How Do Businesses Change? Theory And Evidence From Telecommunications Companies Concerning Relevant Resources And Market Failures

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This project studies different organizational modes by which managers attempt to change their businesses. The motivation for the study is to learn more about how firms change in the face of strong inertial forces that interfere with attempts to change. Many convincing theoretical and empirical studies in organization theory, economics, and business strategy show that firms face strong social and economic inertial barriers to change (e.g., Nelson and Winter, 1982; Wernerfelt, 1984; Hannan and Freeman, 1989). Nonetheless, although many businesses do not respond successfully to changes in their competitive environments, some firms do undertake fundamental changes by adjusting their set of resources over time (Capron, Dussauge, and Mitchell, 1998). Recently, researchers have begun to focus on the intersection of inertia and change, on the processes by which some firms balance their needs for reliability of current activities with their needs to reshape their business capabilities (Eisenhardt, 1989; Levingthal and March, 1993; Haveman, 1993; Amburgey and Dacin, 1994; Burgelman, 1993; Mitchell, 1994; Barnett and Carroll, 1995; Greve, 1998). This paper attempts to continue these efforts.

Our approach in this paper uses a routine-based view of strategy (Nelson and Winter 1982). We treat routines as the key units of analysis for studying firm activities, where routines are repeated patterns of actions that span multiple actors (Winter, 1987), and view managers as boundedly-rational actors who face substantial limits in their ability to assess and undertake individual actions (Karim and Mitchell, 2000). In this approach, change means substantive alteration to a firm's routines and resources, thereby altering the firm's business activities. Our goal is to identify systematic influences that lead managers to chose among modes of change.

We define four organizational modes of change: internal development, discrete resource exchange, alliances, and business acquisitions. Internal development involves changes that a firm undertakes by recombining its existing resources, such as internal training and internal product development. Discrete resource exchange refers to changes that a firm undertakes by obtaining distinct new resources, such as hiring new employees, purchasing assets such as software packages or production equipment, or contracting for short-term services. Alliances refer to the formation of ongoing relationships with another entity in which the organizations retain strategic autonomy but agree to work together. Examples of alliances include joint ventures, R&D and marketing partnerships, and long-term sourcing relationships. Business acquisition refers to purchasing an existing commercial entity. Acquisition encompasses both acquiring entire corporations and acquiring individual businesses from ongoing multi-business corporations.

The following section emphasizes two influences on mode choice, resource relevance and market failure. We will be happy to provide interested readers with extensive references concerning the literature that underlies our summary arguments.

We explore the influences through a series of interviews with managers of European telecommunications firms. The empirical results provide intriguing implications concerning the influence of factors that derive from protecting firms from opportunistic behaviour versus factors that derive from the need to coordinate the use and creation of resources.

Modes Of Business Change

Figure 1 depicts our general model of factors that influence modes of business change. Table 1 lists elements of each proposition that we discuss in this section.
The first distinction in Figure 1 arises between the choice of internal development versus external modes of change. We argue that internal development increases with resource relevance. In face of a need for change, firms evaluate the magnitude of change in comparison with their existing resources. Firms will tend to undertake internal development when they estimate that their current resources are highly relevant to the targeted changes. By relevance, we mean that existing resources within the changing firm provide the skills needed to undertake the changes. In our empirical analysis, we will discuss several dimensions of resource relevance, which we list in Table 1, that arise from literature in which routines are central concepts.

**Proposition 1**: The greater the relevance of a firm’s existing resources to the targeted resources, the more likely the firm will use internal development rather than external modes to undertake a change.

The second distinction in Figure 1 deals with the choice of discrete resource exchange and inter-organizational modes of change. Everything else being equal, firms will prefer discrete resource exchange to inter-organizational modes simply because discrete exchanges tend to be less costly, as they involve only the targeted resources and avoid governance costs and redeployment costs for excess resources associated with alliances and acquisitions. Nonetheless, firms often undertake even highly expensive inter-organizational activities in order to undertake changes, rather than attempt to change via obtaining focal discrete resources.

Proposition 2 states that the degree of market failure that the resource exchange faces affects this choice. Market failures exist when firms face difficulties in attempting to compose, consummate, and enforce arms length agreements to exchange assets. Exchanges with high degrees of market failure often need safeguarding and coordinating mechanisms that firms find more possible to create via inter-organizational exchange rather than through discrete exchange. Exchange of such resources requires organizational forms that enhance cooperation, proximity and repeated exchanges to transfer effectively resources among parties. Such organizational forms allow the internalization of resource exchange, with stronger opportunities to reduce behavioral uncertainty through internal or inter-organizational governance and to enhance learning and coordination through internal or inter-organizational socialization processes.

Our empirical analysis explores the impact of three forms of market failures, as Table 1 notes, including appropriation hazards due to potential opportunism, coordination problems from the need for cooperation by provider and user of resources, and lack of institutional legitimacy. We also address the impact of exchange scope, mode experience, and reconfiguration ability.

**Proposition 2**: When a firm chooses an external mode to obtain resources, the greater the degree of market failure that the resource exchange faces, the more likely the firm will use inter-organizational exchange rather than discrete resource exchange to undertake a change.

The third distinction in Figure 1 concerns the choice between alliances and acquisitions as inter-organizational modes of change. Simply in terms of cost, firms will often prefer alliances to acquisitions, because alliances tend to involve lower expenditure and immediate disruption. Indeed, we agree with Williamson (1985) that internal organization adds bureaucratic costs, so that full internalization, as represented by business acquisition, can be thought of as the organizational form of last resort. Firms typically are better off if they first carefully consider
alliances before undertaking the costs and difficulties of acquisitions. In many cases, though, firms must turn to acquisitions in order to achieve desired changes.

Proposition 3 states that the tendency to use business acquisitions as modes of change will increase with the scope of market failure. The proposition derives from the need to safeguard and coordinate the use of existing and target resources. We use the term scope of market failure to refer to the number of resources that a market failure affects. An exchange has low scope of market failure when few resources face appropriation or coordination issues. An exchange has high scope of market failure when many resources face appropriation concerns or will require substantial coordination. Exchange cases that involve many resources that face market failure, whether due to risk of losing value or coordination difficulties in creating value will tend to be better suited to acquisitions than to alliances. Our empirical analysis examines how different dimensions of market failure will refine proposition 3, as Table 1 notes.

**Proposition 3**: When a firm chooses an inter-organizational resource exchange mode to undertake a change, the greater the scope of market failure, the more likely the changing firm will use business acquisitions rather than alliances.

In summary, we develop three propositions. We consider four modes of business change, including internal development, discrete resource exchange, alliances, and business acquisitions. The propositions emphasize the impact of relevant resources and market failure on firms' choice of modes of change. The concepts of resource relevance and market failure encompass several attributes that arise from the concept of firm-specific routines. Our empirical analysis will also investigate mode cost and availability as contextual factors that will influence mode choice.

We stress that the predictions do not lead to unambiguous choices concerning modes of change. There are conflicting influences among the factors, which we believe is consistent with the conflicting signals to which managers must attempt to respond. Rather than an unambiguous solution to understanding change modes, our predictions provide a sequential process of decision making that helps describe the issues and considerations that managers face when they attempt to undertake the difficult task of changing their businesses.

**Business Change By Telecommunications Companies**

This section outlines the results of a series of interviews that we conducted with managers of European telecommunications companies. The interviews focused on changes that the firms needed to undertake in order to address environmental trends in the Information Communication Technology (ICT) business. The ICT product-market segment of the telecommunications industry combines telecommunications and information technology skills and services. We conducted thirteen interviews with senior corporate executives and business unit managers of ten telecommunications firms during 1998 and 1999. One of the firms is a recent telecommunications industry start up, while the other companies are established incumbents. The interviews included open-ended discussions and semi-structured formats.

The interviews explore the propositions that we outlined above. We set the basic dimensions of the propositions before the undertaking the interviews, based on relevant literatures. We then refined elements of the propositions as the interviews proceeded. We stress that the interviews provide theory building more than theory testing.

We first asked the managers about the types of changes that they wanted to undertake and the types of resources that they would need for the changes. The changes and resources that they
identified reflect the substantive changes that are taking place in the telecommunications environment, in which regulatory, technical, competitive, and market transformations are affecting most aspects of telecommunications company activities. The desired changes emphasized three key business dimensions: products, markets, and organization. Targeted resources emphasized marketing skills, managerial skills, and R&D capabilities.

We then asked the executives to discuss how they chose among modes of change in different situations of resource relevance and market failure. Table 2 summarizes the results of the interviews. The interviews provide substantial support for the propositions. In many cases, the managers raised the issues themselves, without prompting by our questions. In other cases, especially as we moved into the more structured phase of the interview series, we found that the managers were highly familiar with the issues that we addressed.

********** Table 2 about here **********

Most dimensions of resource relevance figure prominently in Part A of Table 2, which addresses internal versus external modes of change. Resource closeness (1.1), resource strength (1.2), mode experience (1.3), internal resource linkages and reconfiguration routines (1.4), external linkages and importation reconfiguration routines (1.5), and resource conflict (1.6) all arose as key influences during the interviews. Scope of change (1.7) primarily arose in the context of discussing resource closeness and resource strength. Firms facing greater time pressure (1.8) often sought external sources, rather than developing new internal routines.

An intriguing implication arose during the comparison of internal and external modes of change, concerning managerial recognition of the need for change and identification of modes of change. Discussions of mode experience suggested that path dependence sometimes constrains firms’ activities (1.3). At the same time, though, most managers were highly aware of the potential problems that path dependence imposes and were attempting to over-come the inertia by using modes of change that suited the diversity of resources that they required. This suggests that inertia stems more from organizational difficulties in responding to recognized problems than from managers' inability to recognize the problems in the first place.

Several dimensions of market failure arise in Part B of Table 2, which addresses discrete versus inter-organizational external modes. The executives often mentioned two of the three types of market failure, including the need for ongoing cooperation in resource use (2.2) and institutional legitimacy (2.3). By contrast, the third type of market failure, appropriation hazards stemming from intrinsic resource characteristics or institutional hazards (2.1), received less mention in distinguishing between discrete and inter-organizational exchange. The lack of emphasis on appropriation hazards might occur because the managers simply take it for granted as an important factor, but the factor did not figure as an important issue even in the semi-structured interviews. Instead, the appropriation issue arose more commonly in the comparison of alliances versus business acquisitions, which we discuss later. Scope of resource exchange (2.4), which reflects all three types of market failure, also received some mention. Discrete exchange mode experience (2.5) arose as an issue in some interviews, although the executives again are aware of path dependency issues and attempt to overcome them. Reconfiguration ability (2.6) also arose as a key factor in distinguishing between discrete exchange and inter-organizational modes. The managers with whom we spoke raised this issue both independently and in response to our questions. The degree to which their firms possessed routines needed to undertake independent and inter-organizational change clearly affected their choice of modes.
Thus, through the first two stages within Figure 1, of internal versus external modes and discrete exchange versus inter-organizational modes, the issues emphasized what Williamson (1999) refers to as competence factors more than protection factors. That is, the initial issues that influenced mode choice tended to be issues concerning what the firm was able or not able to do. Only after selecting a mode that built on prior competence or addressed competence limits, did the firms tend to turn to governance issues in order to protect the value of their changes.

Several dimensions of the scope of market failure arise in Part C of Table 2. Among market failures (3.1), appropriation hazards now emerge as a major factor in distinguishing between alliances and acquisitions, with some additional reference to the need for ongoing cooperation and institutional legitimacy. Mode experience (3.2) was a common determinant of mode choice, while resource relevance (3.3) received some attention. The interviews also drew our attention to the retractability issues of uncertainty and goal centrality (3.4).

The results in Part C of Table 2 reveal an important contrast concerning appropriation risks, when considering the inter-organizational modes versus the earlier considerations of internal and discrete modes. Where appropriation risks rarely figured as important issues earlier, appropriation appears as a key element in the choice between acquisitions and alliances. The emergence here suggests that appropriation risks commonly intertwine with the ability of another firm to gain close interaction with a changing firm, via an alliance. That is, risks of appropriation may tend to be most severe when coupled with ongoing inter-organizational activities. Discrete changes, by contrast, may tend to involve lower risks of appropriation, both because of the more limited scope of the exchange and because of the greater ability to define adequate contractual safeguards. The core implication of this contrasting result is that governance issues often arise from competence issues, particularly in the context of ongoing inter-organizational development of competence, rather than primarily from the need to protect existing resources.

In summary, the framework identifies four modes of change and two sets of factors that influence mode choice. The interviews emphasized dimensions of resource relevance and market failure that involve organizational routines. The results of the interviews are consistent with a sequential change model in which firm first compare internal and external modes and then choose between different external modes. The results also are consistent with an escalating emphasis on change via first emphasizing internal development of existing resources, next undertaking discrete resource exchange via hiring knowledgeable people with tacit skills, and then undertaking inter-organizational modes. Firms often use alliances to obtain wider-scope tacit skills that are outside a firm's existing knowledge base and use acquisitions to obtain core resources and resources that face high appropriation risks. Mode experience and the presence of specific reconfiguration routines that suit particular modes condition mode choice.

Conclusion

This paper outlines a model of change mode choice. Figure 1 depicted the elements of the model, in which issues concerning resource relevance and market failure lead firms to undertake increasingly complex modes of change. The mode choice sequence provides a cumulative model of increasing mode complexity, in which each higher level mode often involves elements of lower level modes. A series of interviews in the Information Communications Technology segment of the telecommunications industry offer support for the framework.

The interviews suggest preliminary implications for comparing how incentives to develop and protect competence affect mode choice. Among simpler modes, such as the use of discrete
resource exchange, the primary initial influences arose from issues concerning a firm’s possession or lack of needed competence, while protection factors arose mainly as a consequence of competence-based choices. Among the more complex inter-organizational change modes of alliances and acquisitions, however, resource protection concerns emerged as first stage issues along with competence needs. Hence, the risks of appropriation may be most severe when coupled with ongoing inter-organizational activities that involve changes on several dimensions and substantial tacitness in defining and forecasting resource development outcomes.

In conclusion, we use a conceptual approach that identifies routine-based factors that managers commonly face in making decisions concerning business change. The approach reflects the complicated reality of business change. We outline possible routes by which managers can attempt to change their firms, rather than offering unique predictions that unambiguously identify change modes. We believe that the approach suits the context of complicated business environments, in which boundedly rational managers rarely face unique choices. This ambiguity underlies the seemingly fragmented choices that firms make in the face of environmental demands. The ambiguity may also underlie the recent tendency in the strategy and organizational literatures to under-emphasize studies of how businesses change, in favour of more constrained approaches that focus on inertial tendencies. While we are highly sympathetic to inertial arguments, believing that path dependency undoubtedly conditions business change, our conceptual interest lies in understanding why firms often change in the face of inertia. We believe that an increased understanding of business change requires a multi-faceted approach. We also believe that the conceptual base of routines and resources as units of analysis provides a useful element of such an approach. We hope that further empirical work initially will refine the theory and ultimately can test key elements that emerge from the theory building stage.
References


Figure 1. Factors Affecting Modes of Business Change
Table 1. Dimensions of resource relevance and market failure

<table>
<thead>
<tr>
<th>Resource relevance</th>
<th>Mode</th>
<th>Market failure</th>
<th>Mode</th>
<th>Scope of market failure</th>
<th>Mode</th>
</tr>
</thead>
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<td>2.1 Appropriation hazards</td>
<td>Discrete</td>
<td>Appropriation hazards, cooperation, &amp; institutional legitimacy</td>
<td>Acquisition</td>
</tr>
<tr>
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<td>2.2 Coordination problems</td>
<td>Inter-org</td>
<td>Mode experience</td>
<td>Relative</td>
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<tr>
<td>1.3 Internal or external mode experience</td>
<td>Relative</td>
<td>2.3 Lack of institutional legitimacy</td>
<td>Inter-org</td>
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<td>Relative</td>
</tr>
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<td>1.4 Internal resource linkages &amp; reconfiguration routines</td>
<td>Internal</td>
<td>2.4 Scope of resource exchange</td>
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<td>Alliances</td>
</tr>
<tr>
<td>1.5 External resource linkages &amp; importation reconfiguration routines</td>
<td>External</td>
<td>2.5 Discrete exchange mode experience</td>
<td>Discrete</td>
<td>3.4 Uncertainty, goal peripherality, &amp; retractability</td>
<td>Alliances</td>
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<td>1.6 Resource conflict</td>
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<td>1.7 Scope of change</td>
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<td>External</td>
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</table>

4. Contextual factors
Mode cost & availability | Relative
A. Proposition 1: The greater the relevance of a firm’s existing resources to the targeted resources, the more likely the firm will use internal development rather than external modes to undertake a change.

1.1. Resource closeness: Hiring new people is a common mode of obtaining resources that are far from the changing firm’s resources. When the gap between the targeted resources and the firm’s resources is wide, firms tend to acquire critical mass of needed resources through alliances or acquisitions.

1.2. Resource strength: The weakness of the changing firm’s resources relative to the targeted resources is an important motivation to pursue external modes of resource acquisition. Resource strength in both the focal resource area and in non-focal resource areas matter and can help. A firm with no particular resources in the focal area will find it easier to acquire resources from the outside if it has strengths in other areas. Having a reputation in some resource areas helps overcome the liability of newness that a firm, even established, can face in a distant resource area, so long as the reputation does not come from a resource area that conflicts with the targeted resources.

1.3. Mode experience: There is some evidence of path dependency, but firms tend to be aware of the need to use alternative modes of internal and external modes to obtain the diversity of resources they want. There also is strong recognition of the limits inherent to internal development.

1.4. Internal resource linkages and reconfiguration routines: Internal resources linkages and processes tend to be difficult to disentangle. Managers often mention mechanisms for linking resources as critical, such as personnel rotation and information sharing systems. Key processes involve reconfiguration, such as divestiture of obsolete resources, coaching and socialization processes, and reduction of bureaucracy.

1.5. External linkages and importation reconfiguration routines: The capability of importing external resources is critically important in a context of shortage of supply. In face of a shortage of external supply (e.g., IT people), attracting people is difficult as the firm faces the liability of business newness. Such liability of newness also holds for incumbents that do not benefit from a reputation in the specific targeted area. Incumbents can suffer from administrative heritages that make them less attractive compared with newcomers. Usually, the ability to attract external resources requires internal changes to create a more appropriate profile. There can be a vicious spiral in which a firm will not be able to attract external resources as long as it does not have a certain level of these resources internally. Alliances and acquisitions can be ways to overcome this liability of newness.

1.6. Resource conflict: Targeted resources often conflict with the changing firm’s existing resources. Conflicting targeted resources meet mutually reinforcing problems of internal legitimacy (employee acceptance) and of external legitimacy (customer acceptance). When developed within the firm, firms often develop conflicting targeted resources outside the original organization. However, the independent unit that provides a home for the conflicting targeted resources has a very unstable position as a form of internal joint venture; the independent unit must deliver quick results, cannot fully benefit from the corporate resources, and so aims at gaining more organizational importance.

1.7. Scope of change: The more business dimensions that a change affects, the more likely firms are to use external modes, typically in combination with internal development.

1.8. Time pressure for change: Firms facing greater time pressure often sought external sources, rather than developing new internal routines.

B. Proposition 2: When a firm chooses an external mode to obtain resources, the greater the market failure that the resource exchange faces, the more likely the firm will use inter-organizational exchange rather than discrete resource exchange to undertake a change.

2.1. Appropriation hazards: Managers raised the fear of not commanding the intangible elements in discrete resource exchange. Eventually, the firm will be the owner of the resources that have been bought. The process of transaction per se is a concern which varies with the level of the buyer’s knowledge in the targeted area. The degree of intangibility of a resource is relative to to the buyer’s prior knowledge of the targeted resources; the further away the targeted resource from the buyer’s resources, the higher the
perceived degree of intangibility of that resource, and the higher the risk of appropriability hazard, suggesting that transaction costs are partly endogenous to a firm's existing resources.

2.2. Need for ongoing cooperation: Managers view alliances and acquisitions as means of obtaining bundles of resources that firms needed to develop new services. Intangible elements such as culture, processes, and ways of operating often arise in alliances and acquisitions.

2.3. Institutional legitimacy: External legitimacy is a key element in attracting external resources. Firms do not have equal access to external resources. Firms with a high reputation can overcome some liability of newness in a specific resource area if they have strengths in other areas. However, in the specific resource area, a firm will face an absorptive capacity issue as the lack of a prior resources will make it difficult to absorb and retain the resources. The lack of a critical size in the targeted resource area may lead the firm to go for a more radical approach through alliances or acquisitions. Internal legitimacy is also an key element for absorbing external resources.

2.4. Scope of resource exchange: When discrete resource exchange would involve many resources, firm often undertake an acquisition or alliance instead.

2.5. Discrete exchange mode experience: Path dependency for discrete resource exchange may occur as a default mode, rather than being an experience enhancing mechanism. The fact of avoiding inter-organizational mode may be an outcome of the lack of skills to manage alliances or acquisitions, rather than as a trade-off between discrete and inter-organizational modes. Firms often view internal development and discrete resource exchange as parts of an inwardly focused mode of change, which also suggests the difficulties that the firm faces to change by itself. In contrast, alliances and acquisitions bring a different organizational context. To some extent, the failure in the discrete resource exchange may come from the inability of the receiving firm to change its context to graft the resources (internal failure), rather than from the features of the targeted resources (embeddedness). Some resources, even embedded in their context, could be decontextualized and recontextualized if the changing firm could overcome the difficulties to change its own context. The use of alliances and acquisitions sometimes creates momentum for the changing firm to change its context.

2.6. Independent and inter-organizational reconfiguration ability: The interviews noted that firms must undertake internal changes such as developing new reward systems and coaching processes, if they want to acquire external resources. In the coaching process, for example, firms have to decontextualize and recontextualize acquired resources. Internal changes may not be sufficient to attract discrete resources. In that case, firms will have to ally or acquire firms to gaining access to a different organizational context. However, even in the context of alliances and acquisitions, it is difficult to learn from others. Some firms can be better at designing mechanisms to increase their ability to learn from partners or targets.

C. Proposition 3: When a firm chooses an inter-organizational resource exchange mode to undertake a change, the greater the scope of market failure, the more likely the changing firm will use business acquisitions rather than alliances.

3.1. Market failures: Support for appropriation hazards, ongoing cooperation, and institutional legitimacy. The fear of losing knowledge in the alliance is a key issue. Termination uncertainty is a major issue.

3.2. Mode experience: Systematized practices of alliances or acquisitions represent incentives to choose modes of change. Firms tend to measure the performance of an alliance according to the degree to which firms share knowledge. Sharing of knowledge varies across resource areas, depending on their sharing of a community of interests. Operating systems such as inventory, codification, and staff rotation are enforced in alliances driven by resource sharing.

3.3. Weak resource relevance: Firms that are unfamiliar with targeted resources often conduct alliances rather than acquisitions. This is highly relevant when firms cross borders to gain access to locally-embedded resources (e.g., networks, customer contact) that they cannot yet manage by themselves.

3.4. Uncertainty, goal peripherality, & retractability: Reversibility of commitment can be valuable in situations where there is uncertainty about the future value of the targeted resources and when resources are peripheral to the firm's core goals.

D. Contextual Factors: Mode cost and available alternatives both influenced mode choice.