TEAM MEASUREMENT SYSTEM: A BALANCED SCORECARD APPROACH TO PERFORMANCE MEASUREMENT

by

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ABSTRACT

The balanced scorecard approach to organizational performance measurement is gaining in popularity due to its strategic use of key non-financial measures (customers, internal processes, and organizational learning) along with some of the more traditional financial metrics.

This thesis outlines the process of development and implementation of such a system in a leading North Sea underwater construction company. In addition, it postulates the likely impact of such a system on organizational behavior and provides a framework in which to consider the development of an employee rewards system congruent with the organization's strategic objectives.

Finally, it outlines some of the remaining organizational challenges and potential pitfalls associated with developing and implementing a revised employee rewards system.

Thesis Supervisor: Paul M. Healy
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In particular, I would like to thank many of my colleagues at Rockwater who either participated in the survey or otherwise contributed to the compilation of this thesis.

Back in Cambridge, I acknowedge the support and guidance of Professor Paul Healy (thesis advisor) and Professor Maureen Scully (thesis reader) during the development of a thesis topic which has been at times akin to "shifting sands." In addition, I would like to thank Cherie Potts, my thesis editor, for her constructive feedback and prompt turnaround of the draft thesis material.

Finally, I would like to thank a more than understanding family -- Karin, Stephan, and Michael -- for their patience and tolerance of an often-reclusive husband and father.

DEDICATION

"Some hae meat, and canna eat,
And some wad eat that want it;
But we hae meat and we can eat,
And sae the Lord be thank it"

Robert Burns.

Fond memories of a childhood upbringing on a family farm in the North-East of Scotland are captured in the words of this traditional Selkirk Grace. My thanks go out to my late mother and father for their warmth, support, and encouragement during those formative years.

This thesis is dedicated to their memory.

CHAPTER ONE

INTRODUCTION AND EXECUTIVE SUMMARY

> *The rules of the military are five: measurement, assessment, calculation, comparison, and victory. The* ***ground*** *gives rise to* ***measurements****, measurements give rise to* ***assessments****, assessments give rise to* ***calculations****, calculations give rise to* ***comparisons****, comparisons give rise to* ***victories*** (emphasis added)
>
> Sun Tzu[1]

The modern world of business is in many respects analogous to Sun Tzu's strategic understanding of the art of war and the battlefield, where organisations now attempt to achieve victory by gaining a form of sustainable competitive advantage over their rivals.

Within the context of corporate organisations, the subject of **measurement** is often limited to static finance-oriented metrics which provide relatively little strategic insight into the organisation's ability to compete effectively in the corporate battlefield.

The purpose of this thesis is to discuss the development of a new dynamic performance measurement* system within an organisation engaged in the highly competitive market of underwater construction. It will (1) focus on the development and implementation process, (2) postulate its likely inpact on organisational

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* Throughout this document, the words "performance measurement" and "measurement systems" will refer to either **organisational** or **individual** performance measurement and measurement system, depending upon context.

behaviour, (3) attempt to identify the needs of the organisation in modifying its current employee rewards systems, and (4) propose a framework in which to develop a modified rewards system which is congruent with the organization's strategic objectives.

The thesis is structured as follows:

Chapter 1 Provides an introduction and background to the specific company and industry to be analysed, and includes an executive summary of the results of the thesis.

Chapter 2 Provides a review of current business practice in the area of *organisational* performance measurement.

Chapter 3 Provides details of the design, development, and implementation of a balanced scorecard approach to *organisational* performance measurement - the Team Measurement System - within Rockwater.

Chapter 4 Provides an analysis of the results of a survey of current employee attitudes relating to *individual* motivational factors and rewards systems.

Chapter 5 Provides a framework in which to redesign an employee rewards system congruent with the aims of the Team Measurement System with due consideration of some alternative approaches available to Rockwater.

Chapter 6 Offers some insights into the potential challenges and pitfalls associated with a revised system of *organisational* and *individual* performance measurements.

Chapter 7 Recommendations and conclusion.

1.1 INDUSTRY STRUCTURE AND COMPANY BACKGROUND

Before discussing the strategic role of performance measurement within the company under consideration, it is worthwhile to outline the prevailing industry structure of the company's primary market environment as well as provide some background on the actual company.

1.1.1 Industry Structure

The highly competitive North Sea underwater engineering and construction market went through a period of great turmoil and consolidation in the late 1980s following the 1986 oil price collapse. Prior to 1986, the needs of the customer (the major oil and gas companies) had been met by a fragmented amalgam of five specialist types of contractor:

- the Engineering Contractor;
- the Pipelay Contractor
- the Specialist Vessel Owner
- the Diving Contractor
- the Heavy-Lift Contractor

No one company could realistically claim to offer an integrated service combining all the skills/hardware that the above five specialist contractors could individually offer. Many field development-type contracts were subsequently awarded by the oil and gas corporations to two or three differing contractors along the lines of the following:

Project Phase	Contractor Type
Engineering & Procurement	Engineering Contractor
Prime Construction Phase	Pipelay Contractor and/or Heavy-Lift Contractor
Underwater Construction Phase	Diving Contractor (normally subcontracted to Prime Construction Contractor)

The Specialist Vessel owner then typically provided the appropriate vessel (e.g., diving support vessel, or multi-purpose construction vessel) on a subcontract basis to the Diving Contractor.

Following the 1986 oil price collapse, margins within the North Sea offshore construction industry reduced significantly. Downsizing and consolidation became prevalent among all the major contractors. As a result, by 1989 the number of competitors in each specialist field had dramatically altered:

	No. of Effective Competitors	
	Pre-1986	1989
Engineering	>10	5
Pipelay	6	4
Specialist Vessel Owner	>10	4
Diving Contractor	6	4
Heavy-Lift Contractor	3	2

For the Diving Contractors, access to the Specialist Vessel Owner became critical as more and more vessels tended to be "pooled" under one consortium or another. It was becoming more apparent that a form of competitive advantage could

be achieved by a contractor that was able to offer project services including pipelay, provision of specialist vessels, and diving services totally "in-house."

This industry restructuring was to provide the catalyst for the formation of Rockwater in January 1990.

1.1.2 Company Background

The parentage of Rockwater is rather complex. Essentially, the company was formed as a 50/50 joint venture in January 1990, jointly owned by Halliburton (a diversified U.S. engineering and oilfield services corporation) and Smit International (a Dutch marine contracting company).

Prior to the Rockwater strategic alliance, both companies had representation in the highly competitive North Sea underwater engineering and construction market via existing subsidiaries. In this market arena, Halliburton (via their engineering and construction offshoot, Brown & Root) were represented in a variety of forms:

(i) Brown & Root Ltd. - a Specialist Vessel Owner

(ii) 2W - a Diving Contractor

(iii) EMC - a Pipelay Contractor

(iv) Brown & Root Vickers - an Engineering company.

Smit International, on the other hand, primarily used its subsidiary SOCON (Smit Offshore Contractors), as both a Specialist Vessel owner and niche Pipelay Contractor.

The Rockwater joint venture therefore consisted of pooling the vessel assets of Brown & Root Ltd. and all of the assets of 2W (the Halliburton contribution) with

all of the assets of SOCON (the Smit International contribution). The objective of this alliance was to provide an integrated underwater construction market service that could compete in both the emerging Field Development market as well as holding traditional market share in the maturing Diving Services market.

Whilst appearing outwardly complementary, 2W and SOCON were indeed culturally opposite entities. 2W had been regarded as an aggressive, entrepreneurial diving contractor specialising in lumpsum construction activities in the North Sea. In contrast, SOCON was regarded within the industry as a more conservative supplier of specialised marine services.

Whilst both companies had their share of successes (and failures) in the 1980s, it became obvious from the outset that a revised approach to contracting in the 1990s would be required in order to remain competitive -- one requiring much closer focus on the customer.

Hence the formation of a joint venture* with a new name, new culture, and new vision: to become "a leading underwater contractor . . . providing the highest standards of safety and quality to our clients."**

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* In November 1992, Rockwater reverted to a 100% subsidiary of Brown & Root Marine following a buyout of the Smit International share by Halliburton.

** The original Mission Statement which said "a leading underwater contractor" was subsequently modified to becoming "**the** leading underwater contractor."

1.2 EXECUTIVE SUMMARY

From the outset of this thesis research, it was the author's implicit intent to propose and recommend a specific employee rewards system for the company under consideration. It was initially postulated that some form of simple, numerical formula could be adequately developed to link employee remuneration with the objective results of a recently implemented organizational performance measurement system -- the Team Measurement System (TMS).

In hindsight, such a linkage is not yet feasible at Rockwater, for a variety of reasons. First, it assumes that extrinsic reward is the main motivational factor for individual behavior and ignores the necessity to maintain and develop the intrinsic factors.[2] Second, the company appears unaware of the employee reward system design choices available to it. This issue can be addressed by education and further benchmarking of other companies' reward system practices. Finally, it is the author's assertion that not all the preconditions necessary for the successful implementation of such a scheme are yet in place within Rockwater. Four areas of specific concern remain:

(i) Measurements - Do the measurements currently in use in the TMS truly represent the areas of greatest organizational leverage and can they be considered adequately objective?

(ii) Culture - Does the present organizational culture truly foster open communication, idea sharing, honest feedback, trust, and participation?

(iii) Managerial Inertia - Have the present mid- and senior-level managers the willingness, ability, and incentive to truly embark on an irreversible process of employee empowerment?

(iv) Human Resource Management - Does a comprehensive human resource management strategy exist?

Notwithstanding the above, the actual process of researching this thesis has proved of immense benefit to the author and, hopefully, more importantly, of value to the organisation under consideration. There are multiple strategic choices facing the company in how it approaches the whole subject of human resource management and this thesis perhaps offers a framework in which to consider the next step in developing its strategy in this respect.

NOTES

1. Sun Tzu, "The Art of War," translated by Thomas Cleary. Boston: Shambhala, 1991, p. 30.

2. Kohn, A., "Incentives Can be Bad for Business," *INC*, January 1988, pp. 93-94.

CHAPTER TWO

REVIEW OF CURRENT BEST PRACTICE IN ORGANISATIONAL PERFORMANCE MEASUREMENT SYSTEMS

Traditionally, the overriding measurement of organisational performance has been with a system of measurement by numbers; Rockwater was no exception. Inordinate amounts of resources are allocated to the monthly cycle of accounting, reconciling, accruing, tracing, and allocating costs to projects, departments, and business units. All too often the information generated, whilst financially accurate, is only of consequence historically and results in an underlying tendency of management to extrapolate future success/failure based on historical trends and an overwhelming belief that somehow the "numbers will be managed"[1] to reduce, for example, Cost of Goods Sold or Overhead Expenses and thus lead to future targets being achieved.

However, past organisational success by no means guarantees future survival, and it is interesting to note that of the *Fortune 500* Industrials listed in 1970 only two-thirds of the companies survived to make the 1983 listing.[2] Whilst the 1980s were the decade of the corporate takeover or leveraged buyout, they also could be heralded as the dawn of an era in which the rate of change within business, especially international or global business, was quickening -- or at least the decade in which this rate of change was recognised by the Western world.

Concepts of achieving sustainable competitive advantage reached prominence among corporate management as organisations grappled with new initiatives in quality and customer satisfaction as a means of adapting to the pace of environmental and competitive change.

Nevertheless the market-makers, analysts, and investment managers increased their quest for more and more financial information on last quarters results; last quarter versus same quarter last year; news on plant layoffs and shutdowns and other noteworthy items to allow them to "read the entrails" and move the stock price and therefore, more often than not, the management remuneration plan. It is indeed unfortunate that management initiatives in organisational learning, training and development, customer satisfaction, and continuous improvement did not receive the same amount of critical analysis as the accounting manipulations (in accordance with GAAP, of course) reported on an ever-more-frequent basis.

It is not unrealistic, therefore, to categorize the majority of current organisational performance measurement systems as being Industrial Age[3] in both content and focus. These systems typically have a strong tendency to be:

- dominated by financial management
- biased by external reporting
- no measure of value drivers
- no measure of intangibles
- no measure of learning and change
- no motivation/incentive for long-term behaviour.

While such systems were originally effective in supporting the corresponding Industrial Age management practices (column 1 of Exhibit 2.1), they offer little strategic insight into the performance of the organisation of the future (column 2).

<Exhibit 2.1> Comparison of Paradigm Shift in Management Practices

	Industrial Age	Organisation of Future
Job Organisation	Functional	Cross-functional
Structural	Hierarchy	Empowered Workforce
Basis of Output	Mass Production	Linked to Suppliers & Customers
Geographical Focus	Regional/National	Global
Employee Skills	Production-oriented	Knowledge Workers
Adaptive Culture	Incremental Change	Continuous Improvement

As companies contend with this paradigm shift in management practice, it is vital that their organisational performance measurement system undergoes the same metamorphosis.

Two examples of current best business practice in the field of strategic performance measurement will be considered:

(i) Balanced Scorecard - a conceptual framework

(ii) Analog Devices, Inc. - an actual case study of a system in place.

2.1 BALANCED SCORECARD

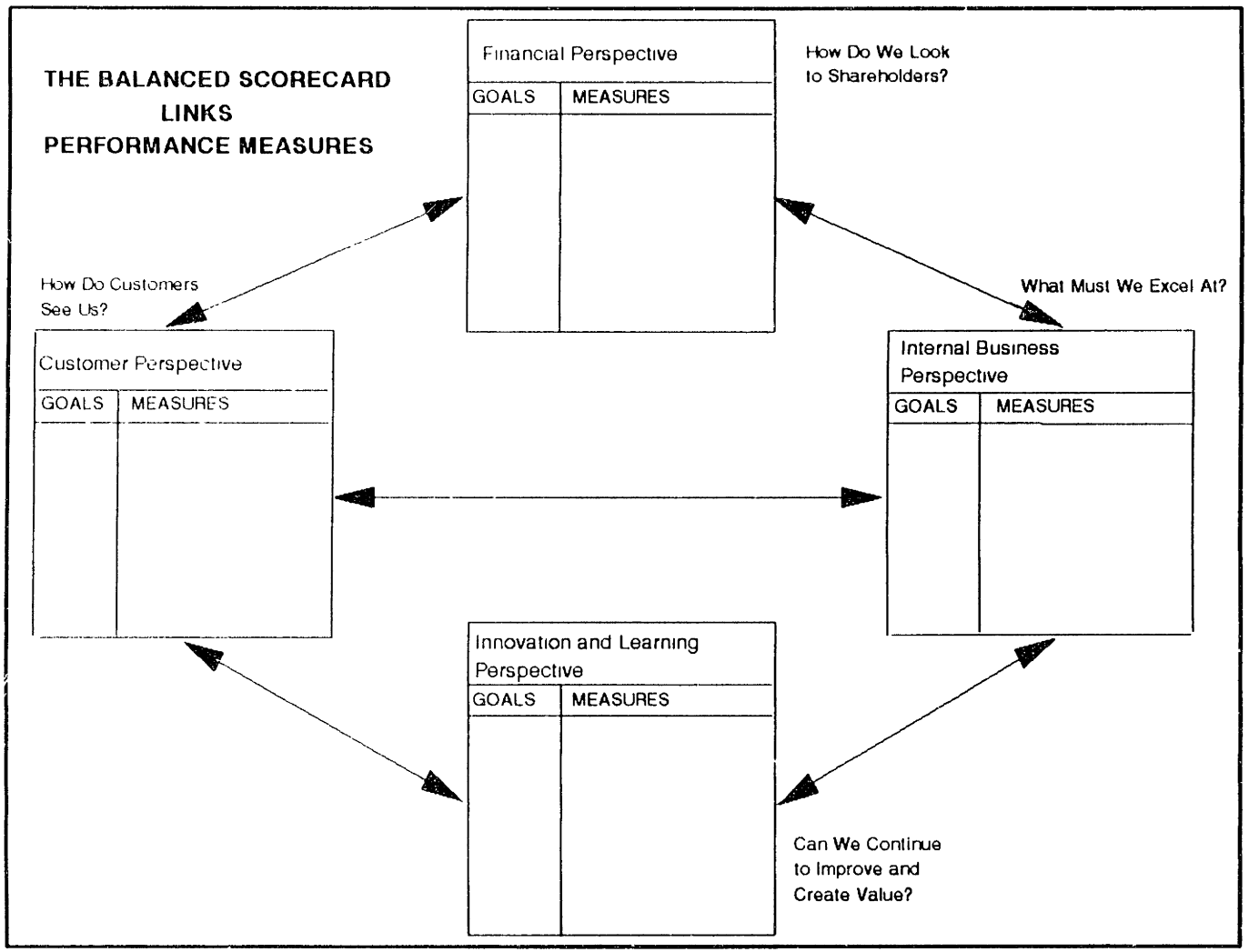
The "Balanced Scorecard"[4] approach to organisational performance measurement is not new in terms of its constituent parts. However, it does attempt to strategically align four important measurement perspectives into a form of usable management report card which captures "lead" indicators of future corporate health and direction as well as the "lag" indicators of traditional financial measures. The four perspectives in question include:

Financial Perspective -	How do we look to our shareholders?
Customer Perspective -	How do customers see us?
Internal Business Perspective -	What business processes are the value drivers?
Organisational Learning Perspective -	Are we able to sustain innovation, change and improvement?

In short, it attempts to balance the measures of financial value with the factors which create value (see Exhibit 2.2).

If one subscribes to the theory "what you measure is what you get," the success of a balanced scorecard approach is highly dependent upon the effective translation of the organisation's goals in terms of strategy and vision into meaningful measures which will positively influence organisational behaviour.

<Exhibit 2.2> The Balanced Scorecard



Once implemented, it is intended that the scorecard will lead to the positive influence of organisational and individual behaviour by **strategy** and **communication** rather than dictating targets by **control**. Such an approach is wholly consistent with the aims of Continuous Improvement and Organisational Learning.

Having discussed a conceptual approach to strategic performance measurement, we will now consider the actual case of Analog Devices, Inc. (ADI), a Massachusetts-based company that produces integrated circuits and systems for the high-end data acquisition market, and its approach to organisational measurement.

2.2 ANALOG DEVICES, INC

> *A problem with management information systems is that they are strongly biased toward reporting financial information to stockholders and government agencies. Unless quality improvement and other more fundamental performance measures are elevated to the same level of importance as financial measures, when conflicts arise, financial considerations win out. To address this issue, we designed a division scorecard that reports only the barest of financial information and places greater emphasis on quality improvement goals.*
>
> Ray Stata
> Chairman and CEO,
> Analog Devices, Inc.[5]

At ADI quality improvement goals are explicitly measured in terms of setting *half-life*[1] targets for improvement of various key internal and external measures.

---

[1] A half-life for improvement is determined in the following manner: for each increment of time that equals this half-life, the defect level drops 50%. For example, if the initial defect level was 10% and the defect half-life was six months, then after the first six months, the defect level would be 5%, after the next six months, 2.5%, and so on.

These half-life targets are normally expressed in months and typically vary depending upon the organisational and technical complexity of the process requiring improvement (see Exhibit 2.3).

<Exhibit 2.3> Target Half-Lives (months)

Organisational Complexity	Technical Complexity: low	Technical Complexity: med	Technical Complexity: hi
hi	14	18	22
med	7	9	11
low	1	3	5

The selection of appropriate measures within ADI is focused along two dimensions: external (customer focus) and internal (manufacturing processes). In the original scorecard developed by ADI in 1987, the interdependency between these internal and external measures is explicit (see Exhibit 2.4).

<Exhibit 2.4> Interrelationship Between Internal and External Measures

Internal / External	Time to Market	Process PPM	Manufacturing Cycle Time	Yield	Generalized Cycle Time
Products	●		○		
Defect Levels		●		○	
On-Time Delivery		○	◒	●	
Lead Time		○	●	◒	
Price		◒	○	●	
Responsiveness					●

Degree of Interrelationship:
● = high
◒ = medium
○ = low

The key factor in this system is the understanding that the half-life or slope of the learning curve is contingent upon how long it takes to identify and prioritise the causes of the problem and to eliminate those causes. This in turn is often dependent upon the complexity and bureaucracy of the organisation.

Put in another way, the half-life is effectively determined by the rate of organisational learning. The relevance of this relationship is supported by Stata in his assertion that "the rate at which individuals and organisations learn may become the only sustainable competitive advantage, especially in knowledge-intensive industries.[6]

The concept of a learning organisation[7] is fast becoming the predominant area of management focus in the '90s. Schein (1992) considers that organizational learning is defined as "increasing the capacity of the organization to adapt and to innovate in an increasingly turbulent and unpredictable environment" and differs from individual learning in that "the organization has learned when the capacity to adapt is shared across all of the units along the entire value chain, and the organization is able to implement its capacity in actions that get desired results."[8]

It is interesting, therefore, to use the half-life concept in the context of being an active measure of the ability of an organisation to learn.

Having developed a set of high-leverage strategic measures, ADI has subsequently implemented a Quarterly Scorecard (see Exhibit 2.5) which explicitly records actual performance versus benchmark targets. These benchmark targets are set by senior executives in a top-down fashion and include more conventional

<Exhibit 2.5> Analog Devices Corporate Scorecard

	End FY89	Q190		Q290		Q390		Q490		FY90	
FINANCIAL	ACT	BHMK	ACT	BHMK	ACT	BHMK	ACT	BHMK	ACT	BHMK	ACT
Revenue											
Revenue Growth											
Profit											
ROA											
QIP											
On Time Delivery (to FCD)											
% CRDs not matched											
Excess leadtime											
Labor turnover											
Manufacturing Metrics: IC Products											
Outgoing PPM											
Process PPM											
Cycle time											
Yield											
Manufacturing Metrics: Assembled Products											
Outgoing PPM											
Process PPM											
Cycle time											
Yield											

New Products	Actual	FY87 Plan	Actual	FY87 Plan	Actual	FY87 Plan	Actual	FY87 Plan	Actual	FY87 Plan	Actual
Bookings Pre-86 Prod											
Bookings Post-85 Prod											
Total Bookings											
	FY89Plan	FY87Plan	FY90Plan			FY87Plan	FY90Plan			FY87Plan	FY90Plan
1992 Ratio (FY90Plan/FY87Plan)											
Forecast 3rd Year CAGR											

financial and new product performance measures as well as the quality improvement goals described above.

In terms of employee rewards systems, ADI left the existing compensation system effectively unchanged. All employees received a base salary and participated in a company-wide bonus scheme:

Level	Bonus Payment
Corporate	Payout Factor x 0.4 x Base Salary
Employee	Payout Factor x 0.05 x Base Salary

The Payout Factor was set annually by corporate.

However, in 1987, ADI did introduce an additional incentive bonus plan linked to its operating indicators while retaining the company-wide performance bonus tied to meeting ADI's financial goals. This additional plan for divisional personnel only paid out bonuses when a Division Net Income threshold was passed while achieving an On-Time Delivery and Defect Level targets (in 1990 these threshold targets were 90% and 250ppm, respectively.

In the period 1987-1990, ADI achieved considerable success in meeting their seemingly high quality improvement targets (see Exhibit 2.5).

<Exhibit 2.5> Actual ADI Performance, 1987-1990

	7/87	7/90	11/90
On-Time Delivery	70%	96%	--
Late Orders	30%	4%	--
Outgoing Defects	500ppm	50ppm	--
Yield	26%	51%	--
Stock Price	$24	--	$6

Source: Art Schneiderman, VP Quality, ADI, 1993.

Unfortunately, in the same period, the ADI's stock price collapsed along with the rest of the semiconductor industry, leaving the company potentially vulnerable to a hostile takeover in 1990. The company then refocused its attention on boosting its share price by embarking on a cost-cutting, business restructuring program.

This strategic reprioritization of managerial attention was not without cost. The quality improvement program effectively stalled and the majority of non-financial indicators suffered accordingly.

What are the implications of this case? It is all too easy to conclude that Wall Street assigns little or no value to non-financial quality improvements. However, the answer is not that simple.

Much of the problem lay with financial market downgrading of future growth expectations of ADI. In the period 1970-1985, ADI had achieved 27% compound annual income growth; the corresponding figure for 1985-1990 was 8%.

In addition, the level of competition in the marketplace intensified with a result that, as a minimum, all of the benefits of the cost improvements associated with the quality gains were passed onto the customer in terms of lower prices.

In this instance, quality improvements have effectively assisted the company in holding position rather than achieving sustainable competitive advantage. Perhaps the more interesting question to ask associated with this case is whether ADI would have survived the industry downturn without such an initiative? In the words of a Lucky Goldstar poster on a South Korean computer manufacturing plant wall:

"To Improve Is To Survive"

(Author's note: ADI stock is currently trading at $21-¼ as of 4/12/93.)

NOTES

1. For a more interesting and exhaustive discussion on the development of current cost management systems, see:
Kaplan, R.S. and Johnson, H.T., *Relevance Lost - The Rise and Fall of Management Accounting*, Harvard Business School Press, 1987.

2. Geus, A.P. "Planning as Learning," *Harvard Business Review*, March-April, 1988.

3. Adapted from an internal Rockwater presentation document produced by Renaissance Strategy Group, Lincoln, Massachusetts.

4. Kaplan, Robert S. and Norton, David P. "The Balanced Scorecard - Measures That Drive Performance" *Harvard Business Review*, Jan-Feb 1992.

5. Analog Devices: "The Half-Life System," Harvard Business School Case 9-190-061, rev 7/12/91.

6. "Organizational Learning - The Key to Management Innovation: Ray Stata," *Sloan Management Review*, Spring 1989, p. 64.

7. For an excellent introduction into this subject, see Senge, P.M., *The Fifth Discipline: The Art and Practice of the Learning Organization.* New York: Doubleday, 1990.

8. These remarks by Ed Schein were made at the MIT Sloan Fellows Convocation on October 24, 1992.

CHAPTER THREE

DEVELOPMENT AND IMPLEMENTATION OF A TEAM MEASUREMENT SYSTEM

In order to fully understand the strategic relevance of organisational performance measurement within Rockwater, it is worthwhile to trace the development of the company's first attempt at a "balanced scorecard" (known within Rockwater as the Team Measurement System) back to its origins within the framework of Rockwater's overall Total Quality Management (TQM) philosophy.

This section will then conclude with a description of the three main stages in the Team Measurement System (TMS) development and implementation process:

- Selection of Measures
- Shareholder/Customer Involvement
- Implementation of Team Measurement System

3.1 DESCRIPTION OF ROCKWATER TQM PHILOSOPHY

Since 1990, Rockwater has attempted to create an organisation which has the ability to continually adapt to its market environment and is committed to improving its products and services by adopting a process of continuous improvement. The business rationale behind this strategy of Total Quality Management (TQM) is clearly an attempt to offer a differentiated service to our customers and would ultimately lead to Rockwater becoming recognised as "**the** leading underwater contractor." Only in this way could future growth and investment be reasonably

expected to be sustained as the competitive forces within some of the traditional segments of the market were likely to continue to yield low-margin outcomes for the foreseeable future.

Of course incorporating TQM into its business strategy is by no means unique to Rockwater as much of Western business had already tinkered with TQM and other quality initiatives throughout the 1980s in an attempt to improve their competitive position and in light of the warning of W. Edwards Deming: "... The only survivors at the end of two decades will be companies with constancy of purpose for quality, productivity and service."[1]

Within Rockwater, TQM is considered as the effective interaction between three equally significant constituents:

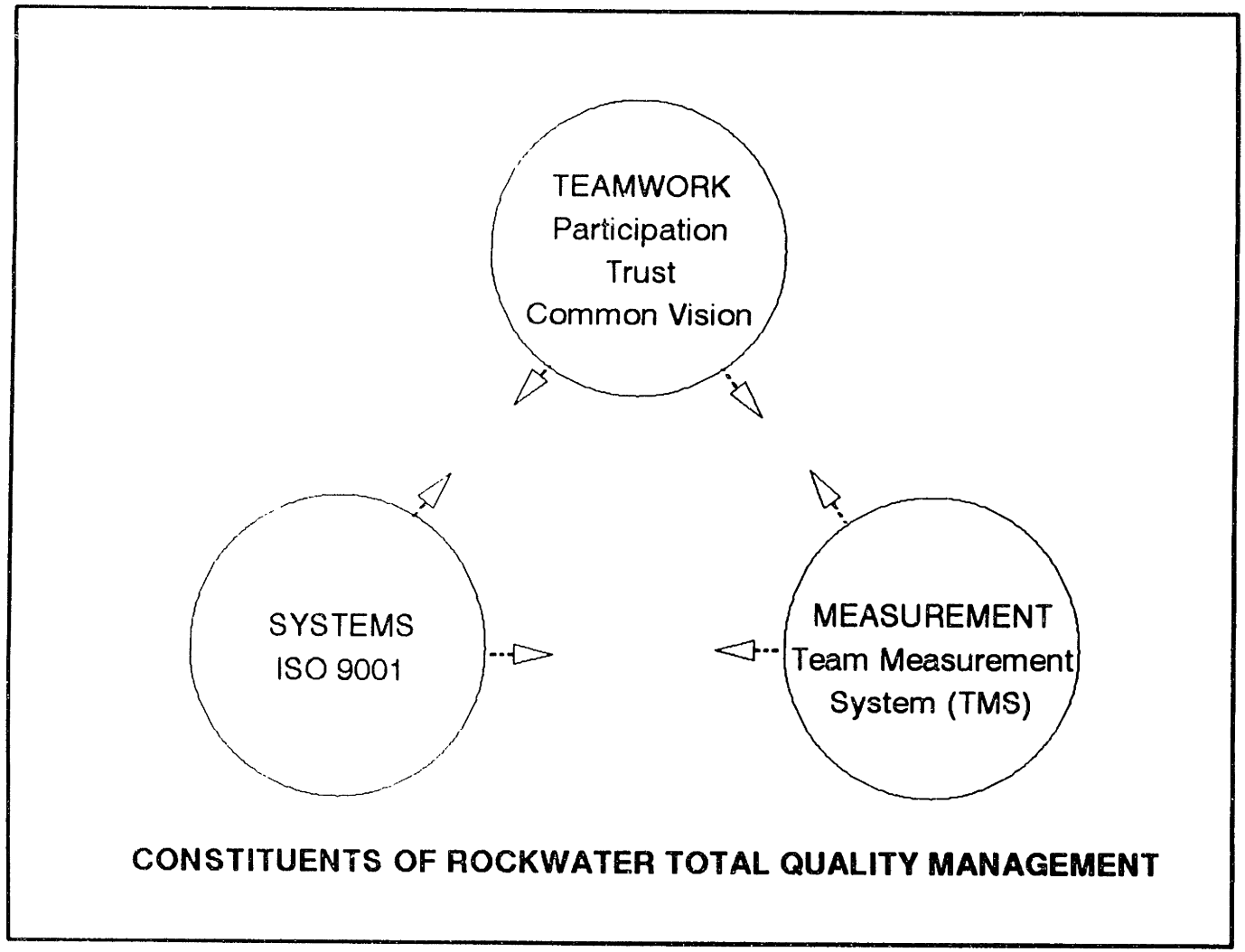
- systems
- teamwork, and
- measurement.

This is best represented graphically by Exhibits 3.1 and 3.2.

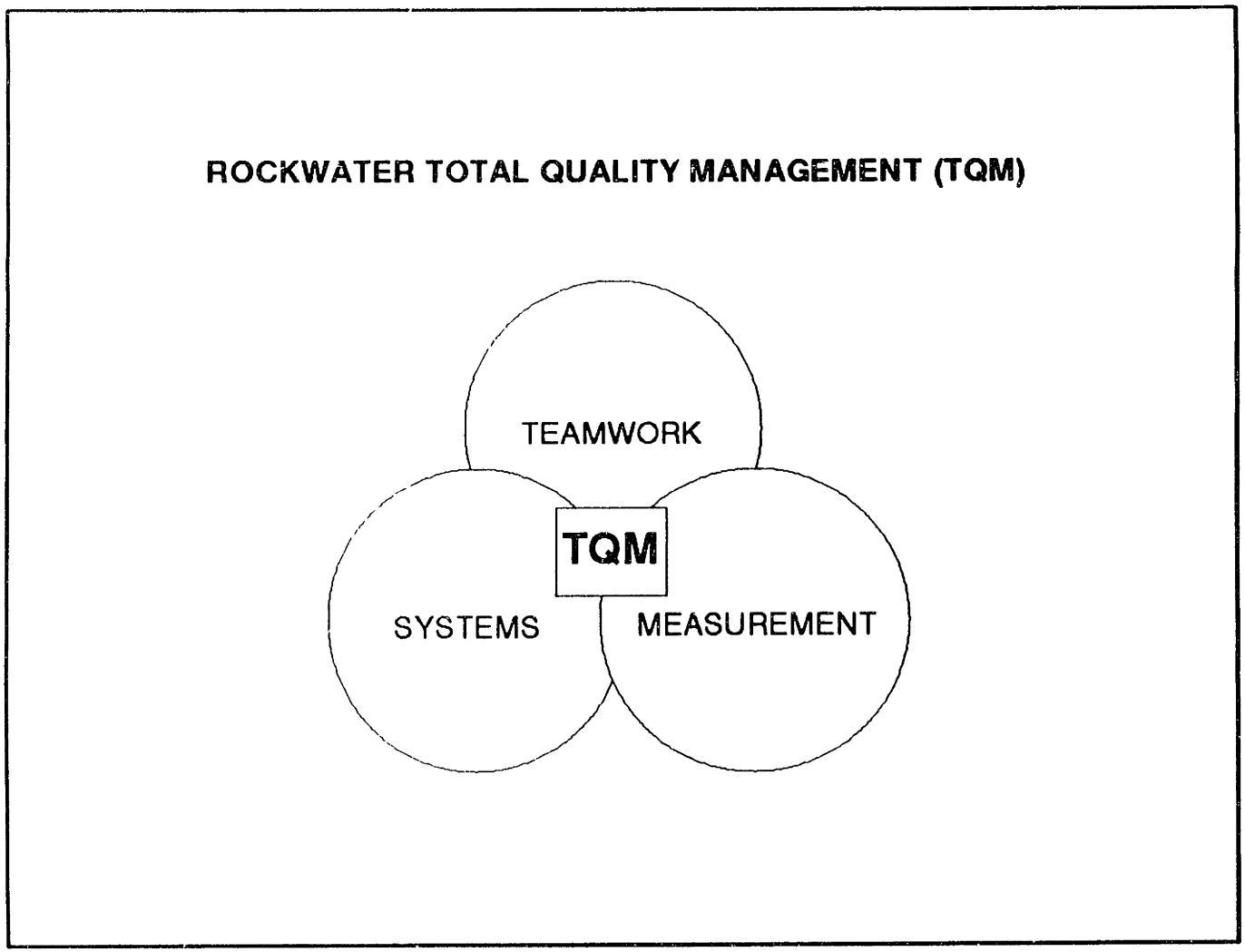
3.1.1 Quality Systems

The Quality System path that Rockwater followed was largely conventional in that much of the initial thrust came from the organisation's Quality Department. As a result, the company became the first underwater construction company in the North Sea to achieve the ISO 9001 quality award from DnV (Det Norske Veritas) in 1991 which in certain respects contained several of the criteria required in the Malcolm Baldrige award in the U.S. Whilst this quality award is primarily for the

<Exhibit 3.1> Constituents of Rockwater Total Quality Management



<Exhibit 3.2> Rockwater's Total Quality Management Program



development and subsequent adherence to a consistent set of procedures and does not fully address aspects of employee involvement, organisational learning, and continuous improvement, it was indeed an important first step in the development of an overall TQM philosophy.

Having initiated a set of quality ***systems*** the next step on the agenda was a process of developing common vision, participation and trust, important cultural building blocks in achieving ***teamwork***.

3.1.2 Teamwork

Why *teamwork* and not a set of *well-focused individual contributors*?

One obvious answer is one of adoption of the latest in vogue management fads--everyone is doing it! However, the real rationale is somewhat deeper -- underwater construction is, by its very nature, teamwork-oriented. Placing two divers on the seabed 500 feet below the surface of the hostile North Sea in zero-visibility conditions is utterly dependent on the teamwork, trust, and cooperation of the entire crew of that diving-support vessel. Well-focused individual contributors may well be very productive in individual task settings, but at the sharp end of Rockwater's operations the requirement is quite different.

Therefore, three major company-wide initiatives were instigated in 1991:

(1) Management Training And Development Program, and

(2) Linkage of Process, and

(3) Management Team Building.

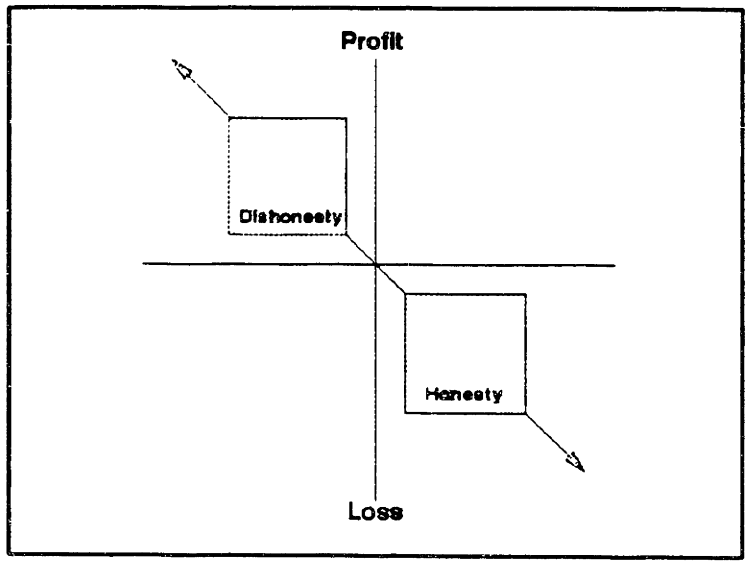
What follows is a brief description of each of these initiatives.

(1) Management Training And Development Program

Early in 1990 the company recognised the need for an extensive amount of employee education and training at all levels in order to develop a sense of common vision in terms of the organisation's goals, and participation and trust between individuals in project teams, functions, and departments. The trust element cannot be under-emphasised as it is fundamental to the success (or failure) of the subsequent balanced scorecard approach to organisational performance measurement that the company will adopt.

The company had been created from two diverse cultural constituents and had had its strategy shaped around a focus on customer satisfaction by its senior management. To many in the company the customer had previously been regarded as an external obstacle to profit-making opportunities. Indeed, it is not unrealistic to suggest that within the industry the tendency, when dealing with the customer, to associate HONESTY with financial LOSS, and DISHONESTY with PROFIT (see Exhibit 3.3) had previously prevailed. How, then, to invoke the cultural change to a customer-focused organisation?

<Exhibit 3.3> Honesty v. Loss



The first major initiative, therefore, was an ambitious management training and development program targeting management personnel (both onshore and offshore) as well as line supervisors. The program was split into five main modules totalling approximately five weeks of full-time training spread over a three-year period.

Module 1 - Management Of People Performance

Module 2 - Interpersonal Skills

Module 3 - Leadership

Module 4 - Management Techniques

Module 5 - Strategic Management

The primary objectives of these modules were Shared Values and Style,* while the two secondary objectives were Skills and Staffing.

Without broad-based managerial understanding of the importance of the above four factors and their implicit "fit" in an overall management framework,** the prospects for organisation-wide communication and understanding of the company's strategic vision would be indeed limited.

In parallel with the Management Training Development Program another initiative in developing teamwork and mutual understanding of the company's internal processes was undertaken:

(2) Linkage Of Process (LOP)

In the summer of 1991 Rockwater embarked on a project of self-discovery. The Rockwater value chain or, as it was known within the company, its basic Linkage Of Process (see Exhibit 3.4) was extensively flow-charted and analysed showing all the known interactions between departments and functions.

As a result of this formal analysis the LOP task force recommended the implementation of several changes within the company, the most significant of which was the reorganisation of the reporting structure of the North Sea Business Unit (the

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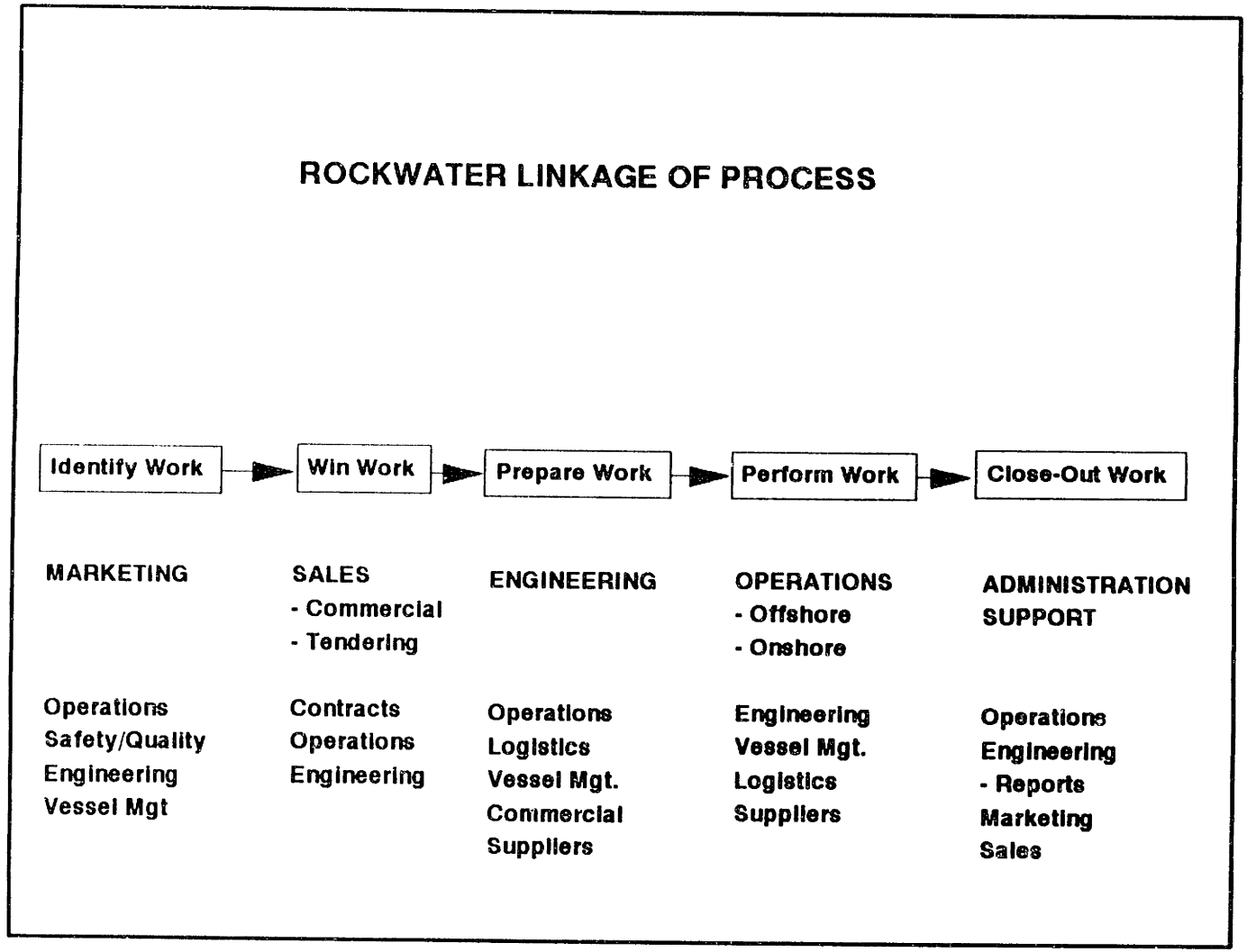
* Shared Values does not necessarily have to imply homogeneity, lack of diversity, or "Yes men." It does imply, however, that there is a Common Vision in terms of the goals of the organisation. How this is actually achieved is contingent upon questioning, probing, querying validity of assumptions and other hallmarks of "learning".

** See the example of the Seven-S model in Chapter Four for further details.

<Exhibit 3.4> The Rockwater Linkage of Process



largest strategic business unit (SBU) within the organisation). This resulted in a matrix organisation structure being adopted with three countries -- UK, Norway and Holland -- and two main functional departments -- Resources and Commercial -- forming the immediate management structure of that SBU. Not only did this organisational structure attempt to harness economies of scale with respect to resources -- vessels, equipment and materials -- across borders but also attempted to ensure that the Commercial Sales & Marketing approach was consistent throughout the North Sea whilst retaining local area contact.

Matrix management structures,[2] although academically attractive, require careful attention to the interpersonal conflicts which tend to occur in dual-reporting situations. Nonetheless the imposition of such a management structure within Rockwater did assist in breaking down inter-geographical barriers and provided managers within the matrix with a means to readily assess the impact of their actions not only in a functional but also in a profit-center responsibility context.

The third initiative relating to teamwork was considerably more conspicuous and consisted of senior management participating in the ultimate of team building techniques -- outdoor survival at the John Ridgeway School of Adventure.

3.1.3 Management Team Building (John Ridgeway School Of Adventure)

To date over ninety Rockwater personnel have gone through this physically demanding outdoor program of team-building activities in the remote northwest

corner of Scotland.* Over a period of five days individuals drawn from a diverse background of disciplines and functions are thrown together into teams with a common goal -- physical and mental survival...

With the inclusion of the Ridgeway School of Adventure into the corporate team-building "portfolio", two parts of the TQM puzzle, ***systems*** and ***teamwork***, were now either in place or under development. The third and perhaps ultimately the most powerful link in terms of influencing organisational behaviour, ***measurement***, was now the focus of attention in the quest for an integrated philosophy of TQM within the organisation.

3.1.4 Measurement

The organisational behaviour impact of measurement systems can be very profound indeed. "What you measure and how you measure it have a powerful, often invisible, influence on what you think and do,"[3] and in the majority of cases "what you measure is what you get" in terms of organisational control and behaviour. This theory is forcibly supported by Goldratt in his assertion,

> *Tell me how you measure me, and I will tell you how I will behave. If you measure me in an illogical way ... Do not complain about illogical behaviour.*[4]

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* As a result of its innovative use of this technique, Rockwater has attracted significant media attention in the UK culminating in a TV documentary entitled, "The Cutting Edge," which followed 24 Rockwater participants through a typical course. The program was aired on national television in January 1993.

The desire for a performance measurement system that would yield a positive influence on organisational behaviour while still retaining shareholder, customer, and internal growth interests was therefore the basis of the decision to adopt a balanced scorecard approach to performance measurement within the company.

In April 1992, Rockwater embarked on the development of what was to become known as the Team Measurement System (TMS) under the direction of the UK Continuous Improvement Manager, Sian Lloyd-Rees. Rockwater was assisted by Robert Kaplan and David Norton, the proponents of this powerful system, in setting up what was to become our first high-level balanced scorecard.

3.2 SELECTION OF MEASURES

From the outset it was important that the measures which were to be developed were owned by the ultimate information providers and end-users. A task force was therefore created which canvassed management opinion throughout Rockwater regarding what type of indicators ought to be measured; this, in turn, produced a list of over 100 potential measures. These were subsequently prioritized into approximately twenty or so strategic measures which, it was hoped, would yield the type of management indicators not only congruent with the company's mission to be "the leading underwater contractor..." but also with the following key considerations in the Rockwater Value Chain or Linkage of Process:

Identify Needs

- Understand customer
- Shape the tender

Win Work

- Effectiveness of bidding
- Better ways to do work

Prepare Work

- Resource constraints
- Internal efficiency/rework
- Equipment preparation

Perform Work

- Operating efficiency/rework
- Safety
- Project management

Closeout Work

- Manage client interface
- Obtain and act on feedback

Before selecting the final measures it was clear that, similar to what Zairi[5] advocated, the ultimate TQ-based measures ought to have the following characteristics:

Correctness: measure precisely what is intended

Preciseness: be exact about what is being measured

Timeliness:	reflect the present situation;
Objectivity:	process-based rather than based on opinions;
Comprehension:	easily understood and interpreted.

These characteristics mirror the requirements of Merchant[6] in that measurements for an effective *results-oriented control system* should,

1. assess the *correct* performance areas -- the ones for which results are truly desired;
2. be *precise* - not determined only by crude estimations;
3. be *timely*; and
4. be *objective* - not subject to manipulation.

By early September the following nineteen measures had been selected, many of which include reasonable surrogates or proxies for the actual desired indicator:

<Exhibit 3.5> Rockwater Selected Performance Measures

FINANCIAL PERSPECTIVE	
F1	ROCE
F2	Cash Flow
F3	Project Profitability
F4	Reliability of Forecast
F5	Backlog
CUSTOMER PERSPECTIVE	
C1	Price Competitiveness Index
C2	Customer Ranking Survey
C3	Customer Satisfaction
C4	Market Share/Account Share
INTERNAL BUSINESS PERSPECTIVE	
I1	Number of Hours Spent with Client
I2	Tender Success Rate/Cost Per Tender
I3	Rework
I4	ISRS/Safety Incidents
I5	Project Performance Effectiveness
I6	Project Closeout Cycle
GROWTH AND LEARNING PERSPECTIVE	
L1	Revenue Per Employee
L2	% Revenue from New Services/Products
L3	Staff Attitude Survey
L4	Staff Suggestion Scheme

A more detailed explanation of these measures and their relationship to strategic organisational objectives may be found in Appendix I.

3.3 CUSTOMER/SHAREHOLDER INVOLVEMENT

While the process of brainstorming, discussing and selecting the twenty or so measures was ongoing, both our shareholders and some of our major customers were approached for their views on our initiative and on areas which they would like to see addressed. Their input was critical in confirming the validity of our approach as there is often a tendency to concentrate inwardly and to ignore vital external interests, i.e., customer needs and expectations, and shareholder interests. Not only were these select customers and shareholders interviewed by our third-party consultants but also, more importantly, a representative of our shareholders attended Rockwater's TMS roll-out seminar in October 1992, outlining his expectations and aspirations for the Team Measurement System to an audience of over 80 managers and line supervisors. In addition, various client video interviews were displayed at the same session, effectively reinforcing some of the findings from our research.

One interesting finding from discussions with our primary North Sea customers (typically only numbering 20 companies) was the fact that they could be effectively segmented into two main customer categories:

Tier I Relationship-Based Customer

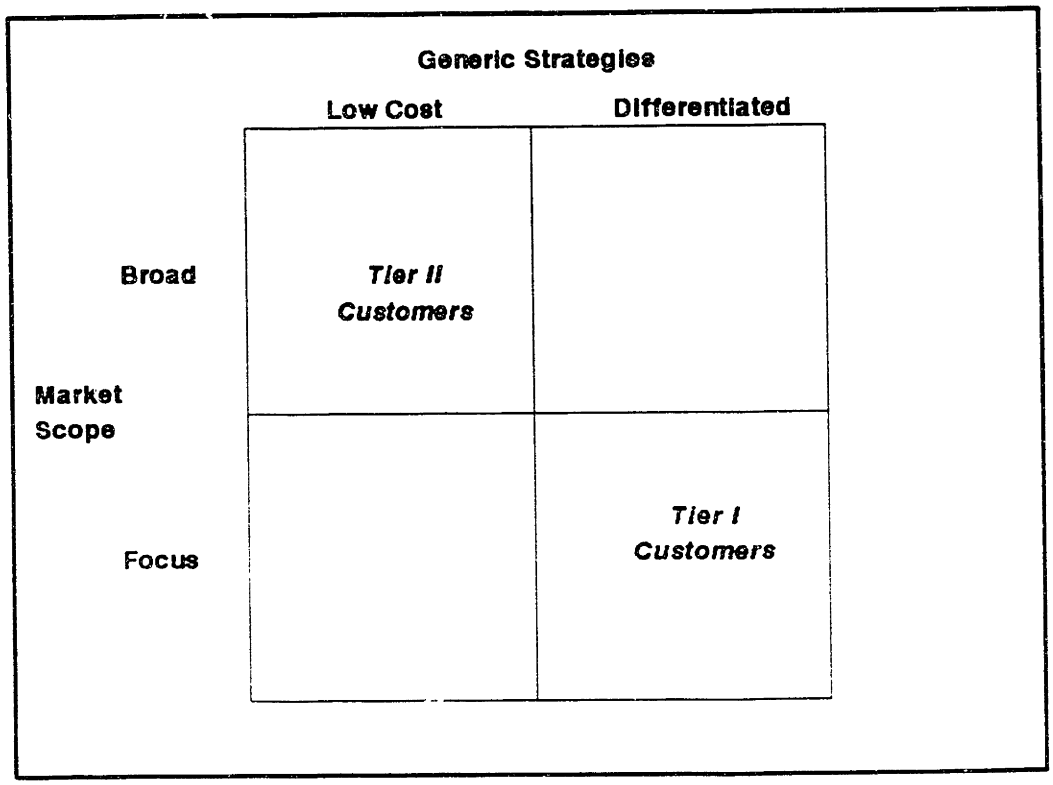
Companies looking for value-added service from a contractor and not necessarily looking for the low-price tender. Emphasis on value for money.

Tier II Price-Based Customer

Companies looking for the most competitive prices whilst adhering to contract quality and safety specifications.

This presented Rockwater with the classic strategist's dilemma of whether its competitive advantage would be seen as a **differentiated** or a **low-cost** provider of goods and services. The second dimension to consider is market scope and whether Rockwater will cater to the **broad** market with its goods and services or whether it would become **market-focused.** This is conventionally represented in the matrix shown in Exhibit 3.6.

<Exhibit 3.6> Strategy vs. Market Positioning



Source: Hax/Majluf, 1991, p. 84.

In this instance while the rationale for segmenting the market into Tier I and Tier II customers (some customers could be treated as Tier I on one contract and Tier II on others) is market-driven, it is clear that attempting to follow low-cost and differentiated strategies simultaneously within the company is fraught with danger and conventional academic wisdom warns of the likely consequences i.e. no competitive advantage.[7] In this instance Tier I customers imply a need for a differentiated approach, while Tier II customers require a low-cost approach. Is this indeed a viable strategy ?

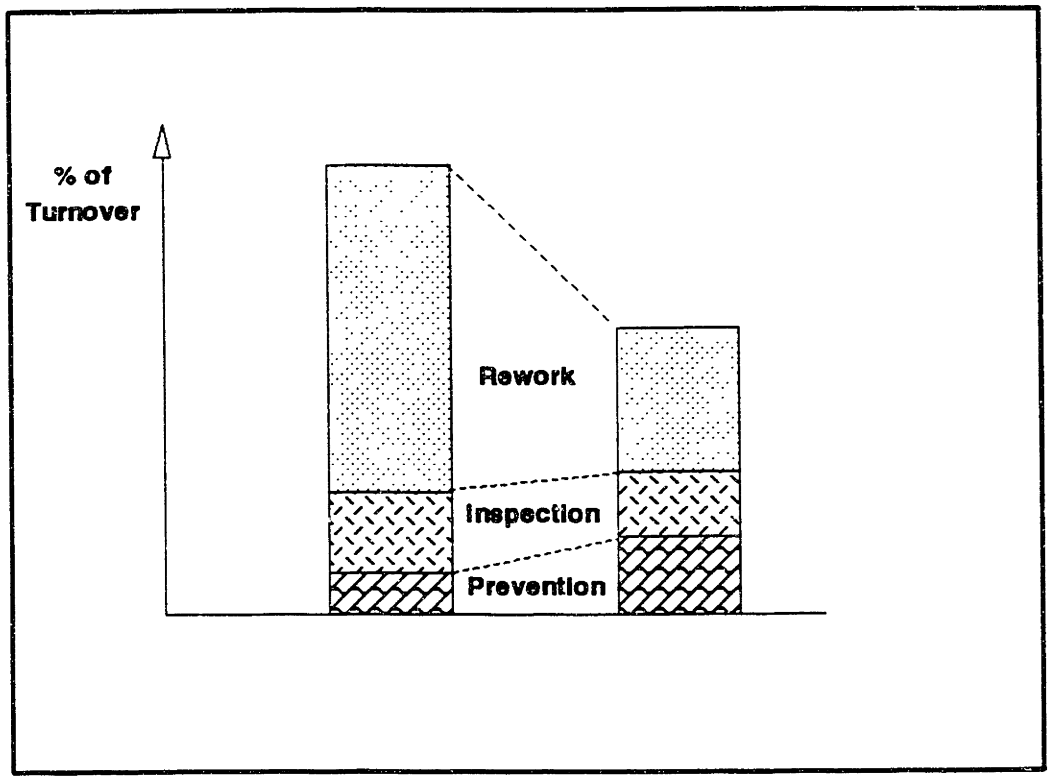
Becoming a low-cost producer while still offering a differentiated service is not as paradoxical or as doomed to failure as it originally seems. The Rockwater approach to becoming a low-cost producer is two-pronged:

- Internal (reduction in own cost base)
- External (reduction in customers' total project costs)

Internally, organisational learning and continuous improvement will reduce the propensity for rework to occur (see Exhibit 3.7) effectively reducing our cost-base.

Externally, the recognition of being the lowest total-cost provider of project services to our clients (not necessarily the lowest tendered cost for an individual project) will only come from providing a standard of product and service which enables customers to reduce their own associated project costs (e.g., contract administration, inspection, interface costs with other contractors, and engineering

<Exhibit 3.7> Impact of Rework



department overhead). Recognition of the Rockwater influence on the overall value chain is therefore critical to this approach and requires not only awareness of the contractor/client interface but also of the contractor/supplier interface and its impact on the value chain.

3.4 IMPLEMENTATION OF THE TEAM MEASUREMENT SYSTEM

Whilst the conceptual and developmental phases of any strategy require close attention to detail, the implementation phase is probably the most critical if the chosen strategy is to succeed. The Rockwater TMS is no exception to this rule. The implementation process can be described in three stages:

- Data collection
- Analyses and interpretation
- Communication and feedback.

Data Collection

At the time of writing the implementation process is still ongoing within Rockwater but it is already apparent that developing conceptual measures is somewhat easier than physically metering them. Some measures, of course, can be accessed directly from existing information systems (e.g., accounting system). Others required additional data collection systems to be initiated, an activity which to date has been both time- and labor-consuming.

The longer-term implementation strategy is to develop an integrated MIS (Management Information System) which can collect, collate, and process the relevant measures in a timely and consistent fashion. However, at this time many of the measures are collected manually using independent systems and then consolidated manually at the balanced scorecard report level.

Analyses and Interpretation

Having collected and presented the relevant data the next phase is interpretation of the output -- what does it mean? Some of the more quantitative process measures (or, indeed, constituent submeasures) may be analysed using Statistical Process Control (SPC) techniques to determine whether the process is within statistical control limits. From these analyses common causes and special

causes can be separately identified and action plans developed for process improvement. The use of half-life indices for certain measurements is also a useful method of identifying the rate of performance improvement and their subsequent use in pragmatic target setting can be very helpful.

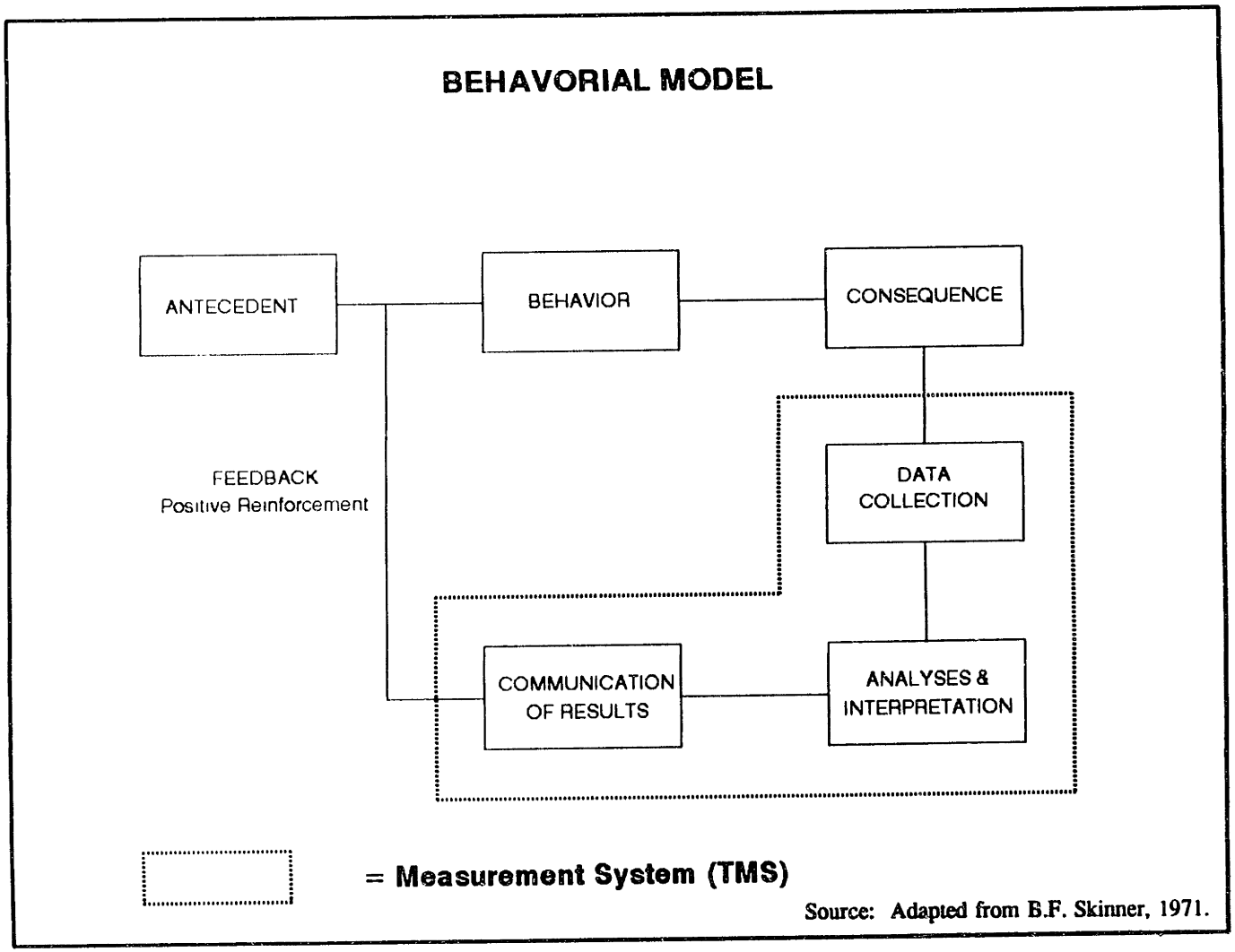
Communication and Feedback

And so the measurement wheel turns around. We are now back at the point of feedback into "what you measure is what you get." In order to fully understand the criticality of this stage of communication and feedback, consider an alternative interpretation of a Behavioral Model originally postulated by Skinner (1971)[8] and subsequently graphically depicted by McCoy (1992).[9]

In this model, the following terminology definitions are applicable:

Antecedent:	Anything that precedes behavior and acts as stimulus to initiate, e.g., management tools such as policies and procedures, instructions, work assignments etc.
Behavior:	In this context it is defined as the employee performance that takes place as the results of the antecedent stimulus.
Consequence:	The business outcome which results from an aggregation of employee performances.
Feedback:	Measurements provide feedback to the individual and as a result subsequently acts as an additional antecedent. Very often it displaces the original antecedent and consequently modifies the outcome.

<Exhibit 3.8> Skinner's Behavior Model



Source: Adapted from B.F. Skinner, 1971.

Having conceptualised a measurement system, developed a set of key indicators, and collected and analysed the relevant information, we are at the point in time with potentially the most organisational impact: how do we feed it back into the company with the maximum leverage?

Clear, concise communication of the results is the first prerequisite. The language obviously ought to be kept simple with as many graphical images used as is possible. A picture paints a thousand words and time-domain graphs probably remain the best medium to display trends.

Management employees at all levels share in a responsibility to convey or drill down the results through the organisation -- this responsibility cannot be over-emphasised if the full benefits of the TMS are to be realised. In the initial stages, regular feedback workshops using a Question and Answer format ought to be employed wherever practically possible. The company's two main newsletters -- *Interface* and *Impact* -- also provide important feedback.

When using feedback to individuals as a means of positive reinforcement it is worthwhile to remember the asymmetry between positive and negative reinforcement: negative reinforcement will often produce strange, unpredictable, and undesirable behavioral change, whereas positive reinforcement encourages behavioral change usually in the intended direction.

Finally, possibly the greatest organisational leverage of the Team Measurement System can be attained by formally linking it to the Employee Rewards System either extrinsically or intrinsically. Further discussion on this related issue is included in Chapter Five.

NOTES

1. Deming, W.E., "Out of the Crisis," MIT Center for Advanced Engineering Study, Cambridge, MA, 1986, p. 155.

2. For an interesting strategic discussion on this subject see Bartlett, Christopher A. and Ghoshal, Sumantra "Matrix Management: Not a Structure, a Frame of Mind." *Harvard Business Review*, July-August 1990.

3. Ohmae, Kenichi, "Companyism and Do More Better" *Harvard Business Review*, January-February, 1989.

4. Goldratt, Eliyahu M. *The Haystack Syndrome*. New York: North River Press, 1990, p 26.

5. Zairi, M. *TQM-Based Performance Measurement: Practical Guidelines*. Letchworth, England: Technical Communications (Publishing) Ltd., 1992.

6. Merchant, K. A., "The Control Function of Management," *Sloan Management Review*, Summer 1982, p. 46.

7. Porter, M. *Competitive Strategy*. New York: Macmillan, 1980, pp. 41-44.

8. Adapted from Skinner, B.F. *Beyond Freedom and Dignity*. New York: Knopf, 1971.

9. McCoy, T.J., *Compensation and Motivation*. New York: AMACOM, 1992, pp. 33-34.

CHAPTER FOUR

ANALYSIS OF EMPLOYEE MOTIVATION AND REWARDS SURVEY

Ultimately the success or failure of a new system or strategy is contingent upon its implementation. The success of a new set of performance measures is equally susceptible to the vagaries of non-acceptance and non-implementation by both the information providers and information users.

As part of my research into the implementation of the Team Measurement System at Rockwater, a small sub-set of Rockwater employees in Aberdeen, Scotland, was interviewed regarding not only their current knowledge of TMS but also their opinion on the subject of Employee Rewards and Motivation systems in general.

4.1 SURVEY METHODOLOGY

From the outset the purpose of this survey was not to achieve a statistically profound analysis of attitudes within Rockwater but rather as anthropological backup to personal discussions with employees whom, up to six months ago, the author had either line-supervised or otherwise influenced in his previous position of Operations Manager. This point is important as many of the points and issues raised quite possibly may not have been aired by non-personal data collection techniques (e.g., a postal survey) or more if the author had been an official part of the "establishment"

of Rockwater as opposed to a thesis researcher. This second point is worthy of further explanation.

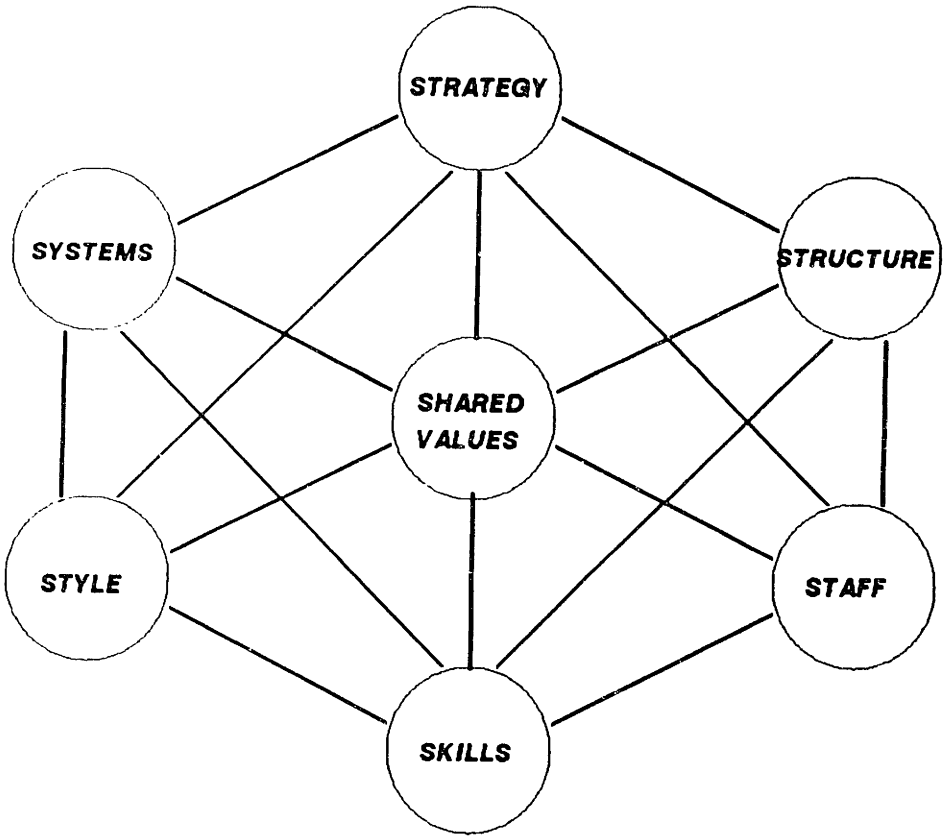
Traditionally Rockwater has been a very hierarchical company and the position of Operations Manager was seen by many as the focus of power and authority. The position was results-orientated (i.e., short-term financial)--where schedule and budget targets often justified (in the author's mind) the methods used to achieve such results.

Most of the managerial focus had therefore traditionally been on the hard "S" components (Strategy, Systems and Structure) of the Seven-S Model (see Exhibit 4.1), with the soft "S" components (primarily Shared Values and Style) only recently beginning to be addressed through the Management Training Development Program.

In the heat of the operational environment some of the old habits involving the use (abuse?) of power and authority still tended to surface and, more importantly from a cultural view, were still seen to be tolerated or accepted by the company. As a result these norms of behaviour inhibited the empowerment process and reinforced the role of the hierarchical decision maker within the company.

Despite this historical backdrop and the author's own tenure in the role of Operations Manager (November 1990 - May 1992), many of the issues raised during the interview process were spontaneous and candid -- attributes which Rockwater has endeavored to encourage over the past three years.

<Exhibit 4.1> The SEVEN-S Framework



THE SEVEN - S FRAMEWORK

Source: Pascale and Athos, 1981, p. 81.

4.1.1 Survey Technique

Seventeen employees were interviewed from December 16-18, 1992 in Aberdeen. For the purposes of the survey, the interviewees can be categorised as follows:-

Category	Sample Size
Managers	8
Supervisors	4
Employees	5

Both full-time and long-term contract employees were represented in the survey.

The format of the interview session involved the completion of a questionnaire (shown in Appendix II) which was intended to extract current employee opinions on the following five key areas:

1. Individual motivation factors
2. Specific company HR practices
3. Level of awareness of alternative employee rewards systems
4. Level of inter-departmental communication
5. Level of awareness of the Team Measurement System

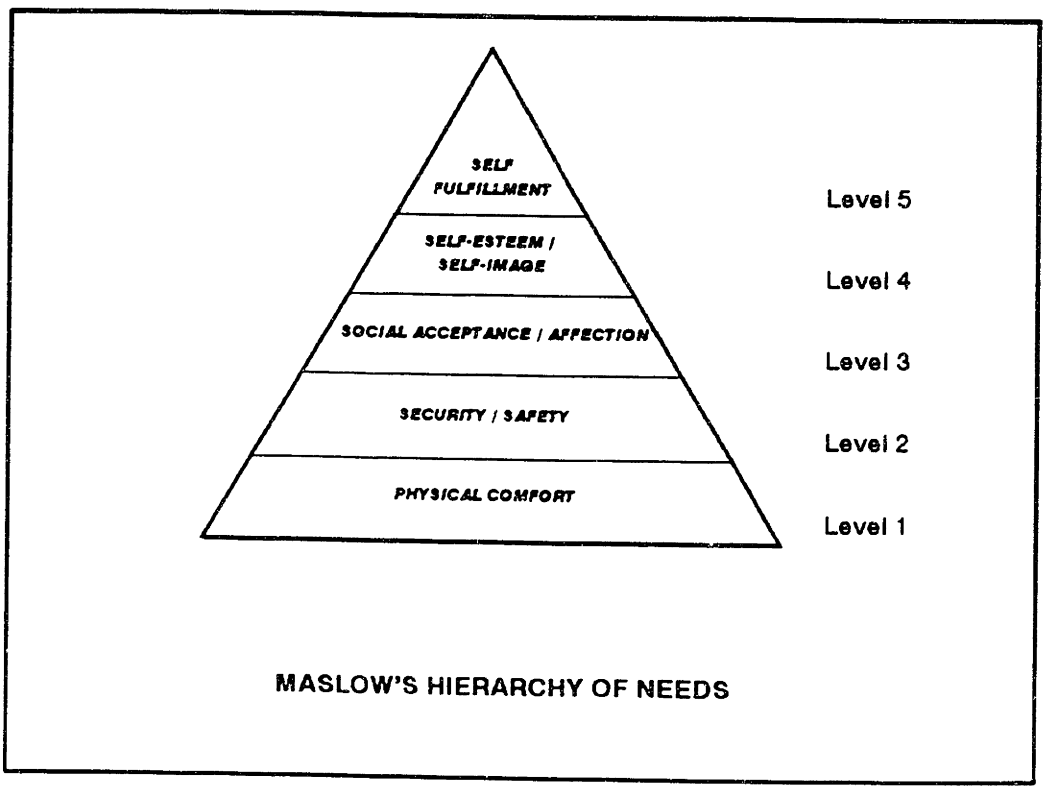
4.2 SUMMARY OF SURVEY RESULTS

4.2.1 Motivational Factors

What motivates people in the workplace? This age-old question has been the subject of significant academic research for the better part of this century. Maslow[1]

was responsible for producing the ***hierarchy of needs*** which has influenced much of the subsequent literature on factors affecting employee motivation (see Exhibit 4.2).

<Exhibit 4.2> Maslow's Hierarchy of Needs



Further work on this subject led Herzberg to carry out extensive organisational research by asking the following two questions:-

- What factors lead employees to experience extreme satisfaction with their jobs?
- What factors lead employees to experience extreme dissatisfaction with their jobs?[2]

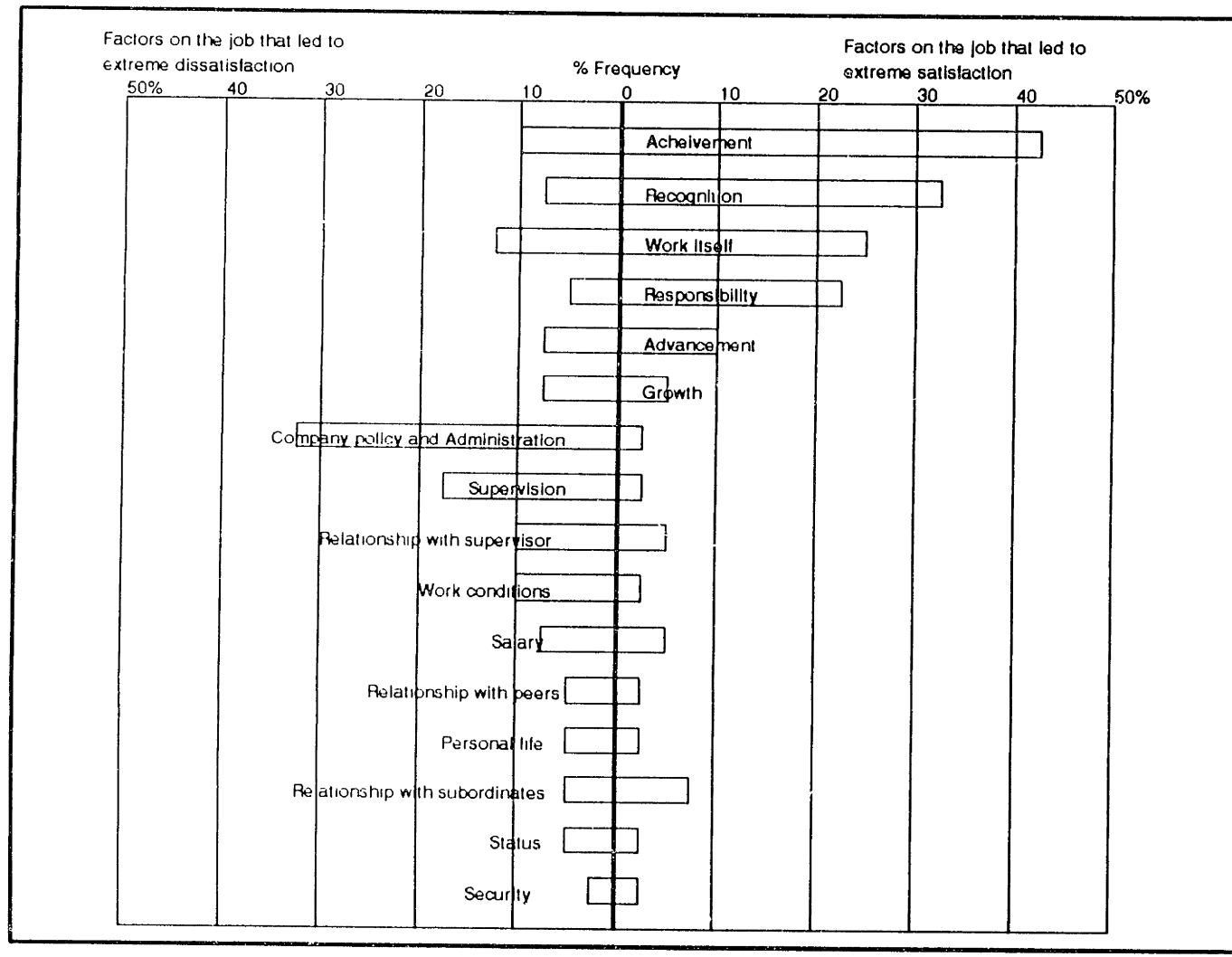
From the results of his research (see Exhibit 4.3) Herzberg postulated a theory of the existence containing what he defined as "hygiene factors" connected to *job context* (analagous to levels 1, 2 and 3 of the Maslow hierarchy) and "the motivators" connected to *job content* (analagous to levels 4 and 5 of the Maslow model).

Part of the analysis of the survey results would be to establish a correlation (if any) between the Herzberg findings and the factors of motivation currently explicitly stated at Rockwater.

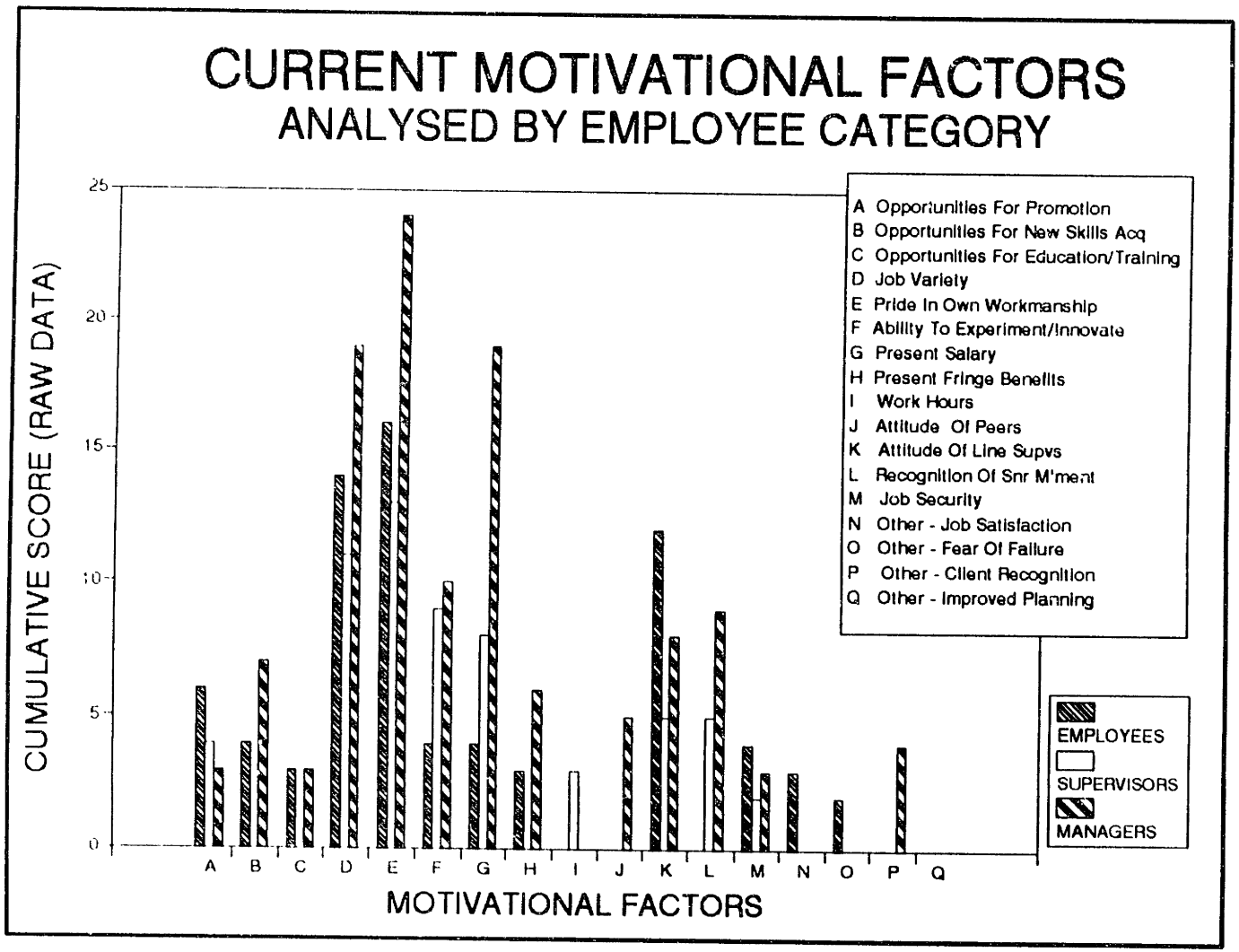
In this survey, interviewees were asked to rank the top five out of a selection of thirteen generic motivational factors, both for their current work environment and also for their hopes or desires in the future. The respondents choices were weighted as follows: 1st choice = 5 points; 2nd choice = 4 points, etc.

The summary weighted data results are given in Exhibits 4.4 and 4.5.

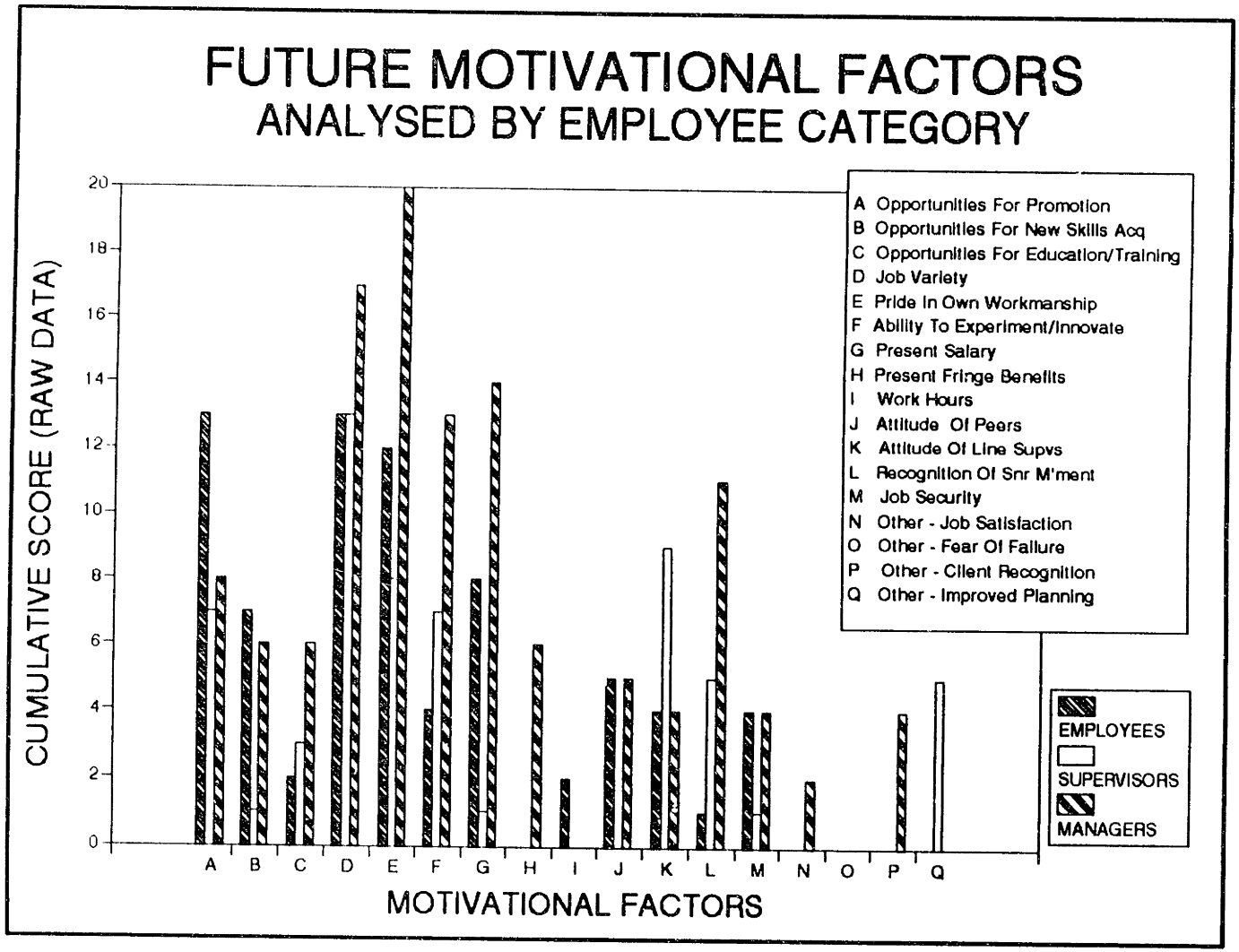
<Exhibit 4.3> Herzberg's Factors of Satisfaction and Dissatisfaction



<Exhibit 4.4> Current Motivational Factors



<Exhibit 4.5> **Future Motivational Factors**



Interestingly, given the small population size of the survey, the top five current motivational factors displayed remarkably similar traits across the employee categories:

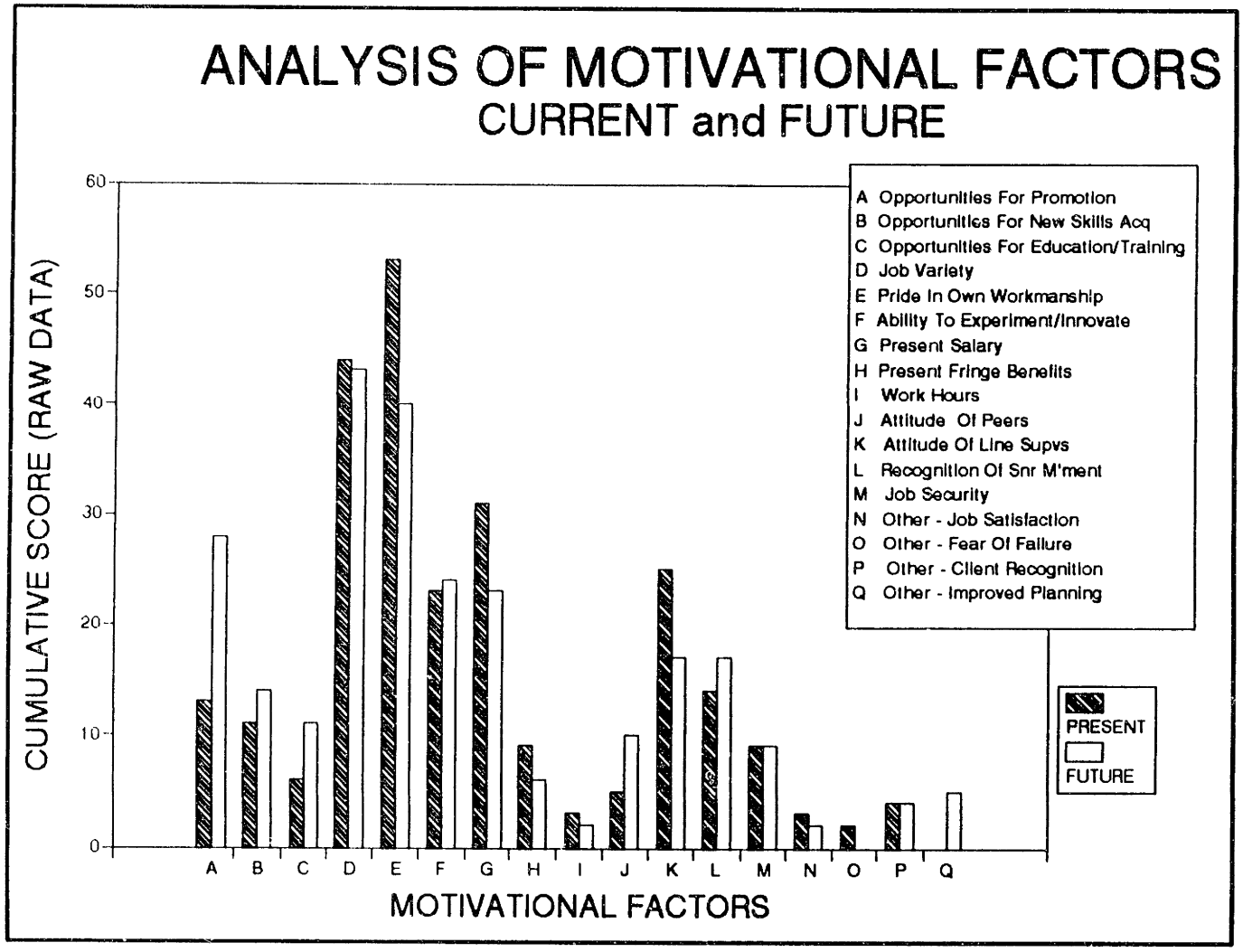
	MANAGERS	SUPERVISORS	EMPLOYEES
1	Pride In Own Workmanship	Pride In Own Workmanship	Pride In Own Workmanship
2	Job Variety	Job Variety	Job Variety
3	Present Salary	Ability to Experiment	Attitude of Line Supervisors
4	Ability to Experiment	Present Salary	Opportunities For Promotion
5	Recognition From Senior Management	Attitude of Line Supervisors	Opportunities For New Skills Acquisition

Analysis of the **likely future** factors of motivation yielded slightly different priorities for Supervisors and Employees:

	MANAGERS	SUPERVISORS	EMPLOYEES
1	Pride In Own Workmanship	Job Variety	Job Variety
2	Job Variety	Attitude of Line Supvs	Opportunities For Promotion
3	Present Salary	Pride In Own Workmanship	Pride In Own Workmanship
4	Ability to Experiment	Opportunities For Promotion	Present Salary
5	Recognition From Senior Management	Ability to Experiment	Opportunities For New Skills Acquisition

A summary comparison between current and likely future motivational factors for the survey population as a whole is given in Figure 4.6.

<Exhibit 4.6> **Analysis of Motivational Factors**



4.2.2 Comparison with Herzberg's Factors of Satisfaction and Dissatisfaction

Given the fact that the actual question posed was one of prioritising the five most significant motivational factors in both current and likely future work environments, it may be unwise to draw too many comparisons between the survey findings and those of Herzberg who specifically set out to analyse the factors which caused either extreme satisfaction or extreme dissatisfaction. Nevertheless, all of Herzberg's "the motivators" -- achievement, recognition, work itself, responsibility, advancement and growth -- are essentially covered in the motivation factor choice options offered in the survey question. Interestingly, 74% of the factors deemed to be the respondents' top five motivational factors in the *current* work environment fell into Herzberg's "the motivators" category. Similarly, for the *likely future* work environment this figure rose to 78%.

4.2.3 Specific Company Human Resource Practices

Three specific areas were considered - performance appraisals, staff hiring (and firing) policy, and promotion opportunities.

Performance Appraisals

Interviewees were polled on whether they believed that there were some type of correlation (if any) between:

1. Work accomplishments and annual merit pay increases
2. Annual Performance Review results and annual merit pay increases

The rationale behind the first question was to test the effectiveness of the performance appraisal system in providing honest feedback on individual performance within the company context. All too often an individual's opinion on their work accomplishments and/or contribution and their line supervisor's opinion on the same subject are never fully and truthfully contrasted during the appraisal process -- this topic is covered in greater detail in Chapter Six.

Not surprisingly therefore, employees tended to feel that their work accomplishments were undervalued in terms of their impact on an extrinsic incentive (i.e., annual merit pay increase). Fifty-eight percent of the respondents viewed the correlation between the two as either **Low** or **No**, with only 12% rating it as **Very High** or better. The implication of this finding is that candid performance feedback is perhaps being inhibited in the appraisal process with supervisors unwilling to be the bearer of bad news during appraisals and hence employees are unable to reconcile why merit-pay rises are seemingly so low.

This is further supported with the results of the second question regarding the correlation between the actual annual performance review results and the annual merit pay increase. In this instance, 65% of the respondents cited a **Low** or **No** correlation, with only 6% rating it as **Very High** or better.

Again, this tends to imply that the appraisal process is providing employees with feedback that is often more positive than candid (93% of employees were deemed to be *ABOVE AVERAGE* in the 1991 appraisal process). Having been evaluated positively, it is understandable that most employee's expectations are that

merit pay increases will be similarly evaluated and distributed - alas this is not borne out in practice.

In hindsight, a third important question ought to have been asked:

Is there any correlation between your work accomplishments and your annual performance review evaluation?

This would have yielded additional information on the perceived accuracy of the annual performance review process.

Staff Hiring (and Firing)

In order to ascertain whether firing was considered a credible threat for continued poor employee performance the following question was posed:

What would the most likely management reaction be to failure or continued poor job performance?

The following results were attained:

	Overall [illegible]p	Managers	Supervisors	Employees
Reassignment	53%	50%	50%	60%
Demotion	18%	25%		20%
Dismissal	18%	12.5%	25%	20%
No Action	11%	12.5%	25%	

While recognising the dangers of interpretating such statistically insignificant data, there does appear to be consensus in that in the majority of cases an individual would be either **reassigned** or **demoted** rather than **dismissed**. What does this

indicate - an enlightened, understanding employer, or a company indifferent to individual poor performance? Further follow-up research is required.

A second question relating to staff hiring policy for key positions is covered under the heading of Promotion Opportunities.

Promotion Opportunities

Given the fact Opportunities For Promotion remained a significant motivational factor for many interviewees, two questions relating to this subject were posed:

1. Is it likely that continued high job performance will lead to advancement within Rockwater?
2. Is it more likely that Rockwater would fill a key job vacancy from within or from outside the company?

Interestingly, while 53% of the respondents believed that it was **Likely, Very Likely** or **Certain** that continued high job performance would lead to career advancement, only 15% believed that Rockwater would currently fill a **key** job vacancy in their own departments from within the company. This apparent paradox is probably best explained by the fact that Rockwater has experienced substantial growth (especially in the North Sea) over the past three years and that many new recruits at all levels have been required to fill the vacancies.

However it may prove beneficial to follow up on these findings in future attitude surveys with a question such as:

Would an outsider get a job over an interested insider?

4.2.4 Level Of Awareness Of Alternative Rewards Systems

The next area was designed to poll opinions on five differing (although not mutually exclusive) alternatives in the design of Employee Rewards Systems:

1. Employee Profit-Sharing Schemes
2. Non-Monetary Recognition Schemes
3. Knowledge/Skill-Based Pay Schemes
4. Work Group/Team Incentive Schemes
5. Pay-At-Risk Schemes

When asked whether they had knowledge or experience of the above types of rewards schemes, the following **affirmative** response rates were attained:-

	OVERALL GROUP	MANAGERS	SUPERVISORS	EMPLOYEES
Employee Profit-Sharing	18%	25%		20%
Non-Monetary Recognition	88%	75%	100%	100%
Knowledge/Skill-Based	12%	12.5%		20%
Team Incentives	53%	62.5%	75%	20%
Pay-At-Risk	12%	25%		

The most surprising finding from the above responses was that awareness of Knowledge or Skill-Based Rewards Systems was very low overall (12.5%). This approach is often cited as making the strongest link between learning and monetary rewards and, as such, is congruent with many of the aims of continuous improvement

and organisational learning. The reasons for this apparent lack of awareness are probably two-fold:

1. Cultural - UK firms have been slow to adopt this approach and as such it is not well publicised in that country.
2. Industry - the underwater construction business tends to lag when it comes to innovative rewards practices.

When asked to qualitatively evaluate the strengths and weaknesses of each approach, responses were understandably varied. Nevertheless, the main finding was that Non-Monetary Recognition could be regarded as potentially a powerful part of an effective Employee Rewards system. This topic will be revisited in Chapter Five.

4.2.5 Level Of Inter-Departmental Communication

Communication is the life-blood of any attempt at employee empowerment. Areas of communication weakness can result from geographical location, inter-departmental mistrust or cultural misconceptions. All three exist to a degree within Rockwater.

Thirteen typical inter-departmental or inter-functional relationships were cited and respondents asked to rank their views on the top three problem areas. An ordinal ranking of the thirteen relationships from a communication weakness perspective is given below (based on an arithmetical mean calculation), along with the frequency that a particular relationship was cited by the respondents as one of

their top three choices. From an analysis point of view the frequency of citation method is probably a more reliable indicator of problem areas.

	Ranking	Frequency Of Citation
Main Office - Satellite Offices	1	59%
Project Team - Project Team	1	59%
Project Operations - F/A	3	23%
Internal to Own Department / Function	4	41%
Main Office - Stavanger	4	29%
Project Operations - Engineering	6	29%
Project Operations - Materials Management	7	18%
Rockwater - Customer	8	6%
Project Operations - Commercial	8	6%
Onshore - Offshore	8	6%
Equipment - Rest of Company	8	6%
Corporate - Rest of Company	12	6%
Internal Project Reporting	13	6%

From the above results it appears that over 40% of the respondents considered the following three areas suffered from the highest frequency of mis-communication and confusion:

Main Office and Satellite Offices

Inter-Project Team

Intra-Departmental or Intra-Functional.

Given the design limitations of the actual question and, in particular, its bias toward relationships between Project Operations and other departments, the value of the results is questionable. However the fact that intra-departmental/intra-functional and inter-project team communication both rank highly tends to suggest that the functional/departmental side of the project matrix is not as efficient a vehicle for disseminating inter-project information as was originally planned.

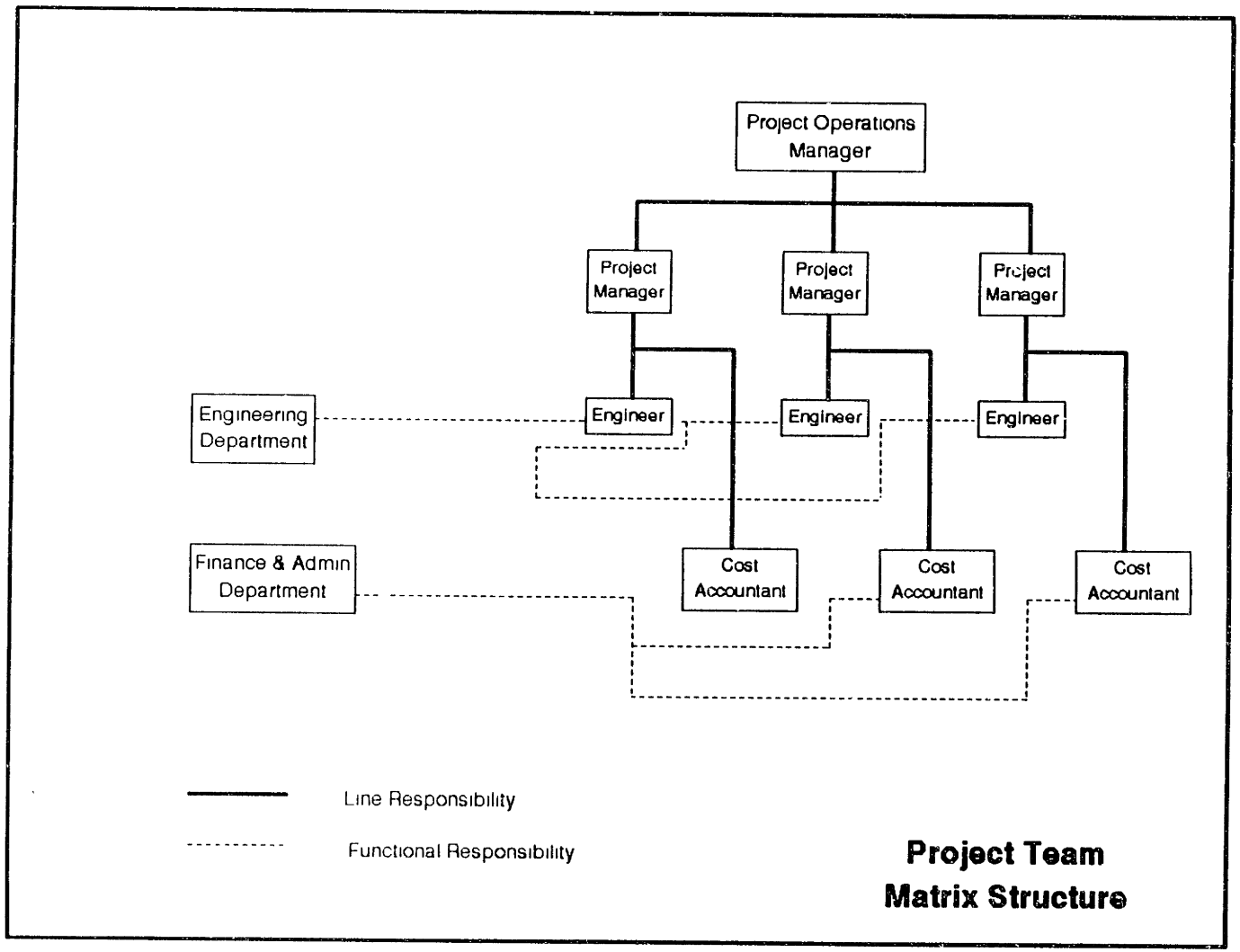
All project teams within Rockwater are placed in a matrix (see Exhibit 4.7) with the intent that the functional departments (i.e., Operations, Engineering and F/A) take on the responsibility for capturing knowledge gained on projects and encouraging the communication of the results amongst their functional/departmental employees (including project-assigned employees).

The problem with Main Office and Satellite Office communication is well recognised within the company and considerable effort has gone into ensuring that satellite office employees do not feel like "second-class" Rockwater employees due to their geographical location. Despite these initiatives, 59% of all the respondents believed that this problem still existed and, more significantly, 88% of the respondents who currently worked in satellite offices ranked this relationship in their top three.

4.2.6 Level Of Awareness Of Team Measurement System

At the time of the interviews (December 1992) the Team Measurement System had been conceptualised and developed to such a stage that over 80 managers had either attended the roll-out ceremony or had participated in its development. As

<Exhibit 4.7> Rockwater Project Team Matrix



this survey was aimed at employees at the Project Manager level and hierarchically down through the organisation, the question regarding their knowledge of the TMS was aimed at capturing a feeling of how successful drill-down had been to date.

The results were not particularly encouraging, with general anecdotal comments, such as the following:

"...another MBA initiative"

"...too difficult to grasp why we need it"

"...too much talk about it and not enough action"

"...hope it isn't another ..... - it wasn't free the last time"[1]

"...only people in the know know"

"...more meetings"

*"...how does it affect the **workers**?"*

"...is it cost-effective?"

"...jargon...strip it out and say what you mean"

"...elitist."

On a more positive note, some of the respondents expressed hope for this approach toward an alternative form of performance measurement:

"...hope it allows us to create an environment where cock-ups are openly discussed."

"...hope it allows us to measure and eliminate own-goals"

"...company committment to TMS appears sustainable"

---

[1] In the mid-1980s the Brown & Root companies embraced a "Quality is Free" program with little sustained effect.

"...definitely advantageous, we [Project Managers] need to translate message and push it down through the organisation."

In summary, whilst the TMS is in the first instance a high-level corporate scorecard, its impact on the organisation as a whole has yet to be fully translated and communicated throughout the company. This must become a priority activity.

NOTES

1. Maslow, A.H., *Motivation and Personality*. New York: Harper & Brothers, 1954, pp. 80-106.

2. Herzberg, F., Mausner, B. and Snyderman, B., *The Motivation to Work*. New York: John Wiley & Sons, Inc., 1959, p. 72.

CHAPTER FIVE

DEVELOPMENT OF CONGRUENT EMPLOYEE REWARDS AND MOTIVATION SYSTEM

Having discussed at length the need for the introduction of a new set of performance measurements (in the form of the Team Measurement System) in order to positively influence organisational and individual behaviour by strategy and communication rather than control, it is worthwhile to revisit the hypothesis of "what you measure is what you get" and carry out a simple experiment to test its validity.

Let us list, in no particular order, ten universally common elements of human behaviour in organisations which have undesirable effects in a company. The following list may be therefore be representative of such an exercise:

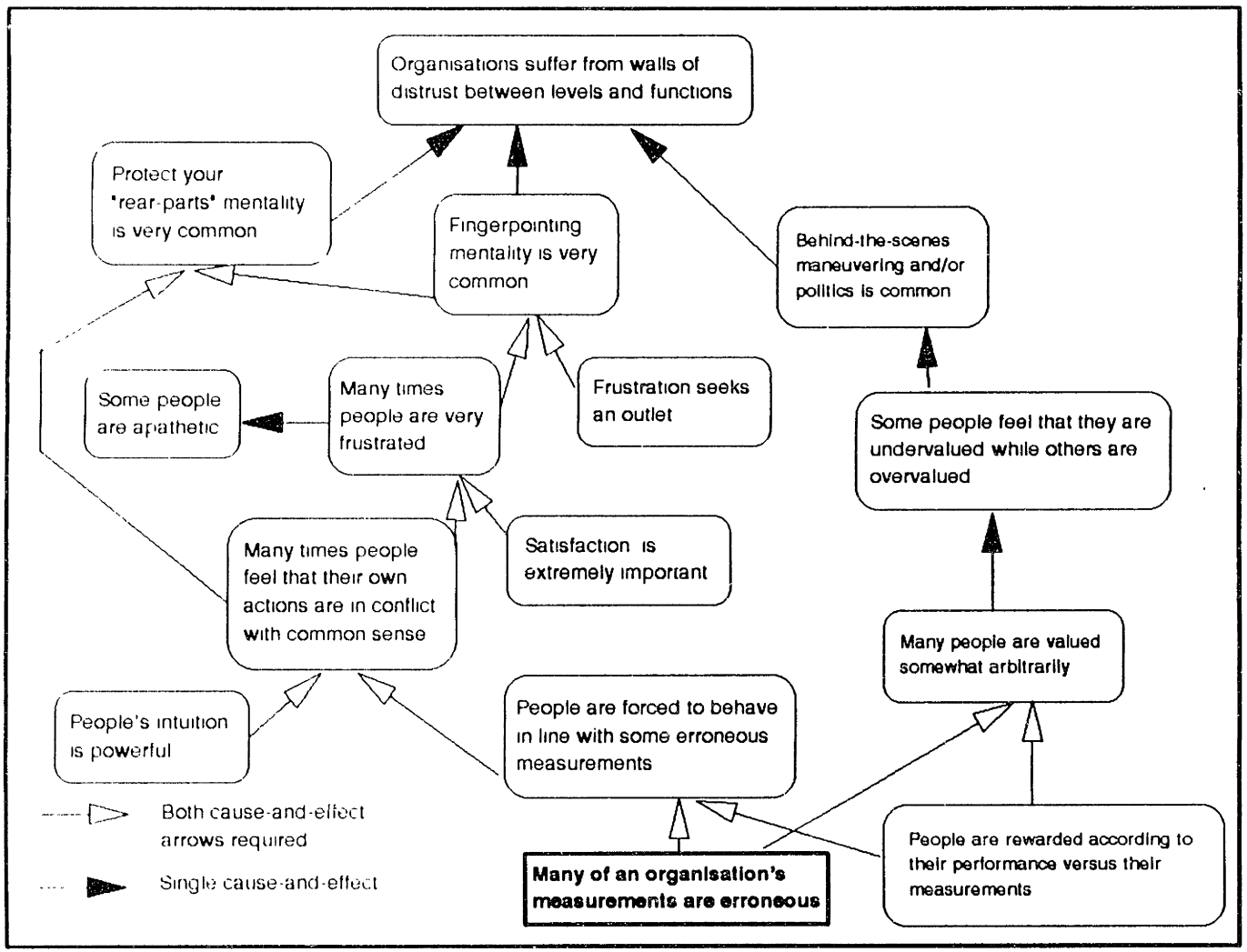
- Many people are valued somewhat arbitrarily
- Many times people are very frustrated
- Behind-the-scenes maneuvering and/or politics is common
- Some people are apathetic
- Organisations suffer from walls of distrust between levels and functions
- Fingerpointing mentality is very common
- People are forced to behave in line with some erroneous measurements
- Some people feel that they are undervalued while others are overvalued
- "Protect your backside" mentality is very common
- Many times people feel that their actions are in conflict with common sense

By applying an approach which systematically constructs linkages between these seemingly random symptoms (undesirable effects) and creating a Current Reality Tree[1] one can pinpoint the core problem -- in this case "Many of an organisations's measurements are erroneous" (see Exhibit 5.1). Whilst the outcome at face value may not be revolutionary, this process of analysing the question of "What to Change?" allows the identification of the core problem systematically -- a very powerful analytical technique.

If indeed the core problem is "Many of an organisation's measurements are erroneous" and an Employee Rewards and Motivation system is in place in which "People are rewarded according to their performance versus their measurements" it is easy to envisage the consequential set of highly undesirable effects, many of which will ultimately hamper the process of continuous improvement.

In order to further this hypothesis let us now consider the present system of Employee Rewards and Motivation within Rockwater and investigate the basis on which rewards are given.

<Exhibit 5.1> Example of a Current Reality Tree



5.1 DESCRIPTION OF EXISTING EMPLOYEE REWARDS SYSTEM

Rockwater employs a traditional rewards system (traditional both in terms of industry and national norms) in which the majority of employees are remunerated on a straight salary basis. The actual salary is determined by the job grade with eleven job grade levels being currently attainable up to corporate level (Grade 1 being lowest). Grades 1 to 4 retain the entitlement to overtime payments with all other grades effectively straight-salaried positions.

As is the national norm in the UK, company cars figure significantly in the remuneration system with Grades 8-11 being eligible for company cars. Effectively this means that if a job is graded as a *managerial* position (Grade 8 and above) a company car will be provided.

Within each job grade there is a band of salaries available and the salary bands overlap between grades. For example, an employee at the top end of Grade 8 could be paid more than an employee at the bottom end of Grade 9.

Annual leave entitlement is based on seniority as follows:-

Up to 5 years continuous service - 23 days per annum

5 to 10 years continuous service - 23 days per annum

10 years plus continuous service - 28 days per annum

In summary, the present system is a traditional "Pay-The-Job" type approach. As a result, it is a widely held view that the only way to advance one's earnings is to be PROMOTED and consequently the Job Grade of an assignment is often a point of considerably more negotiation than the job content.

Such Promotion-Based Reward Systems[2] have however several inherent flaws:

- Organisational growth is required to feed the reward system
- Incentives dependent upon probability of promotion which in turn is dependent upon identity and expected horizon of incumbent superior.
- Offer no incentive for anyone to exceed the standard or substantially outperform his or her coworkers.
- Offers little incentive for employees who have been passed over for promotion previously and whose future promotion potential is doubtful
- Offers no incentive for employees who cannot conceivably win a promotion tournament.

Doubtless, as organisational structures tend to "flatten" and hierarchical levels disappear, the prevalence of Promotion-Based Reward Systems will also come under review. Such is the case with Rockwater.

However, before attempting to identify some of the other strategic considerations in reward system design, it is worthwhile to review some of the alternatives currently in use elsewhere.

5.2 REVIEW OF ALTERNATIVE APPROACHES TO EMPLOYEE REWARDS

As was evident from the Employee Survey results (Chapter Four) there appeared to be very little employee knowledge of alternative rewards systems. Much of this apparent lack of awareness is symptomatic perhaps of the industry and even of the nation (UK) at large. However, alternative systems do exist and it is worthwhile to review some of the alternatives[3] currently practiced by other companies who have embraced TQM and are endorsing employee involvement (EI).

Knowledge/Skill-Based Pay

An alternative to traditional job-based pay that sets pay levels based on how many skills employees have or how many jobs they potentially can do, not on the job they are currently holding. Also called pay for skills, pay for knowledge and competency-based pay.

Profit Sharing

A bonus plan that shares some portion of company profits with employees. It does not include dividend sharing.

Gainsharing

Gainsharing plans are based on a formula that shares some portion of gains in productivity, quality, cost effectiveness, or other performance indicators. The gains are shared in the form of bonuses with all employees in an organisation (e.g. a

plant). It is typically includes a system of employee suggestion committees. It differs from profit sharing as it is based on a set of local performance measures not company profits.

Individual Incentives

Bonuses or other financial compensation tied to short-term or long-term individual performance.

Work Group or Team Incentives

Bonuses or other financial compensation tied to short-term or long-term work group, permanent team, or temporary team performance.

Non-Monetary Recognition Awards for Performance

Any non-monetary reward (including gifts, publicity, dinners, etc) for individual or group performance.

Employee Stock Ownership Plan

A credit mechanism that enables employees to but their employer's stock, thus giving them an ownership stake in the company; the stock is held in trust until employees quit or retire.

Flexible, "Cafeteria-style" Benefits

A plan that gives employees choices in the types and amounts of various fringe benefits they receive.

In a 1990 survey[4] carried of the practices of the Fortune 1000 corporations in the U.S., the following results were attained regarding the proliferation of use of these alternative approaches to Employee Rewards:-

<Exhibit 5.2> Percentage of Employees Covered By Reward Systems

	None 0%	Almost None 1-20%	Some 21-40%	About Half 41-60%	Most 61-80%	Almost All 81-99%	All 100%
All-Salaried Pay	36%	18%	14%	10%	7%	9%	7%
Knowledge or Skill-Based Pay	49%	34%	11%	2%	1%	1%	1%
Profit Sharing	37%	19%	7%	4%	6%	10%	17%
Gain-sharing	61%	28%	8%	1%	1%	1%	
Individual Incentives	10%	46%	24%	8%	5%	3%	4%
Team Incentives	41%	38%	10%	6%	1%	2%	3%
Non-Monetary Recognition	9%	23%	18%	10%	13%	10%	17%
ESOP	36%	9%	6%	3%	5%	12%	29%
Cafeteria Style	46%	12%	5%	4%	5%	9%	20%

5.3 STRATEGIC CONSIDERATIONS IN REWARD SYSTEM DESIGN

Rather than make specific proposals for the redesign of the current rewards system, it is the author's intention to focus on the strategic choices in reward system design and their relationship to organisational effectiveness.

Lawler stated that reward systems potentially have six kinds of impact that can influence organisational effectiveness:

- Attraction and retention of employees
- Motivation of performance
- Motivation of skill development
- Cultural effects
- Reinforcement of structure
- Cost[5]

Using the above attributes as a framework for reward system design, this section will discuss the valid design options available to Rockwater before attempting to summarise with a broad-based reward system mix congruent with the company's strategic objectives.

5.3.1 Attraction & Retention

Attracting, recruiting and retaining high-quality professionals must form part of an effective human resource strategy. Therefore, it is important, organisationally, not to become Larkin's Blacksmith[1] and to fall into the trap of ignoring what is

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1 "The Blacksmith can't hear the birds sing for the sound of his hammer."

happening in the rest of the industry with respect to employee rewards and human resource policies in general.

Active benchmarking of competitors in particular forms an important part of the employee rewards design process. This can be extended to companies known to have world-class practices in other industries.

In addition to offering competitive employment packages to potential high-quality recruits, it is important to have in place effective interviewing and screening procedures. All too often the current interview procedure relies on the hiring manager's "gut-feeling" and subjective assessment of the applicant. It is important at this stage to evaluate the applicant's likely ability to "fit" not only the immediate task but, as importantly, the core values of the company. Only then can both sides - company and applicant - fully evaluate whether they are indeed compatible.

Consideration should therefore be given to instituting a two- or three-stage interview process:

- First interview with hiring supervisor / manager
- Some form of objective evaluation assessment (e.g. Myers-Briggs) followed by full screening of applicant's CV and references
- Second interview with hiring supervisor and, dependant upon circumstances, either the hiring supervisor's immediate manager or some of the applicants likely peers.

Having attracted the required type of personnel, the next requirement must be to retain the most valuable employees. Note that this does **not** mean all employees. Whilst high turnover of employees can prove inefficient and expensive in terms of

both training and morale, it should be remembered that organisations can benefit from shedding poor performers. (A discussion of what constitutes *poor performance* will be continued in Chapter Six.)

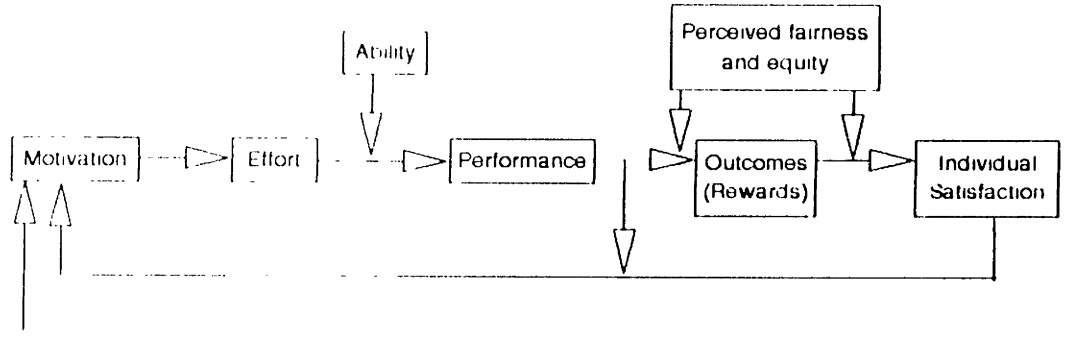
In order to retain the more valuable employees an effective system ought to provide a level of benefit which is superior to that offered by competitors for similar job functions in other organisations. In addition, the intraorganisational distribution of rewards ought to be perceived as equitable -- the better performers require to feel that they are rewarded better than the poorer performers in their own organisation irrespective of their standing relative to the competition.

This naturally leads to a requirement to offer competitive reward levels as well as having a system of performance-based rewards which offer the better performers significantly more than the poorer performers. Effective performance measurement and appraisal is therefor vital for this approach to succeed.

5.3.2 Motivation of Performance

The Expectancy Theory model[6] (see Exhibit 5.3) is a commonly used general model of behaviour in organisational settings. *Motivation* is considered as a prerequisite for an individual to expend *effort*. The individual's *performance* is a function of his or her *effort* and *ability* - which is in turn linked to his or her talents, skills, training and information. Over a period of time an individual assimilates an expectancy of what type of *performance* leads to what type of *outcome (reward)*. This perception or expectancy also subsequently affects *motivation* in the future. Individual *satisfaction*, the final link in the model, is essentially a function of the

<Exhibit 5.3> Expectancy Theory Model



A person's motivation is a function of:-

1. **Effort to performance expectancies**
2. **Performance-to-reward expectancies**
3. **Perceived attractiveness of rewards**

Modified Expectancy - Theory Model

actual *outcome (reward)* and the individual's *perception of its fairness and equity.* In essence, this perceived attractiveness of reward also forms a feedback loop into the individual's future likely *motivation.*

This relatively simple model suggests that an organisation simply ought to relate pay and other valued rewards to obtainable levels of performance. Add a climate of trust and credibility, incorporate fairness and equity, and magically the linkage between the reward system and motivation of performance is forged. A simple formula on paper but, alas, more difficult to obtain in practice.

In Rockwater's case, the effective use of rewards to motivate performance is only achievable when all of the above prerequisites are structurally in place, namely, trust, credibility, fairness and equity. The degree of trust and credibility within the organisation is a function of some of the wider ranging cultural issues (namely, participation and teamwork) addressed later in this chapter.

The other factor, perceived fairness and equity of the rewards system, is a deliberate choice point for Rockwater and great care ought therefore to be taken to incorporate this consideration in the design process (see Chapter Six for further details on this subject).

5.3.3 Skill Development

Skill-based pay plans are recognised for making a direct linkage between rewards and skill acquisition. If well-designed and administered there is little question that they can motivate skill development.[7] The more immediate question for Rockwater, however, is to prioritise what skills it actually wants to develop.

The company currently offers three avenues to employees for training and skills development:

(i) On-the-job training

(ii) Internal training courses

(iii) External training courses and assistance in further education.

It is important, however, for the company to identify the actual employee skills required for current and future tasks and to coordinate training and development programs around these requirements. Training ought to be "needs" driven and not "wish list" driven as in the past.

Identifying employee training and development needs is also a line management rather than a human resource management function. Whilst the human resource department can assist in coordinating training programs and providing advice, it remains a line management function to develop, coach and mentor the employees under its authority. All too often this responsibility is overlooked.

The interface between line management and the human resource function requires strengthening with respect to this subject and also in terms of career and succession planning. At present this process tends to be rather informal and it may well be advantageous to initiate regular (e.g., quarterly or semi-annual) Operations Council-type[8] meetings with a mandate to coordinate these activities. In addition, the issue of intra-company (within Brown & Root Marine) career planning and development ought to be considered as an extension to this process.

Reverting back to the subject of skills development, one possible approach is to initiate a form of a Skills-Based rewards system to encourage the development of "knowledge workers." Whilst not discounting the merits of such an approach, the first priority must be to identify the skills sets required by the company (both present and future) and to develop a coherent training and development strategy to meet these requirements.

5.3.4 Cultural Effects

Ultimately, the rewards system ought to play a vital part in the creation and maintenance of high employee involvement within the organisation. Lawler (1992) defined involvement as:

Involvement = Information x Knowledge x Power x Rewards[9]

Assuming that Rockwater's ongoing managerial commitment to employee empowerment will yield gains in:

Information (via enhanced intra-company communication)

Knowledge (via training and skills acquisition)

Power (via delegation of decision making)

then **Rewards** remain the last leverage opportunity available to maximise employee involvement.

In the case of Rockwater, the rewards system ought to reinforce two key cultural norms in the quest for successful high employee involvement:

- Employee Participation
- Teamwork

Employee Participation

Even the process of reward system redesign, development, and implementation can be actively used to reinforce employee participation. It is not one to be undertaken in isolation or indeed mandated from the top. Employee representation at all stages of the process is an imperative and the best vehicle for such a change program within Rockwater is to initiate a Quality Improvement Team (QIT) to investigate this subject in infinitely more detail. This thesis has this task in mind and will hopefully serve as a discussion document in such a QIT after July 1993.

In light of the apparent lack of employee awareness of alternatives to traditional rewards system design (see Chapter Four), the mandate of the QIT must include an ability to use external consultants as well as effectively communicating to all employees the alternatives which are being considered, what are the likely benefits and what are the potential drawbacks of each approach.

Teamwork

A major part of creating a high involvement environment is by fostering teamwork -- a desirable organisational behavior attribute. In turn, incentives to encourage such behaviour ought to be considered actively including:

- Work Group or Team Incentives
- Non-Monetary Recognition of exceptional team performance (publicly announced as soon after the event as possible)

- Special Individual Bonuses (specifically linked to an individual's efforts in improving teamwork across geographical boundaries, departments or functions)
- Gainsharing (entire business unit employees to share in the gains directly attributable to enhanced employee performance)

5.3.5 Reinforcement of Structure

The type of organisational structure in place within an organisation is often mirrored by its rewards system. Alternatively, an effective rewards system can reinforce and define an organisation's true structure -- occasionally starkly contrasting the published statements of organisations claiming to be "flattened" or "empowered".

The present system is essentially to most employees a hierarchal, job-based, promotion-oriented incentive structure. The role of sustainable promotion-based incentives within a "flattened" organisation is indeed questionable and a switch to either a truly performance based or skill based system is now perhaps more appropriate.

Culturally, this is problematic. Promotion-based incentives tend to be ingrained within the culture of our parent shareholder and in the industry in general. This is however not an excuse for the current system within Rockwater but merely an observation.

Can an organisation legitimately claim to endorse employee empowerment while effectively adding hierarchical tiers of managers? At present the number of

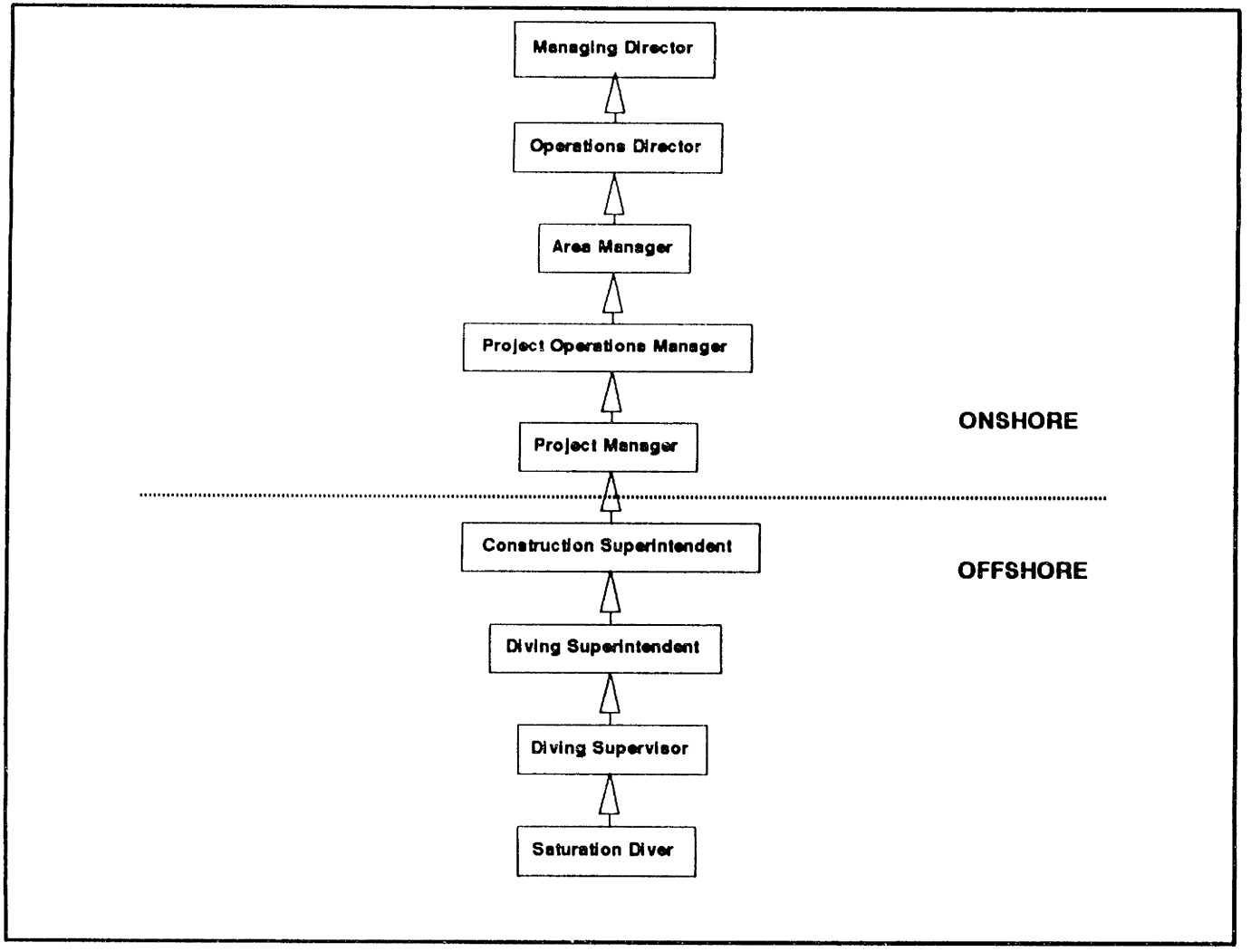
tiers of management between the diver at the workface of an offshore construction worksite to managing director of Rockwater is eight (see Exhibit 5.4). Extending this through our parent company, Brown & Root Marine, to the ultimate parent, Halliburton, and you add another 5 tiers at least.

Starting from this position as a given, the real question within Rockwater is, How do you strip away "managerial" status from a whole array of employees "promoted" into ostensibly managerial positions? Certain of these positions were created to justify a Grade 8 job classification for individuals without necessarily due consideration of the managerial content (if any) requirements of the job.

Perhaps the semantics of the title "Manager" ought to be actively reconsidered. Is "Team Leader" more appropriate in certain positions? Only if the hierarchical tier actually disappears with the demise of the managerial position. What about the role of the company car in the UK and its implicit (and often explicit) association with managerial positions? Is it left as a perk for senior corporate officers only? In light of the changing tax situation in the U.K. regarding company cars, cash in lieu of a car is perhaps now even more attractive (to both company and individual[10]) and would assist in removing an "elitist" perk.

If the promotion-based incentive structure can be effectively dismantled and replaced with a skill-based scheme, then employees will be effectively rewarded for increasing their skills and developing themselves instead of moving up in the hierarchy. Not only is this consistent with the aims of organisational learning but it will also increase organisational flexibility by developing a workforce of self motivated, multi-skilled employees.

<Exhibit 5.4> Present Degree of Hierarchy Within Rockwater



A secondary method of encouraging employee empowerment is by providing individual choice in benefits. A flexible, cafeteria type benefit scheme can offer employees the choice in their selection of their preferred mix of personal fringe benefits (e.g. pension, healthcare, company car etc) up to a prescribed limit.

5.3.6 Cost

Any new approach to employee rewards ought to be subjected to some form of cost-benefit analysis in comparison to the existing one. Gainsharing, for example, is one system which the costs of the payouts are potentially covered by the financial gains in performance that the business unit or plant achieves. But even with gainsharing or indeed with company-wide profit-sharing some form of investment-type analysis[11] is required to establish the contribution that enhanced employee performance or productivity has made to the registered gain (often the gains could be the result of technological improvements as well as employee performance).

5.3.7 Summary of Reward System Congruence

Lawler attempts to contrast appropriate reward system practices for two differing management philosophies - traditional bureaucratic (Theory X) and participative employee-involvement (Theory Y) in the following Exhibit 5.5.[12]

Rockwater is certainly on its way to developing the latter management philosophy, one of encouraging self-development, openness, employee participation and teamwork although there is still considerable ground yet to cover. Bearing this in mind, Exhibit 5.6 attempts to prioritise the type of reward system alternative most

supportive of the primary Rockwater objectives in each of the dimensions outlined in Lawler's original framework.

<Exhibit 5.5> Appropriate Reward-System Practices

REWARD SYSTEM	TRADITIONAL OR THEORY X	PARTICIPATIVE OR THEORY Y
Fringe Benefits	Vary according to organizational level	Cafeteria--same for all levels
Promotion	All decisions made by top management	Open posting for all jobs; peer group involvement in decision process
Status symbols	A great many carefully allocated on the basis of job position	Few present, low emphasis on organization level
Pay		
Type of system	Hourly and salary	All salary
Base rate	Based on job performed; high enough to attract job applicants	Based on skills; high enough to provide security and attract applicants
Incentive plan	Piece rate	Group and organization-wide bonus; lump sum increase
Communication policy	Very restricted distribution of information	Individual rates, salary-survey data, and all other information made public
Decision-making locus	Top management	Close to location of person whose pay is being set

<Exhibit 5.6> Summary of Reward System Design Considerations

	REWARD SYSTEM ATTRIBUTE					
	Attraction & Retention Of Employees	Motivation Of Performance	Motivation Of Skill Development	Cultural Effect	Reinforcement Of Structure	Cost
	CONGRUENT ROCKWATER PRIMARY OBJECTIVE					
REWARD SYSTEM ALTERNATIVE	Retention of Most Valuable Employees	Fairness and Equity	Knowledgeable; flexible workforce	Participation; teamwork	"Flattened Organisation"	Cost-Neutral
All-Salary		●	O		O	
Skill-Based			●		●	
Profit-Sharing						◒
Gainsharing		◒		●		●
Individual Incentives	●					
Team Incentives				◒		
Non-Monetary Recognition	◒	O	◒			
ESOP	O			O		
Cafeteria Style					◒	O

Key: ● = Highly Supportive
◒ = Moderately Supportive
O = Marginally Supportive

What is obvious from the above is that no one design approach fully supports Rockwater's primary objectives in each of the dimensions under consideration. A combination may well be required and further research into the optimum mix should be pursued during the development of a comprehensive human resource management strategy with the company.

NOTES

1. This approach and example has been generated using an approach advocated by Dr. Eli Goldratt during a lecture at the MIT Sloan School of Management on 19 February 1993.

2. Baker, G.P., Jensen, M.C. and Murphy, K.J. "Compensation and Incentives: Practice vs. Theory," *The Journal of Finance*, Vol. XLIII, No. 3, July 1988, p. 600.

3. Lawler, E.E., *Employee Involvement and Total Quality Management*. San Francisco: Jossey-Bass, 1992, p. 145.

4. Ibid., pp. 20-22.

5. Lawler, E.E., "The Design of Effective Reward Systems." In: Lorsch, J.W. (ed.), *Handbook of Organizational Behavior*. Englewood Cliffs, NJ: Prentice-Hall, 1987, pp. 255-258.

6. Adapted from Edward E. Lawler, *Pay and Organisation Development*. Reading, MA: Addison-Wesley, 1981, p. 21.

7. Ibid.

8. Von Werssowetz, R. and Beer, M., "Human Resources at Hewlett-Packard." Harvard Business School Case 482-125, 1982, pp 13-14.

9. Lawler, E.E. *The Ultimate Advantage: Creating The High-Involvement Organisation*. San Francisco: Jossey-Bass, 1992 p.59.

10. Prior to 1989, company cars received favorable tax treatment from the Inland Revenue which effectively encouraged their proliferation throughout UK industry.

11. For an interesting example of such an approach, see Boudreau, John W. and Berman, Robert "Performance Measurement: Kodak's Experience With Profit Sharing". CAHRS (ILR/CORNELL), Working Paper 92-14.

12. Lawler, "The Design of Effective Reward Systems," op. cit. p. 269.

CHAPTER SIX

CHALLENGES AND POTENTIAL PITFALLS

Having considered the process of rewards system redesign in Chapter Five and ostensibly laid out the structural choices available to Rockwater that are congruent with employee involvement, participation, and teamwork, this chapter will focus on the challenges and potential pitfalls arising from the implementation process:

- Strategic Fit
- Reward System Equity
- Parent Company Considerations
- Extension to Offshore Workforce
- Linkage to Team Measurement System
- Performance Appraisal and Feedback

6.1 STRATEGIC FIT

The dominant strategy of the company is focused on its ultimate goal of integration with the customer. In the interim it must continue to maintain share in the mature market of providing underwater services, primarily to Tier II customers, while expanding in the emerging markets of integration and value-added to Tier I customers.

Organisationally, the company currently serves both markets with the same organisation structure, people, and policies. Is this strategy indeed valid? Exhibit 6.1 below highlights some of the generic options for human resource strategies available to organisations dependent upon their position within the business life cycle.

<Exhibit 6.1> Options for Human Resource Strategies

	EMBRYONIC	GROWTH	MATURITY	DECLINE
SELECTION, PROMOTION & PLACEMENT	Recruit best technical/ professional talent. Entrepreneurial Style	Recruit adequate mix of qualified workers. Management succession planning. Manage rapid internal labor market movements.	Encourage sufficient turnover to minimise layoffs and provide new openings. Encourage mobility as reorganisations shift jobs around	Plan and implement workforce reductions and relocations. Transfers to different businesses. Early retirement.
APPRAISAL	Appraise milestones linked to plans for business, flexible	Linked to growth criteria, e.g. market share, volume unit cost reduction	Evaluate efficiency and profit margin performance.	Evaluate cost savings.
REWARDS	Salary plus large equity position	Salary plus bonus for growth targets plus equity for key positions	Incentive plan linked to efficiency and high-profit margins.	Incentive plan linked to cost savings.
MANAGEMENT DEVELOPMENT	Minimum until a critical mass of people in business then job related.	Good orientation programs. Job skills. Middle-management development	Emphasis on job training. Good supervisory and management development programs.	Career planning and support services for transferring people.
LABOR / EMPLOYEE RELATIONS & VOICE	Set basic employee relation philosophy and organisation.	Maintain labor peace, employee motivation and morale.	Control labor costs and maintain labor peace. Improve productivity.	Improve productivity. Achieve flexibility in work rules. Negotiate job security and employment adjustment practices.

Source: Hax and Majluf, 1991, p. 279.

Strategic fit can, however, be considered in another way. Rather than concluding that Rockwater actually requires two different human resource policies in order to support businesses in differing stages in their respective life cycles, a more realistic approach may be to consider strategic fit against a different dimension -- the stage of company quality development. A 1992 survey carried out by Ernst & Young and the American Quality Foundation suggested that companies on the road to becoming world-class performers pass through three distinct stages of quality development:

- Novice (Getting Started)
- Journeyman (Honing New Skills)
- Master (Staying On Top)[1]

Exhibit 6.2 outlines certain measures and recommended techniques congruent with each stage of company quality development.

<Exhibit 6.2> How to Make Your Company a Quality Master

	NOVICE "Getting Started"	JOURNEYMAN "Honing New Skills"	MASTER "Staying on Top"
PROFITABILITY	Less than 2% return on assets (ROA)	2% to 6.9% ROA	ROA of 7% and higher
PRODUCTIVITY	Less than $47,000 value added per employee (VAE)	$47,000 to $73,999 VAE	VAE of $74,000 and up
EMPLOYEE INVOLVEMENT	$ Train heavily. Promote teamwork, but forget self-managed teams, which take heavy preparation. Limit employee empowerment to resolving customer complaints	$ Encourage employees at every level to find ways to do their jobs better--and to simplify core operations. Set up a separate quality-assurance staff.	$ Use self-managed, multiskilled teams that focus on horizontal processes such as logistics and product development. Limit training, mainly to new hires.
BENCHMARKING	Emulate competitors, not world-class companies	Imitate market leaders and selected world-class companies	$ Gauge product development, distribution, customer service vs. the world's best
NEW PRODUCTS	Rely mainly on customer input for ideas	Use customer input, formal market research, and internal ideas	Base on customer input, benchmarking, and internal R&D
SUPPLY MANAGEMENT	Choose suppliers mainly for price and reliability	Select suppliers by quality certification, then price	Choose suppliers mainly for their technology and quality
NEW TECHNOLOGY	Focus on its cost-reduction potential. Don't develop it--buy it	Find ways to use facilities more flexibly to turn out a wider variety of products or services	Use strategic partnerships to diversify manufacturing
MANAGER & EMPLOYEE EVALUATION	Reward frontline workers for teamwork and quality	Base compensation for both workers and middle managers on contributions to teamwork and quality	Include senior managers in compensation schemes pegged to teamwork and quality
QUALITY PROGRESS	$ Concentrate on fundamentals. Identify processes that add value, simplify them, and move faster in response to customer and market demands. Don't bother using formal gauges of progress-gains will be apparent	$ Meticulously document gains and further refine practices to improve value added per employee, time to market, and customer satisfaction	Keep documenting gains and further refine practices to improve value added per employee, time to market, and customer satisfaction.

$ = Activities that should reap the highest paybacks

Note: Two key measures are return on assets, which is simply aftertax income divided by total assets, and value added per employee. Value added is sales minus the costs of materials, supplies, and work done by outside contractors. Labor and administrative costs are not subtracted from sales to arrive at value added.

Rockwater presently still falls in the **Journeyman** category and the suggested use of base compensation for both workers and middle management linked to teamwork and quality reinforces some of the findings of Chapter Five.

6.2 REWARD SYSTEM EQUITY

How equitable will the new system be? Will the same system be employed company-wide? Are executive compensation programs retained that are significantly different from the remainder of the organisation?

The choices are numerous but so are the potential ramifications on organisational behavior. Inequity will lead to gaming, gaming will lead to politicking, politicking will lead to barriers between departments, and so the cycle of undesirable behaviour begins again.

Despite the above less-than-optimistic assertion, it is the author's firm opinion that middle and senior management incentives, accountability, and rewards are the first leverage point to be attacked in the system redesign process. So much still hinges on senior and middle management alignment with the company's strategic objectives and their ability to subsequently influence (implicitly and explicitly) the remainder of the organisation by their attitudes and actions remains enormous.

Holding middle managers accountable by making some portion of their pay contingent upon non-financial performance measures is a starting point. These ought to include some of the TMS measures which they can directly influence, e.g., on a project basis -- customer satisfaction, project performance effectiveness, project closeout cycle. In addition, some form of subjective assessment of the manager's

contribution to team development, employee training and development, employee appraisal and feedback, and other "softer" managerial responsibilities ought to be actively considered.

6.3 PARENT COMPANY CONSIDERATIONS

What parent company constraints will be placed on the system redesign and subsequent implementation? In many respects Rockwater is a guinea-pig for the rest of Brown & Root and also, to some extent, Halliburton. Many of the TQM and continuous improvement initiatives originally begun in Rockwater have since been replicated elsewhere. Will this be the situation with employee rewards? Or will the 100% acquisition of Rockwater in November 1992 by Brown & Root Marine lead to increased pressure for horizontal equity and homogenisation of pay and practices across all Brown & Root operating companies?

It is the author's hope that the latter scenario will not necessarily be the case and that adequate opportunity will be given to Rockwater to prove that a new approach to employee rewards is indeed merited.

One rewards system option currently unavailable is an Employee Stock Ownership Plan (ESOP). Halliburton stock options are currently restricted to senior executives (within Brown & Root and Halliburton) and it is highly unlikely that a company-wide scheme would be permitted. The only potential vehicle for such a scheme would be a management or employee leveraged buyout of Rockwater, a subject which is well outside the scope of this discussion.

6.4 EXTENSION TO OFFSHORE WORKFORCE

Rockwater is essentially split into two workforces - *onshore* and *offshore*. The performance measures and reward system alternatives proposed within this document relate almost exclusively to the *onshore* workforce. Where does this leave the remaining 55% of Rockwater employees who work *offshore*?

6.4.1 Rewards System

The majority* of Rockwater's offshore diving workforce are presently self-employed and hired on a day-rate basis when required. This approach obviously allows the company a great deal of flexibility in terms of having a truly variable cost offshore workforce. Conversely, however, it can induce a great degree of uncertainty into an employee's annual income expectation -- his/her income being a function of the number of days' employment "given" by the company.

Of course, the magnitudes of the dayrates on offer are not insignificant. Every three years, minimum dayrates are set on a national, industry-wide basis** following negotiations between the AODC (Association of Diving Contractors) and NUS (National Union of Seamen).

The dynamics of the above situation are quite interesting. How is an employee motivated to work harder to reduce an offshore project's time schedule when such

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* A relatively small number of key staff (e.g., superintendents, supervisors, and technicians) are retained on annual contracts guaranteeing 180 days offshore work per annum.

** The remainder of Rockwater's workforce is non-union.

effort effectively reduces his own net income? In this instance, an extrinsic factor (e.g., dayrate remuneration) can have a negative effect in terms of behavior induced.

Conversely, offering financial performance incentives for early task completion can also be counter-productive, leading to undesirable side effects such as corner-cutting and potential disregard for safety and quality.

Emphasis on intrinsic motivators such as pride in workmanship and general recognition for professionalism can have far more positive effects and ought to be actively encouraged.

Within Rockwater, it is important to remember the contribution of the offshore workforce. They are at the cutting edge, delivering the products and services to Rockwater's customers. It is all too easy to concentrate on the onshore workforce and miss an important opportunity to reinforce the company's strategic vision **throughout** the company.

With this in mind, the position of Offshore Development Manager was created in 1992 to serve the needs of the organisation in reducing the potential of onshore versus offshore and salary versus dayrate mismatch.

6.4.2 Performance Measurement

Performance measurement in a dayrate environment tends to be retrospective rather than proactive and implicit rather than explicit. If an employee performs satisfactorily he will be considered for future work by the offshore superintendent; if not he will wait a long time at home for a telephone call that never arrives.

Tightknit teams tend to be formed in this environment, often as a result of the reputation or perceived ability of the superintendent to provide adequate work opportunities for the team on an annual basis. Cross-fertilisation between teams, however, tends to suffer and as a result specialist skills tend to reside in individual teams, e.g., hyperbaric welding or cable-lay or heavy construction. This over-specialisation is unfortunate and can lead to organisational inflexibility at times.

One of the challenges facing the company is how to encourage the cross-fertilisation of talent without reducing the effectiveness of the specialist teams. Superintendents should probably be held accountable for identifying individual team development needs as well as being encouraged to accept new blood within their own domains -- not an easy task.

6.5 LINKAGE TO TEAM MEASUREMENT SYSTEM

The TMS can serve a variety of organisational needs:

1. High-level corporate scorecard
2. Strategy communication mechanism
3. Basis for measurement of individual and work group performance

However, in this section on the third attribute, the use of the TMS as a basis for measurement of individual and work group performance, will be considered.

Within the TMS, the word "team" can be construed in two ways: a company-wide team or a set of individual project teams. While the goal must be to stimulate improved company-wide performance, the importance of the individual project as a building block toward this goal cannot be overlooked.

With this in mind, a two-tier incentive system with divisional and individual project level targets could be considered. With this approach incentive payments could be paid out if the "team" achieved certain financial goals while meeting selected customer, internal business, and organisational learning targets arising from the TMS.

The problem, however, is how to design an incentive linkage which minimizes an overriding human tendency -- that of "gaming the system." Selecting simply two or three TMS measures as the basis of incentives (either individual, project team, or divisional) automatically elevates their perceived importance above all others, much to the detriment of the aims of the **balanced** scorecard.

Alternatively, attempting to link incentives to all nineteen separate TMS measures is equally unsatisfactory and rather more complicated organisationally to administer. In addition, as experience in the use of the TMS develops, certain of the original measures will be replaced by other more meaningful measures. With such a dynamic system, linkages to specific measures could soon become obsolete and require yet more changes to the rewards structure -- an unsatisfactory situation.

A more appropriate approach may be to limit the use of TMS in the revised rewards system to being purely a visible feedback device on team and company performance. If simply depicted (preferably graphically) and regularly communicated to the workforce, it can form the basis of team recognition ("project team improvement of the month", perhaps). In addition, it can provide employees real-time feedback of how (hopefully) continuous improvement, customer satisfaction, and organisational learning translates into improved financial results.

6.6 PERFORMANCE APPRAISAL AND FEEDBACK

> *Remove barriers that rob the hourly worker of his right to pride of workmanship. The responsibility of supervisors must be changed from stressing sheer numbers to quality. Remove barriers that rob people in management and engineering of their right to pride of workmanship. This means, inter alia, abolishment of the annual merit rating and of management by objective.*
>
> Point 12 of Deming's Fourteen Points[2]

To fully embrace the Deming philosophy and adopt not only this Point but all of his Fourteen Points requires a transformation in present management practices within Rockwater. Whilst acknowledging the impact of Deming's transformation process, the focus of this section will be to discuss the limitations of the present performance appraisal system and to consider possible improvements which would facilitate the "removal of the barriers to pride in workmanship"?

The motivational leverage of pride in workmanship is considerable (recall the survey results of Chapter Four - Pride in Own Workmanship ranked as currently the No.1 motivational factor).

6.6.1 Existing System Of Personnel Evaluation

At present, the main emphasis on performance appraisals within Rockwater has been on an annual evaluation of Base Staff personnel.* This appraisal process basically is conducted on a one-on-one, top-down basis between line manager and employee every January/February.

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* It is important to note that base staff make up only 33% of the present Rockwater payroll of employees and affiliates (June 1992 figures)

As the company still currently operates a Management By Objective (MBO) system, the appraisal process primarily offers the means to convey information regarding objectives and targets, measurement of performance, recognition of achievements, recognition of strengths and weaknesses, identification of training needs, and finally, effectively provides the basis on which salary increases are awarded.* All this is covered in a one hour annual meeting!

Prior to the actual meeting the employee can optionally complete a Self Appraisal and Performance Plan which is designed to stimulate topics for discussion during the performance review.

The appraisal meeting then takes place, normally in the line manager's office, and can take from 20 minutes to 2 hours to complete. The resultant completed appraisal form is then signed by both parties before being returned to the Personnel Department for further processing.

As with the majority of conventional appraisal systems the system is heavily dependent upon the evaluator being as objective and consistent as possible when completing the sections of the form. Undoubtedly the overall assessment section causes the largest amount of psychological stress (for both appraiser and appraisee) and the success or failure of this valuable process is often remembered by both parties purely on the basis of which box was actually ticked.

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* It is present company policy to state that annual salary reviews are not considered part of the annual appraisal process described above although it is the author's contention that the linkage is inseparable in both the minds of the appraiser and appraised. There is no other scheduled annual review with the employee to discuss salary issues.

Not surprisingly therefore, since forced distribution is not adopted, ranking of individuals on the present system of overall assessment of *Excellent*, *Above Average*, *Average* or *Below Average* is remarkably consistent from year to year in that the vast majority of personnel are appraised as *Above Average* (in 1991, 93% of all Base Staff fell into this category).

Even in the most egalitarian society this cannot be true and perhaps this apparent lack of objectivity can be attributed to two main areas -- lack of formal training for evaluators and the question of what is actually being evaluated, the objective or the behaviour:

Training Of Evaluators

The present system of training evaluators is an obvious weak point, because no formal system exists other than the issuance of a documented guide to appraisal. One suggested immediate improvement would be to organise "in-house" practice sessions (preferably videotaped), with subsequent analysis of the effectiveness of the appraisal technique employed. Alternatively, it ought to form part of the formal Management Development Training program discussed in Chapter Three.

What is Actually Being Evaluated--The Objective or the Behavior?

How do you foster a system of honest feedback? Two-way feedback is often so dependent upon the manager's persona and ability to coach, guide, develop, and communicate with an individual on a regular basis and not merely a function of a single annual one-hour appraisal meeting. A more dynamic approach to feedback

and the airing of "pinch-points" as and when they arise (and preferably well in advance of "crunch-points") is often overlooked in a task-orientated workplace. Nevertheless, with more and more personnel being coached in the importance of interpersonal skills in the workplace, this approach to feedback ought to continue to improve.

6.6.2 Suggested Improvements To Existing System

It is the author's contention that the role of the manager within Rockwater has to be reevaluated if a true organisational transformation is to take place. Rather than judge people, ranking them, putting them into slots ("outstanding," "excellent," down to "satisfactory"), the aim should be to help people optimise the system -- a win:win situation.

In Deming's words, his vision of the new role of a manager of people can be described as follows:

1. A manager and his people understand the meaning of a system. They understand how the work of the group may support the aims of the system.
2. The group sees themselves as a component in a system. They work in cooperation with preceding stages and with following stages towards optimisation of the efforts of all stages.
3. A manager of people understands that people are different from each other. He tries to create for everybody interest and challenge, and joy

in work. He tries to optimise the education, skills, and abilities of everyone.

4. He is an unceasing learner. He encourages his people to study. He provides, when possible and feasible, seminars and courses for advancement of learning. He encourages continued education in college or university for people that are so inclined.

5. He is coach and counsel, not a judge.

6. He understands a stable system. He understands the interaction between people and the circumstances that they work in. He understands that the performance of any one who can learn a skill will come to stable state - upon which further lessons will not bring improvement of performance. A manager of people knows that in this stable state, it is distracting to tell the worker about a mistake.

7. He has three sources of power:

    I Formal

    II. Knowledge

    III. Personality and persuasive power

    A successful manager of people develops II and III; does not rely on I. He has nevertheless the obligation to use I as this source of power enables him to change the system - equipment, materials, methods - to bring improvement.

8. He will study results with the aim to improve his work.

9. He will try to discover who if anybody is outside the system, in need of special help. Special help may be only simple rearrangement of work. It could be more complicated.

10. He will also use his formal power to improve the system.

11. He creates trust. He creates freedom and innovation.

12. He does not expect perfection.

13. He listens and learns without passing judgement on him that he listens to.

14. He will hold a conversation of four hours with every one of his people, at least once a year, not for judgement but merely to listen.

15. He understands the benefits of cooperation and the losses from competition between people and between groups.[3]

Developing these skills will not be easy. Nevertheless the present system of performance appraisal could be modified into a form of team review (which already sounds less judgmental) which no longer will be merely a top-down, one-way exercise but a genuine two-way dialogue. Peer reviews could be considered as supportive of the process.

In addition, any new team review system still needs to incorporate a large individual element from the perspective of considering individual career development. Unless another form of career development management exists then the performance appraisal practices should be flexible enough to handle different career types. This approach originates from the view of Driver that people differ in the ways that they conceive their careers.[4]

There are four distinct career concepts to be considered: linear, spiral, transitory, and steady state. Prince and Driver summarise the manner in which several performance appraisal dimensions ought to be packaged in an appraisal system based on these four career types, as shown in Exhibit 6.2.

Finally, it is important to recognise that opportunities for review and feedback are not limited to an annual exercise formally feared by both sides. Wherever possible, continuous dialogue aimed at optimisation of the system is to be encouraged. In this respect the current Quality Suggestion Scheme (part of the TMS) has an important role to play. Employee suggestions aimed at improving the present system ought to be actively encouraged throughout the company, and the role of non-monetary recognition rewards in this area ought to be pursued with vigour. Recognition from senior management remains a strong motivational factor for many employees and if consistently applied can lead to enhanced individual and organisational behavior.

<Exhibit 6.2> A Multiple-Package Appraisal System

	CAREER-BASED PERFORMANCE APPRAISAL PACKAGE			
Performance Appraisal Dimensions	LINEAR	STEADY-STATE	SPIRAL	TRANSITORY
Focus on current performance level	Minimal	High	Minimal to moderately high	Moderate
Basis of evaluation & discussion	Demonstrated managerial skills, management potential	Demonstrated technical skills, quality of performance	Areas mastered, new growth areas, breadth of experience	New variety-adding areas, attainment of short-term goals
Evaluation Method	Managerial skill ratings and potential	BARS, critical incidents and skill ratings	BARS and critical incidents	Ratings on accomplishments
Source of appraisal information	Higher management representatives	Peer ratings presented by technically competent persons	Self-ratings plus informed sources	Self-ratings plus informed sources
Career & responsibility focus	Ways to build opportunities to gain managerial skills and visibility	Ways to allow further technical refinement	Ways to build growth areas into jobs	Ways to build distinctly new skill areas into jobs
Use of goal setting	Ends-oriented, with 6-12 mo. horizon	Skill benchmarks and technical accomplishments, with 12-36 mo. horizon	Developmental goals with 12-24 mo. horizon	Ends-oriented with 1-2 mo. horizon
Frequency of performance appraisal	6-9 months	12-36 months	12-24 months	1-2 months
Use of participation	Not critical, provided evaluation is clearly understood	Not critical, provided evaluation is clearly understood	Critical; provides growth-area information	Critical; provides information on interest level
Promotion or transfer prospects	Specific upward promotion prospects discussed	Minimal; perhaps moves up technical ladder or within function lateral moves discussed	Lateral and possibly upward moves discussed	Lateral moves to new areas discussed
Key advisor	Higher-level linear supervisor	Older technical mentor in same field	Spiral mentor, well informed on career change options	Not critical issue
Key rewards	Promotion	Security, benefits, expert recognition	Education, retraining	Time off; rotational assignments

NOTES

1. *Business Week*, November 1992, pp. 66-75.

2. Scherkenbach, W.W. "The Deming Route to Quality and Productivity," Gold Arrow Publications Ltd., 1986, p. 44.

3. The following description is paraphrased from notes taken at a seminar that the author attended from July 2-5, 1991, in London entitled, "Transformation For Management Of Quality and Productivity" chaired by Dr W. Edwards Deming.

4. Driver, M., "Career Concepts and Career Management in Organisation." In: C.L. Cooper (ed.), *Behavioral Problems in Organisations*. Englewood Cliffs, NJ: Prentice-Hall, 1979.

CHAPTER SEVEN

RECOMMENDATIONS AND CONCLUSIONS

The modern day proclivity of mankind to rationalise, analyse, and theorise any given subject or problem is best captured by Havel's assertion that the modern era has given rise "to the proud belief that man, as the pinnacle of everything that exists, is capable of objectively describing, explaining and controlling everything that exists, and of possessing the one and only truth about the world."[1]

Given the actual fallibility of mankind in this respect, this thesis provides one man's limited point of view on the subject of performance measurement and by no means offers the "one and only truth" about that particular subject.

Nevertheless, the dynamics of the subject are indeed highly visible. Measurement is an important weapon in the competitive corporate battlefield. Its effective use offers potentially sustainable competitive advantage to those companies prepared to look outside the paradigm of conventional, outdated financial statements and into the world of the customer and the learning capability of the organisation.

Drucker asserts that "we need to measure, not count" and that "we need measurements for a company or industry that are akin to the 'leading indicators' and 'lagging indicators' that economists have developed for the economy."[2]

The role of performance measurement within a relatively small business unit of a large, diversified multinational corporation has been the focus of attention for the major part of the thesis. Its likely impact on organisational and individual

behavior has been postulated and an attempt made to develop a framework in which to consider the design of an appropriate employee rewards and motivation system.

The resultant observations and recommendations are offered in the spirit of an ongoing commitment to process improvement. Developing and implementing a new process of performance measurement in the terms of a Team Measurement System can offer significant organizational benefits only if it is supported by commitment, trust, and participation by employees at all levels. Developing such an organizational environment remains a major challenge for senior management within the company.

The expected role of the "manager" within the company may well also require significant redefinition. It is no longer sufficient to state that human resource issues are a staff function problem; they are now firmly back on the line manager's agenda.

Mobilising a knowledgable, flexible workforce behind a vision of becoming "the leader" in its chosen field is no easy task but is a task that if carried out effectively will produce a rate of return on investement which not only satisfies the common shareholder but, as importantly, the other two stakeholders - the customer and the employee.

Surely that must become "The Goal."

NOTES

1. Extracted from an address given by Vaclev Havel, President of the Czech Republic, at the World Economic Forum in Davos, Switzerland, on February 4, 1992.

2. Drucker, P.F., *The Wall Street Journal*, April 13, 1993, p. A18.

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APPENDIX I

PERFORMANCE MEASUREMENT SELECTION CRITERIA

FINANCIAL MEASURES

F1 **Return On Capital Employed (ROCE)** Frequency: Monthly
The forecast and actual return (profit after notional tax, excluding interest) expressed as a percentage of average capital (equity and working capital) employed by the shareholders.

F2 **Cash Flow** Frequency: Monthly
The number of days between completion of billable work packs (e.g. milestones) and receipt of payment from client. This measure focuses attention on the asset management such as receivables and unbilled work.

F3 **Project Profitability** Frequency: Monthly
The total job income of a business unit (e.g. UK, Norway) as a percentage of business unit revenue.

F4 **Reliability Of Forecast** Frequency: Monthly
The percentage change in operating income forecast for the year, relative to the previous months forecast of operating income.

F5 **Backlog** Frequency: Monthly
All work awrded to Rockwater but not yet performed.

CUSTOMER MEASURES

C1 **Price Competitiveness Index** Frequency: Monthly
To establish the percentage variance between our bid prices to Tier II customers and those of our competitors. Data to be collected by work type and by country.

C2 **Customer Ranking Survey** Frequency: Annually
Customer's perception of Rockwater and rating of our component services, relative to our competition, in accordance with work type and country. Survey to be undertaken by independant 3rd Party Market Research consultants.

C3 **Customer Satisfaction** Frequency: Monthly
At the outset of a new contract our customers specific needs and expectations are to ascertained (possibly using a standard list of generic measures for initial guidance) with our subsequent performance in these areas being monitored and measured on a monthly basis.

C4 **Market Share / Account Share** Frequency: Quarterly
Measure of our market share by client, country, work type and tier.

INTERNAL MEASURES

I1 **Hours Consulting With Client** Frequency: Monthly

Measure of the quality and quantity of hours spent consulting with our clients regarding **new** work. Quality rating based on usefullness / newness / value of information index as assessed by sales and marketing. Quantity of hours excludes major arranged social gatherings.

I2 **Tender Success Rate/Tender Cost** Frequency: Quarterly

Determine effectiveness of tendering process by measuring "wins" as a percentage of total bids submitted. Analysis to be broken down by country, client and work type.

I3 **Rework** Frequency: Monthly

To establish the cost level of vaoidable work as a result of errors, complaints, repeated work and additional actions to finish a task. The cost level of rework to be presented as a percentage of total cost and of total time (where applicable). Initially five major known causes of rework will be measured.

I4A **Frequency/Cost Of Safety Incidents** Frequency: Monthly

Incident frequency rates (claculated as the number of lost time incidents per 100,000 manhours of exposure) will provide a system for determining variations in the occurrence of safety / loss incidents on a month by month basis. Cost analysis of incidents will identify pure loss to the company (exclude intangibles such as loss of reputation etc)

I4B **ISRS** Frequency: Annually

The ISRS (International Safety Rating System) is an internationally recognised safety program evaluation system which provides the means for a systematic analysis of each element of the safety program to determine the extent and quality of management control.

I5 **Project Performance Effectiveness** Frequency: Monthly

A single measure of project performance based on the effectiveness of our procedures for carrying out the work. The single overall measure will be derived from a weighted mean of fifteen underlying measures as outlined in the Project Management Handbook.

I6 **Project Close Out Cycle** Frequency; Monthly

Average amount of days between last day working offshore and final payment received from client on all jobs. Segmented by business unit.

GROWTH AND LEARNING MEASURES

L2 **Revenue Per Employee** Frequency: Annually

The revenue for a 12 month period divided by the average manpower employed (including long-term contract staff and temporary employees both onshore and offshore).

L3 **Revenue From New Services/Products** Frequency: Annually

Revenue of new products and / or services expressed as a % of total revenue. New products / services to be regarded as products / services never sold by Rockwater before within a certain geographical area. Revenue of the first two years after the initial innovation to be taken into account.

L4 **Staff Attitude/Buy-In Survey** Frequency: Annually

Indicators of staff attitude which measure committment to and involvement in organsisational change programmes along with analysis of employee acceptance of their empowerment and accountability.

L5 **Staff/Customer Suggestion Scheme** Frequency: Monthly

This measure is based on the number of suggestions for improvement received, % of ideas when feedback is provided in less tha one week and % of ideas implemented.

APPENDIX II

SURVEY QUESTIONNAIRE

The following **confidential** survey is being carried out to ascertain attitudes towards Employee Motivation and Rewards systems, the results of which I will use as data for the completion of a section of a thesis on the subject of Team Measurement Systems.

1. Dept :
2. No. Of Years With Rockwater :
3. Given the choice of **five** motivational factors from the following list, please rank in order the factors which motivate you the most significantly in your current position within Rockwater:

Opportunities For Promotion	
Opportunities for Acquisition Of New Skills	
Opportunities for Further Education/Training	
Job Variety	
Pride in Own Workmanship	
Ability to Experiment/Innovate	
Present Salary	
Present Fringe Benefits (pension, healthcare)	
Work Hours (length; flexibility)	
Attitude of Peers	
Attitude of Line Supervisor	
Recognition From Senior Management	
Job Security	
Other (pls specify)	

4. Given the choice of **five** motivational factors from the following list, please rank in order the factors which are likely to motivate you the most significantly in the future given the emphasis in the Team Measurement System within Rockwater:-

Opportunities For Promotion	
Opportunities for Acquisition Of New Skills	
Opportunities for Further Education/Training	
Job Variety	
Pride in Own Workmanship	
Ability to Experiment/Innovate	
Present Salary	
Present Fringe Benefits (pension, healthcare)	
Work Hours (length; flexibility)	
Attitude of Peers	
Attitude of Line Supervisor	
Recognition From Senior Management	
Job Security	
Other (pls specify)	

5. Is there any correlation between your work accomplishments and your annual merit pay increase ? (Circle your response)

1. Perfect Correlation
2. Very High Correlation
3. Moderate to High Correlation
4. Low Correlation
5. No Correlation

6. Is there any correlation between your annual performance review and your annual merit pay increase ? (Circle your response)

1. Perfect Correlation
2. Very High Correlation
3. Moderate to High Correlation
4. Low Correlation
5. No Correlation

7. Is it likely that continued high job performance will lead to advancement within Rockwater ?

1. Certain
2. Very Likely
3. Likely
4. Somewhat Likely
5. Not Likely At All

8. The reaction of your management to failure or continued poor job performance of an employee is **most likely** to result in : (Circle one response)

1. Reassignment
2. Demotion
3. Dismissal
4. No Action

9. To fill a key job vacancy in your department, Rockwater is **most likely** to select a candidate from : (Circle one response)

1. Within the Company
2. Outside the Company

10. How long have you worked in your present position ? (Circle one response)

1. Less than 1 year
2. 1 to 3 years
3. 4 to 5 years
4. More than 5 years

11. Within its industry how do you view the company as an employer ? (Circle one response)

1. The Employer of Choice
2. Above Average
3. Average
4. Below Average
5. Well Below Average

12. Compared to your previous employer how do you rank Rockwater ? (Circle one response)

1. Well Above Average
2. Above Average
3. Average
4. Below Average
5. Well Below Average

13. Have you ever participated in or have knowledge of an Employee Profit-Sharing Scheme ?

1. Yes
2. No

14. If yes please comment on its effectiveness, i.e.,

Strengths Weaknesses

15. Have you ever participated in or had knowledge of non-monetary recognition awards for performance.

1. Yes 2. No

16. If yes please comment on its effectiveness i.e.

Strengths Weaknesses

17. Have you ever participated in or have knowledge of knowledge/skill based pay schemes.

1. Yes 2. No

18. If yes please comment on its effectiveness i.e.

Strengths Weaknesses

19. Have you ever participated in or have knowledge of work group or team incentive schemes.

1. Yes 2. No

20. If yes please comment on its effectiveness i.e.

Strengths Weaknesses

21. Have you ever participated in or have knowledge of pay-at-risk rewards systems?

1. Yes 2. No

22. If yes please comment on its effectiveness i.e.

Strengths Weaknesses

23. In which areas of communication do you perceive the greatest confusion / lack of understanding within the company (rank top three in order):-

Communication With Customer	
Communication Within Own Department	
Communication Between Project Teams	
Communication Between Engineering - Operations	
Communication Between F/A - Project Operations	
Communication Between Materials Management - Project Operations	
Communication Between Main Office and Satellite Offices (Kirkhill, Peterhead, Wick)	
Communication Between Main Office and Stavanger	
Other (pls specify)	

24. Any other comments / opinions on Employee Rewards Systems and the Team Measurement System currently being implemented within Rockwater.

MANY THANKS FOR YOUR TIME AND COOPERATION