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Organising the Firm

Theories of Commercial Law, Corporate
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Chapter 9

Corporate Governance and Innovation

9.1 General Remarks

It is not enough to have a governance structure that is self-enforcing. The firm's long-term survival is not possible without continuous adaptation. The sustainability of the firm is increased, if the firm is able to innovate.

Innovation means more than mere maximising, optimising, or reacting to changes in circumstances. Innovation is a form of useful organisational learning and change. This requires two things. First, the firm should create and maintain organisational capabilities (Chandler 1990),¹ and improve and adapt its skill base (Lazonik 2010).² Organisational capabilities and skills can enable the firm to “set the agenda” before its competitors do (Arrow 1974).³ Second, the firm should use an organisation structure that is “built to change”. The necessary capabilities change as the business environment changes.⁴

¹ Chandler AD, *Scale and Scope: The Dynamics of Industrial Enterprise*. Harvard UP, Cambridge, Mass. (1990) p 594.

² Lazonik W, *The Chandlerian corporation and the theory of innovative enterprise*, *Ind Corp Change* 19 (2010) p 333: “Precisely because innovative enterprise depends on social conditions, the development and utilization of skill bases that occur in one institutional environment may not, at a point in time at least, prevail in another institutional environment. Moreover, even within the same industry and same nation, dynamic capabilities that yielded innovative outcomes in one historical era may become static capabilities that inhibit innovative responses in a subsequent historical era.”

³ Arrow KJ, *The Limits of Organization*. Fels Lectures on Public Policy Analysis. Norton, New York (1974) p 47.

⁴ Worley CG, Lawler EE, *Designing Organizations That Are Built to Change*, *MIT Sloan Man Rev* 48(1) (2006) pp 19–23; Jones J, Keller S, Neilson G, Spiegel E, *Organizing for Agility: Creating Natural Business Units*. Booz-Allen & Hamilton, USA (1999).

Innovation can relate to all business processes. It is not limited to product development or to what takes place in the R&D department.⁵ For example, the ability of the firm's top management to change the organisational architecture of the firm is particularly important for the firm's sustainability.

Ensuring the firm's ability to innovate requires the right combination of strategy, organisation, and finance (Lazonik 2010).⁶ From the perspective of commercial law, it requires the use of a large number of legal tools and practices at all three levels of corporate decision-making (strategic, operational, and transaction level, see Sect. 4.7).

There are threats to the firm's ability to innovate. Some of them are characteristic of the self-enforcing corporate governance model. When choosing the balance between delegation and centralisation (Sects. 8.3 and 8.4), ensuring the firm's ability to innovate should therefore be one of the key objectives.

The purpose of this chapter is to study the firm's governance structure as a way to foster innovation. The firm must use various legal tools and practices in order to achieve and maintain its ability to innovate. The firm is again studied as an organisational construction (governance structure).

9.2 The Problem of Measurement

When is the firm innovative? There are alternative ways to measure the firm's ability to innovate. The choice can depend on the research area. Innovation can be studied in different disciplines. In addition, the perspective may vary.

Traditional corporate governance research. In traditional corporate governance research, it is customary to choose between the shareholder primacy approach, the managerial approach, and the stakeholder approach.

For example, one could focus on the effect of various innovation-related aspects on the financial performance of the firm (shareholder primacy approach). One could also try to formulate a theory of an innovative firm that explains "how, by generating output that is higher quality and/lower cost, a particular enterprise can differentiate itself from its competitors and emerge as dominant in its industry" (managerial approach).⁷ The opposite approach could be sustainability innovation

⁵ Compare Pavitt K, Innovating routines in the business firm: what corporate tasks should they be accomplishing? *Ind Corp Change* 11 (2002) p 119 (distinguishing between three overlapping processes: producing scientific and technological knowledge; transforming knowledge into working artifacts; and matching working artifacts with users' requirements).

⁶ Lazonik W, The Chandlerian corporation and the theory of innovative enterprise, *Ind Corp Change* 19 (2010) p 326.

⁷ *Ibid.*

research that focuses on ideas that improve environmental and/or social performance and how firms can foster such sustainability (stakeholder approach).⁸

Economics. In economics, mainstream corporate governance research focuses on relatively few innovation-related aspects for two reasons. The first is that the neoclassical theory of the firm studies the firm as a “black box” (see below).⁹ This is likely to have reduced the overall volume of innovation-related corporate governance research. The second is that the shareholder primacy model does not include a theory of the firm’s ability to innovate (Lazonick 2007).¹⁰

The main innovation-related streams focus on funding constraints and the effect of the share ownership structure.¹¹ There is plenty of research on funding constraints.¹² There is relatively little research on the effect of governance structures on the firm’s ability to innovate.¹³

Organisational research. Organisational research can take a broader view, because it is not constrained by the neoclassical theory of the firm and the shareholder primacy model.

The theory of an innovative enterprise can have as its starting point the three generic activities in which the firm engages: strategy, organisation, and finance. One can then identify three social conditions of the innovative enterprise: strategic control, organisational integration, and financial commitment (Lazonik 2010).¹⁴

Proxies. It is necessary to choose proxies for the firm’s ability to innovate. One alternative could be to use profitability, growth, the number of patents, or mere

⁸ See Siebenhüner B, Arnold M, Organizational learning to manage sustainable development, *Bus Strat Env* 16 (2007) pp 339–353; Arnold MG, Hockerts K, The Greening Dutchman: Philips’ Process of Green Flagging to Drive Sustainable Innovations, *Bus Strat Env* (2010).

⁹ Lazonik W, The Chandlerian corporation and the theory of innovative enterprise, *Ind Corp Change* 19 (2010) pp 321–323.

¹⁰ Lazonick W, The US stock market and the governance of innovative enterprise, *Ind Corp Change* 16 (2007) pp 984 and 997.

¹¹ See Hall BH, Rosenberg N (eds), *Handbook of the Economics of Innovation*. North-Holland, Amsterdam (2010).

¹² For a review, see Bond S, Van Reenen J, Microeconomic models of investment and employment. In: Heckman JJ, Leamer E (eds), *Handbook of econometrics*. North Holland, London (2007) pp 4417–4498.

¹³ See also Belloc F, Corporate governance and innovation: an organizational perspective, MPR Paper No. 21495 (10 January 2010): . . . “to ask what makes a firm innovative means that we must ask what are conditions *internal* to the firm conducive to innovation and to ask how systems of corporate governance affect firms’ investment strategies. Surprisingly, unlike traditional studies on the economics of innovation, such a field of research has not benefited so far from a systematic discussion and review of its major contributions.” Lazonick W, Prencipe A, Dynamic Capabilities and Sustained Innovation: Strategic Control and financial Commitment at Rolls-Royce plc, *Ind Corp Change* 14(3) (2005) p 534: “Precisely because of the inherent uniqueness of each particular case, an accumulation of case studies . . . is essential for the construction of a relevant and rigorous theory of innovative enterprise.”

¹⁴ Lazonik W, The Chandlerian corporation and the theory of innovative enterprise, *Ind Corp Change* 19 (2010) p 320 and pp 330–333.

survival as proxies for innovation (meaning that the firm must be innovative if it makes a profit, grows fast, or has a large number of patents). This approach would reflect “black box” theories of the firm that regard the firm as a production function.

But past profitability, growth, patent rights, or survival do not really explain what the firm should do now in order to remain innovative in the future. On the contrary, if the firm’s managers use such factors as proxies, the result may be arrogance caused by past successes and failure to adapt to present and future changes in the market. There are many examples of large firms that have disappeared.

Firm size in particular. Large firm size would not be a suitable proxy for the firm’s ability to innovate.

On one hand, large firm size may be the result of the successful exploitation of past innovations, and it may also bring benefits in the future. Generally, complex contracts with external parties can be avoided when things are done internally (Williamson 2002a, 2002b).¹⁵ Large firm size brings organisational capabilities, economies of scale, and funding benefits (Chandler 1990).¹⁶ The monopoly firm would be the extreme form of a large firm. Temporary monopolies can be necessary to provide the required incentive for firms to develop new products and processes (Schumpeter 1942).¹⁷ After the Second World War, the monopoly firm was therefore regarded as the model that maximised innovation in a particular industry.¹⁸

On the other hand, the benefits of large firm size cannot be achieved without coordination. When the firm grows in size, continuing intra-firm specialisation results in new layers of hierarchy. The existence of many layers of hierarchy and bureaucracy can make it more difficult for the firm to manage information and adapt to changes in the market (Williamson 1984).¹⁹

Moreover, a large firm cannot be managed unless its governance structure is, to a large extent, self-enforcing. This requires coordination, but the tools and practices used for coordination (such as the separation of monitoring and management) will add new layers to hierarchy. The governance structure of the firm can thus be self-enforcing and relatively stable in the short term although it hampers innovation and is not sustainable in the long term.²⁰

¹⁵ Williamson OE (2002a), *The Lens of Contract: Private Ordering*. *Am Econ Rev* 92(2) (2002) pp 438–443; Williamson OE (2002b), *The Theory of the Firm as Governance Structure: From Choice to Contract*. *J Econ Persp* 16(3) (2002) pp 171–195.

¹⁶ Chandler AD, *Scale and Scope: The Dynamics of Industrial Enterprise*. Harvard U P, Cambridge, Mass. (1990) p 594.

¹⁷ Schumpeter JA, *Capitalism, Socialism and Democracy*. Harper and Brothers, New York (1942).

¹⁸ See Lazonik W, *The Chandlerian corporation and the theory of innovative enterprise*, *Ind Corp Change* 19 (2010) p 337.

¹⁹ Williamson OE, *The Incentive Limits of Firms*, *Rev World Econ* 120(4) (1984) pp 736–763.

²⁰ One can distinguish between the synchronic problem and the diachronic problem. Aoki M, *Toward a Comparative Institutional Analysis*. The MIT Press, Cambridge, Mass. (2001) pp 2–3.

The existence of innovation-related limits to the size of firms (Williamson 1984) reduces the maximum size of firms and increases their number.

New ways to measure innovation. One should, therefore, find other ways to measure innovation. We can study the question of resources as a preliminary question as it is certain that the firm's ability to innovate requires the availability of proper resources. The competitiveness of the firm's "innovation team" is chosen as a way to measure innovation.

9.3 The Innovation Team

Innovation work is not possible without human and other *resources*. Moreover, the resources must be *managed*. Firms manage the necessary resources and take decisions designed to foster innovation at all *three levels* of corporate decision-making (strategic, operational, and transaction level). Moreover, the ability of the firm to innovate depends not only on the internal organisation of resources within the firm but also on the *interaction* of the firm with outsiders (other firms and the market).

Internal and external resources. The resources can be internal and organised internally, or external and obtained from the market.²¹ In the latter case, the firm can purchase them (business acquisitions, employment contracts), hire them (outsourcing, consultancy work), or share them through the pooling of resources with other firms (cooperation, joint ventures).

Innovation team. If the firm is regarded as an organisational structure, we can assume that innovation-related work is done by specialised innovation teams embedded in the general organisational framework of the firm. Innovation teams combine human resources and other resources. The firm can have one or more innovation teams, and there can be innovation teams shared by two or more firms. Different innovation teams may be responsible for different sectors depending on the business process (for example, sales, R&D, financial engineering, M&A) and the level of corporate decision-making (for example, customer account management, strategic management).

Competitiveness of the innovation team. Innovation teams compete against other innovation teams. The question of the ability of the firm's governance structure to foster innovation can thus be reduced to a question of the competitiveness of its innovation teams against other firms' innovation teams (or their competitiveness in the relevant "innovation market").

What makes the innovation team competitive? In the following, we will study certain things that might increase the competitiveness of the innovation team. They relate to the following:

²¹ See Arora A, Fosfuri A, Gambardella A, Markets for Technology and their Implications for Corporate Strategy, Ind Corp Change 10 (2001) pp 419–451.

- Human and other resources. The firm cannot remain innovative in the long term without investing human resources, capital, and other resources in its innovation team or teams.
- Organisational framework. The general organisational framework of the firm should foster innovation.
- Culture. The firm needs a corporate culture that fosters innovation.
- Risk preferences. The firm should accept the high-risk nature of innovation work.
- Long-termism. The innovation team needs long-termism. It takes time and money to build a competitive innovation team.
- Effective decision-making process. In order to be competitive against other innovation teams, the innovation team needs a fast decision-making process and well-informed decision-makers.
- Discretion. The innovation team needs a sufficient amount of discretion and flexibility.
- Incentives. Moreover, it needs proper incentives.

These issues can be studied at different levels of corporate decision-making: the strategic level, the operational level, the level of innovation team members, and the transaction level. We will focus on the *strategic level*.

9.4 Strategic Level

9.4.1 General Remarks

At the strategic level, the factors that can foster innovation might relate to control, ownership structure, the availability of funding, the structure of the firm, and societal and corporate culture. We can start with culture.

9.4.2 Culture

Like any corporate goals, the ability to innovate should be supported by societal and corporate culture.²² Corporate culture is not static.

First, the firm's corporate culture depends on the strategic choice of the societal or institutional environment. Firms are social structures embedded in larger institutional environments.²³ The choice of one institutional environment rather than the

²² See, for example, Mäntysaari P, *The Law of Corporate Finance. Volume I*. Springer, Berlin Heidelberg (2010) p 101.

²³ Lazonik W, *The Chandlerian corporation and the theory of innovative enterprise*, *Ind Corp Change* 19 (2010) p 333.

other can influence access to information and incentives in the form of social expectations, career prospects, and financial rewards.

Societal and corporate culture can thus be influenced by the choice of industry, geographical location, and business partners. For example, a firm that develops and sells nanotechnological products (a knowledge-intensive and competitive industry) next door to MIT (access to high-quality information, high social expectations of innovation) in a network of innovative firms (access to information, convergence of innovation-friendly cultures) to NASA (high customer requirements) is likely to remain more innovative compared with a sawmill located in a remote part of Finland.

Second, the firm's culture depends on the firm's control structure and ownership structure (Sects. 9.4.3 and 9.4.4) as the firm's culture is the culture enforced by those in control.

9.4.3 Control Structure

The firm is more likely to be innovative when innovation-relevant issues are controlled by the right people, that is, people that have “the abilities and incentives to confront the technological, market and competitive uncertainties inherent in the innovation process” (Lazonick and Prencipe 2005).

Generally, they should ensure that the firm's “innovation teams” are competitive (Sect. 9.3). In particular, they should control the firm's institutional environment and culture, and the allocation of corporate resources (strategic control). They should also be able to ensure that financial and other resources remain locked in to sustain the innovation process (financial control).²⁴ Moreover, they should ensure that there is a balance between centralisation and delegation. The innovation team should be given enough discretion (organisational control).

One of the important factors influencing the control structure is the level of self-enforcement. If the firm's governance model does not work without external monitoring and control inputs (apart from control by customers and the enforcement of general laws), the firm's ability to innovate may suffer, because: external monitors can further different objectives and have different incentives; external monitors may be less informed when taking decisions; and their decision-making may be slower. Such problems can be mitigated if the governance model is self-enforcing.

²⁴ Lazonick W, Prencipe A, *Dynamic Capabilities and Sustained Innovation: Strategic Control and financial Commitment at Rolls-Royce plc*, *Ind Corp Change* 14(3) (2005) p 534; Lazonik W, *The Chandlerian corporation and the theory of innovative enterprise*, *Ind Corp Change* 19 (2010) p 331.

9.4.4 Ownership Structure

The firm's ownership structure can have a large impact on the firm's control structure, innovation culture and resource allocation. If the firm has shareholders, different existing or potential shareholders can have different qualities as sources of capital and/or providers of ancillary services such as control services or services designed to foster innovation (see Sect. 7.9).

Ownership concentration. For example, if the firm has a small number of entrepreneur-shareholders each committed to innovation (such as Hewlett/Packard, Gates/Allen, Page/Brien), the firm is more likely to have a strong innovation culture. The firm is less likely to have a strong innovation culture when it has a highly dispersed share ownership structure. In the latter case, vocal short-term shareholders (such as hedge funds) might try to block long-term investments in innovation projects, prevent the issuing of new shares to finance investments, and force the company to distribute excess funds to shareholders.

Ownership concentration is thus one of the factors that can bring benefits. Large shareholders are better at fostering innovation compared with small shareholders.

According to previous studies, there can be a positive correlation between ownership concentration and R&D expenditures,²⁵ and cuts in R&D following poor earnings performance are less likely, if the degree of institutional ownership is greater.²⁶ Moreover, a higher degree of institutional share ownership may encourage innovation. This has been explained by better monitoring and protection of managers in the event that an R&D project fails. There is also a more positive relationship between innovation and institutional ownership when product market competition is more intense or when there is protection from hostile takeovers.²⁷

On the other hand, if the firm has a controlling shareholder, the quality of the controlling shareholder obviously matters. A "good" controlling shareholder can be a source of various kinds of necessary ancillary services. It might use its legal and de facto powers in innovation-friendly ways. It might provide know-how and other information, help in dealings with outsiders, management resources, and other services. A good controlling shareholder can even be a source of capital or a signalling mechanism that makes it easier for the firm to raise funding from other investors.

Even non-controlling shareholders can be sources of capital and/or suppliers of necessary ancillary services. For example, firms often cement technological

²⁵ Francis J, Smith A, Agency costs and innovation: Some empirical evidence, *J Acc Econ* 19 (1995) pp 383–409; Eng LL, Shackell M, The Implications of Long-Term Performance Plans and Institutional Ownership for Firms' Research and Development (R&D) Investments, *J Acc Aud Fin* 16 (2001) pp 117–139.

²⁶ Bushee B, The influence of institutional investors on myopic R&D investment behavior, *Acc Rev* 73 (1998) pp 305–333.

²⁷ Aghion P, Van Reenen J, Zingales L, Innovation and Institutional Ownership (February 3, 2009).

partnerships with share ownerships designed to align the parties' long-term interests.

Management discretion. The firm's ownership structure can also affect the level of management discretion.

Management discretion is highest in the "classical firm" with one sole shareholder-manager-entrepreneur, or in partnership-type firms.

In other firms, a high level of management discretion can be combined with access to capital and other resources in different ways. (a) A private equity fund or investor may be the sole shareholder but concentrate on ownership rather than management control. A venture capital investor may provide capital without interfering in the management of the firm. (b) In hyped industries, it may be possible to raise plenty of capital from the market with promises of future growth. (c) Moreover, as a very large firm with a huge market capitalisation is not really in the market for control, its management can enjoy a high level of discretion even where the firm has a highly dispersed share ownership structure.

Management discretion can also be increased if the firm chooses a business form that does not include shareholders. Such business forms include, for example, cooperatives (Sect. 8.5) and the business form of private equity. The business form of private equity gives fund managers plenty of discretion compared with the managers of traditional limited-liability companies.

9.4.5 *The Availability of Funding*

Innovation work requires funding. In particular, it requires "patient" capital (Lazonik 2010).²⁸ Patient capital is necessary, because capabilities that derive from collective learning cumulate over time and cannot be transferred as such. Capital may also be required for business acquisitions. Business acquisitions are customarily used for the purpose of purchasing capabilities embedded in the target's organisation.

Control and ownership. Once again, the firm's ownership structure and control structure matter. The firm is more likely to be innovative when its strategy is controlled by well-informed people committed to fostering innovation, and when they can ensure the availability of funding and financial commitment.²⁹ This may require strategic control over internal revenues.³⁰

²⁸ Bushee B, *op cit*, p 331.

²⁹ Lazonick W, Prencipe A, Dynamic Capabilities and Sustained Innovation: Strategic Control and Financial Commitment at Rolls-Royce plc, *Ind Corp Change* 14(3) (2005) p 534.

³⁰ Lazonik W, The Chandlerian corporation and the theory of innovative enterprise, *Ind Corp Change* 19 (2010) pp 331–332.

The firm's ownership structure and control structure play an important role even due to the nature of innovation work. Because of the particular characteristics of innovation work, it can be difficult to raise funding.³¹

Problems. To begin with, innovation processes are time-consuming, and many innovation projects fail. This could mean that it is difficult to find investors that can accept the high-risk nature of the investment and provide funding for the whole duration of the project.

In principle, the nature of information could be another cause of problems. It has been assumed that it is difficult to raise funding for innovation work in a freely competitive marketplace, because the use of information does not preclude its use by others (Arrow 1959).³² On the other hand, knowledge transfer is not costless. It requires investment in the firm's absorptive capacity (Cohen and Levinthal 1989).³³ This means that the firm's ability to innovate requires plenty of investment in prior knowledge and the innovation team's skills and that information cannot be used by others without a cost.

9.4.6 *The Structure of the Business Organisation*

9.4.6.1 **General Remarks**

In addition to control and ownership, the firm should choose the structure of its business organisation (organisational architecture). The firm's organisational architecture is customarily decided on by the board or whoever is in control.

The structure of the firm's business organisation influences the firm's ability to innovate in four main ways.

Size. The first relates to the overall size of the firm. Large firm size can increase bureaucracy and cause information and incentive problems (Williamson 1984).³⁴ Problems caused by the large size of the firm can be mitigated by dividing the firm into smaller units (independent divisions or subsidiaries).

Skill base. The second relates to the firm's skill base. The firm's skill base depends on the available resources, the division of labour within the firm,³⁵ and the

³¹ There is plenty of research on funding constraints. For a review, see Bond S, Van Reenen J, Microeconomic models of investment and employment. In: Heckman JJ, Leamer E (eds), Handbook of econometrics. North Holland, London (2007) pp 4417–4498.

³² Arrow KJ, Economic Welfare and the Allocation of Resources for Invention. The Rand Corporation, Economics Division (15 December 1959). For a survey of recent research, see also Hall BH, The Financing of Innovation (December 2005).

³³ Cohen WM, Levinthal DE, Innovation and learning: the two faces of R&D, Econ J 99 (1989) pp 569–596.

³⁴ Williamson OE, The Incentive Limits of Firms, Rev World Econ 120(4) (1984) pp 736–763.

³⁵ Lazonik W, The Chandlerian corporation and the theory of innovative enterprise, Ind Corp Change 19 (2010) pp 332–333.

matching of resources with the task at hand at any point in time. In other words, the firm's skill base can depend on the skills of "the man on the spot" (Hayek).³⁶

Make or buy. The third is that the firm can change its skill base in various ways. The firm can change its organisational structure, acquire or divest capabilities through transactions with outsiders, or build up capabilities internally.

Agency. The fourth is that the organisational structure of the firm influences the behaviour of intra-firm agents.³⁷

9.4.6.2 Organisational Structure

There are various ways to organise the firm (see Sect. 8.1) and widely-used organisational design frameworks such as the Star Model (Galbraith 1977, 1995) and the "fit" and "good design" tests (Goold and Campbell 2002). These particular models are nevertheless fairly static in the sense that they do not describe how they change over time or deal with change (although one of the "good design tests" is the flexibility test that asks whether the proposed design supports future innovations). Models that focus more on the organisation's agility include the NBU model (Booz-Allen and Hamilton 1999) and the model for "built-to-change" organisations (Worley and Lawler 2006).³⁸ On the other hand, both are less detailed compared with the other two frameworks.

If the widely-used organisational design frameworks do not provide sufficiently detailed information about organisational structures that foster innovation, it is useful to start with the most basic organisational structures and study how they differ in this respect.

U-form and M-form. One can, therefore, start with the basic distinction between the unitary corporation (U-form corporation) and the multidivisional corporation (M-form corporation). The choice between the U-form and the M-form will also raise questions about the centralisation or decentralisation of corporate functions (see also Sects. 8.3 and 8.4).

The U-form is the older model. U-form corporations are organised into functional departments such as sales or manufacturing.

In contrast, M-form corporations have operating units organised as divisions. There are limits to decentralisation. While the operating activities of M-form corporations tend to be decentralised down to the divisional level, supervisory and service operations are centralised at the corporate level.

³⁶ See Mäntysaari, *The Law of Corporate Finance. Volume I.* Springer, Berlin Heidelberg (2010), section 10.2.2.

³⁷ For the management of agency, see, for example, *ibid*, Chapter 6 and section 7.4.

³⁸ Jones J, Keller S, Neilson G, Spiegel E, *Organizing for Agility: Creating Natural Business Units.* Booz-Allen & Hamilton, USA (1999); Worley CG, Lawler EE, *Designing Organizations That Are Built to Change,* MIT Sloan Man Rev 48(1) (2006) pp 19–23.

The M-form is generally regarded as the appropriate governance structure for dealing with increasing corporate diversity (Chandler 1962, 1977, 1991, Williamson 1975).³⁹ It is customarily accepted that technology is one of the main drivers of corporate diversity and that technologies and organisational practices co-evolve (Thompson 1967, Chandler 1977).⁴⁰

Variants of the M-form. There are variants of the M-form.⁴¹ One of the basic choices is to organise the M-form corporation either as an integrated enterprise contained within a *single corporation* or as a *holding structure* with a parent and multiple subsidiary corporations.⁴²

The variants can favour centralisation or delegation. For example, more *centralised* versions of the M-form include the strategic *planning* style M-form (in which headquarters is strongly involved in guiding the strategic development of the divisions) and the strategic *control* style M-form (in which headquarters focuses on controlling the implementation of divisional strategies).⁴³ Both tend to prevail in *less* diversified companies within *more* technology-intensive sectors.⁴⁴

The choice between different variants of the M-form depends on corporate strategy. First, it can depend on the level of *diversification*.⁴⁵ One can distinguish between related diversification, vertical integration, and unrelated diversification. In related diversification, the related diversifier seeks to obtain synergistic economies. In vertical integration, the vertical integrator pursues vertical economies. Related diversifiers develop a broader range of businesses compared with vertical integrators. Vertical integrators develop a broader range of vertically linked value chain activities related to their dominant business areas.⁴⁶

³⁹ See Chandler AD, *The Visible Hand: The Managerial Revolution in American Business*. Belknap Press, Cambridge, Mass. (1977) pp 5–12; Williamson OE, *Markets and Hierarchies: Analysis and Antitrust Implications*. The Free Press, New York (1975) pp 135–138; Williamson OE, *The Economic Institutions of Capitalism*. The Free Press, New York (1985) p 289; Bainbridge S, *Director Primacy: The Means and Ends of Corporate Governance*, *Northw U L Rev* 97 (2003) pp 547–606 at 566–567.

⁴⁰ Thompson JD, *Organizations in Action: Social Science Bases of Administration*. McGraw-Hill, New York (1967) p 13 suggests that “technologies and environments are major sources of uncertainty for organizations and that the differences in those dimensions will result in differences in organizations”.

⁴¹ See Christensen JF, *Corporate strategy and the management of innovation and technology*, *Ind Corp Change* 11 (2002) pp 264–265.

⁴² See, for example, Muchlinski PT, *Multinational Enterprises and the Law*. Blackwell Publishing (1999), Chapter 3 (on the business and legal forms of multinational enterprise).

⁴³ Goold M, Campbell A, *Strategies and Styles: The Role of the Centre in Managing Diversified Corporations* (LBS Centre for Business Strategy). Blackwell, Oxford (1987), cited in Christensen JF, *op cit*, pp 264–265.

⁴⁴ Chandler AD, *The Functions of the HQ Unit in the Multibusiness Firm*, *Strat Man J* 12 (1991) pp 31–50, cited in Christensen JF, *op cit*, pp 264–265.

⁴⁵ See Christensen JF, *op cit*, p 266, Table 1.

⁴⁶ *Ibid*, pp 264–266.

Second, the choice between different variants of the M-form can also depend on the sector's *technology* intensity:

- More centralised versions of the M-form tend to prevail in less diversified firms within more technology-intensive sectors.⁴⁷
- The decentralised or financial control oriented M-form prevails in very diversified corporations in relatively low-technology sectors.⁴⁸
- Related diversification and vertical integration require more centralised coordination compared with unrelated diversification.⁴⁹
- Related diversifiers tend to use the M-form with more or less centralised functions to promote coordination across divisions.⁵⁰
- Vertical integrators tend to rely on substantial top-level operational control to obtain vertical economies, and they tend to maintain a U-form structure. However, some vertical integrators move closer to the related diversifier position.⁵¹

Third, it can depend on the corporate and societal *culture* of the parent.⁵²

Management of innovation. The choice between the U-form and different variants of the M-form will influence the management of innovation and vice versa.

The organisational mode of managing innovation depends on the overall organisational architecture of the firm and the need to centralise or decentralise innovation work.⁵³ Technology is one of the main drivers that cause corporate organisational practices to adapt.⁵⁴

A *decentralised* mode of managing innovation can reflect (a) the M-form as the overall organisational structure of the firm and/or (b) an innovation strategy that “gives high priority to incremental innovation with a primary concern for downstream, inter-functional relations and engineering-based R&D”.⁵⁵

A *centralised* mode of managing innovation may reflect (a) the fact that the firm is a U-form vertical integrator or an M-form technology-related diversifier and/or

⁴⁷ Chandler AD, The Functions of the HQ Unit in the Multibusiness Firm, *Strat Man J* 12 (1991) pp 31–50, cited in Christensen, *supra*, pp 264–266.

⁴⁸ Goold M, Campbell A, *Strategies and Styles: The Role of the Centre in Managing Diversified Corporations* (LBS Centre for Business Strategy). Blackwell, Oxford (1987); and Chandler AD, The Functions of the HQ Unit in the Multibusiness Firm, *Strat Man J* 12 (1991) pp 31–50, cited in Christensen JF, *op cit*, pp 264–266.

⁴⁹ See Christensen JF, *op cit*, pp 264–266.

⁵⁰ *Ibid.*

⁵¹ *Ibid.*

⁵² Muchlinski PT, *op cit*, pp 60–61: “... US firms tend to be more centralized than non-US firms ...”

⁵³ *Ibid.*, p 271, Table 3.

⁵⁴ Pavitt K, Innovating routines in the business firm: what corporate tasks should they be accomplishing? *Ind Corp Change* 11 (2002) pp 125–126.

⁵⁵ Christensen JF, *op cit*, p 270.

Table 9.1 Management of innovation: strategic focus and organisational focus (Christensen 2002)

Focus of innovation strategy	Innovation	Interface relations	Nature of R&D
Organisational focus for management of innovation: decentralised	Incremental innovation	Primary focus on downstream, inter-functional relations	Engineering-based application
Organisational focus for management of innovation: centralised	Radical innovation	Primary focus on upstream interdisciplinary relations	“Deep” or science-based R&D

(b) an innovation strategy “focusing on radical innovation with primary focus on upstream or inter-disciplinary relations and in-depth or science-based R&D” (Table 9.1).⁵⁶

9.4.6.3 Make or Buy

As the ability to innovate is embedded in the firm’s skill base and organisational routines, it is difficult for the firm to transfer the ability to innovate across organisational boundaries.⁵⁷ However, the firm can change its ability to innovate by managing its scope in various ways.

The firm can use a combination of five basic alternatives. It can: make, buy resources, pool, outsource, or buy. The firm can thus: (1) do innovation work internally by using its existing resources (“make”); (2) do innovation work internally after acquiring new resources; (3) pool resources with one or more other firms (networks, joint ventures); (4) purchase innovation work from outsource providers that are integrated into its organisation (outsourcing); or (5) purchase just innovation work from the market (“buy”).

We can focus on the second alternative as a sustainable way to increase the firm’s ability to innovate through transactions with third parties.⁵⁸

The firm’s ability to innovate can be improved: (1) by employing skilled people or members of innovation teams; (2) by acquiring innovations teams (without breaking them up); and (3) by acquiring complementary assets (Teece 1986) that

⁵⁶ *Ibid.*

⁵⁷ See Arora A, Fosfuri A, Gambardella A, Markets for Technology and their Implications for Corporate Strategy, *Ind Corp Change* 10 (2001) p 420.

⁵⁸ See *ibid*, p 427: “The resource-based theory of the firm suggests that to be a source of sustained above average performance resources must meet three criteria: they must be valuable, rare and imperfectly mobile (Barney, 1991; Peteraf, 1993; Markides and Williamson, 1996). In other words, a competitive advantage must be underpinned by resources for which well-functioning markets do not or cannot exist.”

give the innovation team more options to use their skills and commercialise innovations.⁵⁹

For example, the firm may acquire another firm: to improve its own skill base and ability to innovate; and to get access to complementary assets. (a) When the target firm and the acquirer are integrated, the combined firm may be able to benefit from a larger skill base, better complementary assets, and larger economies of scale. (b) Complementary assets can be particularly important, because the successful commercialisation of a product innovation may require access to specialised assets such as marketing services, competitive manufacturing, and after-sales support (Teece 1986). This can increase the price that industrial firms are prepared to pay for target firms.

9.4.6.4 Agency

The organisational architecture of the firm influences the behaviour of intra-firm agents and therefore also the firm's ability to innovate. There can be particular innovation-related agency issues. For example, they can relate to the scope of agency (discretion), information, and monitoring.

Discretion. First, the innovation team should have enough discretion. This requires the delegation of power to the team and changes the scope of agency.⁶⁰

Increasing discretion at one level of corporate hierarchy can influence agency costs. It can *reduce* agency costs, if decisions can be taken by agents that have better information and better incentives to take decisions in the interests of the firm. On the other hand, an increase in the amount of discretion can also *increase* agency costs. It is, therefore, necessary to find a balance.

The M-form is regarded as the better alternative when corporate diversity is high, because the M-form enables: (a) better operational efficiency by giving managers more discretion; and (b) better separation of monitoring (central monitoring by top management) and management (operational management at the divisional level). The level of discretion can be higher, when the divisions are incorporated subsidiaries with separated assets and a separated governance structure, and lower, when the divisions are unincorporated.

On the other hand, the choice of a strategy that makes the M-form necessary (the choice of many business units and risk management through diversification) can

⁵⁹ See Teece DJ, Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy, *Research Policy* 15 (1986) pp 285–305; Arora A, Fosfuri A, *op cit*, p 428.

⁶⁰ Mäntysaari P, *The Law of Corporate Finance. Volume I.* Springer, Berlin Heidelberg (2010), section 6.3.

influence investment decisions and make it easier for managers to invest in unprofitable businesses that need cash.⁶¹

Information. Second, the organisational structure influences many information-related issues such as: the innovation team's access to information; its ability to comply with expectations; the transparency of the innovation team; and monitoring.

To begin with, a small firm is more transparent and has less internal information-related problems compared with a very large firm.

In a large firm, changes in the organisational structure can change the innovation team's *access* to useful intra-firm information. Whereas a centralised organisational structure (U-form, the functional structure) may increase the size of the innovation team and the transfer of ideas, a decentralised organisational structure with decentralised innovation teams (M-form, product structure, market structure, NBU structure) may create barriers between innovation teams.

Monitoring. The innovation team has better access to information when the firm's other innovation teams are transparent. In addition, increasing the transparency of innovation teams can improve the monitoring of innovation work.

However, transparency is not enough. The monitoring of innovation work requires even particular skills. This can influence organisational architecture and the governance structure of the firm.

A *centralised* organisational structure (U-form) increases the proximity of monitors to the innovation team. This can increase *transparency* and make it easier to monitor the team. However, the *specialisation* of monitors and the quality of monitoring is *reduced*, if the firm is very diversified (in which case it would be customary to choose the M-form). The lack of sufficient monitoring skills can make it more difficult to separate monitoring and innovation management.

A *decentralised* organisational structure (M-form) can contribute to *increased specialisation* of monitors compared with the centralised organisational structure. But if monitoring is decentralised as well, the "embedded" monitors can be *biased* or have incentives not to monitor effectively. In practice, this can require an additional layer of *centralised monitoring*. But the quality of monitoring may suffer, if the distance between the monitors and the innovation team is increased and specialisation reduced. In this case, it is important to ensure that the firm is controlled by people who possess the necessary skills.

For example, the governance model of a German AG addresses these problems in three ways.⁶² First, there is mandatory separation of management powers and monitoring powers at board level (a two-tier board). Second, the management board can have the necessary innovation-relevant skill base, because the management

⁶¹ Bardolet D, Lovallo D, Rumelt R, The hand of corporate management in capital allocations: patterns of investment in multi- and single-business firms, *Ind Corp Change* 19 (2010) p 608: "... we find that more diversified firms invest relatively more in unprofitable business units, less in cash-needy businesses, and more in cash-needy unprofitable businesses".

⁶² See Mäntysaari P, *Comparative Corporate Governance*. Springer, Berlin Heidelberg (2005), section 5.2.5.

board must consist of the company's top executives. Third, even the supervisory board can have the necessary skill base, because German law does not hamper the appointment of skilled and well-informed supervisory board members. Since the independence of the monitoring function is achieved by structural measures, the personal independence of each member of the supervisory body is less relevant. This makes it possible to appoint well-informed former managers as supervisory board members. The mandatory supervisory board membership of employee representatives can increase the skill base even more.

9.5 Operational Level

The firm can employ a large number of legal tools and practices at the operational level, and they can have an influence on the firm's ability to innovate. We can illustrate this with three examples: the organisation of the firm's top management and the board; incentives; as well as the size and number of innovation teams.

Top management and the board. The structure and composition of the firm's top management should foster innovation. This requires managers that have the necessary skills and represent an innovation-friendly culture.

Many entities have a board structure (Sect. 7.8). As a result of the separation of monitoring and management, self-enforcement (Sect. 8.6), or compliance with laws, the board may be the body responsible for controlling corporate strategy, much of the governance structure of the firm, the allocation of resources, risk management, and the firm's culture. The board can thus play a key role. This requires board members that possess the necessary qualities. A board dominated by monitoring specialists may lack the necessary skills and an innovation-friendly culture.

Incentives. Generally, the personal incentives of top managers, members of the innovation team, and board members should be aligned with the interests of the firm in innovation-friendly ways. This can require "the alignment of their personal interests with the interests of the business organization in attaining and sustaining its competitive advantage" (Lazonik 2010).⁶³

The nature of innovation work should play a role. For example, as innovation work requires risk-taking, members of innovation teams should not be punished for failure. It may also be important to ensure that members of innovation teams have favourable career prospects.⁶⁴

Size and number of innovation teams. Even the size and number of innovation teams can play a role. Generally, large entity size can improve the skill base but

⁶³ Lazonik W, The Chandlerian corporation and the theory of innovative enterprise, *Ind Corp Change* 19 (2010) p 331.

⁶⁴ See Aghion P, Van Reenen J, Zingales L, *Innovation and Institutional Ownership* (February 3, 2009).

increase bureaucracy and information problems. The entity should therefore not be too large. Moreover, each innovation team should have proper incentives. Internal competition is one of the ways to create incentives. On the other hand, there are processes that must be coordinated.

This leads to the question of the optimal number of innovation teams in the firm. First, there cannot be more than one innovation team for a *coordination process*. For example, there cannot be more than one top management team for the firm.

Second, it may bring benefits to designate one innovation team for each *innovation market*. If the work of an innovation team is dependent on the work of another innovation team, bad things may happen. There may be information, incentive, and coordination problems. The other team may not know what the innovation team is up to, may not focus on the right issues, may not provide the optimal answers, may not prioritise the same things, and so forth. For example, it would perhaps not be a good idea to use a matrix organisation for the development of mobile phones with different teams responsible for different components or mobile phone functions, as the matrix organisation might lead to coordination problems.

Third, an innovation team should have sufficient human and other *resources*. This can reduce the optimal number of innovation teams. However, the firm may benefit from internal *competition* between innovation teams, and a large firm may need to mitigate information problems caused by its size. A large firm may, therefore, double some innovation work by using use smaller cells or “teams within teams” embedded in a larger but transparent innovation team.

9.6 Summary

As the governance model of the firm can influence its ability to innovate and survive in the long term, the latter belongs to factors that can explain the choice of the former. In order to remain innovative, the firm should be controlled by people who share an innovation-friendly culture and have both the necessary skill base and enough discretion. If the firm has a management body and a monitoring body, both should have an innovation-relevant skill base. The board should not be dominated by monitoring specialists. Because of the nature of innovation work, the firm should encourage innovation-relevant risk-taking.