

SAP Strategic Enterprise Management

Enabling Value Based Management



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Written by SEM Product Management, SAP AG

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This paper has been prepared in collaboration with PricewaterhouseCoopers global financial and cost management consultancy team. PricewaterhouseCoopers is a recognized leader in operationalizing value based management, implementing SAP solutions, and integrating large-scale systems change with process, people and organizational change. In developing Strategic Enterprise Management, SAP is working closely with PricewaterhouseCoopers to ensure that this next generation solution will support companies in delivering sustained, superior returns to their shareholders.

The pictures on the frontcover and on page 24 show Prof. Dr. Patrick M. Georges, Brain Surgeon and Prof. in Management, in a Management Cockpit installed by N.E.T. RESEARCH.

This and further reading on the respective topics can be found
in the media centers on our homepage.

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About This Paper

Enhancing shareholder value is a top priority for the senior executives of virtually all publicly listed companies, as institutional investors continue to press for sustained superior returns. Much is at stake: senior managers who fall short of meeting investor expectations will often find their own future and the future of their corporation jeopardized. How can you deliver the required returns on a sustained basis?

Previous approaches to value have centered around high-level metrics. Organizations have changed their performance metrics from conventional measures like return on net assets to shareholder value metrics such as economic profit. Value based management is often thought to be merely the use of such metrics at corporate and business unit levels, sometimes with reinforcement through the organization's remuneration systems. While such an approach is a step in the right direction, it represents only the *first* step. To deliver superior value based returns, companies must embed the value approach deep in the organization's culture - and this requires information systems that support the decision-making process.

Companies that have invested in ERP systems already have a major information asset. This paper describes how you can exploit the full potential of that asset in Strategic Enterprise Management (SEM) - SAP's next generation solution that will facilitate comprehensive value based decision-making. By combining the data from ERP systems with externally focused information, and creating a structure that supports predictive as well as historical views, SAP SEM provides the means to make strategy happen - and deliver sustained, superior value performance.

Why Manage for Value?

The concept of shareholder value is a recurrent theme in today's business press. Pressure from investors to deliver sustained superior returns has made shareholder value enhancement a principal issue facing the CEOs and CFOs of most publicly listed companies. Many large institutional investors now actively strive to redirect corporate strategies that in their view do not enhance value. The days of passive shareholders and management decisions made without accountability to investors are over.

Most questions that preoccupy executives today relate to shareholder value:

- how can we accelerate profitable growth over the next several years?
- why does the market undervalue our company?
- how can we transition from cost cutting to revenue generation?
- what really drives value in our business?
- how can we promote a culture of value creation throughout the company?

There are no easy answers to these concerns. Over the last decade, more and more companies have begun to address the issue: 'How should we manage for value?'. Most solutions have focused on the introduction of new metrics - moving away from *traditional* targets like return on capital employed (ROCE) and return on net assets (RONA), toward *value based* measures. These new measures can be divided into three types: economic profit (for example EVATM), residual income (for example CFROI) and free cash flow (for example TSR).¹

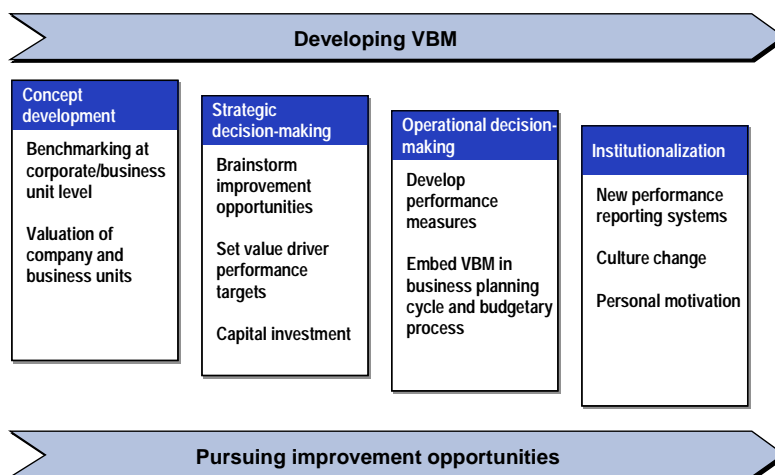
Many corporations search for a single, specific metric to encapsulate value. But all three types of metric are grounded in similar economic theory and each has unique strengths and weaknesses. Experience shows that they each can play a useful part in the value creation process. Economic profit, for instance, can be used to track overall corporate and business unit performance but is fundamentally a historical measure. CFROI is increasingly used in evaluating a company's longer-term strategies and resource allocation but its complexity makes it hard for operational management to understand how their decisions will affect it. Discounted cash flow methods are particularly effective in valuing alternative strategies but, because they are entirely forward-looking, can be difficult to link to compensation schemes.

¹ EVATM was developed by Stern Stewart & Co. For more detailed descriptions of various value metrics, see Alfred Rappaport, *Creating Shareholder Value*, Free Press 1998; and Andrew Black, Philip Wright and John E Bachman, *In Search of Shareholder Value*, Pitman 1998.

The problem with this approach is that it makes the delivery of the metric an objective - and often only in the short term. This is not what most companies are in business for. The key objective of corporate management must be to deliver the corporation's vision. Shareholder value is simply a measure - albeit the most important one - by which their success is gaged. To deliver superior shareholder returns, corporate management must therefore not only formulate effective strategies but also be capable of delivering those strategies. Value based management makes strategy happen by developing close links between strategy, operations and finance, with shareholder value as the overriding measure of success or failure.

The reason why setting targets alone - even when soundly based on value principles - won't automatically deliver the desired result is because many companies have difficulty explaining them and obtaining buy-in. Critically, they struggle to establish the new measures at divisional and strategic business unit level. As a divisional manager at one major European multinational observed: 'The CFO is really hooked on this shareholder value thing. Out here in operations, where it counts, it means nothing. It simply hasn't been translated into terms that we relate to. We haven't got a clue how to put it into practice'.²

Few companies effectively link strategic objectives to resource allocation and performance management, with the result that operational decision-making fails to focus fully on delivering strategic objectives. Yet this is precisely what's needed to achieve a superior investment return. What's holding them back? The fact is that most companies have failed to recognize the full extent of the challenge of implementing value based management: it is only when people *throughout the organization* use shareholder value thinking in decision-making that the true benefits will be realized (see diagram). A critical component in achieving this is the right information systems infrastructure.



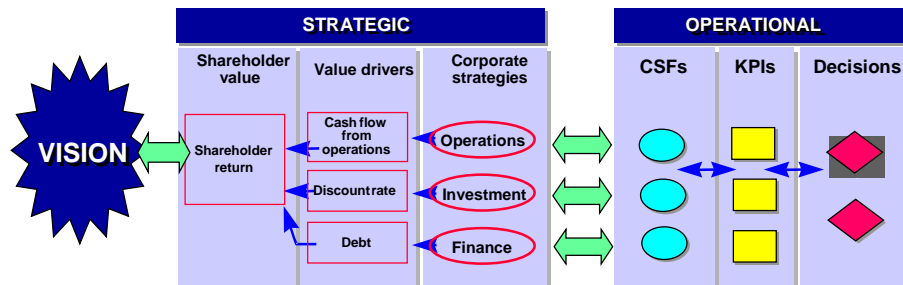
Source: PricewaterhouseCoopers

Fig. 1: The value based management (VBM) lifecycle

² PricewaterhouseCoopers Financial & Cost Management Team, *CFO: Architect of the Corporation's Future*, Wiley 1997.

Operationalizing Value Based Management

To be effective, value based management must add transparency to the decision-making process: it must let you see the likely impact of specific decisions on the value of the business - not just major strategic decisions like mergers and acquisitions, but operational decisions too. What will be the impact on shareholder value of, for example, reducing lead time? Of reconfiguring the supply chain? Of rationalizing the product range? By expressing shareholder value in terms that everyone can understand, you can forge a link from corporate strategy through to operations and the actual value being created by executing management's plans (see diagram).



Source: PricewaterhouseCoopers

Fig. 2: Bridge the gap between strategy and operations by making shareholder value your overall measure of success

Your objective must be to combine historic *and* predictive views with financial *and* non-financial drivers of the business. You must incentivize people at all levels to pursue the overriding objective of improving shareholder value. To operationalize value based management, take four essential steps:

- understand what drives value
- find where value is created or destroyed
- establish value as the criterion for decision-making
- embed value into your culture.

At each step, information systems are critical to success - as the following descriptions demonstrate.

Understand What Drives Value

How do large institutional investors assess the economic value of companies? Earnings per share (EPS) has long been recognized by investment management firms as a convenient *shorthand* for valuing stocks, but is increasingly being replaced by cash measures. This is because EPS has several well-known limitations.³ These include the use of different accounting methods across companies and countries (a practical reality that makes earnings comparisons difficult); the need for investment in fixed and working capital which, for the most part, is excluded from earnings calculations; the need to assess risk that is not included in an earnings figure; and the fact that earnings do not take account of future expectations or the time value of money.

Research shows that investors' focus is moving away from classic attempts to model earnings based returns, toward assessments based on growth expectations, cash flow return on invested capital, and risk. In response to the changing concerns of institutional investors, equity analysts at securities firms are also revising their approaches to value analysis. Typically, shareholder value is defined as total corporate value less debt, where corporate value is no different from the *economic* value of any asset – that is, the future free cash flow that investors expect the company to generate over a defined timeframe, discounted by the cost of capital appropriate for the business (see diagram).⁴

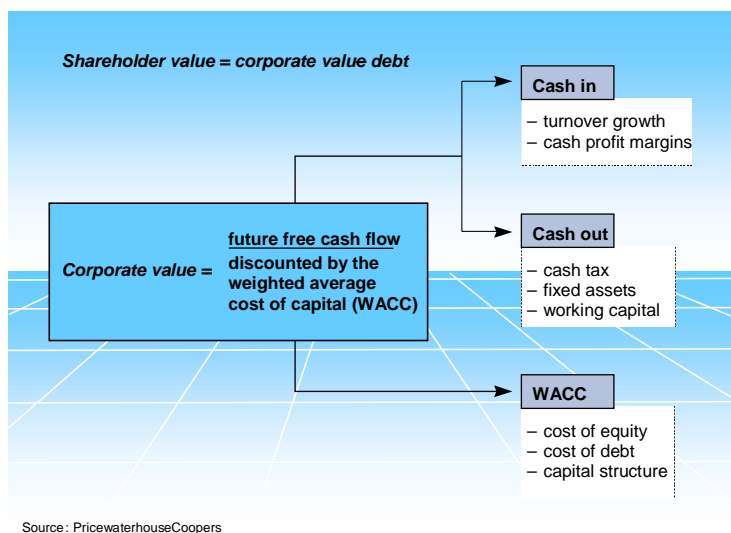


Fig. 3: Calculating shareholder value using the free cash flow method

³ John E Bachman, John R Devereaux, Christopher M Neenan and Jonathan M Peacock, *Value Transformation: Driving Shareholder Value Throughout the Organization*, PricewaterhouseCoopers 1997.

⁴ The analytical framework in this diagram is based on work in the 1980s by Alfred Rappaport.



This means you need to consider seven value drivers – macro level factors that, for most industries, determine shareholder value. Five are operationally based. *Turnover growth* and *cash profit margins* drive the amount of cash coming into the business. The *cash tax rate* (actual tax paid) drives the amount going out. So does investment in the business, in terms of *fixed asset* and *working capital* expenditure.

In addition to these, there is the *weighted average cost of capital* (WACC): the rate of return demanded by investors – in relation to both debt and equity – based on the risk associated with the business and its capital structure (ratio of debt to equity). The company creates shareholder value only if it generates returns in excess of its cost of capital. The seventh value driver is the timeframe over which the market expects your business to achieve this, known as the *competitive advantage period* (or *growth duration period*).

When you break down shareholder value using the value drivers, you can begin to view the business from the inside exactly as it is viewed by external investors. You might find that the market's expectations of returns are *much higher* than the cost of your company's invested capital. A major pharmaceutical company, for example, currently has a WACC of 10% but the compound return expected by the marketplace over the next 15 years (the competitive advantage period) is 23% pa. Because this expectation is already incorporated in the current share price, delivering a return that merely equals the cost of capital will, for this company, be *value destroying*.

Comparing the market's expectations with your own cash flow projections allows you to establish the *value gap* that your strategy must close. Since the future is uncertain, analysis of expected cash flows requires judging the relative sensitivity of each value driver to key assumptions. Understanding these sensitivities will help you assess the impact of strategic alternatives on the value of your business - giving insights into where to concentrate efforts to close the value gap.

This framework allows companies to value their strategies: if the value is consistent with the market's valuation, the current share price will be sustainable. If the company's objective is to enhance value, as in the case of one major multinational aiming for 20% annual TSR - in other words, for a doubling of its value in five years - the framework will show whether current strategies will successfully deliver the required result.

Effective strategic planning depends on having the right information - financial *and* non-financial, historic *and* predictive, internal *and* external. Only then, can you begin to understand the complex interplay between your strategy and your business environment. Of course, you need to be able to keep track of your competitors, your customers, your suppliers, the regulatory and political environment, social trends and economics. In addition, you must be aware of new entrants to the marketplace, of potential substitute products, and of the performance of companies - perhaps from different sectors - that may compete with you for investors' capital. In the Internet age, such external, often qualitative, information is available in overwhelming quantities - and it lacks structure. You must have an information system that is capable of identifying, filtering, and analyzing information to make it relevant to your decision-making needs.

The system must also have a simulation capability to allow you to model the effect of various strategic choices on the business. Alternative scenarios should be analyzed to determine their impact on the value drivers and different assumptions concerning risk should be tested. For instance, you could study the probable impact of a strategy to generate increased revenues, or to decrease selling or marketing costs, or to optimize global tax payments.

Find Where Value Is Created or Destroyed

You must make decisions about how to allocate resources - financial, human and intellectual - to maximize returns *overall*, not simply because individual projects are expected to deliver higher returns. Resources therefore need to be allocated to strategies, not individual projects: this makes resource allocation an integral part of strategy appraisal.

By adopting shareholder value as the standard for implementing plans and allocating resources, both the corporate parent and its business units will be operating under a common framework - and so will make better decisions. Nevertheless, management should assess performance regularly and objectively: if investments are not performing against value based objectives, the capital should be freed for a high-return strategic investment elsewhere.

One technique you can use to analyze issues of resource allocation is *value mapping*.⁵ Convert the results of your shareholder value analysis into a value map by plotting, for each strategic business unit, the value generated against the level of investment needed to generate it (see diagram). Giving a vivid picture of which business units create value and which consume value, this technique can open up a whole new perspective for executive managers. Confronted by a value map, they're prompted to challenge basic assumptions that govern the way they constitute, structure and manage the enterprise.

⁵ PricewaterhouseCoopers Financial & Cost Management Team, *CFO: Architect of the Corporation's Future*, Wiley 1997.

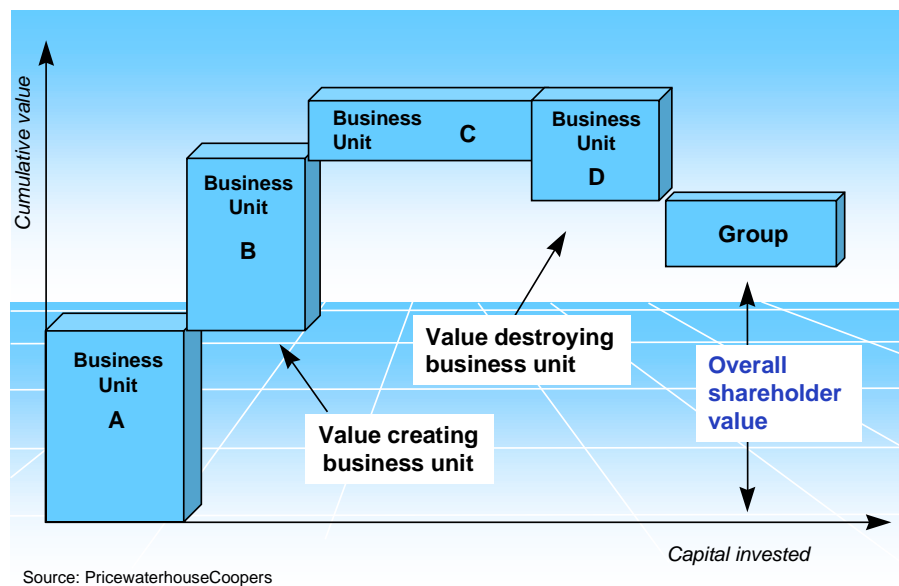


Fig. 4: A value map pinpoints the sources of value creation

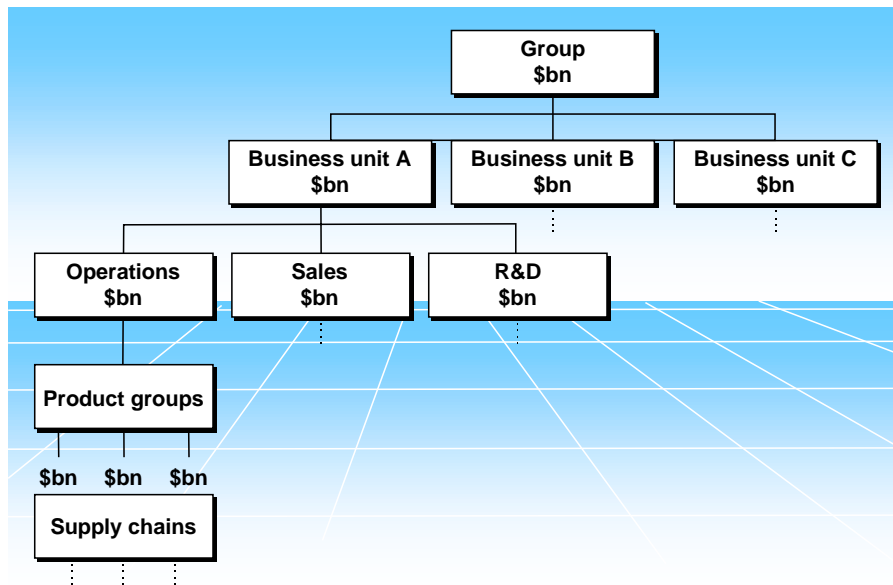
After value mapping at business unit level, you may need to decompose value further, examining lower level *value centers*. These could be product or customer groups, or even groups of processes such as a supply chain - as discussed in the next step.

Make Value the Criterion for Decision-Making

Corporations take three types of decision: investment, financing and operational. To evaluate *investment* and *financing* decisions, most use reasonably sophisticated discounted cash flow (DCF) techniques. But often, they're applied on an incremental basis. They may cover only some of the value drivers - and so fail to pick up the full impact of a decision on the business as a whole. For example, conventional investment appraisal of a proposal to build a new factory would not normally reflect its implications for the company's competitive advantage period.

When it comes to *operational* decisions, companies seldom look at these in shareholder value terms at all. Yet establishing a value creating strategy - though clearly important - is not on its own enough to secure success in today's investment climate. Senior executives must keep in mind that value is created or destroyed at every point where decisions are made. To be certain that value creation can be sustained and improved operationally by front-line managers, you need an infrastructure - including the appropriate information systems - that gives *managers at all levels* a coherent understanding of how to take value based decisions.

Decomposing the corporation's value into value centers (see diagram) may not prove straightforward. You need financial data that's not always readily available: you may have to construct it specially for the purpose. But once you've developed a lower-level value model, you can use it to test the impact on shareholder value of operational decision-making scenarios.



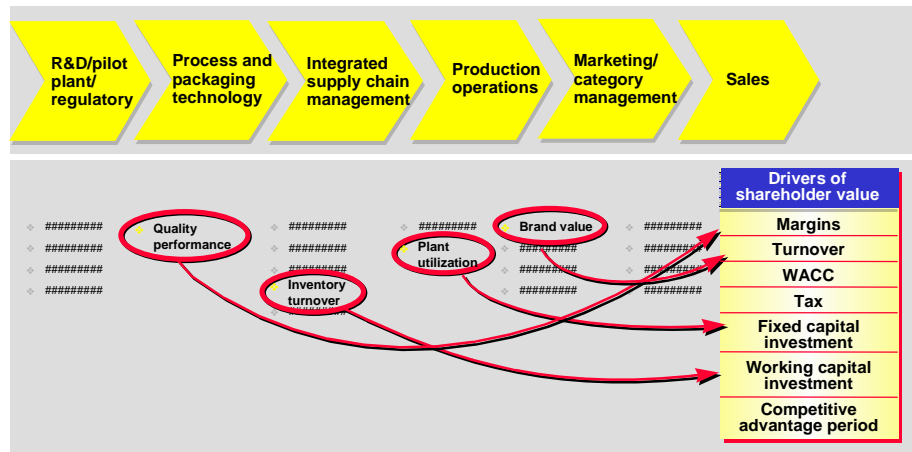
Source: PricewaterhouseCoopers

Fig. 5: Decomposing value by business unit

VBM lets you value operational scenarios - in the same way that you might value an external transaction such as an acquisition - select the right option, and *then* establish a set of performance measures to monitor day-to-day decisions at the operational front-line. The seven value drivers provide a common planning platform. The linkage of financial planning to business operations and tactical decision-making, however, requires that these drivers be *mapped* into the business-specific measures that drive success with markets, customers and production. Via metrics like receivables, debtor days and lead times, linked to value, the company can see how well it's doing in operationalizing value strategies.

In a unit driven by innovation, for example, this driver mapping will focus on research, development, prototyping and time-to-market measurements. A customer service business, on the other hand, may need to focus on highly valued customer segments through market penetration, customer acquisition, product extensions and business retention measures. In both cases, the operational measures are clearly and explicitly linked to the key value drivers.

What's different about this approach is that it makes shareholder value targets meaningful to front-line managers. Individuals responsible for slices of the working capital pie - inbound logistics, manufacturing, outbound logistics, sales and finance - all know precisely what they must do to deliver the targets, and how their efforts will be measured and reported. Metrics need to be correlated with the business units' value chains and strategies (see diagram). Aided by linkage through a balanced set of performance measures, senior executives and managers will have their hands on all the controls needed to implement strategy and achieve objectives.



Source: PricewaterhouseCoopers

Fig. 6: Map key performance measures to value drivers to create a balanced value scorecard

Once senior management has identified the measures that can be managed to create shareholder value, people at all levels must be compensated according to how well they perform against these targets. This promotes a culture of performance that rewards shareholder value maximization and empowers employees to manage the business as if it were their own. This approach goes a long way toward ensuring that the interests of shareholders and employees remain fully aligned. No one measure is appropriate for all employees at all levels. Nor is one timeframe applicable to all people.

A compensation system based on value creation has features that distinguish it from traditional plans. This type of system is organized around economic performance - with the emphasis on cash flow, the capital invested to generate that cash flow, and the cost of the invested capital. It also employs different periods of time to motivate short-term and longer-term results which will collectively maximize value. Senior managers should address shareholder value with a longer-range perspective and goals, while people at the operational front-line should view value through a short-term lens. By designing a value based incentive plan that contains appropriate levels of risk and reward, a company can energize all its employees to work for value creation.

Everything we've described above relies on the accessibility of information. Relevant, timely, consistent information should be made available to all decision-makers. These include external decision-makers such as the investment community and other stakeholders. You must ensure that investors understand your company's value based strategies and goals - and that they are confident in management's ability to implement those strategies and deliver on them. With the right information, investors can develop an informed view on growth, return and risk assumptions in assessing value. Credibility with the markets is a major asset: if investors do not understand or do not *believe in* management's ability to deliver on these strategies, then your market value will reflect a less informed - or more pessimistic - view of your company's prospects.

Embed Value into Your Culture

You will experience plenty of barriers to implementing value based management.⁶ So it's as well to prepare for them now. From marketeers, you may hear: *'It's a narrow financial view of the world. What about our markets and products?'*. From others: *'Shareholder value management treats employees as money-making machines rather than as assets to be nurtured'*. Almost certainly expect this: *'You're obsessed with shareholders. We have to consider government, unions, community, suppliers and customers too'*. And there are always the procrastinators: *'We'd love to install VBM but we don't have the people or systems. Come back in 2010!'*.

The business case for VBM is a highly persuasive one, but you're going to need the strongest possible buy-in at board level, right from the outset. To become operational, value principles have to be embedded in the company's culture. And that means roll-out must be an evolutionary – not revolutionary – process. Fully-managed stakeholder communication – with investors, management, employees, customers and business partners – is critical for success. You'll need to strike the right balance between concept and reality too: VBM can all too easily smack of academic theory if it's not presented in the down-to-earth context of business decision-making.

But the real secret to winning the necessary commitment and ownership, at all levels, lies in communicating information that allows people to participate – in a way that connects the *value* agenda to their *personal* agenda.

The 21st Century Financial Management Model

Fully embedded value based management takes the corporation into a new, very different world. As the shareholder value concept comes down from the corporate ivory tower and out into the front-line of operational management, senior executives must drive radical change:

- from profit targets only, to targets for each of the value drivers
- from managing traditional functional structures, to managing value centers
- from historical accounting, to predictive value reporting
- from incremental DCF project appraisal, to value based business appraisal.

⁶ PricewaterhouseCoopers Financial & Cost Management Team, *CFO: Architect of the Corporation's Future*, Wiley 1997.



You can't make this transformation without the right IT architecture in place to support decision-makers' information needs. A value based management system must meet the new demand for forward-looking information. And it must be capable of seamlessly integrating strategic, financial and operational information in a way that supports all management processes. The ultimate objective must be to create transparency across the enterprise and to ensure continuity of information from strategy through to execution.

Information Systems to Support the Transformation

To properly support value based decision-making, your system must have the following features.⁷

- ❑ *Accessibility* - All the relevant information must be easily available at the point of decision-making.
- ❑ *Flexibility* - Organizational structures and processes will change over time: it must be possible to adapt the system to reflect resulting changes in information requirements.
- ❑ *Multi-dimensionality* - It should be possible to decompose value into its components, and to compare scenarios by drilling down through alternate but reconciling hierarchies, for example by business, brand, channel or country, over time.
- ❑ *Multi-user access* - You need to provide a common source of information, allowing people across the organization to make decisions on a consistent basis.
- ❑ *User friendliness* - While providing sophisticated functionality for advanced users, the system must also be easy to use for non-financial and non-IT literate decision-makers. In addition, it must be easy to configure and manage.
- ❑ *Speed of response* - The system should be dynamic and highly automated to support real-time decision-making and ensure that changing business conditions trigger appropriate, timely responses.
- ❑ *Openness* - However complete your integrated solution, it is unlikely to provide all the functionality that's needed: it must be possible to integrate third party applications and allow for future developments.

⁷ John King and Frank Ashton, *ValueTech™: Making the 21st Century Financial Management System a Reality Today*, PricewaterhouseCoopers 1998.

- ❑ **Robustness and scalability** - The system must be able to integrate large volumes of data from diverse sources. It must also be able to handle simultaneous queries from a large number of users dispersed across the enterprise.
- ❑ **Consistency and data integrity** - All users must have confidence in the information the system provides.

The features of a value based management system may seem similar to those of other decision support systems. But, in terms of functionality, there are important differences. Critically, the system connects top-down communication of strategic targets with bottom-up reporting of performance, and combines both historic and predictive views to support the entire value management cycle. In such an integrated system, *data* from internal and external sources is consolidated and compared with targets as part of the performance measurement process - creating management *information*. This information is transformed by simulation and scenario modeling into *knowledge* to form the basis of strategic planning. Plans are translated into targets to drive the management of operational performance, and so the cycle is complete (see diagram).

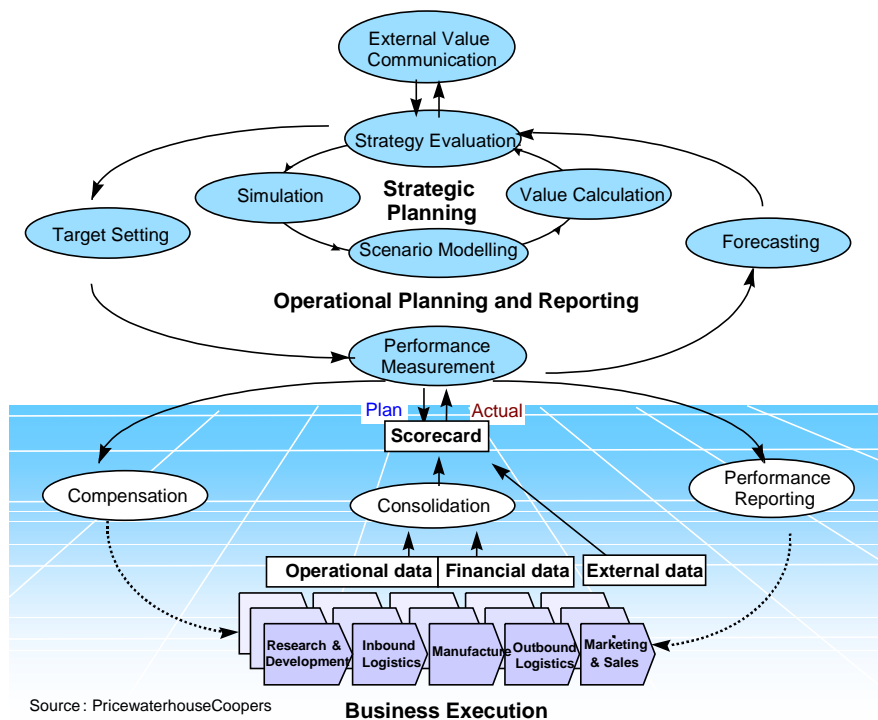


Fig. 7: The cycle of value management processes

The functionality required can be broken down into three areas: gathering, synthesizing and communicating information.



Gathering Information

Consolidating Internal Information

It must be possible to collect, reconcile and consolidate data from different dimensions and levels within the business - making complex organizational structures transparent. For example, many companies today have a global structure based around products or markets - but they may also need to consolidate actual or projected performance according to their geographical and/or legal structure, or even by function. This means numbers prepared according to different regional accounting standards must be restated on a common basis to meet external and internal reporting requirements.

Externally, as more and more European companies are becoming listed on the US markets, the ability to report results using US GAAP as well as IAS or local standards is becoming increasingly important. Speed is critical: increasingly decision-makers at corporate level demand access to information within days, not weeks. This means the consolidation process must be highly automated and data must be sourced directly from local accounting systems.

Internally, the system must be able to calculate alternative views of performance - allowing you to measure managers according to the factors that they are able to influence. Transfer pricing and other management accounting adjustments will be an important part of this. As well as consolidating historical performance, you need to be able to consolidate forward-looking information, including budgets, rolling forecasts and latest estimates. Therefore you need an integrated approach to consolidation and budgeting.

Many organizations grant a high level of autonomy to their business units: it is not uncommon for different business units to have different ERP system configurations or even systems from different vendors. It must be possible to consolidate results using both financial and non-financial data from all these sources.

Sourcing External Information

To provide unbiased business intelligence and a sound basis for decision-making, internal information must be viewed in context with information from *external* sources. With the advent of the Internet, accessing external information is no longer a problem - quite the opposite. The challenge is to find the facts you want among the vast quantities available. Continuously changing, often unstructured and typically qualitative rather than quantitative, external information is difficult to filter and assimilate. In the past, without appropriate tools, many organizations used external information in an informal, sporadic way: in the information age, the pace of change makes a more systematic approach essential.

Synthesizing Information

Value Based Management Accounting

The system must be able to report numbers calculated in accordance with GAAP and local accounting regulations in order to satisfy statutory accounting requirements. But it must also be possible to produce numbers for management decision-making and external value communication. This means adjusting numbers calculated on a statutory accounting basis, to arrive at the cash flows necessary to perform a valuation. Necessary adjustments include the exclusion of provisions, amortization and other non-cash accounting adjustments, as well as the calculation of value adjusted measures such as economic book values for use in EVATM⁸.

Cost and Capital Allocation

In order to analyze precisely where value is created or destroyed within the enterprise, you need to be able to trace the use of resources (capital, assets and period expenses) to the correct business unit, brand or customer/channel. The basis on which resources are allocated can have a powerful influence on the resulting valuation. Activity based costing (ABC) is an ideal basis for performing these allocations as it can dramatically reduce the distortions of more traditional approaches to cost allocation and apportionment. Unlike traditional ABC, however, value analysis requires the allocation of capital items as well as those from the income statement.

Automated Forecasting

The main value of historical information is the clues it holds to the future. With the right information base, it becomes possible to project historical performance forward. Recent developments in data mining, neural net technology and genetic algorithms make it possible to identify trends and correlations in your data in more sophisticated ways than were possible in the past. Much faster than bottom-up budgeting and less open to manipulation, automated forecasting lets you detect global trends that may not be apparent to local managers. While this should never be a *substitute* for planning and budgeting, it can be a powerful aid for decision-making.

⁸ EVATM was developed by Stern Stewart & Co.



Value Calculation

While it is still important to calculate the more traditional measures of profitability and liquidity, you also need a valuation engine capable of calculating all the commonly used shareholder value metrics, including EVATM, CFROI and TSR.⁹ It should be possible to calculate value for the business overall and for sub-divisions such as divisions and brands. The valuation engine will also be a key component of scenario modeling functionality (see below).

Business Risk Management

Every decision has a risk attached. Because VBM requires a shift in focus from historical to forward-looking information, the ability to quantify the risks associated with each possible course of action becomes even more important. Business risks can be divided into five main groups: strategic, financial, operational, commercial and technical. To make informed decisions, management must assess the materiality of potential risks in each of these categories, by mapping their likelihood against the impact they may have on the business. It is also vital to look at risk holistically - not as pockets of risk measured on different scales. Risks which appear minimal when viewed from a local perspective may take on a new significance when consolidated and viewed globally.

A system that provides a comprehensive view of the materiality of business risks, across the enterprise, will allow you to treat risk as an *asset* to be exploited for gain, rather than something to be avoided at all costs.¹⁰ Consider taking more risk - and therefore more reward - in areas that fall within your company's tolerance limits.

Simulation and Scenario Modeling

Business simulation can be used to model the complex and subtle interdependencies between financial and non-financial drivers of the business - revealing powerful and unintended consequences of decisions. It can be used to confirm hunches and generate new insights into how your business behaves. One benefit of simulation that often goes unrecognized is its education potential when used interactively. Business games or *flight simulators* based around the actual workings of the organization can play a valuable part in training and team-building, right up to board level.

⁹ For more detailed descriptions of various value metrics, see Alfred Rappaport, *Creating Shareholder Value*, Free Press 1998; and Andrew Black, Philip Wright and John E Bachman, *In Search of Shareholder Value*, Pitman 1998.

¹⁰ PricewaterhouseCoopers Financial & Cost Management Team, *CFO: Architect of the Corporation's Future*, Wiley 1997.

By developing in more detail promising scenarios generated from your simulations, scenario modeling offers a safe environment to test the full risk/return implications of a specific strategy, or compare a number of options. It can also show how the relative timing of initiatives can directly impact the value generated. Scenario modeling underpins the strategic planning process and is a key input to development of performance targets.

Communicating Information

Target Setting

In order to link strategy to execution, the strategy must be translated *top-down* into appropriate performance targets at all levels in the business. When personal targets are derived from and consistent with strategic goals, management has a means of aligning the entire organization with a common objective. When used in conjunction with modern *bottom-up* forecasting techniques such as rolling forecasts, this renders the traditional budgeting process obsolete.

Performance Management

At every level, the balanced scorecard must reflect value: the scorecard does not simply measure the performance of your business, it *drives* the performance of your business. The key is to link the right measures - via a value scorecard - to compensation and incentive schemes. This promotes accountability and increases awareness of value. Your system must support this process. For instance, you may want to use the simulation and scenario modeling tools to validate the scorecard: do the measures encourage the kind of strategic, tactical and operating decisions you need managers to take in order to create value? You may also want to take advantage of the latest interactive multi-media tools to design innovative solutions for communicating performance to teams of decision-makers.

External Value Communication

However well you succeed in communicating your strategy internally, the way in which it affects the company's share price will ultimately depend on the perceptions of external investors. Leading companies are experimenting with the publication of *value reports*, designed to share key elements of their strategy and performance, both historical and projected, with the markets. Despite the fact that care is needed to avoid the potential risks associated with publishing predictive information, there is a continuing trend toward this form of stakeholder communication - fueled by demand from the markets. With the Internet becoming an increasingly important channel for communicating with external stakeholders, your system must be capable of making selected information available on the World Wide Web.

Beyond ERP: Strategic Enterprise Management (SEM)

Modern ERP systems provide organizations with an integrated solution for planning, executing, and controlling business processes *horizontally* across the value chain. SAP R/3—the world-leading business software for client/server computing—integrates processes such as sales and materials planning, production planning, warehouse management, financial and management accounting, and HR management. This is achieved by using standard communication protocols and common objects between components, standard definitions for shared data, and standard rules for data access.

SAP Strategic Enterprise Management, SAP's next-generation solution, will extend these principles of integration *vertically* to support strategic management processes such as strategic planning, risk management, performance monitoring, and value communication. SAP SEM is tightly integrated with existing business execution systems, as well as SAP's extended financials (see Figure 15). It allows a *two-way* flow of information: corporate strategists can monitor performance continuously using feedback from the business execution systems, and adjustments to the strategy can be driven down to the operational level via new targets and KPIs.

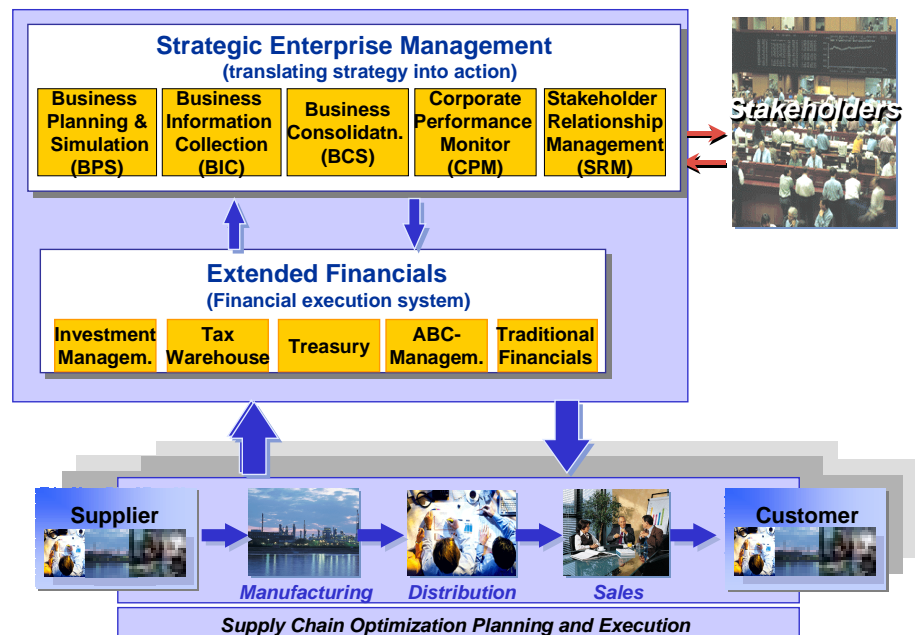


Fig. 8: SAP's Solution: Linking ERP with the Strategic Enterprise Management (SEM) System

Based on SAP's Business Framework and BAPI technology, which facilitate the speedy implementation of new solutions, SAP SEM comprises five application components:

1. Business Planning and Simulation.
2. Business Information Collection.
3. Business Consolidation.
4. Corporate Performance Monitor (including the Management Cockpit).
5. Stakeholder Relationship Management.

Underpinning all these components is the Business Information Warehouse, which makes it possible to analyze, manage, and query complex, multidimensional data.

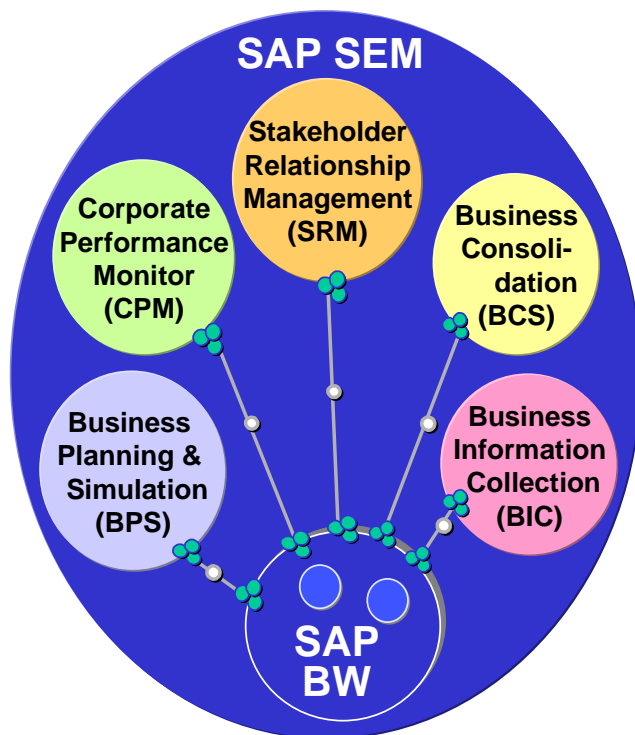


Fig. 9: SAP SEM: A Set of Integrated Analytical Application Components Operating on Multidimensional SAP BW Data Structures



SAP Strategic Enterprise Management (SAP SEM)

The software is structured functionally into five components and features a high level of integration in terms of the metadata and the application data. SAP's software architecture, the Business Framework Architecture, guarantees that the individual SAP SEM components can readily use each other's functionality when required.

Business Planning and Simulation (SEM-BPS)

SAP SEM supports the trend away from key figures that focus on the past such as those provided by quarterly and annual accounts. The trend is towards performance management that allows future-focused enterprise management and active management of stakeholder expectations. The SEM-BPS component, therefore, is designed to enable you to carry out comprehensive simulations and scenario analyses without investing excessive time and effort.

For strategic planning and specific operational problems, SEM-BPS provides facilities for dynamic simulations based on special tools and functions. Thus it is possible for example, to model and simulate the complex, nonlinear relationships between markets, competitors, and your own enterprise.

You define functional and organizational plan sections to model operations at the enterprise's resource level in the multidimensional SAP SEM data basis. The planning processor enables you to model the business activities for each planning unit and in the corresponding plan sections ranging from sales volume planning through materials requirements, cost, capacity and headcount planning, to profit and loss planning, financial budgeting and balance sheet planning in an integrated quantity and value flow.

SEM-BPS integrates different planning levels and, therefore, lets you build an integrated planning model from the strategic level to the resource allocation level.

With the integration of Activity-Based Management (ABM), SEM-BPS provides a specific decision support tool for operational and strategic resource optimization and cost management issues.

SEM-BPS enables close planning integration with ERP systems. You can transfer data from ERP systems to SAP SEM and use it there as the basis for the SEM planning process. The reverse is also possible. You can transfer planning results from SEM-BPS back to ERP systems e.g. to carry out more refined planning there.

SEM-BPS uses Business Consolidation (SEM-BCS) functions to consolidate planning scenarios at the push of a button. The Corporate Performance Monitor (SEM-CPM), with Balanced Scorecard functions and the Management Cockpit™, supports the visualization, analysis and assessment of planning scenarios.

Corporate Performance Monitor (SEM-CPM)

In the area of performance management, SAP SEM offers innovative concepts for the interpretation and visualization of Key Performance Indicators (KPIs). These concepts extend beyond the scope of regular management reporting. They allow the general inclusion of non-financial measures in performance management.

The product includes a software application that corresponds to the Balanced Scorecard concept of Robert S. Kaplan and David P. Norton. The Balanced Scorecard is a management methodology for communicating the enterprise strategy and converting it into operational targets for all levels of the enterprise. The Management Cockpit¹¹ is an ergonomic concept for structuring and visualizing performance indicators using large, easy-to-understand displays on the walls of a meeting room. The aim is to support and accelerate communication in the management team through the use of ergonomically optimized visualizations of decision-relevant information. The concept includes appropriate work and decision techniques in association with the Management Cockpit room. The SEM-CPM contains the software component of the Management Cockpit. The hardware and consulting services required to install a Management Cockpit room are optional and can be supplied by the SAP international subsidiaries in cooperation with N.E.T. Research.

The components SEM-CPM and SEM-BPS are not only linked at the data level but are also closely linked functionally. For example, the SEM-CPM facilities for structuring and visualizing performance indicators are used by the SEM-BPS component for modeling and analysis of planning scenarios.

Management Cockpit[®]

Faced with a mass of information, today's executives and managers must learn to look beyond the details to see the big picture. The Management Cockpit[®] is an innovative concept for the presentation of critical management information, providing collaborative intelligence that helps managers understand each other's business issues. The aim is to create an environment that encourages more efficient management meetings and boosts team performance via effective communication. To help achieve this, KPIs and information relating to critical success factors are displayed graphically on the walls of an ergonomically designed meeting room.

¹¹ The Management Cockpit, an SAP product originally developed by Professor Patrick M. Georges



Fig. 10: A Management Cockpit room supports efficient management meetings

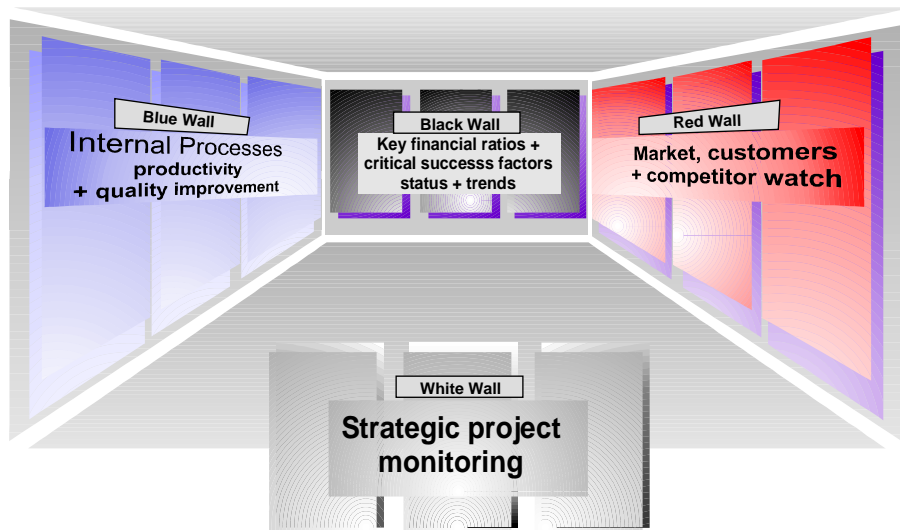


Fig. 11: All relevant controlling factors are clearly displayed in the Management Cockpit - the control center of the enterprise

Business Consolidation (SEM-BCS)

The SEM-BCS component provides complete functionality for the legally required consolidation by company and segment (for example by US GAAP, IAS and local GAAPs). At the same time it enables you to carry out management consolidations based on user-defined organizational units and user-defined hierarchies.

Using automation, SEM-BCS can significantly accelerate the consolidation process. The treatment of balance differences ranges from automated posting of currency-related variances to automatic creation of letters/e-mails/faxes etc. between organizational units for reconciling balance differences.

SEM-BCS allows consolidation simulations, for example, to determine the effects of mergers and acquisitions, different currency translation methods or changed consolidation rules.

The internal and external consolidations can be based on the same data basis. This harmonizes the financial accounting and management accounting systems. The data structures for the management consolidation, however, provide the required flexibility, for example, to analyze the consolidated revenue for customer groups, destinations, product groups or distribution channels.

SEM-BCS allows you to automate Economic Profit calculations at the level of internal organizational units, legal entities and at every desired group level. You can define the necessary adjustments and allocations in advance and have them posted automatically.

The SEM-BCS functionality is also used by the SEM-BPS and SEM-CPM components for consolidation of plan data and for reporting. SEM-BCS provides the relevant functions in the form of a consolidation engine.

Business Information Collection (SEM-BIC)

SEM-BIC provides the necessary infrastructure for SAP SEM's data collection.

The component automates the collection of structured data, for example key figures from the ERP system, stock prices from commercial database providers via the Internet etc., and supports the decentralized collection of financial figures from subsidiaries in a structured and systematic way.

A new feature is the web-based Editorial Workbench. This provides functionality for efficient collection of relevant information from the Internet.



The search process for documents in the Internet is automated to a large extent using automatically generated search strings. The information retrieved (brokers' reports, press reports, announcements on competitors' homepages etc.) is processed by the Editorial Workbench, indexed and saved in the data basis. It is then forwarded automatically to the relevant information receivers. These information items are linked to the evaluation objects in the multidimensional database and are therefore available for general reporting purposes.

Stakeholder Relationship Management (SEM-SRM)

The long-term success of an enterprise depends increasingly on its ability to establish solid partnerships with its various stakeholder groups. The most important of these groups are investors, customers, employees, partners, suppliers, social groups and state institutions.

Good, stable relationships with the stakeholder groups represent 'intangible assets'. They affect the capital market's valuation of the enterprise. Therefore, fostering these relationships is an essential component of value based management

SEM-SRM provides support for communicating enterprise strategy, current plan data, and strategic initiatives to the different stakeholder groups. This communication, however, is not all one way. Enterprises are showing more and more interest in finding out about stakeholder expectations in order to incorporate them into their strategic management processes.

The Internet is the ideal means of SEM-SRM communication, but conventional methods such as mailings are also supported.

Certain stakeholder groups, for example private investors, can be very large numerically and may demand a great deal of information. The information exchange with such groups can become a time-consuming and costly business. The SEM-SRM functionality can place investor relations queries in a workflow process and have them dealt with semi-automatically. SEM-SRM manages a stakeholder database to support the communication functions. This database would enable an enterprise, with justifiable expense, to issue and administer registered stock, and thus to keep a close eye on the stockholder structure.

Using SEM-SRM, the enterprise can more actively manage the expectations of analysts and the capital markets.



Advantages of the SAP Approach

Like the overall value based management approach, systems roll-out must be an evolutionary, not revolutionary, process. SAP's solution has major advantages over other available solutions.

Architecture

SAP SEM is built on state-of-the-art computing technologies based on the Business Framework architecture - capable of processing huge volumes of information and supporting rapid decision-making. Unlike other solutions on the market, SAP's implementation offers high levels of data integration by ensuring synchronization of information between SAP SEM and the underlying business execution systems. This open connectivity allows business components to interact with multiple business systems.

Functionality

Building on existing SAP R/3 functionality, SAP SEM includes functionality for advanced Business Consolidation and Business Information Collection, which links internal information with automated collection of relevant external information through the Internet. SAP SEM also supports advanced Business Planning and Simulation, based on both internal and external information - allowing you to model risks and rewards, and more effectively manage the uncertainties of the future. The Corporate Performance Monitor, including the Management Cockpit[®], is enhanced with industry-specific KPI templates. And the Stakeholder Relationship Management component facilitates communication with investors and other key stakeholder groups.

Ease of Implementation

SAP SEM is based on the Business Framework architecture, using SAP's Business Information Warehouse technology, with easy access for end users through the Business Explorer and its advanced data warehouse and OLAP capabilities. Ready-to-use BAPIs enable easy integration with your business execution systems and with those of external partners. Web-enabled end-user access, in combination with SAP's Business Framework architecture and other advanced SAP R/3 and Business Information Warehouse technologies, allows flexible and rapid deployment of SAP SEM, enterprise-wide.

Componentization

As with other SAP solutions, the Business Framework architecture lets you deploy SAP SEM components incrementally, as you need them. Because SAP uses state-of-the-art, object-oriented techniques, you can start deploying SAP SEM components today and integrate future components step-by-step.



Lowest Total Cost of Ownership

Companies implementing, or planning to implement, non-SAP SEM-type components are all too familiar with the expense involved. Using SAP R/3 as the foundation for SAP SEM, SAP customers will achieve lowest total cost of ownership, by virtually eliminating the additional costs and concerns over version compatibility that result from attempting to integrate multiple vendor products. SAP is focusing its development efforts on significantly enhancing the already impressive SAP SEM solution - bringing yet more cost benefits in future.

Optimizing the People Factor

SAP recognizes that the concepts and methods described in this paper are a radical departure for many organizations. Successful implementation of value based management requires a great deal more than advanced computing technologies and solutions. Companies implementing SAP SEM to improve their ability to generate sustained, superior returns must adopt new structures and practices, and ensure that people develop new skills.

SAP is widely recognized as a leading provider of client education services. Our stature as a leading provider of client/server business systems is due in large part to the concentration of outstanding business and organizational knowledge and industry expertise. That acumen is shared in many ways, including an extensive education network with comprehensive training programs that support successful adoption of SAP solutions within customers' everyday work processes. As part of our continuing commitment to the success of our customers, SAP will provide knowledge sharing and training forums as an integral part of our overall strategy for delivering the next generation Strategic Enterprise Management solution.

SAP will offer conferences and focus groups geared to executive decision-makers, along with a series of modular courses for practitioners, including business analysts, controllers and management/corporate accountants. With this initiative, SAP ensures a common understanding and knowledge of best practices among all participants in the implementation of Strategic Enterprise Management excellence, including SAP consultants, partners and customers.



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This white paper was written by Pricewaterhouse's Global Financial and Cost Management Team (Cendric Read) and by Juergen H. Daum, former Product Manager for SAP SEM, SAP AG, in March 1998

Find more information and additional articles about value based management and related topics at Juergen Daum's website at

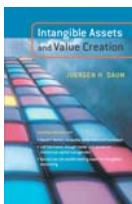
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John Wiley & Sons Ltd, Chichester, 2002
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Galileo-Press, Bonn, 2002
ISBN 3-89842-112-0

Working with some of the main contributors to a new model of enterprise and performance management as well as of accounting and corporate reporting and communications, Juergen H. Daum developed in his book the foundation for a new enterprise management system and introduces it from a very practical perspective. He is citing many examples and is describing concrete steps that companies must take to implement the management system for the 21st century. This is complemented with interviews with some of the leading experts like David Norton, coauthor of the Balanced Scorecard, Leif Edvinsson, pioneer and thought leader in intellectual capital management, and with Baruch Lev, the worlds leading expert in intangibles accounting.

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