

An Investigation on a Foreign Direct Investment Company in the North West of Ireland, with regard to Non-Financial Performance Indicators and Specifically Knowledge as an Asset.

A Case Study into the Practices and Perceptions of the Management and Staff of Company X.

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## Disclaimer

The work presented in this dissertation is the original work of the author, under the supervision of Ms Suzanne Roarty and due reference has been made, where necessary, to the work of others. No part of this thesis has previously been submitted to LYIT or any other Institute.

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## Abstract

The objective of the research for this dissertation is to effectively capture the views of both management and staff on knowledge assets and non-financial indicators and to ascertain whether certain theoretical models hold in a contemporary organisational environment. To achieve this objective the case study method was chosen as the most appropriate research methodology.

The Research Question answered through this dissertation is:

To what extent does Company X value non-financial performance indicators, and what part does Company X perceive knowledge assets play in the success of the company?

In terms of knowledge, Company X was actively involved in setting up meetings and forums for their staff to mentor each other and discuss different aspects of their work. A culture of knowledge sharing is critical to the successful intentional integration of knowledge as a competitive advantage. As Company X has demonstrated, they are positively inclined towards the potential benefits from knowledge capture and knowledge management; therefore they are an ideal candidate for this dissertations primary research focus.

The Balanced Scorecard was found to be a most useful implement to engage during strategic decision making and analysis with regard to the financial and non-financial performance indicators. For this purpose themes from the balanced scorecard were employed for the data analysis so as to provide a coherent and cogent interpretation.

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## Chapter 1 – Introduction

This dissertation was undertaken as part of a Masters in Accounting Program in the Letterkenny Institute of Technology. It was completed in a one year time frame.

### 1.1 Purpose and Scope

The purpose of this dissertation is to conduct an investigation into the practices and perceptions of Company X's management and staff on non-financial indicators of performance, in particular recognising knowledge as an asset and harnessing it to gain a sustainable competitive advantage.

The research is of benefit to Company X as it will analyse their management and staff attitude towards non-financial performance indicators and knowledge as an asset, and determine if they are in alignment. 2010 has been dedicated Company X's Year of Knowledge and knowledge was also recently added to their mission statement. Therefore determining the practices and perceptions regarding knowledge will help identify if changes are happening or whether training is needed. It will highlight for management whether the perception of knowledge value at the top is filtering down. It is obvious that mentoring and internal training are actively encouraged, but determining whether people are doing the basics to achieve recognition, or actually believe it is of value and confers competitive advantage, and so will ensure that what Company X is striving to achieve is actually being put into action.

This paper attempts to highlight the existing and potential benefits of non-financial indicators, in particular recognising, capturing and using knowledge, within a US Foreign Direct Investment company in the North West of Ireland.

### 1.2 Background and Objectives

This dissertation will also add to Ireland's research output on knowledge within the management accounting discipline. As a knowledge-based economy it is important that we recognise the value of knowledge and Case Studies are a significant method of illustrating the importance of non-financial

indicators and knowledge, as the ambiguity of certain terms can be removed with the use of examples. This dissertation will also add to the growing number of case studies being carried out on knowledge as an asset, throughout the world but specifically in America, Australia, the UK and Ireland.

Due to the complexities involved in dealing with terms such as non-financial performance indicators and knowledge, in practice it is often taken for granted or dealt with intuitively. It will be interesting to follow the developments and see how knowledge is recognised in the future, be that on the financial reports as a note or in a separate disclosure document or whether it retains its elusive character and remains a matter for internal review and senior management personnel only.

The objective of the case study will be to determine Company X's policies and practices concerning knowledge generation and collection, from the perspectives of staff and senior management. It will also ascertain the emphasis placed on different non-financial performance indicators. It was felt that specifically focusing on knowledge may produce exaggerated results if the subjects of the research were aware of the particular topic being analysed. Knowledge sources vary and thus the metrics used to measure knowledge are diverse.

In terms of knowledge, Company X was actively involved in setting up meetings and forums for their staff to mentor each other and discuss different aspects of their work. It is no longer necessary for Company X to formally organise these meetings as the staff have recognised the value of them and set them up on a regular basis themselves. This was remarked upon by management and also proved true from analysis of the staff questionnaire responses. However meetings and forums are still monitored and mentors and participants are rewarded as the value of sharing knowledge is recognised within the organisation as a whole, for example, in terms of on-the-job training and problem solving.



A culture of knowledge sharing is critical to the successful intentional integration of knowledge as a competitive advantage. As Company X has demonstrated, they are positively inclined towards the potential benefits from knowledge capture and knowledge management; therefore they are an ideal candidate for this dissertation's primary research focus.

### 1.3 Importance of the Research

The importance of this research is threefold.

1) It is of benefit to the subject of the primary research as it demonstrates the extent to which management and staff are in agreement as to the importance of non-financial indicators of performance, and the benefits of knowledge assets. It will also illustrate areas where further training, or communication, will be required. In terms of staff, their objectives and targets may become clearer, their perceived worth will become more tangible and measurable within the organisation. For performance management and pay issues, it is also important that a worker's value be determined. Often companies will pay more than the average hourly rate for consultancy services. It makes sense therefore that those who do more for the company and know more about its processes and technicalities should be rewarded for this expertise. There are often issues involved with seniority as opposed to performance as a measure, particularly as for a time it was an employee's market, and thus the level of labour mobility was great. Now, with job security a major factor for everyone, performance has to be the real measure. For example, those who train and mentor others are more beneficial to the company than those who guard their secrets closely for their own purposes; despite the fact the latter may be marginally more productive.

2) The information gained from this case study and the associated research will be of importance also to academic institutions, students, staff members and other organisations. In terms of learning institutions and students, this research will indicate the practical implementation of performance measurement in terms of knowledge, including metrics and methods. Non-financial indicators are proving to be a successful method of measuring

performance alongside financial. This is particularly emphasised with the balanced scorecard. Ireland does not currently have a substantial body of literature on knowledge as a practical element of the everyday business performance of a company. This case study will therefore provide information on a particular case, but will also illustrate how research can be carried out on other firms.

3) In terms of other organisations, this case study may illustrate how knowledge can be successfully recognised and intentionally measured, and may provide a bench-marking system. Therefore the third reason that this research is important is the valuable insights it will provide to other national and foreign direct investment companies. They will be able to see the benefits derived by Company X and thus potentially add to their own competitive advantage by increasing their investment, in terms of time especially, in the non-financial aspects of business, which many firms have relegated in priority in the cost-cutting environment of the current recession.

This paper asserts that a company which recognises knowledge as an asset and the importance of non-financial indicators obtains a competitive advantage from doing so. While there is an intense focus on cash in the current economic climate it is of interest that the primary research is conducted on a company which is still prioritising these non-financial factors.

## 1.4 Overview of the Research

The Research Question answered through this dissertation is:

To what extent does Company X value non-financial performance indicators, and what part does Company X perceive knowledge assets play in the success of the company?

This is broken down into Research Objectives which include,

- determining the management practices and perceptions; and
- determining the staff practices and perceptions,

regarding non-financial performance indicators and knowledge as an asset.

The Research Question is answered and the Research Objectives are met through this dissertation. The following information outlines the structure of the research paper.

Chapter 1 provides an Introduction.

Chapter 2 provides a literature review which provides evidence as to the wealth of information available on this topic, but also selects the best of the available literature to demonstrate particular views and accepted models, and helps locate the primary research in a context.

Chapter 3 details the research methodology followed in order to obtain, through primary research, the data necessary to meet the research objectives with regard to Company X. It also gives information on the type of research and illustrates best practice and alternatives, but gives reasons as to why the particular research methods used were chosen.

Chapter 4 illustrates the findings of the primary research. These findings answer the research question and meet the objectives set out for the study.

Chapter 5 provides recommendations and conclusions and also highlights any problems encountered.

## Chapter 2 - Literature Review

### 2.1 Sources of Literature

The amount of literature surrounding these areas is immense, particularly in America and Scandinavia, with authors such as Stewart (2001), Kaplan and Norton (2000), Lev (2004) and Sveiby (2002), all illustrating the requirement for companies to realise that qualitative or non-financial indicators can be just as important as financial performance to record and manage. However there is considerably less literature available in Ireland, where we had been enjoying a science and technology driven export boom until the recent economic downturn. Despite the recession, Ireland still has an abundance of highly skilled staff, and a performance measurement system which incorporates knowledge, could simultaneously be motivating to staff and beneficial to employers. It may therefore be more important than ever that those non-financial elements become analysed and valued.

This paper illustrates that potential benefits can be gained from incorporating an asset which is already present, in particular knowledge, and making it work explicitly for the organisation. The challenges of doing so are also mentioned and are illustrated by the very title of Brown and Duguid's 2000 paper, "Balancing act: How to capture knowledge without killing it." In the paper itself it describes how, even with the very best innovative ideas, you still need managers who can harness the knowledge and direct the processes to ensure efficiency. Recognising that knowledge is an important asset is just the first step forward towards achieving a competitive advantage. Therefore it is clear that although many companies use knowledge intuitively and without specifically taking it into account as an asset, a competitive advantage can best be achieved when knowledge is recognised as a valuable asset and used explicitly with processes in place that are capable of utilising knowledge to provide the company with that sustainable competitive advantage.

## 2.2 Performance Measurement Definition

Performance Measurement is an aspect of performance management in which what was actually achieved is compared to what was budgeted for. The most quoted performance measurement definition is identified by Moullin (2007) as being Neely *et al.*'s. (2002, p. xiii) "the process of quantifying the efficiency and effectiveness of past actions".

He elaborates on this definition by stating that performance measurement is "evaluating how well organisations are managed and the value they deliver for customers and other stakeholders" (Moullin, 2002, p. 188). This definition gives much more guidance to people involved in performance measurement. It lets them know that it is ultimately the stakeholders who require improved performance.

Performance Measurement is what tells a company how it is functioning, what direction it is going in and should highlight potential areas for change or improvement. Only by measuring what a company has achieved is it actually able to determine if the resources used were well spent, if the client or market segment targeted with the latest advertising campaign, for example, was the correct choice and will also help with future decision making processes.

A more comprehensive definition of performance measurement is given where Atkinson *et al* (1997, p.25) state that it "has a coordinating role, in which it directs attention to the company's primary and secondary objectives. It has a monitoring role, in which it measures and reports performance in meeting stakeholder requirements. And it has a diagnostic role, in which it promotes understanding of how process performance affects organizational learning and performance."

## 2.3 Performance Measures

Performance measures are objective comparisons that provide evidence of an important performance outcome. Thus when establishing the right measures

for a specific company, it is necessary to ensure that they do not conflict, that is to say one is not achieved to the detriment of another.

Neely *et al.* (1997) as cited by Radnor and Barnes (2007, p. 385) argue, “Traditionally performance measures have been seen as a means of quantifying the efficiency and effectiveness of action ... an integral element of the planning and control cycle.” However, they also conclude that “[This is a] somewhat mechanistic view. Performance measures also have a behavioural impact.”

Stewart is among the more persistent critics of what he regards as the inadequacies of industrial age accounting, which he has described as long-dead but not yet buried (Stewart, 2001, p. 268). Recently global competitive pressures have become not so much about financial targets as non-financial measures including levels of knowledge, innovation, motivation and customer retention. Neely and Austin (2000) illustrated the change of focus by saying that traditional performance measurement suffered from “measurement myopia ... [caused by] measuring the wrong things”. The new found concern for quality had required measures with which Operations Managers can track their performance. Due to the current economic climate there are arguments that profit needs to be the focus once more, however in an emerging culture of cutting jobs to cut costs it is essential that management think in terms of knowledge as an asset and determine which staff are necessary for the future success of the business. This paper would assert that employees need to be prioritised based on knowledge potential rather than seniority alone.

Strategic performance measures monitor the implementation and effectiveness of an organisation's strategies, determine the gap between actual and targeted performance and determine organisational effectiveness and operational efficiency. According to the Balanced Scorecard Institute (March 2010), good performance measures:

- Provide a way to see if our strategy is working
- Focus employees' attention on what matters most to success

- Allow measurement of accomplishments, not just of the work that is performed
- Provide a common language for communication
- Are explicitly defined in terms of owner, unit of measure, collection frequency, data quality, expected value(targets), and thresholds
- Are valid, to ensure measurement of the right things
- Are verifiable, to ensure data collection accuracy

This checklist of what makes performance measures worthwhile does not limit the scope to financial data. In particular the measurement of accomplishments has learning or knowledge as its underlying factor. Thus learning curves are a valuable source of information; this is where staff become more productive at doing a particular task due to experience or additional training. Not only is this beneficial to the individual staff member, but it is important for the company to know who is consistently learning, and organise further training for staff who do not meet the standard. Politano (2003, abstract) states a company should “measure what matters, and manage what can be measured”. In terms of this research, knowledge is something that matters, but how it is to be measured may cause challenges, with regard to consistency and bench-marking. Politano (2003) also refers to those items that matter as key performance indicators, which in common with the above checklist are not limited to financial data.

Within qualitative performance measures the language used to measure performance is of great significance. Using words which are subjective like efficient, effective, reliable, sustainable and quality, may lead to misunderstanding or manipulation of results.

In terms of setting a target, the company must be careful that it is achievable. If it is unrealistic, this may have a negative and demotivating effect on staff, which would be contradictory to the organisations objectives.

Barr, in a June 2009 article for the Balanced Scorecard Institute, further illustrates how to find the right measures.

Step 1: Begin with the end in mind; focus on the outcome

Step 2: Be sensory specific; describe outcome in detail

Step 3: Check the bigger picture; level of control, consequences

Step 4: What's the evidence; specific measures of what is being achieved

Step 5: Name the measure; knowing exactly what to measure

In general though, choosing the appropriate performance measures for a particular company should take into account the strategy of that company, its stakeholders and its competitive position.

## 2.4 The Importance of Non-Financial Indicators of Performance

As mentioned previously, traditionally the emphasis of performance measurement was on financial measures such as profit, return on investment and productivity. The move towards non-financial indicators started in the late 1980s as a result of changes in the global market. Companies began to lose market share to overseas competitors who were able to provide higher-quality products with lower costs and more variety. The same possible alternatives are available to the customers of the subject of the primary research. It is Company X's quality and knowledge which set them apart and makes their service worth paying a premium for.

Ghalayini and Noble (1996, p. 64) stated that "to regain a competitive edge companies not only shifted their strategic priorities from low-cost production to quality, flexibility, short lead time and dependable delivery, but also implemented new technologies and philosophies of production management e.g. just in time (JIT) and total quality management (TQM)." The implementation of these changes revealed that traditional performance measures have many limitations and the development of new performance measurement systems may be required for success.



## 2.5 Non-Financial Indicators

Financial measures are usually part of the Annual Report which is regulated, and by the time it gets to the stakeholders it has been reviewed and rechecked. Non-financial measures tend to be part of internal reports. It can be seen that although the Balanced Scorecard has been widely adopted, it is often seen as an internal reporting tool. This is a valid use and potentially of great benefit to the strategic decision making management function of the company. Kaplan and Norton in 1992 envisaged the use of non-financial indicators aiding the implementation of strategic change, there is evidence of around 100 companies where this has occurred according to the Balanced Scorecard Institute.

Plasek (2005) demonstrates how we measure and manage performance is continually evolving. He states that “broad-based financial performance management is an integral part of business ...however; best practice examples have shown that the true drivers of performance and early signals of change are non-financial.” He later explains this by stating that measures have evolved from a cost focus to measuring processing speed, economies of scale and lower labour rates. Increasingly, businesses are also tracking key indicators such as employee and customer satisfaction.

Up-to-date performance management should therefore measure innovation and learning and reward creativity and added value. It should link an individual's objectives to the corporate objectives. Brennan and Connell (2000, p. 2) state that “whereas accounting standards bodies in the USA, the UK and Europe have all adopted methods for classifying intangibles, these assets tend to be defined very narrowly in the form of patents, licences, trademarks and the like. They do not include such aspects as human capital, company reputation, customer loyalty or similar softer dimensions”.

In contrast Wingren's 2004 article has a model which indicates that market value is equal to the sum of the tangible and intangible assets of a company,

thereby including human capital, reputation, customer loyalty, etc. They then go on to link the intangible assets to the balanced scorecard thus:

- External Structure = Customer Perspective
- Internal Structure = Internal Business Processes
- Competence of Employees = Learning and Growth
- Expectations = Financial Perspective

This reinforces the earlier assertions that financial and non-financial indicators may be of equal importance to the successful achievement of company objectives.

Effective performance measurement is of critical importance in ensuring the successful implementation of an organisation's strategy. It is about monitoring an organisation's effectiveness in fulfilling its own predetermined goals or the requirements of stakeholders. In order to be successful, today's company must perform better not simply in terms of cost but also in other dimensions such as quality, flexibility, value and so on. A performance measurement system that enables it to meet these demands successfully is essential as it helps ensure that decision-making at strategic and operational level is better informed, aligned and more effective. Comparison of outcomes against objectives or targets enables the identification of underperformance so that timely corrective action can be taken. Above all, measuring performance is an important tool of strategic analysis. Stakeholders will get a better indication of an organisation's strategy from observing what it measures and does, than from its declared goals or what it says it does.

Allio (2006, p.258) identifies that for every stage of an industry's evolution, different performance measures stand out as critical to successful implementation of the firm's strategy: "In a start-up high technology business, managers focus primarily on technical performance – reliability, speed, efficiency. In the growth stage, when competitors vie for new customers, the key measure of performance is probably market share. In mature industries, managers focus on production cost or capacity utilization. And in an aging industry, when firms harvest, cash flow emerges as the predominant metric."

This is an interesting and helpful way of segregating the different means of measuring a company's performance. Thus illustrating that whatever the objective is within your organisation and whatever its industry's stage of evolution, it is possible to find the right goal to strive to achieve and consequently a range of non-financial performance measures, which will help you achieve it.

## 2.6 A Definition of Knowledge

Terms such as data, information and knowledge are often confused. In the context of this paper, "data has been defined as raw facts; information is processed data without interpretation, whereas knowledge implies the application of a cognitive process to information so that it becomes useful." (Edwards et al, 2005)

Knowledge is defined by the Oxford English Dictionary (online version, May 2010) as (i) expertise, and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject; (ii) what is known in a particular field or in total; facts and information; or (iii) awareness or familiarity gained by experience of a fact or situation.

In the context of this paper the primary focus is on knowledge as an asset along with non-financial indicators of performance. In conjunction with this it is necessary to touch on some of the main developers of the concept of knowledge as an asset.

In the Sveiby article on tacit knowledge (1997, p. 5) he cites Bertil Rolf's suggestion of a hierarchy of knowing, and then goes on to explain the three levels as being:

1. Skill is the ability to act according to rules which depend on feedback from a non-social environment. The actor is able to judge if the action has been successful.

2. Know-how includes skill and is the ability to act in social contexts. Other actors establish the rules, e.g. professional institution or tradition. Know-how implies problem-solving.

3. Expertise is know-how plus the ability of reflection. This is the ability of know-how within a certain domain and the ability to submit to the rules and by reflection, influence the rules of the domain.

### 2.6.1 Tacit and Explicit Knowledge

Within each level of the hierarchy of knowledge, as explained by Sveiby, are tacit and explicit knowledge. Working definitions for these terms in the context of this paper are:

1) Tacit Knowledge is a feeling or insight. It is difficult to explain and more difficult to capture, but it is that intuition which makes someone more valuable than a peer with the same technical ability.

2) Explicit Knowledge is what can be captured, explained in words, traded, or sold — for example, a corporate mission statement, an operations manual, a sales script or a manufacturing procedure. This knowledge remains with the company after an employee leaves.

Though there is an element of tacit knowledge involved within the knowledge asset the actual documentation and purposeful capture of the knowledge will help bring it to an explicit level, and it is the explicit knowledge which can be measured and managed by the organisation. It is possible to document the knowledge required to do a task in the most efficient manner. Although initially it may be perceived as intuition, deliberately isolating separate elements of a task and questioning the individual involved as to the thought process behind each action and recording it will pass on such knowledge.

For example, a car's petrol cap lever is broken. Two men spend half an hour pulling back the covers of the car so as to reach the cable to open the cap.

When the car next needs petrol, a third man opens the boot, pops out the tail-light cover and reaches past the lights to pull the cable, and puts back the cover. This is a much more efficient method, and on sharing this knowledge with the original two men, time need not be wasted in future. Documenting this type of knowledge within the company means that if new workers are taken on, the knowledge may be shared, but more importantly, after those employees involved are no longer working there, the knowledge is not lost.

Knowledge can be an elusive term which is misinterpreted and confused with terms like intellectual capital. Davenport and Prusak repeatedly provide examples of what they mean by knowledge in their 1997 book "Working Knowledge: How Organizations Manage What They Know". Knowledge is the asset, whereas intellectual capital is what is earned from a cohesive strategy which acknowledges the importance of knowledge and tries to establish measures and guidelines so that it can be captured, retained and used to add value to the organisation as a whole rather than just the originator or individual concerned. These terms are only an issue when the company is trying to communicate its intentions to others.

## 2.7 Intellectual Capital

Intellectual capital has been around for as long as companies have had customers. "It's what makes a company worth more than the sum of its countable parts. As an asset, it has been (inadequately) covered for years by the blanket of goodwill. Unlike accounting goodwill, intellectual capital appreciates." Brinker, CPA article, (2002). This sentiment is repeated by many authors including Brennan and Connell (2000), Martin (2004) and Edvinsson (1997).

Brooking (1996) defines intellectual capital as the "combined intangible assets which enable the company to function." In other words, she sees an enterprise as the sum of its tangible assets and its intellectual capital, as shown in the following formula:

- Enterprise = Tangible Assets + Intellectual Capital

Lev's 2004 article on solving the misallocation of resources strongly reinforces this researcher's perception of knowledge as a major component of a company's success. This is illustrated where he states: "Intangible assets – a skilled workforce, patents and know-how, software, strong customer relationships, brands, unique organisational designs and processes, etc – generate most of corporate growth and shareholder value."

Knowledge also fits within Intangible Assets under Individual competence in Sveiby's "Intangibles Assets Monitor" (2001). This is a person's ability to act in various situations. It includes skill, education, experience, values and social skills. Sveiby's contribution to the literature on knowledge as an asset has been a veritable fountain of information. It is the recognition that there is more to intangible assets as they currently stand within reporting frameworks, that there exists a human element to the organisation which means that it could not trade all of its staff for people with the exact same training and experience and still function at the usual level, that makes for interesting discussions and theories on how to exploit this asset that is knowledge. Finally it is the fact that it is currently undeterminable as to what value to place on knowledge assets that means there is yet much to be discovered, debated and decided.

## 2.8 Taking Account of Knowledge as an Asset

Knowledge is becoming more recognised in accounting, particularly management accounting. This is demonstrated by the various projects and initiatives launched by the OECD and the European Union, for example the OECD's "Science, Technology and Industry Scoreboard", the EU's "Regions of Knowledge", "Competitiveness and Innovation Programme", and "CASPAR", the Cultural, Artistic and Scientific knowledge for Preservation, Access and Retrieval. It is also significant that the British Standards Institution in co-operation with PriceWaterhouseCoopers has produced a framework entitled "Knowledge Management – A Guide to Good Practice" (BSI, 2001).

It has been suggested by Lev (2004) that the reason managers do not inform shareholders of the intangible elements of the company's performance, is that

GAAP (Generally Accepted Accounting Principles) doesn't take it into consideration. This is an insightful message, which leads one to wonder if, like Corporate Governance latterly, it will soon be necessary to divulge this type of information in a medium such as the Annual Report. The article suggests that financial indicators may be misconstrued by stakeholders if they are not given some facts on all areas of performance.

Brennan (2001) has produced an article speculating as to how knowledge assets or intellectual capital could be accounted for within the balance sheet. It was found that there was a large discrepancy between market value and tangible assets, which Brennan concluded resulted in high intellectual capital value. Disclosure of such assets was found to be low among the 11 companies researched.

Although it may not be feasible for all companies to determine the value of intellectual capital as the estimates and opportunity for manipulation of accounts would be great, Sveiby's 2002 proposal of accounting for non-financial indicators in a separate format, while the Annual Report remained unchanged, would be easier to facilitate and more appropriate internally for an organisation. Recognition of knowledge as a key performance indicator organisation wide would undoubtedly produce positive results, without the need to issue rules as to how to value knowledge but instead providing guidance on good practice. Rather than precise values and figures, it may be advisable to use a format such as that used when discussing risks the companies face and strategies implemented to deal with them. Also, as companies come to realise the value to be derived from documenting their knowledge policies, they may prefer to keep knowledge issues internal, however this research suggests that whether internal or external, knowledge policies and decisions should be documented.

Attempts to apply managerial rules and disciplines to knowledge and other intangible assets may defeat the purpose and begin to stifle and constrain the creative process. It is for this purpose that identifying the correct strategy of integrating the knowledge into the overall strategy of the firm is so important.

Prior to being able to use the knowledge that exists within an organisation it must be possible to communicate, capture, store and share that knowledge.

## 2.9 Methods of Measuring Intangible Assets

According to Sveiby (2002) there are four possible approaches to the measurement of intangibles. These are:

- Direct intellectual capital methods; used to estimate the monetary value of intangible assets
- Market capitalisation methods; used to calculate the difference between a company's market capitalisation and its stockholder equity as the value of its intellectual capital, as used by Brennan (2001)
- Return on assets; used to compare the relative ROAs (return on assets) of companies
- Scorecard methods; report various indicators for the components of intellectual capital in scorecards

Among the more prominent authors in this field, it appears that scorecards are the preferred method. They are used by Edvinsson ("Skandia Navigator", 1997), Roos ("IC Index", 1997), Sveiby himself ("Intangible Assets Monitor", 1996, 1997, 2001), Kaplan and Norton ("Balanced Scorecard", 1992) and Lev ("Value Chain Scoreboard", 2001).

These authors are much referenced and highly respected academically on this topic. It is thus valid to accept that the scorecard method is a recognised and useful method of measuring intangibles such as knowledge.

For the purposes of this paper it is essential to look at a scorecard approach as the primary research indicates at this stage that Company X is in need of a scorecard to adequately measure and monitor their intangibles, including knowledge. For the purposes of this paper the contemporary iteration of Kaplan and Norton's 1992 "Balanced Scorecard" is to be analysed in greater detail as it not only emphasises the value of non-financial indicators alongside the financial indicators, it also relates to knowledge in each of its non-financial



categories, in the customer focus, the internal business process focus and perhaps more specifically in the growth and learning focus.

### 2.9.1 The Balanced Scorecard

The balanced scorecard is a management system that enables organisations to clarify their vision and strategy and translate them into action. It provides feedback around both the internal business processes and external outcomes in order to continuously improve strategic performance and results.

Kaplan and Norton (2002) describe the innovation of the balanced scorecard as follows:

"The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation."

The balanced scorecard uses four perspectives to plan, direct, manage, analyse and measure the performance of the company. These are the financial, customer oriented, internal business process and learning and growth perspectives. Immediately it is clear that although financial performance is a key element of the company's strategic decision making and performance evaluation systems, it is no longer the sole element. Attaching equal importance to three separate qualitative non-financial indicators highlights the need to focus on these areas also.

The benefits of the balanced scorecard identified by the Balanced Scorecard Institute and confirmed by many organisations include:

- Improved organisation alignment
- Improved communications, both internally and externally
- Linked strategy and operations

- More emphasis on strategy and organisational results
- Integrated strategic planning and management

There are, however, several major challenges to developing and sustaining the balanced scorecard and these have been identified by the Balanced Scorecard Institute as:

- Engaged leadership
- Maintaining momentum
- Measuring what matters
- Not using a disciplined framework to build the system
- Mistakenly thinking a scorecard system is a short-term project
- Not involving a cross-section of the organization in developing the system
- Not thinking strategically enough
- Not incentivising desired behavioural changes

The main elements of the Balanced Scorecard are thinking strategically, measuring performance, evaluating results and feedback; these are fundamental concepts in contemporary management. Thus it is valid to suggest that the incorporation of a balanced scorecard would improve these key aspects of management and thus it would likely be a worthwhile investment.

Implementation of the Balanced Scorecard is supported by the Nine Steps to Success™ Balanced Scorecard Framework. This framework, first developed in 1997, has been used successfully by over 100 organisations globally. Organisations ranging in size from 6 employees to over 100,000 employees have used the framework. The nine steps, in sequential order, are:

1. Organisational Assessment
2. Strategy Development
3. Strategic Objectives
4. Strategy Mapping
5. Performance Measures and Targets
6. Strategic Initiatives
7. Automation

8. Cascading the Balanced Scorecard throughout the Organization

9. Evaluation

## 2.10 Knowledge and Intangible Assets

According to a study published in the Harvard Business Review (Ulrich, 2004), as cited by Robert T. Grant (2004), companies possess eleven identifiable traits when they place high value on their intangible assets. They are:

1. Talent – Companies are good at attracting, motivating, and retaining competent and committed people.
2. Speed – Companies are good at making important changes rapidly.
3. Shared Mind-Set and Coherent Branding Identity – Companies are good at ensuring that employees and customers have positive and consistent images of and experiences with the organisation.
4. Accountability – Companies are good at obtaining high performances from employees.
5. Collaboration – Companies are good at working across boundaries to ensure both efficiency and leverage.
6. Learning – Companies are good at generating and generalising ideas with impact.
7. Leadership – Companies are good at embedding leaders throughout the organisation.
8. Customer Connectivity – Companies are good at building enduring relationships of trust with targeted customers.
9. Strategic Unity – Companies are good at articulating and sharing a strategic point of view.
10. Innovation – Companies are good at doing something new in terms of both content and process.
11. Efficiency – Companies are good at managing costs

Within these traits it is easy to discern the importance of knowledge, whether it is within the organisational culture itself or the individual employees. This demonstrates the links between knowledge as an asset and non-financial

performance indicators as previously outlined according to Wingren's 2004 article. Within talent, learning and innovation, knowledge plays a pivotal role, and the innovation and learning perspective of the balanced scorecard provides a means to measure these aspects and chart the company's progress in this regard. Similarly with customer connectivity, knowledge plays a significant role. This will be shown in the management interview, where it is evident that business acumen plays an important role in the retention of current customers and the successful acquisition of new customers. The customer perspective is also a part of the balance scorecard; here goals can be set and the development of customer connectivity can be monitored. Strategic unity also demonstrates the knowledge and communication levels within the company, whereas the internal business process perspective of the balance scorecard helps identify what is needed in terms of strategy, and establishes how the company can improve.

Bayou and Reinstein's 2001 paper develops a system of corporate knowledge to account for:

- 1) individual thinking
- 2) group thinking
- 3) product of thinking i.e. knowledge
- 4) output of knowledge i.e. professional degrees, patents and licensing.

This once again links back to the balanced scorecard non-financial indicators of performance as the product of thinking relates to innovation, learning and growth, and the output of knowledge may be relevant to the customer perspective and internal business processes. In terms of actual implementation this system of corporate knowledge is valuable to a company, in that it provides examples of different sources of knowledge and thus different values can be assigned. It is made clear what is lacking and where further development is needed. However even at the initial stage of trying to explain what knowledge is to senior management and why it can provide a competitive advantage, when they may be focusing on tangible results and profits, it is useful for demonstration purposes. It can also be used when explaining to staff why they should engage in knowledge sharing, what the different sources are and how it can be documented. This is because staff

may wish to hold on to their own ideas so as to retain their own advantage, but illustrating how group ideas are about sharing and working together to improve, is beneficial to staff and the company as a whole.

In terms of financial advantages, Rivette and Kline (2000) discuss how attention to intellectual property boosted IBM's annual patent-licensing royalties, 3300% from \$30million in 1990 to almost \$1 billion in 2000. This is a powerful message to encourage other companies to do the same.

## 2.11 The Learning Environment

Knowledge creation and retention must be done within a certain type of environment. This environment must actively encourage the sharing of knowledge. Employees must be encouraged to work as a team. Rather than hoarding knowledge for personal gain or recognition it is important that sharing, mentoring and teaching other staff is made possible and attractive by the Company, perhaps by offering incentives or acknowledging participation with rewards, etc.

## 2.12 Conclusion

While it is important that Company X has recognised the significant impact that recognising knowledge as an asset and non-financial indicators in general can have on their performance, it is important to understand that using them to gain a competitive advantage is not enough. They then have to be monitored and improved upon so as to provide Company X with a sustainable competitive advantage which will provide continuing benefits. This is why the balanced scorecard should be proposed as a viable opportunity for Company X to use what they currently recognise, but to develop it more and to assure that the non-financial performance indicators and in particular knowledge as an asset, continue to remain a significant part of the company's strategy.

## Chapter 3 – Research Methodology

The objective of the primary research within this dissertation is to effectively capture the views of both management and staff on knowledge assets and non-financial indicators and to ascertain whether certain theoretical models hold in a contemporary organisational environment. To achieve this objective the case study method was chosen as the most appropriate research methodology. Although single case studies are deemed to not be generalisable, in the current economic climate companies are seeking new ways to gain competitive advantage and thus it would be difficult to state that two companies of the same size, location and industry were alike. This implies that drawing accurate inferences from a sample about a population would be improbable if not impossible. Instead, focusing on one company will allow this research to gain an in-depth view of that company's practices, and also gain an understanding of their attitudes and behaviour regarding knowledge. This chapter explains how the primary research was carried out.

### 3.1 Research Aims and Objectives

The aim of this research is to analyse how a US foreign direct investment company in Ireland's North-West region deals with the issues of non-financial indicators of performance and specifically knowledge as an asset.

The primary research carried out in relation to this paper is a case study on a company which has recently incorporated the term knowledge into its mission statement but has been implicitly recognising knowledge over a number of years without formally putting a name on it, for example, by comparing staff to output and querying why an increase in staff numbers didn't lead to a rise in output. In conducting the case study the researcher uses multi-methods to obtain sufficient data to be able to draw conclusive evidence from Company X in terms of its perceptions and practices. Using multi-methods allows the researcher to make valid assumptions, when the evidence coming from a number of different sources leads to the same conclusion. This is called triangulation.

Robson (2002) defines a case study as a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence. Data collection methods may include questionnaires, interviews, observation, and documentary analysis.

This case study will involve exploratory research, in that it will try to deduce the level of importance knowledge assets and non-financial indicators in general play within Company X, and explanatory research which will try to establish the relationship between knowledge and competitive advantage within Company X.

The objectives of this research are:

- to analyse the practices and perceptions of the management of Company X in terms of non-financial indicators and knowledge;
- to analyse the practices and perceptions of staff within Company X in terms of non-financial indicators and knowledge;
- to determine the level of importance placed on non-financial indicators of performance by Company X;
- to determine whether the management and staff of Company X have achieved goal congruence

In order to meet these objectives it is important that the right research choice is made and the correct methodology is employed.

### 3.2 Research Choice

The positivist philosophical stance regards the researcher as an objective, independent analyst of an observable social reality; he/she neither affects nor is affected by the research subject. Positivist research involves following methodological rules that are independent of the content and context of the inquiry. Personal bias is minimised (Kvale, 1996). Collecting quantifiable data that lends itself to statistical analysis such as hypothesis testing or causal explanations is typical of a positivist study. The objective of the positivist

approach is to produce physical, law-like, reliable and valid generalisations from the observed phenomena (Reynolds, 2001; Snape and Spencer, 2003).

Interpretivism recognises the difficulty in making research value-free and objective. In terms of this view, a single objective reality does not exist. The social world is not easily interpreted and cannot be made to fit certain rules (Snape and Spencer, 2003). The meaning derived by the researcher depends on the circumstances, the people involved and the situations being researched (Saunders et al, 2007; Ticehurst and Veal, 2000). Walsham (2006: 325) maintained that "*the researcher's best tool for analysis is his or her own mind, supplemented by the minds of others when work and ideas are exposed to them*". Unlike the positivist stance used for the questionnaire, generalisations are not the end product. Understanding, through detailed descriptions, is sought by answering questions such as "*what?*", "*why?*" and "*how?*" Interpretivism has grown in importance in research in the past decade. It is more appropriate in exploring complex social phenomena as it facilitates the researcher placing the data in a context and providing detailed descriptions.

In terms of this piece of research an interpretive approach is preferable however in using questionnaires and sampling, in order to assess the employees' practices and perceptions, it is necessary to use some positivist models. The fact that there is no right or wrong answer to the questions posed limits the potential for researcher bias. Similarly bias on behalf of the staff is greatly reduced by the anonymity afforded to them by posing the questions through questionnaires and email rather than face-to-face interviews.

### 3.3 Research Design

The primary research subject was chosen as they suited the needs of the researcher in terms of proximity, suitability, in that they recognise knowledge as an asset, and availability, as they were willing to participate. It was felt that the most beneficial method of collecting the data would be a case study as it encompasses a variety of data collection possibilities.



Other possible methods of data collection including surveys, interviews, observations, focus groups and field studies were considered before the case study method was selected. Opting for a single case study meant choosing a number of methods and triangulating the results so as to achieve the most reliable findings.

### 3.3.1 Case Study

The case study is defined by Yin (2003, p 13) as: - *“an empirical inquiry that investigates a contemporary phenomenon within its real life context, when the boundaries between the phenomenon and the context are not clearly evident, and in which multiple sources of evidence are used”*.

It is suited to both positivist and non-positivist research paradigms. Further, the case study can be used to validate existing theories or in a grounded approach where the researcher develops a theoretical conjecture from evidence collected (Remenyi et al, 1998). The case study is appropriate in situations where a single explanation cannot provide a complete account of the research topic. “It is suitable for achieving in-depth, holistic knowledge of broad, complex phenomena and in understanding interactive processes, relationships, political issues and influence tactics within specific contexts. Hence, it offers greater depth of enquiry than many other tactics.” (Gengatharen and Standing, 2004; Khalifia et al, 2001) The case study provides up-to-date information, making it suitable for the study of contemporary issues.

Whelan and McGrath (2001) suggested that case studies are particularly appropriate when:-

- Theory is in its formative stages and little past research exists;
- Context and interactions are important in answering “*how*” and “*why*” questions;
- The research goal is to capture content and leading edge industry practices.

Further, Yin (1994) suggested that the case study is suitable where:-

- The researcher has little or no control over the environment studied;
- The issues under investigation are contemporary;
- The research is important.

Therefore, with reference to Yin's (1994) criteria above, the case study was deemed to be the most appropriate research methodology for this research for the following reasons. As an independent researcher, I did not have control over the environment. Since 2010 is Company X's year of knowledge, the research topic was contemporary. Further, since knowledge and non-financial indicators are not subjects greatly written about in the academic journals in Ireland, despite Ireland having a knowledge economy, this research is important as it will contribute to the emerging body of research findings in this domain and is set in an Irish context.

### 3.3.1.1 Limitations of Case Studies/ Qualitative Research

Although it is not statistically representative of the wider population of foreign direct investment companies in Ireland a single case study is still a valid research method. This is because the subject was chosen as they have specific characteristics that enable the core theme to be understood in greater detail. These include an acceptance that financial performance is not the only aspect of the company which needs to be managed, also a positive relationship with their workers encourages sharing knowledge and helps achieve good productivity, and finally their acknowledgement that knowledge, if collected, stored, valued and used adequately, can be a major source of competitive advantage at little extra cost to the company.

Within a case study there is an obvious threat of bias, both of the researcher and the subject. However, there is no right or wrong answer to this particular research question and the logic behind the case study is to assess Company X's practices and perceptions. The fact that they have acknowledged that knowledge plays a pivotal role and dedicated the year 2010 to knowledge

indicates they are positively inclined towards it, thus the risks associated with bias are not off-putting.

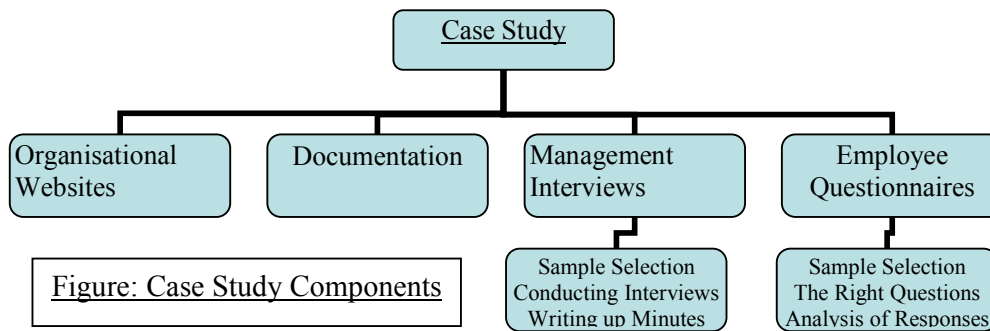
### 3.3.1.2 Overcoming the Limitations

A single case study is not representative of the population. This is overcome as the current economic climate in Ireland requires companies in general to explore all possibilities of sustaining a competitive advantage. Thus they are not currently comparable, but more importantly, this specific company has recognised non-financial performance indicators and knowledge as an asset. This means that the findings may give a greater understanding of these topics in a contemporary organisational context.

The threat of bias has been alleviated by exploring the chosen topic with staff and management. Without specifically mentioning the central theme to staff, it was found that they concurred with management's assertions about non-financial performance indicators and knowledge. This implies that the management and staff responses were not embellished.

The case study was based on data collected from four sources; organisational websites, documentation, management interviews and employee questionnaires, as shown below. The first three sources are to establish management's practices and perceptions of knowledge assets and non-financial indicators of the company's performance, with the final source and an element of the organisational websites research dedicated to the task of ascertaining employees' practices and perceptions regarding knowledge assets and non-financial performance indicators. Using four methods and two sources allows the researcher to use triangulation to check the validity of the research findings.

Figure: Case Study Components demonstrates this case study approach.



### 3.3.2 Organisational Websites

A wealth of information exists on this particular company, from client reviews and press releases, to managers and staff giving detailed outlines of their jobs, awards and achievements and plans and projections. It delves into the history of the company and celebrates a great many of their success stories. It creates a truly positive atmosphere which is reflected in a general sense in the job satisfaction aspect of the employee questionnaire. The websites back up the questionnaires and interviews with typical work scenarios and training and learning opportunities.

#### 3.3.2.1 Limitations of Organisational Websites

Obviously because this material is produced internally and distributed for the benefit of the company there is an element of bias involved. To show the company in the most favourable light this data highlights positive aspects from the perspective of the company to make it attractive to consumers, potential employees, potential and current investors and to potential and current business contacts. Due to the nature of the research it was found that this bias does not adversely affect the research, instead it pinpoints the necessary data for confirming the management views on knowledge. Similarly, the employees' stories are not specifically written on the topic of knowledge or non-financial indicators of performance, but there are elements of the information provided which can validate data obtained elsewhere. Using this information provides a method for reinforcing and confirming certain

conclusions drawn while analysing the responses to the questionnaires and to the interview.

### 3.3.2.2 Overcoming the limitations

There is an element of bias which has to be overcome when dealing with data compiled by the company itself. This is because achievements will be pushed to the fore, while any short fallings will not be awarded the same level of exposure or priority. The fact that there is no benchmark for how much knowledge a company should use, means that there is no bias in this regard. They assert that they use knowledge and they demonstrate their use of non-financial performance indicators, and this is verified using triangulation with other data collection methods.

### 3.3.3 Documentation

Documentation provides a means of triangulation in that the documents prepared and/or circulated internally often supply specific details, and augment and substantiate interview and questionnaire data. Specific types of documentation considered include the confidentiality agreement which had to be signed before the primary research commenced. This single document enforced immediately the fact that knowledge is indeed perceived to be an asset, at least at the senior levels within the company. The agreement specified that any information uncovered could not be divulged to a third party without specific consent. Failure to adhere to the agreement leads to penalties, thus implying that the matter of confidentiality of knowledge acquired during the research is taken seriously.

#### 3.3.3.1 Limitations of Documentation

Similar to the limitations of organisational websites, the type of data gathered from internal documentation has the potential for bias. Further challenges associated with documentation include locating suitable documents, the analysis may be time consuming and gaining access may be difficult. However, the type of documentation referenced in this research is policy and therefore a reliable source.

### 3.3.3.2 Overcoming the Limitations

Minimising the level of bias was achieved by using one official document. This document was not produced with the intention of its being used for any purpose other than to safeguard the knowledge assets and information necessary for the company to perform. Thus it has no bias, as it is a policy document, requesting those with access to internal information to keep it private.

### 3.3.4 Management Interviews

Interview was the chosen method for management as it meant being able to clarify questions. It was also conducted before the questionnaire to provide information the researcher was not aware of, which could then be verified with the questionnaires. The interview is an important evidence collection tactic in interpretive research. It assists the researcher in capturing accounts of events, from individuals who often participated in those events. Czarniawska (2004: 47) defined the interview as two people:-

“seeking knowledge and understanding in a common conversational endeavour”.

According to Kvale (1996), the interview helps to:-

“understand the world from the subject’s point of view, to unfold the meaning of people’s experiences, to uncover their lived world prior to scientific explanations”.

Interviews involve a dual aspect – personal interrelations between the interviewer and informant, and the knowledge, meaning and understanding that results from their dialogue and interaction. In general, the interview takes place in an interpersonal context which is influenced by power, emotion and the interpersonal process. Hence, in interpreting statements made by informants, the researcher always needs to bear in mind the context in which the interview took place (Ellis and Berger, 2001).

Conducting qualitative interviews requires a researcher's knowledge of the subject area, the context under investigation and interview techniques. The interviewer is the research instrument and needs to be skilled in human interaction. Kvale (1996) proposed seven stages to assist the researcher:-

- Thematising or clarifying the study's purpose and the research question;
- Designing or planning the methods to obtain the required knowledge;
- Conducting interviews with the aid of an interview guide;
- Transcribing recorded interviews;
- Analysing interview material;
- Verifying research findings;
- Reporting and communicating findings in a written medium.

Taking these stages into consideration it was then possible to prepare a semi-structured interview. Semi-structured being preferable to a structured interview so that the interview was not limited to any preconceived notions of how the questions and responses would flow, but instead allowing for new ideas and directions being followed, while also covering the most important prearranged areas.

#### 3.3.4.1 Limitations of Management Interviews

The first potential issue in relation to conducting interviews is the fact that the interviewer may inadvertently influence the responses. It is therefore important to have a structured system in place whereby questions are asked neutrally so as not to direct the respondent's reply, one way or the other. There is also the possibility that the interviewee may distort the information, either intentionally or accidentally, through selective perceptions, desire to please the interviewer or recall error.

Interviewer clarifications can result in inconsistencies. One of the advantages of a face-to-face interview is that questions may be adapted to suit the flow of information and questions may be explained so as to reduce the level of ambiguity. However, these deviations may make the data obtained incomparable with other interview findings.

The final issue in relation to the collection of data through interviews is that the volume of information may be very large and thus may prove to be difficult to record and reduce data to suit the needs of the researcher.

#### 3.3.4.2 Overcoming the Limitations

The preparation that went into the interview helped counter any issues to be taken into consideration with regard to interviewer bias. Asking the questions in a conversational tone, but closely monitoring responses, so as not to leave out any important information, resulted in all areas of the interview being studied. The interviewer was careful not to influence the interviewee. Interviewee bias is beyond the control of the interviewer. However the interview was conducted in the interviewee's office, to put them at ease and also so that any information they required was close to hand.

As one interview was conducted, there was no need to keep the questioning consistent; however it was necessary to keep track of which topics had been covered and for this purpose, detailed notes were taken throughout the interview.

#### 3.3.5 Employee Questionnaires

The aim of the questionnaire was to help determine the value placed on non-financial performance indicators and knowledge as an asset by the employees. The questionnaire was based on the balanced scorecard as it was felt that an outline which encompassed more than just the non-financial performance indicators and knowledge assets, would allow for the employees to react naturally to such topics and dismiss them entirely if they were not perceived to be important. Of course, if the employees were to give knowledge an equal rating to the financial objectives of the company, it would reinforce managements assertions that Company X recognises knowledge and it would demonstrate that the channels of communicating the importance of non-financial performance indicators and knowledge to staff are functioning in this regard.

The main objective of collecting the questionnaire data is to ascertain whether



certain theoretical models hold in a contemporary organisational context. These models include the balanced scorecard primarily which puts three sets of non-financial performance indicators alongside the financial focus of the company. It was therefore decided that the themes of the Balanced Scorecard would be the basis for the structure of the questionnaire after establishing some identifier data.

Before sending the questionnaire, it was necessary to pilot test. This was done a number of weeks prior to the questionnaire being sent to its intended recipients for the purposes of the primary research, in order to allow sufficient time for responses to be made and for any possible queries to be addressed. For the pilot testing it was sent to three individuals. One recipient was a professional and two further recipients were fellow post-graduate students. It was suggested that more explanation was needed as to why the research was being carried out, but the research was relying on the employees selecting knowledge and non-financial indicators as important without being prompted. Another suggestion was that there should be an option to put in an 'other' option on the focus question, which was accepted as a valid point which may provide valuable information.

The questionnaire target must be of adequate size, relative to the goals of the study. Once again, this is where the positivist approach influences this research, but this is only to assure the most conclusive findings. The target must be of a size that will be statistically significant. It is just as important, however, that the study not be too big. Sample size is important for economic reasons as an under-sized study can be a waste of resources for not having the capability to produce useful results, while an over-sized one uses more resources than are necessary. (Lenth, 2001)

With this in mind it was decided that the questionnaire would be sent to all of the systems staff of the company in question. In all, 24% of the population responded, with every response being valid and suitable for analysis. On one occasion the researcher had to prompt a respondent to resend their completed questionnaire as they had returned a blank version. In a number of

instances, employees emailed to confirm anonymity and ascertain the purpose of the research. Anonymity was confirmed, but the overall objective of the research was not confirmed as it was vital to the research to establish if the importance of non-financial performance indicators and knowledge as a non-financial asset was apparent without being made obvious to the respondents. This was necessary so that the potential for bias was significantly reduced. After two weeks and a 12% response rate, the recirculation of the questionnaire resulted in the final tally of 24% responding, or 58 from a census of 235. While it would be preferable to carry out analysis on 100 responses, it is generally recognised that 20% is a reasonable response rate to questionnaires, and therefore 24% was deemed to be an adequate sample, which would be representative of the population, but which would also not be excessive.

#### 3.3.5.1 Limitations of Employee Questionnaires

Questionnaires are an extremely convenient source of data. They are good for covering a wide variety of topics, gather descriptive data efficiently and are relatively inexpensive. However the data obtained may provide a general picture but lack depth. It may also be the case that they do not provide adequate information on the context.

#### 3.3.5.2 Overcoming the Limitations

To overcome the possibility that the questionnaire responses would lack depth, the questions were structured so as to cover each aspect of the balanced scorecard. Therefore even though some people placed little emphasis on innovation and learning when asked about the company focus, they then rated certain aspects of it as highly important in the section on innovation and learning. This was an interesting finding as it meant that although the label may not seem important the individual processes and procedures are.

As commented on above, it is sometimes necessary to find a method of ensuring there is a sufficient response rate. If the response rate achieved is

not adequate for the purposes of the research it may be necessary to incur additional expense with monetary incentives or a charity pledge. In terms of this research an adequate response rate was obtained after the questionnaire was sent out a second time.

### 3.4 Conclusion

The limitations of each method of collecting data have been looked into. It has been found that despite these issues, the primary research is of benefit due to the triangulation of data methods. This means that where there may have been cause to doubt an assertion due to its context, when it is then backed up by other separate sources it becomes justifiable. Using one method of data collection to validate the findings in another lends credence to it and greatly reduces the risks associated with using one method in isolation.

Great efforts were taken to address the limitations of the data collection. Despite the care taken over the wording of the interview and the questionnaire, the resending of the questionnaire to ensure an adequate response rate, the prompt and detailed note-taking for the interview and the attention to possible bias, there are still some issues which would be considered if the research were to be replicated. Ascribing more time to each method of data collection would improve the chances of overcoming the limitations associated with each. Yet even more significantly, ascertaining at the outset the best time possible for sending out questionnaires to the intended recipients would expedite the entire process. In conducting this research, it was neglected to find out whether the questionnaire respondents had other questionnaires to deal with. This was unfortunate as the time chosen to send the questionnaires was just at the end, and immediately after, the annual Company X internal questionnaire was to be filled out and resubmitted. It is probable that were it not for this oversight, there would have been an even bigger and thus more representative response to this questionnaire.

## Chapter 4 – Data Analysis and Findings

This chapter details a critical phase of the research. At this point, all the raw data have been analysed and converted to meaningful information. This is the section where the original research question is answered.

There are a number of different sources of data and therefore the analysis will be conducted in discrete sections with an overall conclusion at the end.

### 4.1 Data Analysis

When it comes to analysing the data, it is not simply a matter of quantifying the responses and there are no mathematical equations which will gauge precisely the extent to which managers and employees agree on the importance of non-financial performance indicators and knowledge as an asset. Rather it will be a case of determining the qualitative factors and analysing and interpreting them so as to form a comprehensive and justifiable conclusion as to whether focusing on these aspects is positive for the company as a whole, whether management and staff are communicating effectively and whether the practices and perceptions of both groups are in alignment.

Conducting qualitative research requires considerable reflection on the researcher's part, and the ability to make a critical assessment of informants' comments. It involves debating the reasons for adopting a course of action, challenging ones own assumptions and recognising how decisions shape the research study. Mason (2002) provided the following guidelines for the qualitative researcher:-

- The research should be conducted systematically and rigorously;
- It should be strategic, flexible and contextual;
- The researcher is accountable for its quality and claims;
- He/She should engage in critical scrutiny or active reflexivity;
- He/She should produce convincing arguments.

Positivist researchers often regard qualitative research methods as unscientific. However, Kvale (1996) challenges this assumption stating that it

reflects a limited view of science. Science needs to be regarded as a subject of continuous clarification and discussion. Qualitative data collection approaches include for example observation, documentary analysis, case studies, interviews and focus group discussions (Ritchie, 2003). The choice of method is influenced by the nature of the research problem, the researcher's theoretical lens or philosophical assumptions, the researcher's skills and academic politics (Trauth, 2001).

Research provides data, and it is the task of the researcher to transform the collected data into useful information. The first step in data analysis is preparing the data by editing it for several factors, including:

- completeness—checking for any omissions
- legibility—making sure that the correct response is recorded
- comprehensibility—making sure the answer is understandable
- consistency—checking for consistent answers from the respondent
- uniformity—checking to see that responses are recorded in the same manner

After the data is entered into a data spreadsheet, statistical analyses can be performed to create useful information for the researcher. The researcher is now in a position to use the gathered data to test the hypothesis that non-financial performance indicators and knowledge assets are important. In this instance data analysis consists of reporting descriptive statistics such as averages, measures of variability, and percentages. (Parasuraman et al., 2006)

## 4.2 Organisational Website Data

There is an abundance of information on the Internet about Company X. Their own website provides a great variety of information from sources including; the managing director, the staff, the clients and some of the Awarding Bodies who recognised the achievements of Company X. In terms of this research paper the focus was on information regarding non-financial performance indicators and knowledge. These non-financial performance indicators are

limited to customer focus, internal business process and learning and innovation, for the purposes of carrying out an appropriate level of analysis in a reasonable time frame. The research was designed so as to utilise the Balanced Scorecard methodology on the local company, thus providing a reliable framework from which to draw reliable conclusions.

#### 4.2.1 Findings

Company X delivers a well thought out website structure which facilitates users looking for their culture, learning and training opportunities, and which provides real life information from clients and staff as to the benefits of working with or at the company.

On accessing the website the following banner statement is illustrated:

“Celebrating 10 Years of Growth.

Building on Knowledge, Innovation, and Partnership”

This is a clear statement, also evidenced through the management interview, which demonstrates the intent of the company at a strategic level.

The website talks about the company’s commitment to human resources policies and practices that foster an inclusive work environment where they respect and value their employees and have a commitment to maintaining a positive work/life balance. This encourages the best performance from their staff. Promoting a culture where staff feel valued and encouraged to train and reach their potential provides an environment where staff are willing to share their experience and knowledge, which in turn benefits the company as a whole.

Technology also plays an important role within the company. There is evidence that through the use of Lotus notes, the staff communicate effectively and in a timely fashion so as to address problems, issues and queries of its customers.

The active training programmes ensure that staff skill sets remain current and relevant to customer needs. Staff members certify their knowledge by taking

IBM examinations every year. Continuous and worthwhile training encourages staff to improve while also giving the company the means to provide additional added value services to customers. Management are also provided with courses and continuing professional development (CPD) opportunities. This establishes the environment of learning as being company wide and thus encourages staff to fulfil their potential by motivating them through dynamic leadership. Seeing those around you learning is a great incentive to participate and improve your own skills. Employees partake of technical training, and an induction program, there is an individual development plan, education assistance, professional skills training and certifications. These provide opportunities to learn new skills, new languages, computer skills and communication skills.

Company X has a dynamic, modern, multi-cultural environment which the company recognises. Contributing to the environment, which actively encourages sharing, are the sessions where staff members teach colleagues about their own national culture and customs, even providing the best information on holiday destinations.

Company X sees client focus, responsiveness, flexibility and proven added-value as key to their success and continued growth. Although they also indicate that costs are cut where possible, the non-financial performance indicators are shown to be of significance. This view is echoed when staff are asked to rate the focuses of the company.

In the Quality Assurance department, their mission is to consistently focus on the total cost of delivering value added service and building Company X's capabilities. The goal of QA has been to go over and above in delivering value to the customer, ensuring that all avenues are explored to secure as much business and technical knowledge as possible about their business partners and their applications, often questioning and challenging along the way. Application and business knowledge is a vital 'need to know' for any QA team and Company X are proud of their ability to gain quality business knowledge quickly and effectively. A key focus is to document and store knowledge in a

repository for the business group – making it readily available for new team members and others who may need the information, and thereby sharing what they have learned. QA is very focused on cross-training their staff on new technologies but also on business and application knowledge from other areas. This provides great resource flexibility for the business groups they work with.

#### 4.2.2 Conclusions

Making knowledge explicit in the mission statement illustrates its importance for management and staff alike, but also signposts to the clients, investors and potential future staff, the company's attitude towards knowledge. This constant positive reinforcement keeps knowledge, innovation and partnership to the forefront of daily working life and ensures that knowledge sharing is integrated within the company as opposed to solely partnering with other companies, and focusing the knowledge assets in that regard.

A culture of sharing provides a positive learning environment where knowledge assets are created and nurtured for the benefit of staff members and the company as a whole, as evidenced in the literature. Having an atmosphere that actively encourages knowledge sharing is beneficial to the internal business processes also as they become more efficient. The use of teams and forums also provide opportunities in respect of sharing knowledge and providing tips and know-how in relation to the processes required. Client satisfaction is extremely important. A major question for Company X to answer is 'what makes the customer choose Company X over a cheaper alternative?' This is primarily about customer relationships and customer care. Being able to ask the right questions, knowing what the client will need and providing excellent after sale care, are what matters to the client. Training the staff to deal with these issues by becoming experts in Lotus Notes may require time and money, but giving the client what they need and dealing with queries and issues can prove to be valuable training, which builds longer term competitive advantage.



Training not only delivers an additional competitive advantage, but the employee questionnaire also shows that those who have received training in the past year, value the training and wish to partake in further improvements to their qualifications and capabilities. Not only does this mean that provided the appropriate forums take place, further staff members will get the opportunity to learn from the training in a knock-on effect, but also staff are kept motivated. As training has to be justified by line management as well as HR, it is important that it is beneficial to the company, but also the employees are generally satisfied with what they attain from these sessions.

Within Company X there appears to be a culture of getting to know other staff members, they are encouraged to share personal information such as culture and values, and this leads to more effective sharing in a work situation, through team participation and forums.

Company X recognises the need for knowledge of different aspects of the field and multi-skilling, and not just having staff dedicated to one area. This means that excellent client service can be provided flexibly. Similarly the dedication to staff's continuous improvement through career plans and training means that the staff in return will function well and provide a return on the company's investment in them through increased productivity and mentoring of future staff members.

### 4.3 Documentation Data

In partaking in this primary research study, Company X was anxious to ensure that their private information would not be distributed openly. Although only one document is used in this triangulation of data methods, it was felt that it was significant as its very existence proves that Company X values their information and knowledge. Though it does not specifically talk about non-financial performance indicators, it does allude to internal business processes and innovation and learning.

### 4.3.1 Findings

The confidentiality agreement document consists of a policy which was provided to the researcher and was signed before the commencement of work on the management interview and employee questionnaire. The purpose of the document entitled Confidentiality Policy is to ensure that where someone working for the company or doing research has access to information, documents and methods of operations that are identified as sensitive or critical to the company, that person cannot disclose any of it to a third party.

The protection of the information shared is explained as it is a crucial asset due to the fact that it constitutes the knowledge, intelligence, facts, and data that Company X needs to conduct business and to service its customers.

The purpose of the document is for the protection and security of the information and to safeguard it, in all forms, from unauthorized use, duplication, dissemination, modification, or destruction.

### 4.3.2 Conclusions

What this document demonstrates is the need for Company X to protect its non-financial assets, primarily knowledge. This provides concrete evidence that Company X is putting into practice their assertions that knowledge is important. While many companies use knowledge implicitly, this is a clear indication that deliberate measures are being used to safeguard and protect the information, knowledge, business processes, intelligence, facts and data of the company.

## 4.4 Management Interview Data

This interview was carried out in an informal and semi-structured, conversational style. There was no need for the company to embellish or overstate their knowledge practices and perceptions as this is an investigation and not a comparison. For this reason, the threat of bias was deemed to be outweighed by the benefits of the insights to be gained by the interview.

### 4.4.1 Findings

Throughout the interview it was obvious that knowledge plays a significant role in the company. It is part of the mission statement, of which there is a framed statement on the office wall, serving as a continual reminder. Other indicators included the focus on training staff, the individual development plan which works alongside the annual performance review and the emphasis on culture, which facilitates learning, sharing knowledge and mentoring.

It was found that the major performance indicators are the individual development plan and the annual performance review. These provide management with information as to whether targets are being met and standards are being achieved. They also provide a means by which to assess the training needs of certain individuals which coincide with the needs of the company.

It was interesting to discover that knowledge has become a major focus recently after being used implicitly previously. Company X discovered that when analyses were conducted on knowledge output and staffing levels, they were not always positively correlated. What makes this of importance is the realisation that it is not the actual number of staff that provides the best knowledge and performance outputs but it is the individuals concerned. Factors which need to be taken into consideration in this regard are willingness to undertake further training, participation in team meetings and forums, and their success in their respective individual development plans.

Another important revelation from the interview was the significance of the culture within the company. Capturing, sharing and developing knowledge is encouraged at individual, team and forum levels. Within such forums staff can enlighten colleagues on their recent training, or simply share methods of operating which have been found to increase productivity. From the individual's perspective this is evidenced by the training provided and facilitated by the company. In terms of teams, they are encouraged to form them and share methods and insights with each other. Teams are generally perceived as being beneficial by the staff as well as management, as evidenced in the questionnaire responses. In a small percentage of instances,

employees were not entirely happy with their co-workers performance, but by and large they are deemed to contribute sufficiently. Forums are actively encouraged by management, and it was stated during the interview that employees were so impressed with the outcome that they are setting up informal forums for themselves. Management are impressed with the results of these forums and participants, whether they are mentors or learners, are rewarded.

Non-financial indicators of performance were demonstrated to be important during the interview. These indicators came under the balanced scorecard headings of innovation and learning, client perspective and internal business processes, but were termed technical differentiator, business acumen and consultancy – follow up. The particular significance of these key performance indicators in terms of this research is that only one is technical. The other two refer to 'soft skills' which the company has deemed provide it with a competitive advantage, making it more appealing to clients than competitors.

The interview also confirmed data found online regarding technology used to facilitate knowledge sharing including Lotus Notes. It added to this by stating that staff also use blogs and wikis to stay up-to-date. At a time when 20% of the staff are teleworking, i.e. working from home, it is important for them to be able to contact others in a timely fashion, and these technologies facilitate enhanced communication between and among staff.

#### 4.4.2 Conclusions

The interview revealed relevant information regarding the perceptions and practices of management at a senior level. They are definitely recognising knowledge as an asset and seeing the potential benefits of incorporating such an asset into their strategy. They are also shown to support non-financial indicators of performance through the individual development plan, and the technical and 'soft' skills being promoted.

In defining business acumen, the interviewee explained what they need from their staff in this respect as being threefold:

- 1) Offering the right options to clients in the first instance
- 2) Knowing the right question to ask and when to ask it
- 3) Prompting clients, knowing enough about what the client wants to be able to provide advice and expert opinion

In this way they can add value to the product/service, thus delivering a competitive advantage. This will be respected and appreciated by the client, who will get the right product/service to suit their specific needs, rather than the right product/service to suit the staff resources or targets.

## 4.5 Employee Questionnaire Data

This area covers the objectives surrounding employees and their practices and perceptions of non-financial indicators of performance and specifically knowledge as an asset. This questionnaire was devised so as not to promote these specific areas, but rather to see if knowledge as an asset and non-financial performance indicators would naturally emerge as important features of contemporary working life, for employees of Company X.

In deriving information from the responses received, it was decided that averages and correlations would provide the most representative findings, but that any significant deviations would be discussed along with any relevant additional information provided. In discussing the findings it was decided that the best approach would be to group the results according to the themes set out in the questionnaire, these being job satisfaction and communication, followed by the themes taken directly from the balanced scorecard, namely financial, customer, internal business process and innovation and learning perspectives.

### 4.5.1 Findings

It is important to identify the respondents to the questionnaire. There were 58 respondents out of a population of 235, therefore a 24% response rate. Of these:

- 34% are willing to discuss their answers further
- 66% are male, and 34% are female

- In terms of age:
  - 0% are under 25 years of age
  - 58% are between 25 and 35 years of age
  - 37% are aged between 36 and 45 years
  - 5% are over 46 years of age
- In terms of length of service:
  - 15.5% have worked in Company X for 2 years or less
  - 46.5% have worked in Company X for between 3 and 5 years
  - 12% have worked there for between 6 and 8 years
  - 26% have worked there for more than 8 years of a possible maximum of 10 years

Training information includes the following:

- 83% of the respondents have undertaken training in the past year;
- 97 % of the respondents are interested in further training; and
- 79 % of the respondents believe that training is made readily available

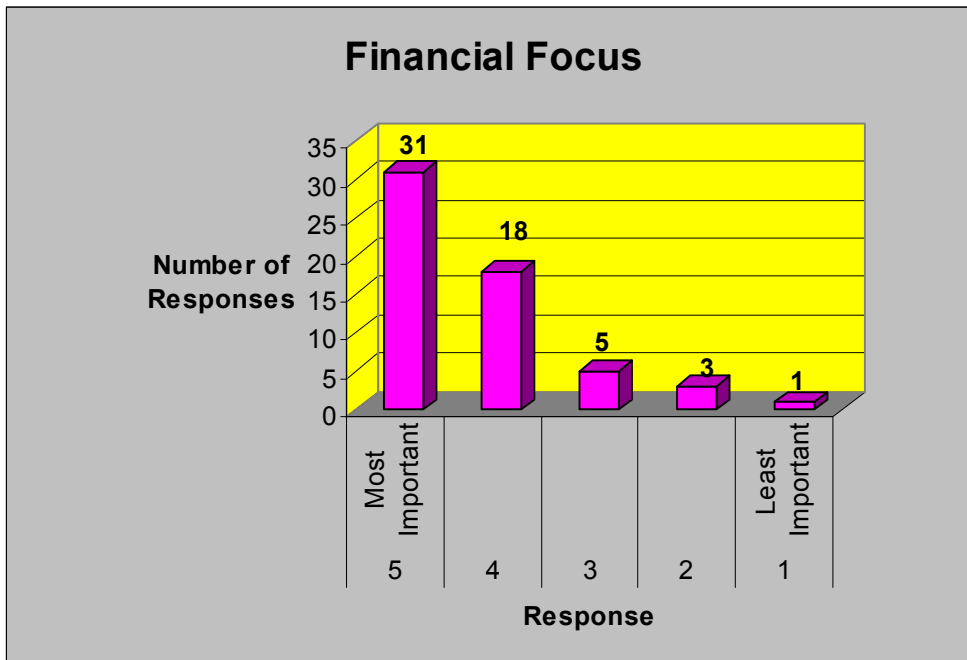
The questionnaire grouped the questions according to themes, first was communication, and the four others were taken from the Balanced Scorecard's financial and non-financial performance indicators. These themes are:

- 1) Communication**
- 2) Financial**
- 3) Customer/Client**
- 4) Internal Business Processes**
- 5) Innovation and Learning**

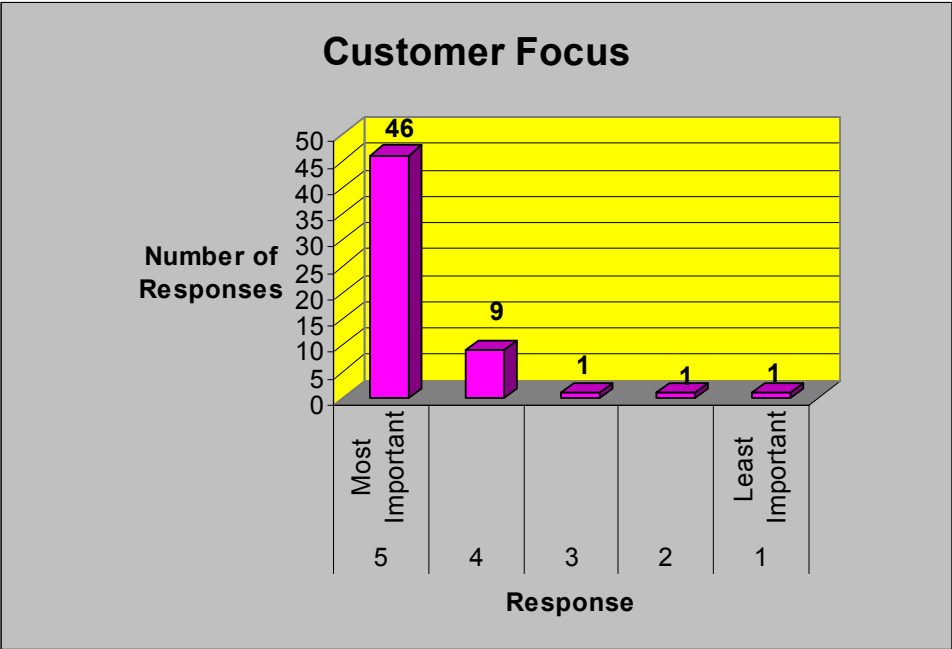
The questionnaire asked employees about their perception of the company's prioritising of focuses. This question was structured so that staff could give two or more different focuses the same result. It was found that:

- 53% of respondents believe Company X's primary focus is Financial
- 79% of respondents believe Company X's primary focus is the Customer/Client
- 17% of respondents believe Company X's primary focus is Internal Business Processes
- 41% of respondents believe Company X's primary focus is Innovation and Learning
- 53% of respondents rated the Innovation and Learning focus as being equal in importance or more important than the Financial focus

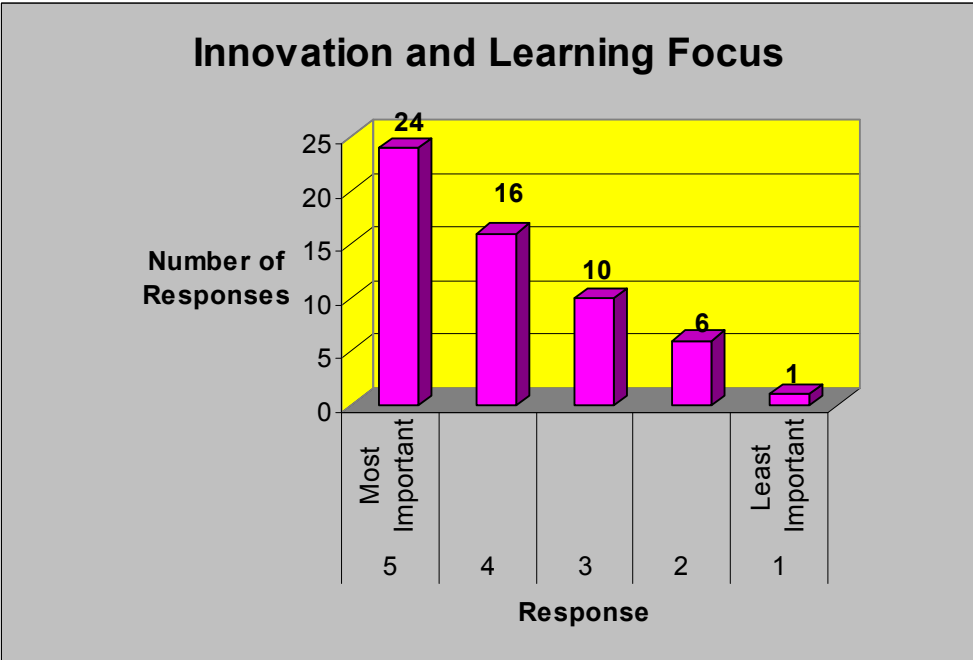
These findings are illustrated in the following graphs:



This graph clearly illustrates that the financial focus is very important



This graph shows that this particular non-financial indicator is the most important focus of the company as perceived by staff.



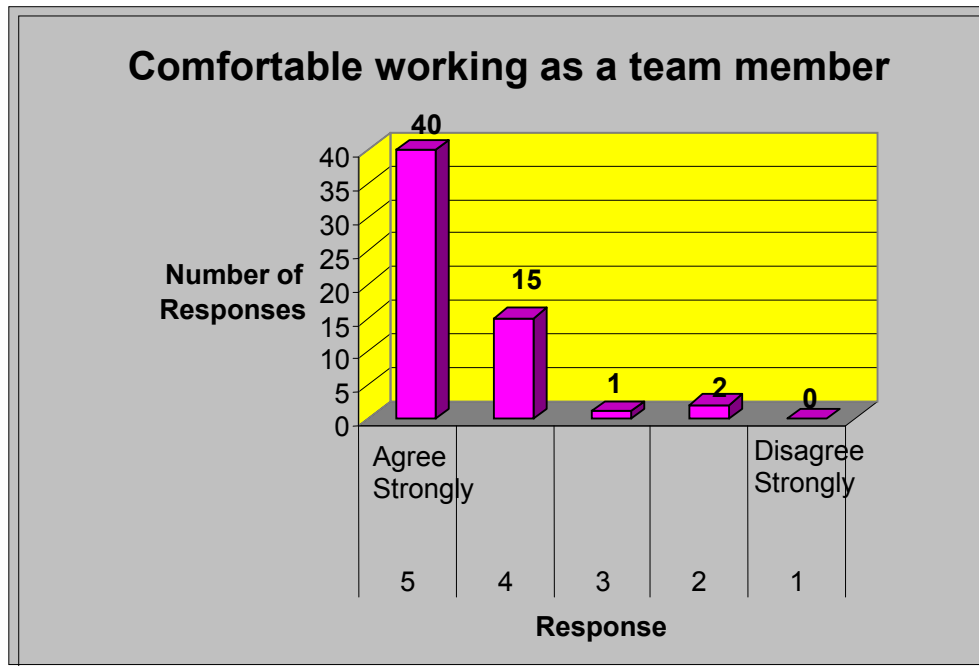
The innovation and learning focus ranked third overall, however this graph illustrates that it is still perceived as being very important. Only one respondent ranked it the least important, this is significant for the company.



In terms of job satisfaction, of the 24% of the population who responded:

- 84% are satisfied or very satisfied with their job
- 12% are considering seeking or actually seeking other work
- 90% are sure or very sure that they understand the role that is expected of them
- 95% are comfortable or very comfortable working as part of a team
- 84% are happy or very happy with their co-workers performance
- 38% believe they are well paid

Employees' satisfaction with their ability to work as part of a team is illustrated in the following graph:



This graph shows that a vast majority of workers are confident in their abilities to be a team member. The research has shown this to be a vital quality for staff in a learning environment.

To ascertain a greater depth of analysis, the averages were sought across the themes under certain identifiers. This facilitated distinguishing groupings within the respondents, and establishing if there were any identifiable patterns emerging in relation to the research objectives. Respondents were asked to

demonstrate their level of agreement with statements set out in the questionnaire. Their agreement was measured on a scale of 1 to 5, 1 being disagree strongly, while 5 was agree strongly and 3 was neither agree nor disagree.

In terms of gender, the averages didn't deviate greatly depending on whether the respondent was male or female. For this reason the analysis is very similar to the overall analysis and thus the overall analysis has not been described in detail.

- Females rate customer focus extremely highly at an average of 4.95, compared to males average of 4.55 although both are favourable
- Both males and females rank innovation and learning in 2<sup>nd</sup> place, with averages of 3.97 and 4 respectively
- Males feel under more pressure to finish the job on schedule, but only marginally, with a 4.05 average, compared to female's 3.75 average
- Females appear to keep more detailed notes than their male counterparts, with respective averages of 4 and 3.42
- Both males and females believe innovation and learning are recognised and valued, with averages of 4.6 and 4.2
- Similarly males and females agree that forums are encouraged by management and that they provide a valuable source for learning, with averages over 4 in all respects.

Under age analysis the following was identified as being of significance:

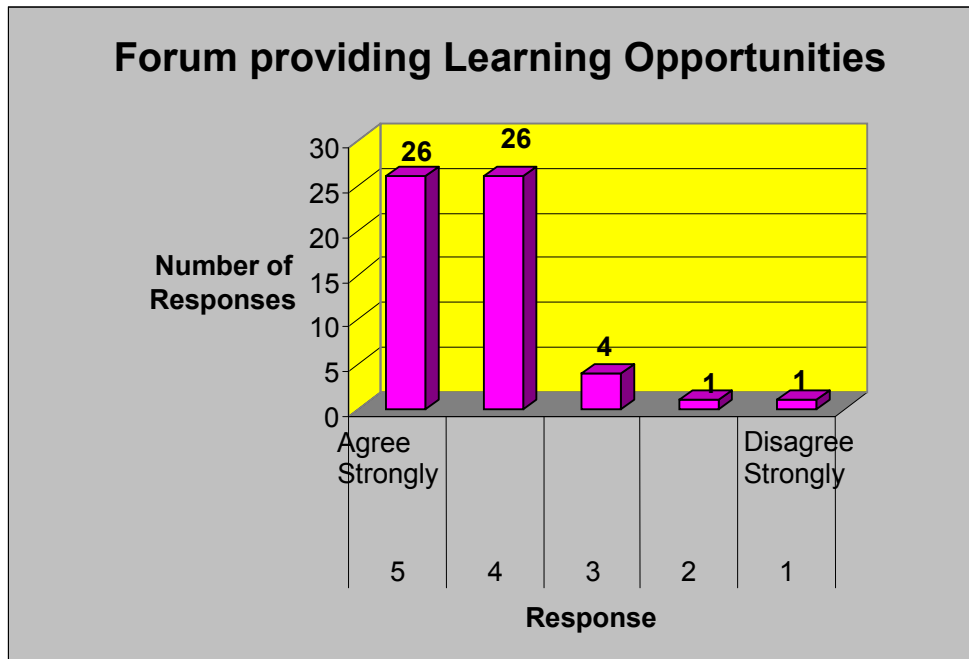
- In all three age groups, the priority of focuses ranks innovation and learning 3<sup>rd</sup>, and the client focus is ranked first. This is important in terms of non-financial indicators as it places one of the main non-financial performance indicators ahead of financial
- Those aged between 25 and 35 years felt less well paid than those aged over 46 years, with the averages being 2.94 and 4 respectively
- Although the overall results demonstrate that very few are actively seeking alternative employment, the average for those aged over 46 is

1, and this indicates that they are more satisfied in their work than those between the ages of 25 and 35, whose average was 2.09

- All 3 age groups acknowledge that sharing knowledge is valued and forums are beneficial, with all averages being 4 or over
- On the question of whether profitable work is prioritised, 25 to 35 year olds believe it is, while both of the other age groups believe it is not
- Again there is disagreement where those aged between 25 and 35 believe they are not well paid, but the other age groups believe that they are well paid for the work they do
- All three age groups agree to different extents that new information regarding processes and procedures is circulated

The information was manipulated again so as to illustrate the averages in terms of length of service. For this purpose group 1 is those working for the company for 2 years or less, group 2 consists of those working at Company X for between 3 and 5 years, group 3 is those who worked for the company for between 6 and 8 years and group 4 is those who have worked there for over 8 years. It was found that:

- All four age groups prioritised client focus ahead of financial. This proves that Company X have communicated their ideas effectively to their staff
- Similar to the previous set of information, the question as to whether they are paid well leads to disagreement. In this case, those in group 2 think not, while all other groups are more favourable, but still not very satisfied
- Those in group 4 do not believe profitable work is prioritised whereas those in other groups do
- Those in group 1 do not feel that they are adequately trained to deal with customer complaints, but those in all other groups feel they are
- All groups perceive forums to be worthwhile in terms of providing learning opportunities, with all averages over 4. This is shown in the following graph:



A significant majority believe that forums provide learning opportunities. This reinforces their role of providing a means for workers to share and generate knowledge.

The final set of information that was derived to demonstrate the averages in relation to the different elements of the questionnaire compares those who took part in training in the past year and those who did not. It found:

- Those who took part in training were marginally better satisfied with their job than those who had not, with averages of 4.25 and 4.1 respectively
- Those who trained felt they better understood their role, with an average of 4.46, compared to those who had not, with an average of 3.8
- Those who took part in training were more comfortable with directions given by management and discussing their ideas and suggestions
- Both those who took part in recent training and those who do not, strongly recognise that quality is a major factor in the success of the company, with averages of 4.52 and 4.2
- Those who received training indicated that they kept detailed notes, whereas those who did not train, did not keep detailed notes

- Although both groups agree that client needs are facilitated, those who trained in the past year were more inclined to agree with the statement, with an average of 4.31, compared to an average of 3.5 for those with no recent training
- Those who trained agreed more strongly that sharing knowledge is valued among teams and forums are good sources of learning, than those with no recent training

These findings clearly illustrate the varying nature of the responses, but illustrate that on most topics, they are broadly in keeping with the findings from the other data collection methods employed.

#### 4.5.1.1 Correlations

The correlation is one of the most common and most useful statistics. A correlation is a single number that describes the degree of relationship between two variables. It ranges in value from -1 to +1. -1 means negatively correlated, when one variable goes up the other goes down. 0 means that there is no correlation; therefore the two variables have no impact on one another. +1 means the two variables are positively correlated, when one variable goes up, the other goes up.

The data analysis consisted of correlations under the identifier information but also under themes. These were:

- 1) Communication
- 2) Financial
- 3) Customer/Client
- 4) Internal Business Processes
- 5) Innovation and Learning

The data found were compiled into a correlation matrix; from that matrix a number of findings will now be discussed.

- The diagonal of a correlation matrix always consists of ones. That's because these are the correlations between each variable and itself

- An important fact which came from analysis of the correlations is that there was either no correlation or only an insignificant correlation between gender and any other question. This is of significance as it means that the gender of the respondent does not have a significant impact on the research findings
- Similarly age and length of service give only a negligible or zero correlation with other aspects of the questionnaire

Examples of significant correlations include: (where  $r$  = correlation)

- Q13 and Q14, where  $r = -0.67$

These questions cover job satisfaction and seeking other work, and therefore it is expected that if satisfied, there is no need for employees to seek other work.

- Q15 and Q16/Q15 and Q17, where  $r = 0.62$ , and Q15 and Q31, where  $r = 0.68$

Q15 and Q16 are about understanding your role and being able to express opinions and suggestions, while Q17 confirms to what extent the respondent is happy to work as part of a team. Q31 queries the respondents' awareness of client needs, therefore understanding the role gives respondents a better perception of client needs.

- Q16 and Q17, where  $r = 0.77$ , Q16 and Q21 where  $r = 0.71$ , Q16 and Q40 where  $r = 0.69$  and Q16 and Q47, where  $r = 0.71$

Again Q16 and Q17 cover expression of opinions and suggestions, and team work. Q21 asks if there are channels in place for discussing ideas, while Q40 seeks to understand respondents' perceptions of Employee Relations. Q47 ascertains if respondents believe that sharing among teams is valuable.

- Q17 and Q21, where  $r = 0.71$  and Q17 and Q47, where  $r = 0.68$

Ability to work as a team member and discussion of ideas are found to be positively correlated, therefore the individual's ability to express themselves is important. While being a team member and sharing knowledge within teams also correlate positively. This implies that those not willing to work as part of a team are also unwilling to share their knowledge, highlighting the need for team involvement.

- Q22 and Q33, where  $r = 0.79$

There is a positive correlation between Q22, channels to discuss problems, and Q33, positive customer feedback. This implies that working out problems internally results in a better customer relationship.

- Q24 and Q48, where  $r = 0.76$

Q24 asks if internal information is freely circulated internally, and responses correlate positively with the responses to Q48, forums are valued. Thus forums may be seen as a method of circulating internal information and learning together.

- Q33 and Q34, where  $r = 0.89$

There is a strong positive correlation between Q33 and Q34. These questions both relate to customer feedback and query if it is reviewed and if it is positive. This may imply that reviewing customer feedback, and making any changes necessary, results in positive future customer feedback.

- Q40 and Q47, where  $r = 0.82$

These questions relate to respondents perception of the company's views of Employee Relations and the value of sharing knowledge. Therefore it may be the case that a positive employee-employer relationship, leads employees to be more willing to share their knowledge and learning.

- Q42 and Q43, where  $r = 0.92$

There is a very strong positively correlated relationship between Q42 and Q43, and they cover the topic of innovation and assess whether it is recognised and whether it is valued.

Where the correlations are above 0.6, positive or negative it shows a strong relationship between the two variables. In some cases this may be coincidental, as is the case for Q16 and Q17 responses as they are very similar. However where the topics are more dissimilar it is possible to find more conclusive evidence.

#### 4.5.2 Conclusions

The answers to the staff questionnaire in general are in line with expectations derived from the management findings. That is to say the message, about the

importance of non-financial indicators of performance along with the significance of knowledge when incorporated as an asset, has been effectively conveyed to the general workforce. This is good for the company as it means it is achieving its goals in this respect. Similarly it is important for the company that the workforce understand what is expected from them, as they appear to do based on the majority of responses.

Training responses were surprisingly positive, which implies that it is an effective learning tool, but also confirms management's assertions that it is readily available.

Overall innovation and learning ranked third in terms of the company's focus. This is a good result as 69% of respondents deemed it to be either very or extremely important. It was also very interesting that the client focus was pushed to the fore. The fact that the financial focus is not perceived to be the main priority means that the company is interested in non-financial performance indicators, and have successfully conveyed this to the staff.

A small number of respondents claimed that an emphasis on innovation may detract from the daily business processes, but it is generally deemed to be positive. Forums and team mentoring sessions are perceived mainly to provide a source for learning and sharing knowledge, which reinforces management's encouragement of such activities.

In terms of the correlation results found, these are very interesting. In many cases the issues that held strong correlations were on the same topic, but in some cases it was found that issues such as being able to express opinions and suggestions, led to a greater appreciation of sharing knowledge within teams.

It is also interesting to note that gender plays no role in the perceptions held. This means there is no benefit in skewing the balance of the workforce towards male or female, which is a good thing as equality is important. The fact that gender does not have an influence on these findings means that the perceptions of knowledge and non-financial indicators of performance may be



more dependent on the communication channels within Company X and individual teams.

In a number of analyses the number making up a particular group may be relatively small compared to others, such as those aged over 46, or the group of people who believe they do not require further training. In these instances, the findings are not as reliable as those with larger numbers; this is because they are not as representative as those groups made up of larger numbers. The analysis has not weighed heavily on these responses and therefore is still relevant and valid.

#### 4.6 Overall Findings and Conclusions

It has been found through conducting the primary research and subsequent analysis of data that the management's practices and perceptions regarding knowledge assets and non-financial indicators generally coincide with those of the employees. In this respect it is possible to suggest that goal congruence has been achieved. In aligning the needs of the company, for example productivity and knowledge, with the needs of the client, for example greater customer service, and with the needs of the employee, for example motivation, training and job satisfaction, the company has achieved the best possible outcome for all parties involved.

## Chapter 5 – Recommendations and Overall Conclusions

In a globally competitive environment, companies aggressively seek out different means of competitive advantage. In addition to the focus on costs, a range of other factors exist including the non-financial performance indicators as laid out in the balanced scorecard, and knowledge as an asset. This is where experience and knowledge are valuable and from Company X's perspective are already viewed as an asset from which they can derive a significant competitive advantage. It is then their job to discover how to share the knowledge and experience and technical know-how among the staff. This may be done through forums, mentoring, and technical notes. However, it is the company's responsibility to provide the environment or culture to support this type of behaviour, which in this case they seem to do well. Rather than having a worker who keeps his notes and methods private, to keep their output level the highest or to protect their position, it is the company's aim to reward the sharing of information through whatever format suits them best, either through monetary bonuses or with enhanced training or positive feedback.

It is important that the company communicate their aims and objectives to their staff to achieve the desired results. If it is found that they do wish to achieve a higher level of understanding of the benefits and potential competitive advantages available from capturing and sharing knowledge, it is vital that staff are encouraged to share and work together.

In terms of the primary research subject, I would recommend that Company X use a method such as the balanced scorecard, or a dashboard to gauge and record their non-financial and knowledge targets and achievements in relation to these targets. Encouraging the staff and management to adapt their routines so as to record their achievements and plans with regard to these elements should be feasible as they are already acknowledging the benefits possible from taking them into account.

The company already use diagrams, even for potential employees on their recruitment section, so a balanced scorecard would be an obvious method to use. From the literature it is clear that the balanced scorecard is a recognised method of recording knowledge as part of the non-financial performance indicators.

Provided that knowledge and non-financial indicators remain as important as the data analysis has shown, potential future rewards for the company are significant as there is a large proportion (84%) of staff with the company for over 3 years and they are on average, very satisfied with their jobs. Thus it is reasonable to assume they will stay on, particularly as there is a job shortage at the current time and their ongoing training will continue to benefit the company.

In conducting and completing this research, a number of issues had to be overcome. They included obtaining permission from the primary research subject, ensuring that the questionnaire was unambiguous, determining what qualifies as an adequate response rate, getting responses back in a timely fashion, and writing up interview notes as soon as the interview was completed. If this research were to be taken on again, it would definitely be of benefit to determine whether other questionnaires were also being dealt with by the intended recipients. If there are, research could be conducted before originally planned, provided that the preparations are complete, or a sufficient period after any other questionnaires, to ensure the best possible response rate.

Finally to validate the findings it is recommended that further research be carried out on the same company, over two or three different time periods. A management questionnaire, for the purposes of verifying and discussing employee assertions would be beneficial. A similar case study conducted on different research subjects would illustrate these findings in a different context, and would provide comparisons. At this stage the research has achieved the objectives that were set and answered the research question posed at the outset.

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“CASPAR”, the Cultural, Artistic and Scientific knowledge for Preservation,  
Access and Retrieval

[www.casparpreserves.eu/caspar-project](http://www.casparpreserves.eu/caspar-project)

Institute of Chartered Accountants

OECD

“Science, Technology and Industry Scoreboard”

[www.sourceoecd.org/scoreboard](http://www.sourceoecd.org/scoreboard)



## Appendix 1: Questionnaire

### Questionnaire

My name is Kate and I am a student in my final year in the Letterkenny Institute of Technology. I am conducting primary research as part of the dissertation for my masters in accounting.

This questionnaire should take a maximum of 10 minutes to complete, and I would like to take this opportunity to thank you for participating.

The results from this questionnaire are for my research. Therefore although the general findings derived will be made available to the company, individual responses will be kept confidential.

Any questions of a personal nature are for statistical purposes only and are not used to identify individuals. For this reason please answer all questions.

If you wouldn't mind being contacted further regarding any additional issues arising from the responses obtained please tick this box.

Please answer the following questions.

Male  Female

Age Range:

Under 25 years	<input type="checkbox"/>
25 – 35 years	<input type="checkbox"/>
36 – 45 years	<input type="checkbox"/>
46 years +	<input type="checkbox"/>

Length of Service with the company:

2 years or under	<input type="checkbox"/>
3 – 5 years	<input type="checkbox"/>
6 – 8 years	<input type="checkbox"/>
More than 8 years	<input type="checkbox"/>

Have you taken part in training in the last year?      Yes       No

Are you interested in further training?                      Yes       No

Is training made readily available?                              Yes       No

In your opinion, which focus is the most important for the company?

It is possible to give 2 or more an equal rating  
1 = least important, 5 = most important

Level of importance	1	2	3	4	5
Financial Focus					
Customer Focus					
Internal Business Process Focus					
Innovation and Learning Focus					
Other, please explain below					

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### Job Satisfaction

Please indicate to what extent you agree with the following statements.

In each case the numbers represent the following:	1 – Strongly Disagree	2 – Somewhat Disagree	3 - Neutral	4 – Somewhat Agree	5 - Strongly Agree
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Level of agreement	1	2	3	4	5
I am satisfied with my job.					
I am seeking other work.					
I understand the role that is expected of me.					
I am able to voice opinions and make suggestions.					
I feel comfortable working as part of a team.					
I am satisfied with my co-workers performance.					
I am paid well for the work I do.					

### Communication

Please indicate to what extent you agree with the following statements.

Level of agreement	1	2	3	4	5
Directions and suggestions are given by management in a clear and concise manner.					
There are channels in place for discussing my ideas and suggestions.					
There are channels in place for discussing any problems I may have encountered in the workplace.					
It is easy to access internal information in a timely fashion.					
New information is circulated regarding processes and procedures to all employees.					

### Financial

Please indicate to what extent you agree with the following statements.

Level of agreement	1	2	3	4	5
The company is efficient at cutting costs.					
The company focuses on profit maximisation.					
There is pressure to finish the job on schedule.					
Quality is a major factor.					
Bonuses are financially related.					
The most profitable work is prioritised.					

Customer/Client

Please indicate to what extent you agree with the following statements.

Level of agreement	1	2	3	4	5
Employees are aware of different customer needs.					
Detailed notes are taken and recorded regarding customers.					
Customers provide positive feedback of their experiences with the company.					
Customer feedback is reviewed.					
Employees are trained to deal with customer complaints.					
Employees are trained to deal with customer queries					

Internal Business Processes

Please indicate to what extent you agree with the following statements.

Level of agreement	1	2	3	4	5
The company's processes are effective.					
The company's processes are efficient.					
The client requirements are facilitated.					
The company sees good employee relations as important.					
The company's organisational structure works well.					

Innovation and Learning

Please indicate to what extent you agree with the following statements.

Level of agreement	1	2	3	4	5
Innovation and learning are recognised within the company.					
Innovation and learning are valued within the company.					
I can easily make suggestions/ recommendations.					
Teams work together to mentor and teach each other.					
I record what I learn about new processes and techniques.					
Sharing what we learn is a valuable exercise within teams.					
Forums/mentoring sessions are encouraged.					
Partaking in forums/mentoring sessions is a valuable source of learning.					

Any other comments

Please take the time to write down any aspects of work which you feel are of importance and are missing from this questionnaire.

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## Appendix 2: Response Overview

Possible Answers	Yes	No	Male	Female	< 25	25-35	36-45	46+	<2 years	3-5 years	6-8 years	8 years +
<b>Q1 Consent to further contact</b>	20	38										
<b>Q2 Male or Female</b>			38	20								
<b>Q3 Age Range</b>					0	34	21	3				
<b>Q4 Length of Service</b>									9	27	7	15
<b>Q5 Training current year</b>	48	10										
<b>Q6 Require further training</b>	56	2										
<b>Q7 Training is available</b>	46	12										
<b>Possible Answers</b>	1	2	3	4	5	0						
<b>Company Focus</b>												
<b>Q8 Importance of finance</b>	1	3	5	18	31							
<b>Q9 Importance of Customers</b>	1	1	1	9	46							
<b>Q10 Importance of Internal Processes</b>	3	4	17	23	10	1						
<b>Q11 Importance of Innovation &amp; Learning</b>	1	6	10	16	24	1						
<b>Job Satisfaction</b>												
<b>Q13 Job satisfaction</b>	1	1	7	24	25							
<b>Q14 Seeking other work</b>	30	12	9	4	3							
<b>Q15 Understand their role</b>	0	4	2	22	30							
<b>Q16 Opinions and Suggestions</b>	0	2	5	25	26							
<b>Q17 Working as a team</b>	0	2	1	15	40							
<b>Q18 Satisfied with coworkers</b>	0	2	7	20	29							
<b>Q19 Paid well</b>	4	17	16	8	13							

## Communication

Q20 Directions are clear	0	3	12	26	17
Q21 Channels to discuss ideas	0	3	4	27	24
Q22 Channels to discuss problems	0	4	3	24	27
Q23 Access to internal information	0	1	8	26	23
Q24 Information circulated	0	1	4	18	35

## Financial Perspective

Q25 Efficient at cost cutting	0	2	11	26	19
Q26 Profit maximisation is the goal	0	3	15	26	14
Q27 Pressure to keep on schedule	2	4	7	27	18
Q28 Quality is key	1	0	4	19	34
Q29 Bonuses are related to finance	0	2	15	23	18
Q30 Profitable work is prioritised	4	6	33	10	5

## Customer Perspective

Q31 Awareness of client needs	1	3	9	27	18
Q32 Detailed notes are kept	3	7	13	21	14
Q33 Customer feedback is positive	0	3	5	26	24
Q34 Customer feedback is reviewed	1	2	2	26	27
Q35 Training for complaints	3	9	14	24	8
Q36 Training for Queries	2	4	13	25	14

## Internal Business Processes

<b>Q37 Company processes are effective</b>	1	6	5	32	14
<b>Q38 Company processes are efficient</b>	2	8	7	26	15
<b>Q39 Client needs are facilitated</b>	1	3	5	25	24
<b>Q40 Company sees ER as Important</b>	1	1	6	22	28
<b>Q41 Good organisational structure</b>	0	1	15	23	19

## Innovation & Learning Perspective

<b>Q42 Innovation and Learning are recognised</b>	0	1	5	25	27
<b>Q43 Innovation and learning are valued</b>	0	1	6	22	29
<b>Q44 Can make recommendations/suggestions</b>	0	1	12	21	24
<b>Q45 Teams mentor and teach each other</b>	2	1	5	26	24
<b>Q46 Record new processes /techniques</b>	0	4	10	25	19
<b>Q47 Sharing within teams is valued</b>	2	1	4	23	28
<b>Q48 Forums are encouraged</b>	0	0	2	25	31
<b>Q49 Forums provide learning opportunities</b>	1	1	4	26	26



## Company Focus

### Q12 Other

- Motivation of staff - 5
- Work/life balance, sports and social activities - 3
- Employee Focus –if you & your employees happy and with the right direction, they will be productive and everything else will fall into place.
- 5 People Management and Motivation
- 3 People – Work-Life Balance
- The primary focus is the customer

## General

### Q50 Any Other Comments

- Focus too much on innovation than the job on hand
- Important good thing about the company is flexible working conditions
- Company X recognises the value training and development provides not only to the employees but to the company. They see it as a true investment and employees who receive training or encouragement to develop their skills always want to give back to the company so it's a win win situation.
- Possible additional questions: Job satisfaction: I find my work challenging/rewarding. The company encourages Sports & Social activities. Communication: Customer communications are monitored and responded to in a timely manner.
- I feel that not much importance is placed in training employees in the latest technologies. Too much time is spent on company processes that are formulated with a view to improve software quality but in the end becomes a form filling exercise which benefits no-one. Different teams need different processes. One of the solutions would be to have project leads (technical leads) to have the say with regard to processes and not the team lead.
- Work-life Balance: There should be a balance between the needs of the company and the needs of the employee. Usually, we are driven to please the customer/client. But when should we step back and consider the employee? They are usually taken for granted because of pressures to meet deadlines, financial targets. With the competitive environment, targets just keep getting tighter and expectations keep rising. What measures should be done to keep things in check and who should be responsible for this?
- I think Innovation and Learning should be separated into 2 categories, because they are totally 2 different aspects. Innovation is like creating something new with the existing system that makes it more effective than the old one while Learning is the process of acquiring skill or knowledge. I know that sometimes these 2 might cross each other in some aspects but still, they should be separated.
- Communication: many channels to express concerns or issues, via anonymous feedback for employee forums, employee opinion surveys etc.
- You probably should include a brief summary on what your research is about, that would help in putting the questions in context. Include a small description on sections/items that are not necessarily self-explanatory i.e., section on Focus.



## Appendix 4: Proposed Balanced Scorecard

	Strategic Objectives	Measurements	Targets			Programs	Budgets
			Year 1	Year 2	Year 3		
Financial	Increase Return on Investment	Percent Growth in Revenues	5%	12%	20%	Since financial is the final outcome, there may not be any formal programs directly related to the Financial Perspective.	
	Increase Gross Margins	Revenue Mix					
	Increase Net Profit	Reduction in Expenses					
	Ensure Company Viability	Cash Flow					
	<i>Insert financial objective</i>	<i>Insert financial measurement</i>	Target	Target	Target		
	<i>Insert financial objective</i>	<i>Insert financial measurement</i>	Target	Target	Target		
	Increase Customer Quality	Customer Satisfaction Rating	5%	10%	15%		Training in dealing with customer queries and complaints. Review of customer feedback.
	Increase Customer Feedback	Customer Response Rate					
	Improving Relations	Customer Satisfaction Rating					
	Improving Customer Service	Customer Loyalty					
Customer ∨	<i>Insert customer objective</i>	<i>Insert customer measurement</i>	Target	Target	Target		
	<i>Insert customer objective</i>	<i>Insert customer measurement</i>	Target	Target	Target		
	Make Processes More Efficient	Product/Service Contribution Margin	5%	10%	15%	Increase overall productivity level by making processes more efficient and effective. Staff training and feedback will be required.	
	Make Processes More Efficient	Output Levels					
	Make Processes More Effective	Staff Feedback and Output Levels					
	Improve Quality Control	Staff Feedback and Customer Feedback					
	Make Training More Effective	Staff Feedback					
	<i>Insert internal process objective</i>	<i>Insert internal process measurement</i>	Target	Target	Target		
	<i>Insert internal process objective</i>	<i>Insert internal process measurement</i>	Target	Target	Target		
	<i>Insert internal process objective</i>	<i>Insert internal process measurement</i>	Target	Target	Target		
Internal Processes ∨	<i>Insert internal process objective</i>	<i>Insert internal process measurement</i>	Target	Target	Target		
	Increase Level of Importance of Knowledge	Communication				Recognising the potential competitive advantages of knowledge as an asset encourages learning and innovation. Using the knowledge and defining further required training, while acknowledging the voluntary sharing sessions among teams & forums will highlight the learning culture and potential for the company.	
	Increase Team Sharing	Forums taking Place					
	Increase Level of Understanding Processes	Training hours completed					
	Increase Awareness of Client Needs	Business Acumen					
	<i>Insert learning &amp; growth objective</i>	<i>Insert learning &amp; growth measurement</i>	Target	Target	Target		

Appendix 5: Strategic Map for Balanced Scoreca

ROI EVA Revenue Earnings Capital Cash Flow			<u>Insert</u>	<u>Financial</u>	<u>Objectives</u>
Quality Service Pricing Time Image Relations	Customer v		<u>Insert</u>	<u>Customer</u>	<u>Objectives</u>
Production Delivery Marketing Operations Quality Control Service Dept R & D	Internal Processes v		<u>Insert Internal</u>	<u>Processes</u>	<u>Objectives</u>
Employee HR Capital Knowledge Technology Best Practices Intangibles	Learning v		<u>Insert</u>	<u>Learning</u>	<u>Objectives</u>