

THE GENESIS OF THE MODERN CORPORATION

By

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2002.I

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Acknowledgements

This paper is the transcript of a lecture delivered at the University of Nottingham on 27th February 2002. The text reflects several years of research, much of it collaborative. The role of the following colleagues in various aspects of research activities is therefore gratefully acknowledged. Bob Berry, Stanley Chapman, Igor Filatotchev, David Higgins, Steve Procter, Mike Wright, John Wilson.

This paper is circulated for discussion purposes only and its contents should be considered to be preliminary.

The Genesis of the Modern Corporation

Abstract

The objective of the paper is to explain the development and characteristics of corporations, in particular, the scale and scope of the firm's activities. Using theoretical analysis, analytical models, and historical and modern examples the paper aims to synthesise the characteristics of scale and scope economies with processes of accountability to external stakeholders. It begins by examining the nature of the conventional financial balance sheet and then goes on to examine an alternative balance sheet view of the firm. It then seeks to offer an explanation of changes in the scope of firms' activities, presenting a knowledge-based view of entrepreneurship. Finally it offers an explanation of the characteristics of business networks.

The Genesis of the Modern Corporation

Introduction

The objective of this evening's lecture is to explain the development and characteristics of corporations. In particular, it aims to explain the scale and scope of the firm's activities. Management gurus have exercised considerable energy in developing suitable prescriptions. Buzz words, such as 'downsize', 'downscope' and 'rightsized', have recently entered the managerial lexicon. Whereas management theorists almost always uncritically presume the need for change ('change something today' is the bold slogan of one leading publication),¹ few give consideration to serious historical analysis. But if an organisation really does need to be 'rightsized', an extremely interesting question is surely how it came to be 'wrong-sized' in the first place.

If we consider the large, modern corporation, it appears to be founded on a contradiction. Transparent capital markets should promote specialisation by firms and diversification by shareholders. Modern capital markets are underpinned by technologically assisted and rapid information transfer, have global reach, and are characterised by low transaction cost. In Britain and in the USA, conglomerates tend to trade at a discount on the share markets. However, notwithstanding some recent evidence of refocusing, the large, diversified corporation remains the norm. According to some, they rule the world.² There are two possible explanations for this apparent contradiction. One, diversification by firms is more efficient than their specialisation. Two, accountability structures are inadequate. Or in other words managers are being allowed systematically to destroy shareholder value. Both

possibilities will be examined in more detail using theoretical analysis, analytical models, and, as far as time permits historical and modern examples. In the process the analysis will also offer, (i) an alternative balance sheet view of the firm, (ii) an explanation of changes in the scope of firms' activities, (iii) a knowledge-based view of entrepreneurship and, (iv) an explanation of the characteristics of business networks.

The Financial Balance Sheet and its Limitations

There are two groups of people in the audience tonight. The first group, mainly the accountants among you, when faced with a simple financial balance sheet will understand it perfectly, but will find it relatively dull. The second group, the non-accountants, will not understand it much or at all, and will find it relatively dull. Let's have a quick look at what a conventional balance sheet tells us:

Fixed assets + working capital = debt + equity

In simple terms this tells us about what assets the company has and in what proportions. On the right hand side it tells us about who owns those assets, split between two groups of claim holders. Note that the 'what' and the 'who' categories correspond to the scale of activity on the one side and accountability to stakeholders on the other. Figure 1 shows how the balance sheet categories may be used to contrast the predominant financing method in different industries or different economies. Here the German and Japanese tradition of debt, or bank financing is contrasted with the Anglo-American tradition of equity, or stock market financing. The matrix can also be used to contrast the predominance of circulating capital in economies dominated by

merchants with the investment in fixed capital required to sustain manufacturing. These contrasts are pertinent when for example examining transitions to industrialisation for specific economies.

Figure 1: Some Generic Balance Sheets

		<i>Source of funding</i>	
<i>Type of capital</i>	Fixed capital	Debt	Equity
		Manufacturing Germany, Japan	Manufacturing Britain, US
	Circulating capital	Merchant Germany, Japan	Merchant Britain, US

Nonetheless the limitations of standard balance sheets are obvious and well-known. Whilst it may be useful to look at the fixed and working capital split, I would like to argue that it is better to consider the nature of the firm's resources and whether it relies on internal or external economies of scale to secure competitive advantage. These correspond to fixed and circulating capital, but not very well, as will be explained soon. Other interesting assets, particularly intangibles, the value of a skilled workforce, the reputation of the business, its linkages with customers and suppliers, are all commonly ignored by the introverted world of double entry bookkeeping. The balance sheet also tells us about equity and debt, but nothing about what is potentially a more interesting contested terrain - namely the conflict between those working within the organisation, including its managers and the external financial stakeholders. An alternative balance sheet is called for, lest we dispense with it altogether - a step that non-accountants would surely approve of.

Alternative balance sheet

I believe in the seeing a long way by 'standing on the shoulders of giants' view of research. My presentation this evening is heavily dependent on the previous work of other scholars both inside and outside this room. It would in fact have been nice to quote Aristotle, but I couldn't find anything relevant. So instead I had to settle for Aristotle Onassis. He said, and I quote, that 'the secret of business is to know something that nobody else knows'. Knowing something that nobody else knows sounds like a definition of a secret, full-stop. But let's keep the business situation in mind anyway. There are two sources of business secret or types of valuable knowledge accessible by entrepreneurs. These are organisation-specific sources that might create idiosyncratic or 'tacit' knowledge (ISK).³ Such knowledge might be developed through organisational learning at the general level.⁴ Specific examples might include or spotting more than one use for non-fungible assets.⁵ An alternative source of knowledge comes from outside the organisation. By this we mean external pools of knowledge,⁶ which usually have a public good element such as local pools of experience and skilled labour (public good knowledge, PGK).⁷ If the knowledge is valuable, there are two ways in which the value can be appropriated: as private rent (perquisites, PQ) or as external financial stakeholder return (profit, Π) plus monitoring cost (MC). Two types of knowledge and two types of appropriation provide us with an alternative 'knowledge' balance sheet'. This might be represented as:

$$PGK + ISK = PQ + MC + P \quad (1)$$

Or:

$$PGK + ISK - PQ - MC = P \quad (2)$$

There are many possible examples that might be used to illustrate these relationships. The written version of the lecture contains several. I'll just mention two for now, intended to illustrate contrasting cases. The Lancashire cotton industry in the nineteenth century has been often cited as an example of an industrial district, where external economies of scale underpinned success.⁸ In Oldham in the period c.1870-1885, shareholders possessed virtually all potentially valuable knowledge.⁹ They were usually cotton workers themselves, and vociferous participants at company meetings, as Farnie put it 'displaying as much ruthlessness [to directors producing unacceptable balance sheets] as the leaders of the French revolution towards their unsuccessful generals'.¹⁰ Input and output material prices were published regularly by organised futures markets. Wage piece-rates were negotiated via lists and strongly adhered to by unions and employers' organisations.¹¹ Directors knew little that wasn't known already and were paid accordingly. Directors' salaries were only £2 per quarter for some companies. Elsewhere the typical fee was £50 and more.¹² In terms of the model, most knowledge was PGK, and entrepreneurial opportunity arose from activities outside the company, rather than for example in organising more efficient production or diversification. Shareholders rather than managers appropriated surpluses.

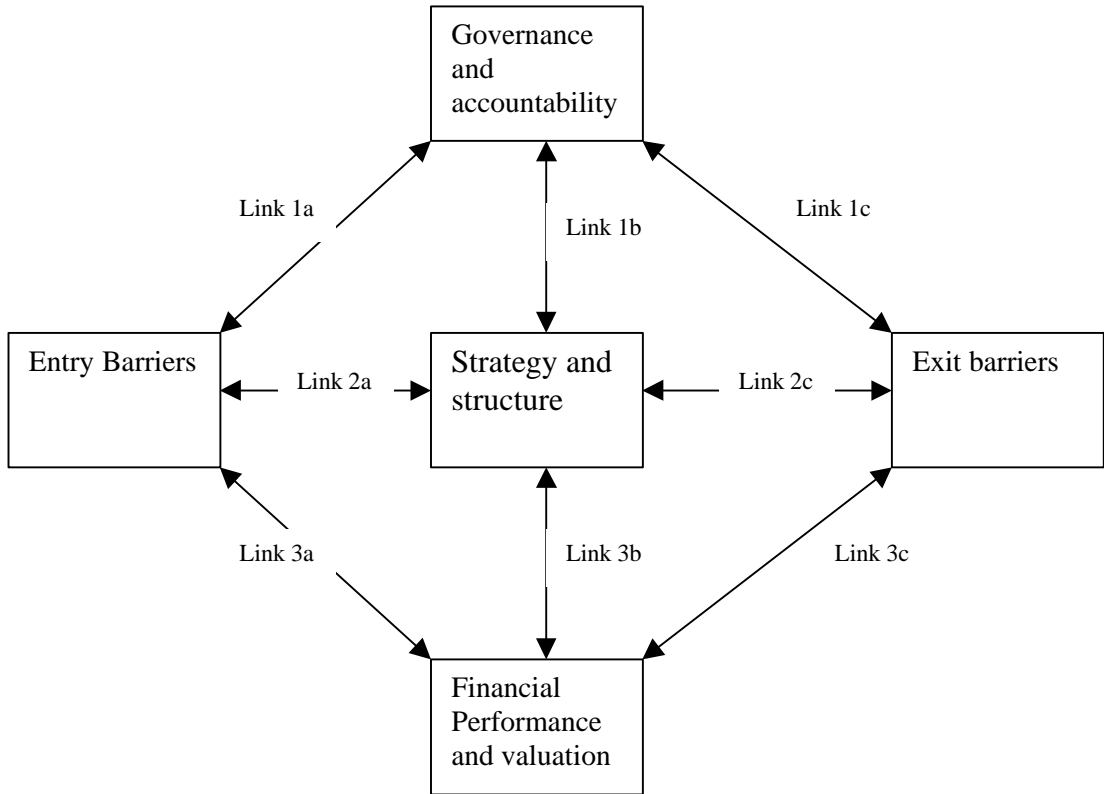
It is interesting to contrast these well-informed shareholders with the situation in the United States. Here business organisation centralised rapidly in response to the scale economies afforded by the large domestic market. In the steel industry and elsewhere, huge investment in fixed capital drove down unit costs, effectively excluding overseas imports. To guarantee supplies for large-scale production,

backward integration was a rational response. Another major investment was in the extensive sales force. Horizontal mergers centralised and rationalised managerial hierarchies. The latter were carried out with the assistance of banking and financial institutions, perhaps best exemplified by the alliance of Andrew Carnegie and J.P. Morgan in the formation of the United States Steel Corporation.¹³ Managerial and cost accounting evolved from the principles of scientific management as the scale of business activity expanded.¹⁴ Accountants were also employed by promoters of business combinations to add authenticity to prospectuses and initial balance sheets of new combinations. Critics of the system included Arthur Anderson, who although sympathetic to the rise of the corporation, was concerned about the potential for fraud. Lack of an organised accounting profession and regulatory framework¹⁵ left outside investors with little idea of what was happening inside these new giant corporations. As one early twentieth century commentator suggested, the quoted share price was the best guide to profitability.¹⁶ This system was not seriously considered for reform until after the Wall Street crash of 1929.

Abstracting back to the model lets consider some general contrasts. In the limiting case where all knowledge is ISK, production efficiency is achieved through internalisation of economies of scale and scope. From a financial market perspective all risk is firm specific, Although there are theoretical gains to investor diversification where risk is specific, the opportunities for diversification may be undermined by monopolistic control of product markets.¹⁷ Abnormal profits are generated and significant rents are available for appropriation between managerial and ownership groups, split according to the effectiveness of monitoring arrangements. Conversely, if all knowledge is PGK, allocative efficiency is achieved through specialisation. From a financial market perspective all risk is systematic and again, although for a

different reason, there are no gains to investor diversification under such circumstances. Profits are normal and accrue solely to owners. Using this model to return to our main question, diversification by the firm occurs rationally where managerial internal scope economies (ISK minus allocative inefficiencies) are greater than market transaction cost (investors' cost of monitoring minus the opportunity benefit of diversification). Generalising further, the resource base is set by the nature of scale and scope economies and this in turn determines entry and exit barriers. From the well-known structure-conduct-performance paradigm, the level of profit is determined by these conditions. However, the notion of accountability integrates this paradigm with a governance perspective, as illustrated in figure 2.

Figure 2: Structure, Conduct and Accountability



There is a further logical link between financial performance and the resource-based view of the firm. At the simplest level, profitability generates cash where other things being equal the resource base of the firm will increase. At a more abstract level, strategic entry and exit decisions can be related to level of profit and the valuation of assets.¹⁸ In addition to underlying earnings, profitability also depends on the opening and closing valuations placed on the firm's assets. Because this analysis deals with entry and exit decisions it can be extended logically to include decisions to diversify or to refocus. Such decisions depend crucially on comparisons between economic value in use and replacement cost and realisable value and hence asset specificity and utilisation. In certain conditions of asset specificity, managers have an incentive to diversify the uses of such assets.¹⁹ The economic value yardstick implies judgement about the future earning power of intangible and human capital assets. In turn such strategic resources generate economic quasi-rents that sustain superior performance and restrict entry.²⁰ Conversely if there are changes in the level of technology the replacement cost of assets may change, resulting in a loss of capital for the firm. This may depend on whether the firm or its competitors have made ex ante investments in proprietary research and development activities. Where incumbent firms lose capital, there are stronger entry incentives for new firms to enter the market. Another way in which firms lose capital is if existing assets are under-utilised, either through temporary changes in demand or through longer run over-capacity problems. In such cases, losses are incurred as a result of spreading fewer units of output over a higher cost base. In conditions of changing technology, capital losses arising from obsolescence may be also expressed as asymmetries between realisable values and the book value of assets on the assumption

of continuing use.²¹ Further, declining realisable values of specific assets may create exit barriers where their use can be continued at low marginal but high average cost, for example in conditions of excess capacity.

Finally, and most importantly, strategic entry and exit decisions are heavily dependent on governance and accountability processes. A fundamental objective of accounting is accountability for the capital advanced. Hence the concept of capital maintenance is at the centre of most systems of accounting measurement and regulation.²² In conditions of industry expansion provision of accurate depreciation charges is problematic. At the same time technical change means there will be divergences between the values of assets in use and the values of new assets required by incumbent firms and new entrants. Demand for new finance is high and there will be pressures to alter governance, accountability and reporting structures in favour of outside financial stakeholders. The conditional availability or non-availability of finance may under certain conditions act as an entry barrier. Similarly in conditions of industry decline, exit decisions will be mediated by governance and accountability arrangements. Whether or not firms exit will depend in part on whether the realisable value of assets allows financial stakeholders to liquidate their position without loss of capital. If such values are low compared to the value profit streams from continued use, then active monitoring by financial stakeholders may prevent exit.²³ The governance and financial performance relationship is a further important aspect of these relationships. For example, firms in mature but profitable industries generating free cash flows will systematically over-diversify.²⁴ In contrast, possession of knowledge-based resources and financial resources from external sources are associated with more related diversification.²⁵

The model suggests some parameters influencing the level of diversification carried out within the firm. On the horizontal axis, the rate of entry and exit through time are a function of financial performance (links 3a, 3b and 3c) and hence asset value and stakeholders monitoring of financial performance, or the accumulation and maintenance of capital. On the vertical axis the transparency of these processes influences the extent of monitoring by financial stakeholders and their attitude to strategic entry and exit decisions (links 1a, b and c).

Here the scale and scope paradigm is synthesised with notion of accountability. In figure 2, scale and scope economies are manifested in the horizontal relationship between entry barriers, strategy (decisions to diversify or refocus) and exit barriers (links 2a and 2c) and mediated by the effectiveness of the system of governance and accountability (links 1a, 1b and 1c).

The model hints at some interesting dynamics within industries. In the remainder of the lecture, we can go on to examine how knowledge assets, scale and scope economies and accountability influence the evolution of business and the nature of business networks.

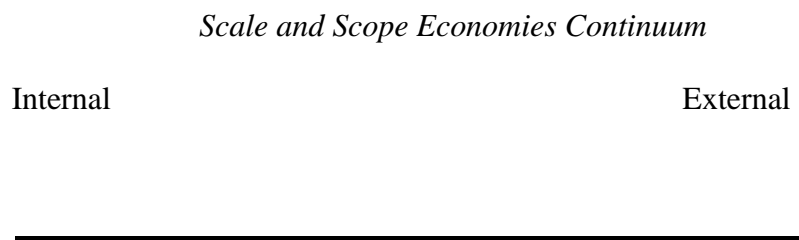
Determinants of the scope of firm activities

From the model in figure 2 and the discussion so far, it seems potentially productive to analyse the organisation's scope in terms of the nature of economies of scale and scope, that is internal versus external and the institutional context and structures of accountability, that is transparency versus opacity. A dominant paradigm in this area is the oft-cited work of Alfred Chandler. But Chandler only really considers internal economies of scale. He has less to say about internal economies of scope, especially managerial knowledge based economies, or 'tacit' or 'idiosyncratic' knowledge.

External economies are largely ignored. Governance is analysed in terms of ownership differences, mainly families in Britain, banks in Germany and institutions in the US. Meanwhile financial theory has begun to depart from the traditional propositions of the value irrelevance of capital structure and dividend decisions and is beginning to examine the relationships between active or passive investor monitoring arrangements and the value of the firm.²⁶

Let us begin by considering the nature of scale and scope economies, contrasting internal and external economies (figure 3).

Figure 3: Internal and External Economies



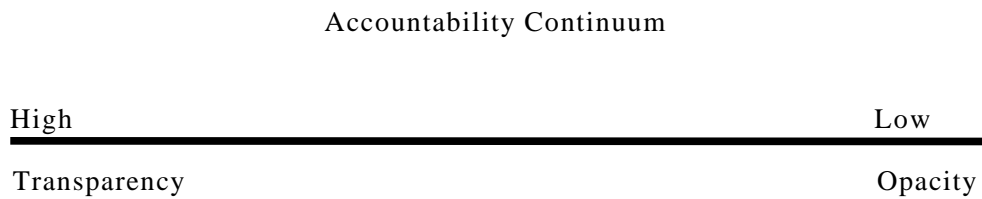
The extremes of the continuum allow us to contrast location of knowledge, within the firm or in the market place. Expertise is hired on the one hand or contracted out on the other. This is a 'markets and hierarchies' view of the firm, or the 'make' or 'buy' decision. It can be seen that one extreme will promote management accounting and the other will promote financial accounting. In the robber baron era in the US, budgeting and costing techniques developed quickly, whilst financial accounting as

we have seen, was unreliable and underdeveloped. In Britain, in the same period the situation was approximately the reverse. Another contrast is provided in terms of the likely consequences for labour management. On the one hand, internal economies promote internal labour markets and possibly unionised wage bargaining whilst external economies promote external sub-contracting on the other. The road haulage industry of the inter-war period offers a good example of the relationship between industrial organisation through external collective institutions and the use labour sub-contracting.²⁷

To exploit internal economies, a firm must achieve high market share and hence high output in order to transform high fixed costs into low unit costs and promote the large firm. This improves productive efficiency, but damages allocative efficiency.²⁸ On the other hand, where economies are external an industry spreads the fixed costs already invested in the economy as a whole over a larger output. External economies derive from cheaper inputs that can be purchased on the market.²⁹ In this case, small and medium-sized enterprises (SME's) are more important when scale and scope economies are external (for example, where internal economies are limited by the size of the market). Whilst increased competition improves allocative efficiency, productive efficiency may be damaged unless collective external economies can be internalised through networks.³⁰ I'll move onto consider the question of networks in a few moments. Meanwhile this gives us some perspective on the production efficiency versus flexible specialisation debate.

Returning to the accountability issue, a second continuum allows us to contrast the extremes of transparent and opaque accountability (figure 4).

Figure 4: Transparent and Opaque Accountability



Transparency to outside monitors say shareholders for example can be achieved in two ways. They turn up and vote at the AGM or otherwise actively interfere in the management of the company, referred to as the voice mechanism, or by selling their shares, referred to as the exit mechanism. In practice these can be complements or substitutes. Where there is a long run relationship between the corporation and the providers of finance, for example in Japan and Germany, the exit threat lacks credibility, so voice and exit are substitute mechanisms. In the UK and the US, there are relatively efficient stock markets. The corollary is that shareholders are diversified and have weak voting power in individual corporations, and can therefore only use the exit sanction. In intermediate situations, for example where an institutional investor can sell a proportion of the holding but still wield a large block vote at the AGM, voice and exit are complements. From the accountability perspective, this sounds better, although as Will Hutton has pointed out, both can simultaneously fail to operate. In such circumstances regulation is necessary, either to force the governance mechanism to operate, or to protect small investors. It should be noted that the capital market could not work without accounting and other information, which are always costly to provide. In fact, information asymmetry is the necessary condition. It is obvious enough that if no investor has any information whatsoever, there can be no

basis for trade. It is also the case that if all investors share the exactly the same information, there can be no basis for trade.³¹ As the so-called 'more fool theory' suggests that you can only sell your shares if you can find someone else stupid enough to buy them.

Let's summarise these arguments by making two points. First, whether through regulation or market organisation, information, monitoring and transaction costs vary. Second, and following from this market efficiency is actually an empirical and *historical* question.

Figure 5: An Analytical Matrix

		<i>ACCOUNTABILITY</i>	
		High	Low
<i>ECONOMIES OF SCALE AND SCOPE</i>	Internal	Quadrant 3	Quadrant 2
	External	Quadrant 4	Quadrant 1

The next step is to combine the continua to produce the matrix in figure 5. Historical examples can be used to illustrate the locations of firms and industries in different quadrants in different time periods. The example of Oldham stock market capitalism has already been mentioned and illustrates what was going on in quadrant 4. Similarly the US style corporate capitalism of the robber barons illustrates what was going on in quadrant 1. Time only allows brief illustration of episodes that fit the

other cases. For quadrant 2 consider Britain in the period circa 1950 to 1980. During this period Britain's managers engaged in diversification strategies and adopted multi-divisional at a time when external monitoring, governance and accountability were relatively weak. To exemplify quadrant 3, we might continue this story beyond 1980, during which period regulatory changes and increasing stock market scrutiny resulted in refocusing and divestment.³² Time only permits brief consideration here. For further illustration, references to detailed explanations of these examples are provided in the accompanying paper. In answer to the question posed in the introduction, these historical examples suggest that the rise of the large diversified corporations was promoted by internal economies of scale and scope and poor accountability and that more recent tendencies towards divestment suggest these processes have altered or are being reversed.

Putting things in historical boxes is not that interesting and is perhaps best left to archivists. What is potentially more interesting are the underlying forces shaping movement through time and affecting whole economies, industries or individual firms within industries.

Figure 6: Forces of Transition

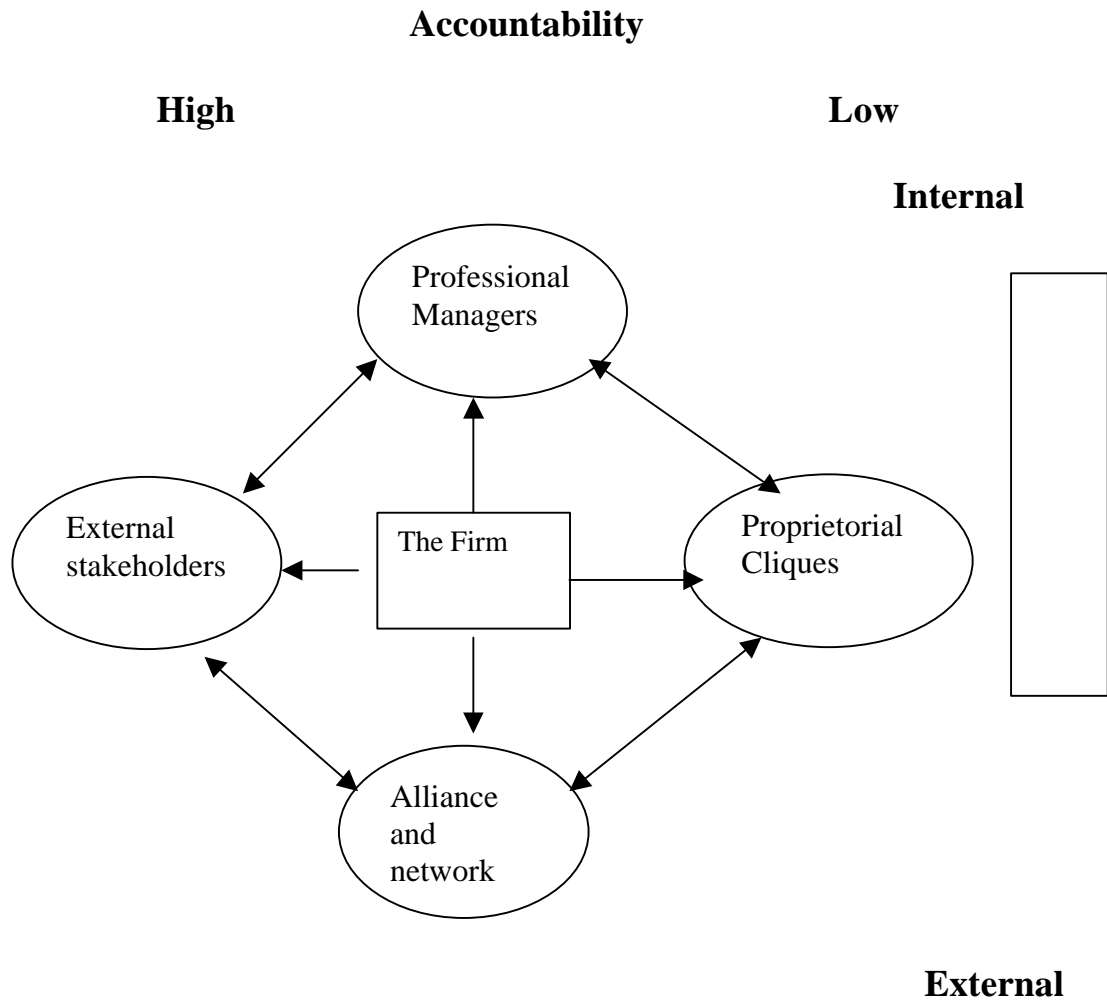


Figure 6 sets out the forces of transition. On the vertical axis, availability of internal scale economies promotes investment in and empowerment of managerial hierarchies whilst availability of external economies promotes internalisation of public good assets through alliances and networks. Technological innovation

determines the availability of scale economies, but are accommodated into the model via assumptions about the acquisition and use of knowledge. Where professional managers possess tacit knowledge through organisational learning, they can pursue diversification by exploiting internal managerial economies of scope.³³ Conversely where knowledge is routed in agglomeration-based external economies with public good properties, network liaison is promoted. In other words, entrepreneurship has the appearance of managerialism in the former case and networking in the latter. On the horizontal axis, control by proprietorial cliques attenuates accountability whilst the involvement of external stakeholders promotes it. Proprietorial cliques may include families, whilst external stakeholders may include institutional investors, banks, regulators etc. The arrows indicate the direction of transition through technical discovery, entrepreneurial action and transaction cost changes. Diagonal movement occurs when the basis of internal or external economies of scale alters but accountability remains constant or vice versa. Horizontal or vertical movement occurs when the scale and scope economies and accountability structures alter simultaneously.

The process of industrialisation illustrates the dynamics of the model. Economic theory tells us that external economies of scale reflect prior investment in internal scale economies.³⁴ For example investment in the railways provided profit opportunities for entrepreneurs in the 1840s in the form of cost reduction relative to competing means of transport. Once such investment had been made railways as infrastructure provided entrepreneurs in other industries with external economies of scale opportunities. If we investigate the nature of any external economies, it is usually necessary to go one step back in time to trace their origins. The very first factories were able to exploit the opportunities created by previous agricultural development, in the form of convertible buildings close to power supplies, surplus

labour generated by agricultural mechanisation, and surplus capital. The latter leads us to consider the interplay with the accountability spectrum. Using surplus capital is all very well, but if it belongs to someone else, it is likely that structures of accountability will be imposed. There are some famous exceptions to this rule. In 1720 capital was raised from credulous investors on the promise and nothing more of untold riches from the spice trade of the South Sea. The South Sea Bubble fraud had many victims, famously including the king, and famously excluding the Prime Minister to be, Sir Robert Walpole, whose Bubble Act effectively outlawed the limited liability company for the next 130 years or so.³⁵ Railway flotations in the nineteenth century, satirised by Trollope in *The Way We Live Now*,³⁶ and more recently dot-com companies illustrate the importance and potential ineffectiveness of accountability structures and supporting regulatory institutions from the perspective of the naive investor. All of this suggests that entrepreneurs instinctively prefer to escape the scrutiny of outside investors. As they build a business, the opportunities to do so increase. Profitable investment in factories, product development etc allows the accumulation of capital and reduced dependence on external sources of finance. Meanwhile the investments of this generation of entrepreneurs in physical and knowledge assets, in research and development, distribution networks, training and managerial hierarchy, create the external economies of scale for the next generation.

Network structures

In practice difficult to classify business activity eg into hierarchies or markets. Networks have been suggested as an alternative unit of analysis to markets and hierarchies³⁷ and in certain contexts as a basis for creating and sustaining competitive advantage.³⁸ Hence the popularity of networks, which seem to occur everywhere.

Hierarchy substitution for pure market functions (nexus of contracts) is a necessary condition for the existence of firms, and also that substitution will always be partial. In other words, networks reflect the degree of market or hierarchy substitution³⁹ and are therefore adopted according to transaction cost considerations. It is also assumed that organisations are open systems⁴⁰ so that they resemble networks and are interdependent with elements of the environment they transact with.⁴¹

Figure 7: Internal and External Resources



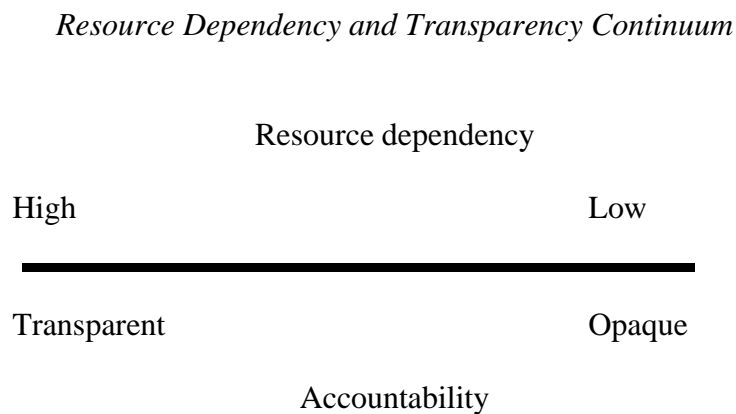
Let's analyse the issue, by adapting the continua illustrated earlier (figure 7). This time continuum 1 shows the extent to which the resources of the firm are internalised, or purchased from the market - the 'make or buy' decision that lies at the centre of market/hierarchy analysis. This is a corollary of the underlying nature of scale economies, internal or external. An additional and useful perspective on these contrasts is offered by the resource-based view of the firm. According to this view, managerial and entrepreneurial resources drive growth and diversification.⁴² Such resources might include specialised production facilities, trade secrets and engineering experience.⁴³ They might also include firm-specific idiosyncratic knowledge assets.⁴⁴

Such firm-specific factors are traditionally considered as the major drivers of strategic change according to the resource-based view.⁴⁵ At the same time specialisation may in certain periods of history and stages of economic development promote flexibility, replacing standardisation and scale economies.⁴⁶ Meanwhile, clustering of firms in industrial districts, trade associations and other networked organisations may be promoted through sharing trade secrets and drawing on local pools of experience and skilled labour. These resemble knowledge pools or agglomeration based external economies of scale originally described by Alfred Marshall.⁴⁷ Synthesising these relationships, organisational diversity and network characteristics are likely to be closely influenced by how the firm accesses resources.

Transparency and opacity are a function of the degree of dependency on external stakeholders for resources, especially financial resources, which create reciprocal agency, monitoring and transaction costs. Opaque networks are unaccountable to external stakeholders and more likely to be self sufficient in resource terms. Transparent networks on the other hand demonstrate accountability and are more likely to be resource dependent. At the same time, large and diverse organisations by definition have control over a wider resource base and have the option of internalising them using a hierarchic structure. Similarly, small-scale and specialised firms draw on a narrow resource base and will draw on market inputs for non-specialised functions.

The transparency and opacity attributes are derived from the governance and accountability perspectives discussed earlier. This time it is useful to re-analyse these concepts from the perspective of resource dependency theory (figure 8).

Figure 8: Resource dependency and accountability



There is room for consistency, since research from a resource-dependence perspective has also emphasised that outside institutional investors play a crucial role in providing the firm with the resources needed to survive and function efficiently.⁴⁸ In particular, the links that directors have with the firm’s environment can be used to obtain financial resources needed for example to secure effective restructuring.⁴⁹ This may also influence the restructuring expertise directly related to board diversity measured in terms of board size, the number of outside directors, and the number of outside directorships (‘interlocks’) each individual board member holds in other organisations, within the industry and outside. It is fair to assume that managerial unwillingness and/or lack of capacity to undertake change may impede strategic

expansion, restructuring and long-term survival in proto-industrial and declining industries such as textiles. These attitudes may be a function of governance and resource based constraints, especially financial constraints.

Figure 9: Dynamic Determinants of Network Characteristics

		<i>Strategic Context: Degree of Accountability</i>	
<i>Strategic Content: Organisational Resource Base</i>	Extensive	Transparent <i>Quadrant 3</i> Hierarchy substituting, high external resource dependency networks	Opaque <i>Quadrant 2</i> Hierarchy substituting, low external resource dependency networks
	Narrow	<i>Quadrant 4</i> Market substituting, high external resource dependency networks	<i>Quadrant 1</i> Market substituting, low external resource dependency networks

Figure 9 illustrates the interplay of the resource base and resource dependency continua. Looking at the vertical axis, if there is a pure market and a network develops, it will tend to substitute market processes. Examples might include inter-firm arrangements to control supply and price, particularly where firms with narrow resource bases lack the market power to do so singly. Similarly if there is hierarchy, network development substitutes for the original internal relationships.⁵⁰ Examples might include outsourcing to associated companies, enforcement of supply via dedicated contracts, and horizontal amalgamation of semi-independent firms within a

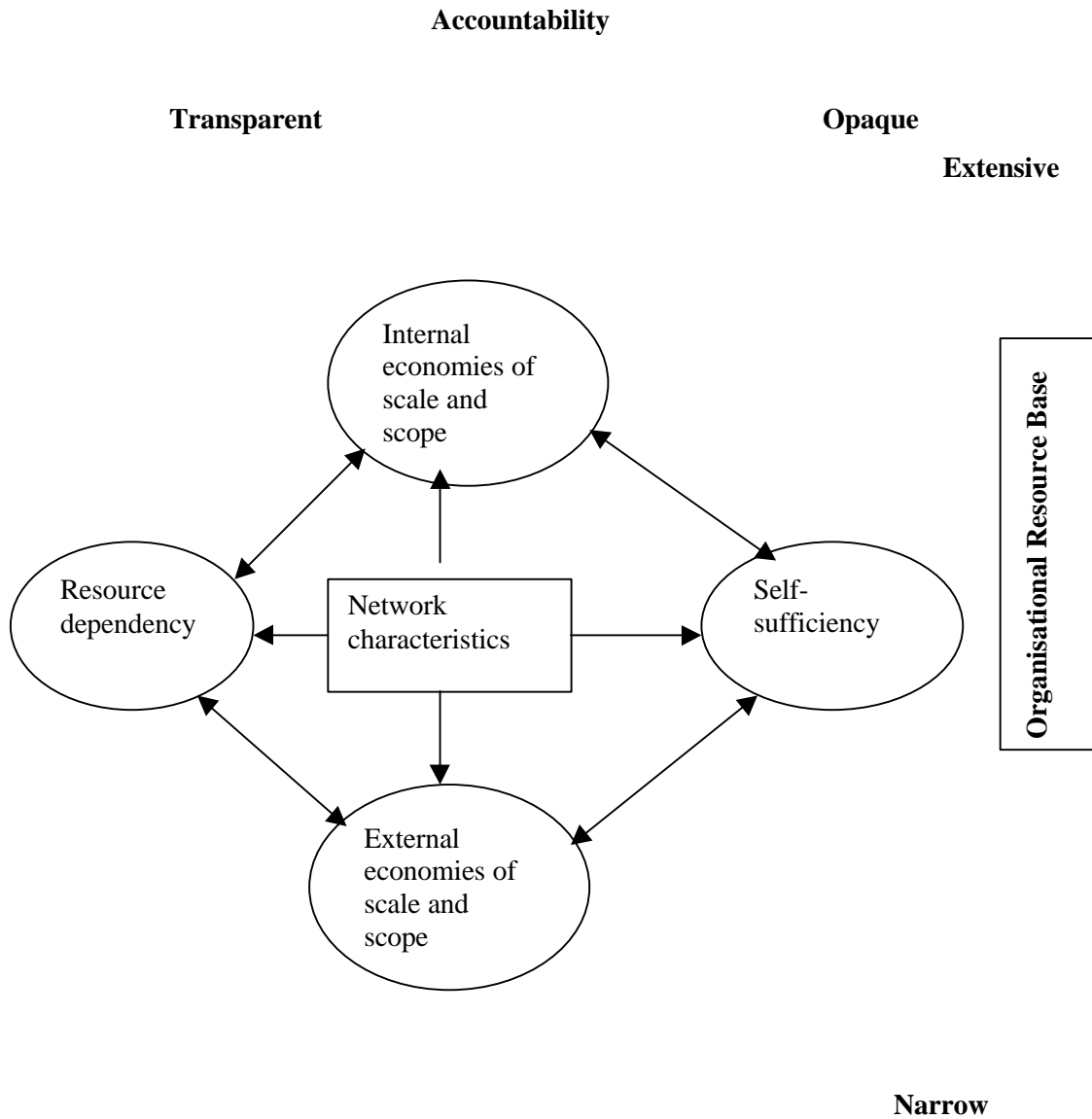
federal combine structure. If an institutional and social constructivist view is taken of accountability structures on the horizontal axis,⁵¹ self-sufficient and resource dependent networks correspond to these. Transparent governance and accountability is more likely to be socially constructed whereas self-sufficiency is more likely to be naturally occurring. In other words economic action is 'embedded'⁵² by *ex ante* resource distribution and accountability structures. This suggests the following network typology corresponding to the matrix quadrants in figure 9:

1. Market substituting, low external resource dependency (self-sufficient) networks.
2. Market substituting, high external resource dependency (resource dependent) networks.
3. Hierarchy substituting, low external resource dependency (self-sufficient) networks.
4. Hierarchy substituting, high external resource dependency (resource dependent) networks.

Networks are hence common and easy to identify in most business situations. All you have to do is find connections between one person conducting business activity and another. It is true by definition that business activity involves connections. Robinson Crusoe could only contemplate business activities of a sort after the arrival of Friday, and even today there are few hermits quoted on the stock market.

More interesting than mere identification of networks, therefore are the cause and effect relationships governing their time dependent dynamics. There are four forces governing these changes, illustrated in figure 10.

Figure 10: Forces determining network structure



The firm's ability to internalise resources, including knowledge assets that underpin managerial economies of scope is a function of the firms' resource base and therefore the presence of internal economies of scale and scope. Conversely narrow resource bases and external economies of scale and scope exert a pull towards markets. At the

same time, if firms are self sufficient in resources or if a network can be used to share resources on such a basis, the network will have no recourse to outside resource providers and monitors. On the transparency side of the continuum, the use of a network to secure access to outside resources requires the involvement of outside resource providers and structures of governance and accountability to mediate network relationships. From this analysis, it can be seen that trust tends to be low on the left-hand side of figures 9 and 10 and high on the right. This is broadly consistent with the view that where trust is based on personal contacts in a context of repeat transactions.⁵³ Game theoretic analysis also suggests that co-operation is a more likely result when transactions are repeated through time.⁵⁴

Perhaps an even more important determinant of network characteristics is the rate of industry growth. This in itself is a function of the rate of technological change, which establishes the available internal and external economies of scale within the industry, district or economy. Self-sufficient networks are almost by definition unconcerned with growth and may be appropriate to low-growth industries or to support rationalisation, patent based monopoly production, etc. Conversely in high growth industries, firms and networks require funds for production facilities, advertising, research and development that can only be obtained externally. In general past growth influences the current resource base whilst future growth impacts on the degree of resource dependence.

Finally self sufficiency and resource dependence may reflect the politics of regulation and ideology.⁵⁵ Competition policy, company law and rules governing financial institutions are the obvious examples.⁵⁶ The absence or presence of such rules influences the viability of secretive cartels and the level of protection offered to

external stakeholders. Meanwhile prevailing ideology may influence the extent to which managers acquiesce to or promote accountability to external stakeholders.⁵⁷

Figure 11: Dynamic Determinants of Network Characteristics in the Lancashire Textile Industry, 1860-1980

		<i>Strategic Context: Degree of Accountability</i>	
<i>Strategic Content: Organisational Resource Base</i>	Extensive	Transparent <i>Quadrant 4</i> Surviving companies, 1950-80.	Opaque <i>Quadrant 3</i> Lancashire Cotton Corporation, 1950- 62; Other federal combines (e.g., FCSDA)
	Narrow	<i>Quadrant 2</i> Oldham Limiteds, 1860- 90	<i>Quadrant 1</i> Industrial district, 1860-1959

Again time permits only brief illustration using historical examples. For this purpose I've chosen a case study of the rise and fall of the Lancashire cotton textile industry. Figure 11 reprises the grid first presented above in Figure 9. The grid can now be used to summarise the history of the industry is revealed in detail by the

earlier narrative. For the majority of the period 1860-1960, most firms were part of an industrial district whose principal characteristics were their specialised resource base, internalisation of external economies of scale using a network structure of directors that promoted self-sufficiency, secrecy and independence from external stakeholder groups. Quadrant 1, market substituting, low external resource dependency networks summarises the position of most firms. Some firms for limited periods did not conform to this Lancashire model of network capitalism. In Oldham, in the period 1860-1890, a co-operative ideology and resource sharing by small investors promoted transparent accountability. This was a temporary phenomenon, since the principle method of raising finance, new stock exchange share issues, facilitated manipulation by insider groups and the usurpation of control by cliques of directors.⁵⁸ Oldham had moved from quadrant 2 to quadrant 1 by the mid-1890s. After 1920, when the industry was faced with declining world markets and excess capacity, the Lancashire Cotton Corporation (LCC) was formed to try to rescue the industry. From its inception in 1929 was intended to be a centralised, professional hierarchy. This was never a substitute for the relatively efficient markets of Manchester and Liverpool and until 1960, the LCC operated as a more decentralised organisation, allowing autonomy to the managers of individual mills and basing its acquisition strategy on local knowledge and contacts.⁵⁹ Other larger firms such as the Fine Cotton Spinners and Doublers Association had adopted this model since the beginning of the twentieth century.⁶⁰ They represented a tightly related network of firms that was held together by cross-ownership of shares and directors' interlocks. For the period 1900-1960, most of these firms operated in quadrant 3. Surviving firms, such as Shiloh plc, in the later period were able to diversify away from cotton as the industry declined and sustain a wider resource base.⁶¹ To do this they had to secure outside finance and

secure new structures of accountability and governance. Quadrant 4 describes the networking characteristics of this strategy.

For the majority of firms characterised by the Lancashire model of network capitalism, industry growth encouraged such the concentration of directors' power. In turn this undermined accountability and acted as a barrier to restructuring during decline. Whilst emphasising the role of accountability, the ownership and management structure of the industry interacted with organisational diversity. Hence in the nineteenth century, the rise of specialisation also promoted informal interlocked groups of firms. In the twentieth century interlocks reinforced specialisation and acted as a constraint on restructuring. Only in the minority of cases where board diversity was associated with organisational diversity were recovery strategies achieved. From the 1890s onwards the Lancashire textile industrial district developed a highly unusual system of governance. It was based on diversified directors and non-diversified shareholders. In the conventional model of Anglo Saxon economies it is the other way round.⁶²

As this brief case study suggests, the model is of some value for analysing and to a certain extent reinterpreting the evolution of an important industry. It illustrates the dynamic relationship between resource sharing and resource dependence and the formation of network characteristics. In the case presented here growth of external economies of scale promoted resource sharing, network self-sufficiency and increasingly opaque accountability. When growth became decline, self-sufficiency and opacity operated jointly to prevent orderly retreat from a declining industry.

Conclusions

To conclude let us return briefly to the original question, the appearance of diversified corporations against a backdrop of apparently transparent capital markets. Accountability, like the ability of entrepreneurs or professional managers to access resources, are matters of historical contingency. It is no surprise therefore to find that organisational scale and scope vary through time. I hope that I have succeeded in explaining some of the processes leading to such variation.

Applying theory to history is full of pitfalls. An obvious one that springs to mind in view of the brevity of the examples provided here is that of historicism. That is the selection of evidence to fit the model. In my defence, I would suggest that is not my motive, since the models are intended to be as theoretically eclectic as possible. These theories owe much to some of the best research traditions of this Business School. Industrial Economics and Corporate Governance were two of the prominent ones when I first arrived in 1994, with accounting operating on a smaller and more specialised resource base. Industrial economics might be said to have formed one major parameter of the models presented here today, and corporate governance the other. In attempting this synthesis, I hope to have provided some interesting perspectives on some other areas of the School's activities. These include a knowledge-based view of the entrepreneur and an explanation of the determinants of business network characteristics. Last, and perhaps least, the alternative balance sheet view of the firm, the what and the who, might have convinced you that accounting has something interesting to say after all. Especially when carefully disguised as history. But it is not just a question of history. I'll leave you with one thought. What we have, whether tangible wealth or knowledge, and to whom we are accountable for it, is perhaps a useful way of evaluating our own lives.

Notes

¹ 'Aggressively pursue change' and 'Learn to love change' are other variations on this theme. See respectively and M. McCormack, *What they don't Teach you at Harvard Business School: Notes from a Street-Smart Executive*, New York, Bantam (1984) and T. Peters, *Thriving on Chaos: Handbook of a Managerial Revolution* (Knopf, 1987).

² D. Korten, *When Corporations Rule the World*, Kumarian Press, Ct. (1995). An important part of the argument that follows is that an overwhelming lesson of history and modern politics is that businesses (especially large-scale business) have successfully fashioned their own environments. See especially N. Fligstein, *The Transformation of Corporate Control*, Harvard University Press: Cambridge, MA (1990) and for recent British case studies, see G. Monbiot, *Captive State: The Corporate Take over of Britain* (2000).

³ R.Castanias and C. Helfat, 'Managerial Rents', *Journal of Management*, Vol.17 No.1 (1991), pp.155-171. E. Penrose, *The Theory of the Growth of the Firm* (Oxford, 1959); D. Teece, 'Economies of Scope and the Scope of the Enterprise', *Journal of Economic Behaviour and Organisation*, Vol.1 No.3 (1980), pp. 223-47. Such resources might include specialized production facilities, trade secrets and engineering experience, D. Teece, G. Pisano, and A. Sheun, 'Dynamic Capabilities and Strategic Management', *Strategic Management Journal*, Vol.18, No.7 (1997) pp.509-33.

⁴ For current purposes, organisational learning is defined as 'encoding inferences from history into routines that guide behaviour'. B. Levitt and J.G. March, 'Organisational Learning', *Annual Review of Sociology*, Vol.14 (1988), pp.319-340.

⁵ Teece, 'Economies of Scope and the Scope of the Enterprise'.

⁶ A. Marshall, *Principles of Economics*, London (1890); M. Kamien, E. Mueller and I. Zang, 'Research Joint Ventures and R&D Cartels', *American Economic Review*, Vo.82, No.5 (1992); pp.1293-1306.

⁷ These can include linkages with higher education research bases and explain the success of some industries, for example the German synthetic dye industry. See J. Murmann, 'Knowledge and Competitive Advantage in the Synthetic Dye Industry, 1850-1914: The Co-evolution of Firms, Technology, and National Institutions in Great Britain, Germany, and the United States', *Enterprise and Society*, Vol. 1, No.4 (2000); pp. 699-704.

⁸ Mass, W. and Lazonick, W., 'The British Cotton Industry and International Competitive Advantage: the state of the debates,' *Business History*, XXXII (4), (1990) pp. 9-65

⁹ Toms, S., 'Information Content of Earnings Announcements in an Unregulated Market: The Co-operative Cotton Mills of Lancashire c. 1880 - 1900', *Accounting and Business Research*, 31 (3) (2001), pp.175-190.

¹⁰ Farnie, D., *The English Cotton Industry and the World Market*, Oxford: Clarendon Press (1979), p.266.

¹¹ For an examination of the wage bargaining structure in the industry, see Procter, S.J and Toms, J.S. 'Industrial Relations and Technical Change: Profits, Wages and Costs in the Lancashire Cotton Industry, 1880-1914, *Journal of Industrial History*, Vol. 3, No. 1 (2000); pp.54-72.

¹² For more details on these governance arrangements, see Toms, J.S. 'The Rise of Modern Accounting and the Fall of the Public Company: the Lancashire Cotton Mills 1870-1914', *Accounting Organisations and Society*, (2002) Vol.27, No.1-2, pp.61-84.

¹³ For more detail on this case study and on other industries, see A. Chandler, *Scale and Scope: The Dynamics of Industrial Capitalism*, Belknap, Harvard (1990), ch.4.

¹⁴ R. Fleischman, T. Tyson, 'Parallels Between U.S. and U.K. Cost Accountancy in the World War I Era,' *Accounting, Business and Financial History*, Vol.10, No.2 (2000); pp.191-212.

¹⁵ Toms, 'Information Content, Hawkins, D., 'The Development of Modern Financial Reporting Practices among American Manufacturing Companies', *Business History Review*, (1963), pp.135-68. Specific examples of inadequate accountability include no national standards for separate headings on accounts (, Henry Rand. Hatfield *Modern Accounting: Its Principles and Some of Its Problems*, 2d ed. New York and London: D. Appleton and Company, 1919, p. 117, Lawrence R. Dicksee, *Goodwill and Its Treatment in Accounts*, London: Gee & Company, 1906. Third edition. p.39), for the calling up of capital (Collier, William Miller. *The Trusts: What Can We Do with Them? What Can They Do for Us?* New York: Baker and Taylor Company, 1900, p.229), or the revaluation of assets (Hugh P. Hughes, *Goodwill in Accounting: A History of the Issues and Problems*. Atlanta: CBA Business Publishing Division, Georgia State University. Research Monograph 80, 1982, p.42).

¹⁶ Merino, B.D. and Neimark, M.D. (1982), Disclosure Regulation and Public Policy: A Sociohistorical Reappraisal, *Journal of Accounting and Public Policy*, Fall, pp.33-57.

¹⁷ Financial theory contrasts systematic risk, where returns on an individual security fluctuate in line with general market fluctuations, with specific risk, where fluctuations in an individual security's return reflect firm-specific events. Diversification by portfolio investors only eliminates specific risk. For a review, see Z. Bodie, A. Kane and A.J. Marcus *Investments* 4th ed. London: Irwin/McGraw-Hill (1999).

¹⁸ J. Edwards, J. Kay and C. Mayer, *The Economic Analysis of Accounting Profitability*, (1987). A. Shleifer and R. Vishny, 'Liquidation Values and Debt Capacity: A Market Equilibrium Approach', *Journal of Finance*, Vol.47, No.4 (1992); pp.1343-1366

¹⁹ For example in cases of bilateral monopolies or thin markets for the assets Teece, 'Economies of Scope and the Scope of the Enterprise', O. Williamson, *Markets and Hierarchies* (New York, 1975).

²⁰ M. Peteraf, 'The cornerstones of competitive advantage: A resource-based view', *Strategic Management Journal*, Vol.14, No.3 (1993), pp.179-191

²¹ These cases are well illustrated by the example of the Lancashire Textile industry in the inter-war period. See D.M Higgins and J.S Toms, 'Financial Distress, Corporate Borrowing and Industrial Decline: The Lancashire Cotton Textile Industry, 1918-1938', *University of Nottingham International Business History Institute Discussion Paper*, (2002). D.M Higgins and J.S Toms, 'Capital Ownership, Capital Structure and Capital Markets: Financial Constraints and the Decline of the Lancashire Cotton Textile Industry, 1880-1965', *Journal of Industrial History*, Vol.4 (2001), No.1, pp.48-64.

²² R.A Bryer., 'The History of Accounting and the Transition to Capitalism in England. Part One: Theory', *Accounting, Organisations and Society*, Vol.25, No.2, (2000); pp.131-162. R.A. Bryer, 'The Laws of Accounting in Late Nineteenth Century Britain', *Accounting History*, Vol. 3, No.1 (1998); pp.55-94.

²³ M. Jensen, 'The Modern Industrial Revolution, Exit and the Failure of Internal Control Systems', *Journal of Finance*, Vol. XLVIII, No.3 (1993); pp.831-880.

²⁴ M. Jensen, 'The Agency Costs of Free Cash Flow: Corporate Finance and Takeovers', *American Economic Review*, Vol.76 (1986); pp.323-29.

²⁵ S. Chatterjee, and B. Wernerfelt, 'Related and unrelated diversification: A resource-based approach', *Academy of Management Proceedings*, (1988), pp.7-11.

²⁶ Jensen, 'The Modern Industrial Revolution'.

²⁷ P. Scott and C. Reid, "'The White Slavery of the Motor World": Opportunism in the Inter-war Road Haulage Industry', *Social History*, Vol.25, no.3 (2000); pp.300-315.

²⁸ C. Oughton and G. Whittam, 'Competition and Co-operation in the Small Firm Sector', *Scottish Journal of Political Economy*, Vol.44, No.1 (1997), p.6.

²⁹ Lazonick, W., *Business Organization and the Myth of the Market Economy*, Cambridge: Cambridge University Press (1991), p.107.

³⁰ Oughton and Whittam, 'Competition and Co-operation'.

³¹ S. Grossman and J. Stiglitz, 'On the Impossibility of Efficient Capital Markets', *American Economic Review*, Vol.70 No.3 (1980), pp.393-408.

³² J.S. Toms and D. M. Wright, 'Corporate Governance, Strategy and Structure in British Business History, 1950-2000', *Business History* (forthcoming).

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- ³³ Teece, 'Economies of Scope and the Scope of the Enterprise'.
- ³⁴ Oughton and Whittam, 'Competition and Co-operation'.
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- ⁴⁴ Castanias and Helfat, 'Managerial Rents'
- ⁴⁵ J.B. Barney, *Gaining and Sustaining Competitive Advantage*, New York, Addison-Wesley (1997).
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- ⁴⁷ Kamien *et al*, 'Research Joint Ventures and R&D Cartels', Marshall, *Principles of Economics*, Oughton and Whittam, , 'Competition and Co-operation'.

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⁵⁰ Fruin, *Networks, Markets and the Pacific Rim*, p.9.

⁵¹ Fligstein, *The Transformation of Corporate Control*, Hopwood, A.G. (1987) 'The Archaeology of Accounting Systems', *Accounting, Organizations and Society*, Vol. 12, No.3: 207-234. From an accounting perspective, Hopwood suggests, 'Rather than seeing organizational accounts as a technical reflection of the pre-given economic imperatives facing organizational administration, they are...more actively constructed in order to create a particular economic visibility...and a powerful means for positively enabling the governance and control of the organization along economic lines' (p.213).

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⁵⁹ I. Filatotchev, and J.S. Toms, (2002) 'Corporate Governance, Strategy And Survival In A Declining Industry: A Study Of UK Cotton Textile Companies', *Journal of Management Studies* (forthcoming). D.M Higgins and Toms J.S., 'Public Subsidy and

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