1. Introduction

*We live in a global economy . . . To have a fighting chance, companies need to get every employee with every idea in their heads and every morsel of energy in their bodies, into the game.* (Jack Welch, ‘The “But” Economy’, Wall Street Journal, October 30, 2003)

It is commonly accepted that the existence and survival of firms rest on their ability to generate new market knowledge in the form of innovations more effectively than (or at least as effectively as) their competitors. Yet economics has so far not explained very well how firms create and introduce innovations, and why some are more successful at it than others. Joseph Schumpeter defined the function of entrepreneurship as introducing novelty (as in something new) and initiating change, but there has been little economic examination of either the process of change or the introduction of novelty within firms and even fewer systematic inquiries into how entrepreneurship works within a firm.¹ In modern economic theory firms either have nothing to do with innovation, or else are but vessels for carrying out the vision of a great, charismatic leader/entrepreneur (for example, Casson 1982; Nelson and Winter 1982). Circumstances where employees act in creative and entrepreneurial ways are not often considered. But in order to explain many of the most vibrant of today’s businesses and industries, we must not only incorporate entrepreneurship into the theory of the firm but do it in a way that will also explain employee creativity. That is the goal of this book. I will examine how the structure of the internal organization of firms affects employee entrepreneurship. I will focus in particular on the phenomenon of decentralization of decision-making within a firm, as I believe this is the clearest manifestation of attempts to create a thoroughly entrepreneurial firm, one where most or even all employees are encouraged to act in creative and innovative ways. I will compile and develop a set of theoretical tools which can be used to better explain the existence of decentralization within firms as well as why decentralized firms are sometimes very successful. There will be three main components of my analysis: 1) a systematic application of the knowledge problem within firms, 2) a development of a theory of spontaneous order within firms, based on a realistic accounting of factors affecting employee motivations, and 3) a development of a framework to explain human creativity.
It is unfortunately not an exaggeration to claim that economists have so far not fully come to grips with the institutional richness and complexity that are evident upon even a cursory look at real-life firms. Little recognition has been given to institutional heterogeneity of firms. Firms are usually studied as abstract institutions that operate under a hierarchical, command-and-control structure, independent of internal self-organization or spontaneous order. The focus has been on understanding the common aspects of firms. This is a valid endeavor, but it will not answer all the questions related to the firm. In particular, a theory of homogeneous firms cannot explain firm decentralization. Decentralization of managerial control, also sometimes known as ‘decontrolling’, is a phenomenon evident in many business organizations in the world today, ranging from small, privately owned ventures all the way to large conglomerates. Management literature has been grappling with explanations of this development for some time, but economics for a long time remained relatively unaffected by it. The theory of the firm usually assumed a hierarchical structure as one of the fundamental features of a firm despite there being in the real world few firms that are absolutely controlled from the top through a strict hierarchy. All firms rely to some extent on forces of self-organization because they must give their employees at least some decision-making ability in order to operate. Thus, modeling firms by assuming one central decision-maker acting through the hierarchical structure may effectively simplify complex organizations of firms in order to explain some aspects of their operations, but it will not explain why firms are organized as they are. Radically decentralized firms force us to recognize the heterogeneity of firm organization as well as the existence of intra-firm self-organization. Given that decentralization can be carried out in many different ways and can vary in depth (some firms going as far as removing all of the middle management to create a two-level hierarchical structure with the responsibilities formerly held by middle managers now entrusted to regular employees), inevitably we are left with firms that exhibit different internal structures and institutional features, some of which do not adhere closely to the hierarchical theory of the firm, built on assumptions of opportunistic and non-creative employees.

There is mounting evidence that decision-making within firms is increasingly decentralized and allocated to lower tiers of the managerial hierarchy. There have been many anecdotal indicators showing this in the business and management literature over the years (a particularly good example being Malone 2004). But now we are starting to see some empirical support for it as well. A recent article by Rajan and Wulf (2006) relied on a detailed database of job descriptions of top managers, reporting relationships, and compensation structures to find ‘that the flattening of the
senior management hierarchy . . . is widespread in the United States among leading firms in their sectors’ (p. 4).2 They find that there are more managers reporting directly to the CEO, reflecting fewer positions between the CEO and the division heads.3

The authors examine whether this increasing CEO ‘span’ could be due to the natural growth of firms or mergers. They find that neither factor plays a role. They also examine whether the increasing CEO span could be due to profit center units becoming larger and more important and thus needing to report directly to the CEO. Again, the data does not support this hypothesis, as the average size of profit center divisions has actually been decreasing: ‘[E]ven though the structure of the division has not changed drastically over time, its head has moved nearer the top. The organized hierarchy is indeed becoming flatter’ (p. 18). They find that middle management has been shrinking, just as the anecdotal evidence has suggested. This development on its own does not mean that there is greater decentralization of decision-making – it could simply indicate greater control and decision-making by top management rather than middle management. But this does not appear to be the case, for the simple reason that as the hierarchies have flattened the individuals who started out at lower levels of the hierarchy also got paid more: ‘[O]ne strong piece of evidence suggests that these changes are not all form without any function: they seem to be accompanied by systematic changes in pay’ (p. 20). The only explanation for increasing pay is that authority and responsibility have been delegated to the lower rungs of the organization and employees are expected to act in more creative ways. Decision-making has become more decentralized and less subject to oversight by higher rungs of management, and in the process raised the pay of regular employees.

The phenomenon is real – decentralization of decision-making accompanied by hierarchical flattening is on the rise. Economists are increasingly recognizing this fact and attempting to explain these phenomena. This area is no longer strictly within the domain of business and management literature. But one area remains insufficiently elucidated – the source of innovations within firms. This area will be the focal point of this book. My primary hypothesis is that, in order to create innovations and increase market responsiveness, some firms engage in an experimental process of altering their institutional structure by introducing various degrees of decentralization of control and decision-making. The decentralization is done in order to spur the creative and entrepreneurial impulses of the employees. In some cases, these decentralized forms are appropriate and firms are successful; in others, they are not and firms fail (or revert to a more hierarchical form). The appropriate institutional structure cannot be known with certainty ex ante, but can only be discovered through the
process of institutional experimentation guided by intra-firm entrepreneurial insights. Two key elements of this explanation of decentralization bear emphasis: 1) the scope for entrepreneurial (that is, innovative) action (whether by employees or managers) within firms is strongly influenced by their internal structure; 2) in some cases innovations introduced by a firm are the result of creative or entrepreneurial actions of employees rather than owners or managers (who are usually thought of as the primary entrepreneurial actors within firms).

UNDERSTANDING DECENTRALIZATION DEVELOPMENTS

We can observe a general pattern in growth of firms. The great majority of firms start out as mechanisms to carry out the entrepreneurial vision of one or few men. As the firm is successful and its complexity grows, it becomes impossible for a single person to run the entire company. Through a hierarchy, the entrepreneur-promoter can delegate certain tasks to the various management levels while the important decision-making remains centralized among the managers or owners. The upside of this structure of control is assured co-ordination of activities of various sections and divisions of the firm, and subsequent orientation of employees toward achieving the common goal. As I will show in Chapter 2, Ronald Coase believed this to be one of the benefits of the firm mode of production. It allows the resource owners to reduce or eliminate the costs of co-ordinating through simple control by the entrepreneur (or, in his words, ‘entrepreneur-coordinator’, who appears to be more of a managerial rather than an entrepreneurial figure in the usual Austrian economics sense).

But there is also a downside: all change within a firm (whether due to the entrepreneur-promoter’s own innovative initiative or as a necessary response to competitive pressures) has to take place through the execution of a central plan, as designed by the entrepreneur and/or the strategic management. Thus, any progress by the firm is necessarily constrained by the knowledge of the entrepreneur and/or the strategic management.

Ludwig von Mises presents an alternative to the purely centralized view of the firm in his 1944 book *Bureaucracy*. He shows that, even in gigantic multinationals, individual managers of different sections are still ultimately responsible to the market as well as guided by the market, even if they are not ‘micromanaged’ from above. A firm is divided into divisions, which are further subdivided into other divisions, which leads to a decentralization of responsibility and decision-making. At the head of each division is a manager. This manager must produce profit, or at least produce partially
completed goods (to be finished by another section) at a lower cost than an outside company could. By holding each section manager responsible for the profit of his section, Mises claims, a large corporation can ensure that consumer sovereignty controls that manager’s actions. As long as each division manager has access to the tools of economic monetary calculation through the existence of market prices and the standard tools of accounting, ‘the general manager of the whole enterprise can assign to each section’s management a great deal of independence’ (p. 33) and decentralization will not result in any loss of ‘the sovereignty of consumers and the democratic operation of the market’ (p. 36). The bottom line, according to Mises is that ‘[the profit motive] joins together utmost centralization of the whole concern with almost complete autonomy of the parts, it brings into agreement full responsibility of the central management with a high degree of interest and incentive of the subordinate managers of sections, departments and auxiliaries’ (p. 36). It does this by simply leaving ‘most of the details . . . to the head of every department’ (p. 34).

When we take a look at the business world today (and for the last few decades) we see many firms experimenting (sometimes explicitly, often implicitly) with ways to increase the amount of authority and responsibility not just of the heads of different sections and departments, but, even more radically, of each employee. Some firms, such as W.L. Gore & Associates and McKinsey Consulting, do so to a practical extreme where hierarchy is all but eliminated. Other businesses experiment with less radical but still substantial reductions of hierarchical control of employees. The bottom line is the same, though: top management gives up at least some control, and firms rely on spontaneous order at least to some extent to co-ordinate the actions of employees. Today’s world looks more like the one described by Mises in the pages of Bureaucracy rather than the one described by Coase, with many firms relying on internal self-organization to a greater extent than ever before.

W.L. Gore & Associates

The aforementioned W.L. Gore & Associates is worthy of a closer look to illustrate these claims. It is a stunningly successful company, producing a wide variety of products, ranging from sophisticated medical equipment to guitar strings to weatherproof clothing (made with the company’s famous GORE-TEX material). It was started in 1958 by Bill Gore and his wife, Vieve, and initially operated from their basement. The 46-year-old chemical engineer quit his job with Du Pont to start his own company because Du Pont refused to take seriously his suggestions on the potential uses of Teflon. In 1998, only 40 years after the founding of the company, its revenue...
was over $1.1 billion with estimated annual operating profits of $250 million (information taken from Shipper and Manz 1998). This exceptional performance earned the company consistently high rankings on *Forbes* magazine’s list of the 500 largest private companies in the United States. W.L. Gore & Associates achieved all this with a radically decentralized internal structure, instituted at the very founding of the firm. There is no hierarchy of which to speak, and Gore associates (they refuse to use the word ‘employee’ to describe the people working for the company) have an immense amount of freedom in deciding which projects to pursue, where in the company to work, and so on. This is why the company’s management style has been often referred to as ‘unmanagement’.

That W.L. Gore & Associates is a radically ‘flat’ company can be seen by the fact that there are only three persons with actual titles: ‘Bill Gore was chief executive officer for over 20 years . . . As of 1995 the executive hierarchy consisted of a president (Bob Gore [Bill Gore’s son]) and a secretary-treasurer (Vieve Gore) because the two titles were required by the laws of incorporation’ (Shipper and Manz 1998, p. C-500). It is a company ‘without titles, hierarchical organization charts, or any other conventional structural arrangements typically employed by enterprises with hundreds of millions of dollars in sales revenues and thousands of employees’ (ibid., p. C-496). The founder, Bill Gore, described the company’s structure as a ‘lattice organization’ (in contrast to the orthodox ‘pyramid organization’), intended to allow all associates to communicate and cooperate with each other in a spontaneous manner (that is, as they see necessary) and thus to promote creativity among the associates. The lattice structure depends on ‘interpersonal interactions, self-commitment to group-known responsibilities, natural leadership, and group-imposed discipline’ (ibid., p. C-499). The lattice structure is based around continuously fluctuating cross-functional teams, consisting of associates who voluntarily choose to become a part of a team. It would seem a miracle that anything gets done under this kind of a system, and even the founder once admitted that the whole process is somewhat of a mystery to him, as we can see in the following passage: ‘When a puzzled interviewer told Bill [Gore, the founder] that he was having trouble understanding how planning and accountability worked at W.L. Gore & Associates, Bill replied with a grin, “So am I. You ask me how it works? Every which way” (ibid.). I cannot imagine a better description of an intra-firm process of spontaneous order!

Probably the most radical aspect of W.L. Gore & Associates’ ‘unmanagement’ is that the employees choose what work they will carry out. Nobody assigns a place to any associate, and in fact ‘words such as *employees*, *subordinates*, and *managers* [are] taboo in the Gore culture’ (ibid., p. C-500).4 When the associates are hired they are given time alone to familiarize
themselves with the operations of the company and, once they are ready, select the team where they think they can make the greatest contribution. Nobody has the power to deny their participation on the team they choose. The associates ‘were expected to commit to making a contribution to the company’s success’ (ibid., p. C-502), and their pay depends on the magnitude of their contributions to the company. On the other hand, the company has committed to ‘providing a challenging, opportunity-rich work environment and reasonable job security’ (ibid.). The associates are not managed, but are (voluntarily) guided and advised by leaders who naturally emerge in teams. The power of choice in W.L. Gore & Associates rests with the associates, though from the legal perspective the company is privately held.

It may seem quite strange for those ultimately responsible for a business to give up their control over it. There obviously must be something to be gained by it. The benefits of decentralization are indirect: decentralization, if done right, intensifies incentives and creates an environment more conducive to creative action and problem-solving by non-management employees, which in most cases actually leads to more creativity and innovation by non-management employees. This is very clear in the case of W.L. Gore & Associates, where the flat structure was a conscious attempt to encourage innovative behavior by the employees: ‘Bill Gore believed great products alone did not make a great company. He felt hierarchy stifled creativity and that therefore it was important to avoid smothering the company in thick layers of formal management’ (ibid., p. C-503). And at Gore, employees must be creative since all operations are innovation-driven:

Like everything else at Gore, research and development activities were unstructured. There was no formal R&D department charged with coming up with new products and more efficient manufacturing processes; Associates were expected to be inventive. Empowering Associates to be innovative in developing new products and ferreting out new market opportunities had worked well over the years . . . All Gore Associates were encouraged to think, experiment, and follow a potentially profitable idea to its conclusion. At the plant in Newark, Delaware, Fred L. Eldreth, an Associate with a third-grade education, designed a machine that could wrap thousands of feet of wire a day. The design was completed over a weekend. The year before he died, Bill Gore claimed that at his company ‘the creativity, the number of patent applications and innovative products is triple [that of Du Pont].’ (Ibid., p. C-507)

Gore’s internal organization is a radical and dramatic example of decentralization, one that probably would not prove to be a good fit for most businesses. But by revealing what is possible when decentralization is carried out in the right way and within the appropriate market circumstances, this
extreme can be very useful in clarifying our thinking. It also presents an important challenge: if the theory of the firm is unable to explain an organization such as Gore, it is in some ways incomplete.

THE PROS AND CONS OF DECENTRALIZATION

To explain why some firms have been engaging in decentralization of decision-making we must recognize two important epistemological points: First, those who are closest to the product or the customer, obviously most often the non-management workers, can be usually expected to have the best insight into how to make that product more attractive to the customer. Second, it is very difficult to know in advance which innovations will capture the imagination – and pocketbooks – of consumers, which is why business history is littered with skeletons of innovations gone awry. Most innovation is at least to some extent a process of trial and error, companies never knowing for certain what will work and what won’t. Given this, it seems clear that the greater the amount of total innovations generated within an organization, the better the odds of having at least a few of them actually appeal to consumers and promote the business. The question then is, how does a firm promote innovative and creative work by their employees that generates the greatest amount of potentially viable innovations? The central hypothesis of this book is that this can be done through a process of decentralization. Innovations are the benefits of decentralization.

But as with everything else, this reduction of hierarchical control does not come without cost. If workers are no longer told exactly what to do with every minute of their time, but are expected to come up with creative solutions to the problems facing the business, then there is no longer any guarantee of perfect co-ordination of activities of all the employees and all the departments of the firm. At the very least, such co-ordination is no longer *ex ante* but rather *ex post* (as it is in markets), and therefore in some ways probably wasteful as management finds that activities of certain departments are not compatible with the rest of the firm and might need to be abandoned or modified. The firm then has to bear the costs of the wasted resources. The wasted resources can also come from two other sources within decentralized firms: poor decisions and greater shirking by the employees.

So, the main questions of decentralization are: 1) Why engage in this loosening of the hierarchical authority (generically labeled as ‘decentralizing’ though also referred to as ‘decontrolling’) in the first place? 2) Why do different businesses engage in different amounts of decentralization? 3) How is it possible for a company to give up almost all of the central control
and still exist as a company and survive – or even thrive? 4) What then is the role of top management in decentralized firms?

Let me tackle the answers in turn: 1) Firms engage in decentralization because the potential benefits of decontrol (greater flexibility, faster response to competition, greater innovation, faster growth, better workplace characteristics) are in some cases greater than the costs (instability of the firm, potential waste of resources due to incompatibility of projects, fragmentation of the company’s purpose, territorialism and lack of cooperation between employees, greater shirking, poor decision-making), which can ultimately be discovered only through a process of experimentation with the institutional structure.

2) Giving up central managerial control only makes sense in a market which exhibits continuous innovative potential, a market where firms must constantly strive to innovate in order to simply survive. The markets that are based on taking advantage of proven technology in order to continue to satisfy consumers and that do not require (or the consumers are not calling for) further innovation will feature firms with much stronger centralization and hierarchical structure in order to ensure the greatest possible co-ordination between all of the resources of the firm, and thus the greatest amount of cost minimization. However, for certain industries cost minimization is not as important as innovation. Furthermore, it is possible that the structure of certain industries is more amenable to decentralization than others.

3) Companies can give up quite a bit of central control and still do well because there exist forces of ‘spontaneous order’ operating within firms that are akin to the ‘invisible hand’ in the economy. Obviously, they are not the same. Spontaneous order refers to ‘the principle by which a beneficient social order emerged as the unintended consequences of individual human actions’ (Vaughn 1987, p. 168). The actions of the employees within a firm are in fact intended for the firm’s benefit, so at first glance it would appear that the principle of spontaneous order does not apply to the firm. However, there is a way of thinking about the concept of spontaneous order that is of relevance to the study of the firm. Vaughn continues: ‘In [Scottish Enlightenment] literature, a spontaneous order was one that had consequences that were mutually beneficial but were nevertheless unplanned by any one person’ (1994, p. 124). In the case of at least some radically decentralized firms, we observe no ex ante planning of any significance. These firms are relying on the innovative actions of their employees and innovation cannot be planned. In addition, Vaughn goes on to say that:

spontaneous order can be seen as a process of systematic, ordered change in either the formal or informal rule structures by which people attempt to achieve
their purposes. In this sense, the spontaneous order is the unplanned and often unconscious changes in rules and institutions that occur as the by-product of purposive action.’ (Ibid., p. 125)

This is of great relevance to decontrolled firms where continuously evolving informal rules play as important a role in governing behavior as formal rules.

4) Managers still have an important role, though they are no longer expected to engage in detailed planning. Instead, they are expected to understand which tools they have at their disposal to ‘empower’ the workers and facilitate their creativity. They must have a good understanding of the evolution of the informal rules within the firm in order to promote the rules that encourage creative work and eliminate the rules that promote free-riding and routine labor. That may entail sometimes formally adopting the successful rules that have been introduced informally by subdivisions of the company; in other cases it may entail actually introducing – or rejecting – certain informal rules. A decentralized firm can really be thought of as a nexus of rules intended to facilitate innovation (which of course requires successful co-ordination of the activities of many different people). This role of management differs significantly from the traditional one. Managers in decontrolled firms no longer monitor employee performance in order to discourage shirking and penalize the employees who do not meet some planned output goals, but rather aid each worker in being more creative. Management literature often uses the phrase ‘management must be a resource for the employee’ to describe this new managerial role. They cannot simply co-ordinate the activities of the employees; they must in some instances educate, in other instances act as a service to match employees with compatible ideas with each other, and in still other instances simply provide suggestions rather than orders. The following comments by Steve Morton, a former head of an engineering group at Tektronix, illustrates this. If one of the employees that Morton was managing had a problem, Morton did not impose his own solution: ‘I may suggest alternatives, but in the end I let him choose his own way. Then I do whatever has to be done on my end to get that alternative to happen. If we have to go over budget I arrange it’ (Pinchot 1985, p. 145). The same principle applied to purchase orders presented to Morton by employees, which he always signed: ‘I may ask what it is, but in the end, even if I disagree, I’ll sign. Their project is their responsibility and they decide’ (ibid., p. 146).

It is worth emphasizing that decentralized firms do not – and should not – randomly give up control over employees, simply hoping that this decentralization will unleash their creative impulses. Rather, they create a struc-
ture of rules that can reduce (if never entirely eliminate) the free-rider problem, while increasing the incentives for the employees to engage in creative rather than routine work effort. To achieve these goals, firms engage in a process of continuing experimentation by instituting different rules and control structures. The important thing to understand is that many of the rules develop through a trial-and-error, evolutionary process and may only be applicable and effective in those firms under those particular circumstances. It is very difficult to say how many of these rules are general and will apply in different situations and in other firms. It is very likely that many of them are specific to their time and place.

Also, very importantly, a decentralized firm is not a ‘co-op,’ or a self-managed company. It always has an ultimate decision-maker who decides which projects will be carried through to the market and which ones will not. The interesting thing about this, though, is that more than a few ultimate decision-makers in decentralized firms today see the benefits of ‘not putting all of their eggs in one basket’ by allowing some amount of funds to go to projects in which they do not have full confidence, but which exhibit an intense devotion of an individual employee or a group of employees. The most radical form that this decontrol can take is when the decision-makers in the firm simply allot particular funds to a team of employees and do not interfere in their development process. In some cases, the top management then becomes more like a venture capital firm rather than the controlling authority of the company. And like true venture capital firms, decontrolled firms may continue to fund projects that are not a sure bet because they see the potential for something great.

**Intrapreneurship**

The best-selling 1985 management book, *Intrapreneuring* by Gifford Pinchot III, refers to the funds devoted to employee creativity as well as the time they can devote to their creative pursuits as ‘corporate slack’. Letting employees pursue their own pet projects has often been very successful for companies for a very simple reason: ‘When all corporate resources are committed to what is planned, nothing is left for trying the unplannable. Yet innovation is inherently unplannable. Companies that successfully innovate empower their employees to use corporate resources in ways that cannot always be predicted or justified’ (Pinchot 1985, p. 211). It is clear that creativity requires time and in many cases funds to keep it going. Many companies have embraced this viewpoint, and have instituted programs that provide this corporate slack. For example, Ore-Ida instituted just such a program with great success:
Every two years Ore-Ida names five fellows, each of whom is given a $50,000 annual budget to fund other employees in the exploration of new ideas. The results have been impressive:

- A new computerized scale system funded by a $15,000 fellows grant has already saved more than $2 million.
- A $10,000 fellows grant supported engineers in developing a novel heat-recovery system that has already saved $170,000 in one year. (Ibid., p. 213–14)

Here is another example of corporate slack from *Intrapreneuring*:

At Texas Instruments, managers have three distinct funding options for new R&D projects. If their proposal is rejected by the centralized Strategic Planning System because it is not expected to yield acceptable economic gains, intrapreneurs can seek a ‘wild hare’ grant . . . [designed] to ensure that good ideas with long-term potential were not systematically turned down. Alternatively, if the project is outside the mainstream of Strategic Planning, managers or engineers can contact one of dozens of individuals who hold ‘IDEA’ grant purse strings and can authorize up to $25,000 for prototype development. The briefness of the one-page application form expresses both a commitment not to become bureaucratically slow and a high level of trust in the people they have hired. It was an IDEA grant that resulted in TI’s highly successful Speak-n-Spell learning aid. (Ibid., pp. 214–15)

The bottom line is that nobody can know *ex ante* exactly what is going to work in the markets and what isn’t, so some firms have adopted a policy of innovation diversification. Providing time and funds for employees to be creative is one way in which firms are decentralizing the decision-making in their organizations. In such cases no longer is the top management making all the decisions about how to spend the company funds. But many companies are going further than that by experimenting with their institutional structures. They are engaging in ongoing learning about the strengths and weaknesses of their institutional configuration through a trial-and-error process, attempting to discover the optimal one for that time and place – meaning, the arrangement of intra-firm rules that will achieve the proper balance between innovation and co-ordination. In order to extract as much creativity as possible out of their workers, some companies are relinquishing managerial power and letting the employees make their own mistakes and engage in their own trial-and-error processes – in other words, allowing them to learn on their own. Ultimately, decentralized firms are a real-world manifestation of an experimental process of discovery of the optimal organizational form – where the ‘optimal’ means one that is most suited to its environment, one that will have the best mix of various tradeoffs, especially the tradeoff between stability and innovation.
Oticon

The Danish hearing-aid company Oticon A/S is a dramatic example of the process described in the previous paragraph. By the late 1980s, the company which had once been an undisputed leader in its industry had fallen behind the competitors. In the late 1970s they had a 15 per cent share in the world market for hearing aids; by 1987, that market share had shrunk to 7 per cent (Foss 2001c). The main reason for this decline was that Oticon was not keeping up with the new technology introduced by their competition (in particular, the new ‘in-the-ear’ hearing aids and the application of digital technology to hearing aids). The company was in trouble:

Oticon management had to realize that in an industry where the race to bring the next technologically sophisticated product to the market was fast becoming the competitive criterion, the competition had leapfrogged Oticon in terms of technological developments and in terms of reducing the time length of product development. (Ibid., p. 8)

The added problem was that the prevalent culture in the company was one of incremental technological change. Oticon preferred to rely on proven products and proven technology. However, the markets were changing and that was no longer an option.

In 1989 Lars Kolind became the new CEO of Oticon, replacing the executive team that had been in place for 30 years and had made the company into a huge success in the 1970s. That team voluntarily stepped down when it became clear that they were unable to cope with the new problems of the company. After some introductory cost-cutting measures, Kolind decided that ‘something more radical was needed with respect to the strategic orientation of the firm and the administrative systems’ (Ibid., p. 10). In 1990, Kolind undertook a complete overhaul of the company. At the heart of the overhaul was ‘empowering of employees’ through less managerial intervention. Kolind called the new organizational structure the ‘spaghetti organization’ to contrast it with the ‘pyramid organization’ (notice the similarity to W.L. Gore & Associates’ ‘lattice organization’). As Foss explains, Kolind’s goals were clear:

[T]he new organization should be able to change rapidly, yet still possess coherence. The new administrative structure should be explicitly ‘knowledge-based’ . . . It should therefore be capable of combining and re-combining skills in a flexible manner where skills and other resources would move to those (new) uses where they were most highly valued, with only minimal intervention on the part of Kolind and other managers being required to secure this aim. (Ibid.)
In order to achieve this, the employees were given an unprecedented amount of decision-making power. Kolind eliminated most functional departments, and the company was now almost completely ‘project-based’. Just as in W.L. Gore & Associates, the firm relied on spontaneous order to match employees with the project-based groups:

Rather than being assigned tasks from above, employees now had a choice to decide which projects they would join. All projects were to be announced on an electronic board, where employees who would like to join them could sign in. The much noted ‘multi-job’ principle meant, first, that employees were not restricted in the number of projects they could join, and, second, that employees were actively encouraged (and in the beginning actually required) to develop and include skills outside their skill portfolio. (Ibid., p. 11)

Kolind seemed to implicitly accept that employees have a greater knowledge of their skills than the managers, and if motivated properly will insert themselves in those teams where they can make the greatest contributions. In the project-based teams there existed ‘project managers’ but as Foss explains ‘“management” [was] understood more in terms of playing the role of facilitator and coordinator than that of a directing principal’ (Ibid.). In addition, the company implemented new information technology greatly facilitating communication among employees to better ‘coordinate plans and actions in such a decentralized company’ (ibid.).

The spaghetti organization was a great success. All of the goals set by Kolind were met within two or three years of the implementation of the new administrative structure:

Yet another positive outcome of the spaghetti organization was that the development time of new products became half of what it used to be. . . . Customer orientation, another explicit aim of the spaghetti, also dramatically improved. In 1993, half of Oticon’s sales stemmed from products introduced in 1993, 1992, and 1991. A total of 15 new products had been introduced since the introduction of the new organization. Moreover, the ambition to broaden the business areas of Oticon was successful; it was characteristic of the new products that they were not just hearing-aid hardware, but complete integrated hearing solutions, many of them drawing upon recent advances in digital signal processing technology and embodying sophisticated software. (Ibid., p. 12)

The company was pulled back from the brink of bankruptcy as a result of the radical decentralization. However, by 1995 the mismanagement of the spaghetti organization had led to widespread demoralization and organizational instability, and the company eventually reintroduced (limited) hierarchical structures. The experiment created a lot of innovative behavior but ultimately at too high a price. It would appear that either 1) radical
decentralization is the proper structure for W.L. Gore & Associates but was not for Oticon at that point in time, or 2) Oticon made mistakes which undermined the successes of the flat organizational form. I will discuss this aspect of the Oticon case in Chapter 3.

MODERN ECONOMIC THEORY OF THE FIRM AND DECENTRALIZATION

Despite the increasing examination of decentralization in modern management and organizational literature, economists have approached this issue very cautiously and even skeptically, to the extent that they have even acknowledged it. For a long time most economists would not even consider the possibility that firms where employees were granted some – or even great – decision-making power and whose remuneration was not directly tied to some objective measurement of their performance could function at all. Foss (2001b) is a revealing example:

[T]heoretical arguments suggest that emulating market organization inside firms, for example, by radically decentralizing the firm and allocating far-reaching decision rights to employees may be hard to accomplish in a successful manner. Unlike independent agents in markets, corporate employees never possess ultimate decision rights. They are not full owners. This means that those who possess ultimate decision rights can always overrule employees. Thus, there are incentive limits to the extent to which market mechanisms can be applied inside firms, and delegation, while not exactly a rare flower, is certainly a very delicate one. (p. 7)

Foss’s quote effectively presents several misconceptions commonly held by modern economists. First, there is a perception that decentralized firms consciously attempt to copy market forms of organization. But decentralization is not necessarily carried out in order to emulate the market. Instead, it is an alternative organizational form which in comparison to a traditional hierarchically run firm features certain advantages and certain disadvantages.

Second, most economists believe that, because employees within firms can never legally claim the full fruits of their creative labor and because those with ‘ultimate decision rights can always overrule employees’, the incentives within a firm are insufficient to get employees to act in truly creative, entrepreneurial ways. In addition to this motivational problem, there is also the problem of intra-firm co-ordination of employees’ potentially complex activities in the absence of detailed planning by the management.
But as Foss acknowledges in the paragraph above, and as even the most ardent critics of firm decentralization must concede, firms that are organized along these lines do exist. A skeptical economist will offer some possible explanations for this apparent aberration: 1) the organizational form is a fleeting, impermanent experiment which is doomed to failure (that is, it is not an organizational equilibrium), or 2) the firm is not decentralized in reality, but rather the decentralization claims are a part of a public relations campaign, possibly intended to reduce the unionization pressures, or something similar. These explanations are not convincing to anyone who has followed the business literature over the last ten years. Examples of enduring and successful decentralized firms abound. How can they be explained?

I believe that we can explain decentralized firms only by extending and even reconsidering some of the building blocks of the theory of the firm. The New Institutionalist theory of the firm may have led us astray to a certain extent by presenting central planning as the salient characteristic of firms and neglecting to account for the decentralization of decision-making that exists at some minimum level in all firms. Examining decentralized firms is an effective way of ‘testing’ the real-world applicability of the modern theory of the firm, and subsequently suggesting the ways in which we should modify it. In particular, I will focus on these neglected or even ignored elements of the theory of the firm: the knowledge problem within firms, spontaneous order within firms and creativity within firms. With better understanding of these three elements we can begin to explain why at least some intra-firm decentralization exists and why some radically decentralized firms can even thrive, contrary to today’s dominant theory.

OUTLINE OF THE BOOK

The modern economic theory of hierarchical firms is mostly due to the work of two men: Ronald Coase and Oliver Williamson. I will analyze their view of the firm as the antithesis of the market in Chapter 2, and explain their theories of the hierarchical firm (based on top-down planning). I will show that these theories cannot explain existing, real-life decentralized firms because they do not account for dispersal of knowledge within firms. Thus, we must look beyond the Coase/Williamson theory of the firm to explain decentralization.

In Chapter 3 I will look at the recent work on the knowledge problem, that is, dispersal of knowledge, within firms. A growing body of literature has recognized the existence of the knowledge problem within firms, and some of it has actually even dealt with decentralized firms from
this perspective. The contributions in this area have come basically from three economists: Richard Langlois, Nicolai Foss and Alanson Minkler. Though their work was foundational and essential, none of them have gone far enough to fully explain intra-firm decentralization.

In Chapter 4 I will explain the role of spontaneous order within firms with decentralized decision-making. Such firms by definition eliminate at least some consciously directed internal co-ordination, and thus implicitly rely at least somewhat on spontaneous co-ordination. But economists often seem to hold the view that the market system is the only example of spontaneous order. They therefore come to the conclusion that, in the absence of the market institutions (private property and money prices), spontaneous order is impossible, or at least unlikely. However, there are other examples of spontaneous order, which emerge without relying on monetary prices. Languages and money itself are two such spontaneous orders. In fact, as Richard Ebeling has shown using the sociological and philosophical insights of Alfred Schutz (see Chapters 4 and 5), the entire market order itself is dependent not only on the above-mentioned market institutions but also on the sociological connections between individuals established through the existence of structures of intersubjective meanings. I will argue that it is these structures of intersubjective meaning (which are embodied in various organizational rules) that are responsible for spontaneously co-ordinative properties of decentralized firms.

Few issues are more important to decentralized firms than that of employee motivation, which I will also consider in Chapter 4. Unfortunately, economists have not done much to realistically explain the complex factors that motivate employees. The only notable exceptions appear in the work of Herbert Simon and Alanson Minkler, both of whom find that employees are motivated by an intricate set of factors outside of simple incentives. Even more, the actions of most employees at most times are far from being ‘opportunistic with guile’, which was Williamson’s fundamental assumption of employee behavior. It is this fact that allows firms to function at all; otherwise the principal–agent problem and the accompanying monitoring and transaction costs would be absolutely overwhelming.

In Chapter 5 I will deal with one element of decentralization that has so far remained mostly ignored – the fostering of creative responses among employees. In this chapter I will discuss how delegation of decision-making in firms can bring about greater active creativity among employees. Though the emerging economic literature dealing with decentralization has so far enumerated many of its benefits and costs, little attention has been given to the role of creativity. Creativity (in the sense of introduction of ‘novelty’) within the firm will be explained by relying on Schumpeter’s conception of entrepreneurship as creativity in action. Schumpeter stated that ‘a study of
creative response in business becomes coterminous with a study of entrepreneurship’ (1947, p. 223). Much attention has of course been given to Schumpeter’s theory of entrepreneurship, but it has so far not been applied in a way to help us understand the origins of creativity within firms. An important implication of his definition is that it is not only the owners or head managers in a firm who can act in entrepreneurial ways, but rather employees at all levels of the hierarchy. Decentralized firms are decentralized precisely for this reason: they give decision-making power to employees in order to extract creative action from them. Also, Schumpeter’s conception of entrepreneurship holds that in addition to pecuniary factors (which certainly play a role) entrepreneurs are often motivated by other factors, an important one being an innate need to create. This Schumpeterian conception of entrepreneurship can be used to explain why and how workers in decentralized firms will act in creative ways and how internal structures of decentralized firms are designed to encourage this behavior.

Finally, Chapter 6 will present some concluding thoughts.

NOTES

1. A notable exception is Sautet (2000). Sautet incorporates the entrepreneurship theory of Israel Kirzner into the ‘capabilities’ and transaction cost theories of the firm in order to show that the multidivisional form of the firm has emerged to spur greater intra-firm entrepreneurial discovery of new opportunities and more effectively solve the Hayekian knowledge problem present within firms. While Sautet focuses primarily on the M-form of the firm (which he refers to as a ‘decentralized form’) to explain how entrepreneurship fits into a firm, this book will deal with decentralization in a broader, more general way. Nevertheless, to the extent that Sautet did address the connection between the structure of firms and intra-firm entrepreneurship, it is an important predecessor to my own work, with which it shares more than a few affinities.

2. The database consists of over 300 large US firms, spanning multiple industries, tracked over a period of up to 13 years (1986–1998). The database comes from the largest private compensation survey to date, carried out by Hewitt Associates, a leading human resources consulting firm. In addition, the database consists mostly of large, established companies, belying the common perception that hierarchical flattening is mostly seen in start-ups and newer high-tech companies: ‘The firms in the sample are large, U.S. publicly-traded firms that are well-established and profitable with average size of approximately 47,500 employees, age of 85 years since founding, and return on sales of 19%. The typical firm in the sample is thus a large mature stable firm, not one whose organizational structure is likely to be in flux . . . The survey participants are typically the leaders in their sectors and, in fact, more than 75 percent of the firms in the dataset are listed as Fortune 500 firms in at least one year and more than 85 percent are listed as Fortune 1000 firms. These firms represent a significant fraction of the activity of publicly-traded firms in the U.S.’ (Rajan and Wulf 2006, p. 9).

3. ‘Our first finding is that the number of managers reporting to the CEO has increased steadily over time, from an average (median) of 4.4 (4) in 1986 to 8.2 (7) in 1998 . . . Our second finding is that the depth, which is the number of positions between the CEO and the lowest managers with profit center responsibility (division heads), has decreased by more than 25% over the period’ (Rajan and Wulf 2006, p. 4).
4. We can see this also from the interview held with some employees. One said ‘What attracted me to the company was the opportunity to be my own boss and determine my own commitments . . . I felt a strong need to be sure that I was working on something that had value, something that truly needed to be done . . . I did want to make sure that I was helping the company to make money in some way’ (Shipper and Manz 1998, p. C-504). Another said simply ‘You’re unshackled here. There’s a lot less bureaucracy that allows you to be a lot more productive’ (ibid.).