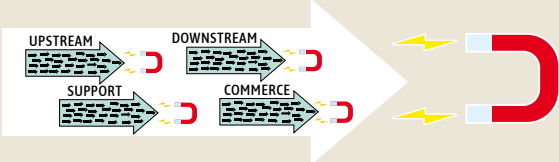


# THE ALIGNMENT PUZZLE

WHITE PAPER

Deep dive:

## The Alignment Control System (ACS)



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## 1. The ACS: Introduction

Managers need to know where they stand and where they need to go. A company can only realize its strategy successfully if its business units are well aligned and collaborate. That is why the strategy consists of both a commercial strategy and a supply chain strategy, why there are SPIs, and why the strategy is translated to the tactical level in the form of a Task-setting Tactical Plan.

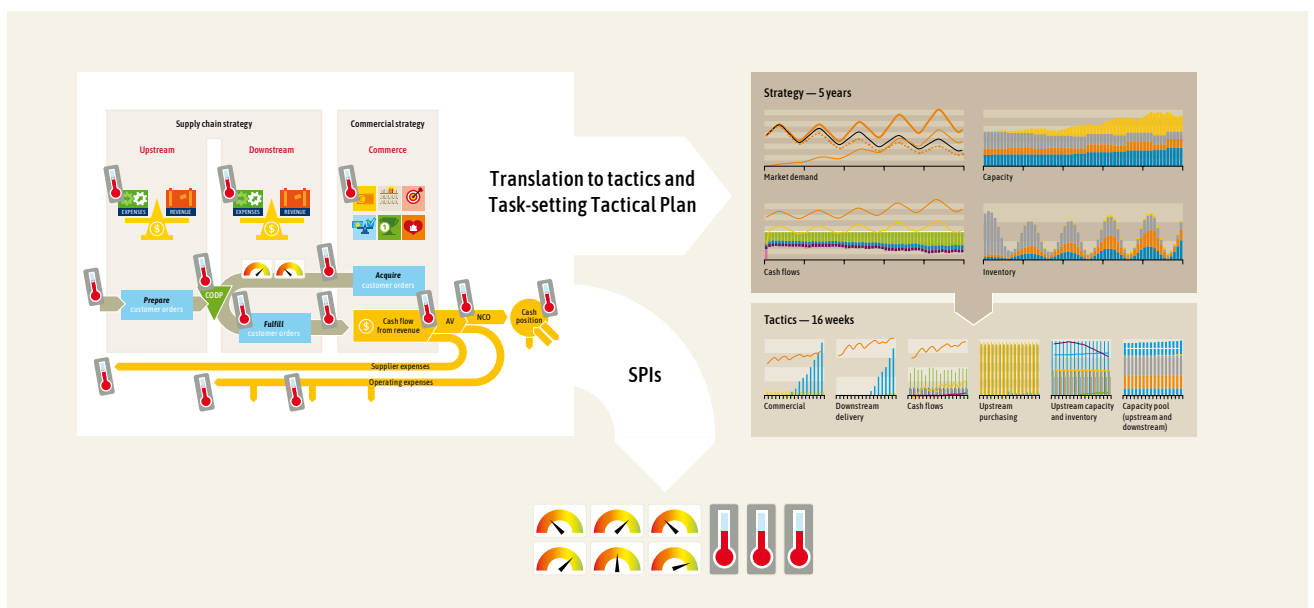
To steer effectively, information about deviations from the plan is essential. To what extent is the strategic plan being achieved? Is collaboration between business units still effective enough? An Alignment Control System (ACS) provides that information to all managers in the company, so that the right decisions are made everywhere.

The ACS consists of two main components:

- Objectives derived from the strategy and tactical planning — the SPIs.
- Performance measurements.

The highest strategic objective for all departments combined is to optimize the company's net cash flow. Within the ACS, the strategy is translated into objectives per individual department. This translation also governs how departments should collaborate. In the departments that jointly execute the primary process, this is achieved with a well-aligned Target-setting Tactical Plan for the output of the departments involved. Such a Task-setting Tactical Plan is therefore a representation of the strategy at the departmental level.

A department's performance measurement consists first and foremost of an output measurement. If the output is accompanied by an incoming cash flow, that can be measured directly.



Where the incoming cash flow cannot be measured directly, we measure plan realization against the Task-setting Tactical Plan — for example in terms of the number of executable customer orders, the volume delivered, the service level, or other ratios.

Second, a department's performance measurement includes measurements of internal process flow — for example: the deployment and utilization of resources, and the outgoing cash flows associated with them, insofar as the department can influence those cash flows.

Third, a department's performance measurement includes measurements against goals for improving its own organization and processes.

The ACS must be set up alongside the traditional Management Accounting (MA) system. MA information is based on cost allocation and assigning "costs" to time periods. It says little to nothing about influenceable, real incoming and outgoing cash flows. The usefulness of MA information within the ACS is therefore limited — and decreases to zero as the planning horizon (i.e., decision horizon) becomes shorter.

After measuring performance comes assessing and weighing performance. An important aspect is creating the right incentives. This can easily go wrong, because managers are sometimes assessed on items they cannot influence. Or the reverse: managers unjustly shift responsibility, claiming that they can influence under-performance only partially. To prevent this — and starting from the idea that many outcomes are in fact the result of collaboration — top management should prioritize achieving the right output according to the Task-setting Tactical Plan over a department's internal process flow (its efficiency). This ensures that the department has a vested interest in collaborating with other departments as needed to realize the strategy.

If efficiency is prioritized in the assessment, the focus shifts to an optimal internal process flow. When attention is directed too much toward, for example, maximizing the utilization of people and assets, that quickly comes at the expense of the department's output and the delivery performance of the primary process as a whole.

All in all, a focus on the right output has a beneficial effect on two fronts: (1) the contribution to the incoming cash flow, and (2) collaboration between departments. Efficiency comes second — and that is fine. Especially in the short term, outgoing cash flows are largely fixed anyway, so there is little to steer or influence there. A manager is better off spending her energy on things she can actually influence — in the short term, that is the department's output and its contribution to the incoming cash flow.

## 2. The ACS: Recap — Scope, Usefulness, and Necessity

### 2.1 A New System for Managing Business Performance, Alongside the MA System

In Chapter 9 of *The Alignment Puzzle*, we described the usefulness and necessity of an Alignment Control System: a new system that is better suited for managing business performance than the classic system of Management Accounting (MA). In this deep-dive chapter, we look more closely at the design of the Alignment Control System (ACS).

The ACS comprises:

- Setting goals and targets for organizational units — and sub-units.
- Measuring the results achieved and determining the variances versus the goals set.

Chapter 9 described how goals in an ACS are established. Strategic goals are decomposed into goals at the tactical and operational levels. During this decomposition, attention must be paid to vertical alignment. Additionally, to optimize performance of the primary process as a whole, horizontal alignment between sub-processes within the primary process is safeguarded. This occurs primarily by developing a feasible, integrated Task-setting Tactical Plan for all sub-processes. The Task-setting Tactical Plan represents the strategy at the tactical and operational level and is managed in the Sales and Operations Planning (S&OP) process.

In full alignment with the Plan–Do–Check–Act control loop (Deming, 1982), a variance between measurement and goal must lead to action and adjustment. The saying “What gets measured gets done” is well known, as is Goldratt’s formulation: “Tell me how you will measure me and I will tell you how I will behave.” Our experience is that more is needed than the measurement itself. Performance metrics only lead to action and follow-up if employees have a real incentive to deliver the requested performance. We must therefore also consider the follow-up of measurement and the shaping of managers’ and employees’ behavior.

We therefore need to determine how to ensure such incentives arise and — very importantly — how to prevent conflicting interests from emerging among departments, managers, or employees who should in fact be collaborating.

In what follows, we detail the formulation of goals and performance measurements per sub-process. We also address how measurements are followed up, how performance is assessed and evaluated, and how (if needed) we steer back toward the desired goal. We conclude with a few practical tips for implementation in the organization and in the information systems.

## 2.2 Usefulness and Necessity of an ACS

The ACS supports optimal alignment between organizational units, on the basis of a system of objectives, targets, and performance measurements constructed in such a way that collaboration is encouraged and conflicts of interest are minimized. As a result, the business processes collaborate optimally in pursuit of the company's goals.

You cannot implement an ACS without a solid commercial and supply chain strategy in which the right choices have been made and correctly translated into goals for the business processes. These strategic goals must be translated to operations in such a way that collaboration happens “as a matter of course.”

A good management information system must deliver information on which managers can make sound internal decisions — i.e., decisions that optimally contribute to the stated strategic goals and to long-term net cash flow.

A classic Management Accounting (MA) system works with information from the general ledger. That information must comply with statutory rules for external reporting, in which the concept of cost allocation plays a central role.

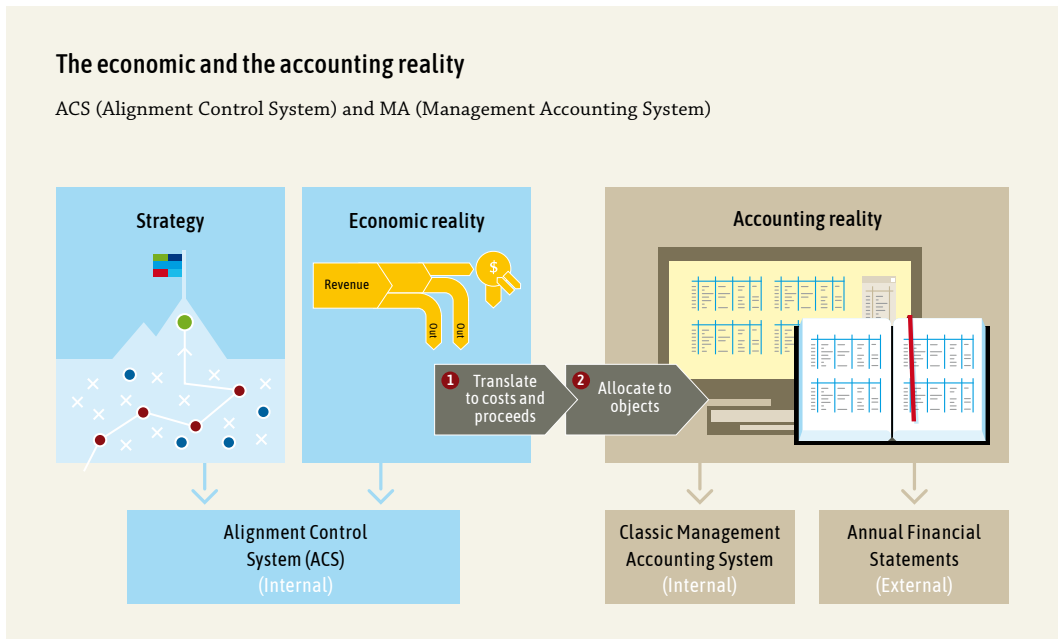
“Costs” are assigned to, for example, people, production assets, or products within time periods. That is necessary for external accountability and useful for post-calculation and cost-price determination. However, such information says nothing about the actual, current process flow, the output achieved, the associated incoming and outgoing cash flows, and the best way to influence those outcomes. That makes the classic MA system unsuitable for the periodic performance measurement of departments and managers that we are looking for.

A classic management accounting (MA) system is based on cost allocation rather than strategy and is therefore unsuitable for measuring managerial performance.

The ACS therefore differs from a classic MA system. For years, there was no alternative to an MA system grounded in accounting — far too much hassle, and besides, most did not see the problem. It seems logical to many that you steer internally using the same parameters by which you are judged externally. Thanks to increasingly powerful computers and software — and because it has become much easier to capture and store large amounts of data — there are now, fortunately, robust options to set up an ACS alongside the MA system.

**A classic MA system starts from cost allocation rather than strategy — and is therefore unsuitable for measuring managerial performance.**

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### 3. Considerations for Designing and Implementing an ACS System

In this section we discuss how to design an ACS (Alignment Control System) on the basis of the specified principles. We answer, among others, the following questions:

- With which objectives and measurements are the sub-processes steered?
- How do you steer in practice on “real” cash flows? Which performance do you steer on when the real cash flows are not directly measurable?
- How do you ensure that managers and employees act in line with the objectives and the measured results, and that, for example, collaboration gets the priority it deserves?

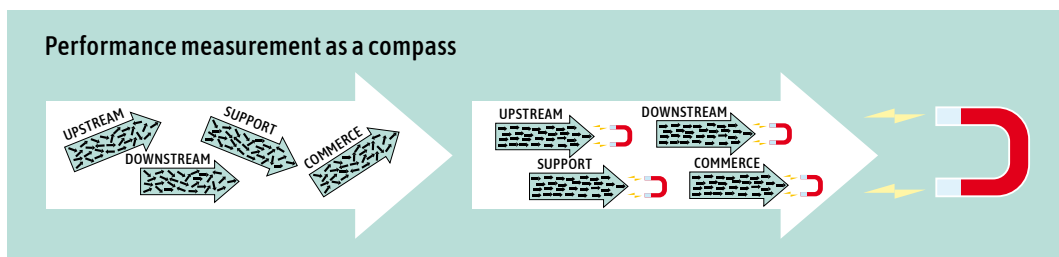
#### 3.1 What Are We Going to Measure?

The strategy that specifies how the company intends to optimize long-term net cash flow is the starting point. The strategic objectives must lead to flows of orders, goods, and money. Time-related measurements can be placed on all of these flows which trigger an alarm if deviations become too large.

These flows arise in the execution of business processes. The departments are responsible for executing these (sub-)processes. Although we mainly refer to the departments that together execute the primary process (Commerce, Downstream, and Upstream), the way of thinking applies to any (sub-)process and to every department within a company.

This also holds for the support functions: HRM (“provide personnel”), ICT (“provide information services”), and Technical Services (“provide production assets”). For example, if HRM does not ensure on time the availability of the right employees in the Upstream process, there may be insufficient capacity to fill the Customer Order Decoupling Point (\*CODP\*) on time with the right inventory.

A performance-measurement system does not only aim to inform top management about progress and status; it also serves as a compass for the dozens of smaller decisions that lower management makes every week—especially when a strong accountability mechanism such as a bonus is linked to the metrics.



A good set of performance indicators is derived from the Strategic Performance Indicators, or SPIs. These are translated to the three core processes and to the support departments, and within them to the lower levels and the individual managers and employees.

In the absence of a usable strategy, organizations almost automatically fall back on classic book-keeping-style performance measurements. Or, in the words of J.A.M. Theeuwes: “When vision is lacking, the bookkeeper takes over.”

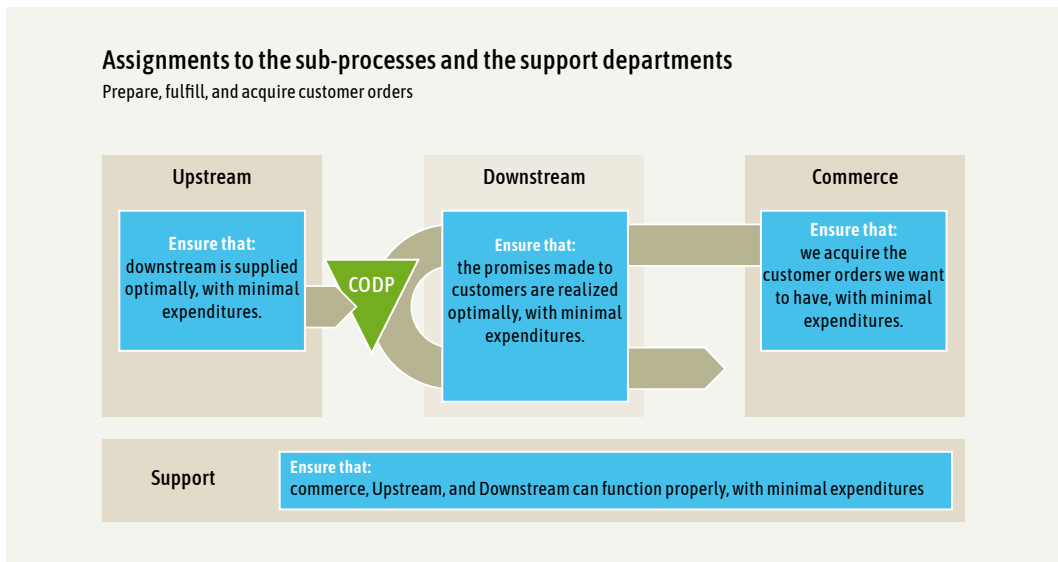
### 3.2 Measurements Are Designed from Three Perspectives

#### The first perspective: output measurements

The output measurements concern the output of sub-processes:

- **Commerce:** make sure we obtain the customer orders that we want to have.
- **Downstream:** make sure that the promises to customers are realized in the best possible way.
- **Upstream:** make sure that downstream is supplied optimally.
- **Support:** make sure that Commerce, Upstream, and Downstream can function well.

For all of these, measurements can be defined that are tied to the chosen strategy. These measurements can be defined in many dimensions: numbers of products, percentages on-time, days of lead time, money, numbers of orders, or kilograms.



For Commerce, the most important question will be: what are the characteristics of the customer orders that we would like to have? The answer often forms the basis for the rest of the performance-measurement system. If there is no agreement on this, achieving alignment becomes very difficult.

By way of illustration: organizations often think first of orders that generate a lot of profit. Such orders can be very challenging for the production process. It may also be that the company wants to limit the number of rush orders or very large orders in order to maintain stability in production. In a situation with a very costly machine that is structurally over-utilized, attractive orders are those with high added value per hour of that bottleneck machine.

The orders “that we would like to have” therefore often need to be described not only in financial terms but also in logistical characteristics such as the load on production capacity, lead time, and deviation from standards regarding product characteristics, quality, and packaging. And in commercial terms related to long-term objectives, for example winning orders from a new market. That does not immediately yield much revenue, but entering the market is important because more revenue is expected in the long term. In practice, there are systems in which salespeople received bonus points for such orders. The strategy should already address these matters in broad terms.

The downstream process must ensure that the organization lives up to the promises made to customers. Measurements that apply there include, for example, delivery reliability, average lead

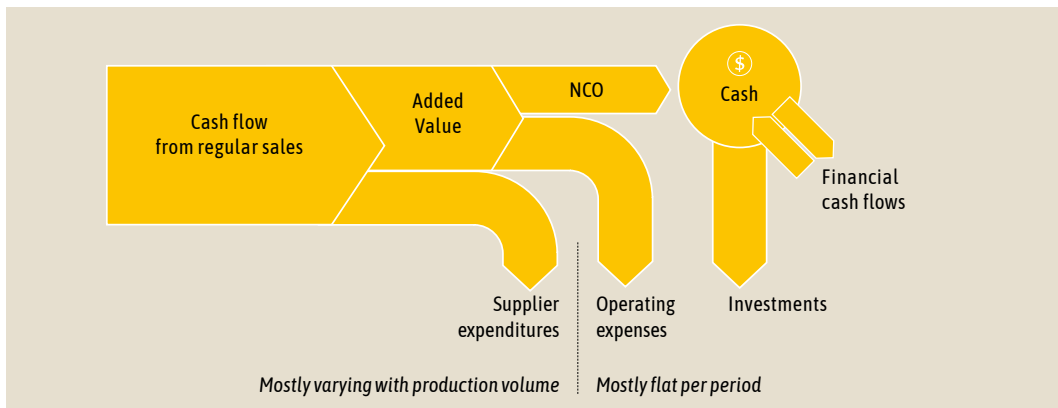
time, and the OTIF percentage. OTIF—On Time In Full—is the percentage of orders delivered on time and in full.

Within Downstream a distinction can be made between production and distribution. The performance measurements of both parts are often important to management. It may happen that an order is completed exactly on time in production but goes wrong in distribution. But it is also possible that an order delayed in production still arrives on time at the customer thanks to an adequate response in distribution.

The task of the Upstream process is to keep the CODP at such a level that the Downstream process can carry out its tasks properly. The availability of products in the right quantity at the right time can be measured in terms of service levels. The reliability of the forecast provided plays an important role. The flexibility with which the Upstream process can deal with deviations is also important and can be a measurement.

### The second perspective: cash-flow measurements

Strategy is about generating “real money” in the long term. So let’s look at how we can make those cash flows measurable. For measuring the performance of operations in the short and medium term, this means optimizing the NCO (Net Cash Flow from Operations). We ignore the cash flows related to financing and investments when measuring the performance of the three core processes and the support departments, because these can only be influenced at the strategic level and by the Finance department. Of course, for the longer term these cash flows must be taken into account.



If a company wants the entire organization to focus on optimizing cash flows, it must assess every part on the component of NCO that it can influence. That means the three sub-processes and the support departments are given responsibility for the expenditures they themselves can influence.

The most important cash flow is the incoming cash flow from sales. The incoming cash flow is the direct “performance” of the sub-process that sends invoices and receives payments. But it should be clear that the performance is delivered by a collection of sub-processes, not just by the Accounts Receivable function. The contribution to the incoming cash flow by sub-processes that do not themselves deliver to the customer is usually not directly measurable. For departments that are part of the primary process, however, we can establish a logical relationship between the department’s output and the company’s incoming cash flow, based on the Target-setting Tactical Plan (TTP). That plan represents the strategy at the departmental level for Upstream, Downstream, and Commerce.

If the departments’ output is in line with the TTP, then the contribution to the incoming cash flow is good. If such a TTP exists, a department’s output can be measured in units other than real money—which in practice will often come down to the quantity of a given product of a given quality that must be delivered at a given time.

Traditionally, the incoming cash flow from sales is a PI on which the “Commerce” sub-process is judged. We regard this incoming cash flow of the company as the result of the performance of all sub-processes together. To achieve this result, each sub-process provides its own contribution—its output can be measured with the output PIs described above.

This way we kill two birds with one stone: (1) we address the issue that not every sub-process or department has an incoming cash flow; and (2) we again emphasize the need for collaboration and adherence to the TTP—which translates the Strategy to the tactical control level and aims at the optimal long-term net cash flow.

At the departmental level, the impact of a decision on outgoing cash flows is usually easier to measure. Crucially, only the impact on real outgoing cash flows within the plan horizon should be considered when preparing decisions. One must therefore look at the outgoing cash flows that are influenceable by the department within the plan horizon. The shorter the plan horizon, the fewer expenditures are influenceable.

This also means that paying attention to measurements of utilization and efficiency—which many companies consider important and which weigh heavily in choices or decisions—is not necessary in the ACS. These measurements are only relevant if they are representative of real incoming and outgoing cash flows—and that is usually not the case.<sup>1</sup>

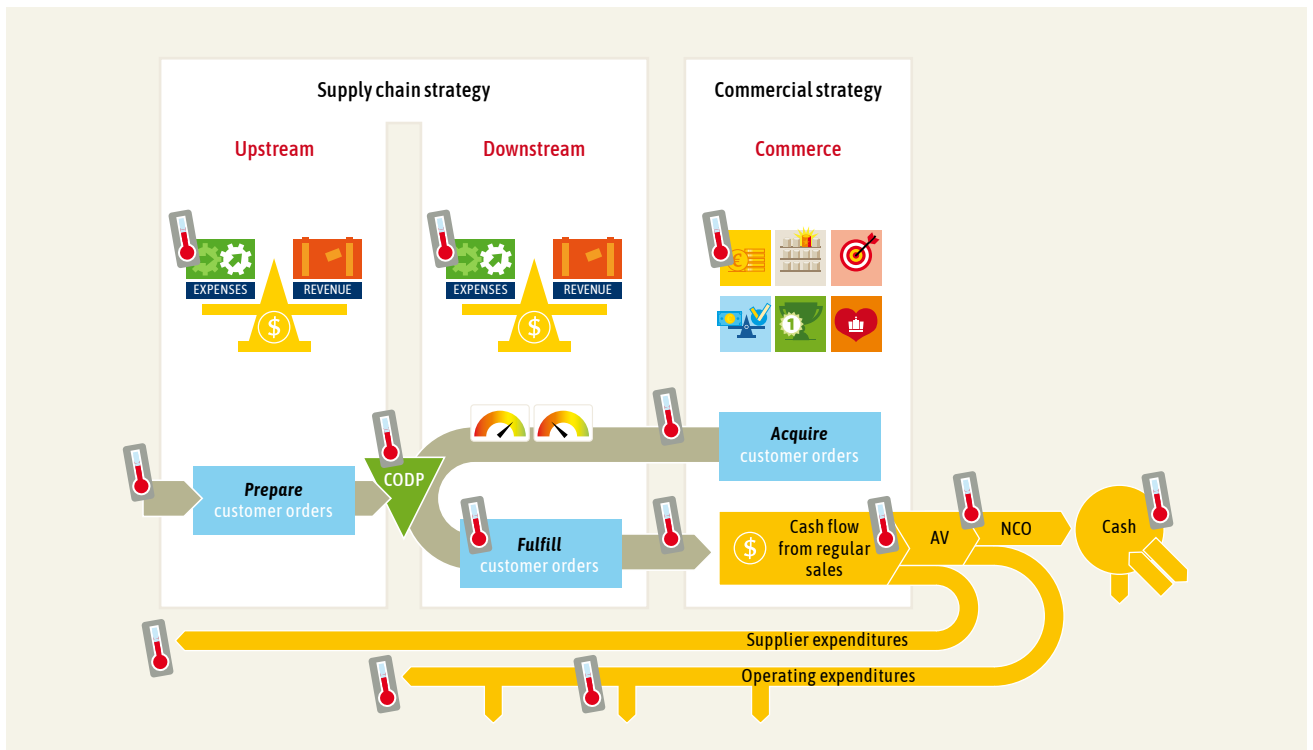
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1 The extent to which available capacity of people or production assets is utilized may say something about higher or lower “costs.” But that is the accounting reality, which does not play a role in the domain of the ACS, where the focus is on influencing real cash flows. Higher or lower utilization does not itself cause more or less outgoing cash. Only when the dominant control task is “capacity,” and it concerns the bottleneck capacity itself, is the utilization of the bottleneck capacity decisive for the company’s

# THE ALIGNMENT PUZZLE

Ultimately, only items such as ad-hoc outsourcing, paid overtime, and ad-hoc purchase of extra materials remain. As the decision horizon becomes shorter, more and more outgoing cash flows are fixed and the ability to influence outgoing cash declines to zero.

Cash-flow-based measurements automatically include the effects of payment terms, payment disputes, and any bad-debt losses. The commercial process also includes matters such as credit control, invoicing, and dunning customers. But the supply processes also deal with supplier payments and invoice handling—for Upstream, for example, suppliers of raw materials, and for Downstream, the transport company.



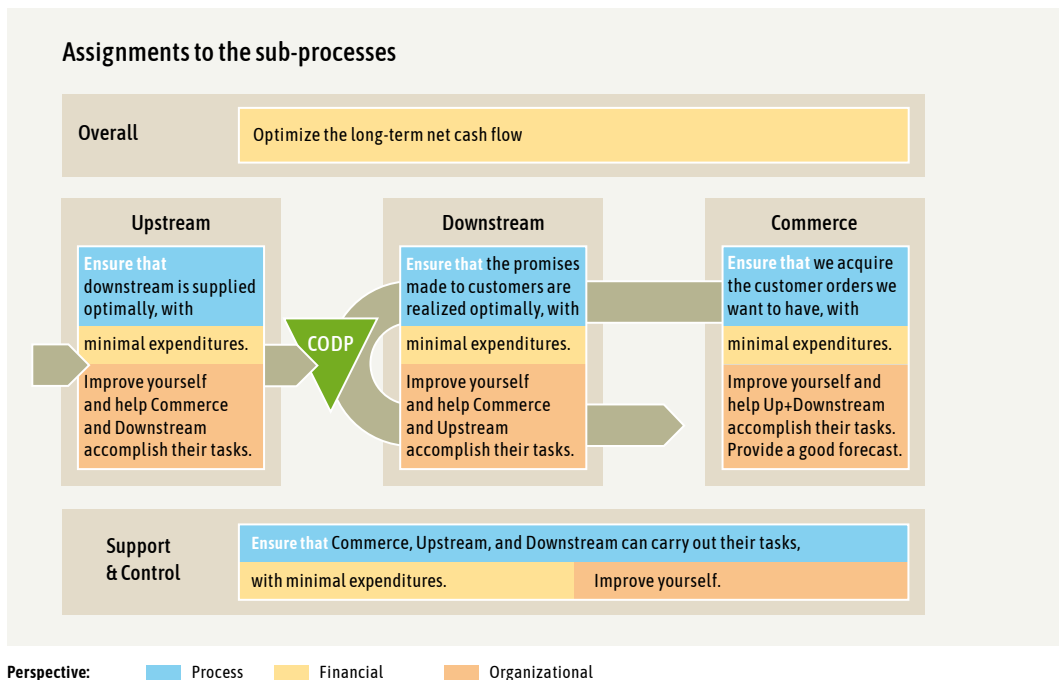
## The third perspective: organizational measurements

Thirdly, performance measurements from an organizational perspective are important. In general, these amount to: “improve yourself and help others achieve their goals.”

For example, Downstream is expected to improve by increasing flexibility and response speed; Upstream by improving efficiency; and Commerce by winning more attractive orders in promising yet hard-to-reach customer segments.

When it comes to helping the other core processes, providing a good forecast plays an important role in particular. In many companies a reliable demand forecast is a key precondition for the Up- and Downstream processes to work efficiently and effectively. This task often lies with Commerce.

If one of the three sub-processes is considered a constraint, it is important that the others make an extra effort to support that process. Suppose, for example, that Commerce is the constraint; then it may be wise to add a small order to a closed production schedule to delight a very promising new customer. Or, in another situation where Downstream is the constraint, a salesperson might ask a customer to postpone one of their orders even though delivery dates have already been promised. It is not always easy to see which actions these are and how much they deliver. But you can imagine that systems can be developed based on a “wish list” or bonus points.



Ultimately, the entire company is assessed on long-term net cash flow and the realization of the planned NCO per period. Helping colleagues must therefore lead to shared gains.

**Elaborated example**

The table contains an example of such a design. Here, NCO is given a central role. It is the same for every unit because it is a joint performance.

**Example of performance measurement for the core processes**

	Upstream	Downstream	Commerce
<b>Assignments</b>	<ol style="list-style-type: none"> <li>1. Ensure that Downstream is supplied according to S&amp;OP, with minimal expenditures.</li> <li>2. Improve your own performance-limiting characteristics.</li> <li>3. Help Commerce and Downstream.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ensure that the promises to customers are realized, with minimal expenditures.</li> <li>2. Improve your own performance-limiting characteristics.</li> <li>3. Help Commerce and Upstream.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ensure that we acquire the customer orders we want to have, with minimal expenditures.</li> <li>2. Provide a good forecast.</li> <li>3. Improve your own performance-limiting characteristics.</li> <li>4. Help Upstream and Downstream.</li> </ol>
<b>Example KPIs — logistics</b>	CODP service level (based on forecast / TTP/ S&OP)	Service level to customers	Winning the right orders. Forecast quality (for Up- and Downstream)
<b>Example KPIs — economic</b>	NCO (Net Cash Flow from Operations). Expenditures for purchasing raw materials. Other Upstream-related expenditures.	NCO. Downstream-related expenditures.	Incoming funds from sales. NCO. Commerce-related expenditures.
<b>Example KPIs — organization</b>	Raise the efficiency of the bottleneck. Meet special requests from Downstream.	Increase flexibility and responsiveness. Meet special requests from Commerce.	Improve predictability by better incorporating actions, etc., in the sales plan and forecast.

#### 4. Closing the Control Loop: Following Up on Goals and Measurements, Steering and Adjusting Behavior

An “Alignment Control System” for strategy realization is only effective if goals and measurements lead to the right actions and if the behavior of managers and employees is aligned with the strategic objectives. After setting the right goals, the metrics, and identifying any variances between them, influencing behavior is the final hurdle on the road to effective alignment.

People behave in a certain way when they have an interest in doing so. How do we ensure people develop a real stake in realizing the strategic goals and attune their actions accordingly?

“Human behavior” is a popular topic with many excellent books written about it. All the more reason for us not to dwell on it too much here and instead to write about the other, more rational, management side of business success. However, if we want to understand how interests arise and how they can be influenced, we cannot avoid a brief reflection on behavior.

## 4.1 Creating Interests with Motivators, Enablers, and Triggers

The inspiration for the reasoning that follows comes from the book *The Unwritten Rules of the Game* (Scott-Morgan, 1994). In that book, the author shares his view of corporate culture. Scott-Morgan sees “corporate culture” as “collective behavior.” He tries to describe that behavior in such a way that “handles” become visible with which the culture can be influenced—in the literal sense: made manageable.

He distinguishes three determinants of human behavior:

- **Motivators:** the inner drivers of people—the personal reason(s) why they want to devote their time to this work, commit themselves, and derive satisfaction from it.
- **Enablers:** people (usually) or systems (sometimes) with the power to make things happen. Enablers can ensure that people obtain what they are aiming for in their work—think of personal growth, a better workplace, more status, higher pay, or promotion.
- **Triggers:** the yardsticks by which people believe they will be judged in terms of punishment or reward. The word “believe” here is very important: there can be significant differences between formal, documented yardsticks and informal, perceived ones.

A company can unfortunately influence personal drivers only with much effort and patience. For triggers and enablers, fortunately, things are different. To influence behavior in the right direction, the best approach is to ensure that there are no triggers for performance assessment other than the KPIs from the ACS, and that departments are judged only on these KPIs. In this way, the group of people who together make up a department acquire a stake in delivering the right performance.

Next, managers must become “enablers” of the ACS. That starts with the executive team. They themselves must consistently apply and enforce the goals and metrics of the ACS in day-to-day practice: practice what you preach and walk the talk. Then employees will start taking the system seriously. It also prevents a culture from emerging with deviant, informal “triggers”—yardsticks that have no relation to the strategy. It is therefore important that managers actually take action when variances are established between goals and measurements in the ACS.

For example: if we want collaboration between departments and sub-processes to happen in practice, it is essential to weigh most heavily the contribution to the output delivered to other sub-processes (perspective 1) and helping colleagues (perspective 3). And not only in words but also in deeds—meaning in appraisal and in reward.

Good behavior should be rewarded, poor behavior should not. It is useful to approach this constructively, focusing not on the person (“who did it?”) but on the task (“what has to be done?”). What will move the KPI value closer to the target?

Another thing that helps: give recognition to employees who have performed in line with the ACS—for example, through personal rewards and promotions. What certainly backfires is the opposite: rewarding or promoting the “wrong” employees. People will immediately start doubting the importance the company truly attaches to “performing in line with the ACS.” Or stronger still: they will now be sure that other things are actually more important.

#### 4.2 Preventing Conflicts of Interest

Creating the right interests goes hand in hand with preventing conflicts of interest. Careful goal-setting and defining performance measurements already prevent many potential conflicts of interest, but there is another important potential source that must be neutralized: the individual annual agreements made with managers and employees in the “HR circuit.”

The HR circuit often runs parallel to and disconnected from steering the business. All too often, misalignment arises between company goals and personal goals—which in turn can be a cause of seemingly inexplicable conflicts of interest.

It is essential—but not simple—to align the goals and yardsticks for individual, personal success and personal development with departmental goals for alignment.

To that end, at a minimum the individual evaluation system for managers and employees must meet the following requirements:

- Individual goals and performance measurements are aligned with the company’s goals and performance measurements.
- Flexibility (helping each other) is valued positively when it benefits the company.
- Rigidity (refusing to help) is assessed negatively when it harms the company.

#### 4.3 ACS—Considerations for Organizational Implementation

Day-to-day business dynamics can cause assumptions not to hold, put goals under pressure, and force a reassessment of prior trade-offs. The implementation of the ACS can be designed with this in mind.

- First: organize things so that the intended trade-offs are made as low as possible in the hierarchy—but not lower. If the trade-off is made too high, the distance to execution becomes too great and bureaucracy arises. If the trade-off is made too low, there is a lack of overview and authority.
- Before setting goals and assigning them to departments and their managers, carefully consider controllability. That can lead to surprising outcomes. For example: for years, operating departments have been judged on their internal efficiency. If steering is set up as described in this book, that is not justified. The reasoning is as follows:

- o If a department's workload is determined in the Target-setting Tactical Plan (TTP), then the responsibility for the maximum achievable capacity utilization lies there as well. The department cannot create its own work—and you don't want it to.
  - o Only the person who draws up the TTP may be judged on the variance between the workload offered and the optimal utilization of capacity.
  - o The department itself is only responsible for delivering its output on time and according to plan—so that is not a responsibility of the person who creates the TTP.
- This division of responsibilities is logical—but it is the opposite of what you will find in most companies.
- To maintain the output goals in the TTP, you need shared, end-to-end steering in the primary process, which directs the departments on behalf of the executive team.
    - o This process steering determines the current output targets in consultation with the departments involved and decides to adjust them when business dynamics require it.
    - o The recommendation is to implement this process steering as an S&OP process as described by Wallace and Stahl (see also 9.3.3). The result must be a feasible TTP with goals for all sub-processes in the primary process.
    - o Because the S&OP process is often a consultative setting, it is advisable to appoint someone responsible for preparation and day-to-day management. This also creates a point of contact for questions.

Such a TTP helps assess and handle the consequences of various “events” resulting from everyday business dynamics. In such cases, it may happen that, in the company's interest, one department has to step up to help solve another department's problem. This immediately tests the decomposition of collaboration goals. Do all department managers feel they have a stake in the requested cooperation? Or does someone feel resistance because collaboration threatens their interests? In the latter case, the wording of the collaboration goals—or how they are followed up—must be reconsidered.

- o You could call the S&OP secretary or daily manager of the TTP the “Supply Chain Manager”—but with a different job description than is customary today. After all, the “SCM” meant here manages the output targets of all sub-processes in the Primary Process—including the output of Production and Commerce (“the customer orders we want”).
- The more detailed the steering, the more sensitive it is to disruptions and the more often new trade-offs must be made. Choose a sensible balance between clarity and detail. Prefer a compass to a thick book of rules. Not more detailed than necessary, but also not so sparse that managers at different decision levels lack a firm grip.

- Formulate goals and measurements with a bandwidth. Only when performance threatens to fall outside the bandwidth is a new trade-off required.
- When a new trade-off must be made, alignment takes place between the person who has to solve the problem and the goal-setter—and, if needed, with the recipient of the output.
- If the “lower” level cannot properly make the trade-off, then the trade-off must be made at the next higher level in the hierarchy.
- The trade-off must result in an unambiguous, unequivocal goal or instruction to the requester of the decision. This decision also becomes the new standard for performance measurement!

#### 4.4 ACS Implementation—Information Provisioning

We are regularly asked: “If it’s so logical, why don’t companies have an ACS? Is implementing such a system really that difficult?”

The short answer: it requires extra effort, but implementation is quite feasible. Any company that uses an ERP system has, in principle, the necessary basic data available.

Two hurdles must be cleared during implementation:

- Typical standard ERP functionality is aimed at the correct accounting processing of transactions in the financial administration. For that purpose, an ERP system transforms recorded data about reality according to accounting rules. The results of this translation process are not—any more—suitable for application in an ACS.
- Contrary to what the name suggests—Enterprise Resource Planning—it is difficult in a typical ERP system to plan the primary process in an integrated way. For example, maintaining a feasible TTP and generating the associated KPIs does not come naturally.

The solution lies in the already discussed “layered architecture” (see Chapter 13). As a complement to the ERP system, additional software is needed that is specifically suitable for planning and reporting.

In that setup, the ERP system is used as the base registry and source of data. The required data from the ERP system are copied to the planning environment where, among other things, the TTP and the KPIs are designed and maintained. The resulting TTP is used to steer the operational Upstream planning—e.g., timing and volumes—and as the reference for monitoring process flow in Commerce, Upstream, and Downstream.

When selecting such a complementary ACS solution, we must therefore look at three things:

- The ability to plan—among other things, maintaining a feasible TTP that fits the characteristics of the primary process and the company’s DBO.
- The ability to copy the necessary data for performance measurement of each sub-process and translate them into a KPI dashboard.
- The ability to feed plan information from the TTP into the ERP system (steering Upstream).

For the ACS, data are needed about planned and realized output and about incoming and outgoing cash flows. Every datum must carry a time stamp. For sub-processes without an incoming cash flow (such as Upstream and Commerce), the measurement of output replaces the “real” incoming cash flow.

Typical data for output measurements come from the logistics domain and are available in the ERP system: think of planned and realized volumes, delivery moments, and—for deliveries—the incoming cash flows per delivered customer order.

To control the feasibility of a TTP, data are needed about, among other things, planned and realized workload and the availability of materials and human and machine capacity. The goals from the TTP for filling the CODP (volumes and timing) are, in turn, entered into the ERP system.

With regard to outgoing cash flows, it is important to include per sub-process only the change in cash flows caused by the established TTP—or its execution. For example: outgoing cash flows for additional materials or manpower—such as overtime or temporary hiring. Expenditures for, say, already contracted employees or the costs of maintenance or depreciation on the existing machine park are not part of that.

In summary: if the basic data are available—for example in an ERP system—implementing an ACS is feasible. The company does have to invest in a suitable system for planning and reporting. The task is of the same order as implementing S&OP. Our recommendation is to tackle the development of S&OP support and maintaining the TTP jointly as a single initiative.

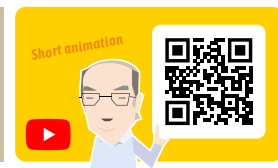
The biggest challenge, however, probably lies in a very different area—namely, adjusting the mindset. It is about raising awareness that different purposes require different information: horses for courses. Realizing the strategy and steering day-to-day work requires different information than reporting to shareholders.

For example, it involves awareness of the following notions:

- There is a fundamental difference between concepts such as “revenue,” “costs,” and “profit,” and “real money.”
- The logistics aspect of the process is not just about moving stuff; it has a direct link to earning “real money.” A healthy flow through the entire primary process is essential for realizing the strategy and generating an incoming cash flow on time.
- Therefore, realizing the planned output of the entire primary process is always more important than the performance of individual departments. There is one exception to this rule: if an individual department contains the bottleneck, that department determines the company’s output. There, departmental and company interests coincide.
- A sensible manager spends her energy on things she can influence. It is therefore important to know that, in the short and medium term, the incoming cash flow of a company is usually much more influenceable than the outgoing cash flow.
- The planned output of a sub-process according to the TTP is directly derived from the company’s planned incoming cash flow and from the strategy.
- By realizing the planned output, a department helps the next link in the chain deliver its optimal contribution.
- Therefore, steering on output is the best thing you can do if you want to earn “real money”—and it is far more important than achieved efficiency.

These are new insights about a topic that sits at the center of many managers’ thinking: how to manage in order to earn money for the company. Letting go of old axioms and embracing new ones in such a crucial area requires not only a solid understanding of the necessity but also a great deal of courage and perseverance.

#5 *Steering on  
long-term net cash flow  
instead of value and profit*



## 4.5 Decision Support within the ACS

Anyone who wants to keep the primary business process on course amid the dynamics of everyday life (including when things go against you) must continually make trade-offs and decisions to realize the agreed goals in line with the TTP—or, if it cannot be helped, to adjust the TTP to reality into a new feasible TTP.

This raises questions such as:

- Should we accept this rush order?
- Do the extra income and the “satisfied customer” outweigh the disruption to planning and operations and the extra effort we must make to deliver the order?
- Can next month’s workload only be completed on time if we work overtime?
- Do the extra burden on employees and the extra overtime expenditures weigh up against realizing the requested “output” on time?

For all such decisions, the existing TTP is the point of departure. To make sound trade-offs, information is needed about the expected impact of a decision on performance—using the TTP as a reference.

Information is the answer  
to the question asked  
(E. Goldratt)

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In addition to the requirements formulated earlier, the information system must be able to answer the following questions:

- What is the impact of the decision on realization of the TTP?
- If no clear answer can be obtained to this question: what is the impact of my decision on the company’s incoming and outgoing cash flow?

To provide these answers, the following underlying information is needed:

- What is the workload resulting from the decision? In other words, what changes relative to the current, already planned workload?
- What is the physical feasibility of processing the workload? In other words, what is the impact on:
  - o The consumption of materials? Are the materials physically available within the decision’s time frame? What is the potential extra outgoing cash flow?
  - o The utilization of human and machine capacity? Can this utilization physically be realized within the decision’s time frame, and what is the potential extra outgoing cash flow?
- What is the impact on the sub-process’s output? Think of volume, lead time, delivery reliability or quality and—if possible—the incoming cash flow.

The planning system must then make this impact visible by presenting the alternatives side by side in a clear way.

# THE ALIGNMENT PUZZLE

Such a form of decision support for maintaining the TTP can be realized with a dynamic model of the business process in which the process flow can be simulated and optimized.

“Simulation” means that the information system—preferably via a graphical interface—makes the effect of a decision on the various planning objects transparent. If multiple options are possible, the system ensures that different options can be compared, for example in the form of scenarios.

“Optimization” means that the information system brings the process flow and output as closely as possible in line with the stated goals—and then shows which control measures are required as input to achieve that.



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