Strategic choices in a dynamically changing deregulatory environment

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Abstract

This paper explores the effects of the changing deregulation environment on the strategic choices and performance of a number of telecommunications organizations, which have undergone deregulation. A regulatory framework has been developed, which suggests that regulatory reach and regulatory incrementalism influence strategic choice and performance. This framework was empirically examined using a path-analytic model. © 2000 Elsevier Science Inc. All rights reserved.

Keywords: Deregulation; Telecommunication firms; Path-analytic technique

1. Introduction

The telecommunications industry is undergoing dynamic and dramatic changes such as globalization and deregulation, which is transforming the global landscape of the industry. These changes are being driven by the convergence of telecommunications, data processing, broadcasting and multimedia industries leading to the emergence of information highways (Tarjanne, 1995). This global trend towards deregulation of the telecommunications industry heightens the need to empirically study the intersection between deregulation, strategic choice and performance (Miller, 1994; Chandy, 1995).

Although the literature on privatization and liberalization is extensive, it, however, lacks a comprehensive detailed description of the deregulation of the telecommunications industry (Miller, 1994). The literature does not provide a viable strategic model, which could be used to guide governments to transform their state-owned telecommunications operators into privately-owned and competitive enterprises (Goodman and Loveman, 1991; Saunders, 1992).

Furthermore, the global trend towards deregulation of the telecommunications industry heightens the need to empirically study the intersection between deregulation, strategic choice and performance (Mahon and Murray, 1981; Smith and Grimm, 1987). The effects of deregulation are increasingly attracting interest as the demand for deregulation continues unabated (World Telecommunications Development Report, ITU, 1995).

Reger et al. (1992) point out that deregulation has attracted scant empirical attention from researchers in the Strategic Management and Organizational theory field.

Many vital questions remain un-addressed, such as:

1. What regulatory framework to apply in a dynamically changing industry environment?
2. How does deregulation affect strategic choice?
3. Do telecommunications operators pursue riskier strategies under regulation or under deregulation?

One certain factor in the present climate of a dynamically evolving telecommunications industry is that regulatory issues are becoming more and more vital to the competitiveness of the nation (Porter, 1985). As technology advances and the facilities offered by telecommunications organizations converge and become more powerful, the task of putting sophisticated systems into effective use become more complex and involved—in short, more specialized, necessitating the need for a regulatory framework (Vallance, 1995).

The deregulation of telecommunications in the USA and the UK indicates that in a completely free market, existing telecommunications organizations can exert too much market power, less through economies of scale and innocent entry barriers but more through strategic barriers erected by predatory behavior (Chandy, 1995).
2. Deregulatory framework

The field of strategic management rests on the premise that managers tend to match their organization’s strategies with the attributes of their environment and that organizations that achieve superior matches will enjoy superior competitive positions and higher levels of performance (Porter, 1980; Reger et al., 1992).

Organizational theory researchers, on the other hand, argue that environmental influences, as a whole, drive performance (Hannan and Freeman, 1977; Aldrich, 1979) and, as such, the selection of the environmental factors is the most critical input for achieving higher performance levels. Other researchers, such as Child (1972), argue that the managers’ strategy selections are of critical importance. On the other hand, Reger et al. (1992) have insisted that the most critical choices are those that match organizational strategies with the changing environmental conditions in order to achieve a higher level of competitive advantage.

The deregulation of the telecommunications industry offers an ideal context in which to examine the interactions between the environment, strategic choice, and performance suggested by the strategic management literature. This is because the telecommunications industry is well defined and is currently undergoing regulatory changes at an unprecedented rate (Tarjanne, 1995). Furthermore, regulations and subsequent moves toward deregulation typically apply evenly across all telecommunications organizations (Miller, 1994; Chandy, 1995). As such, this study of deregulation avoids many of the disconcerting factors that often cloud studies that examine responses to environmental changes.

In the deregulatory framework tested in this research, government regulation and deregulation are expected to affect strategic choices, which in turn are expected to affect performance as measured in financial terms and risks (Reger et al., 1992).

Both direct as well as indirect effects of the environment were examined. The indirect effects of deregulation on performance and risk may occur due to the mediating effects of strategic choices. At the same time, the performance and risk of organizations in an industry can be influenced directly and indirectly by regulatory activity. The possibility that regulatory scope and incrementalism may have both direct and indirect effects on performance and risk were incorporated into the framework.

3. Deregulatory dimensions

Mahon and Murray (1981) offer a framework from the strategic management perspective, which evaluates regulation as an environmental force affecting organizations’ actions and performance. Under the Mahon and Murray (1981) framework, two types of regulation are identified—social regulation that tends to regulate non-economic activities, and economic regulation that tends to be directed towards a specific industry.

Economic regulation has global implications as many countries use such regulations to constrain competition in various markets in order to protect national firms (Porter, 1980; Vietor, 1989). As such, this research focused on competition constraining regulation. According to Reger et al. (1992), the purpose or type of regulation however does not capture the extent of influence of regulation on strategic choice and performance. The REACH OF REGULATION more fully reflects the depth of deregulation, which encompasses both the scope and the stringency of regulation.

Mahon and Murray (1981) have suggested that when examining regulatory effects at the organizational level, the rate of deregulation must be taken into account. This is because organizations may have time to adjust their capital expenditure in anticipation of the environmental changes to come. This has been encompassed in the REGULATORY INCREMENTALISM dimension, which is a process similar in nature to Quinn’s (1980) concept of logical incrementalism.

The framework, thus, encompassed two dimensions of regulation:

1. Regulatory Reach (REACH)
2. Regulatory Incrementalism (THETA).

3.1. Regulatory Reach

The telecommunications industry faces regulations, which generally tend to constrain telecommunications operators from engaging in certain activities. These regulations have tended to be social in nature in order to protect the interests of the consumer and to protect the interests of the state, which is the stakeholder (Goodman and Love- man, 1991).

Even a superficial knowledge of the telecommunications industry suggests that easing of restrictions will provide unequal strategic choice opportunities and impact performance differentially.

A REACH index was developed to measure the extent of regulation present in the sample countries and to reflect the differential impacts of regulations. The coding scheme for the REACH index was developed through an extensive review of the telecommunications industry and strategic management literature, as well as interviews with 30 telecommunications industry experts. The literature review and interviews suggested that deregulation of the nationwide-based telecommunications organizations creates more significant environmental changes than does the deregulation of globally operating telecommunications organizations (Chandy, 1995). Also, the deregulation of national telecommunications organizations creates a higher level of change than that of global telecommunications organiza-
tions (Miller, 1994; Chandy, 1995). This is consistent with findings by Reger et al. (1992) in their study of the US banking industry.

Regulations for each country were coded in the following manner:

- For national telecommunications companies: 7 = national limited-liberalization, 6 = national full liberalization.
- For intra-regional companies: 5 = regional non-reciprocal, 4 = regional reciprocal, 0 = not permitted.
- For global telecommunications companies: 3 = unlimited access, 2 = limited access, 0 = not permitted.

The REACH of regulation index was then calculated as a sum of the values for the national, intra-regional, and global companies. The greater the level of deregulation, the higher the values of REACH assigned to that country. This index does have some limitations but it was felt that it captures the differential effects of deregulation and has been previously applied by Reger et al. (1992) for the banking industry.

3.2. Regulatory Incrementalism

The rate and speed of regulatory change (incrementalism) varies from country to country. For instance, the countries that provide the most stable regulatory environments have made no changes to the laws relating to their telecommunications industry in the past 10 years. Some countries are rapidly deregulating their telecommunications industry in one or two sweeping legislative changes while other countries are just gradually implementing liberalization policies (World Telecommunications Development Report; ITU, 1995). The slower the rate of change would allow incumbent telecommunications operators with more opportunities to adjust their strategies, thereby resulting in higher profits and less risk.

In constructing an index to measure the rate of regulatory changes (THETA), information gathered through telephone interviews, mail surveys, and literature search was used to calculate the number of changes (THETA) in the 5-year period prior to 1995. The year 1995 was chosen as the preferred starting data as all regulatory changes (THETA) in 1995. These five major strategic groupings constitute the largest and most important service provisioning areas for telecommunications organizations (as seen by examining the annual reports of various telecommunications organizations). Thus, the service/market mix variables included in this study were the percentage of the subscribers for residential (RES), business (BUS), mobile (MOB), and value-added services (VAS) (Chandy, 1995; World Telecommunications Development Report, ITU, 1995). These five major strategic groupings constitute the largest and most important service provisioning areas for telecommunications organizations.

4. Strategic choice variables

The literature offers a plethora of strategic choice variables (Hofer and Schendel, 1978; Hambrick, 1980; Snow and Hambrick, 1980; Reger et al., 1992). Harrigan (1985) has noted that determining the key strategic choices within an industry is difficult but a crucial task. It is difficult to include all the strategic choice variables in one empirical study. Hence, in this study, it was deemed crucial to include strategic choice variables, which the literature and an industry analysis suggested would be influenced by deregulation and which would also have an impact on the performance outcomes. The strategic choice dimensions used in this study were service/product provisioning mix, geographic, and product diversification.

In addition to the importance of these dimensions in the strategic management field, they are likewise highly significant in the deregulation of the telecommunications industry and are, thus, especially relevant to this study.

The key service mix decision in the telecommunications industry is whether to focus on the provisioning of residential services or and concentrate on the business oriented services (Vallance, 1995). It is tempting to divide all telecommunications activity into residential or business services. The telecommunications industry literature and the ITU, however, suggest other strategic business areas such as mobile telephony, customer premises equipment (CPE) and value-added services (VAS) (Chandy, 1995; World Telecommunications Development Report, ITU, 1995). These five major strategic groupings constitute the largest and most important service provisioning areas for telecommunications organizations (as seen by examining the annual reports of various telecommunications organizations). Thus, the service/market mix variables included in this study were the percentage of the subscribers for residential (RES), business (BUS), mobile (MOB), and VAS to total number of subscribers. In the case of CPE, which is not subscriber-based, the ratio of revenues to total revenues was used (Table 1).

Two types of diversification based on the industry’s history were deemed to be important: globalization and the traditional service/market diversification. GLOBINV is a measure of a telecommunications operator’s diversification outside its country’s borders, whereas NONTELINV measures the extent of diversification into non-traditional telecommunications activities such as broadcasting. The measurement used for GLOBINV was the ratio of investment in other telecommunications projects/organizations to total investment. For NONTELINV, the ratio of investment in other telecommunications projects/organizations to total investment.
in non-telecommunications related activities to total investment was used as a measure.

**5. Performance dimensions**

The regulatory effects on performance in previous studies (Smith and Grimm, 1987) have tended to be defined in terms of financial performance. According to the economics literature, competition constraining regulations allow organizations to enjoy artificially high profit levels (Stigler, 1971). Where regulation prohibits excessive competition, higher profit levels are expected as a result of the favorable industry structure (Scherer, 1980; Porter, 1981).

As most organizations included in the sample are still state-owned enterprises, it is not possible to use market-based performance measures — such as earnings per share or P/E ratio. Financial performance was therefore measured in terms of return-on-assets (ROA), as the data on this was readily available. Furthermore, Reger et al. (1992) have pointed out that the ROA tends to be a measure that is closely watched by industry analysts and organizations themselves.

Profitability is not the only component of organizational performance. The degree of risk an organization is willing to take in order to achieve a certain level of profit is another component of organizational performance (Bettis and Hall, 1982). Risk needs to be considered when studying regulatory impacts because regulation/deregulation tends to limit strategic options, which, in turn, can distort risk profiles (Baird and Thomas, 1985). This is because deregulation opens up new opportunities and some organizations may seek to actively manage risk as well as financial performance (Reger et al., 1992).

One of the risks that a telecommunications operator is exposed to is the asset management risk, that is, the rate of asset utilization. One way in which this can be measured is by the ratio of inactive subscribers to total subscribers. As this is an area of risk that telecommunications operators actively seek to manage, it was deemed the most appropriate measure of risk in this study. Also data on this is widely available. This variable was labeled TELECOM RISK.

**6. Research design and hypothesis**

There is a global trend towards deregulation of telecommunications, which is creating a variety of regulatory environments. This trend towards greater deregulation is gaining momentum and as such, provides an interesting and exciting area for research.

Fig. 1 presents the framework with the hypothesized relationships as being either positive or negative (see Table 1 for list of variables).

**7. Methodology**

The telecommunications industry is an ideal setting in which to test the effects of deregulation. The Basic Agree-
ment on Telecommunications (WTO, 1995) has already set up a timetable by which countries must liberalize their telecommunications markets. As each country regulates telecommunications activities within its national borders, a variety of regulatory environments exist. Even though countries regulate telecommunications activities within their borders, there is a global trend toward deregulation of telecommunications. This trend towards greater deregulation is gaining impetus, providing an interesting and exciting ground for research.

A testable path-analytic model, which incorporated the deregulatory, strategic choice, and performance dimensions, was developed—as suggested by the Reger et al. (1992) study.

### 7.1. Sample

The sample for this study consists of telecommunications organizations from countries that deregulated their telecommunications activities prior to 1995. This identified 34 countries. In order to reduce the possible distortions arising from size variation in the population, the study is limited to medium to large telecommunications organizations—those with $500 million or more in assets. This resulted in a sample of 112 telecommunications organizations that range in size from $50 to $51,250 million with a mean of $11,325 million in total assets. The sample includes a broad range of telecommunications organizations from large global players to regional and national, privatized telecommunications organization. Thus, the size of the sample can be considered to be representative of the population.

### 7.2. Data collection

Due to the geographic distribution of the countries, it was decided that the most cost-effective method of collecting data would be initially through a mail survey. Mail surveys were sent out to the regulatory bodies responsible for the telecommunications sector in the 34 countries in early 1995, requesting for detailed history of the telecommunications related regulations. Responses were received from 18 countries, giving a response rate of 53%. This was deemed to be too low and so another survey was sent out in the middle of 1995, which was followed 2 weeks later by a telephone contact, which resulted in 29 countries responding, thus increasing the response rate to 85%.

In the second phase of the data collection, the regulatory bodies that responded were contacted by telephone during last quarter of 1995 in order to clarify some of the answers given in the mail survey and to ask for any updates since the mail survey.

The regulatory variables were then matched with the strategic choice and performance data for 1995, the latest available data.

### Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<tbody>
<tr>
<td>1. REACH</td>
<td>7.6542</td>
<td>1.9852</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. THETA</td>
<td>2.3582</td>
<td>1.0023</td>
<td>0.423*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3. RES</td>
<td>1.0684</td>
<td>0.9343</td>
<td>0.045</td>
<td>0.015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. BUS</td>
<td>0.8963</td>
<td>0.0231</td>
<td>-0.078*</td>
<td>-0.035*</td>
<td>-0.083**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. MOB</td>
<td>0.1536</td>
<td>0.0463</td>
<td>0.086*</td>
<td>-0.082*</td>
<td>0.051*</td>
<td>0.294*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6. CPE</td>
<td>0.4569</td>
<td>0.0204</td>
<td>0.128</td>
<td>-0.051**</td>
<td>-0.048**</td>
<td>0.033***</td>
<td>0.007***</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7. VAS</td>
<td>0.0235</td>
<td>0.0065</td>
<td>0.096**</td>
<td>-0.024**</td>
<td>0.003***</td>
<td>-0.095**</td>
<td>0.293*</td>
<td>0.054**</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8. GLOBINV</td>
<td>0.1258</td>
<td>0.0182</td>
<td>0.025*</td>
<td>0.002***</td>
<td>-0.235**</td>
<td>-0.062**</td>
<td>-0.018**</td>
<td>0.004***</td>
<td>0.065**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. NONTELINV</td>
<td>0.236</td>
<td>0.02586</td>
<td>0.094</td>
<td>-0.047*</td>
<td>-0.56*</td>
<td>0.042**</td>
<td>-0.036**</td>
<td>0.023**</td>
<td>-0.077**</td>
<td>-0.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Telecom risk</td>
<td>0.0462</td>
<td>0.0096</td>
<td>-0.215**</td>
<td>-0.182**</td>
<td>0.182</td>
<td>0.091***</td>
<td>0.084****</td>
<td>-0.042**</td>
<td>0.085</td>
<td>0.21**</td>
<td>0.38***</td>
<td></td>
</tr>
<tr>
<td>11. ROA</td>
<td>0.0015</td>
<td>0.0248</td>
<td>-0.078**</td>
<td>0.031***</td>
<td>0.175*</td>
<td>0.084**</td>
<td>0.093***</td>
<td>-0.132*</td>
<td>0.074*</td>
<td>-0.006**</td>
<td>0.062*</td>
<td>0.135*</td>
</tr>
</tbody>
</table>

* *p < 0.05.
** *p < 0.01.
*** *p < 0.001.
was gathered from the annual reports of the telecommunications organizations and from the World Telecommunications Development Report (1995).

8. Results

The correlation analysis shows that there is moderate correlation between REACH and THETA, which suggests that these variables captured different but related aspects of regulation and are within acceptable levels (Table 2). These findings support similar findings by Reger et al. (1992).

The hypothesized framework illustrated in Fig. 1 was tested by developing the Path Analysis technique. A path-analytic model is an ideal way to assess direct and indirect interactions (James et al., 1982).

The results of the final path model shown in Fig. 2, Tables 3 and 4 support some of the hypothesized relationships illustrated in Fig. 1. The results show that REACH and THETA have both direct and indirect influences on TELECOM RISK and ROA. Also, the strength of the direct effects is greater than that of the indirect effects. REACH has negative direct and indirect influences on both TELECOM RISK and ROA, whereas THETA has positive direct and negative indirect effect on ROA and a negative direct and a positive indirect effect on TELECOM RISK (Table 4).

REACH also influences strategic choices regarding Residential, Mobile, Global Investment and Non-Telecommunications Investment. THETA influenced only choices regarding Residential and Global Investment. The strategic choices Business, Value-added Services, Global Investment and Non-Telecommunications Investment influenced TELECOM RISK but not ROA. Provisioning of CPE has a negative influence on TELECOM RISK while TELECOM RISK exerts a positive influence on ROA.

9. Discussion

The results of the final path model suggest that the influence of deregulation on strategic choice and performance is more complex but significant for risk and performance. The results are not only statistically significant but are of prime importance to both the telecommunications regulatory bodies as well as telecommunications operators that are operating or about to operate in a deregulated environment.

The finding that deregulation exerts both direct as well as indirect influences on TELECOM RISK and ROA suggests that deregulation will increase competition and entry of new players, and this will lower ROA. The positive relationship between ROA and TELECOM RISK, however, provides incentives for telecommunications operators to accept higher levels of risk under deregulation in order to maintain profitability at or above the levels obtained under regulation. The results show that REACH and THETA are negatively associated with TELECOM RISK, indicating that telecommunications operators in the sample are reluctant to choose this option. Some Telecommunications operators might be tempted by the opportunity to maintain profits through increased risk, which may be attractive to managers whose rewards are based on short-term financial performance. Telecommunications organizations and policy makers should, therefore, be aware of the impact of incentives

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Table 3
Regression analysis results

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>ROA</th>
<th>TELECOM RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACH</td>
<td>-0.1156* (0.00042)</td>
<td>-0.0846 (0.00012)</td>
</tr>
<tr>
<td>THETA</td>
<td>0.1456** (0.0026)</td>
<td>-0.1345* (0.0053)</td>
</tr>
<tr>
<td>RES</td>
<td>0.0532* (0.00032)</td>
<td>0.3521* (0.00235)</td>
</tr>
<tr>
<td>BUS</td>
<td>0.095** (0.00236)</td>
<td>0.0144** (0.00542)</td>
</tr>
<tr>
<td>MOB</td>
<td>0.0135* (0.00163)</td>
<td>-0.1124 (0.00283)</td>
</tr>
<tr>
<td>CPE</td>
<td>-0.0275 (0.001284)</td>
<td>0.0636* (0.000324)</td>
</tr>
<tr>
<td>VAS</td>
<td>-0.0351** (0.00522)</td>
<td>-0.00235** (0.00055)</td>
</tr>
<tr>
<td>GLOBINV</td>
<td>-0.0865** (0.00235)</td>
<td>-0.3276*** (0.00865)</td>
</tr>
<tr>
<td>NONTELINV</td>
<td>0.01582 (0.1525)</td>
<td>0.2233* (0.00062)</td>
</tr>
<tr>
<td>TELECOM RISK</td>
<td>0.044532*** (0.01532)</td>
<td>0.044532*** (0.01532)</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.23</td>
<td>0.36</td>
</tr>
<tr>
<td>F Value</td>
<td>8.765***</td>
<td>11.235***</td>
</tr>
</tbody>
</table>

* p < 0.05.
** p < 0.01.
*** p < 0.001.
when formulating strategies for operating under a deregulated environment.

The results show a positive influence of THETA on ROA, indicating that a gradual (incremental) shift towards deregulation provides telecommunications operators opportunities for adjusting to the changing regulatory environment. Similarly, THETA is negatively associated with TELECOM RISK—here, again, incrementalism allows telecommunications operators time to adopt less risky strategies. The general findings indicate that deregulation is least disruptive when changes occur incrementally, providing affected organizations advance notifications of the impending changes.

The negative relationship between REACH and TELECOM RISK suggests that deregulation either provides opportunities for telecommunications operators to better manage risk they assume, or it removes incentives for excessive risk-taking that occur under regulation. From the data, it appears that deregulation provides telecommunications operators with opportunities to adopt new strategies that are less risky than strategies that are tied to the vagaries of a particular geographic region.

While deregulation influences strategic choice, the impact is less than expected. REACH influences choices regarding Residential, Mobile, Global Investment and Non-Telecommunications Investment, but for three of these choices the relationship is only moderately significant. THETA influences only CPE and VAS, suggesting that regulatory incrementalism leads telecommunications operators to reduce the proportion of riskier CPE and VAS (Table 4).

Significantly, the balance between residential and business service provisioning was unaffected by REACH or THETA. This finding was unexpected. It may be that other environmental factors not represented in the framework affected this choice.

In addition, strategic choice variables, which were affected by both REACH and THETA, VAS, and CPE provisioning, constitute smaller portions of the portfolios of most of the telecommunications operators in the sample. Thus, it could be easier for most of the telecommunications operators to sell these areas of their business in order to change strategies than it would be to exit from, or even significantly reduce Residential or Business services.

Another interesting and unexpected finding was that five (5) out of the seven (7) strategic choice variables influence TELECOM RISK but only one influences ROA directly. One explanation that supports these findings is that, in response to deregulation, telecommunications operators adopt new strategies very quickly as evidenced by the four strategic choice variables significantly influenced by THE TA. The immediate impact of these strategies could be to reduce RISK. However, other research shows that the successful implementation of new strategies, especially diversification, requires a considerable amount of time and investment to exert a significant influence on performance.

This suggests that managers in the telecommunications industry have taken a cautious approach to deregulation, perhaps they have taken a more long-term view than they have been given credit for.

10. Implications and future research directions

This study has addressed a number of important issues concerning the relationship between deregulation, strategic choice, risk, and performance. As the trend in the telecommunications industry heads for greater levels of deregulation, these are pressing issues.

The findings presented in this study, if replicated by further empirical research, will be of assistance to telecommunications regulators in formulating regulatory policies. Strategic Planners and Consultants working in the industry should take into account these results when formulating strategic responses to deregulation.

The findings on the relationship between risk and performance lend support to the common-sense notion that managers should use caution when responding to deregulation. A fruitful direction for future research could be to consider the potential for telecommunications organizations to achieve competitive advantage by formulating political strategies toward regulatory agencies.

The literature on privatization is extensive. Since 1990, over 1500 articles on the subject have appeared in journals in different fields. Only a relatively few of these studies have examined the impact of deregulation on strategy formulation and implementation and its impact on organizational performance. However, a few studies have appeared recently concentrating on the deregulation of telecommunications (Newman, 1986; Chandy, 1995) while few other studies have looked at other industries (Ungson et al., 1985; Provan, 1987; Reger et al., 1992). This study contributes to this new stream of literature, and offers a framework suggesting that REACH and the regulatory rate of change influence organizational strategies and performance. The results suggest that deregulation impacts significantly on strategic choice, risk, and performance. These relationships should be explored in future research as deregulation is gaining importance.

One future research direction that could be considered is to study how telecommunications operators are competing across different regulatory environments.

This study is limited in its scope as it examined only two dimensions of deregulation: reach and incrementalism. Other important dimensions may exist that were not incorporated in this research but should be considered in developing a strategic management based deregulatory framework. One area that could be examined is the volatility of deregulation. Regulatory volatility refers to changes in regulatory directions—for instance, first encouraging competition, then restricting competition, then requiring it, and so on. Regulatory volatility creates an “undulating playing field.” Managers of
telecommunications organizations may find it extremely difficult to develop strategies under these conditions. Thus, it is important to examine in future research the positive and negative effects of volatility.

Future research should also examine the long-term effects of deregulation, such as the time lag effects between regulatory change and strategic response and its impact on performance in order to provide greater insight. Subsequent research might also examine other variables that were not included in this study. The role of managers in perceiving, framing, and reacting to deregulation is promising. For instance, how managers assess the opportunities and threats posed by deregulation and how managerial interpretation and framing of the environmental discontinuity moderates the relationship between deregulation and strategic choice should be researched further.

Acknowledgments

I would like to Thank the Chief Executive Officers (CEOs) of the 10 Telecommunications Operators who agreed to be interviewed by telephone, the 40 Industry experts who were contacted and provided valuable insight on the issues and the 34 Regulatory Bodies in the sample countries that provided some of the data used in this research.

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