

## Chapter 3

# Theoretical framework

*Chapter 2 explained that the research will proceed along two paths: the development of a theoretical framework and the confrontation of this framework with empirical data. The present chapter develops the theoretical framework. An important starting point for this framework is Van Loon's model of the dynamics of financial management. Therefore, section 3.1 presents some basics of this model. Subsequently, section 3.2 shows in what sense Van Loon's model is helpful in answering our research question. This results in the presentation of a simple model for explaining the level of sophistication of accounting instruments. In order to enrich this simple model, the present chapter links Van Loon's model with Mintzberg's model of organisational structure. Section 3.3 briefly describes the latter model. Next, section 3.4 makes clear how Van Loon's model can be linked with Mintzberg's model to obtain an expanded model. In addition, it examines the implications of this expanded model. Finally, section 3.5 presents a summary of the theoretical framework that will be confronted with empirical data later on.*

### 3.1 Van Loon's model

Not every organisation performs all accounting tasks that can be distinguished. In addition, organisations can differ in the accounting instruments that they use to perform each of these tasks. Moreover, organisations may change the accounting tasks they perform and the accounting instruments they use. Hence, differences arise between organisations and within organisations at different points in time with respect to the accounting instruments used. These differences can also relate to the level of sophistication of the accounting instruments. A model that can be used to describe and explain the latter differences is Van Loon's model of the dynamics of financial management (Van Loon, 1993, 1994, 1995). Van Loon regards differences in the level of sophistication of accounting instruments between and within organisations as differences in developmental stage. He argues that the developmental stage of an organisation's accounting instruments should be in harmony with the developmental stages of two other organisational aspects: the planning attitude of the managers and the

other decision makers, and the expertise of the employees who perform the accounting tasks. The first aspect – the planning attitude of managers and other decision makers – is concerned with the type of accounting information that managers and other decision makers would like to consider for decision-making, and planning and control purposes. Van Loon distinguishes five stages in the development of this aspect. In describing these stages, he focuses on planning and control information. However, it is also possible to carry Van Loon's reasoning further for decision-making information. Therefore, in the subsequent description of the planning-attitude stages, we will not only pay attention to planning and control information, but also briefly to decision-making information.

The first of the five stages is the *unplanned stage*<sup>16</sup>. Managers and decision makers who are in this stage focus primarily on the organisation's activities, without systematically paying attention to the financial consequences of these activities. That is, both in planning and controlling operating activities, and in taking operating decisions, organisational participants concentrate on non-financial information. The only financial information that they do use is information which is produced because the organisation is legally liable to disclose it to its external participants, such as information provided by the annual account. This information is retrospective in nature. For the accounting employees, the unplanned stage implies that they have to be able to produce retrospective financial information in compliance with the external accounting requirements.

From the second stage onwards, managers and decision makers ask for information on the expected future financial situation. This information may be reflected into documents – called budgets<sup>17</sup> – that present forecasts of the organisation's future financial situation in general, and documents that present analyses of the financial consequences of particular decisions. The second stage is the *budgeting-system stage*. In this stage, managers request budgets that are based on trends in financial figures in the past. Typically, in the budgeting-system stage the budget identifies a number of cost

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<sup>16</sup> The unplanned stage does not exclude any form of planning. Instead, it implies that there is no planning in a financial sense. Hence, when an organisation's accounting instruments are consistent with the unplanned stage, this organisation may, for example, have a production plan, but this plan has not been translated into financial terms.

<sup>17</sup> We can distinguish two types of budgets: operating budgets and financial budgets. Operating budgets comprise the budgeted income statement and its supporting budget schedules, such as the revenue budget, the cost of goods sold budget and the marketing costs budget. Financial budgets comprise the capital budget, the cash budget, the budgeted balance sheet and the budgeted statement of cash flows (Horngren *et al.*, 1997, p. 180). This dissertation does not consider financial budgets.

and revenue categories. In order to control the organisation, managers aim at keeping the actual costs and revenues in each of these categories within the amounts specified in the budget. That is, the budget imposes restrictions on the organisation's activities and decisions. Consequently, compared with the unplanned stage, in the budgeting-system stage managers ask for the performance of more accounting tasks, and the use of more advanced accounting instruments. As a result, there are differences between the accounting expertise required in the budgeting-system stage and the accounting expertise required in the unplanned stage. First, in the budgeting-system stage there is an additional need for expertise on making financial forecasts. That is, accounting employees should be able to produce both retrospective and prospective information. Second, not only do these employees have to meet external accounting requirements, they also have to pay attention explicitly to the need for financial information of internal participants.

The third stage in the development of the planning attitude is the *annual-planning stage*. In this stage, managers and decision makers regard the financial situation explicitly as a result of the organisation's activities. Consistently, whereas in the budgeting-system stage budgets impose restrictions upon the activities, in the annual-planning stage short-run plans for the activities are the input for the budgets. That is, in this stage managers start the planning process by formulating tentative plans for the operating activities. Subsequently, they consider the financial situation that is likely to result from these plans. If this financial situation is not acceptable, they adjust their initial plans. Therefore, in this stage planning implies that managers search for a set of consistent short-run plans – such as a production plan and a sales plan – that are likely to result in an acceptable financial situation. Short-run budgets are the translation of such sets of plans into financial terms. From the annual-planning stage onwards, planning and control instruments present financial information per group of activities. Moreover, managers try to control the organisation by aiming at the realisation of both the planned financial situation and the planned activities. Furthermore, because decision makers who are in the annual-planning stage consider the financial situation explicitly as a result of the activities, they take the short-term financial consequences of these activities into consideration when deciding on them. Consequently, the role of accounting employees in the annual-planning stage is different from their role in the budgeting-system stage. Whereas in the budgeting-system stage accounting employees prepare the budget, in the annual-planning stage they help managers prepare the budget. Moreover, they advise decision makers on the financial consequences of their decisions, instead of formulating restrictions for those decisions. However, not only do accounting employees have a different role; they also have to undertake different activities. On the one hand, they have to translate plans into short-range forecasts of

the resulting financial situation. On the other hand, they have to evaluate the short-term financial consequences of decisions.

As we have seen, in the annual-planning stage decision makers ask for information on the financial consequences of their decisions. However, in this stage they only want to consider information on the financial consequences in the short run. In contrast, in the *long-range-planning stage* – the fourth stage in Van Loon’s model – decision makers also request information on the long-term financial consequences of their decisions. In addition, managers who are in this stage ask, for planning and control purposes, for a long-range forecast of the organisation’s financial situation based on long-run plans. This forecast – the so-called long-run budget – comprises a framework for the short-run budgets. That is, the short-run budgets have to fit into the constraints derived from the long-run budget. Consequently, compared with the annual-planning stage, the long-range-planning stage requires additional accounting expertise for the assessment of the long-term financial consequences of decisions, and for the translation of long-run plans into budgets.

The final stage is the *strategic-planning stage*. In this stage, managers and decision makers formulate explicitly the overall objectives that they want to realise. The document that describes these objectives is called the strategic plan. Apart from the overall objectives, this plan covers the organisation’s strengths and weaknesses, and the market opportunities and threats. Moreover, it gives an outline of the strategy that the organisation has chosen in order to realise its overall objectives, given these organisational characteristics and market circumstances. That is, it presents the outcomes of the organisation’s strategic planning process. Typical of the strategic-planning stage, the accounting employees contribute to this process by assessing the financial consequences of alternative strategies. In order to assess different strategies, the accounting employees need estimates of the future market circumstances. Especially for new organisational activities, these estimates are often soft. For this reason, the financial consequences of particular strategies are sometimes presented as scenario’s. However, the strategic plan not only describes the chosen strategy; it also formulates alternative strategies that the organisation may pursue if its market circumstances change. Consequently, in the strategic-planning stage, managers and decision makers acknowledge explicitly that the environment may change. Environmental changes may call for changes in strategy. However, changes in strategy are only possible if the organisation’s activities are flexible. For this reason, decision makers who are in the strategic-planning stage want to take into consideration the flexibility that is incorporated in each alternative. In the strategic-planning stage, decision makers typically ask for the valuation of this flexibility in financial terms. Managers who are in the strategic-planning stage regard the strategic plan as the framework for their short- and long-run

plans. In turn, these plans constitute frameworks for, respectively, the short- and long-run budgets. Hence, in the strategic-planning stage there is a link between the strategic plan and the budgets. As a result, environmental changes which lead to changes in the strategy call for changes in the budgets too. Therefore, in the strategic-planning stage, budgets need to be flexible<sup>18</sup>. This description of the strategic-planning stage implies that in a number of respects the expertise required in this stage differs from the expertise required in the long-range-planning stage. First, accounting employees need to be able to acquire and use relatively soft data. Second, they must be capable to take flexibility into consideration when evaluating alternatives. Finally, they need to be able to adjust planning and control documents if changes in the environment call for changes in the strategy.

To summarise, the developmental stage of the planning attitude of managers and decision makers determines the accounting instruments that these managers and decision makers desire. In addition, the accounting instruments that they desire have implications for the expertise that they require from the accounting employees. Table 3-1 shows the characteristics of the different planning attitude stages. In addition, it shows the demands that managers and decision makers in each of these stages put on the accounting instruments and the accounting expertise.

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<sup>18</sup> In other words, the strategic-planning stage does not arise from the mere introduction of a strategic plan. Instead, it requires an explicit link between the strategic position of the organisation on the one hand, and the accounting instruments that it uses on the other. This link implies the use of the strategic plan as a framework for the planning and control instruments, and the use for decision-making purposes of financial information that takes account of the strategic position of the organisation and possible changes in this position. The strategic-planning stage does not require that the accounting instruments used are consistent with the *specific strategy* that the organisation has chosen, such as a cost-leadership strategy or a differentiation strategy. Langfield-Smith (1997) provides a review of the literature on this latter relationship.

**Table 3-1 Characteristics of the planning attitude stages, and the demands in each of these stages on the accounting instruments and the accounting expertise.**

Stage	Aspect	Characteristics
Unplanned stage	planning attitude	<ul style="list-style-type: none"> <li>▪ focus primarily on activities</li> <li>▪ no planning of future financial situation</li> <li>▪ no explicit attention for financial consequences in decision-making process</li> </ul>
	instruments expertise	<ul style="list-style-type: none"> <li>▪ retrospective financial information</li> <li>▪ provide information on financial situation in the past</li> <li>▪ meet external accounting requirements</li> </ul>
Budgeting-system stage	planning attitude	<ul style="list-style-type: none"> <li>▪ planning of future financial situation based on financial situation in the past</li> <li>▪ budgets put restrictions on activities and decisions</li> </ul>
	instruments	<ul style="list-style-type: none"> <li>▪ budgets based on trends in financial figures in the past</li> <li>▪ planning and control instruments classified into cost and revenue categories</li> </ul>
	expertise <sup>19</sup>	<ul style="list-style-type: none"> <li>▪ provide information on the financial situation in the future based on the financial situation in the past</li> <li>▪ aim at satisfying information needs of internal participants</li> </ul>
Annual-planning stage	planning attitude	<ul style="list-style-type: none"> <li>▪ planning of activities in the short-run</li> <li>▪ attention for short-term financial consequences of plans and decisions</li> </ul>
	instruments	<ul style="list-style-type: none"> <li>▪ budgets based on short-run plans</li> <li>▪ planning and control instruments classified according to groups of activities</li> <li>▪ analysis of short-term financial consequences of decisions</li> </ul>
	expertise	<ul style="list-style-type: none"> <li>▪ assist internal participants in planning and control, and decision-making processes</li> <li>▪ formulate expectations for short-term financial consequences of activities</li> </ul>

<sup>19</sup> From the budgeting-system stage onwards, the table shows the expertise that is additionally required compared with the previous stage.

Stage	Aspect	Characteristics
Long-range-planning stage	planning attitude	<ul style="list-style-type: none"> <li>▪ planning of activities in the short- and long-run</li> <li>▪ attention for short- and long-term financial consequences of plans and decisions</li> </ul>
	instruments	<ul style="list-style-type: none"> <li>▪ budgets based on short- and long-run plans</li> <li>▪ planning and control instruments classified according to groups of activities</li> <li>▪ analysis of short- and long-term financial consequences of decisions</li> </ul>
	expertise	<ul style="list-style-type: none"> <li>▪ formulate expectations for long-term financial consequences of activities</li> </ul>
Strategic-planning stage	planning attitude	<ul style="list-style-type: none"> <li>▪ planning of activities in the short- and long-run based on strategic planning of activities</li> <li>▪ attention for short- and long-term financial consequences of plans and decisions</li> </ul>
	instruments	<ul style="list-style-type: none"> <li>▪ attention for flexibility</li> <li>▪ flexible budgets based on short- and long-run plans that are based on the strategic plan</li> <li>▪ planning and control instruments classified according to groups of activities</li> <li>▪ analysis of short- and long-term financial consequences of decisions</li> <li>▪ analysis of financial consequences of alternative strategies</li> </ul>
	expertise	<ul style="list-style-type: none"> <li>▪ scenario analysis</li> <li>▪ valuation of flexibility into financial terms</li> <li>▪ acquire and use soft information on future market circumstances</li> <li>▪ value flexibility when evaluating activities</li> <li>▪ use flexible budgets</li> </ul>

From Table 3-1 it appears that the long-range-planning stage and the strategic-planning stage imply that the instruments from, respectively, the annual-planning stage and the long-range-planning stage are embedded in a broader framework. In other words, the strategic-planning stage builds on the long-range-planning stage, and the long-range-planning stage, in turn, builds on the annual-planning stage. However, these three developmental stages do not build on the unplanned and budgeting-system stages. Consequently, the instruments from the final three stages are similar in the

sense that they represent more or less elaborated variations on the same basic instruments, but these instruments are alternatives to the instruments from the first two stages.

### 3.2 Simple model

Our research question did not concern the developmental stage of the planning attitude of an organisation's managers and decision makers. Instead, it concerned the level of sophistication of an organisation's accounting instruments. Nevertheless, we can use Van Loon's model as a starting point in answering our research question. That is, the developmental stages that Van Loon distinguishes for the planning attitude of managers and decision makers, also imply developmental stages for accounting instruments. We can regard these latter developmental stages as different levels of sophistication of accounting instruments. Moreover, Van Loon argues that the developmental stage of the accounting instruments should be in harmony with the developmental stage of the planning attitude and the developmental stage of the accounting expertise. As such, he identifies two factors that are related to the developmental stage of an organisation's accounting instruments, and thus to their level of sophistication. We regard planning attitude and accounting expertise as, respectively, a demand-side factor and a supply-side factor that may explain the level of sophistication of accounting instruments<sup>20</sup>.

In each of the planning-attitude stages, managers and decision makers make different demands on the accounting instruments. However, the instruments that an organisation actually has available can deviate from the instruments that its managers and decision makers want it to have available. Van Loon's model contains a factor that may cause such deviations: the expertise of the organisation's accounting employees. That is, the developmental stage of the accounting expertise may differ from the developmental stage of the planning attitude. More particularly, accounting employees may not be able or may not want to supply the instruments that the managers and

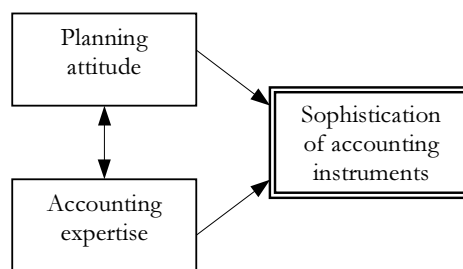
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<sup>20</sup> It should be noted that Van Loon (1993, 1994, 1995) did not aim at explaining the level of sophistication of accounting instruments. Instead, his objective was to measure the development of three dimensions of the finance function (*i.e.* planning attitude, financial expertise and financial instruments), to investigate whether patterns can be observed in the development of these three dimensions, and to answer the question of how managers should gear the development of each of these dimensions to one another. In two respects, our research is more focused. First, we concentrate on management accounting, whereas Van Loon also considered financial accounting and finance. Second, our major concern is accounting instruments, whereas Van Loon attached as much importance to financial instruments as to planning attitude and financial expertise.



decision makers require, or they may supply accounting instruments that the managers and decision makers do not need. Such situations arise, for example, when decision makers want insight into the long-term financial consequences of capital investments, whereas accounting employees are not able to determine these consequences. The opposite situation may also exist, for example, when accounting employees produce budgets, whereas managers refuse to take budgetary information into account when managing the organisation's activities.

Hence, Van Loon's model suggests two factors that may explain the level of sophistication of an organisation's accounting instruments: the planning attitude of its managers and decision makers, and the expertise of its accounting employees. This gives rise to the simple model that is shown in Figure 3-1.



**Figure 3-1 Simple model for explaining the level of sophistication of accounting instruments.**

The model presented in Figure 3-1 is simple, because it contains only two explanatory factors: the planning attitude of managers and decision makers, and the expertise of accounting employees. Both factors, however, are closely related to the accounting instruments themselves. It is not clear whether and how they are associated with more general organisational and environmental factors. Nevertheless, it is reasonable to assume that there exist organisational and environmental factors that, in turn, explain the planning attitude and the accounting expertise. In addition, apart from the planning attitude and the accounting expertise, there may also be other factors that explain the level of sophistication of accounting instruments. Van Loon's model does not pay attention to these factors. For these reasons, we will expand Van Loon's model to include a broad contingency model: Mintzberg's model of organisational structure (Mintzberg, 1979, 1993). We will include this latter model, because it distinguishes different types of organisations, and the characteristics of these types can be expected to affect – both directly, and via the planning attitude and accounting expertise – the

level of sophistication of accounting instruments. The combination of these two models will lead to the development of our theoretical framework. Section 3.3 briefly describes Mintzberg's model.

### 3.3 Mintzberg's model

Mintzberg (1993, p. 2) defines the structure of an organisation as 'the sum total of the ways in which its labor is divided into distinct tasks and then its coordination is achieved among these tasks'. In his model, he distinguishes a number of parameters with which managers can influence the structure of their organisations – the so-called design parameters – and a number of characteristics of the environment of organisations – the so-called situational or contingency factors. Mintzberg (1993, pp. 121-123) claims that, in order to be effective, organisations should select design parameters and contingency factors in such a way that there is a consistency both among design parameters, and between design parameters and contingency factors. Mintzberg (1993, pp. 151-155) argues that only five combinations of design parameters and contingency factors are consistent<sup>21</sup>. These are the so-called configurations. In each of these configurations another mechanism to coordinate the organisational tasks is dominant.

In small organisations, coordination is primarily achieved by direct supervision. That is, some persons – the managers – take responsibility for the work of the people who produce the products and services – the operators; they issue instructions to them and monitor their actions. Mintzberg (1993, chapter 8) names the configuration that depends on this way of coordinating tasks the *simple structure*. Because of its reliance on direct supervision, the power over all important decisions ultimately tends to be centralised at the top of the organisation. The simple structure typically has only a loose division of labour between operators. However, it has a clear distinction between operators and decision makers. A number of organisational circumstances are consistent with the organisational structure described above. First, new and small organisations tend to adopt the simple structure. These organisations have difficulty with predicting the future, and, as a result, they are not able to formalise behaviour. Second, the simple structure is only appropriate when the operating tasks are simple – *i.e.* the

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<sup>21</sup> Apart from these five configurations, Mintzberg (1989, chapters 12 and 13) distinguishes two other configurations: the missionary organisation, and the political organisation. He argues that sometimes an organisation's ideology or politics may become so strong that its whole structure is built around it. Then, respectively, a missionary organisation or political organisation appears. In Mintzberg's view, however, organisational ideologies and politics are more commonly overlaid on conventional configurations. For this reason, this dissertation does not consider the missionary and political organisations.

knowledge that is necessary to perform these tasks is easy to comprehend. Only this type of tasks allows for direct supervision as the dominant coordinating mechanism. That is, with complex tasks – the opposite of simple ones – a single individual cannot comprehend the entire knowledge base, and therefore he cannot control decision making. In addition, the simple structure is appropriate in dynamic environments. By definition, such environments are unpredictable<sup>22</sup>, and hence coordination cannot be achieved by standardisation. Moreover, the centralisation of decision-making power in the simple structure allows for rapid decision making, which is important in dynamic environments.

Larger organisations cannot coordinate their tasks by relying on direct supervision only, because it would cause overload of the top managers. Dependent on the characteristics of their tasks, these organisations can choose between three types of standardisation. When their tasks can be divided into simple elements, organisations tend to rely on the standardisation of the work processes themselves. This coordinating mechanism implies that each operator is assigned a simple and routine task, and that the contents of the work contained in this task are specified in detail in rules and procedures. The operators have highly specialised tasks. Mintzberg (1993, chapter 9) calls this configuration the *machine bureaucracy*. In this configuration, formal decision-making power rests with the top management. Informal power is decentralised to some extent to the staff specialists who prescribe how work processes must take place. Its reliance on the standardisation of work processes allows the machine bureaucracy to have large units. Typically, these units are grouped on a functional basis. The machine bureaucracy is suitable in stable environments, because stability enables it to standardise processes. It is typically found in large and mature organisations.

We have seen that the standardisation of the work processes requires simple tasks. More complex tasks may force organisations to turn to the standardisation of the outputs as a coordinating mechanism. That is, the top managers decentralise decision-making power to middle-line managers, and monitor the results of their decisions. The top managers evaluate these results by comparing them with performance standards, which have been developed with the help of planning and control analysts. Because decentralisation to different units hinders coordination between these units, it is required to have minimal dependency between units. Therefore, this configuration relies

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<sup>22</sup> Mintzberg (1993, p. 136) stresses that when he uses the term ‘dynamic’ he means unpredictable, not variable; variability may be predictable. Unpredictability may result from, for example, an unstable government, unpredictable shifts in the economy, unexpected changes in customer demand or competitor supply, client demands for creativity or frequent novelty, or rapidly changing technologies.

on a market basis for grouping. The quasi-autonomous units that arise are called divisions. For this reason, Mintzberg (1993, chapter 11) names this configuration the *divisionalised form*. It should be noted that this configuration does not constitute a complete structure: the organisation can structure each division as one of the other configurations, or even as a divisionalised form itself. As a result, the divisionalised form comprises several effective combinations of design parameters and contingency factors. The divisionalised form requires market diversity, because this is necessary to split the organisation into market-based units. Moreover, since increasing market diversity, or diversification, without divisionalisation increases the amount of information that top managers have to deal with, market diversity also stimulates organisations to choose the divisionalised form. Other conditions encouraging the adoption of this configuration are age and size. More particularly, as organisations become older and larger, they are more likely to diversify, and hence, to adopt the divisionalised form.

In very complex work, the outputs often cannot be standardised either, and so organisations must, if possible, rely on the standardisation of the skills of the workers. This mechanism implies that the kind of training required to perform the job is specified. The reliance on this mechanism results in the fourth configuration: the *professional bureaucracy* (Mintzberg, 1993, chapter 10). Organisations adopting this structure employ well-trained and indoctrinated specialists – or professionals – as ‘operators’. The professional bureaucracy decentralises decision-making power primarily to the professionals. Hence, these professionals have considerable control over their own work. During their training, they have learnt how to apply standard sets of skills to standard situations. The professional bureaucracy is appropriate when tasks are complex enough to require the use of sets of skills that can be learnt only in extensive formal training programs, yet the environment is stable enough to enable these skills to become standardised.

Some organisations, however, cannot use any of these three forms of standardisation, because their environment is too dynamic. This is the case when organisations aim at sophisticated innovations. These innovations require a configuration that is able to integrate experts drawn from different disciplines in ad hoc project teams: the *ad-hocracy*<sup>23</sup> (Mintzberg, 1993, chapter 12). This configuration decentralises decision-making power to and within the project teams. In order to solve very complicated

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<sup>23</sup> Mintzberg (1993, pp. 257-261) distinguishes the operational and the administrative ad-hocracy. In operational adhocracies, all important parts of the organisation, including the operators, are part of the adhocracy. By contrast, in administrative adhocracies, the operational work is separated from the rest of the organisation, and is not part of the adhocracy. This implies that operators do not play a role in the project teams. This dissertation concentrates on the operational adhocracy, because it focuses on different ways to coordinate operating work.

problems, people need to communicate informally. Therefore, the adhocracy favours mutual adjustment as the dominant coordinating mechanism. To encourage mutual adjustment within and between teams, adhocracies use liaison devices. We have seen that the most important contingency factors for the adhocracy are a dynamic environment and complex tasks. In addition, adhocracies, in general, are not old. More particularly, as organisations become older, they tend to repeat their successful projects, which allows them to rely more on the standardisation of skills or processes to coordinate tasks.

It is beyond the scope of this dissertation to elaborate further on Mintzberg's model. However, in order to make the reader more familiar with this model, Table 3-2 summarises the main characteristics of the five configurations (*cf.* Mintzberg, 1993, pp. 280-281).



**Table 3-2 Main characteristics of the five configurations.**

Configuration	Simple structure	Machine bureaucracy	Divisionalised form	Professional bureaucracy	Adhocracy
Coordinating mechanism	direct supervision	standardising processes	standardising outputs	standardising skills	mutual adjustment
Design parameters	decision-making power especially for top management	decision-making power especially for top management and staff specialists that develop rules and procedures	considerable decision-making power for middle-line management	considerable decision-making power for operators	considerable decision-making power for project teams
	clear distinction between operators and decision makers	clear distinction between operators and decision makers	clearness of distinction between operators and decision makers varies	no clear distinction between operators and decision makers	no clear distinction between operators and decision makers
	no strict division of labour between operators	strict division of labour between operators	at least some division of labour between operators	strict division of labour between operators	strict division of labour between operators

Configuration	Simple structure	Machine bureaucracy	Divisionalised form	Professional bureaucracy	Adhocracy
	operators with little education	operators with little education	level of education of operators varies	operators with high education	operators with high education
	if present: unit grouping on a functional basis	unit grouping on a functional basis	unit grouping on a market and a functional basis	unit grouping on a market basis is equal to unit grouping on a functional basis	unit grouping on both a market and a functional basis
	no specific other design parameters	use of rules and procedures	use of planning and control system	no specific other design parameters	use of lateral linkages
Contingency factors	dynamic environment	stable environment	preferably stable environment	stable environment	dynamic environment
	easy to comprehend necessary knowledge	easy to comprehend necessary knowledge	necessary knowledge preferably easy to comprehend	not easy to comprehend necessary knowledge	not easy to comprehend necessary knowledge
	young	old	old	age varies	in general not old
	small	large	large	size varies	size varies
	small number of product-market combinations	small number of product-market combinations	several product-market combinations	often several product-market combinations	number of product-market combinations varies

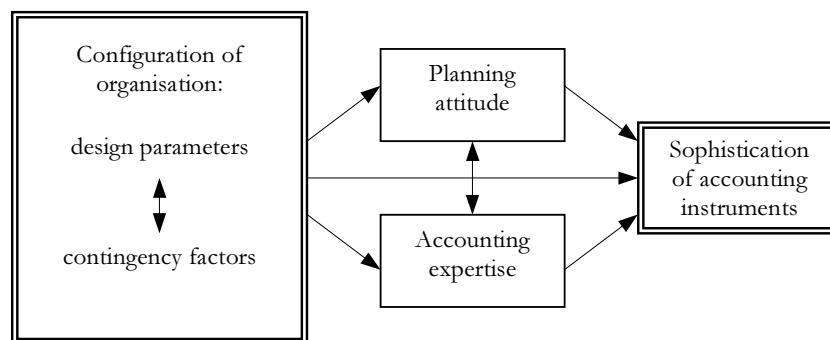




Hence, Mintzberg argues that only the five combinations of design parameters, contingency factors and coordinating mechanisms that have been presented in this section are consistent. However, Mintzberg (1993, p. 156) does not claim that there are organisations which exactly fit a single configuration. In his opinion, the configurations are stereotypes that can be used to understand differences in organisational structure. In a similar fashion, the configurations can be regarded as stereotypes that can be used to understand differences in the level of sophistication of accounting instruments.

### 3.4 Expanded model

Now that we know the basics of Mintzberg’s model, we can link this model with Van Loon’s model. That is, we can formulate expectations with respect to the developmental stage of the accounting instruments in each of the five configurations. In order to link the developmental stages to the configurations, we argue below that an organisation’s configuration may influence both the planning attitude of its managers and decision makers, and the expertise of its accounting employees. In addition, we argue that this configuration may also influence the organisation’s accounting instruments directly. These relationships give rise to an adjustment of the model presented in Figure 3-1. Figure 3-2 shows the expanded model that results from this adjustment.



**Figure 3-2 Expanded model for explaining the level of sophistication of accounting instruments.**

This section presents the arguments behind the relationships shown in Figure 3-2. In addition, it links the specific configurations with the specific developmental stages of the accounting instruments. That is, it argues which developmental stages are consistent with each of the configurations.

The first configuration is the *simple structure*. This configuration influences the level of sophistication of accounting instruments in each of the three ways mentioned above. First, the simple structure uses direct supervision as the dominant coordinating mechanism. As a result, its management needs to spend most of its time solving the problems that arise with respect to the organisation's activities; the time left to think about the future financial situation is very limited. Consequently, the planning attitude of the simple structure's management is in the unplanned stage. Second, the simple structure only has a loose division of labour between operators. Hence, it does not have a department that is specialised in performing accounting tasks. Most likely, the only persons who perform accounting tasks are the managers, who, in many cases, are not trained to do so. Therefore, in many cases the accounting expertise in the simple structure is consistent with the unplanned stage. Finally, the simple structure influences the accounting instruments directly. To be precise, the simple structure's environment is dynamic, meaning that its environment is difficult to predict. As a result, the simple structure usually has difficulty with predicting its future financial situation. This limits the accounting instruments available to the simple structure to the instruments that are consistent with the unplanned stage. Consequently, in the simple structure, the accounting instruments are only consistent with the unplanned stage.

The *machine bureaucracy* uses the standardisation of work processes as the dominant coordinating mechanism. More particularly, its tasks are divided into simple elements, and its managers ask technical analysts to formulate standards that the people performing these tasks should meet. Some of these standards – for example, efficiency standards – can be used to forecast the financial consequences of activities. If managers demand the use of such standards for this purpose, their planning attitude is at least in the annual-planning stage. Yet, the attention of the machine bureaucracy's management does not need to be restricted to the time horizon that is consistent with the annual-planning stage; it is possible that its management is concerned with the financial consequences for a longer period of time. However, because of the stability of the machine bureaucracy's environment, it is not very likely that its management develops a strategic orientation. Consequently, in the machine bureaucracy the managers' planning attitude is either in the annual-planning stage, or in the long-range-planning stage. In addition, because the machine bureaucracy has highly specialised tasks, it has specialists available to perform the accounting tasks. This enables the machine bureaucracy to produce accounting instruments that are at least consistent with the annual-planning stage. Finally, because its environment is stable – *i.e.* predictable – the machine bureaucracy can predict its future financial situation, and hence use instruments that are consistent with the annual-planning or long-range-planning stage.

For these reasons, the accounting instruments in the machine bureaucracy are consistent with the annual-planning and long-range-planning stages.

The *divisionalised form* is divided into several divisions. The managers of these divisions have decision-making authority over a large number of decisions. The top managers of the organisation – *i.e.* the managers at the corporate level – evaluate the results of the decisions of the divisional managers by comparing these with predetermined standards. In practice, this type of coordination implies that the divisional managers have to submit periodically documents that contain their forecast of the future financial situation to the top managers. With the help of planning and control analysts, the top managers evaluate these documents. If the top managers approve the documents, they decentralise decision-making power to the divisional managers. The approved documents also contain the standards that the top managers use to evaluate the divisional performance. Because the top managers require forecasts of the future financial situation to coordinate the divisional activities, their planning attitude – as so far as it is related to planning and control – is at least in the budgeting-system stage. Dependent on the characteristics of the documents that the top managers require from the divisional managers, the planning attitude of the top management in the divisionalised form can range from the budgeting-system stage to the strategic-planning stage.

The planning attitude of the top management of the divisionalised form is not the only factor at the corporate level that influences the accounting instruments available for planning and control purposes. First, the accounting instruments that the organisation possesses are also influenced by the accounting expertise at the top. Due to the presence of planning and control analysts, this expertise is at least consistent with the budgeting-system stage. Second, the divisionalised form influences the accounting instruments at the top directly. More precisely, if these instruments were only consistent with the unplanned stage, the divisionalised form could not delegate decision-making power to its divisions without, from a financial point of view, becoming a loose collection of individual organisations. For these reasons, we assume that at the corporate level the accounting instruments used for planning and control purposes are at least consistent with the budgeting-system stage<sup>24</sup>.

Up to this point, we focused on the influence of the planning attitude, the accounting expertise and other explanatory factors at the corporate level. However, the corporate planning and control instruments are also influenced by the configuration of the divisions. More particularly, for the use of some planning and control instru-

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<sup>24</sup> The arguments do not exclude the use of instruments that fit into the unplanned stage: the divisionalised form may complement the more sophisticated planning and control instruments with some instruments that fit into the unplanned stage.

ments – for example, budgets based on annual plans – the corporate level needs to rely on instruments produced at the divisional level. These instruments are influenced by the divisional configuration – both directly, and via the planning attitude and the accounting expertise at the divisional level. Consequently, the divisional configuration influences the instruments that the corporate level has at its disposal. For example, top managers should not expect a division that has primarily the characteristics of the simple structure to draw-up budgets on the basis of long-range plans: its managers have too little time to make up these plans; its organisational participants lack accounting knowledge; and its environment is too dynamic<sup>25</sup>. Conversely, the top managers can influence the accounting instruments used for planning and control purposes at the divisional level, because they can prescribe the performance and the way of performing certain accounting tasks.

So far, we only paid attention to the accounting instruments that are related to the planning and control of activities. Apart from these instruments, the divisionalised form also uses accounting instruments for decision-making purposes. However, the divisionalised form does not have any particular characteristic that influences these instruments. It seems more appropriate to relate these instruments to the configuration of the organisational part – either the divisions or the corporate level – that produces them. The only addition that can be made for the divisionalised form is that the top management can influence the decision-making instruments that the divisions use by prescribing the fulfilment and the way of fulfilling accounting tasks.

The *professional bureaucracy* relies, in order to coordinate its tasks, on the standardisation of skills. That is, it employs as ‘operators’ well-trained and indoctrinated professionals. These professionals work relatively independently from each other and from their managers. Moreover, they have decision-making authority over a large number of decisions. However, when making decisions their background causes them to focus on professional performance measures, rather than on financial performance measures. This effect is reinforced because of the fact that the professionals, in general, lack accounting expertise. The professionals’ emphasis on professional performance measures and their lack of accounting expertise result in a situation in which an analysis of the financial consequences is not very important when making decisions. Therefore, the planning attitude of the decision makers in the professional bureaucracy is basically in the unplanned stage.

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<sup>25</sup> Theoretically, the divisionalised form can be superimposed on any of the other configurations. However, it works best with divisions that are structured as the machine bureaucracy. What is more, the divisionalised form drives divisions with other configurations toward the machine bureaucracy (Mintzberg, 1993, p. 219).

The managers in the professional bureaucracy are responsible for the planning and control process. Their planning attitude may be more developed than the planning attitude of the professionals, because they may be more concerned with the financial performance. Due to the stability of the professional bureaucracy's environment, the managers – possibly with the help of planning and control analysts – can base planning instruments on either trends in financial figures, or relationships observed in the past between the activities and the financial figures in combination with annual or long-range plans. Hence, the accounting instruments that are available for the planning of the activities may range from the unplanned to the long-range-planning stage. As with the machine bureaucracy, the strategic-planning stage is less likely, because of the stability of the environment.

The level of sophistication of the control instruments in the professional bureaucracy is likely to be relatively low. This results from the fact that the professional bureaucracy's tasks are complex, meaning that the knowledge necessary to perform the operating activities is not easy to comprehend. Because of this, managers have difficulty with assessing non-financial performance figures. Consequently, the only way in which they can control the professionals is to compare budgeted with actual financial figures, which is consistent with the budgeting-system stage. When managers try to control the behaviour of the professionals in this way – *i.e.* by restricting costs to the amounts specified in the budget – they confront professionals who make decisions with financial restrictions. As a result, the planning attitude of these professionals is also in the budgeting-system stage.

In summary, in the professional bureaucracy the planning attitude of an important group of decision makers – namely, the professionals – and the complexity of the operating tasks, restrict the level of sophistication of the accounting instruments. Although for some accounting tasks more sophisticated instruments may be used, for many tasks the professional bureaucracy can only be linked with the unplanned and budgeting-system stages.

The *adhococracy* decentralises decision-making power for many types of decisions to multi-disciplinary project teams. These teams have to solve very complicated problems, in which they use mutual adjustment as the dominant coordinating mechanism. The complex problems have to be solved in an environment that is dynamic. This means that it is difficult to forecast the future. For the accounting instruments, this implies that it is difficult to determine the financial consequences of particular future activities. As a result, when taking decisions it is not possible to see what the financial consequences of these decisions will be. Furthermore, it is hardly possible to base budgets on plans for activities. Therefore, the only way in which managers can try to

control the adhocracy is to formulate budgets for the different projects that are consistent with the budgeting-system stage. Moreover, because of the complexity of the adhocracy's tasks, its managers have difficulty with assessing non-financial performance figures. This implies that these managers are also likely to use control instruments that fit into the budgeting-system stage. Of course, it is also possible that the adhocracy does not possess a budgeting system, which leaves its accounting instruments in the unplanned stage.

So far, we only paid attention to the direct relationship between the configuration of the adhocracy and the accounting instruments. When we look at the other two relationships, we see that the direct relationship is the only relevant relationship for the adhocracy. Both the planning attitude of the managers and the accounting expertise may be in a higher developmental stage. However, the dynamism of its environment and the complexity of its tasks limit the adhocracy's accounting instruments to instruments that are consistent with the unplanned and budgeting-system stages.

### **3.5 Summary**

This chapter has linked Van Loon's model of the dynamics of financial management with Mintzberg's model of organisational structure. This approach has resulted in an expansion of our model of the level of sophistication of accounting instruments, which was shown in Figure 3-2. Table 3-3 summarises the implications of the expanded model by indicating which developmental stages of accounting instruments are (+) and which stages are not (-) consistent with each of the configurations.

**Table 3-3 The developmental stages of accounting instruments that are consistent with the five configurations.**

Stage	Simple structure	Machine bureaucracy	Divisionalised form <sup>26</sup>	Professional bureaucracy <sup>27</sup>	Adhocracy
Unplanned stage	+	-	-	+	+
Budgeting-system stage	-	-	+	+	+
Annual-planning stage	-	+	+	-	-
Long-range-planning stage	-	+	+	-	-
Strategic-planning stage	-	-	+	-	-

Table 3-3, along with the arguments behind this table, reflects our theoretical framework for explaining the level of sophistication of accounting instruments<sup>28</sup>. In order to further develop this framework, we will confront it in the following chapters with empirical data.

<sup>26</sup> As far as it concerns planning and control. With respect to decision making, the theoretical framework suggests that the developmental stage depends on the configuration of the organisational part that takes the decisions.

<sup>27</sup> As far as it concerns decision making and control. With respect to planning, the theoretical framework suggests that the professional bureaucracy fits into all developmental stages except the strategic-planning stage.

<sup>28</sup> For a theoretical application of this framework: see Tillema (2000b).