous. They are automatically created as a result of the operation of the business. The capital base is therefore fixed assets plus net working capital. RONA has grown more popular for financial measurement as more companies have focused on their net investment position in current assets and liabilities (Eiteman et al., 1997).

The financial performance, which is rooted in financial accounting, has been criticised for the following reasons: scope for accounting manipulation, under-valuation of assets, distortions due to depreciation policies, inventory valuation, and treatment of certain revenue and expenditure items, different methods of consolidating accounts, and differences due to lack of standardisation in international accounting conventions (Brown

Oktemgil, 1998; Cakravarthy, 1986; Hambrick and D'Aveni, 1988). These measures are *generated slack* and *invested slack* as shown in Table 2. Generated slack is a measure represent available resources for developing strategy option for future flexibility, while invested slack is a measure deploying resources which may reduce the opportunity to develop strategy option for future flexibility.

Table 2: Slack Resources Measures

Slack Measures	Definition and Interpretation
Generated Slack	
Cash flow/investment	Ability to generate internal capital for future investment. The higher the ratio the higher the available resources for future flexibility
Debt / Equity	Ability to raise loan capital for future investment. The lower the ratio the higher the potential to generate loan capital for future flexibility
EBIT / Interest cover	Ability to take a risk and to raise additional debt. The higher the ratio the higher the potential to raise resources for future flexibility
Market / Book value	Ability to raise additional equity capital. The higher the ratio the higher the potential to raise additional share capital for future flexibility
Current asset/ current liabilities	Ability to generate liquid resources in excess of short term obligations. The higher the ratio the higher the liquid resources for future flexibility
Sales per employee	Ability to attain surplus revenue per employee. The higher the ratio the higher the resources for future flexibility
Invested Slack	
Working Capital / Sales	Slack invested in working capital. However, the lower the ratio the higher the available resources for developing future strategy option
Sales / total assets	Slack invested in fixed and current assets. However, the higher the ratio the higher the available resources for developing future strategy option
Administration cost / sales	Slack invested in salaries, overhead expenses and various administrative expenses. However, the lower the ratio the higher the available resources for developing future strategy
R & D /sales	Slack invested in R & D expenditure. However, the lower the higher available resources for developing future strategy

As financial superiority is only one element of a company's performance, whose benefits are focused solely on the welfare of the investor (shareholders), others suggest that a truly successful measure of firm performance must satisfy a range of stakeholder expectations (Brown and Laverick, 1994; Clarkson, 1995). This measure should not only include financial measures, but it should also include operational measure such as customer satisfaction (i.e. quality of product, capacity to innovate, quality of marketing), use of information technology plus innovation and improvement of the firm's activities, employee (i.e. ability to attract, develop, and retain talent) and community (environmental responsibility). Despite the subjective nature of this measure, it provides a dynamic insight into the esteem attracted by each firm. Furthermore, not only does it highlight successful companies but it also provides a method of identifying problem companies.

III. EVOLUTION AND MARKET GROWTH OF THE UK TELECOMMUNICATIONS SERVICE INDUSTRY

Two factors have been considered as drivers of the evolution in telecommunications service industry: government regulation (liberalisation), and technology development. Historically, telecommunication services have typically been

From the white paper features, it is clear that regulation in the UK telecommunications industry is largely the regulation of BT. Because of its size and dominance, it is generally considered to be the only operator which can indulge in anti-competitive behaviour. Therefore, the UK regulator Office of Telecommunications (OfTel) is concerned two key issues - *interconnection* and *number portability* - to prevent anti-competitive behaviour from the incumbent and further liberalise the telecommunications industry.

The aims and objectives of the regulator concerning interconnection (access pricing) include allocative efficiency, productive efficiency, promotion of competition, fairness and social obligations. Interconnection is very important in a multi-vendor environment, because the telecom system must function as a single system. Users desire end-to-end services within an apparently seamless communication network. They want connectedness and connectability. The users do not usually care who owns what facilities in the overall system, or how the communication links are established.

Interconnection or access pricing is defined as gaining and giving access to and from alternative service providers to bottleneck assets or services derived from them on a non-discriminatory basis, at a fair price under set service quality and inter-operability standards (Armstrong and Doyle, 1995). Interconnection among complementary service providers in different geographical areas, such as between a local exchange carrier and a long distance carrier, is unlikely to be a major problem because it is in every provider's interests to resolve any problem as quickly as possible. However, interconnection among competing telecom operators in the same area may raise a problem, because the interconnecting parties are typically of two different types. One is the incumbent, who used to be a monopoly service provider and who owns a complete infrastructure. The other is the competitive entrant, who wishes to provide service in competition with the incumbent but is forced to use parts of the incumbent's infrastructure, the local loops, because constructing a complete infrastructure is relatively expensive.

A transaction of interconnection may be arranged to provide an optimal balance of benefits to the two or more partners as well as to serve the interest of the general public. However, it is difficult to meet the interconnection agreement among the parties because of their different interests. The incumbent may argue that such interconnection is asymmetrical because the new entrant has far more to gain than the incumbent. Therefore the incumbent may refuse to interconnect at all, or to charge such a high price that the entrant cannot successfully compete. On the other hand, the entrant wishes to obtain interconnection for free, or at least for less than the cost of building and maintaining its own local loops.

In such a situation, the role of government as telecommunications regulator is very significant. The problem facing any regulator is at what price interconnection should be charged. Obviously a prohibitively high cost will result in the new entrant failing to compete with the incumbent. Conversely, an unrealistically low cost for access will result in the new entrants not paying the true cost for interconnection to the incumbent's network, and will leave virtually no incentive for the new entrant to invest funds in building their own network infrastructure. In an ideal environment, interconnection would be priced at a cost rate. This could enable market forces to determine the success of both the new entrant and the incumbent. The new entrant would attract customers if it was to be more efficient than the incumbent, in terms of prices charged to the consumer. In

radio-based technology and fibre optics. Technology development has not only made the telecommunication industry more susceptible to competition and further blurring the distinction within telecommunication industry (fixed and mobile service), but has also facilitated the convergence of telecommunications, broadcast (video), and computing (IT).

Radio based technologies are rapidly increasing in quality and capacity, and decreasing the cost of wireless telecommunication service. The combination of these three factors make radio-based telecommunication network much more of a competitive threat to the traditional copper-wire (fixed-lines) based telecommunication network. Radio (wireless) technology has gone through a series of advances since it was first introduced (see Figure 2).

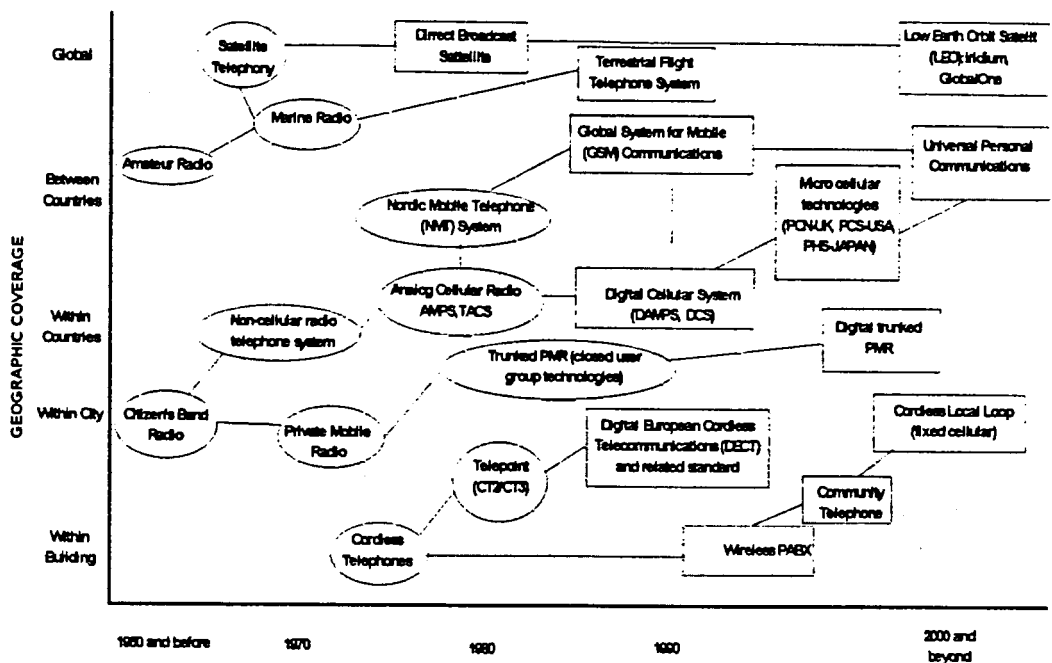


Figure-2: Evolution of Wireless Technology (adapted from Garg and Sneed, 1996)

The advances in wireless technology are currently most evident in the explosion of cellular telecommunication usage that has occurred over the past ten years. In 1994 there were more new cellular telephone lines activated than fixed lines. Despite its success, and the emerging indication that cellular might compete with fixed line, the radio-based technology is still facing a problem with capacity (radio-spectrum) limitation. Further development of digital signalling and the increase in the spectrum available for mobile communications will eliminate the capacity constraint. As a result, the wireless technologies will become more competitive with fixed-line service.

Another access technology now available is fibre optics. Fibre optics have dramatically changed the nature of competition in fixed line telecommunications. Fibre optic networks are the most pervasive and important of all the alternative mode of access in telecommunications networks. These networks have been developed to provide interconnection of large local area networks, one way data transport, and voice-data services access to inter-exchange carriers. Because fibre is so much more efficient than microwave technology, the cost of transmission of calls is much less sensitive to distance than it was at the time privatisation began. Because of the negligible cost differences, it is

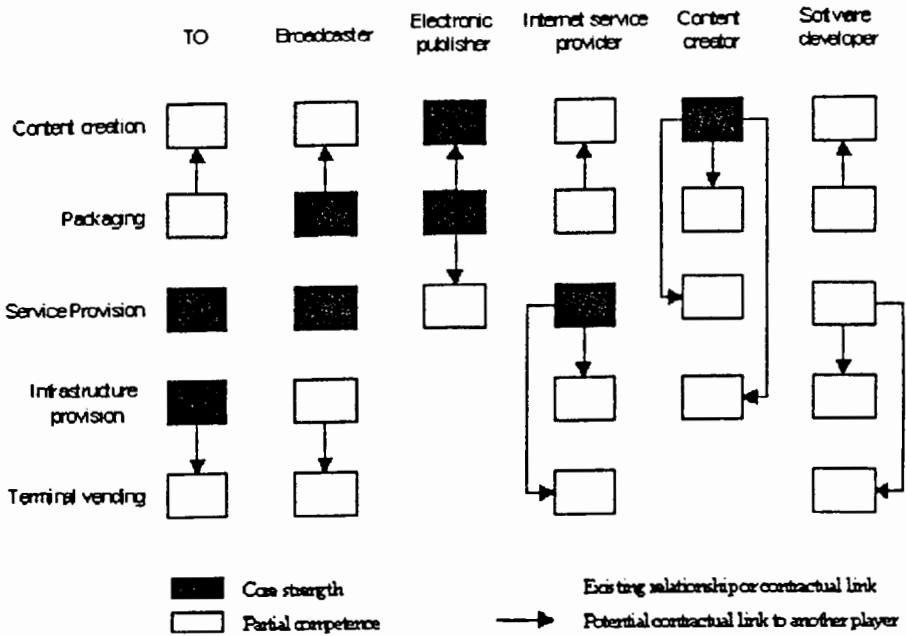


Figure-3: Convergence of Telecommunication, Media and IT (adapted from Squires and Analysys Ltd, 1997)

Telecommunications, Media and Information Technology sectors are seeking cross-product and cross-platform developments. Examples of new products and service being delivered include home banking and home shopping over Internet, voice over Internet, E-mail, data and World Wide Web access over mobile phone networks, and the use of wireless link to homes and business to connect them to the fixed telecommunications networks.

3.3 Market Size and Growth

The UK telecommunications service industry can be divided into two broad market: fixed and mobile telecommunications service. Liberalisation has driven competition in both market. However, different phase of liberalisation between fixed and mobile telecommunications has resulted in different growth pattern as shown in Table 5.

In term of revenues generated, fixed telecommunications market has grown relatively stable during the period 1992 - 1997, while mobile telecommunications market increasing more than 200%. The pace of change of mobile telecommunications is now to slow although growth rates continue to be well above that for fixed telecommunications.

In term of volume of call generated, fixed telecommunications market has changed at 41% during the periods of 1992 - 1997, while mobile telecommunication market has change more than 300% during the periods of 1992 - 1997.

Different growth pattern was not only between fixed and mobile telecommunications market, but also between revenues and number of calls generated in the industry. As shown in Table 6, this was an evidence that competition has driven calls price fallen significantly during the periods 1992 - 1997.

Cable licences, Mobile Communications licence and International Simple Resale (ISR) licence. The number of licences granted by the UK Government since 1991 are shown in Table 7 as follows:

Table 7: Number of Telecommunication Licences Granted in the UK 1991 - 1997
(summarised from Oftel, 1998)

Type of Licence	before 1991	1991	1992	1993	1994	1995	1996	1997
PTO	3 ⁶	0	0	8	7	6	3	13
Cable ⁷	0	2	0	2	9	10	9	8
Mobile Comm.	2 ⁸	0	0	0	2	0	0	0
ISR	0	0	1	1	3	22	22	52

Based on the operating and commercialisation of the licences in the marketplace, the new entrants in the UK telecommunications service industry can be categorised into five generic grouping based on the criteria of geographic coverage and target customers size. These groups are: competitive long-distance providers, regional operators (i.e. franchise area for cable-TV operators), resale operators (national and international), city-based operators, and cellular (mobile communications) operators.

4.1 New Entrants' Entry Strategy

This Part will present entry strategies of the new entrants in the UK telecommunications service industry. Due to the limitation of data availability in the public domain for new entrants, the study will not cover all new entrants which have been granted a licence as in Table 7. The study is limited for only 8 companies. In order to fully represent the above five categories of licences, the decision to select companies to be included in this study considers year of entry, type of entrants, market coverage and data availability.

Four core management decision on entry strategy and source of advantage for 8 new entrants under this study are as follows:

Source Advantage Most of the new entrants source of advantage is from advanced technological development of access network (fibre optics and fixed radio access technology). However, each new entrant has capitalised in difference ways. The new entrants sources of advantage in detail are as follows:

⁶ Incumbents in duopoly UK telecommunication market: British Telecom (BT) and Cable & Wireless (CWC) and Kingston Upon Hull City Council (Kingston Communication Hull) to provide exclusively telecommunication service in Kingston, Hull

⁷ Only accounted for new licences to provide and interconnect telecommunications service.

⁸ Incumbent of analogue cellular communication (Vodafone & Cellnet) with subsequently have also been granted to offer digital cellular communications based on GSM technology

Table 10: New Entrants' Magnitude of Investments as a Percentage of Turnover

Category	COLT Telecommunication Plc	Energis Plc	General Cable Plc	Telewest Communications Plc	Atlantic Telecom Plc	Ionica Plc	World Telecom Plc	Orange Plc
Property, Plant & Equipment (PPE)								
• COLT Telecommunication Plc	11,984	492.2	221.1	109.5	138.0			
• Energis Plc	5,392.7	143.5	63.9	n/a ⁹	n/a			
• General Cable Plc	675.5	705.6	906.3	887.5	817.1			
• Telewest Communications Plc	875.5	772.4	862.4	538.4	469.0			
• Atlantic Telecom Plc	90.8	201.3	n/a	n/a	n/a			
• Ionica Plc	621.0	659.1	706.3	n/a	n/a			
• World Telecom Plc	149.6	18.3	10.0	40.5	n/a			
• Orange Plc	190.9	310.9	231.5	106.7	99.3			
Working Capital								
• COLT Telecommunication Plc	-4,500	-37.2	1.4	432.2	307.8			
• Energis Plc	-3,350.8	-437.4	16.4	n/a	n/a			
• General Cable Plc	70.6	157.8	43.0	33.7	211.7			
• Telewest Communications Plc	-43.6	288.8	268.3	-19.9	-26.0			
• Atlantic Telecom Plc	50.2	32.9	n/a	n/a	n/a			
• Ionica Plc	450.8	1,202.9	793.8	n/a	n/a			
• World Telecom Plc	-98.5	-37.9	-21.7	16.5	n/a			
• Orange Plc	-41.8	12.4	-27.8	-19.3	-12.7			
Administration Cost								
• COLT Telecommunication Plc	5,206.3	114.5	74.1	39.3	41.4			
• Energis Plc	631.6	75.6	32.4	n/a	n/a			
• General Cable Plc	115.7	84.2	68.9	57.5	59.4			
• Telewest Communications Plc	80.6	83.9	72.7	57.6	50.0			
• Atlantic Telecom Plc	33.0	40.5	n/a	n/a	n/a			
• Ionica Plc	79.26	91.9	85.8	n/a	n/a			
• World Telecom Plc	340.5	74.8	53.7	59.9	n/a			
• Orange Plc	47.2	64.9	46.2	34.3	25.4			
Sales & Marketing¹⁰								
• COLT Telecommunication Plc	5,206.2	92.3	53.1	29.1	37.0			
• Energis Plc	495.1	55.4	18.5	n/a	n/a			
• General Cable Plc	79.1	55.8	44.4	40.8	42.9			
• Telewest Communications Plc	46.8	55.3	50.3	39.9	34.8			
• Atlantic Telecom Plc	20.1	21.1	n/a	n/a	n/a			
• Ionica Plc	28.5	29.9	68.1	n/a	n/a			
• World Telecom Plc	258.0	53.5	36.0	40.6	n/a			
• Orange Plc	25.2	40.3	35.0	19.1	14.8			
Advertising¹¹								
• COLT Telecommunication Plc	93.75	0.0	0.32	0.03	0.01			
• Energis Plc	3,150.9 ¹²	5.2	2.2	n/a	n/a			
• General Cable Plc	0	0	0.1	0	0			
• Telewest Communications Plc	0.0	0.41	0.02	1.40	2.50			
• Atlantic Telecom Plc	2.5	7.5	n/a	n/a	n/a			
• Ionica Plc	0	2.5	7.5	n/a	n/a			
• World Telecom Plc	0.0	0.0	0.0	0.27	n/a			
• Orange Plc	0.69	0.81	0.53	0.28	0.24			

⁹ n/a means that the number of year of entry less than that year of entry

¹⁰ Sales and Marketing spend is calculated by deducting wages & salaries for non-marketing & sales staff, general administration costs such as auditor remuneration, non-audit fees, staff pension, and others administration expenses to the total administration cost.

¹¹ Data of advertising spend for all companies under this study is taken from ACNielsen-MEAL reports.

¹² this ratio include advertising spend for year before the company launched its national service

4.2 New Entrants Performance

As already discussed in the literature review, to measure the degree of entry success attained by new entrants two dimensions of performance are commonly used: financial (profitability) and market share. In this study, four financial performance measures: *Return on Investment (ROI)*, *Return on Sales (ROS)*, *Cash Flow Investment*, and *Gross Margin/Sales* and two market performance measures: *market share*, and *market share-growth* are used in measuring the degree of entry success.

4.2.1 Financial Performance

Financial measure of the new entrants in the UK telecommunications service under this study for first five years of entry are shown in the following tables. From table 12, we can see that new entrant's losses are severe through the first five years of entry. The most negative accounting ROI was -604.0 %, while the most positive was 212.9 %. Only one company (General Cable) achieved a positive net income in its fourth year of entry. However, in general, there was an indication which shows a favourable improvement of new entrant's performance through the first five years of entry.

Table 12: New Entrants' Pre-tax Return of Investment (ROI)¹³

New Entrant	Year 1	Year 2	Year 3	Year 4	Year 5
COLT Telecommunications Plc.	-77.0	-16.2	-15.2	-4.1	-4.9
Energis Plc.	-58.2	-65.1	-14.7	n/a	n/a
General Cable Plc.	-10.5	-4.7	-1.5	-0.2	0.4
Telewest Communications Plc.	-8.4	-6.4	-5.1	-8.6	-7.4
Ionica Plc.	-5.9	-6.2	-5.3	n/a	n/a
Atlantic Telecom Plc.	-5.9	-6.2	n/a	n/a	n/a
World Telecom Plc. ¹⁴	-604.0	212.9	36.4	-57.4	n/a
Orange Plc.	-19.2	-20.4	-22.0	-26.5	-16.5

Table 13: New Entrants' Pre-tax Return on Sales (ROS)¹⁵

New Entrant	Year 1	Year 2	Year 3	Year 4	Year 5
COLT Telecommunications Plc.	-5,575	-93.3	-54.9	-25.5	-25.0
Energis Plc.	-1,145.4	-169.6	-55.5	n/a	n/a
General Cable Plc.	-78.7	-40.7	-14.7	-1.7	4.2
Telewest Communications Plc.	-70.1	-67.7	-57.7	-44.4	-32.8
Ionica Plc.	-736.6	-1,568.4	-772.3	n/a	n/a
Atlantic Telecom Plc.	-6.4	-27.7	n/a	n/a	n/a
World Telecom Plc.	-308.9	-41.7	-4.2	-32.6	n/a
Orange Plc.	-36.6	-63.4	-51.0	-28.3	-16.4

¹³ Net pre-tax income/average investment. Income is calculated after deduction of cost of sales & operating expenses but prior to interest charges and tax (EBIT). Investment is calculated as working capital plus fixed capital (value at net book value)

¹⁴ World Telecom's positive ROI was not a result from positive profit but it was a result from negative (deficit) in asset held by the company in that particular year.

¹⁵ Net income define as in note 13 as a percentage of sales (turnover)

Gross margin/sales, as shown in Table 16, was the only measure showing the most favourable financial performance. Most of the new entrant has had a positive gross margin/sales in the first the year of entry, except Colt Telecommunications at the second year of entry and Energis which had a negative gross margin/sales through the three years of entry.

4.2.2 Market Performance

Market performance, which are measured by relative market share, of the new entrants in the UK telecommunications service under this study for first five years of entry is as follows:

Table 17: New Entrants' Market Share (%)²⁰

New Entrant	Year 1	Year 2	Year 3	Year 4	Year 5
COLT Telecommunications Plc.	0.0005	0.0337	0.1278	0.4764	1.0832
Energis Plc.	0.0641	0.5822	1.2911	n/a	n/a
General Cable Plc.	0.0986	0.4424	1.0430	2.1719	2.7988
Telewest Communications Plc.	0.2325	0.4424	1.0430	2.1719	2.7988
Ionica Plc.	0.0071	0.0068	0.0350	n/a	n/a
Atlantic Telecom Plc.	0.0000	0.0145	n/a	n/a	n/a
World Telecom Plc.	0.0018	0.0214	0.0587	0.1201	n/a
Orange Plc.	6.3333	6.9510	7.8645	12.0020	14.8237

Table 18: New Entrants' Market Share Growth (%)

New Entrant	Year 2	Year 3	Year 4	Year 5	CAGR
COLT Telecommunications Plc.	756.1	278.7	272.7	127.4	1983.7
Energis Plc.	808.5	121.8	n/a	n/a	465.1
General Cable Plc.	59.3	34.3	45.0	77.5	54.1
Telewest Communications Plc.	40.3	135.8	108.2	28.9	90.8
Ionica Plc.	410.9	-5.1	417.2	n/a	274.3
Atlantic Telecom Plc.	n/a	n/a	n/a	n/a	n/a
World Telecom Plc.	1.095.8	173.8	104.5	n/a	458.3
Orange Plc.	9.8	13.1	52.6	23.5	29.8

Table 17 shows that the new entrants holding a very low share. In fact, only one new entrant held more than one percent share in the first year of entry, two entrant held more than one percent share in the third year of entry, and one entrant had more than one percent share in five year of entry. The rest still had no more than one percent share until five year of entry. Share improvement, however, for the new entrants as a whole to have occurred at a high rate of growth as shown in Table 18.

²⁰ measured as a percentage of companies turnover to total market turnover after considering segmental turnover (type of services for cable operators and geographical for companies who expand their business outside the UK)

Working capital/sales figure also varied significantly among the samples. A positive figure in working capital/sales means that a new entrant can self-finance - by cash generated from sales - for its working capital. On the other hand, a negative figure in working capital means that a new entrant has heavily employed non-interest bearing liabilities such as trade creditors, and accrued income, to finance their working capital. This also suggest that the new entrant failed to generate cash from their sales. Therefore a negative working capital is likely to have a high possibility of over-trading and poor performance.

Table 20: Investments & Cash Flow Generated by 8 New Entrants for The First Three Years of Entry

Investment & Cash Flow Generated	Mean	Median	Standard Deviation	Variance	Minimum
Capital expenditure/sales	1,126.0	427.4	2,601.2	11,984.4	10.0
Total Assets/sales	1,129.9	735.9	1,576.8	6,290.6	34.8
Working capital /sales	-256.9	12.4	1,192.0	727.9	-4,500.0
Administration cost/sales	325.1	74.8	1,072.1	5,206.1	21.1
Cash Flow /Investment	-98.3	-7.4	142.8	194.9	-879.7
Cash Flow/Sales	-1,089.8	-360.4	2,635.6	0.3	-12,812.5
Current Asset/Current Liabilities	180.7	224.1	675.1	1,290.5	40.2

The study found a slightly favourable findings in market share performance. Despite all new entrants had only a small share compare to incumbent (BT, and Cable Wireless), the growth of their market share were tremendous. The average new entrants growth for the first three year of entry was more than ten times of industry growth (see Table 6 and Table 20). This result suggest that entry in the telecommunications service industry is classified into long-term rather than short-term investment. Therefore, it is necessary to look the new entrant performance at least more than five years of entry.

5.2 Comparison and Determinants of Performance of New Entrant

Comparing the findings of individual performance of new entrants in this study, we found that some companies achieved performance relatively better than others. A half sample of companies in this study, as shown in Table 21, had a better performance than another half of sample. Most of the relatively better performance companies are cable companies (General cable, Telewest Companies, Atlantic Telecom), while the relatively lower performance companies are newly created companies (Orange, Colt Telecommunications, Energis and World Telecom). Only one newly created company, Ionica, had relatively better performance.

Most of the relatively better performance companies are emphasised on lower price, some of them has combined price and quality. On the other hand most of the lower performance companies have emphasised on quality and breadth of their products or services.

The findings suggest that there were a significant effect of entry strategy on performance came from the type of entrant, magnitude of investment, and competitive positioning, while the effect of the timing of entry on performance was varied.

Magnitude of investment The findings reveal that there was a negative relationship between magnitude of investment and performance. The higher a company's relative investments the lower the companies performance in the first three years of entry.

Table 22: Generated Slack Resources of New Entrants for the First Three Years of Entry

New Entrants	Cash Flow Investment	Cash Flow Sales	Current Assets/Current Liabilities
Atlantic Telecom Plc	-45.8	-179.8	239.4
General Cable Plc	-61.2	-494.3	219.5
Telewest Communications Plc	-75.0	-730.5	267.4
Ionica Plc	-77.3	-494.3	533.3
Orange Plc	-78.3	-183.5	63.5
Colt Telecommunications Plc	-109.4	-1,228.7	57.0
Energis Plc	-116.4	-4,548.6	46.2
World Telecom Plc	-205.3	-126.0	39.3

Table 23: Invested Slack Resources of New Entrants for the First Three Years of Entry

New Entrants	Capital Expenditure/Sales	Total Assets/Sales	Working Capital/Sales	Administration Costs/Sales
Colt Telecommunications Plc	4,232.6	2,396.6	-1,511.9	1,798.3
Energis Plc	1,866.7	2,215.5	-1,257.3	246.5
Telewest Communications Plc	836.8	1,112.0	171.1	79.1
General Cable Plc	762.5	916.2	90.5	89.6
Ionica Plc	662.1	1,407.9	815.8	85.6
Orange Plc	244.4	314.4	-19.1	26.2
Atlantic Telecom Plc	146.0	326.2	130.4	36.7
World Telecom Plc	59.3	82.5	-52.7	156.3

As shown in Table 22 and 23, the companies which have relatively achieved a good performance - General Cable, Atlantic Telecom, and Telewest Communications - invested relatively lower percentage of *invested slack* - capital expenditure/sales and administration cost/sales - and generated relatively higher percentage of *generated slack* - cash flow/investment, cash flow/sales, and current assets/current liabilities - than those of average of the samples. This result was consistent with previous research on slack resources and performance reported by Chakravarty (1986), and Greenley and Oktemgil (1998).

Competitive emphasis The findings have not shown a clear relationship between the competitive emphasis and the performance of new entrants. However, there was an indication that a new entrant which failed to achieve positional advantage was likely to have poor performance. For instance, Energis has emphasised on costs control and has deployed the latest technological development by laid its fibre route along the National Grid's power infrastructure. In fact, the company failed to achieve costs advantage which resulted in the most negative in gross margin/sales figures among other entrants.

Competitive positioning The findings show that competitive positioning had a direct effect on the performance of new entrants. The new entrant which compete with

have resulted in higher margin than those on long distance (i.e. national and international calls) and advanced services portfolio.

The above result was consistent with previous research that argued that type of entrants, magnitude of investments - *generated slack* and *invested slack resources* -, and competitive positioning are likely to have a significant relationship with the new entrant performance, while timing of entry is considered to be a contingent determinant of entry success.

There were some limitations of this study. The number of samples of this study was too small to get a good statistical analysis. The number of years of entry was very limited which might lead to under-stated the performance of the new entrants. The measurement of new entrant performance was also limited by accuracy of accounting measure from published accounts. The qualitative analysis is based on the company's and market's published information of the new entrants which might reflect a strategic intention of the companies rather than strategic action and implementation. Hence a subjective judgement can not be avoided in the analysis.

It is suggested that further research should be carried out with larger sample and longer period of entry, and to use non-accounting measure for performance evaluation (market measure P/E ratio, market/book value, and quality of services, etc.) To comprehend the analysis, it is also suggested to integrate competitive reaction of entry by incumbents into the entry strategy and performance model.

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