

## 2 Resources

*In brief:*

*As we saw in the previous section, the business process takes place in stages or phases. The investments and transformation processes of later stages build upon, and are connected to, input from earlier stages. This applies to non-marketable input and to input that has externalities and can be used as a public good in numerous subsequent business activities without being used up in the process.*

### 2.1 A Typology of Resources

#### 2.1.1 Two Features of Resources

The business process – indeed, economic activity as a whole – consists of interlinked processes of transformation. Accordingly, the resources that appear in the transformation processes as inputs or outputs, and can be passed between the interlinked processes, are of central importance.

In fact, the concept of "resource" is broad. It ranges from screws to insurance policies, from a country's infrastructure to its knowledge – these are all different types of resources. Naturally, the decisions made by a company depend closely on the nature of the resources involved. How, then, should we categorize different resources? What are the key features that distinguish them?

Our typology should help us to determine whether decisions about specific resources should have a primarily *strategic* or a *financial* basis. For this purpose, two features prove the most useful:

- Can the resource be bought or sold by the company in its relations with external parties? In other words, is the resource *marketable*? If not, it is a resource that is produced and used entirely within the firm
- Is the resource a *private* or a *public* good? If it is a private good, then using the resource in one location within the firm makes it unavailable for use in other locations within the firm. If it is a public good, it can be made available freely and be used by all, without excluding anyone

Why are these two features of resources so important for our question of *strategy* versus *finance*? In the case of marketability the answer is clear: A marketable resource is one that is actively exchanged and traded between partners, and not just transferred on a one-off basis between a firm and the outside world. Such resources have a *market price*. From this it is easy to derive costs (in the case of purchasing the resource) or profit figures (in the case of selling it). For marketable resources, then, firms can use cost and financial calculations to help with their decision-making. Companies operating close to the market can make the right decisions by keeping a close eye on market prices.

In the case of non-marketable resources, it is not so easy to construct a cost or financial calculation. This is due to the lack of market prices. Yet it is still possible to derive internal values for the resources in question. These internal prices are known as *transfer prices*. They represent an attempt to quantify indirectly the internal usefulness of a resource. Companies derive the internal value or transfer price from the output that can be achieved with the resource in question by other points further down the transformation chain.

Imagine a situation in which a company has the option of developing a particular innovation at a certain cost. It does not have to develop the innovation – it can choose whether to do so or not. If it does develop the innovation, parts of the company further down the chain – the production and sales departments, for example – will be able to use the innovation to boost their income by EUR 1 million. This means that the innovation has a maximum internal value of EUR 1 million. If developing the innovation would cost the company more than this amount, the company should not pursue this course.

This method of quantification – deriving internal values for non-marketable resources by looking at the financial benefit they deliver in subsequent processes of transformation – allows companies to think on a financial basis again. We examine the methodology in greater detail in Part 3, Section 4.

### **2.1.2 Private Goods with Externalities**

The method of assessing the value of non-marketable resources indirectly is more difficult than simply using a market price. What is more, it does not always lead to a clear or helpful evaluation of the resource in question.

Let's go back to our example of the company with the option of developing an innovation. Imagine, now, that the innovation in question actually has some additional positive effects – over and above its positive impact on the production and sales departments. Developing the innovation also improves the company's image. This makes it easier for the company to recruit good staff. Moreover, the experience gained from developing the innovation makes it easier for the company to develop other innovations later on.

In this situation, the innovation is no longer simply a private good that is used up by later stages in the chain (in our example, by the production and sales departments). Rather, it is a resource that has positive external effects. Consequently its internal value should be set at more than the EUR 1 million advantage calculated earlier on. How much more depends on the externalities – and these are not easy to capture and evaluate.

This phenomenon has serious consequences. In the case of non-marketable resources – resources lacking a market price – a finance-based management approach can run into difficulties. This is particularly true where the resource has a further impact above and beyond its direct use and its exploitation in a subsequent stage of transformation – i.e. when it has externalities. Where this is the case, the values used in finance-led management approach and the transfer prices tend to be rather vague, and a supplementary basis for decisions becomes necessary – strategy-based thinking. In Sections 2.2 and 3 we examine in detail the reasons for non-marketable and see that the limitations of deriving transfer prices using the principles of finance-led thinking relate to the extent of the external effects created by the non-marketable resource.

Of course, resources' externalities vary in terms of strength. If they are very strong, then the resource – just like a potential or a public good – can be used to advantage in various locations without being entirely consumed. In this case, it is actually impossible to quantify the internal usefulness of the resource, as this value depends on which processes ultimately use the potential – a matter of extreme uncertainty.

Three different cases therefore occur for non-marketable resources:

1. The resource is a purely private, yet non-marketable good. In this case internal values may be calculated, and financial and cost-based thinking represents an adequate basis for decision-making. An example is internally developed software for a specific task, where the software is not used for other jobs within the company and is not sold externally

2. The resource demonstrates certain external effects. Evaluations are not accurate enough, as the external effects are impossible to capture and evaluate properly. The financial calculations become somewhat fuzzy and should be supplemented by strategic considerations. An example would be an innovative production technique for product A that might be later used for follow-up products B and C
3. The non-marketable and private good demonstrates strong external effects. Here it is no longer possible to calculate reliable internal values. Consequently the firm cannot make decisions about the resource based upon financial considerations. Strategic thinking must step in and fill the gap. An example would be an internal knowledge platform that is likely to enable several new developments

### 2.1.3 Public Goods

Let's go back to our two features of resources: their marketability and their public nature. The question of private versus public goods is also critical in determining whether strategy-based or finance-based thinking is required. In the case of public goods, third parties cannot be excluded from their use, or can only be excluded at great cost. Third parties always find some way to access such goods. Furthermore, once the public good has been created, there is little sense in trying to prevent others from using it – the people for whom the good was primarily created are not prevented from using it by other people using it.

As we have seen, a decision about public goods that is based on financial considerations will not yield optimal results. An extensive literature in the field of finance deals with the difficulties of allocating public goods. Even surveys of the general public are unable to determine the extent of the public goods desired by society. This is because the respondents are afraid that they will be steered toward paying for the creation of the public good themselves, if they say what they would really like. As a result, everyone pretends to have no interest in the good, in the hope that someone else will pay for its creation – safe in the knowledge that they themselves will not be excluded from its consumption later on. This is the concept of the *free ride*, discussed in greater detail in Section 2.2.

When it comes to public goods, then, companies need other bases for their decisions. The gap left by financial calculations can be filled by strategic considerations. When the attempt to make calculations involving public goods falters, strategy must step in to save the day.

In fact, many of the resources that companies use are public in nature. Knowledge is a good example. At this point, we need to introduce a further sub-classification of resources. Some public goods produced by companies are not only available for use at all points within the organization, but are also made available to interested parties outside the company. These goods are what we might call *global-public* resources. In much the same way, public goods can be made available by external entities and used by the company.

With some other resources of a public nature, generated within the company and used internally throughout the organization, the company would like to prevent external use. In this case, using the public good outside the company would destroy their usefulness inside the company. Examples include corporate secrets, such as technical breakthroughs. Such developments give the company a competitive edge – as long as imitators do not appear too early on. In the relationship between what takes place within the company and the outside world, the public good in question behaves like a private good. If it is used outside the company, it loses its usefulness within the company.

Resources of this type are made freely available within the company, as public goods. However, they are protected from the outside world as private goods. We call such goods intra-public resources; they include the majority of the knowledge within a company.

### 2.1.4 Eight Different Types of Resources

The distinctions outlined above give us a total of eight different types of resources. Firstly, we have private goods that are marketable (1) and those that are not. For marketable private goods, we can further distinguish those that are produced externally and bought in by the company as required (1A) from those that are (partially) internally produced and sold to the outside world (1B). In both cases, finance-based thinking fits the bill: companies operating close to the market can reach the right decisions by simply looking at market prices. Examples of private, marketable goods of type (1A) are plentiful. They include materials and power bought in from external sources by the company. Resources of type (1B) are standardized intermediate products that are easy to sell on the market.

Secondly, we have non-marketable resources (2). These resources are both produced and used internally. In Section 2.2 we examine in detail the

reasons for their lack of marketability and give some specific examples. This category of resources is particularly interesting for the subject of this book – management between strategy and finance. Some of the non-marketable goods have no external impact: For these goods it is still possible to determine internal values or transfer prices, and cost and financial calculations do the job nicely (Type 2A). For other non-marketable goods it is only possible to derive rather vague internal values, due to the influence of external effects. In this case, financial calculations lose their precision and must be supplemented by strategic considerations (Type 2B). For a third sub-group of non-marketable goods it is impossible to derive internal values as their external impact is too great; decisions about such resources must be based on a strategic perspective (2C).

CATEGORY	TYPE OF RESOURCE	DECISION
1) Private, marketable goods	A) Bought in from outside, e.g. power (oil, electricity) B) Produced internally and partially sold externally, e.g. software for company processes	Financial Financial
2) Non-marketable, private goods, generated and used internally	A) No externalities – Internal value can be determined accurately, e.g. tacit knowledge, present in certain individuals and valid only in a specific context, making it difficult to formalize or communicate B) Some externalities – Internal value can only be determined approximately, e.g. a firm-specific production process that produces certain emissions C) Strong externalities – Impossible to determine internal value, e.g. corporate culture	Financial  Strategic and financial  Strategic
3) Public goods	A) Intra-public goods – Created and used internally, protected from the outside world, e.g. specific company expertise B) Global-public goods – Created internally, available both internally and externally, e.g. published research C) Global-public goods – Created externally but also of use within the company, e.g. specialist knowledge and skills taught at professional training schools	Strategic  Strategic

### Summary 2-1: A typology of resources

Thirdly, we have resources that show certain properties associated with public goods (3). Here we have examined three separate sub-groups. The first sub-group is intra-public goods (3A). Intra-public goods are public goods within the company, but the company strives to prevent access to them by external entities. In the relationship between what takes place within the company and the outside world, they are protected as if they were private goods. For such goods, financial thinking is no longer sufficient; a strategic approach is needed. The second sub-group is global-

public goods that are created internally and also made available unreservedly to the external world (3B). They, too, require a strategic approach. The third sub-group is global-public goods created by an external entity (3C).

In our enumeration of eight different types of resources, we have ignored mixed cases. However, one such case must be mentioned. This is where a private good is combined with a public good. An example is a part or a component that contains knowledge within it. Here, a combination of resource types (1B) and (3A) may arise.

Parts and components that contain know-how that must be protected from the outside world are not sold by the company manufacturing them. Mixed goods of this type are potentially, in their capacity as private goods, highly marketable. However, the company does not wish to lose hold of the knowledge or the innovation contained within them – that is to say, the public good that the private good is coupled with.

These mixed resources have strong *externalities* owing to the public good combined with them. Often they can easily be taken apart by specialists and through a process of reverse engineering reveal what new production techniques their manufacturers are using. This combined type of resource therefore resembles type (2C). Other mixed types are similar, and need not concern us here.

## 2.1.5 Summary

By looking at two features of resources – their marketability and whether they are private or public goods – we have defined eight different types of resources. For each of these types, we have stated whether a strategic or a financial perspective should dominate in entrepreneurial thinking. This allows us to identify three different overall *mindsets*: pure finance-based thinking, mixed strategic and financial thinking, and pure strategy-based thinking. In Summary 2-2 below, we re-order the eight types of resources and show how they relate to these three different mindsets.

We can now add two further insights:

- Firstly, there is a connection between the scope and the strength of the externalities. For the group marked \*, few or no externalities occur; for the group marked \*\*, some externalities occur; and for the group marked \*\*\*, there are strong externalities

- Secondly, there is a connection between the magnitude of the externalities and where they occur in the transformation processes. Thus, resources in the group marked \* (few or no externalities) are found predominantly in later and external transformation processes; resources in the group marked \*\* (some externalities) typically occur in the middle phases and transformation processes; and resources in the group marked \*\*\* (strong externalities) occur in the early phases and internal transformation processes

RESOURCE TYPE	REGROUPING	DECISION BASIS
(1A), (1B) and (2A)	*	Financial
(2B)	**	Strategic and financial
(2C), (3A) and (3B)	***	Strategic

**Summary 2-2:** Regrouping of resource types by mindset

Putting these two insights together gives the following picture: In the early phases and inner areas of the company's transformation processes, it is strategy that does the trick. In the middle phases, a mixture of strategy and finance is what is needed. And in the late phase and in external areas, finance-led thinking is the order of the day.

**2.1.6 Decisions Based on Strategy or Finance?**

Let's now take a closer look at the two insights discussed above. So far, we have seen which types of resource finance-led thinking is adequate for – types (1A), (1B) and (2A). We have also seen that a mixture of strategic and financial thinking is required for type (2B). For types (2C), (3A) and (3B), strategy-led thinking is more important than financial thinking. The one remaining type of resource, (3C), is unproblematic.

We have thus have reduced our eight original types of resources down to three groups (see Summary 2-2). Furthermore, to determine when financial thinking is preferable to strategic thinking and vice versa, we have distinguished three different overall mindsets:

- Mindset 1: Financial calculations are possible for private, marketable goods of type (1A) and (1B). The same applies to private, non-marketable goods with no externalities (2A)



- Mindset 2: Some non-marketable goods are produced and used internally, but they show certain externalities. For these resources, the attempt to derive internal values gives unclear and rather vague results. Financial calculations are therefore only partially applicable and should be supplemented by strategic considerations (Type 2B)
- Mindset 3: Financial calculations are impossible for non-marketable private goods with strong externalities (2C) and intra-public resources (3A). A strategic approach is required. The same applies to global-public goods (3B)

This is how the eight types of resources relate to our three different mindsets. We now know where financial thinking alone will suffice, where strategic and financial thinking are needed in parallel, and where strategic thinking alone is appropriate.

This finding prompts another question: Can the three different mindsets be "localized" in different areas of the business process? As we have seen, the first mindset (finance-based thinking) is associated with private goods with insignificant externalities. The second mindset (strategic and financial thinking) is associated with resources that display certain externalities. The third mindset (strategic thinking) is associated with resources that display strong externalities or even have the nature of a public good. The three mindsets differ primarily with respect to the extent of the resources' externalities. This was the first insight, discussed above.

So where in the company's processes of transformation do we typically find strong externalities, and where do we typically find weak externalities? Here, the second insight comes into play:

- If we look back at the description of interlinked transformations (Section 2), we see that the earlier, inner stages of the business process lay the foundations for what follows. The resources created in these early stages have strong externalities or even have the nature of a public good. Financial calculations are therefore impossible. In these areas of the business process, a strategic approach is required and can be a powerful tool
- In the middle stages, non-marketable resources and goods dominate. These resources have partly private and partly public characteristics. In the middle stages of the business process, certain externalities come into force. As a result, both financial and strategic thinking are needed, the one complementing the other

- In the later and outer stages, the resources overwhelmingly have the nature of private, marketable goods. In these stages of the business process, financial calculations can be used. In the later and outer stages of the transformation processes carried out by the company, financial considerations thus rule the day

WHEN AND WHERE?	WHY?	CORPORATE DECISIONS
Early phases and inner layers	Resources are intra-public in nature and have strong externalities	Strategic thinking
Middle phases and transformation processes	Resources are non-marketable and have some externalities	Combination of strategic and financial thinking
Late phases and outer layers	Resources are non-marketable and have no externalities	Financial thinking

**Summary 2-3:** Typology of resources, showing which of the three mindsets works best in each phase, and why

The typology of resources shows the connections between, on the one hand, the different phases and stages of the business process (early/inner, middle and late/outer), and on the other, the type of business thinking required (strategic, financial). These connections provide an answer – albeit a theoretical one for the present – to the overall question addressed in this book. In the following sections we will add the meat to the bones, as it were, showing what the different stages actually consist of. In so doing we will arrive at our theory of the four seasons of business, and see that our as yet theoretical answer is actually supported by hard facts.

To summarize our findings so far, we see that in the early phases of the business process, strategy is king; in the middle phases, strategy and finances are both important; and in the later phases, financial thinking rules the day.

## 2.2 Lack of Marketability

### 2.2.1 Introduction

In this section we take a closer look at one of the three categories of resources – non-marketable private goods. As they are not marketable, they cannot be bought in from outside: they have to be produced internally. Moreover the goods, once produced internally, cannot then be sold externally.

The resources in question belong to category (2) with its sub-groups (2A), (2B) and (2C) in our typology of resources (see Summary 2-1). Non-marketable resources are of particular interest to us as they may involve all three mindsets (purely financial, strategic and financial, purely strategic). These resources occur, as we have seen, in the middle phases and transformation processes within the company.

Why do non-marketable resources exist at all? What is it that stops them from being marketable? There can be four different reasons:

1. The resource in question is available everywhere in principle, but transaction costs prevent it from being exchanged, or a market from emerging
2. The resource is not used outside the firm, so there is no market for it. This is because the resource has a high, company-related specificity
3. Although the resource is primarily a private good, it also contains certain information. It is therefore a mixture of a private and a public good. Its public good element must be protected from the outside world – due to synergies, or the fact that if it were sold externally, internal knowledge would be lost along with it
4. Certain individual market participants go against the usual patterns of behavior (price taking) and act toward other participants in a calculated, strategic manner. This is referred to as hold-up

### 2.2.2 Transaction Costs

The first two reasons above – transaction costs and resource specificity – have formed the subject of copious research. In an earlier section we already mentioned OLIVER WILLIAMSON, whose theory of economic

contact states that *specificity*, along with the problem of safeguarding, is the reason for the existence of firms (Section 1.2). The idea that resources lose their marketability as a result of *transaction costs*, and that this leads to the emergence of firms, originates with RONALD H. COASE. COASE investigates the costs related to the use of the market.

Key transaction costs relate to:

- Identifying business partners
- Negotiating conditions and agreeing contracts
- Establishing quality standards
- Making technical adjustments
- Coordinating transfers
- Carrying out payment transactions<sup>1</sup>

### Sources of Internal Financing

The money for internal financing can come from two sources. Firstly, the firm may choose not to distribute certain money it receives by not recording it as profit. The best-known example of this is (cash income from) sales revenue resulting from the use of fixed assets (depreciation, or non-cash expenses). Firms may also retain profits. To do this, they can record lower profits than they actually generate – for example by pushing up depreciation or creating disproportionately large provisions. What's more, the management can convince those providing the equity that they should not withdraw all the money recorded as profit, as that might jeopardize the future of the company. This gives the management a sizeable pot of money that it can use for investment purposes, with little control possible on the part of the shareholders.

Any use of the market involves such transaction costs. If the costs are high, economic actors find it advantageous to form lasting arrangements with partners who they know and trust, thereby keeping down their search and negotiating costs. This gives rise to bilateral relationships, groups and networks consisting of partners who trust one another and work together on an ongoing basis. Cooperation within this circle of trusted partners is to a certain extent protected from the rigors of the market. It also harbors certain inefficiencies. However, breaking up the circle and letting the market in would mean having to bear the transaction costs. A first-best allocation is impossible; the question is which of the possible second-best allocations to choose.

COASE argues that companies exist because of the internal savings that are possible through established transactions

<sup>1</sup> 1. LOUIS DE ALESSI: *Property Rights, Transaction Costs, and X-Efficiency: An Essay in Economic Theory*. American Economic Review 73 (1983), pp. 64-81.  
2. HARVEY LEIBENSTEIN: *Aspects of the X-Efficiency Theory of the Firm*. Bell Journal of Economics 6 (1975) 2, pp. 580-606.

within such networks. If the networks were to collapse, markets would have to be created – and using markets is expensive. The result is that integrated firms appear, within whose boundaries cooperation is straightforward and trust-based. So COASE distinguishes two different contexts: where transaction costs are low, markets appear; and where transaction costs are higher, firms appear.<sup>2</sup>

Let us continue our discussion. Internal trust and openness act like a public good. But this action is absent in the case of transactions between internal and external parties. Where a distinction arises between internal and external parties, insiders raise objections to cooperating with outsiders. This resistance to cooperating with external parties is due to the belief – borne out by experience – that such cooperation always involves transaction costs, and that these transaction costs are initially underestimated. Internal trust and internal openness to transactions therefore represent an intra-public good.

Before we move on to other types of transaction costs, we should take a closer look at a company's risk-bearing capital – its equity. Now, it may seem paradoxical that transaction costs can arise with relation to equity. Yet the internal availability and the external availability of capital can vary greatly. Within the firm, free capital is available through internal financing and occasionally through increasing the equity level. In terms of internal financing, the main source is the cash generated by using fixed assets (depreciation). These resources are available internally, although in reality they are only needed when replacement investments are actually carried out. Up to this point, they remain within the firm. They can be invested in money markets or bonds, but investing them in a share portfolio would be interpreted by the stakeholders as mismanagement.

So there are times when internal risk-bearing capital is in excess – at least temporarily. At such times, less profitable investments become worthwhile, even if they do not offer the usual rate of return available on the external capital market. And there are other times when risk-bearing capital is in short supply within the firm. At such times, the internal capital requirement cannot be met directly by approaching the providers of equity: raising the level of equity is a complicated process that requires lengthy preparations. On some occasions, then, due to a temporary shortage of

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<sup>2</sup> 1. RONALD H. COASE: *The Institutional Structure of Production*. American Economic Review 82 (1992), pp. 713-719. 2. RONALD H. COASE: *The Nature of the Firm*. *Economica* 4 (1937), pp. 386-405.

equity, firms must reject even investments that offer the usual rate of return on the external capital market.

To put it simply, equity is a resource that is available both inside and outside the firm. But it is a resource that involves transaction costs: not every investment in the external capital market (at the usual rates of return) that the firm's management would like to make is acceptable to stakeholders, and increasing the level of equity requires lengthy preparations. Thus the price or value of capital inside or outside the firm may vary. Thus, we classify equity as a resource of type (2A).<sup>3</sup>

Even without detailed modeling, it is clear that if a firm happens to have extensive means at its disposal, it can consider projects offering a relatively low rate of return. If, on the other hand, internal finances are in short supply, projects and investments must offer comparatively high rates of return in order to be considered acceptable.

### 2.2.3 Technical Transaction Costs

The magnitude of transaction costs can change as a result of economic developments. As an example, standardization leads to falling technology-based transaction costs, and the resources in question shift from type (2A) to category (1). Technical transaction costs relate to the alterations that must be made prior to market transactions taking place. Such modifications are generally expensive, which prevents the smooth functioning of the market. The resource is available both internally and externally, but in different varieties. As a result of this lack of homogeneity, the market fails.

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<sup>3</sup> R. GLENN HUBBARD: *Capital-Market Imperfections and Investment*. Journal of Economic Literature 36 (1998) 1, pp. 193-225. OWEN A. LAMONT: *Cash Flow and Investment. Evidence from Internal Capital Markets*. Journal of Finance 52 (1997) 1, pp. 83-109. 3. ROBERT H. GERTNER, DAVID S. SCHARFSTEIN and JEREMY C. STEIN: *Internal versus External Capital Markets*. Quarterly Journal of Economics 109 (1994) 4, pp. 1211-1230. 4. OLIVER J. BLANCHARD, FLORENCIO LOPEZ-DE-SILANES and ANDREI SHLEIFER: *What Do Firms Do with Cash Windfalls?* Journal of Financial Economics 36 (1994) 3, pp. 337-360. 5. TONI M. WHITED: *Debt, Liquidity Constraints, and Corporate Investment: Evidence from Panel Data*. Journal of Finance 47 (1992) 4, pp. 1425-1460.

In the past, technical transaction costs were of critical importance. Up until recently, countries insisted that consumer goods had special features that actually prevented similar goods being imported from abroad, in an attempt by countries to protect their own economies. For instance, the plug on foreign electrical equipment didn't fit into domestic sockets, the lights on imported cars didn't meet the requirements of the domestic vehicle licensing authority, and foreign DVDs wouldn't work on home-grown DVD players.

This situation, in which trade was possible only after technical modifications were made, also applied to industrial production. Different companies had special intermediate products, parts and components – even where no design secrets were involved. Parts fulfilling exactly the same function at different companies had different specifications and were not interchangeable. Spare parts for cars are a classic example: the brake blocks or shock absorbers on a Volkswagen could not be used on an Opel, and vice versa.

In the past this was partly due to eccentricity on the part of manufacturers. Partly it was also due to them overestimating the importance of spare parts for differentiation by customers. Many firms thought that they could generate added value by selling their own custom-made parts: they made each component unique to ensure they had a monopoly. They then went to great lengths to prevent other manufacturers from imitating their spare parts. In so doing they forgot that they were actually damaging their image in the eyes of consumers, as well as introducing inefficiency – these were the days of long, highly integrated production lines and large interim storage facilities.

Those days are now gone. Countries have opened up, abolishing duties and lifting trade barriers. Companies nowadays apply standard engineering principles worldwide in their design work. They consciously choose to apply norms and use standardized features.

As the global economy has emerged, transformation processes have become practically identical across the board. Best practices, norms and standards have revitalized markets. Here are some examples:

1. In the automotive industry, many suppliers now supply different vehicle manufacturers concurrently
2. In vehicle sales and after-sales, large distribution firms have emerged with enormous showrooms displaying various makes of car
3. In telecommunications, interfaces have been standardized

A substantial shift has occurred in the way people think about technical barriers. In the past, companies had a strategic mindset, which led to them specially engineering their own products. Today, the same companies have recognized the advantages of a market economy, and the market and its prices allow them to take up a financial mindset. In the past, strategy guided their decision-making; today, financial considerations support this process.

### 2.2.4 Specificity

The second reason we identified for resources being non-marketable is if they have a high level of specificity. Resources can be so firm-specific that they are of no value to anyone outside the company: they can only be used in internal company processes. In the case of firm-specific resources, no general market emerges even if the resource is produced by an external supplier controlled by the firm. For example, Audi has its own plant in Győr in Hungary that produces tools for its auto bodywork. This resource should be considered a purely private good, not one combined with a public good. Consequently it does not need to be hidden from the outside world, as it does not betray any corporate secrets.

What makes a resource specific? (Note that we are no longer talking about technical transaction costs and the things that led companies in the past to custom build parts as a barrier to market entry.) The first reason for specificity is *internal specialization* in the other transformation processes in the firm. There must be clear advantages from specialization that argue in favor of creating and using firm-specific resources internally.

A second reason for specificity – and a more important one in practice – is the speed of technical progress. A resource can be entirely marketable and possible to transfer between firms. It remains marketable as long as the speed of technical progress is the same for all the firms involved. When selecting suppliers, firms look at whether their potential partners are able to keep up in terms of technical progress, or can even set the pace. Marketability is lost if the external partners are unable to keep up with the firm's own speed of technical progress, and a situation arises in which the firm has internal resources that are not yet available on the external market due to their novelty. Such innovations can therefore not be brought from outside the firm, although the company would be able to sell them. No liquid market exists, and so the innovative resource is considered non-



marketable. The market barrier is the speed with which the firm develops new resources.

### 2.2.5 Synergies

The third reason for resources being non-marketable – beside transaction costs and resource specificity – relates to synergies. In this case, the resource in question has the mixed nature that we spoke of earlier. It has the nature of both a private and a public good. In other words, the resource demonstrates certain external effects. For this reason it must not be sold externally. Our example of this type of resource was the innovative knowledge that would be revealed to a buyer when an object was transferred. Naturally enough, companies do not wish to sell such resources to external parties.

Why, then, can't firms sell innovations *at a high price*? The reason could be that external parties are unable to afford a price that exceeds the value to the firm of using the resource internally. In other words, the resource may not be firm-specific, and could easily be transferred to other interested parties outside the firm. However, its external value is lower than its value within the firm in question. This is because of the resource's external impact. While its use within the company produces *above-average* synergies, its positive impact with competitors is *below average*. Consequently, competitors do not bid high enough for the resource. The cost structure can mean that the resource is produced and used within the firm, whereas competitors decide not to produce it at all. We will illustrate this phenomenon later with a quantitative example.

## **Synergies: The Whole Is Greater than the Sum of Its Parts**

The term “synergy” is derived from the Ancient Greek *synergia*, meaning two or more agents working together to their mutual advantage.

Synergies play an important role in business. They are regarded as the driving force behind takeovers and mergers. Two types of synergy are distinguished in the literature: financial synergies and operational synergies. Financial synergies relate primarily to the management and financing of companies. Thus when two companies merge, it is possible to achieve tax advantages by offsetting losses, for example, or reduce the cost of financing by bundling the credit arrangements.

Operational synergies arise in the provision and marketing of the merged company's goods and services. For example, cost synergies are created where reduplicated corporate functions can be reduced down to a single department, or where infrastructure can be shared. Revenue synergies appear where one company's products can now be sold through another company's distribution channels following a merger.

It is important to note that synergy effects are not automatic – a fact often overlooked by managers of companies. Leveraging synergies takes time and money. Often the companies involved in a merger overestimate the positive synergy effects on the cost and revenue side, and underestimate the effort required to leverage them. This can lead to a situation in which the reality falls far behind expectations. There may even be negative synergies – the cost of the integration (harmonizing different corporate cultures, adjusting the product portfolio, coordinating activities, etc.) can be higher than the cost savings that can realistically be achieved.

Evaluating synergies is of great importance for assessing the value – and hence the price – of the target company in a merger or acquisition process. As part of the due diligence process prior to the acquisition, companies should thoroughly investigate the potential synergies, the speed with which they can be realized and the cost of doing so. This reduces the risk to the buyer of paying an exaggerated acquisition price.

## 2.2.6 The Problem of Hold-up

The fourth reason we identified for resources being non-marketable was a situation in which one of the parties involved in a transaction, at the very last moment, acts in a way that disrupts the normal market process.

Transactions, in addition to their explicit contractual elements – the quality, price, time and place of the transaction, etc. – also contain eventualities that are not clearly covered by the contract. For example, most contracts do not state explicitly what should happen if one party decides to withdraw at the last minute, just before signing the contract (when the other side may have already made preparations for fulfilling the contract). The annoyance and upset caused by last-minute cancellations will be familiar to us all.

By the same token, external developments can create a situation that neither party gave any thought to earlier, or one that is not covered in detail in the contract. For example, the economy may unexpectedly go into recession, making it "unfair" to expect one of the parties to meet its contractual obligations. Coming up with a contingency contract that covers all possible eventualities and every imaginable situation is too time-consuming, expensive and complex. As a result, all contracts have certain loop-holes that are covered by implicit elements in the contract – for instance the expectation that both sides will behave according to normal business practice.

Of course, the problem is that such expectations cannot be enforced. Implicit contractual elements are not formulated in a precise manner. In cases of doubt, the two parties can interpret them quite differently. Thus one side may unexpectedly find the other party behaving in a way that it considers "unfair", to which the latter may respond that it is not actually in

### Dependency as a Potential for Conflict

ALCHIAN gives a well-known example of the problem of hold-up in the automotive industry. An automotive producer buys in certain parts (engines, chassis) from a supplier. This creates a conflict over pricing, as both parties consider that they are not in a market relationship where the price is set by the external world. If the supplier produces vehicles himself, the conflict is even stronger, as the two parties are also competitors. A situation may arise in which the supplier tries to disrupt production by his client and in this way exert pressure on him.

For example, some customers of the bus manufacturer Kässbohrer (when the company was still independent) wanted to have a Mercedes engine in their vehicles. Kässbohrer complained that it constantly suffered from delays in deliveries by its supplier. According to ALCHIAN, a situation of hold-up – where the supplier can exercise too much power – leads to integration.

breach of contract and so its actions are not in any way reprehensible. This is what the American economist ARMEN A. ALCHIAN calls the problem of hold-up.<sup>4</sup>

Situations where potential partners fear the problem of hold-up disrupt the functioning of the market. This happens even where the resource in question can be transferred and, if it is possible to draw up contingency

contracts, transactions via the market would be advantageous for both parties. ALCHIAN argues that, in situations where there is the possibility of hold-up, the affected party can only protect itself by acquiring *ownership* of the resource, meaning that it no longer needs to source via the market. The problem of hold-up is thus a further reason for a resource being non-marketable: the firm will prefer to produce or store it internally.

We can now summarize what we know about resources in category (2). We have discussed the range of reasons for a resource being *non-marketable* even where standardization is widespread and markets generally well developed. Companies must determine the internal value of such resources in the calculations underlying their decisions, presuming that this is feasible. They cannot determine their value from external markets.

Interestingly, the internal value of a resource can be both greater or smaller than its external value. A firm-specific resource, for example, has a high internal value but no external value to speak of. By contrast, an innovative resource would

### Three Business Thinkers, Two Questions

The three business thinkers WILLIAMSON, COASE and ALCHIAN studied the reasons for the existence of the firm. The two central questions they address in their work are (1) why does the firm exist? And (2) what is special about the firm?

In his economic contract theory, WILLIAMSON argues that asset specificity and ineffective external safeguards require the existence of hierarchies (i.e. the firm). COASE puts the emphasis on transaction costs and shows how they are lower in entities (companies) where there is lasting, trust-based cooperation than in market transactions. ALCHIAN states that complex and dynamic environments always harbor the risk of hold-up, which can only be overcome by acquiring ownership of the resource in question. This gives rise to entities that have ownership of resources.

WILLIAMSON: The firm is an entity for exploiting the enormous benefits of specialization. COASE: The firm is an entity for lasting, trust-based cooperation. ALCHIAN: The firm is an entity for acquiring ownership over resources.

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<sup>4</sup> 1. ARMEN A. ALCHIAN and SUSAN WOODWARD: *The Firm is Dead; Long Live the Firm*. Journal of Economic Literature 26 (1988), pp. 65-79. 2. ARMEN A. ALCHIAN and HARALD DEMSETZ: *Production, Information Costs and Economic Organization*. American Economic Review 62 (1972) 5, pp. 777-795.

probably have a considerable external value, if it were to become available on the market.

It is worth noting that transaction costs – COASE's explanation for the non-marketability of resources – are in fact often created by the contractual parties themselves. This, at least, was the case in the past. We have also seen that internal parties try to shield themselves from a market. Time and again, external providers give in to short-term self-interest and carry out hold-ups, thereby destroying the possibility of cooperating through the market in the long term.

## 2.3 Public Goods

### 2.3.1 Knowledge – Definition

Public goods form the core of category (3). Generally what we are referring to here is infrastructure, potential, enablers and knowledge. Resources that are the output of one phase in the business process and the input for a subsequent phase can, in fact, be tangible goods. However, very often they are intangibles. In this section we examine such intangibles in detail, referring to them under the umbrella term "knowledge".

We use the term *knowledge* to mean a body of information that is interconnected (and hence meaningful), coherent, and valid in a specific context.

Our definition implies that knowledge can be understood in a narrower (less information) or broader (more information) sense. Moreover, knowledge is defined by the *context* in which it is valid and where it can be of practical use. In a talk show, for example, the business knowledge expressed may be sufficient, convincing and valid. But in a different context – a seminar for Ph.D. students, say – the same knowledge may be considered poor.

Furthermore, our definition implies that knowledge, and the information it consists of, is tied to a specific medium. Physical signs or configurations are necessary for recording, processing and transferring the information. Knowledge has a tangible medium in which it is conveyed.

- This medium can be tailored exactly to its function as the bearer of information. For example, the information that constitutes the knowledge may be contained in a presentation or papers that can be locked up in a safe, or saved in the form of an electronic document
- The medium can be further developed and assume other functions beside being simply the bearer of information. For example, the information may reside in the memories of numerous individuals and relate to various discussions held by a research team

In the first case, transferring the knowledge is straightforward: you can simply sell the documents. In the second case, it might be necessary to transfer control over an entire research institute. However, the issue of whether the medium is narrow (paper) or broad (a team of people) need not concern us here. For the purposes of our discussion, we may treat knowledge, the information that constitutes it, and the medium that bears it as a single entity.

Knowledge is a resource. Just like any other resource, it must be created. It can subsequently be used in various combinations and transformations. Generating knowledge does not differ from generating other resources. Knowledge can be the product of direct endeavor, that is to say the output of combinations and transformations specially undertaken with the goal of generating knowledge. Examples include product development, building a brand, or nurturing a relationship with a client. Knowledge can also be a by-product of combinations and processes undertaken with a different goal. An example is *learning by doing* – improving processes by repeating them regularly. The knowledge generated can also be in a completely different field: Not infrequently, research in one field generates novel product ideas that are far removed from the actual area under investigation.

### 2.3.2 Knowledge – Use

We noted above that generating knowledge is no different from generating other resources. The same cannot be said of using knowledge. First of all, look at the use of knowledge in combinations and transformations *within* the firm. Within the firm, knowledge functions as a type of public good – what we have called an *intra-public* good. Using knowledge in a process neither eats into it nor exhausts it. It can still be used in other processes within the firm.

This has important implications for how internal resources are evaluated. The internal value (i.e. transfer price) of knowledge increases according to the number of different processes that make use of it. The more frequently and widespread knowledge can be used subsequently within the company, the more valuable it is as an internal resource.

Firms tend to put more effort into generating knowledge and broadening their knowledge base if the knowledge produced in this way can later be applied in *multiple* (income-generating) processes. Firms also tend to keep knowledge for themselves rather than selling it, if it has *multiple* applications within the firm (although it might only be used by a potential buyer in a single process).

The multiple use of knowledge works like a synergy. Or you could say that synergies indicate that knowledge has *multiple* uses. Companies shouldn't just look at what knowledge they need as an input to a specific process. Rather, they should look at *what else they can do* with their existing knowledge. One recommendation is therefore that companies try to identify investments where they can make use of the knowledge that they already possess. Of course, companies can also use their knowledge – as an intra-public good – within a partnership or network. One example of this is where a brand is developed by the members of a virtual company and then used to the advantage of all.

Another point about the use of knowledge is that companies risk losing out on their advantage if they sell their knowledge to third parties. In the relationship between what is internal to the company and what is external, knowledge functions as if it were a *private* good. If sold or stolen, the knowledge can be used by competitors and so loses its usefulness to the company. To capture this idea, we came up with the term "intra-public goods".

### 2.3.3 Knowledge and Investments

Three values are important when it comes to knowledge:

1. The cost involved in generating it
2. The internal value of the knowledge. This depends to a large degree on whether it can be applied in various revenue-generating processes – i.e. whether synergies exist

3. The external value of the knowledge – i.e. the value that could be generated by selling it

Internally, knowledge has the nature of a public good: it is not used up when applied in different processes. Its intra-public nature is often expressed as a synergy: knowledge has a direct positive impact on one process and at the same increases the productivity of another process. This endows knowledge with a greater internal value than if it had only a direct impact and could only be applied in a single process. Thus, to increase the internal value of resources with these characteristics, the resources should be used in *as many subsequent processes as possible*. Indeed, *numerous* processes may need to be run in parallel to make the best use of the intra-public good.

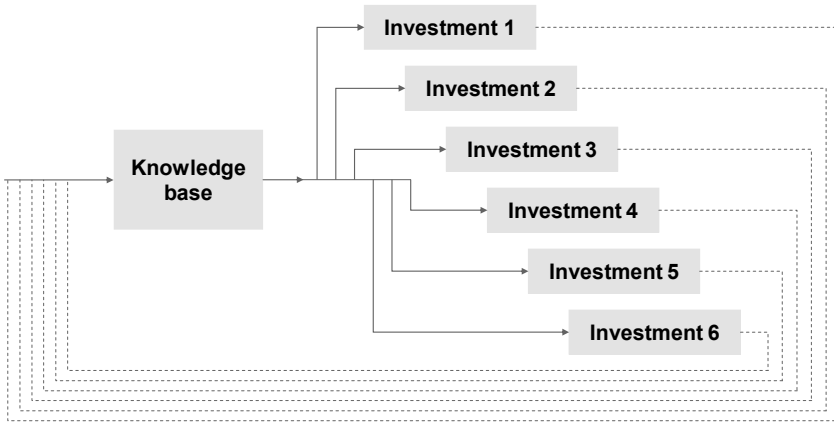
Knowledge is generated not only by research and development: it also appears as the by-product of economic activity. In other words, companies that invest and use their investments in the business process, create new knowledge. All activities, processes and investments that – in addition to their direct products – generate knowledge as a by-product have an additional value. The same applies to resources of a public nature that cannot be considered knowledge, such as potential, real options<sup>5</sup> and opportunities.

Companies should use their knowledge and potential in as many activities, processes and investments as possible. They should also make as many investments as possible that in turn generate new knowledge and potential for the firm as a by-product. In a logical sequence of steps and phases, such investments feed back into the knowledge base.

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<sup>5</sup> Options generally give their holders the right to wait and see how a situation develops before committing themselves. Naturally, the holders then choose the alternative that is to their greatest advantage. In the case of real options, the holders enjoy flexibility. They do not have to fix their production structures in advance. Instead, they can wait and see what happens externally, and still react on time. Players without real options must commit themselves early on and then stick to their chosen structures. As a result, they are often hit more strongly by unforeseeable changes – particularly if they operate in an insecure environment.





**Figure 2-1:** The closed cycle of knowledge and investment

Knowledge and investments thus form a closed cycle. Follow-up investments generate knowledge as a by-product of their business use. This adds to the knowledge and in turn facilitates the initial investment and its business use.

In this manner, groups of investments and different areas of knowledge align with each other. (i) An area of knowledge distinguishes a particular group of investments, which it produces, cultivates and tends. (ii) This knowledge forms the shared knowledge base of this particular group of investments, and can be used by them as a public good. Investments made on the basis of this shared knowledge base collectively define the knowledge base. The knowledge determines the investments that match it, and the investments determine the knowledge.

Note that individual investments do not correspond to individual pieces of information: rather, specific groups of investments correspond to specific areas of knowledge. The group of investments and the area of knowledge determine and define each other in a reciprocal relationship.

*Group of investments = Knowledge base of the firm* (3-1)

The business process gives rise to a knowledge base. The knowledge base determines what activities and investments it can be usefully applied in, and what activities and investments will support and expand the knowledge base itself.

### Additional Advantages

The link between investments and knowledge has an impact on how investments are evaluated. The potential return on an investment cannot be calculated simply on the basis of its direct financial impact. If the investment fits into the group corresponding to the firm's knowledge base, it will generate additional advantages by producing or utilizing the relevant knowledge.

The mutual definition of the knowledge base and a group of investments can sometimes be very close-knit. In extreme cases, a single investment may even correspond to a single piece of information. Similarly, the group of investments and the knowledge base may be very broad, perhaps even extending across different firms. The different firms will then create a knowledge network that together they will nurture.<sup>6</sup> In this way, the interdependency between knowledge and investments determines the optimum breadth and depth of the firm.

### 2.3.4 Types of Knowledge

Transferring knowledge outside the firm is a matter of particular interest to us. Two questions are key: Firstly, is the knowledge useful for external competitors, i.e. is it valuable or not? And secondly, does the knowledge continue to be of use internally once it has been transferred or released externally, i.e. does it retain or lose its value to the firm?

In this way we can identify different types of knowledge:

- General knowledge
- Firm-specific knowledge
- Standardization knowledge
- Commercial knowledge

*General knowledge.* General knowledge is not specific to the firm. Its use in a concrete process within the company is general in nature, and its usefulness is vague. General knowledge in itself has little value either internally or externally. As a rule, the firm that produces it makes it available for free use. Employees may publish this type of knowledge in specialist magazines and the CEO can use it in lectures and talks. This type of general knowledge is not the same as common knowledge – it is new

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<sup>6</sup> ROLF CASPERS, NILS Bickhoff and THOMAS BIEGER: *Interorganisatorische Wissensnetzwerke – Mit Kooperationen zum Erfolg*. Springer, Berlin 2004.

knowledge, not what you learn in school. But it is not the type of knowledge that is of immediate practical use to others.

*Firm-specific knowledge.* This type of knowledge is only useful for the firm itself. It is so firm-specific that it has no value for outsiders. For knowledge of this type, the question of whether it should be transferred outside the firm or not is irrelevant. It can be released to the public – no-one outside the firm will be interested. If it is published, it produces rather boring specialist articles at best.

*Standardization knowledge.* This type of knowledge is useful for the firm producing it, if it is used purely internally. However, it becomes extremely useful to the firm if it is recognized and adopted by other companies and outsiders.

KNOWLEDGE	... IS A PUBLIC GOOD	... IS A PRIVATE GOOD
... has little value for external parties	General knowledge – often published	Firm-specific knowledge – of little interest outside the firm
... has positive or negative value for external parties	Standardization knowledge – made accessible outside the firm, others encouraged to use it	Commercial knowledge – protected by the firm

**Summary 2-4:** Types of knowledge and their characteristics

Often standardization knowledge is useful for other companies that adopt it, without losing any of its usefulness for the original company. This type of knowledge involves setting standards and norms, establishing types and fashions. Firms will try to introduce standardizations on technical committees and let others know about them early on, so they can follow their lead. Alternatively they will release the knowledge to the public and support any external transfer of it.

The important thing with standardization knowledge is how adept the firm is at positioning it and getting it accepted. Mercedes-Benz, for example, is currently trying to establish a new type of vehicle with its R-Class, something between a station wagon and a sports utility vehicle. How successful it will be depends very much on whether its competitors also adopt this type of crossover vehicle.

Perhaps the most important type of standardization knowledge is the firm's familiarity rating and its *brand*. This type of knowledge can even put other companies at a disadvantage. Thus we would argue that standardization knowledge has an impact on the value of external companies – usually a positive impact, but in the case of brand formation a negative impact.

*Commercial knowledge.* Typically firms utilize commercial knowledge in a practical manner, potentially in a number of different areas. However, the different ways the knowledge can be used are not bound specifically to the firm producing the knowledge; it can also be adopted by external parties. Knowledge of this type therefore has a commercial value. The firm has to choose whether to use the commercial knowledge itself or make a conscious decision to sell it to external parties. This means that commercial knowledge has the nature of an external-private good. If the firm transfers it externally, it can no longer make use of it itself. Moreover, because of its commercial value, others may attempt to steal it. So the firm has to protect it from early on by keeping it secret. If the firm decides not to sell it, but rather to use it itself, it must preserve its value by patenting it or implementing it as quickly as possible. There can be no doubt that commercial knowledge has an effect on the value of competitors. If competitors can get hold of the knowledge and make use of it, its effect is positive. If it is used solely by the firm that produced it, competitors may find themselves at a disadvantage.

We can now summarize the key characteristics of different types of knowledge:

- General knowledge has a positive value for the firm, but in most cases this value is small. It has the nature of a public good and so can be released publicly without causing damage or creating value for the firm. This type of knowledge need not detain us further here
- Firm-specific knowledge has an internal value, but is of little interest to outsiders. As with general knowledge, the firm can release it to the public. However, its firm-specific nature means that it has little value outside the firm, so no one is very interested in it. Ultimately it remains a private good within the firm. Nevertheless, firm-specific knowledge is not a physical resource that can be used up when applied in a process. It can be applied in various transformations and these various applications will not be mutually exclusive. Firm-specific knowledge is an intra-public good. Its internal value is the sum of the values of all the internal transformations that make use of it. Firm-specific knowledge clearly demonstrates the dual nature of knowledge: In its relationship with the outside world it is a private good, while internally is a public good

- Standardization knowledge is very important. It produces a certain positive internal effect that is amplified if the knowledge is also used or acknowledged externally. However, for this additional impact to occur, certain processes must take place outside the firm. Accordingly, firms strive not just to create standardization knowledge, but also to promote it and stimulate the external processes
- Commercial knowledge can be of great value both internally and externally. If it is transferred to external parties, it loses its value for the original firm, like an external-private good. So firms first try to ensure their ownership rights over commercial knowledge (by keeping it secret), then weigh up whether they should sell it or use it themselves

In their decisions, companies should bear one important factor in mind: Not every type of knowledge has to be produced and utilized within the firm. Commercial knowledge especially is marketable in many cases. This is not true for firm-specific knowledge and standardization knowledge. These types of knowledge must be produced internally or under the firm's control, and utilized within the firm.

## 2.4 Summary

In this section we have attempted to provide a fuller answer to the question of strategy versus finance. By examining two specific features that characterize resources – their marketability and whether they are private or public goods – we have distinguished eight different types of resources. We also identified three distinct mindsets underlying decision-making: pure finance-based thinking, mixed strategic and financial thinking, and pure strategy-based thinking. We then correlated these three mindsets to three groups of resource types (see Summary 2-2).

We then turned our attention to the question of which mindset is the most appropriate in the different stages of the different transformation processes performed by the firm. To shed some light on this, we added two further insights. Firstly the connection between the different groups of resources and the strength of the externalities, and secondly the connection between the magnitude of the externalities and where they occur in the transformation processes. Putting these two insights together gives us the following picture: In the early phases and inner layers of the company's transformation processes, it is strategy that does the trick. In the middle phases, a

mixture of strategy and finance is what is needed. And in the late phase and in external layers, finance-led thinking is the order of the day.

We also investigated the various types of knowledge and their different characteristics. Knowledge facilitates investment, and investments nurture existing knowledge or give rise to new knowledge. We saw that *individual* investments do not correspond to *individual* pieces of information – specific *groups of investments* correspond to specific *areas of knowledge*. The group of investments and the area of knowledge determine and define each other in a reciprocal relationship. This provides us with valuable information regarding the optimum size and scope of the firm.

## 2.5 Recommended Reading

For a comprehensive treatment of externalities: RICHARD CORNES: *The Theory of Externalities, Public Goods, and Club Goods*. 2nd ed., Cambridge University Press, Cambridge 1996.

Management Between Strategy and Finance

The Four Seasons of Business

Schwenker, B.; Spremann, K.

2009, XIII, 325 p., Hardcover

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