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ANALYSIS OF SIGNALING ACTIONS (CORPORATE  
ANNOUNCEMENTS) ON STOCK MARKET RETURNS: FOCUS  
ON ABNORMAL RETURNS  
Master's thesis

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Subject and supervisors approved by the  
Faculty Council of the Faculty of Business and  
Built environment on May 9, 2012

# ABSTRACT

TAMPERE UNIVERSITY OF TECHNOLOGY

Degree Programme in Business and Technology Management

ALAGBE, SERIFAT: Analysis of Signaling Actions (corporate announcements) on Stock Market Returns: Focus on Abnormal Returns

Master of Science Thesis, 88 pages, 21 Appendix pages

January, 2013

Major subject: Managing Technology-Driven Businesses in Global Markets

Examiner(s): Professor Saku Makinen, Professor Juho Kanainen and Associate Professor Tomi Nokelainen

Keywords: Actions, Abnormal Returns, Corporate performance

Measuring performance is an extremely important issue for firms. It aids management in gauging the effectiveness and efficiency of their strategies. Performance indicators abound, but financial related measures are one of the most salient and direct measures of a firm performance amongst the lot as it encompasses a variety of indicators. Stock market measures have proven to present a truer reflection of a firm's health better than other financial based measures such as purely based accounting measures. This thesis examines the effect of firms' signalling actions in the form of corporate announcements, on stock market returns with focus especially on the abnormal returns.

The thesis can be summed up to be of two major parts. The extensive theoretical discussion which lays the foundation for the underlying theoretical constructs and the empirical part, which includes the quantitative event study for deriving the abnormal returns and the subsequent analyses.

The study indicated that signalling actions do carry relevant information to the market as they influenced the returns generated. However, no strong relationship could be established between the classes of actions examined and their performance effects due to the relatively low number of actions that generated a significant reaction as against those that did not. In addition, it was observed that the intrinsic nature of specific classes of actions influence the reaction generated from the stock market.

Having a larger number of events across the individual classes, for examination will probably help validate some of the trends observed from the events and the reactions from the market in further studies. Furthermore, using a less subjective method of classification and a less automated means of taking out confounding events will probably improve the reliability of results in future research.

## PREFACE

This thesis was done for the department of Business and Technology Management of the Tampere University of Technology. My sincere appreciation and gratitude to my supervisors: Professor Saku Makinen, Professor Juho Kanainen and Associate Professor Tomi Nokelainen for their time, patience and gentle guide throughout the process of making this thesis. I am appreciative of the knowledge imparted. I will also like to express appreciation to Jakko Valli for his technical contributions and the discussions during the times I really seem to have lost my path.

My family constitutes one of the blessings I have that I can never claim to be a result of my efforts, I just got so lucky to have them. They stood by me through thick and thin, and gave me unimaginable support even though they are physically absent. Perhaps, I would not have been able to keep the faith during the ‘very tough and challenging’ days of my entire master’s studies, if not for their love. I know I am never going to be able to appreciate them enough.

I have amazing friends, both old ones and newer ones from Finland. I am most grateful to Olufunmi Daramola, Shakeerah Adeyanju, Zainab Mabodu, my sweet flatmate (Samineh Barmaki) for the amazing soothing words during the emotional blackouts; Gabriel Nketiah, Ibrahim Olanigan for the lending ears especially during the flaky days and to everyone that contributed in one way or the other. May God bless us all.

My ultimate gratitude goes to the One whose exaltation I cannot describe. To Him, I give all of my praises and adorations. I asked for strenght for the journey, but He gave me something better; In the journey, He ‘strenghtened’ me and kept me firm. I am forever grateful.

Tampere, January 2013

Serifat Alagbe

## LIST OF SYMBOLS AND ABBREVIATIONS

$R_t$	Simple Net Return
$P_t$	Price of an Asset at time $t$ .
$P_{t-1}$	Price of the Asset at Time $t-1$ .
$\epsilon_{it} / \xi_{it}$	Disturbance Term
$\epsilon_{it}^*$	Abnormal Return
$R_{it}$	Actual Return
$E(R_{it})$	Normal Return
$H_0$	Null Hypothesis
$X_t$	Conditioning Information for the Normal Performance Model
$\mu$	Mean
$\Omega$	Covariance
$t$	Time or calendar time period
$\sigma_{\xi_{it}}^2$	$(i, i)$ element of $\Omega$
$R_{it}$	Period $t$ Return on Security $i$
$\sigma_{\xi_{it}}^2$	$(i, i)$ element of $\Omega$
$R_{it}$	Period $t$ Returns on Security $i$
$R_{mt}$	Market Portfolio Return
$\epsilon_{it}$	Disturbance Term
$\alpha_i, \beta_i$ and $\sigma_{\epsilon_{it}}^2$	Parameters of the Market Model
AMC	Awareness, Motivation and Capability
APT	Arbitrage Pricing Theory
AR	Abnormal Returns

CAR	Cumulative Abnormal Return
CAPM	Capital Asset Pricing Model
EPS	Earnings per Share
HR	Human Resources
MV	Market Value
MVA	Market Value Added
SAR	Standardized Abnormal Return
TMT	Top Management Team
TRS	Total Return to Shareholders

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# 1 INTRODUCTION

## 1.1 *BACKGROUND OF THE STUDY*

Performance is an extremely important issue for firms, as it is crucial for gauging the effect of their strategies. It enables them pin-points their weaknesses, strengths, points of improvements and more especially make them realise how to make future adjustments. It is a widely accepted concept in strategy formulation that actions are central to a firms strategy (Grimm et al. 2006), as what adds up to the strategy a firm employs is a combination of its actions over time. These actions constitute a part of the market process factors, which contribute to determining the performance of the firm (Smith et al. 1991). Hence the actions carried out by firms are a potential part of what defines their survival, growth and performance (Porter 1980; Nokelainen 2005). Additionally, the central motivation behind the actions of firms lies in their intention and ability to generate some unusual benefits and profits (Grimm et al. 2006). A good use of actions will translate to good performance and competitive advantage for the firm and a misuse of its actions translates into bad performance and a possible loss of competitive positioning (Ghosal 1987 in Nokelainen 2005).

Firm performance is a multidimensional concept which varies with situations and the method of measurement employed (Montgomery & Thomas 1988). A variety of indicators are used for measuring the performance of a company; these include financial measures, growth, diversification, market reach, and customer base amongst others. Meanwhile, financial measures have proven to be one of the most salient and direct measures of a firm performance amongst the lot as it encompasses key indicators like profitability, return on investments, return on assets and stock market pointers. The accounting-based financial measures have been criticised not to have the capability of totally presenting the true performance and situation of a firm (McWilliams & Siegel 1997; Akben-Selcuk & Altiok-Yilmaz 2011). This is so, as insiders from a company are capable of manipulating their accounting details to reveal good numbers, thereby giving false hope in relation to the company's performance (Benston 1992 in McWilliams & Siegel 1997). Furthermore, there are quite a number of limitations that arise from accounting rules and conventions which make interfirm and interindustry comparisons difficult (Montgomery & Thomas 1988).

A group of financial measures that are able to reflect the true state of a firm's health are the stock market indicators as they are not subjected to insider's manipulation; hence they give a true reflection of a firm's value and a concrete measurement of a firm performance. Stock prices of a firm's security are presumed to reflect the discounted

values of future cash flows of the firm and it also incorporates all the relevant information about the firm (McWilliams & Siegel 1997). In addition, the stock market return, which is a result of price differences (between expected and actual) for a certain period is able to give a concise view of the company's performance.

The stock market is presumably taken as efficient because of its ability to incorporate relevant information and the capability to rapidly adjust to new information (Fama et al. 1969; Campbell et al. 1997; McWilliams & Siegel 1997). Thereby, the market reflects the impact of information through reaction of investors to such information via the price movement of securities (MacKinlay 1997). While the stock market measures provide a precise means of measuring corporate performance, the stock market holds information only for publicly listed companies; hence it is not possible to employ the stock market as a performance measure for privately held companies. Investors are known to be prone to all kinds of information, ranging from macro and micro economic factors and changes, governmental and political changes, policy changes, environmental changes amongst others and more specifically firm-specific related information or actions such as acquisitions, stock splits, product announcements and expansions. The investing public is known to make decision and judge the effectiveness of management actions based on the attractiveness of stock returns generated to investors (Cascio 2002 in Nixon et al. 2004).

Stock returns are presumed to reflect new market-level and firm-level information (Louis & White 2007). Firms relay information about their intended actions or executed actions through several media to the general public, the investing public inclusive. Such medium include but not limited to, prior announcement of moves, announcements of results, public discussions, response to competitor's discussions and tactics, changes in strategic activities and goals, management compositions and their divergence from industry norms (Porter 1980; Connelly 2011). It is via these media that firm-level information is garnered. Such actions are referred to as signals. In the words of Porter (1980), an action carried out by a firm that has the capability to provide a direct or indirect indication of its motives, goals, situations and intentions is a signal. Signalling actions serve as a means through which firms relay their underlying quality to other parties (Connelly 2011).

Signalling involves the process through which the sender of information (the firms), tries to influence the decision making of the receivers (Dalitz & Holmen 2012). Signals are credible information transmission sources (Bergh and Gibbons 2011 in Dalitz & Holmen 2012). Announcements form a significant and important part of such information media. Announcements (be it pre or post moves) as signalling actions are used for several purposes. These include pre-emption, threats and for co-optive purposes depending on the targeted audience. (Porter 1980; Grimm et al. 2006.) Investors are known to react to the actions of firms, with announcements of major strategic moves inclusive. Their reactions to such information reflect on the stock prices

of the firm's securities, thereby affecting the stock returns. (Nixon et al. 2004.) This study focuses on announcements targeted at the investing public and its effect on the company's performance via the changes in the prices of the firm's securities.

## **1.2 PROBLEM DEFINITION**

Announcement as already established is a key medium through which firms communicate their actions and intended actions. It is a form of signalling action as it has the capability to directly or indirectly indicate the motives, goals, situations and intentions of a firm (Porter 1980). Announcements made by organisations have become a source of key information content for competitors, customers, the investing public and all stakeholders alike; and it is capable of passing across information they do not intend to disclose (Moore 1992). These actions (press releases or announcements) are also capable of revealing the inherent state of competitiveness of the firm (Porter 1980; Carter 2006 in Connelly et al. 2011).

Even though there is a huge potential that media outlets reporting on those releases could introduce potential distortions (Connelly et al. 2011). Nevertheless, the information being carried by these actions can easily reveal a firm's internal state of affairs and their next line of actions. Additionally, the effectiveness of management's action is ultimately judged based on the attractiveness of stock returns generated to investors (Cascio 2002 in Nixon et al. 2004). In this study, official announcements made by firms via the security market are generally referred to as signalling actions; as they are a source of information through which the public (every stakeholder) get to know about their intended plans or executed plans. They are further categorised into classes based on the content of the announcements.

The performance of a firm as a result or consequence of its actions has been studied widely. The several sources of knowledge including books and articles available attest to this. Some of the measures used include profitability, market share and customer base amongst others; a couple have also used the stock market parameters as a performance measurement pointer. Additionally, previous works that have observed the performance of firms from the stock market perspective were either focused on the competitive activities of certain firms, strategic interactions or about a specific kind of action (See for example, Eddy & Saunders 1980; Wittink et al. 1982; Bettis & Weeks 1987; Warner et al. 1988; Abowd et al. 1990; Chaney et al. 1991; Lee et al. 2000; Ferrier & Lee 2002; Nixon et al. 2004).

Investors are prone to react to the announcements of major strategic moves made by firms, thereby affecting the stock returns (Nixon et al. 2004). This study analyses the effect of signalling actions of firms on the stock market using returns as the performance indicator. These signalling actions encompass all kinds of action types which include financial oriented actions, product related actions, capital market related

actions, mergers and acquisitions, human resources actions and top management changes amongst others; which are communicated through press releases of firms and passed by the security market authorities to the stock market. Furthermore, this study also examined the effect of each class of actions and their intrinsic nature as against the reaction they elicit from the stock market. This study uses past data (announcements by the companies) mandated by the security market and the corresponding stock price information to examine the effect of these releases on stock market returns of selected companies.

*Hence, the aim of this study is to examine the effect of announcements made by selected publicly listed companies on their stock market returns, with major focus on the abnormal returns.*

This study is thus conducted to answer the following questions:

1. Do signalling actions of firms, specifically announcements made via the securities market carry any new information to the stock market?
2. What categories or classes of actions have the most significant impact on the stock market performance of the firms?
3. Is there a relationship between the intrinsic nature of the announcements and the reaction it elicits from the stock market?

### **1.3 RESEARCH DESIGN**

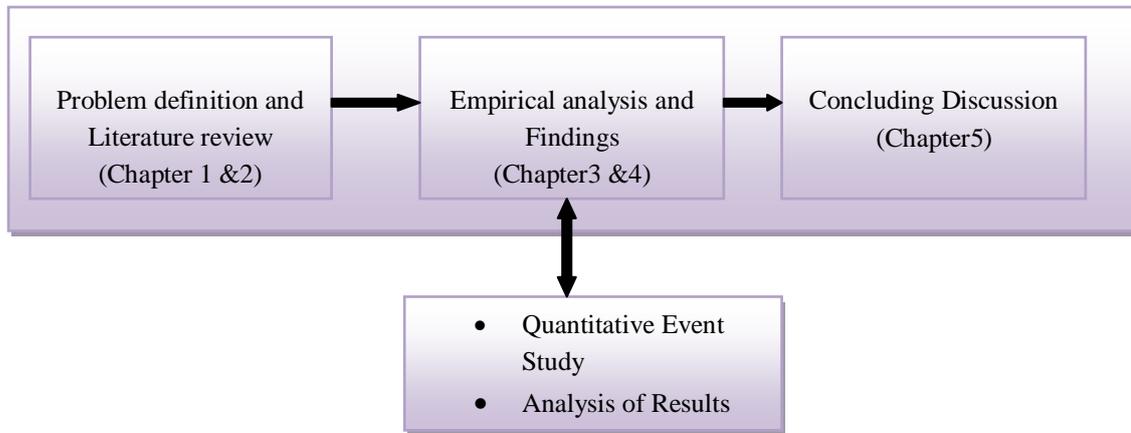
This study follows a deductive approach, as the underlying theory will serve as the basis for data collection. Consequently, a quantitative approach will be used for the empirical analysis. Being a non-experimental quantitative study, the major steps in the study are:

1. Exploring the background theory
2. Data collection and empirical analysis
3. Discussions of findings and results

First, a comprehensive and exhaustive study of the theoretical backgrounds that loosely act as the concerns for the eventual data collection will be done in order to link the theoretical background to the research being done. Secondly, the required data (both the announcements and the stock market returns) will be collected and empirical analysis of the data will be done using the quantitative event study analysis. Finally, based on the results of the event study, detailed analyses will be carried out to evaluate the impact of the signaling actions on the returns before making conclusions.

## 1.4 STRUCTURE OF THE STUDY

This study is divided into five sections as illustrated in the figure below.



*Figure 1.1. Structure of the Study.*

As shown in Figure 1.1 above, first a review of previous literature on actions of firms, competitive dynamics, and performance will be conducted in chapter 2. In chapter 3, a thorough explanation of the methodology that will be used in examining the returns of the stock prices will be given. In chapter 4, the analysis and result obtained, along with its reliability and validity will be presented. Chapter 5 will conclude the study with a discussion of its implication and limitations.

## **2 COMPETITIVE DYNAMICS AND CORPORATE PERFORMANCE**

### **2.1 *WHAT IS COMPETITIVE DYNAMICS?***

In most cases, actions are taken by firms in order to enhance their profits and better their positioning; either in defence to a threat, or as a protection to build tougher resistance against other competing firms (Smith et al. 1992). Competitive dynamics is a stream of business strategy research which emanated from competitive strategy and it studies the causes, drivers, and consequences of firm's actions in their struggle for economic and competitive advantage (Smith et al. 1992, Smith et al. 2001; Chen & Miller 2012). Competitive dynamics considers a firm's actions or moves as the focal point of analysis (Smith et al. 1992) and regards strategy of a firm to be the pattern of actions carried out by the firm over the course of time. These moves are not carried out in isolation of one another rather; each move or action is coordinated with others to strengthen the firm's strategy (Smith et al 2001; Ketchen et al. 2004; Grimm et al. 2006; Chen & Miller 2012). Hence, a firm's strategy can be directly assessed through a focus on the patterns of its actions or moves (Smith et al. 1992).

Consequently, the actions or moves made by a firm and the counteractions elicited from competitors are a key determinant of the firms' performance, growth and survival by a long range (Porter 1980; Ketchen et al., 2004; Nokelainen 2005). The good use of actions by a firm translates into good performance and better competitive advantage cum positioning while a misuse of its actions translates into bad performance as well as a potential loss of its competitive positioning (Ghosal 1987 in Nokelainen 2005).

Firms in the pursuit of better performance and sustainable competitive advantages engage in offensive and defensive actions in their attempt to garner extra ordinary profits and competitive edges vis-a-vis competitors (Chen & MacMillan 1992; Baum & Korm 1996; Grimm et al. 2006). In most cases, the success of such actions results in reactions by other firms in an attempt to enjoy the same profits (Smith et al. 2001). Thereby, other firms attempt to block or imitate the action in order to reap similar benefits (Smith et al. 2001). The resultant series of moves and countermoves from these competitive interactions could lead to a destructive pattern which eats into other firm's profit and probably their survival (Ketchen et al. 2004). Competitive dynamics especially keeps its focus to examining the causative factors, consequences of these jockeying of moves and its implication on corporate or organisational performance.

The micro-level focus on individual actions of competitive dynamics can be traced largely to the Schumpeterian views with some of its defining foundations related to the Austrian views (Chen & Miller 2012; Smith et al. 2001), organisation communication and information processing theories (Smith et al. 1992; Chen & Miller 2012). The Schumpeterian and Austrian economics view the market process as dynamic unlike neoclassical economists who perceive the market as static (Scheler & Ross 1990 in Smith et al. 2001). The Schumpeterian view believes competition is a result of a perennial gale of creative destruction, in which firms act and react to each other's action in the pursuit of market opportunities. This gale is said to be initiated due to the extraordinary profit garnered by the actions of a first moving firm. The gain earned by the firm invariably generates actions or countermoves from competitors who try to overtake the action-initiator and earn similar advantage. (Smith et al. 2001.)

The resulting exchange of actions invariably reduces the presumed or supposed advantage of the first moving firm and could invariably lead to a loss of the advantage (Smith et al. 2001). As such, the market is always in a dynamic state and no firm is safe from the market process of competition (Smith et al. 2001). The outcomes of these actions and reactions interaction determine the survival and performance of a firm. The Austrian economists also subscribe to the dynamic market process view of competition, as the market is never believed to be in equilibrium because the fights for more profit make firms take actions that will continuously disrupt the status quo (Smith et al. 2001). The Austrians explained these disruptions using the concept of entrepreneurial discovery. Entrepreneurship discovery is defined as the action of successfully directing the flow of resources toward fulfilment of consumer needs when the opportunity rises. (Schumpeter 1934; Mises 1949; Jacobsen 1992 in Smith et al. 2001.)

Additionally, competitive dynamics employs the stimulus/response model of communication to explain the interactive process by which firms arrive at their different action/response decisions and the information flow process through the actions (Smith et al. 1992). The communication model consists of a *source* transmitting a message which is likened to the firm that takes an action in the market; the *message* which is the competitive action taken; the *noise* present in the channel is likened to the environment (industry environment) which could influence the process; *responses* are triggered from the *responder* (a competitor firm) due to these actions and channelled back to the environment, serving as a feedback to the source of the action (Smith et al. 1992). As readily established, competitive dynamics research stream emphasises actions as the central unit of analysis (Smith et al. 2001; Chen & Miller, 2012), in addressing fundamental strategy questions such as; *how firms create and sustain competitive advantages? How firms interact when they compete? Why do they compete in particular ways? How do competitive behaviours and actions influence organizational performance, and vice versa* like several other research streams on strategy (See Teece et al. 1997; Smith et al. 2001; Chen & Miller 2012).

Other streams of strategy research that has attempted to create an understanding or give explanations of competitive strategies can be broadly classified into two; the *macro-strategy and microeconomic theories* (Smith et al. 1992). In the words of Smith et al. 1992, “the macro theories and methods are coarse-grained and aim at creating an understanding of the general tendencies in strategy”. The ‘strategic choice perspective’ and ‘structural perspective’ are two important streams of strategic research that belongs to this category (Smith et al. 1992 p. 9). The *strategic choice perspective* emphasises the search for the most profitable strategy for a firm and this stream of research defined strategy as a gestalt pattern of behaviour (Smith et al. 1992). One of the most important themes of this stream is the Miles and Snow typology, which identified strategy approach or types (prospectors, defenders, analysers and reactors) from which managers could choose to successfully build competitive advantage (Smith et al. 1992). The *structural perspective* on the other hand links industry structure to the performance of firms. The most significant theme in this research stream is the Porter’s five forces analysis, in which he portrays the profitability of firms as dependent on five industry structural forces; threats of new entrants or entry barriers, power of substitutes, bargaining power of the suppliers, the bargaining power of customers or the buying power and the competitive rivalry. (Smith et al. 1992.)

The *microeconomic theories* on the other hand are more fine-grained and specific than the macro-strategy theories (Smith et al. 1992). Theories in this stream lays emphasises on more specific factors such as pricing competition as a major factor for competition. The *reaction function models* and *game theory* are the most important of the micro economic theories. (Smith et al. 1992.) The *reaction function models* hypothesize that each firm can determine its most profitable maximising strategic action by presuming the actions of their rivals to be constant (Smith et al. 1992). The *game theory* on the other hand makes assumptions about the player’s objectives and applies logical modelling to predict outcomes for alternate strategies (Smith et al. 1992).

Comparing the approaches of both theories (the macro-strategy and microeconomics theories) to that of competitive dynamics, it is seen that the surface nature of the macro models research is incapable of capturing the fine details of competitive interaction and advantage as the competitive dynamics stream is able to do (Baum & Korn, 1996; Smith et al. 1992). This is because the emphasis on real actions taken by managers stands in direct contrast to the aggregate approach taken by the macro strategy for inferring strategic postures (Chen & Miller 2012). The micro economic theories on the other hand have the fine-grained observation capabilities, but the levels of abstraction and the strict assumptions employed makes them largely inappropriate for strategy research (Smith et al. 1992). Additionally, unlike the competitive dynamics streams, the micro economic theories ignore the process of interaction through which firms arrive at their different action-response decisions (Smith et al. 1992). Table 2.1 below is a comparison of the salient features of the competitive dynamics stream to the major research themes of the

macro and microeconomic theories (Smith et al. 1992; Chen & MacMillan 1992; Smith et al. 2001; Chen & Miller 2012).

**Table 2.1.** *A comparison of competitive dynamics's salient features to Porter's based approach and game theory.*

	<b>The 'Poterian' view</b>	<b>Competitive Dynamics</b>	<b>Game theory</b>
<b>Basic Premise</b>	Industry structure as the determinant of competition and profitability	Actions and responses of firms determines competition and performance	Predicting actions of competitors
<b>Level of Analysis</b>	Macro industry level	Micro firm and action level	Action Level
<b>Focus</b>	Five forces that makes us the industry structure	Actions of firms; Action/response dyad	Actions of firms
<b>Intellectual Origin</b>	Industrial organisation economics	Empirical and theoretical work in strategy management extended from the Schumpeter and Austrian economics	Micro economics logic
<b>Competitive Advantage</b>	Competitive advantage can be created and sustained	Advantages are time dependent and transient	Advantage can be achieved and optimized.
<b>Orientation</b>	Industry	Action/response dyad	Logical reasoning
<b>Relationship between firms</b>	Symmetrical	Asymmetrical	Assumed rational behaviour between firms

<b>Competitive strategy</b>	Generic types	Pattern of actions and responses	Optimal strategies according to the interdependency of the players' pay-off
<b>Dynamic Consideration</b>	Comparisons between two time points	Exchange of actions and responses or interactive between two firms	Prediction of competitor's actions

---

Following the extensive definitions and the features highlight of the competitive dynamics stream and other streams, its major defining attributes are:

- 1 It focuses on the actual actions exchanged by firms in the market place, with emphasis on the uniqueness and distinctness of each action in relation to its timing, context, scope and influence to create an understanding of competition. (Smith et al. 1991; Smith et al. 1992; Gimeno & Woo 1999; Lee et al. 2000; Smith et al. 2001; Chen & Miller 2012).
- 2 Competition is interactive and dynamic. The action/response dyads of firms and the interactive streams of these actions add up as the building block of competition (Chen & Miller 2012).
- 3 It also emphasises competitive interdependence between firms with relativity being an essential premise through which the positions of firms and the consequences of their actions in the competitive arena are adjudged (Porter 1980; Baum & Korn 1996; Smith et al. 2001, Chen & Miller 2012).
- 4 Competitive dynamics employs underlying organizational forces such as leadership and human agency theories to predict and explain firm behaviours in the marketplace (Smith et al. 1992; Chen & Miller 2012)
- 5 Competitive dynamics uses empirical methods in garnering insights (Chen & Miller 2012).
- 6 Lastly, competitive dynamics research stream recognises strategy as a set of coherent actions; hence it embraces strategy formulation and implementation while recognising that, both the internal and external concerns of the firm influences their actions (Chen & Miller 2012).

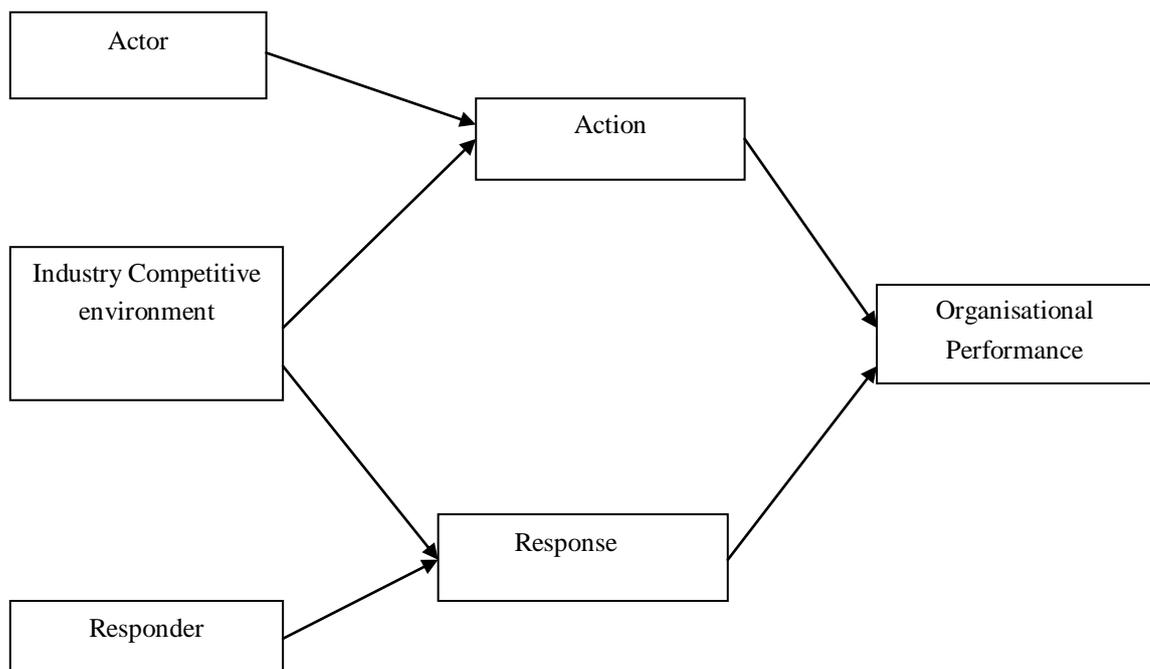
### **2.1.1 BASIC MODEL OF THE COMPETITIVE DYNAMICS FRAMEWORK**

As mentioned previously, competitive dynamics emphasizes the interaction of action/reaction between firms, its consequences on firm performance and the effect of the environment on them. Smith et al. (1992) identifies the basic components underlying

the competitive dynamics framework as originally conceived from the communication theory. The framework consists of:

1. An actor which is the firm that takes the competitive action
2. The competitive action
3. The (potential) responder which is the firm that reacts
4. The response to the action.
5. The environment or the industry context which could influence the manner of decoding and responding to the actions and
6. The feedback which relates to the performance outcomes of the competitive interaction and is capable of triggering another action.

Figure 2.1 below is a pictorial representation of the above mentioned elements.



**Figure 2.1.** Framework underlying the competitive dynamics theories. Adopted from Smith et al. 2001

## THE ACTOR

The actor is the firm which carries out the action and is the direct beneficiary of the consequences of the actions (Smith et al. 1992; Smith et al. 2001). Factors like age of the firm, the diversity of the markets in which the firm operates (operational- market diversity), top management team constitution and demographics, multimarket presence

and market dependence, past performance of the firm and the unabsorbed slack of the firm have an influence on the choice of actions a firm carries out (Ketchen et al. 2004; Baum & Korn 1996; Smith et al. 2001).

## THE COMPETITIVE ACTION

The competitive action is the action being carried out; a move taken by the firm to enhance its competitive position and to add advantage (Smith et al. 1992; Smith et al. 2001; Grimm et al. 2006). The notion of what is regarded as an action is quite diverse and varies across the different industries studied; some generic examples of previously studied actions include pricing actions, promotional actions, marketing actions, acquisitions, new product actions and signalling actions (See Chen et al. 1992; Chen et al. 1994; Smith et al. 2001). Competitive action or move made by a firm is largely dependent on the resources the firm possess, as well as its decision making processes (Ghosal 1987; Grimm & Smith 1997; Grimm et al. 2006). A competitive action carries a message that serves as stimulus to other competitors, and they have to decode its intended meaning in order to be able to respond or compete successfully (Smith et al. 1992). The table below gives a brief explanation of some of the important characteristic of actions that has been studied before.

*Table 2.2. Characteristic of actions and their brief description.*

Action characteristic	Brief description
<b>Radicality</b>	This relates to the extent to which an action deviates from the norm (Smith et al. 2001)
<b>Scope</b>	This relates to the number of potential competitors that could be affected by the action (Smith et al. 1992; Smith et al. 2001; Grimm et al. 2006).
<b>Magnitude and Implementation requirement</b>	This relates to the extent of resources committed to executing the action by the initiating firm, as such they could be tactical or strategic (Smith et al. 1992; Chen et al. 1992; Smith et al. 2001; Grimm et al. 2006)
<b>Degree of threat/Action threat</b>	This relates to the number of rival's customers that are at risk to the action or the extent to which an action threatens another firm's market (Chen et al. 1992; Smith et al. 1992; Grimm et al. 2006).
<b>Total number of actions /Volume of actions</b>	This relates to the total number of actions undertaken by a firm and it also reflects the firm's scale of competitive behaviour (Smith et al. 2001)

Other important characteristics of actions that have been examined in past research include those done on aggregate levels for actions; the frequency of specific actions, competitive repertoire of a firm; which is the total set of actions carried out by a firm during a particular period, the non conformity of its competitive repertoire to industry

norms, competitive repertoire simplicity and the characteristics of uninterrupted sequence of actions carried out over a period (Miller & Chen 1996; Smith et al. 2001). All the aforementioned characteristic of actions have been shown to have a significant effect on organisational performance as they are important predictors of response characteristics such as response likelihood, speed and number of responses amongst others ( See Smith et al. 1992; Smith et al. 2001).

### **THE RESPONDER**

The responder is the potential competitor that reacts to an action with a response of its own (Smith et al 1992). In addition to possessing similar characteristics as the actor, previous research has shown that the response decision of a firm is dependent on its competitive information-processing system and the capacities it possesses, and how this information is being handled in the organisation (Smith et al. 1992). Smith et al (1992) employed the communication model to develop an information-processing model for responding firms which has three central and related dimensions that strongly influence how a firm responds.

These dimensions are the *information sensory systems* which relate to the organisation's capability to perceive or recognise the action of a competitor; the firm's *information processing and analysing mechanism* which relate to the organisation's ability to channel the perceived competitive information from the firm's boundary to the decision makers and response implementers; and the *information selection and retention capability* which are the human factors that prevails on the decision makers and their eventual choice of actions or responses.

These three dimensions have been used to define attributes such as the orientation of the firm, structural complexity and market dependence of the organisation which also affect response characteristics of firms (Smith et al. 1992; Smith et al. 2001).

### **THE COMPETITIVE RESPONSE**

This is the counteraction taken by a firm in an attempt to defend or improve its position with regards to a prior initiated action by one or more of its competitors (Porter 1980 in Smith et al. 2001; Grimm et al. 2006). The competitive response is capable of triggering more actions from other firms as it could act as a new stimulus evoking more responses (Smith et al. 1992). A key dimension to responses is imitation; it is the extent to which a response mimics or imitates the initiated action (Smith et al. 1992). Other important characteristics of competitive response that has been studied in past literature include response likelihood, response type, response lag or delay, response order, and response noteworthiness, response scope, and response generation speed amongst others (Smith et al. 1992; Smith et al. 2001). The Table 2.3 below highlights the most salient features and a brief description of some of these characteristics.

*Table 2.3. Characteristic of responses and their brief description.*

<b>Response characteristics</b>	<b>Brief description</b>
<b>Response likelihood</b>	This relates to the probability that a rival will or will not respond to a firm's action (Chen & MacMillan 1992; Smith et al 2001)
<b>Response Lag/delay</b>	This relates to the amount of time required by a firm to initiate a response or react to an action (Chen & MacMillan 1992; Smith et al. 1992; Grimm et al. 2006).
<b>Response Order</b>	This relates to the positioning of a firm among all responders (Smith et al. 1992; Grimm et al. 2006)

### **INDUSTRY COMPETITIVE ENVIRONMENT**

The competitive environment can be likened to the noise in Smith's et al. (1992) information-communication model and it has influence on the ways firms decode and respond to actions just as noise will do to any message in a channel. The more rivalry present in an industry, the lesser the profitability potential of such industry (Smith et al. 1992). Previous research has shown that the environment of each industries differ from each other and Smith et al. 1992 identified six dimensions through which industries can vary from each other. These are:

1. Industry dynamism which relates to the rate of change;
2. Industry uncertainty which relates to the predictability or unpredictability of industry events;
3. Industry complexity which is concerned with the different organisationally relevant attributes of the industry;
4. Resource scarcity relates to the lean nature of the industry in terms of resources;
5. Industry homogeneity relates to how similar competitors in an industry are in terms of size, costs, resources and strategies; and
6. Industry interconnectedness relates to the interrelation and organisation of events happening in the industry.

Smith et al. (1992) also argued that these six dimensions will affect or have an influence on the manner in which competitive information is made available to decision makers. Consequently, these six dimensions can be used to classify all industry under three classes: *emerging growth industry*, *the mature industry* and *the fragmented industry* (Smith et al. 1992). Industries that are newly formed with no defined rules of

competition are classified as *emerging growth industries*. These kinds of industries tend to be dynamic and unpredictable with high rates of change; thereby competitive information available will be incomplete and unreliable. This uncertainty in turn makes firms to act and respond blindly in an attempt to avoid losing their competitive ground. (Smith et al. 1992.) *Mature industries* on the other hand are more stable with established rules of competition and low rate of change, which results in more complete and accurate competitive information (Smith et al. 1992).

Lastly, *fragmented industries* are those in which no single firm can claim dominance or influence industry outcomes singlehandedly (Smith et al. 1992). Competitive information in this kind of industry undulates between the extreme of uncertainty like that of emerging industries and that of the more stabilized mature industries. Hence, there is more complete information available than that available in emerging industries. Additionally, some of the factors that influence the competitive environment as revealed in previous works include industry growth rates, industry concentration and barriers to entry (Smith et al. 1992; Smith et al. 2001).

## **ORGANIZATIONAL PERFORMANCE**

Organisational performance is the consequence of the action- reaction or counter action interactions that takes place (Smith et al. 2001). Measures like market share, financial measures and sometimes industry specific measurements are used to measure the success or failure of a firm's action. The success of actions typically generates competitive reactions as rivals block, imitate or initiate counter actions of their own in an attempt to limit the advantage of the initiator and improve their own performance (Baum & Korn 1996; Smith et al. 2001). Hence, the amount, speed and gravity of responses an action generates affect its performance potential and the amount of competitive advantage it gathers (Smith et al. 1992; Grimm et al. 2006). These actions-reactions can escalate beyond competing firms to affect the entire industry's performance (Smith et al. 2001).

In addition to the individual characteristics of each component in the framework, there are three important behavioural drivers that push a firm to act or react (Chen & Miller 2012). They are *awareness, motivation and capability* (Chen & Miller 1996; Smith et al. 2001; Chen & Miller 2012). It was originally conceived by Chen & Miller (1994) using the expectance valence theory. First, *awareness* relates to the actor being aware of a need or an opportunity to act/react and how well a focal firm understands the consequences of its action or response with regards to the general competitive environment and the drivers of competition (Chen & Miller 1994; Smith et al. 2001). Second, *motivation* relates to the perceived benefit or loss an organisation tends to accrue by carrying out or by not carrying out the action or response as the case maybe; this serves as the incentive for the firm to execute or not to execute the action (Chen & Miller 1994; Smith et al. 2001). Lastly, *capability* relates to the ability of the firm to

effectively utilise its resources (both human and material) in executing an action and benefiting the reward(s) therein (Chen & Miller 1994; Smith et al. 2001).

Hence, a firm is not able to act or react except it feels or senses the need (awareness) to do so either through a discovery of some new opportunity or by recognising the attack of a competitor on its market; nor will the firm be motivated to act unless it has the resources and capability to carry out the needed action or response effectively in order to realize the potential benefits or gain. Or perhaps, the firm has the resources (capability) but does not perceive the benefits of taking the action as enough motivation to act. It is possible for an action initiator to use these drivers to analyse and predict the response of its competitors as they represent potential response barrier (Chen & Miller 2012.) These drivers further emphasize the competitive dynamics view of actions as being idiosyncratic and the perception of competition as contextual to the competitive environment, because the analysis will vary depending on the action of interest and the competitors under consideration (Chen 1996; Chen & Miller 2012).

Furthermore, findings from previous studies have shown that there are certain factors or characteristics of the firms (be it the actor or responder) that also have an influence on the aforementioned drivers (Smith et al. 2001). Organisational factors that influence *awareness* includes the age of the firm, the diversity of markets in which the firm competes, and top management team (TMT) demographics (Smith et al. 2001). The factors that inhibit or induce the *motivation* of firms to act include past performance and the market dependence of the firm (Smith et al. 2001). Lastly, the factors that determine the *capability* of a firm to carry out actions include the resource endowments of the firm, its unabsorbed slack, the decision making process or procedure of the firm and the TMT demographics (Chen 1996; Smith et al. 2001).

### **2.1.2 RESEARCH TRENDS AND THEMES IN COMPETITIVE DYNAMICS**

According to Chen & Miller (2012), previous work in the competitive dynamics stream has produced five distinct themes; these themes showcases the core of the competitive dynamics stream and together, they present an overview of the work done on competitive dynamics over the years along with its contribution to the strategy and organisational literature. They are:

1. Competitive interaction: action-level studies;
2. Strategic competitive behaviour and repertoire: business-level studies;
3. Multimarket and multibusiness competition: corporate-level studies;
4. Integrative competitor analysis; and
5. Competitive perception

## COMPETITIVE INTERACTION: ACTION –LEVEL STUDIES

This theme focuses on the individual competitive action-response dyad towards creating an understanding of the behavioural dynamics of competition (Chen & Miller 2012). Hence the definition of competitive action serves as the conceptual foundation for this research theme (Smith et al. 2001). While, there is no formal and generic definition of what an action is (Nokelainen, 2008), an action in this context is taken to be a “specific and detectable market move initiated by a firm, with the capability to erode a rival’s market share or reduce its anticipated advantage” (Chen & Miller 2012 p.7). In the same vein, a response is defined to be “a specific and detectable countermove, prompted by an initial action that a firm takes to defend or improve its share or profit position in its industry” (Chen & Miller 2012 p.7).

Previous studies done in this regard, have explored the antecedents and consequences of competition in the context of a variety of industries, therefore each industry differ with respect to the particular types of actions carried out (Smith et al. 2001). However, generic examples of such actions ranges from a new product introduction to a dramatic price cut, to offering free and new product/service contract, starting a new promotional campaign /marketing actions, capacity- and scale-related actions, service and operations actions, signalling actions, acquisitions, mergers, strategic alliances, amongst others (See Chen & MacMillan 1992; Smith et al. 1992; Baum & Korn 1996; Smith et al. 2001; Chen & Miller 2012).

The research began at the very basic level of competitive interaction and it focused on analysing competitive response drivers (Chen & Miller 2012). One of the important contributions of this research theme is its contribution towards elevating strategy from an aggregate and abstract concept to a more practical concept via the emphasis placed on the core exchanges of competitive interactions (Chen & Miller 2012). Some of the major thrusts of this theme include *characterizing and predicting competitive response* (Chen & Miller 2012). In characterising competitive response, key attributes of competitive response such as the response likelihood, response number and speed, the extent to which a response matches the initial action were measured and these attributes were found to be functions of three characteristics: “

1. The attributes of the attack such as the difficulty of implementation; the amount of effort and time required for execution, and the visibility or degree of industry attention.
2. The characteristics of the attacker such as the degree of organisation commitment to the attack and
3. The characteristic of the defender such as a competitor’s dependence or a defender’s stake in the market under attack” (Chen & Miller 2012 p.8).

In addition to the competitive response characterisation, this theme of competitive dynamics stream also gave explicit attention to the *irreversibility in actions*. It explains

irreversibility by emphasizing the level of an organisation's commitment while taking an action (Chen & Miller 2012). Research work has also extended the property of irreversibility beyond the tangible economic investments and capital assets to include broader organizational, psychological, and socio-economic considerations (Chen & Miller 2012). In this light, internal and external irreversibility were identified, with the amount of interdepartmental coordination required for execution cited as an example of internal irreversibility and the degree of top management's public endorsement of a move cited as an example of external irreversibility (Chen & Miller 2012).

Lastly, this theme studied performance consequences of different types of competitive interactions, which has been proven to influence performance (For example Smith et al. 1992; Ketchen et al. 2004; Smith et al. 2001 Grimm et al. 2006; Chen & Miller 2012). While this theme gave detailed attention to the action-response competitive interaction, Chen & Miller (2012) argued that the broader strategic contexts of these actions have been largely ignored.

### **STRATEGIC COMPETITIVE BEHAVIOR AND REPERTOIRE: BUSINESS-LEVEL STUDIES**

This theme also emphasizes the competitive action as the building block for understanding competition, but it focuses on this at the firm level (Chen & Miller 2012). In the words of Chen & Miller (2012), this theme explained 'the organizational and contextual antecedents that *drive competitive behaviour* and *competitive repertoires*, and captures the ensuing performance outcomes'. Behavioural properties of firms such as the propensity to act, responsiveness, and execution speed were identified and linked to their corresponding action/response dyad attributes. It was also found that firm level characteristics such as size, TMT characteristics and the information-processing capacity of firms play a key role in the competitive behaviour of a firm (Chen & Miller 2012).

In addition, this theme conceptualized competitive strategy as a repertoire of micro-competitive behaviours. 'Competitive repertoire is defined as the entire range of a firm's competitive moves / actions; for example new market entries and major price initiatives' (Chen & Miller 2012). Important firm attributes such as a firm's competitive inertial; the simplicity or diversity in a firm's types of moves; and the nonconformity of a firm's move to industry norms were identified and shown to have significant effect on the performance of firms (Chen & Miller 2012).

### **MULTIMARKET AND MULTIBUSINESS COMPETITION: CORPORATE-LEVEL STUDIES**

This theme employed the multimarket or multipoint competition theory to explain the competitive nature of firms that are competitors to each other in more than one market (Chen & Miller 2012). The multiple point competition theory hypothesizes that firms tend to adjust their competitive or rivalry approach when they have contacts in more than one market. The ensuing tempering of retaliatory aggressiveness is known as

mutual forbearance (Edwards 1955 in Baum & Korn 1996). The retaliatory approach taken will depend on the kind of relationship that exists between them in those markets. With an increase in the amount of market contacts between closely competing firms, the lesser the aggressiveness displayed to one another. (Baum & Korn 1996; Smith et al. 2001; Chen & Miller 2012.)

## **INTEGRATIVE COMPETITOR ANALYSIS**

This theme of the competitive dynamics streams employs a more integrative approach than the usual traditional methods for competitor analysis (Chen & Miller 2012). First of these models is the *market commonality-resource similarity* construct developed by Chen (1996). The market commonality and resource construct highlights the idea of each firm's degree of overlap in its competitor's market and each firm being unique with regards to its market profile and resource endowment. In addition, the notion of competitive asymmetry is highlighted as a pair of firms may not pose as equal threats to each other. (Chen 1996.) Second is the development of the *AMC* (Awareness, Motivation and Capability) which is an extension of work on the market commonality/resource similarity construct; and has a direct correspondence or relation between each of its components to that of the market commonality/resource similarity construct (Chen & Miller 2012). The AMC are three important behavioural drivers that push a firm to act or react (Chen & Miller 1996).

## **COMPETITIVE PERCEPTION**

The research in this domain strays from concentrating on the actual behaviour of competition to studying the underlying cause or driver of action. It also examines directly the perceptions and motivations of managers as well as the contexts that shape those perceptions (Chen & Miller 2012.) It acknowledges that action can take place only via human agency, and all human agencies are filtered by perception (Chen & Miller 2012). *Competitive tension*, *identity domains*, and *competitive acumen* are newer concepts which have been developed from this stream (See Chen & Miller 2012).

## **2.2 COMPETITIVE DYNAMICS AND PERFORMANCE**

### **2.2.1 WHAT IS CORPORATE PERFORMANCE?**

Corporate performance or organisation performance as occasionally referred to, is a wide and important phenomenon as it is associated with several facets of a firm's activities ranging from its overall well being to the well being of individual or sub units such as marketing, operations, human resources (HR), financial profitability, market returns and strategy. Each of this unit is ultimately judged by its contribution to the overall organizational performance (Firer & Williams 2003; Richard et al. 2009). Despite its importance, corporate performance has no precise or definite definition (Firer & Williams 2003; Richard et al. 2009). Robbins and Coulter (2002) defined

organisational performance as the accumulated end result or consequences of an organisation's work processes or activities. Some other definitions of performance just like that of Robbins and Coulter, centres on the achievement of set objectives and the creation of value via the accumulation of resources that contribute to its success (Ciora et al. 2011). Major emphasis is placed on performance as being a consequences or aftermath of a firm's actions and activities.

With the central importance of performance, its measurement is essential in allowing managers and researchers alike evaluate the effect of specific actions and activities in relation to their standing vis-à-vis the firm's growth, survival, rivals and competitors. It also has a significant effect on the evolution of the firm over time. (Richard et al. 2009.) There are three specific areas of firm outcomes in which corporate performance is concerned with. These include the product market performance, financial performance and market evaluation. (Firer & Williams 2003; Richard et al. 2009.) Financial performance is concerned with accounting measures and outcomes such as profits, return on assets and the return on investment; while product market performance is concerned with the sales and market share of the firm; and market evaluations is centred around stock market indicators such as shareholder return, total shareholder return and the economic value added (Richards et al. 2009).

### **2.2.2 COMPETITIVE DYNAMICS VIEW ON PERFORMANCE**

Competitive dynamics concerns itself with the action–reaction interactions of firms, and it is in the context of these actions-reactions that advantages and improved performances are obtained (Smith et al. 2001; Grimm et al. 2006). Competitive dynamics bases the performance of firms on the effectiveness and capability of the firm's action to generate sustainable and above-normal profit for the firm (Smith et al. 2001; Grimm et al. 2006). The consequence (success or failure) of a firm's action largely depends on the amount competitive response or counter-action generated from other competing firms (Chen & Miller 1994; Smith et al. 2001). The profit or competitive advantage of an initiating firm can be adversely affected if the attack triggers intense and costly counter-actions from a large number of competitors. Such responses do not only have the potential to reduce the benefits reaped by the firm from the action, but could necessitate the need for further actions resulting in increased expenses for the firm alongside a reduced profit. (Mansfield 1968 and Nelson & Winter 1982 in Chen & Miller 1994.)

Thereby, the competitive advantage a firm garners can be assessed by the change in its market position and the profit generated by each competitive move. Consequently, the firm's overall advantage is gauged by the profit generated from a stream of moves taken over time. (Grimm et al. 2006.) In addition to the characteristic of actions, the characteristic of response along with other contextual factors such as the relationship between firms in the competitive arena (for example, the existence of multipoint

contacts between firms in a strategic group and clusters), and industry factors have been shown to also predict responses which in turn have an impact on how a firm's action results in better performance (Smith et al. 1992; Ketchen et al. 2004; Smith et al. 2001; Chen & Miller 2012).

Some of the significant and consistent findings from previous works, in relation to the performance of firms include the fact that, a firm's performance is positively related to a lag in response and reduced number of elicited responses (Mansfield 1968, MacMillan et al. 1985 and Nelson & Winter 1982 in Chen & Miller 1994; Chen & Hambrick 1995; Smith et al. 2001; Chen & Miller 2012). There is also a negative effect on performance when the opposite of the aforementioned happens. Actions carried out in favourable industries also tend to generate slow responses; hence there is more time for the initiator of the successful action to enjoy the monopoly of the success (Smith et al. 2001).

Furthermore, other factors such as the number of actions or moves, timing of making a move, order of responses, lag in responses, and tendency of responding to an attack from a competitor all affect the performance of a firm (Smith et al. 1991; Chen & MacMillan 1992; Chen & Miller 1994; Chen & Hambrick 1995; Young et al. 1997; Grimm et al. 2006). Table 2.4 below highlight the major outcomes from some previous studies in relation to the attribute of actions/reactions and effect on performance.

**Table 2.4.** *Action and response's characteristic, description and performance consequence.*

	<b>Dimension</b>	<b>Brief definition</b>	<b>Performance consequence</b>
<b>ACTION</b>	Tactical	Actions with less implementation requirement and commitments and are quite easy to imitate (Smith et al. 2001; Chen & Miller 2012 )	Tend to elicit more and quicker responses, hence not necessarily huge positive impact on performance (Smith et al. 2001, Chen & Miller 2012)
	Strategic	Actions with greater implementation requirements and difficult to reverse (Smith et al. 1992; Chen et al. 1992; Smith et al. 2001; Chen & Miller 2012)	Tend to elicit fewer and slower responses, hence the focal firm/initiator tends to enjoy the monopoly of success for a while and positive effect on performance (Chen et al. 1992; Smith et al. 2001; Chen & Miller 2012)
	Impact /Scope	The amount or number of competitors that a firm's action threatens/affects (Chen et al. 1992; Smith et al. 2001)	Tends to generate slower responses from the competitors and perhaps positively influence performance. (Chen et al. 1992; Smith et al. 1992; Smith et al.

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		2001)	
	Threat	The extent or amount of a competitors' key market and customers that an action targets (Chen et al. 1992; Smith et al. 1992; Smith et al. 2001)	Tends to generate more and quicker responses when it diverts or steals customers, hence advantage monopoly is for a short while. (Chen et al. 1992; Smith et al. 1992; Smith et al. 2001)
	Radicality	Actions that deviate from industry norm (Smith et al. 2001, Chen & Miller 2012)	Tends to elicit faster responses (Smith et al. 1992; Smith et al. 2001)
	Speed	The speed at which an action is executed	Positively relates with performance (Chen & Hambrick 1995; Smith et al. 2001)
	Total number of actions	The amount of actions a firm carries out (Smith et al. 2001)	A large number of actions is positively related to profitability and improved performance (Smith et al. 2001)
	Repertoire Complexity	The complexity and diversity of a firm's set of actions (Smith et al. 2001, Chen & Miller 2012)	Firms with a complex repertoire of actions tend to have an improved performance than those with simple ones (Smith et al. 2001)
	Sequence	The series of multiple competitive actions carried out over time (Smith et al. 2001)	A complex sequence of action (diverse and unpredictable action types) leads to delay in responses and better performance (Ferrier & Lee 2002; Smith et al. 2001)
<b>RESPONSE</b>	Speed and order	The speed at which a firm responds to a competitive action and response order is the rank of response to a competitive action by firms (Smith et al. 2001)	Past research has indicated a mixed result which indicates that other factors could have effect on these two characteristics (Smith et al. 2001). Without accounting for the order of response, some research found a negative relationship between response speed and performance while

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another research found that a deviation by small firms from the industry norms in relation to response speed leads to poor performance (Smith et al. 2001).

But when the order is considered, there tends to be a positive relationship between order and performance.

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In addition to the characteristics listed in Table 2.4 above, research has shown that a healthy past performance by a firm mostly inhibits the execution of newer competitive actions. This is because firms rely on existing laurel by sticking to simple and narrow repertoires of actions, less complex sequence of actions and carry out predictable actions thereby falling into complacency. (Miller & Chen 1996; Smith et al. 2001; Chen & Miller 2012.) Only a few studies have found a positive relationship between a firm's past performance and their aggressiveness towards carrying out competitive actions (See Smith et al. 2001). On the other hand, poor past performance increases a firm's aggressiveness, the firm's motivation to act and employ newer approaches towards garnering better advantages (Smith et al. 2001).

Multipoint contact in the competitive arenas between firms have also been found to lead to mutual forbearance, whereby a firm cedes the control of a market for another which leads to reduced rivalry and better performance (Ketchen et al. 2004; Chen & Miller 2012). Lastly, firm's membership in strategic groups has been shown to influence the competitive interaction of firms and their performance (Ketchen et al. 2004). Though there is a lot of ambiguity in linking strategic groups and performance, but most of the work done in this regards recognises that there is group performance differences across firms and industries (Ketchen et al. 2004).

### **2.2.3 CHOICE OF MEASUREMENT PARAMETER**

Firm performance has several means of measurement. One of the criteria that define the parameter chosen is the area or the dimension of the firm performance which is of interest. Three specific areas of firm outcomes in which corporate performance is concerned with include product market performance, financial performance and market evaluation (Firer & Williams 2003; Richard et al. 2009). Other aspects of firm performance include growth, operational efficiency, corporate reputation, customer knowledge, business processes, market reach and social performance (Venkratraman & Rasmtng 1986; Bromley 1990; Combs 2005 in Gentry & Chen 2010).

Amongst all the measures of performance, those with relations to the financial health of the firm are given more emphasis. This is because it encompasses key indicators like profitability, return on investments, return on assets and stock market pointers. Financial measures and market based measures fall in this category. Financial

performance is concerned with accounting measures and outcomes such as profits, return on assets and the return on investment while and market measures use indicators such as shareholder return, total shareholder return and the economic value added. (Richards et al. 2009.)

While these indicators give information about the financial capabilities of a firm, the accounting-based measures have been criticised not to have the capability of totally representing or presenting the true performance and situation of a firm (Montgomery & Thomas 1988; McWilliams & Siegel 1997; Akben-Selcuk & Altioek-Yilmaz 2011). This is so, as insiders from a company are capable of manipulating their accounting details to reveal good numbers, thereby giving false hope in relation to the company's performance (Benston 1992 in McWilliams & Siegel 1997).

Stock market related measures on the other hand are able to reflect the true state of a firm as they are not subjected to insider's manipulation; hence they give a true reflection of the firm's value and a concrete measurement of the firm performance (McWilliams & Siegel 1997). Stock prices of a firm's security are presumed to reflect the discounted values of future cash flows of the firm and it also incorporates all the relevant information about the firm (Siegel & McWilliams 1997). In addition, the stock market return, which is a result of price differences (between expected and actual) for a certain period is able to give a concise view of the company's performance (Ferrier & Lee 2002). Consequently, stock market return is employed in this study to measure performance. In more precise terms, the stock market is able to give a true reflection of a firm performance with the assumption that the market is efficient. It is able to reflect to incorporate and adjust to new information rapidly (See Fama et al. 1969; Campbell et al. 1997; McWilliams & Siegel 1997).

### **2.3 COMPETITIVE ACTIONS**

What is deemed to be a competitive action varies across several literatures, and it does not have a single universally accepted definition (Nokelainen 2008). Meanwhile the term presumed to be competitive action here, is likened to what previous literatures have termed either as competitive action events (Ferrier 2001), competitive actions (Nokelainen 2008), competitive moves (Young et al. 1996), strategic actions (Lamberg & Ojala 2006), organizational actions (Chen & Miller 1994), or just actions (Smith et al. 1991). Consequently, there have been a variety of base features or attributes associated with an action of a firm when it is considered competitive. Some of these sway in the same direction (interpretation wise) while others appear to take contrasting positions.

These attributes include the ability of the action to be detectable, the intentionality of the action, profit and advantage desirability of the firm in taking the action, advantage-generation capability of the action, externally or internally oriented, strategic or tactical, its observability, its market orientation and its ability to disrupt the status quo

of the market amongst others (See Smith et al. 1991; Chen et al. 1992; Chen & Hambrick 1995; Hambrick et al. 1996; Ferrier et al. 1999; Nokelainen 2008; Chen & Miller 2012.) Table 2.5 below is a highlight of some existing definitions of competitive action.

*Table 2.5. Previous definitions of competitive actions*

<b>Author(s)</b>	<b>Definition</b>
<b>Smith et al. 1991</b>	A competitive action is a specific and detectable competitive move, initiated by a firm to defend or improve its relative competitive position
<b>Chen et al. 1992; Chen &amp; Miller 1994; Chen &amp; Miller 2012.</b>	A specific and observable competitive move, initiated by a firm to defend or improve its competitive position and with the capability to erode a rival's market share or reduce its anticipated returns
<b>Chen &amp; Hambrick 1995</b>	A specific and detectable move with the potentiality of acquiring a rivals' market shares or reduce their anticipated returns.
<b>Ferrier et al. 1999</b>	An action is any newly developed market-based move that challenges the status quo of the market process
<b>Smith et al. 2001</b>	A competitive action is an externally directed, specific, and observable competitive move initiated by a firm to enhance its relative competitive position.
<b>Grimm et al. 2006</b>	A specific market move, such as a price cut, a market expansion, or a special promotion designed to defend or improve the firm's competitive position
<b>Nokelainen 2005</b>	A specific and detectable action initiative or responsive, market-oriented or not, major (strategic) or minor (tactical) carried out by a firm to protect or enhance the relative competitive position of a company.
<b>Nokelainen 2008</b>	Competitive action is an intentional action which is performed by a company, because it desires to achieve or maintain competitive advantage and believes that the action will contribute to the fulfilment of this desire.

A general characteristic for all the definition is that these actions are usually taken in an attempt by the firm to enhance its competitive positioning and garner advantage. This attribute of a competitive action falls in line with one of the root beliefs of the competitive dynamics stream; actions being the means through which an organisation generates competitive advantage or some abnormal profit. As this study focuses particularly on announcements of firms as actions, it will follow with the definition of action as being a specific, detectable, observable move by a firm, whether internally or externally directed to enhance its competitive positioning and improve performance.

### 2.3.1 KINDS OF ACTIONS

In similarity to defining competitive actions, there is no formal universal accepted convention as to ways of categorizing competitive actions. To a large extent, the identification and classification of actions in previous research has been context-specific (Nokelainen 2005) with most based on the needs of individual studies. This has made the categorization available limited or industry specific (Nokelainen 2005). A major setback of this lack of standardization in identification or categorization of actions into types is the inability to safely compare the outcomes of different studies (Nokelainen 2005). Some generic examples of previously studied action-types include pricing actions, marketing actions, new product actions and signaling actions (Smith et al. 2001)

The range of possible competitive actions identified vary from tactical moves, such as price cuts, promotions, and service improvements, to strategic moves such as domain changes, facilities expansions, strategic alliances, new product or service introductions- which require more substantial commitments of specific resources and are more difficult to reverse (Chen & MacMillan, 1992; Miller & Chen 1994; Smith et al. 1991; Smith et al. 1992).

A couple of studies has attempted to standardize the categorization of competitive actions. For example, Nokelainen (2005), categorised actions based on the kinds of actions studied in previous literature which he set into two broad categories; those studies which have investigated a single industry (the U.S. domestic airline industry) and those that conducted studies in a multi-industry contexts. He further elaborated that, the studies in the U.S domestic airline industry have generally identified action types which ranges from less than ten (10) up to twenty-one (21). On the other hand, the number of actions identified in studies that took a multi industry context approach is generally smaller. Although, the actions in this category are not industry-specific as the former. The largest inventory of action in this regards reported from past literature is that of Hopkins (2003), and is twelve in total (Nokelainen 2005). Table 2.6 below gives a list of the identified actions in both categories.

**Table 2.6.** *Competitive actions identified by prior studies studying the U.S domestic airline industry (21) and multiple industries (12) (Adopted from Nokelainen 2005)*

Competitive actions identified by prior studies studying U.S. domestic airline industry(21)		Competitive actions identified by prior studies studying multiple industries
1.Price cut	13.Special fare advertisement	1. Outsourcing
2.Price increase	14.Frequent flyer program	2. Marketing
3.New promotion	15.Ticket purchase requirement	3. Manufacturing
4.Promotion with non airlines	16.Acquisition of new plane	4. Joint venture
5.Service improvement	17.Face structure	5. Organisational restructuring

6.New service	18.Feeder alliance	6. geographical expansion
7.Commission rate change for agents	19.Hub creation	7. Price reduction
8.Daily departure increase	20.Cooperation with another airline	8. Offshore manufacturing
9.Daily departure decrease	21.Intraindustry merger and acquisitions	9. New technology
10.Route exit		10. New product/features
11.Route entry		11. New distribution method
12.Entry price cut		12. Government/legal

As can be seen from the table above, most of the identified actions in the first group are applicable to the airline industry. Additionally, there are important action types (for example top management changes) that have been found to significantly influence a firm's performance in the past which is not present in the list above. In an attempt to come up with a standardized classification scheme, Noklainen (2005) made an exhaustive hierarchical taxonomy of competitive actions consisting of fourteen (14) categories at the general level with each having two (2) or three (3) levels or lower levels. Table 2.7 below is a list of the 14 categories at the general first level.

**Table 2.7. Taxonomy of actions spanning the generic level (Noklainen, 2005)**

1.Comment or announce	6. Make changes in distribution	11. Make changes in product or service offering
2. Make juridical actions	7. Make actions concerning human resource management	12. Make promotional actions
3. Make political actions	8. Make supply actions	13.Make action concerning immaterial property rights
4. Make financing actions	9.Make changes in purchasing	14. Make changes in organisation
5. Make changes in production	10. Make product development actions	

Grimm et al (2006) on the other hand mentioned four types of actions; entrepreneurial actions, ricardian actions, deterrent actions and co-optive actions. They base their classifications of actions into these groups with relation to a firm's resource and market position. Entrepreneurial actions are regarded as those actions that employ existing resources to implement a new combination. They are usually innovative in nature, have the ability to exploit uncertainty and blind spots. Some examples of

entrepreneurial actions given include introduction of a new product, innovative pricing actions, selection of a market location, delivering products, unique promotional methods amongst others. (Grimm et al 2006.)

Actions taken by a firm as a resultant effect of owning superior and scarce resources are categorised as ricardian actions. Actions taken by a firm to exploit market power are regarded as deterrent actions. They are carried out by the firms to influence or concretise their hold on the market's competitive turf. Some examples include preemptive patenting, investing in excess capacity and product proliferation. Lastly, co-optive actions are those actions taken by a firm to limit competition and rivalry. Examples of such actions include advance signalling of intended actions, disclosing price information and other information through announcements. (Grimm et al 2006.)

The categorisation by Grimm et al (2006) appears more technical and there will probably be the need for a more concrete source to validate the intention of the actions from the firms, before one can categorise actions into such categories. This study followed a similar approach as the vast majority of the previous literature. The content analysis was used to categorise actions into classes (as will be seen in later sections). Nokelainen (2005) generic first level taxonomy was used, with some modifications in the resultant classification.

### **2.3.2 ANNOUNCEMENT AS AN ACTION**

It is a known fact that firms do not freely or directly give competitive information out about themselves (Moore 1992) but they do so indirectly and willingly sometimes through media such as (press) announcements, public statements and actions alike. Albeit, these information or announcements are probably aimed for a different audience perhaps customers, investors or other stakeholders as the case maybe. But competitors or rivals alike are not debarred access from such information (Day et al. 1997; Jaideep & Stewart 2001). Hence, they pick up this information for their use. An action that is capable of giving information either directly or indirectly about the status quo of a firm, its internal situations and conditions is known as a signal or a signalling action (See Porter 1980; Moore 1992).

As defined previously, an action is a specific, detectable, observable move by a firm, whether internally or externally directed taken by a firm to enhance its competitive positioning and improve performance. Announcements by firms fall into these categories as they are actions that carry or have the potential of giving out information (for example, its intentions, its status quo, motives or goals) about a firm to the outside world; including competitors, customers and other stakeholders about the firm's internal situation (Porter 1980). In addition, firms make these announcements in order to protect their competitive position from deteriorating and to enhance advantage as it is required by law that certain announcements be made publicly.

Market signals serve several functions, two of which are the most fundamental according to Porter (1980). They could serve as a conveyor or indicators of a firm true or sincere motive for passing across conciliatory information or they could be bluffs to mislead other firms in their decision making activities or process (Porter 1980). Announcements represent one out of the various forms market signalling could take (Eliashberg & Robertson 1988; Moore 1992). Porter (1980) identified several kinds or types of market signals through which a firm could communicate information. These include:

1. Announcements which include prior announcements of moves and announcements of results or actions after the fact
2. Public discussions of the industry by competitors
3. Competitor's discussion and explanation of their own move
4. Competitors tactics in relation to what could have otherwise been done
5. A firm's mode of implementing strategic changes
6. Divergence from past goals
7. Private antitrust suits

As the aim of this study is centred on observing the effect of announcements made by firms on their stock-market return, other signalling actions aside from announcements will not be elaborated upon in this study.

Announcements as mentioned above constitute both *pre/prior announcements* and *announcements of results or actions after the facts* (Porter 1980). Preannouncements or prior announcements according to Porter (1980) are a formal communication made by a firm ahead of carrying out an action. Announcement of results or actions on the other hand are formal communication of events that has actually occurred or that has taken place. Both types of announcements generally can be used to convey the same intentions by firms, which is basically to serve as advance signals to its competitors and other stakeholder's alike with the hope of influencing their decision making and shaping their actions (Eliashberg & Robertson 1988; Porter 1980; Robertson & Heil 1991; Day et al. 1997; Jaideep & Stewart 2001)

If a firm gets successful with its intention of signalling with announcements, this could influence the firm's performance and competitiveness positively. Hence, announcements serve as signalling actions through which firms convey information to competitors and other stakeholders alike. A major distinction is that a prior announcement does not necessarily insure an action will be taken (Porter 1980) and has a bigger risk or a higher probability of being a bluff. On the other hand, announcements of result/actions are mostly communication of actions which the firm has already executed; they usually carry information or data that are otherwise difficult to get and could also carry information that are still subjected to external ratification, hence they have the slight potential of being misleading (Porter 1980). Announcements could serve signalling functions such as:

1. Pre-emptive purposes: Firms make announcements proclaiming commitments just to pre-empt or deter other competitors from taking similar actions as well as getting the commitments of customers ahead of time (Eliashberg & Robertson 1988; Porter 1980; Robertson & Heil 1991; Day et al. 1997).
2. They serve as threats for intended actions to other firms to veer off competition or rivals (Porter 1980).
3. For testing competitive sentiments and evaluating possible reactions (Porter 1980; Day et al. 1997).
4. A means of showing displeasure or pleasure in the competitive environment and also a means of conciliation (Porter 1980). In this regard, they serve as co-optive purposes, as firms use them to notify or explain the reasons for taking intended or executed actions to lessen the outbreak of warfare (Porter 1980; Grimm et al. 2006).
5. They also serve as a viable means of communication with the financial community for boosting performances (Porter 1980).

Firms make announcements through an array of outlets including official press releases, speeches by managements to security markets and analysts, interviews with the press, teleconferences amongst others (Porter 1980; Grimm et al. 2006; Yannopoulos 2011). The more formal the medium of announcement, the bigger audience such announcements targets and this depends on the motive or intention of the firm or what the firm seeks to achieve through this announcement (Porter 1980). Albeit, the medium of announcement gives quite a number of indication towards the intention or motives of the firm; for example, announcements made through the security market is more intended for the investing public than for the normal day to day customers. In the same vein, announcements made in an industry trade journal will have other competitors and other industry participants as key recipients as against one made in national newspapers (Porter 1980). The announcements used in this study were made through the securities market.

### **2.3.3 PREVIOUS WORK ON ANNOUNCEMENT**

Previous studies have previewed announcements as actions from different angles. These include the perspective of human resources, legal actions, product announcements, acquisitions, earnings reporting amongst others (for example, see Eddy & Saunders 1980; Wittink et al. 1982; Bettis & Weeks 1987; Warner et al. 1988; Abowd et al. 1990; Chaney et al. 1991; Lee et al. 2000; Ferrier & Lee 2002; Nixon et al. 2004). While some have examined the effect of announcements in a competitive context; by observing them through the lens of competitive interaction and how announcements (playing the role of signals) affect the competitive behaviour of firms or their decision making process. Other significant work focused on the influence of specific action types on the decision making process of managers, customers, investors, and other stakeholders alike or on the actions taken by competitors. For example, Moore (1992) examined the effect of

signals (verbal communications which is tantamount to announcements by the firm) from a competitor on the decisions of managers in a situation of strategic interdependence.

Another example is the study done by Bettis & Weeks (1987) which examined the impact of complex strategic interactions made via announcements by two competing or rival firms on their stock market performance. There is also the study of Warner et al. (1988) about effect of stock returns due to top management change announcements. Additionally, there are series of studies about competitor's responses to preannouncements and new product entry decisions by Eliashberg and Robertson (1988), and Robertson et al. (1995), where they found that the characteristics of both the sender and the signal influence receivers' responses. Eliashberg et al. (1996) also examined the use of signals (price increase announcements) as bluffs in various industries.

Other studies related to announcement have viewed its effect or impact from an economic or financial market point of view. These include the examination of the effect of firms' announcements such as earnings announcements, share repurchase announcements and merger announcements amongst others on the firm's stock market performance or corporate performance as the case maybe (for example, Petit 1972; Kross & Schroeder 1984; Hanvanich & Cavusgil 2000; Chen et al. 2002; Louis & White 2007)

This study examines the effect of corporate announcements (legislated via the securities market) on the stock market performance (returns) of selected firms. It only studies the contextual effect these announcements have (or does not have) on investors as reflected in the stock market performance without emphasis on the competitive nature of these announcements.

### **3 RESEARCH METHODS**

This study is explanatory in nature as it sought to explain the effect of signaling actions on a firm's corporate performance; hence it is situated squarely under the quantitative research paradigm. A quantitative study involves explaining phenomena through the collection of numerical data and subsequently analyzing the collected data or information using mathematically based methods (Muijs 2004). It follows a deductive approach in explaining the relationship between theory and research (Aliaga & Gunderson 2000; Bryan & Bell 2011). This study has both elements of deductive reasoning and inductive reasoning. Deductive in that, it employs established theoretical knowledge and considerations to test a proposition (Bryman & Bell 2011) and it uses inductive reasoning in the later part of the analysis, as it searches for patterns to make generalization and inferences to the best explanation (Johnson & Christensen 2008)

As a brief recap, the aim of the research is to analyze the effect of signaling actions (press announcements of firms legislated by the security markets) on the stock price performance of firms. These announcements and their impact are being studied without relation to the competitive context of the companies chosen; rather they were studied to see if these announcements carry any new significant information into the stock market and if the contents of these announcements (the intrinsic nature of these announcements) have any significance influence on the stock market returns.

#### **3.1 MEASURING ABNORMAL STOCK MARKET PERFORMANCE**

Market based measures generally are believed to reflect investors' assessments and expectations of firm's general performance (Rockmore 1996). The stock market performance of firms is adjudged to be a measure that displays the true nature of a company's performance unlike other financial based indicators such as return on asset, return on investments, earnings and sales figures which could be subjected to manipulations by smart managers (McWilliams & Siegel 1997). The stock market is deemed to be efficient, in that the figures from the markets reflect a reaction by the investors in relation to all relevant information available about that firm (McWilliams & Siegel 1997). To measure abnormality in the performance of the stock market, the normal performance is first measured. There are several methods in which the market performances of firms are evaluated, the most common ones are those related to the creation of shareholder's wealth.

Changes in shareholder wealth are inferred mostly from the changes in stock prices, dividends paid, and equity raised during the period under review (IMA 2007). While

some of these performance indicators still use some accounting-based information like the balance sheet information, others use market based information alone. The most common indicators used in evaluating firm's performances as it relates to the shareholders include earnings per share (EPS), market value added (MVA) and the total return to share holders (TRS) (IMA 2007; Dobbs & Koller 2005; Rockmore 1996; Gentry & Chen 2010; Brealey et al. 2011). Among the three listed above, EPS uses accounting based information from the balance sheet and income statement in evaluating the performance of a firm. Both market-value added and total return to share holders are based mainly on market measures. (Madininos et al. 2007.)

Firstly, the earnings per share (EPS) is simply defined as the bottom line profitability per common share outstanding (Meridian Compensation Partners 2011). EPS is the earnings of the company divided by the number of shares outstanding. It is calculated by dividing net income available to common shareholders (less the preferred dividends or share claims) with the average number of common shares outstanding. The resulting figure indicates each shareholder's proportionate share in the company's earnings. Secondly, the market value added (MVA) of a firm is the difference between the equity market valuation of a company and the sum of the adjusted book value of debt and equity invested in the company (Wibowo & Berasategui 2008; Dobbs & Koller 2005; Brigham & Ehrhardt 2002). It is calculated by subtracting the total shareholder's equity from the market capitalization. Adopting Brigham & Ehrhardt (2002) formula:

$$\text{MVA} = \text{Total Market Value} - \text{Total Capital} = (\text{MV of Stock} + \text{MV of Debt}) - \text{Total Capital}$$

Where,  $\text{MV of Stock} = \text{Market Capitalization} = \text{Shares Outstanding} \times \text{Stock Price}$

$$\text{MV of Debt} \approx \text{Book Value of Debt (as an estimate to the MV)}$$

$$\text{Total Capital} = \text{Total Book Value of Debt and Equity}$$

Market Value added reflects how much value has been added to each dollar that shareholders have invested and the amount of value a company has accumulated over time (Wibowo & Berasategui 2008). Hence, the higher the MVA of a firm, the better the company has created substantial wealth for its shareholders (Wibowo & Berasategui 2008; Brealey et al. 2011). In the words of Lehn & Makija (1996), MVA measures the stock market's estimate of the net present value of a firm's past and expected capital investment projects. There are a couple of additional metrics in use that are related to the market value added like the *market-value-to-capital ratio*, which Dobbs & Koller (2005) defined as a company's debt and market equity compared with the amount of capital invested. And the *market value to book ratio* which is the ratio of market value to book value (Brealey et al. 2011).

Lastly, the total return to shareholders (TRS) is another measure used in evaluating stock market performance of firms. It is believed to be the most common approach to

measuring a company's stock market performance (Dobbs & Koller 2005). It is calculated by computing the company's total returns to shareholders (TRS) over time (Dobbs & Koller 2005). The attention of this study surrounds the return to shareholders and the TRS is just an accumulated value of the returns. Henceforth, the study centers on returns as a performance indicator.

Stock returns which is the change in a company's stock price over a period of time, embeds a lot of information in them. First, when analyzed they have the capacity or capability to give insights on different aspect of a firm performance (Warner et al. 1988). Second, returns exhibit more statistical properties than price such as ergodicity and stationarity (Campbell et al. 1997). The simple net return according to Campbell et al (1997) on an asset between dates t-1 and t is defined as

$$R_t = \frac{P_t}{P_{t-1}} - 1$$

Where  $R_t$  is the simple net return

$P_t$  is the price of an asset at time t

$P_{t-1}$  is the price of the asset at time t-1

To properly understand the performance effect of these actions and its impact on corporate performance, there is need to measure the returns and identify any associated abnormality. In relations that involve the measurement of the impact of some events on a variable, the event study methodology is employed. This method especially allows the accessibility of the financial impact of specific actions of firms (McWilliams & Siegel 2007)

### **3.2 THE EVENT STUDY METHODOLOGY**

The event study methodology is an outgrowth of the efficient market tradition in economics and is a tool used to measure the effect of an event on some variable (Chaney et al. 1991; MacKinlay 1997). It is a methodology that is constructed using financial market data to measure or examine the impact of some events or actions on the behavior of firms (Campbell et al. 1997; Kothari & Warner 2006). It is largely based on the assumption that the market is efficient. In such a market, the effect of an event will be reflected immediately in the security prices, and an unbiased reflection of changes in the expected future cash flows (Chaney et al. 1991; Campbell et al. 1997; McWilliams & Siegel 2007). Thereby, the event's impact can be measured by investigating the price behaviour of the firm's stock price over a period of time (Campbell et al. 1997; MacKinlay 1997). The presence (or absence) of abnormality in the prices of the securities can be determined from which inferences can then be made (McWilliams & Siegel 2007).

The method has found applicability in several areas, with accounting and finance, management, law and economics being some of the most notable ones (Chaney et al. 1991; Campbell et al. 1997; Khothari & Warner 2006; McWilliams & Siegel 2007). It has also been used in other areas such as strategic management and marketing (Chaney et al. 1991). Event study could focus on a number of stock market measures including mean stock price effect, return variances amongst others. In this study, its central usage is for the measurement of abnormal returns (AR) as a resultant effect of changes in prices of the security.

The abnormal return is defined as the actual ex post return on the security over the event window less the normal return of the firm, with the normal return being the expected return if the ‘event’ had not taken place (Campbell et al. 1997).

$$\epsilon_{it}^* = R_{it} - E[R_{it}|X_t]$$

Where  $\epsilon_{it}^*$  is the abnormal return

$R_{it}$  is the actual return

$E(R_{it})$  is the normal return and

$X_t$  is the conditioning information set available to the market about the firm at time  $t$

If no new information is available between the periods under consideration, the abnormal return (AR) is expected to be zero.

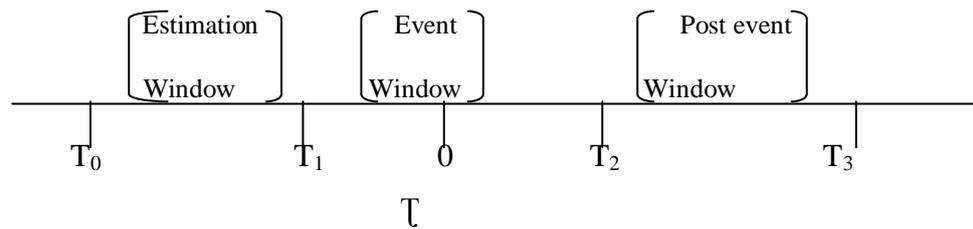
### **3.2.1 THE EVENT STUDY PROCEDURE**

The process or steps involved in carrying out an event study has no strict structure (Campbell et al. 1997). Below are the specified steps as highlighted by Campbell et al. 1997 and McWilliams & Siegel 2007.

- 1 Defining the event of interest: This involves the identification of the event of interest whose impact is to be measured. Along with the event identification also is the identification of the duration through which the security of selected firms will be examined. As specified earlier, the event of interest are the signaling actions of firms which in this study are the announcements made by companies and authorized by the security markets.
- 2 Selection criteria for companies included in the study: This will be in line with the intent of the research and what the objectives or aim of the research is.
- 3 Abnormal and Normal returns: A measure of the abnormal return is needed to appraise or measure the event’s impact. A normal performance model is used to facilitate the abnormal measurement. There are two major categories of normal

performance model: the statistical approach and the economical approach which are explained in more detail in the next section.

- 4 Estimation window: this refers to the data or timeline specified which is used in estimating the parameters of the normal performance model. The common choice is to choose the time or period prior to the event window. The event window is the time or duration around the happening of the event in which the observation or measurement is taken.



**Figure 3.1.** Timeline for an event study. Adapted from Campbell et al. 1997

With  $\tau=0$  being the event date,

$L_2 = T_2 - T_1$  being the event window and

$L_1 = T_1 - T_0$  being the estimation window

If  $L_1 = T_1 - T_0$  be the length of the estimation window and  $L_2 = T_2 - T_1$  be the length of the event window. If the event in consideration is an announcement on a given date, then we can say  $T_2 = T_1 + 1$  and  $L_2 = 1$ . The post event window could then be from  $\tau = T_2 + 1$  to  $\tau = T_3$  and the length will be  $L_3 = T_3 - T_2$  as the timing sequence illustrated in the diagram above. It is of great importance that the event window and the estimation window do not overlap in order to achieve better results as this could lead to the event returns having an influence on the normal return measures (Campbell et al. 1997)

- 5 Testing procedures: this involves defining the testing framework for the abnormal return and more importantly the definition of the null hypothesis along with the method of aggregating the abnormal returns of the included firms.
- 6 Presentation of the empirical results.
- 7 Interpretation and conclusions.

As mentioned, there is a need to measure the normal performance before measuring the abnormal performance. The following section will elaborate more on the available methods for measuring normal returns.

### 3.3 MODELS OF MEASURING NORMAL PERFORMANCE

The methods of calculating the normal returns can be classified into two categories: statistical and economical (Campbell et al. 1997). The models in the statistical group employ statistical assumptions in regards to the behavior of asset returns and do not depend on any economic arguments; while the models in the economical group are not solely based on statistical assumptions like the former, they also employ assumptions based on investor's behavior (Campbell et al. 1997). The economic models also add statistical assumptions in practical applications. Statistical models include the market model, the constant return model and the factor model. The economic models include the capital Asset pricing model (CAPM) and the arbitrage pricing theory (APT) (Campbell et al. 1997.)

#### 3.3.1 STATISTICAL MODELS

Statistical model rely on the general assumption that asset returns are jointly multivariate normal, independent and identically distributed through time, as surmised in the statement below:

Let  $\mathbf{R}_t$  be an  $(N \times 1)$  vector of asset returns for calendar time period  $t$ .  $\mathbf{R}_t$  is then independently multivariate normally distributed with mean  $\boldsymbol{\mu}$  and covariance matrix  $\boldsymbol{\Omega}$  for all  $t$  (Campbell et al. 1997).

This assumption suffices for the correct specifications of both the market model and the constant return model. It allows for the development of exact finite-sample distributional results for the estimators and statistics. (Campbell et al. 1997.) Inferences made using the normal return models are robust to deviations from the assumption and there is also room for accommodating deviations using a method of moment's framework (Campbell et al. 1997).

#### THE CONSTANT MEAN RETURN MODEL

The constant mean return model is the simplest model of all (Campbell et al. 1997), Past research has found that the results gotten when this method is employed is often similar to results gotten from using more sophisticated methods. If daily data is used, the model is applied to nominal returns and with monthly data, the model could be applied to both nominal returns and excess returns or real returns. (Campbell et al. 1997.) If  $\mu_i$  is the  $i$ th element of  $\boldsymbol{\mu}$ , the mean return for asset  $i$ . The constant mean return model can be depicted as:

$$R_{it} = \mu_i + \xi_{it}$$

$$E[\xi_{it}] = 0, \text{Var}[\xi_{it}] = \sigma_{\xi_{it}}^2$$

Where,  $R_{it}$  is the period  $t$  return on security  $i$ ;  $\xi_{it}$  is the disturbance term and  $\sigma_{\xi_{it}}^2$  is the  $(i, i)$  element of  $\Omega$ .

### THE MARKET MODEL

The market model relates the return of any give security to the return of the market portfolio. It employs broad based index for the market portfolio (Campbell et al. 1997). By, the removal of the portion of the return that is related to the variation of the market, the market model provides a potential improvement over the constant–mean return model as this leads to a reduction in the variance of the abnormal return and an increased ability to detect event impacts (Campbell et al. 1997). Overall, the benefit of using the market model is largely dependent on the  $R^2$  of the market model regression as the higher the value, the greater the variance reduction of the abnormal return and the larger the gain (Campbell et al. 1997).

The model's linear specification also follows the assumed joint normality of asset returns:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it}$$

$$E[\epsilon_{it}] = 0. \text{Var}[\epsilon_{it}] = \sigma_{\epsilon_{it}}^2$$

Where  $R_{it}$  is the period  $t$  returns on security  $i$ ,  $R_{mt}$  is the market portfolio return, and  $\epsilon_{it}$  is the disturbance term. The disturbance term ( $\epsilon_{it}$ ) represents the deviation of the rate of return in period  $t$  from the expected return, hence its usefulness for the measurement of the abnormal return.  $\alpha_i$ ,  $\beta_i$  and  $\sigma_{\epsilon_{it}}^2$  are the parameters of the market model.

### FACTOR MODEL

The factor model is able to give better explanation of the variation in the normal return by reducing the variance of the abnormal return by adding additional factors in modeling the normal return (Campbell et al. 1997). The factors are usually portfolios of traded securities. The market model is an example of a one-factor model, but there are other multifactor models which could include other factors such as industry indexes (Campbell et al. 1997). There are different variations of these models, with some little adjustments and additions to the aforementioned.

#### 3.3.2 ECONOMIC MODELS

The Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT) are two of the most common economic models (Campbell et al. 1997). Economic models as mentioned earlier restrict statistical parameters and provide more constrained normal returns. According to the definition adopted in (Campbell et al. 1997 p. 156), “the CAPM is an equilibrium theory where the expected return of a given asset is a linear function of its covariance with the return of the market portfolio” and “the APT is an

asset pricing theory where in the absence of asymptotic arbitrage, the expected return of a given asset is determined by its covariance with multiple factors”.

Meanwhile, there have been some doubts about the validity of the imposed restrictions by the CAPM on the market model which has led to the reduced application of the model (Campbell et al. 1997). This is because it is possible to use the market model through relaxing these restrictions with relatively little or no cost (Campbell et al. 1997). The APT on the other hand enjoys good implementation without any false restrictions, but its usage complicates the event study implementation and has little practical advantage over the market model (Campbell et al. 1997).

This study employs the market model as the normal performance return model; hence subsequent discussion will be solely in relation to using the market model.

### **3.4 RESEARCH DESIGN AND DATA**

The research design follows a non experimental, explanatory design. A non experimental research is a quantitative research in which control over the independent variable is limited and the manipulation of such control variable is allowed. (Johnson & Christensen 2008.) Variables are capable of taking on different values and in the quantitative research context; they could be *categorical* or *quantitative* in relation to their level of measurement; *independent*, *dependent*, *mediating* or *moderating* in relation to their roles in the research (Johnson & Christensen 2008).

A *categorical* variable is a variable with different types of categories of a phenomenon; a *quantitative* variable is one that varies in the degree or amount of a phenomenon; an *independent* variable is the variable that is presumed to be the cause of changes that occurred in another variable; a *dependent* variable is a variable that changes as a resultant effect or impact of another variable; a *mediating* variable is a variable with the capacity of influencing the causal relationship between two variables and a *moderator* variable is one that delineates the change in relationship between variables under different conditions. (Johnson & Christensen 2008.) The signaling actions (announcements) are independently categorical as will be seen in the later part of this report and the dependent variable is the return.

The explanatory factor relates to the study’s attempt at explaining the effect of the announcements on the returns. The following sections give a more detailed explanation of the market model implemented in the study and the data used for the study

#### **3.4.1 IMPLEMENTING THE MARKET MODEL**

As already explained, the event methodology was used in detecting the impact of the event and this study employs the market model as the normal performance return model.

As a brief review, the rate of return on the share price of a security  $i$  and at observation  $t$  in event time is expressed as

$$R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it} \quad (\text{i})$$

Where  $R_{it}$  is the rate of return on the share price of firm  $i$  on day  $t$ ;  $R_{mt}$  is the rate of return on a market portfolio of stocks;  $\alpha_i$  is the intercept term;  $\beta_i$  is the systematic risk of stock  $i$  and  $\epsilon_{it}$  is the error term, with  $E[\epsilon_{it}] = 0$ .

The estimation window observation is then expressed as a regression system

$$\mathbf{R}_i = \mathbf{X}_i \boldsymbol{\theta}_i + \boldsymbol{\epsilon}_i \quad (\text{ii})$$

With  $\mathbf{R}_i = [R_{iT_0+1} \dots R_{iT_1}]'$  being an  $(L_1 \times 1)$  vector of estimation-window returns,  $\mathbf{X}_i = [i \mathbf{R}_m]$  being an  $(L_1 \times 2)$  matrix with a vector of ones in the first column and the vector of market return observations  $\mathbf{R}_m = [R_{mT_0+1} \dots R_{mT_1}]'$  in the second column and  $\boldsymbol{\theta}_i = [\alpha_i \beta_i]'$  is the  $(2 \times 1)$  parameter vector.

The ordinary least square is used in estimating the parameters as typically used under general conditions (Campbell et al. 1997). The OLS estimators of the market model parameters using an estimation window of  $L_1$  observation are:

$$\hat{\boldsymbol{\theta}}_i = (\mathbf{X}_i' \mathbf{X}_i)^{-1} \mathbf{X}_i' \mathbf{R}_i \quad (\text{iii})$$

$$\hat{\sigma}_{\epsilon_i}^2 = \frac{1}{L_1 - 2} \hat{\boldsymbol{\epsilon}}_i' \hat{\boldsymbol{\epsilon}}_i \quad (\text{iv})$$

$$\hat{\boldsymbol{\epsilon}}_i = \mathbf{R}_i - \mathbf{X}_i \hat{\boldsymbol{\theta}}_i \quad (\text{v})$$

$$\text{Var}[\hat{\boldsymbol{\theta}}_i] = (\mathbf{X}_i' \mathbf{X}_i)^{-1} \hat{\sigma}_{\epsilon_i}^2 \quad (\text{vi})$$

These parameter estimates are then used to measure and analyze the abnormal returns.

Let  $\hat{\boldsymbol{\epsilon}}_i^*$  be the  $(L_2 \times 1)$  sample vector of abnormal returns for firm  $i$  for event window,  $T_1+1$  to  $T_2$ . The abnormal return vector will be

$$\begin{aligned} \hat{\boldsymbol{\epsilon}}_i^* &= \mathbf{R}_i^* - \hat{\alpha}_i - \hat{\beta}_i \mathbf{R}_m^* \\ &= \mathbf{R}_i^* - \mathbf{X}_i^* \hat{\boldsymbol{\theta}}_i \end{aligned} \quad (\text{vii})$$

Where  $\mathbf{R}_i^* = [R_{iT_1+1} \dots R_{iT_2}]'$  is an  $(L_2 \times 1)$  matrix vector of event window returns.  $\mathbf{X}_i^* = [i \mathbf{R}_m^*]$  is an  $(L_2 \times 2)$  matrix with a vector of ones in the first column and the vector of market return observations  $\mathbf{R}_m^* = [R_{mT_1+1} \dots R_{mT_2}]'$  in the second column.

$\hat{\boldsymbol{\theta}}_i = [\hat{\alpha}_i \hat{\beta}_i]'$  is the  $(2 \times 1)$  parameter vector estimate.

As mentioned previously, it is conditional on the market return over the event window that the abnormal returns will be jointly normally distributed with a zero conditional mean and conditional covariance matrix  $\mathbf{V}_i$  as presented below.

$$\begin{aligned} E[\widehat{\epsilon}_i^* | \mathbf{X}_i^*] &= E[\mathbf{R}_i^* - \mathbf{X}_i^* \widehat{\boldsymbol{\theta}}_i | \mathbf{X}_i^*] \\ &= E[(\mathbf{R}_i^* - \mathbf{X}_i^* \widehat{\boldsymbol{\theta}}_i) - \mathbf{X}_i^* (\widehat{\boldsymbol{\theta}}_i - \boldsymbol{\theta}_i) | \mathbf{X}_i^*] \\ &= 0 \end{aligned} \quad (\text{viii})$$

$$\begin{aligned} \mathbf{V}_i &= E[\widehat{\epsilon}_i^* \widehat{\epsilon}_i^{*'} | \mathbf{X}_i^*] \\ &= E[[\epsilon_i^* - \mathbf{X}_i^* (\widehat{\boldsymbol{\theta}}_i - \boldsymbol{\theta}_i)] [\epsilon_i^* - \mathbf{X}_i^* (\widehat{\boldsymbol{\theta}}_i - \boldsymbol{\theta}_i)' | \mathbf{X}_i^*]] \\ &= E[[\epsilon_i^* \epsilon_i^{*'} - \epsilon_i^* (\widehat{\boldsymbol{\theta}}_i - \boldsymbol{\theta}_i)' \mathbf{X}_i^{*'} - \mathbf{X}_i^* (\widehat{\boldsymbol{\theta}}_i - \boldsymbol{\theta}_i) \epsilon_i^{*'} + \mathbf{X}_i^* (\widehat{\boldsymbol{\theta}}_i - \boldsymbol{\theta}_i) (\widehat{\boldsymbol{\theta}}_i - \boldsymbol{\theta}_i)' \mathbf{X}_i^{*'} | \mathbf{X}_i^*]] \\ &= \mathbf{I} \sigma_{\epsilon_i}^2 + \mathbf{X}_i^* (\mathbf{X}_i^* \mathbf{X}_i^*)^{-1} \mathbf{X}_i^{*'} \sigma_{\epsilon_i}^2 \end{aligned} \quad (\text{ix})$$

$\mathbf{I}$  being the identity matrix.

From (viii) above, the abnormal return vector with an expectation of zero is unbiased. The covariance matrix of the abnormal return vector from (ix) above has two parts. The first part is the sum of the variance due to the future disturbances and the second term being the additional variance which is due to the sampling error in  $\widehat{\boldsymbol{\theta}}_i$ . This sampling error leads to serial correlation of the abnormal returns as it is present in all the elements of the abnormal return vector, despite the fact that the true disturbances are independent through time. When the length of the estimation becomes larger, the second term approaches zero as the sampling error disappears (Campbell et al. 1997)

The null hypothesis ( $\mathbf{H}_0$ ), is that the event has no impact on either the mean or the variance of returns. Under  $\mathbf{H}_0$ ,  $\widehat{\epsilon}_i^* \sim \mathcal{N}(0, \mathbf{V}_i)$  (x)

Equation (x) above gives the distribution for any single abnormal return observation. This is then built upon and aggregations are made for further statistical inference-making. The SAR is calculated by standardizing the abnormal return by its standard deviation.

$$\text{SAR}_i = \frac{AR_{i(T_1, T_2)}}{\sigma_{i(T_1, T_2)}} \quad (\text{xi})$$

Where  $\sigma_{i(T_1, T_2)}$  is calculated with the  $\widehat{\sigma}_{\epsilon_i}^2$  from equation (iv) above. The standardized abnormal return can then be cumulated and aggregated across the event window to derive the cumulative abnormal return (CAR).

This study only employed the standardized abnormal return (SAR) as the dependent variable, in making inferences because the interest was more on the momentary

abnormal return, and to determine the immediate impact of the events (signaling actions). If found significant, the SAR measures the momentary effect or impact of the event on the value of the firm at each of the sampling interval. A test of the  $H_0$  is then conducted using the SAR. Under the null hypothesis, the distribution of SAR is student  $t$  with  $L_1-2$  degrees of freedom. Hence, using the properties of student  $t$  distribution, the expectation of SAR is 0 and the variance, is  $\frac{L_1-2}{L_1-4}$ . For a larger estimation window (as was the case in this study) the approximation of SAR is well approximated by the standard normal.

As the events in the sample do not overlap in calendar time, under  $H_0$ ,  $SAR_{(T_1, T_2)}$  is normally distributed in large samples with a mean of zero and a variance of  $\frac{L_1-2}{(L_1-4)}$ . The null hypothesis is then tested using the  $J_2$  test.

$$J_2 = \left( \frac{N(L_1-4)}{L_1-2} \right)^{1/2} SAR_{(T_1, T_2)} \sim N(0, \mathbf{V}_i)$$

The sampling intervals of 10 minutes were used with an estimation window of 1240 and an event window of 2 hours.

### **3.4.2 RESEARCH SITE AND DATA**

The data for this study is concerned with announcements made by firm through the security markets. Hence, the data used for this research is secondary data. Secondary data or existing data refers to data that were collected or recorded from an earlier time and in most cases for a different purpose (Johnson & Christensen 2008). This study followed the structured content analysis method in the collection and classification of the actions. This method is an established method that has been used by previous works that studied actions (See Chen & MacMillan 1992; Hambrick et al. 1996; Lee et al. 2000; Smith et al. 2001; Nokelainen 2005). The announcements were legislated announcements by the Helsinki securities market and were collected from the OMX Helsinki. It included announcements for the selected firms from 2008 through 2010.

The companies selected for the study were chosen and are with no major competitive relations. They are firms that are listed on the Helsinki exchange, with significant business activities in the business-to-business (B2B) environment and a significant size of business operations. Nine companies were chosen and their announcements were taken for the aforementioned duration. The nine companies chosen are Huhtamaki Oyj, Cargotec Oyj, Kone Oyj, Konecranes Oyj, Metso Oyj, Outotec Oyj, Vaisala Oyj, Wartsila Oyj Abp and Vacon Oyj. In total, 902 announcements were originally collated, read by the author and categorized into sixteen (16) defined classes based on the nature of the announcements. Table 3.1 below shows the resultant categorization and a brief description of each class.

*Table 3.1. Class categorization and class description*

<b>Class number</b>	<b>Class Name</b>	<b>Number of events</b>	<b>Brief description of 'class'</b>
<b>01</b>	Announcements concerning shares related actions	176	All actions related to shares listing, repurchase, and ownership changes
<b>02</b>	Announcements concerning capital markets events	62	Market oriented events that are not carried out by the company but has an effect on the company's shares and securities
<b>03</b>	Announcements concerning operational actions	37	Actions that affects operations and capacity.
<b>04</b>	Announcements concerning top management changes	46	Top personnel changes
<b>05</b>	Announcements concerning corporate performance	239	Reports about state of the firm
<b>06</b>	Announcements concerning juridical actions	14	Actions related to legal related issues
<b>07</b>	Announcements concerning organizational changes	22	Key organizational restructuring and administrative changes
<b>08</b>	Announcements concerning human resources changes	15	Employee and employee's welfare related changes
<b>09</b>	Announcements concerning product order	108	Actions related to product orders
<b>10</b>	Announcements concerning acquisitions	28	All expansion and investment oriented actions
<b>11</b>	Announcements concerning joint venture	11	Actions involving partnerships and mergers
<b>12</b>	Announcements concerning planned owners actions	41	Actions or events planned by the firm which were pre announced
<b>13</b>	Announcements concerning strategic alignments	8	For seemingly change/adjustments in tactics
<b>14</b>	Announcements concerning financial actions	5	This relates to key financial actions taken by the firm.
<b>15</b>	Announcements concerning shareholder events/actions	28	Events and decisions taken by shareholders
<b>16</b>	Generic announcements	62	Other summary reports and correctional reports.

The stock market data also was from the OMX Helsinki as well. The index used was the OMXHPI, and the data used for the analysis spanned 2006-2010. The availability of the data from some two years back allowed for the long estimation window. As stated, in this study, my objective is to evaluate or analyze the impact of these announcements on the stock market returns of the companies chosen.

## 4 ANALYSIS AND RESULTS

### 4.1 DATA AND EVENT ANALYSIS PARAMETERS

The other numerical parameters used for the event study are:

1. Two event windows ( $L_2$ ) were used. One with 10 hours and the other with two hours. The 2 hours window was invariably used for the analyses it was felt that, much of the information will be incorporated into the stock price quickly. This has been proven from previous studies as well (Ryngaert & Netter 1990 in Siegel & McWilliams 1997).
2. A sampling interval of 10 minutes was used, in order to capture the most immediate impact of the announcements. This is in line with the intention of capturing the most immediate of the reactions.
3. A 1240 time stamp prior to the event date and up to the date of the event was used. This is the estimation window ( $L_1$ ) that was used in estimating the market model parameters.
4. The event date and time examined were the date of the announcement as reported by the security market information (OMX Helsinki)

Additionally, daily trading hour's data were used to capture the fine texture and immediate effect of the announcements, with the typical day starting from 10 a.m. when the stock market opens and ending at 06 p.m. when the stock market closes. Hence, events with windows that lapse till the end of the trading hours have their windows extended till the beginning of trading on the next day. Furthermore, events that happen during non trading hours were not considered. Those that occurred at the weekend were not considered also, as there would have been considerable reaction that will not likely be picked again (because the event window employed is a 2-hour window).

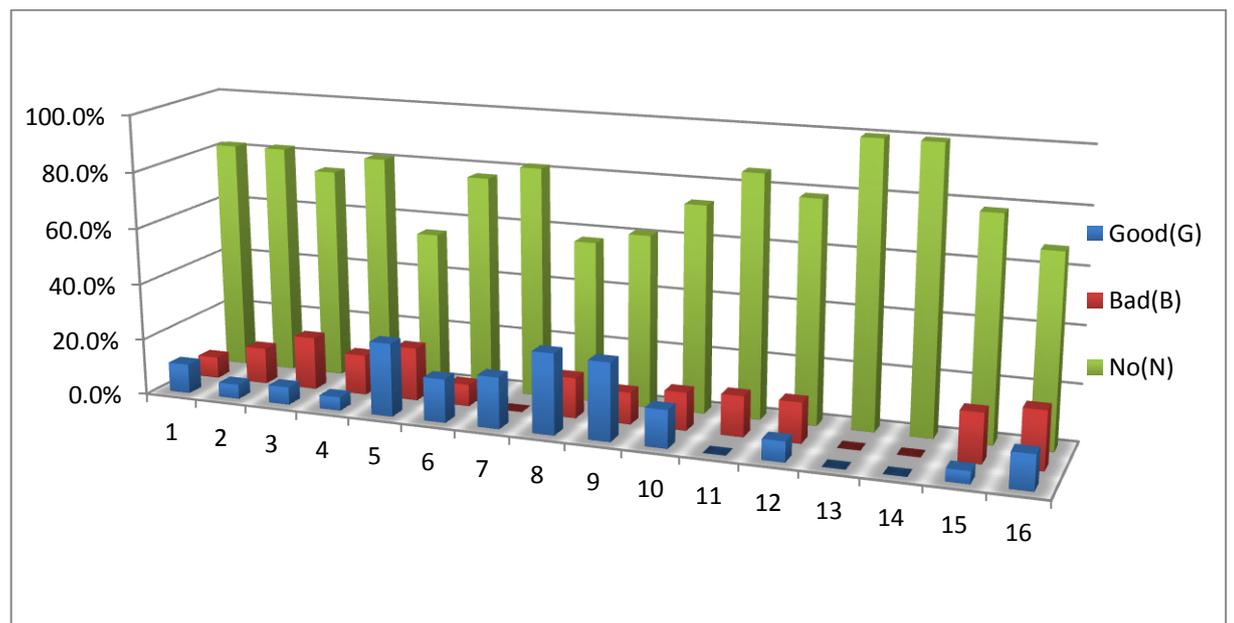
### 4.2 RESULTS

The number of events that eventually got parsed through the system was 547. This was as a result of the 2 hour window used for the analyses, as all events that clashed with each other's event window were removed to avoid their becoming confounding. Additionally, events that occurred during non trading hours and weekends were also taken out as the immediate reaction is of concern (first few minutes) here. The standardized abnormal returns were calculated and the null hypothesis was tested using

the  $J_2$  test. A 95% confidence level was set with a value of  $\pm 1.961881993$ . This value was used to classify the events into positive reaction, no reaction and negative reaction for both the pre event abnormal returns and post event abnormal returns. With abnormal return:

1. values  $\geq +1.961881993$  set as positive reaction
2. values  $< 1.961881993$  and  $> -1.961881993$  set as no reaction
3. values  $\leq -1.961881993$  set as negative reactions.

The presence of a significant positive or negative abnormal return values in the first six post event sampling intervals were used in the categorization of such event as either good (positive reaction) or bad (negative reaction) with more emphasis laid on the first significance that occurred in the case of events that had both positively and negatively significant AR values for the interval chosen. See Appendix 1 for the full resultant categorization. Figure 4.1 below is a visual representation of the results (according to classes) after sorting the data into positive/no/negative reaction.



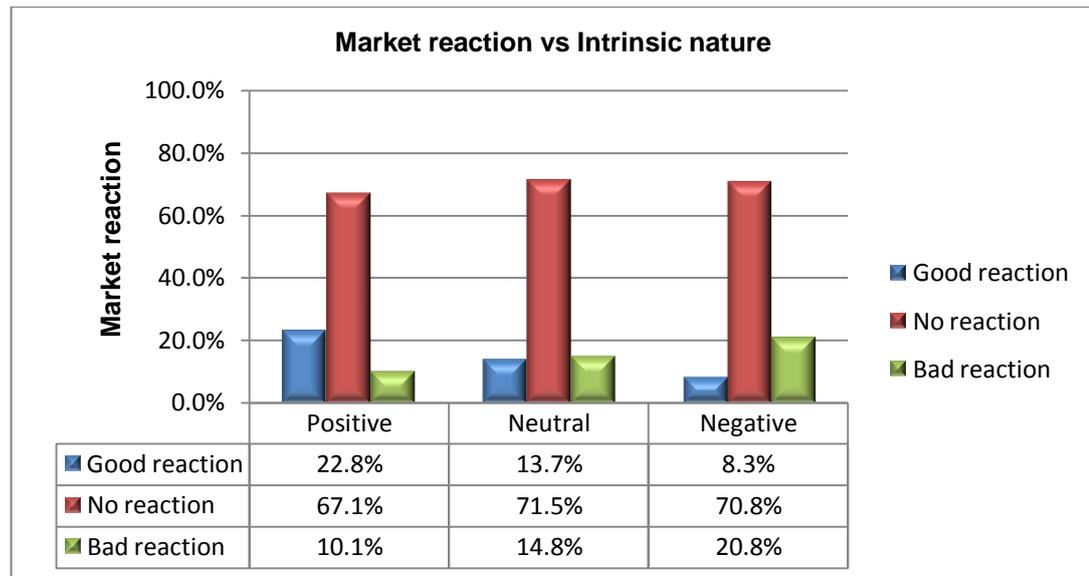
**Figure 4.1.** Chart showing market reactions to events based on the class categorization

**Table 4.1. Brief class nomenclature**

<b>Brief class nomenclature</b>			
01 Shares related actions	05 Performance reports	09 Product order	13 Strategic alignments
02 Capital market events	06 Juridical actions	10 Acquisitions	14 Financial actions
03 Operational actions	07 organisational changes	11 Joint ventures	15 shareholder events/actions
04 Top management changes	08 Human resource	12 Planned owners action	16 Generic announcements

While most of the announcements (across all classes) generated a no reaction response from the market as can be seen in Figure 4.1 above, a portion of the total events parsed through the system generated a significant abnormal reaction (positive and negative); they account for 29.35% of the total announcements as against the 70.65% that did not generate a significant enough AR. The relatively small percentage of announcements that generated a reaction allows for it to be posited that some announcements (legislated by the security markets) do carry significant and relevant information to the market.

Focusing on the events that yielded abnormal reactions from the market, classes 5 through 9 (announcements concerning corporate performance; juridical actions; organizational changes; human resources changes and product order) and class 1 (announcements concerning shares related actions) appear to have more positive reactions in comparisons to the negative reactions received. Additionally, it also appears that classes 2 through 4 (announcements concerning capital markets events; operational actions; top management changes; corporate performance) 11 (announcements concerning joint venture), 12 (announcements concerning planned owners actions) and 16 (general announcements) also have more negative reactions in comparisons to the positive reactions received. To further analyze the effect of these announcements on the returns, the announcements were further categorized into positive, neutral and negative news based on the intrinsic nature of the announcements. The categorization was done based on the presence or the absence of a positive (negative) expression or tone in the announcements. See appendix 1 for the full categorization of the announcements. Figure 4.2 below gives a pictorial view of the market's reaction to the announcements based on their intrinsic nature.



**Figure 4.2.** Chart showing market reactions to events based on their intrinsic nature

As already established, a vast majority of the announcements generated a no reaction (an insignificant  $\pm AR$  value) and this can be seen from Figure 4.2 above as well. As can be observed from the figure above, there is a percentage of announcements that generated unexpected reactions in comparison to their intrinsic nature. A closer look to these announcements based on individual class levels and their intrinsic nature shows the nature of deviations present. Table 4.1 gives a concise view of this interaction.

**Table 4.2.** Reaction of events based on their deviations from their intrinsic nature

Reaction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Deviant reaction (%)	25.7	59.0	81.3	28.6	38.6	76.9	36.4	42.9	71.3	86.7	100.0	21.4	0.0	100.0	21.7	30.6
Counterreaction (%)	1.0	0.0	18.8	0.0	0.0	0.0	0.0	28.6	10.0	13.3	14.3	0.0	0.0	0.0	0.0	0.0
Positive deviance (%)	7.6	20.5	43.8	9.5	22.8	30.8	18.2	14.3	1.3	0.0	0.0	7.1	0.0	0.0	4.3	10.2
Negative deviance (%)	18.1	38.5	37.5	19.0	15.7	46.2	18.2	28.6	70.0	86.7	100.0	14.3	0.0	100.0	17.4	20.4

**Table 4.3.** Brief class nomenclature

#### Brief class nomenclature

01 Shares related actions	05 Performance reports	09 Product order	13 Strategic alignments
02 Capital market events	06 Juridical actions	10 Acquisitions	14 Financial actions
03 Operational actions	07 organisational changes	11 Joint ventures	15 shareholder events/actions
04 Top management changes	08 Human resource	12 Planned owners action	16 Generic announcements

For the larger part of these deviations, there seem to be no distinct characteristic to the kind or type of announcements that fell in this group across all classes. First, as for counter-reactions, the exceptional classes where some trend could be found included classes **3**, **8** and **10**. In **class 3**, actions that got counter reactions as against the intrinsic nature of the announcements were sales of subsidiaries and change in operational routines. In **class 8**, actions that received such counter reactive reactions included employee reductions and bonus or incentive oriented actions. Lastly, actions that involve acquisitions (which included both vertical and horizontal integration for the firms) also received counter reactive responses in **class 10**.

Second, with regards to positive deviations, which are actions that received a better reaction in comparisons to their intrinsic nature. Some of the classes had no announcement that received such reactions. Classes that displayed some kind of peculiar characteristics as to the actions or announcements clustered under this group are: **2**, **3**, **6**, and **8**. In **class 2**, characteristics of actions clustered in this group include negative financial ratings for the firm and reduction of holdings by key corporate investors. In **class 3**, actions such as divestments and sales of subsidiaries' generated such reactions. In **class 6**, actions involving initiated law suit against the firm resulted in positive deviations and lastly, in **class 8**, mass layoffs of employees generated a deviant reaction as against the intrinsic nature of the action.

Lastly, in relation to negative deviations, which are actions that receive a worse reaction in comparisons to their intrinsic nature. Classes that displayed some kind of peculiar characteristics as to the announcements clustered under this group are: **2, 3,4,6,7,8,10, and 11**. In **class 2**, characteristics of actions clustered in this group include positive financial ratings and increase in holdings made by major investments firms. In class 3, these actions included expansions and restructuring. In **class 4**, new appointments constituted the actions clustered in this group. In **class 6**, they included court rulings in favor of the firm. In **class 7**, they included organization changes. Bonus and incentive schemes related actions constituted those that belong to this group in **class 8**. In **class 10**, all actions related to newer investments and acquisitions clustered in this group and lastly, all partnership based actions got reactions worse than their intrinsic nature.

### **4.3 DISCUSSIONS**

As seen in the results, these announcements (signaling actions) do have some influence on the stock market performance of firms. This correlates with previous research affirmations that announcements made by firms do have an influence on the stock market performance of a firm and the general corporate performance (for example see Bettis & Weeks 1987; Warner et al. 1988; Abowd et al 1990; Chaney et al. 1991; Khanna and Poulsen 1995; Palmon et al. 1997; Chen et al. 2001; Nixon et al. 2004; Gurgul & Majdoszstock 2007; Nino & Romero 2007). Hence, they carry significant relevant information to the market.

Looking through the announcements in each of these classes, it was observed that there were no consistent patterns or distinct characteristics amongst the announcements which generated the predominant good reactions seen in classes 1, 5, 6, 7 and 9 (please see Table 3.1 for description of the classes) in comparisons to the other minority that generated the bad reactions. Interestingly, actions related to mass layoffs received positive reactions in class 8. In the same vein, there were no distinct characteristics about the actions in the classes that seem to have a predominant number of bad reactions in proportion to the good reactions. Aside from class 4 in which the actions that generated bad reactions were predominantly new appointments.

Both of these observation correlates with previous findings, about such announcements carrying information that influences stock prices (for example see Warner et al. 1988; Abowd et al 1990; Chen et al. 2001). Contrary to findings from past studies which have shown layoffs to have generated negative reactions from the market (See Abowd et al 1990; Palmon et al. 1997; Chen et al. 2001; Nixon et al. 2004), layoffs generated positive reactions here. Some possible explanation could be that the layoffs were perceived as a means to increase or improve corporate focus, to make adjustments in line with product markets situations and the firm's competitive environment or as a

beneficial tradeoff between labor productivity and profit margins (Abowd et al. 1990; Chen et al. 2001; Nixon et al. 2004).

In the case of class 4 actions (TMT changes), the bulk of previous studies have inconclusive results (for example, see Warner et al. 1988). A possible explanation for the negative reactions to the newer appointments could be that the changes were perceived as negative or an unstable change in corporate governance. This happens when the performance of the previous executive was good and perhaps the experience of the new executive is not trusted enough by the market. It is vice versa when the conditions are opposite. (See Bonnier & Bruner 1986; Warner et al. 1988; Khanna & Poulsen 1995; Nino & Romero 2007.) Other possible explanations could be the nature of the departures of previous executives; if the resignation was forced or voluntary (see Warner et al. 1988, Gurgul & MajdoszStock 2007)

The abnormal reactions noted in classes with distinct types or kind of actions in the counter reaction cluster also belong to either the positive deviance cluster or the negative deviance cluster. Hence, the deviance discussion will be about those that got positive (a better reaction as against their intrinsic nature) or negative deviations (a worse-off reaction as against their intrinsic nature). From the deviation analyses (refer to Table 4.1), the following can be noted. It is noteworthy that the majority of the positive deviations observed were bad news (intrinsic nature) that received a neutral reaction and a couple of them; bad news with positive reactions. Likewise, a majority of the negative deviations observed were neutral news (intrinsic nature) that received negative reactions while a couple were good news that got negative reactions.

## **CLASS 2 (CAPITAL MARKET EVENTS)**

First, actions here have an interesting trend; positively intrinsic actions (improved ratings and increase of investments by large block-holders (firms) received worse off reactions and those that are intrinsically negative (reduced ratings and a reduction in the stock-investments made by large firm) got better reactions. There is a possibility that the ratings announced were not as negative as already anticipated, hence the positive reaction. In addition, these reactions were in direct contrast to the findings of the bulk of previous literature that have found a poor abnormal return associated with downgrade announcements and good returns with upgrades. Only a few reported an insignificant impact on returns for upgrade announcements. (See for example Hand et al. 1992; Baron et al. 1997; Steiner & Heink 2001; Dichev & Piotroski 2001; Hui et al. 2004; Choy et al. 2006.)

Perhaps, a deeper look into the regulatory process and constraints could give an insight as to the reasons for these deviations (Steiner & Heink 2001; Choy et al. 2006). Moreover, Hui et al. 2004 suggested that liquidity could be playing some role in the informational value of credit rating announcements perceived by the market.

### **CLASS 3 (OPERATIONAL ACTIONS)**

The deviations received in this class were majorly divestment actions. They include positive deviations for the sale of sub-units, while expansions and operational restructuring received negative deviations. The positive deviations observed here were in line with the findings of the bulk of previous literature. There has been a predominantly good reaction associated with divestment activities of firms (See Montgomery et al. 1984; Saadouni et al. 1995; Cooney et al 2004; Brauer 2006; Lee & Madhavan 2010). Although, there are a couple of studies that have reported an insignificant or negative reactions (See Denning 1988; Montgomery & Thomas 1988; Saadouni et al. 1995; Wright & Ferris 1997; Brauer 2006).

The reasons for the reactions observed were attached to the divestment motive, relatedness level of the divestiture to the firm's business and previous performance of the firm. When the motives were perceived as strategic, favourable reactions arose as against if they are not. (Montgomery & Thomas, 1988; Cooney et al 2004; Brauer 2006; Lee & Madhavan 2010.) Perhaps the negative deviations here were perceived by the market as not strategic enough, hence the reason for the insignificant (bad) reactions and the positive deviations were probably seen by the market as a move at corporate restructuring with good strategic alignment and growth potentials

### **CLASS 6 (JURIDICAL ACTIONS)**

The positive deviations in this class were decided legal suits against the firm (firm being the defendant), while negative deviations were favourable rulings. It is possible that the damages incurred by these outcomes were below (and above) the expectation of the market for the positive (and negative deviations). Nevertheless, both deviations were in contrast to the majority of findings from previous literature. Previous studies have reported a negative AR to defendants at the initiation of a legal suit and at the loss of lawsuits too. A significant increase in price has also been observed at favourable settlements. (See Bhagat et al. 1998; Cox & Means 1999; Koku & Qureshi 2006.) For the positive deviations in this case, the firms were unsuccessful defendants, but generated no reaction from the market. The negative deviations were settled cases and dismissed legal suits, but generated an insignificant reactions as well.

Another potential explanation could be that the damage to be done had already been accrued at the first announcement of the lawsuits, hence no reactions to subsequent outcomes. In addition, if the defendants had been subjected to more than one lawsuit in a relatively short period of time prior to a settlement, there is a possibility of insignificant reactions, because their reputation would have been severely damaged already (Koku & Qureshi 2006).

### **CLASS 8 (HUMAN RESOURCE CHANGES)**

Mass layoffs of employees got a better reaction as against the negative nature of the action. On the other hand, introduction of bonus (share) schemes received worse-off reactions as against the expectant good nature of the actions. Sometimes, layoffs are a necessary evil that firms need to do in order to align their operations to industry demands. In such cases, mass layoffs could be perceived as a good thing. They could be a means for the firm to increase or improve corporate focus, to make adjustments in line with product markets situations and the firm's competitive environment or as a beneficial tradeoff between labor productivity and profit margins (Abowd et al. 1990; Chen et al. 2001; Nixon et al. 2004). Although, this situation is contrary to findings from past studies which have shown layoffs to have generated negative reactions from the market (See Abowd et al 1990; Palmon et al. 1997; Chen et al. 2001; Nixon et al. 2004).

In addition, the deviation observed at the announcement of bonus and incentive schemes were also in contrast to the observations reported in the extant literature. The introductions of bonus schemes were observed to have been received with significant positive reactions (See Chang 1990; Karamjeet & Balwinder 2010; Chan et al. 2012). In this case, the reaction could be seen to be a sign of disagreement or discontent from the market to the introduced bonus schemes; perhaps the motive is not just for employee incentive. For instance, when bonus schemes are perceived by the market as a takeover defence mechanism by management, which could prevent them from enjoying takeover premiums the reaction is also negative (Chang 1990).

### **CLASS 4 (TOP MANAGEMENT CHANGES)**

In class 4, new top-management appointments received a negative deviation as against their intrinsic nature. A possible explanation for the negative reactions to the newer appointments could be a perceived negative or unstable change in corporate governance. This happens when the performance of the previous executive was good and perhaps the experience of the new executive is not trusted enough by the market. It is vice versa when the conditions are opposite. (See Bonnier & Bruner 1986; Warner et al. 1988; Khanna & Poulsen 1995; Nino & Romero 2007.) Other possible explanations could be related to the nature of the departures of previous executives; it being forced or voluntary resignation (See Warner et al. 1988, Gurgul & majdoszstock 2007)

### **CLASS 7 (ORGANISATIONAL CHANGES)**

Organisational changes that involved internal restructuring received both better and worse-off reactions. Previous studies have reported such mixed reactions towards organisational changes due to its complex nature. Favoured responses have been reported from the market if the firm has made significant and coherent strategic organizational changes prior to the announcement of the restructuring. An opposite

reaction is generated when the market perceives the situation in the reverse form. (Bowman & Singh 1993)

### **CLASS 10 (ACQUISITIONS)**

All acquisitions received a worse off reaction as against the seemingly intrinsic nature of the actions. Perhaps, the market perceived such acquisitions as not profit or growth worthy. Previous studies on acquisitions have produced mixed results. Some reported good returns for both target and acquirer firms; some reported insignificant effects and others reported bad returns for them. The strategic fitness and alignment of such acquisitions to the organisations' needs as perceived by the market is one of the numerous explanations given for the reactions observed. (See Dodd & Ruback 1977; Asquith & Kim 1982; Leong et al. 1996; Ma et al 2009; Wong & Cheung 2009; Akben-Selcuk & Altiok-Yilmaz 2011; Padmavathy & Ashok 2012.)

### **CLASS 11 (JOINT VENTURES)**

All joint venture or partnership moves taken by the firms received a worse off reaction as well. Perhaps, the market reacted this way because; the partnership or joint venture is not seen as profitable. The reaction observed here is in contrast to majority of previous findings in which joint ventures have been reported to have large positive reactions and effects on the stock market. Factors such as better synergy, investment opportunities hypothesis, and free cash flow hypothesis amongst others have been cited as reasons for the reactions observed. (See McConnell & Nantell 1985; Park & Kim 1997; Burton et al. 1999; Chen et al. 2000; Hanvanich & Cavusgil 2000.) Park & Kim cited factors such as the nature of partner's contributions, the extent of partner's control over joint ventures, and the corporate governance in parent firms as some of the reasons that could make investors react differently to a joint venture. Perhaps, one of these reasons is accountable for the negative reaction observed here as well.

### **CLASS 5 AND 9 (PERFORMANCE REPORTS AND PRODUCT ORDERS)**

In addition to the deviance analyses, class 5 actions, displayed a unique trend in the reactions elicited; all intrinsically positive announcements generated good reactions and all intrinsically negative reactions generated bad reaction. This correlates with previous studies which have reported that, performance reports with good news generate larger abnormal returns (Kross & Schroeder 1984; Chen et al. 2002). In addition, the high number of good reactions (significantly positive abnormal returns) generated by class 9 (product orders) actions could be attributed to the potentiality of such announcements to signal an increase in income or revenue for the firm.

The trends noticed in each of these classes validate the proposition that securities market legislated announcements carry significant information to the market. Additionally, they could signify a number of things to the organisation; ranging from corporate renewal, corporate restructuring, to portending deeper uncertainty for the firm

as already sighted above. But like the class based reactions, the number of announcements that received these deviations is relatively small to base any strong conclusions. The only exceptional case is class 5, in which there was a distinct relationship between the announcement's intrinsic nature and the reactions elicited; where all intrinsically positive reactions elicited a good reaction, all intrinsically neutral announcements elicited a no reaction and all intrinsically negative announcements received a bad reaction.

Conclusively, the major derivations from these analyses are:

1. The evident effect of the announcements on stock market performance
2. No class of action had a special or outstanding effect on the stock market as against the other classes examined
3. The evident influence of the intrinsic nature of actions in class 5 (performance reports) on the reaction elicited from the stock market.

The highlighted points provide a direct answer to the objective of the study. They also correlate with previous finding that actions of firms do have an influence on their performance (or profitability as sometimes referred to). Additionally, this study also support previous works which have shown that the content of performance reports have significant effect on the reactions received from the stock market (Schroeder & Kross 1984; Chen et al. 2002). Lastly, the slight impact these announcements have on the stock market performance is also a proof that the security market's legislated announcements do carry relevant information to the market. This is so, as a core assumption of the event-study methodology is that the presence of an abnormal return (irrespective of its magnitude) signifies that the information communicated to the market contains something useful and surprising.

#### **4.4 RELIABILITY AND VALIDITY OF THE STUDY**

Reliability is said to relate to the ability of getting the same results when a research is replicated and the consistency or stability of the measures used in gauging a concept (Johnson & Christensen 2008; Bryan & Bell 2011). A research's validity on the other hand relates to the integrity and appropriateness of the interpretations, inferences and conclusion drawn from a research (Johnson & Christensen 2008; Bryan & Bell 2011). In essence, the important issue in validity is to ensure a research measures what it was set out to measure and the subsequent interpretations of the results are correct (Johnson & Christensen 2008). This study intends to measure the effect of signaling actions (announcements) on firm's stock market returns as outlined in the aim of the research. The methodology employed as explained in the previous section clearly measures this, hence reliability of the research is certain and stable.

The research is valid as it satisfies the measures of validity in a research work. First, its measurement validity is ratified. Measurement validity or construct validity relates to the suitability of the chosen measure in reflecting the intended concept (Bryan & Bell, 2011). The study's measurement is valid as the measure devised (stock market return) does reflect a firm's performance and is a reliable means of measuring it, as shown in the previous sections. Secondly, the study is internally valid as it satisfies all three conditions of causality as listed below (See Johnson & Christensen 2008).

1. There must be a relationship condition between the variables involved.
2. There must be a proper time order relationship between the variables involved.
3. The relationship between the variables must not be due to some confounding or extraneous variables; confounding variables are extraneous variables that are able to give alternative explanations as to the cause of causation.

As clearly established from the review of literature, the variables (actions and performance) in this research are related, which ratifies condition one. Condition two is also fulfilled as the impacts of the announcements are observed after the announcements were made (as this is one of the pre requisite to facilitate the implementation of the event study methodology). Lastly, confounding variables were taken care of by the instrument used for conducting the event study which also fulfils the third condition. All events that clashed with the event window of another event were removed to ensure the right impact was measured.

Third, the study satisfies the external validity requirement as well, in that the study can be generalized beyond the specifics of this particular study. Different choice of companies and index can be chosen, and the same concept can be tested to evaluate if signaling actions (announcement in particular) have an effect on company's performance.

## 5 CONCLUSIONS

In this thesis, the effects of signalling actions (corporate announcements) on stock market returns were examined. The actions were further categorised into classes based on the kind of actions they were using the structural content analysis. The study focused on the abnormalities generated on the returns from the stock market as a consequence of these actions. The relationship between the intrinsic nature of these actions and the reactions elicited from the stock market were also evaluated.

### 5.1 *IMPLICATIONS*

First, no strong relationship was found between individual classes and the performance of the returns. For instance, there were only few classes in which the significant abnormal positive returns generated were more predominant as against the significant negative abnormal returns generated. Even in such classes, the number of actions that generated these abnormalities in return as against the number of actions that generated non-significant abnormal returns are insignificant to conjure a strong-relationship conclusion on. Consequently, these relationships only reflect that these actions (announcements) carry relevant information to the market. In addition, there were no distinct characteristics as to the kind of actions that generated more good/bad reactions in classes where there seemed to be more of either the good or bad abnormal returns.

Second, most of the classes that showed distinct characteristics amongst the kind of actions that generated predominant abnormal returns or any kind of deviance are too small to base a strong conclusion on. The only exception being class 5 actions (announcements concerning corporate performance) whose intrinsic nature was found to have an influence on the reactions elicited from the market; all intrinsically good actions generated positive reactions from the market and vice versa for all the negatively intrinsic actions. This is also in alignment with previous studies on performance reports and the reactions they elicit from the market.

Conclusively, these trends and observations align with previous studies which have reported that such announcements (classes of actions) have an influence on market reactions. While, the numbers are relatively small, they portend an opening for newer discoveries, great source of explanation and deeper understanding for a number of corporate issues. Hence, further studies with a larger number of samples and perhaps a more individualistic approach to each class of actions will need to be taken to further validate these claims.

## **5.2 LIMITATIONS AND RECOMMENDATIONS**

There are a couple of limitations in the study. First, the number of actions parsed through the system for analysis in some classes was too small after confounding events were removed. Hence, this reflected in the results gotten. Additionally, while the study controlled for confounding events and exogenous factors as much as it could, the method of eliminating some confounded events was too automatic and could have influenced the abnormal returns observed. Perhaps, a less automatic approach of removing confounding events could be followed in future studies.

Secondly the method used in categorising the actions is quite subjective. While the study followed a somewhat basic convention used in previous research (structured content analysis), and was based on the definitions given to actions in Nokelainen (2005) 'taxonomy of actions'. This element of 'subjectiveness' could affect the results of the research if carried out by a different researcher using the same data and under similar circumstances. This is also reflected in the intrinsic categorisation of the actions. With the categorisation largely based on the presence/absence of some key word, there are some actions that appeared negative intrinsically, but the extant literature has reported them to generally have positive effect on the firm's stock market returns with relatively few exceptions. An example is sell-off of sub units.

Lastly, the employability of stock market measures as a form of performance measurement has some major drawbacks. The expected returns which form the base criteria with which the abnormal returns were detected could be flawed. This is so, as they are more of the markets' expectations about a firm's performance than the firm's actual underlying performance and health (Dobbs & Koller, 2005). And it is driven by how the company was valued at the beginning of the measurement period. In addition, market values are liable to fluctuation due to several risks and events that are outside the firm's management control (Warner et al. 1988; Montgomery & Thomas 1988; Brealey et al. 2011).

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# APPENDICES

## APPENDIX 1: DESCRIPTION OF EVENTS AND CATEGORIZATION AFTER MARKET REACTION ACCORDING TO CLASSES

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
22/10/2008	17:45:00	01	The Finnish government proposes to transfer the state-owned Metso Corporation shares to Solidium Oy	g	n	b	b
12/12/2008	11:00:00	01	Conversion of unlisted shares series K into series A	g	b	g	g
14/04/2010	12:00:00	01	Conversion of unlisted shares series K into series A	g	gb	g	g
14/05/2009	12:00:00	01	Conversion of unlisted shares series K into series A	g	b	gb	g
08/11/2007	12:30:25	01	Conversion of unlisted shares series K into series A	g	n	gb	n
29/12/2010	12:20:00	01	Listing prospectus for Huhtamäki's SEK 450 million bond available	g	b	n	n
25/06/2008	14:00:00	01	Conversion of unlisted shares series K into series A	g	gb	n	n
19/11/2008	13:00:00	01	Huhtamäki issues EUR 75 million hybrid bond	g	n	n	n
22/12/2010	12:00:00	01	Conversion of unlisted shares series K into series A	g	n	n	n
29/06/2010	12:00:00	01	Conversion of unlisted shares series K into series A	g	n	n	n
19/11/2009	12:00:00	01	Conversion of unlisted shares series K into series A	g	n	n	n
05/03/2009	12:00:00	01	Conversion of unlisted shares series K into series A	g	n	n	n
03/09/2008	14:15:00	01	Conversion of unlisted shares series K into series A	g	n	n	n
12/12/2008	12:00:00	01	The Finnish government has transferred the state-owned Metso Corporation shares to Solidium Oy	g	n	n	n
04/05/2010	16:45:00	01	Metso Corporation has gained title to all the shares in Tamfelt Corp.	g	n	n	n
15/10/2007	10:31:00	01	Change in the shareholding in Outotec Oyj	n	g	b	b
19/06/2008	10:15:00	01	KONECRANES NUMBER OF SHARES registered Notification of a change in shareholding under the Finnish Securities Markets Act	n	gb	b	b
13/08/2008	17:30:00	01	KONECRANES number of shares registered	n	n	b	b
04/05/2007	11:30:00	01	KONECRANES PLC'S BOARD has withdrawn its proposal to authorize the Board REPURCHASE OF SHARES AND SHARE ISSUE AND OTHER SHARES OF SPECIAL RIGHTS ISSUE	n	n	b	b
12/03/2009	10:30:00	01	Subscription of shares with KONE 2005B and 2005C option rights in 2009	n	n	b	b
01/12/2008	10:25:54	01	Listing of the Huhtamäki Oyj option rights 2006 B and subscription dates in 2009	n	n	b	b
22/09/2009	12:30:00	01	Share subscriptions under Wärtsilä Corporation s 2002 option schemes	n	g	g	g
26/06/2007	12:46:02	01	Shares issued in Wärtsilä's free share issue and combination of share series entered in Trade Register	n	g	g	g
26/03/2008	10:30:00	01	Cargotec Shares Subscribed with Option Rights	n	g	g	g
14/03/2008	10:45:00	01	Konecranes' number of Shares REGISTERED	n	n	g	g
27/09/2007	13:00:00	01	KONECRANES SHARE SUBSCRIPTIONS-BASED	n	n	g	g
10/02/2009	12:30:00	01	KONECRANES PLC'S OWN SHARES 26.08.2010	n	n	g	g
26/08/2010	18:22:57	01	KONECRANES PLC STOCK OPTIONS 2009 A SHARE SUBSCRIPTION PRICE AND OPTIONS SERIES 2009 A MARKET VALUE	n	g	gb	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
26/09/2008	10:25:00	01	Listing of the Huhtamäki Oyj option rights 2006 A	n	b	gb	n
15/05/2007	13:01:10	01	Outotec Oyj - Change in the shareholding in Outotec Oyj	n	b	gb	g
17/12/2009	10:15:00	01	KONECRANES SHARE SUBSCRIPTIONS-BASED	n	gb	gb	n
10/02/2010	15:00:00	01	KONECRANES SHARE SUBSCRIPTIONS-BASED	n	n	gb	n
01/10/2007	14:15:03	01	Cargotec Shares Subscribed with Option Rights Preliminary result of Outotec's mandatory public tender offer for Larox shares	n	n	gb	b
25/01/2010	15:15:00	01	Metso's 2003 options - Cancellations and labeling	n	g	n	n
07/03/2007	11:00:30	01	Konecranes share capital registered	n	g	n	n
20/02/2007	11:00:30	01	SHARE SUBSCRIPTIONS KONECRANES PLC STOCK OPTIONS	n	g	n	n
28/04/2008	15:30:00	01	Change in the shareholding in Outotec Oyj	n	g	n	n
04/06/2007	11:10:38	01	Outotec Oyj - Change in the shareholding in Outotec Oyj	n	b	n	n
30/05/2007	11:08:19	01	Notification of a change in shareholding under the Finnish Securities Markets Act	n	b	n	n
09/03/2009	15:30:00	01	Shareholders whose aggregated ownership in Tamfelt Corp. is more than 66.67 per cent have either accepted or undertaken to accept Metso's exchange offer	n	b	n	n
04/12/2009	16:20:00	01	KONECRANES number of shares registered	n	b	n	n
14/04/2008	11:45:00	01	KONE applies for listing of the 2005C stock options	n	b	n	n
17/03/2008	11:41:48	01	Cargotec Shares Subscribed with Option Rights	n	b	n	n
28/10/2008	13:45:00	01	Cargotec completes repurchase of corporate bond	n	b	n	n
24/09/2010	11:00:00	01	Metso has completed the buyback of 300,000 shares for its Share Ownership Plan	n	gb	n	n
02/03/2009	11:15:00	01	Trading in Huhtamäki Oyj's option rights 2003 A, 2003 B and 2003 C	n	n	n	n
17/09/2009	15:00:00	01	will end on October 14, 2009 Final result of Outotec's mandatory public tender offer for Larox shares and directed share issue to Larox shareholders	n	n	n	n
27/01/2010	14:15:00	01	Change in the shareholding in Outotec Oyj	n	n	n	n
15/10/2008	16:45:00	01	Change in the shareholding in Outotec Oyj	n	n	n	n
08/01/2008	14:30:00	01	Change in the shareholding in Outotec Oyj	n	n	n	n
08/05/2007	11:38:42	01	Change in the shareholding in Outotec Oyj	n	n	n	n
11/11/2009	13:35:00	01	Notification of change in share of ownership	n	n	n	n
20/09/2007	14:15:14	01	Conversion of unlisted shares series K into series A	n	n	n	n
04/12/2009	15:00:00	01	Vacon Plc's conveyance of own shares Notification of a change in shareholding under the Finnish Securities Markets Act	n	n	n	n
20/02/2009	15:00:13	01	Vacon Plc's conveyance of own shares	n	n	n	n
23/12/2008	15:00:00	01	Vacon to start acquiring the company's own shares	n	n	n	n
23/10/2008	12:15:00	01		n	n	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
03/04/2007	16:45:00	01	Metso Corporation's Annual General Meeting: a dividend of EUR 1.50 per share	n	n	n	n
17/09/2007	14:30:35	01	Metso's American Depositary Share trading has moved to the over-the-counter (OTC) market in the United States	n	n	n	n
21/12/2009	16:41:37	01	Preliminary result of Metso Corporation's share exchange offer for all issued and outstanding shares and stock options of Tamfelt Corp. and the completion of the share exchange offer	n	n	n	n
28/12/2009	15:00:00	01	Change in the ownership of Metso's own shares	n	n	n	n
15/06/2010	15:40:00	01	Metso received confirmation of redemption price of shares in Tamfelt Corp.	n	n	n	n
15/03/2007	14:45:00	01	Share subscriptions CORPORATION FOR 2001 AND 2002 STOCK OPTIONS	n	n	n	n
04/05/2007	13:40:00	01	Share subscriptions CORPORATION FOR 2001 AND 2002 STOCK OPTIONS	n	n	n	n
14/12/2007	13:00:00	01	Share subscriptions under Wärtsilä Corporation's 2002 option schemes	n	n	n	n
20/03/2008	11:30:00	01	Changes in Wärtsilä's ownership due to combination of share series and directed issue of shares - Notification in accordance with the Finnish Securities Market Act Chapter 2 §9	n	n	n	n
25/04/2008	15:20:00	01	Share subscriptions under Wärtsilä Corporation's 2002 option scheme	n	n	n	n
19/03/2007	16:00:00	01	KONECRANES number of shares registered	n	n	n	n
12/06/2007	14:45:00	01	SHARE SUBSCRIPTIONS KONECRANES STOCK OPTIONS	n	n	n	n
19/06/2007	10:00:09	01	KONECRANES number of shares registered	n	n	n	n
20/06/2007	11:30:00	01	KONECRANES number of shares registered	n	n	n	n
08/08/2007	14:30:00	01	KONECRANES number of shares registered	n	n	n	n
20/09/2007	15:00:00	01	SHARE SUBSCRIPTIONS KONECRANES STOCK OPTIONS	n	n	n	n
06/11/2007	14:00:00	01	KONECRANES number of shares registered	n	n	n	n
13/12/2007	15:00:00	01	SHARE SUBSCRIPTIONS KONECRANES PLC STOCK OPTIONS	n	n	n	n
20/12/2007	10:15:00	01	KONECRANES number of shares registered	n	n	n	n
14/02/2008	11:10:00	01	INCREASE IN KONECRANES' NUMBER OF SHARES REGISTERED	n	n	n	n
13/03/2008	16:30:00	01	SHARE SUBSCRIPTIONS KONECRANES PLC STOCK OPTIONS	n	n	n	n
02/04/2008	13:25:00	01	SHARE SUBSCRIPTIONS KONECRANES PLC STOCK OPTIONS	n	n	n	n
12/06/2008	18:15:00	01	SHARE SUBSCRIPTIONS KONECRANES PLC STOCK OPTIONS AND DECISION 2007-B options in	n	n	n	n
26/09/2008	14:00:00	01	KONECRANES number of shares registered	n	n	n	n
29/10/2008	13:15:00	01	SHARE SUBSCRIPTIONS KONECRANES PLC STOCK OPTIONS	n	n	n	n
03/11/2008	10:15:00	01	KONECRANES number of shares registered	n	n	n	n
07/11/2008	14:30:00	01	KONECRANES PLC: SHARES SUBSCRIBED FOR ON THE BASIS OF 1997 STOCK OPTION PLAN	n	n	n	n
11/12/2008	17:00:00	01	KONECRANES PLC: SHARES SUBSCRIBED FOR THE 2003 STOCK OPTION PLAN C SERIES Option to	n	n	n	n
18/12/2008	14:20:00	01	KONECRANES number of shares registered	n	n	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
23/06/2009	14:00:00	01	KONECRANES SHARE SUBSCRIPTIONS-BASED	n	n	n	n
06/08/2009	10:15:00	01	KONECRANES SHARE SUBSCRIPTIONS-BASED	n	n	n	n
09/12/2009	14:49:17	01	SHARE SUBSCRIPTION schedule under Konecranes Plc's stock option plans 2001 and 2007 IN 2010	n	n	n	n
19/03/2010	13:00:00	01	KONECRANES SHARE SUBSCRIPTIONS-BASED	n	n	n	n
03/05/2010	16:15:08	01	KONECRANES PLC STOCK OPTIONS 2009 B SHARE SUBSCRIPTION PRICE AND OPTIONS SERIES 2009 B MARKET VALUE	n	n	n	n
05/05/2010	13:59:33	01	KONECRANES SHARE SUBSCRIPTIONS-BASED. THE 2001 STOCK OPTION PLAN HAS ENDED	n	n	n	n
14/12/2010	10:36:56	01	KONECRANES PLC STOCK EXCHANGE RELEASE 14.12.2010	n	n	n	n
26/02/2007	14:31:30	01	KONE to repurchase own shares	n	n	n	n
05/12/2007	15:05:18	01	KONE's Board of Directors Decides on New Stock Option Plan	n	n	n	n
25/02/2008	13:57:49	01	KONE Corporation to Repurchase Own Shares	n	n	n	n
03/11/2008	10:53:15	01	Subscription for KONE class B shares with 2005B option rights	n	n	n	n
30/04/2010	14:40:00	01	Correction to the announcement of change in the amount of KONE Corporation treasury shares	n	n	n	n
03/05/2010	11:30:00	01	KONE's share capital increases through subscription of shares with 2005C option rights	n	n	n	n
29/04/2008	11:15:00	01	Cargotec Shares Subscribed with Option Rights	n	n	n	n
19/12/2008	10:30:00	01	Share Subscriptions with Cargotec 2005B Option	n	n	n	n
03/04/2009	14:45:00	01	Cargotec Shares Subscribed with Option Rights	n	n	n	n
22/03/2010	14:15:00	01	Share subscription price and market value of Cargotec Corporation stock options 2010A	n	n	n	n
23/02/2009	13:43:59	01	KONE Corporation to repurchase own shares	n	n	n	n
31/03/2009	12:20:43	02	UBS AG's holdings in Metso decreased to 0.40 percent	b	b	n	n
20/01/2009	14:15:00	02	Moody's revised Metso's rating outlook to negative	b	n	n	n
16/11/2009	17:20:00	02	Moody's confirmed Metso's Baa2 rating	b	n	n	n
25/03/2010	13:00:00	02	BlackRock, Inc. holdings in Metso decreased to 4.85 percent	b	n	n	n
15/03/2007	16:15:00	02	JPMorgan Chase & Co. reduced its holding to shareholders	b	n	n	n
21/09/2007	15:32:33	02	JPMorgan Chase & Co. reduced its holding in Konecranes Plc	b	n	n	n
17/04/2008	14:30:00	02	UBS AG's holdings in Metso increased to 5.13 percent	g	g	n	n
15/05/2007	14:30:00	02	Standard & Poor's raised Metso's corporate credit rating to BBB	g	n	n	n
31/10/2007	13:31:00	02	Moody s upgraded Metso s credit rating to Baa2	g	n	n	n
04/04/2008	16:10:00	02	Standard & Poor's revised Metso's rating outlook to positive	g	n	n	n
22/04/2008	11:00:00	02	UBS AG's holdings in Metso to 4.99% percent	g	n	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
19/11/2008	15:45:00	02	Marathon Asset Management LLP's holdings in Metso increased to 5.12 percent	g	n	n	n
26/03/2009	14:30:00	02	UBS AG's holdings in Metso increased to 5.32 percent	g	n	n	n
02/03/2010	13:30:00	02	BlackRock, Inc. holdings in Metso increased to 5.03 percent	g	n	n	n
12/08/2010	13:15:00	02	Standard & Poor's revised Metso's rating outlook to stable	g	n	n	n
02/04/2007	11:50:00	02	JP MORGAN CHASE & CO increased its holding in Konecranes	g	n	n	n
28/11/2007	10:30:00	02	FIDELITY INTERNATIONAL LIMITED HOLDING Konecranes Plc	n	g	b	b
13/03/2007	10:29:21	02	Securities Market Act 2 Chapter 10 Notice Pursuant to the	n	g	b	b
16/10/2008	17:45:00	02	Ilmarinen Mutual KONECRANES HOLDINGS PLC	n	b	b	b
04/12/2009	10:45:00	02	SECURITIES ACT, CHAPTER 2, SECTION 10 OF NOTIFICATION	n	b	b	b
16/09/2008	13:32:00	02	Huhtamaki's Capital Markets Day in Espoo, September 16, 2008	n	n	b	b
04/07/2007	15:30:46	02	Sampo decreased holding in Wärtsilä Corporation	n	g	g	g
28/03/2007	10:15:00	02	MORGAN STANLEY & CO. INTERNATIONAL LIMITED REDUCED ITS HOLDING IN KONECRANES	n	gb	g	g
02/04/2008	10:32:28	02	Vaisala Capital Markets Day on 2 April 2008 in Vantaa	n	g	n	n
17/12/2007	14:30:00	02	Metso's SEC registration of its securities and related reporting obligations have been terminated	n	g	n	n
31/07/2007	14:15:00	02	FIDELITY INTERNATIONAL LIMITED'S HOLDING IN KONECRANES	n	g	n	n
15/08/2007	11:00:00	02	FIDELITY INTERNATIONAL AS HOLDING IN KONECRANES	n	b	n	n
30/08/2010	14:30:00	02	SECURITIES ACT, CHAPTER 2, SECTION 10 OF NOTIFICATION	n	b	n	n
14/09/2007	10:34:03	02	Announcement Pursuant to Securities Markets Act Chapter 2, Section 10	n	b	n	n
27/12/2010	16:20:00	02	Announcement according to the Securities Market Act, Chapter 2, Section 10	n	n	n	n
23/02/2010	17:00:00	02	Announcement according to the Securities Market Act, Chapter 2, Section 10	n	n	n	n
19/01/2010	15:35:00	02	Announcement according to the Securities Market Act, Chapter 2, Section 10	n	n	n	n
17/12/2009	17:55:00	02	Announcement according to the Securities Market Act, Chapter 2, Section 10	n	n	n	n
08/12/2009	11:30:00	02	Ahlström Capital holding in Vacon Plc	n	n	n	n
04/09/2007	15:31:06	02	Metso seeks to terminate registration of its securities under Section 12(g) of the U.S. Securities Exchange Act of 1934 (the "Exchange Act") and terminate its reporting obligations under Section 13(a) and Section 15(d) of the Exchange Act	n	n	n	n

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15/10/2008	16:00:00	02	BARCLAY GLOBAL INVESTORS UK HOLDINGS LTD IN KONECRANES PLC	n	n	n	n
18/09/2009	17:56:10	02	SECURITIES ACT, CHAPTER 2, SECTION 10 OF NOTIFICATION	n	n	n	n
24/02/2010	16:00:00	02	SECURITIES ACT, CHAPTER 2, SECTION 10 OF NOTIFICATION	n	n	n	n
02/05/2008	13:12:27	02	Announcement pursuant to Securities Markets Act Chapter 2, Section 10	n	n	n	n
13/11/2009	10:45:00	03	Huhtamaki to sell its rigid plastic consumer goods business in Australia	b	n	g	g
30/04/2007	12:40:00	03	Konecranes has agreed to sell a significant portion of its real estate in Finland	b	g	n	n
03/06/2009	14:00:00	03	Huhtamaki sells its rigid plastic consumer goods business in South America	b	gb	n	n
28/09/2007	14:00:39	03	Metso closes the divestment of its German press and energy business	b	n	n	n
19/01/2009	11:00:00	03	Metso adjusts its Finnish operations in response to the weakened demand in the pulp and paper industry	b	n	n	n
25/09/2009	11:50:00	03	Konecranes closes Ettlingen FACTORY IN GERMANY	b	n	n	n
03/06/2010	16:30:00	03	Konecranes closes Windsor plant, WI, USA	b	n	n	n
21/04/2009	14:15:00	03	Metso's nonrecurring expenses related to the adjustment measures	g	n	b	b
08/10/2008	12:00:00	03	Huhtamäki Oyj co-operation negotiations completed in Hämeenlinna	g	g	gb	b
14/08/2008	12:30:00	03	Huhtamäki Oyj commences co-operation negotiations in Hämeenlinna	g	n	n	n
23/05/2008	11:00:00	03	production unit	g	n	n	n
09/06/2008	13:00:00	03	Metso expanding its production capacity in China	g	n	n	n
06/10/2009	13:00:00	03	Metso to rebuild Sabah pulp mill in Malaysia	g	n	n	n
02/02/2010	11:00:00	03	Cargotec to book additional restructuring charges from Hiab and Kalmar merger of MEUR 20 resulting in operating loss for 2009	n	n	gb	b
12/11/2007	18:15:31	03	Metso to convert Domtar's fine paper machine in the USA to fluff pulp production	n	g	n	n
25/06/2009	13:00:00	03	Vaisala rationalizes its North American operations	n	n	n	n
22/10/2007	14:30:00	04	Wärtsilä Ship Power's organisational adjustment proceeds - formal	n	n	n	n
07/12/2010	14:30:00	04	processes have ended in Finland and certain other countries	n	n	n	n
31/08/2009	14:30:00	04	Arto Juosila leave Konecranes	b	n	n	n
			Cargotec strengthens Executive Board presence in Asia	g	b	n	n
			Cargotec appoints Lennart Brelin as Executive Vice	n	g	b	b

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
			Cargotec Appoints Axel Leijonhufvud as Senior Vice President, Product Supply	n	b	b	b
21/11/2008	10:15:00	04		n	n	b	b
15/11/2007	14:00:00	04	Konecranes appoints Pekka Lettijeff Chief Procurement Office	n	b	g	g
10/12/2009	10:55:00	04	Changes in Vaisala's management	n	g	n	n
26/04/2010	10:25:00	04	Changes in Outotec's Executive Board	n	gb	n	n
26/02/2009	11:00:00	04	Outotec announces planned retirement of Deputy CEO Seppo Rantakari	n	n	n	n
08/10/2010	10:33:15	04	Outotec appoints Mikko Puolakka CFO and Member of the Executive Board	n	n	n	n
28/05/2010	13:30:00	04	Outotec appoints Michael Frei to Executive Board	n	n	n	n
04/01/2010	13:00:00	04	Outotec appoints Pekka Erkkilä new Executive Committee member	n	n	n	n
18/03/2009	11:30:00	04	Outotec's President and CEO Tapani Järvinen to retire at the end of 2009	n	n	n	n
26/01/2010	11:15:00	04	Changes in Vaisala's management	n	n	n	n
17/12/2008	12:00:00	04	Appointment in Vaisala's management group	n	n	n	n
30/09/2010	14:30:00	04	Metso's Matti Kähkönen to assume Olli Vaartimo's post as Metso Executive Vice President on October 1, 2010	n	n	n	n
14/12/2010	14:00:00	04	Appointments in Metso Executive Team	n	n	n	n
26/05/2009	11:00:00	04	Appointments to Wärtsilä's Board of Management	n	n	n	n
06/05/2009	13:30:00	04	HARRY OLLILA APPOINTED NEW MARKET OPERATIONS development department	n	n	n	n
25/02/2009	13:42:22	04	KONE appoints Henrik Ehrnrooth as CFO and Member of the Executive Board	n	n	n	n
18/12/2008	14:30:00	04	Cargotec Appoints Pekka Vauramo as Deputy to CEO	n	n	n	n
05/06/2007	10:01:17	04	Cargotec Appoints Pekka Vauramo as President of Kalmar Business Area	n	n	n	n
18/06/2008	12:00:00	05	Huhtamaki revises its 2008 full-year earnings estimate	b	n	b	b
12/12/2008	15:40:00	05	Stock Exchange Release: Vacor slightly reduces forecast for 2008 SOME were postponed last quarter of 2009 THE 2010 FIRST QUARTER RESULTS IN MAY OF 2009 sales to be slightly lower than previously estimated. LI	b	n	b	b
11/12/2009	14:01:00	05		b	gb	gb	b
19/01/2009	13:00:00	05	Cargotec's Operating Profit Falls Short of Earlier Estimates WÄRTSILÄ'S PROFITABILITY FOR 2010 ESTIMATED TO BE BETTER THAN EARLIER EXPECTED	g	n	g	g
14/10/2010	14:30:00	05		g	n	g	g
18/06/2007	12:30:29	05	KONE's Financial Performance Stronger than Anticipated Huhtamaki expects first quarter 2009 Group EBIT to be well above the previous year in spite of lower sales	g	g	gb	g
03/04/2009	13:20:00	05		g	n	gb	g
15/12/2010	16:35:56	05	Increase in Huhtamaki's 2010 results outlook	n	g	b	b
29/10/2010	11:00:00	05	Vaisala's January - September (Q3/2010) results published on November 5, 2010	n	b	b	b
15/07/2008	13:00:00	05	Publishing of Outotec's January-June 2008 Interim Report on July 23	n	b	b	b
02/03/2010	15:00:00	05	Vacon's Annual Report 2009 published	n	b	b	b

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
25/10/2007	12:01:09	05	Metso s Interim Review January 1 - September 30, 2007	n	b	b	b
26/02/2008	15:15:00	05	Metso's release summary in 2007	n	b	b	b
			WÄRTSILÄ PUBLISHES JANUARY-JUNE 2007 INTERIM REPORT ON 3 AUGUST,				
25/07/2007	12:31:02	05	2007, AT 8.30 A.M. LOCAL TIME	n	b	b	b
20/10/2009	12:30:00	05	KONE Corporation's Interim Report for January-September 2009 Vaisala's January - September (Q3/2009) results published on November	n	b	b	b
26/10/2009	11:00:00	05	5, 2009	n	gb	b	b
31/03/2008	14:00:00	05	Huhtamaki specifies first quarter 2008 earnings estimate	n	n	b	b
03/03/2009	11:00:00	05	Outotec Oyj Annual Report and Announcements 2008 published	n	n	b	b
19/01/2009	16:00:00	05	Publishing of Outotec's Financial Statements Review 2008	n	n	b	b
11/08/2009	17:15:00	05	Correction to Vaisala Group interim report January - June 2009	n	n	b	b
23/10/2007	12:31:34	05	KONE Corporation s Interim Report for January-September 2007	n	n	b	b
19/07/2007	12:01:09	05	Cargotec s Interim Report for January-June 2007	n	n	b	b
			Vaisala's annual report and summary list of 2008 releases published				
11/03/2009	16:30:00	05		n	g	g	g
18/04/2007	13:00:04	05	Metso's Interim information for January-March 2007	n	g	g	g
22/04/2008	12:30:00	05	KONE Corporation's Interim Report for January-March 2008 Cargotec's Year 2007 Annual Report and Financial Statements as well	n	g	g	g
06/02/2008	12:45:00	05	as Summary of Year 2007 Releases published	n	g	g	g
23/01/2009	12:30:00	05	KONE Corporation's financial statement bulletin 2008 Correction to Cargotec Corporation's Financial Statements	n	b	g	g
02/02/2009	16:30:00	05	Review 2008	n	b	g	g
09/03/2009	14:00:00	05	Metso's Annual Report 2008 published	n	gb	g	g
22/01/2008	11:00:00	05	KONECRANES PUBLISHES A SUMMARY OF THE 2007 RELEASES	n	gb	g	g
			Cargotec's Financial Statements Review 2009 - Year of streamlining operations and structural changes in a difficult market situation				
03/02/2010	12:30:00	05	Outokumpu Technology's Annual Report 2006 has been published	n	gb	g	g
20/03/2007	10:03:21	05		n	n	g	g
21/07/2010	14:00:00	05	Metso's financial information in 2011	n	n	g	g
27/09/2010	16:44:57	05	KONECRANES PLC'S FINANCIAL INFORMATION IN 2011	n	n	g	g
20/04/2010	12:30:00	05	KONE Corporation's Interim Report for January-March 2010	n	n	g	g
19/10/2010	12:30:00	05	KONE Corporation's Interim Report for January-September 2010	n	n	g	g
03/11/2009	14:30:00	05	Cargotec's Financial Information in 2010 Preliminary information on Vaisala's financial statements for year 2009	n	n	g	g
03/02/2010	10:09:21	05		n	g	gb	b
07/05/2007	11:00:54	05	Vaisala Interim report 1.1.-31.3.2007 (3 months) Cargotec's Interim Report January-June 2010 - Orders during the second quarter increased by 55 percent year on year	n	g	gb	g
21/07/2010	12:00:00	05		g	g	gb	g

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
11/03/2009	11:30:00	05	Huhtamaki's Annual Report and Annual Accounts 2008	n	b	gb	n
27/02/2007	11:00:30	05	Metso published a summary of the 2006 releases	n	b	gb	n
01/08/2007	10:00:11	05	JANUARY-JUNE 2007 INTERIM REPORT	n	b	gb	b
24/04/2007	12:30:40	05	KONE Corporation s Interim Report for January-March 2007	n	b	gb	n
20/07/2007	12:31:21	05	KONE Corporation s Interim Report for January-June 2007	n	b	gb	g
21/10/2008	12:23:06	05	KONE Corporation's Interim Report for January-September 2008	n	b	gb	b
20/07/2010	12:30:00	05	KONE Corporation's Interim Report for January-June 2010	n	b	gb	g
17/07/2008	12:00:00	05	Cargotec's Interim Report for January-June 2008	n	b	gb	n
20/10/2008	12:00:00	05	Cargotec's Interim Report for January-September 2008	n	b	gb	g
03/02/2010	12:00:00	05	Publication of Vacon's Financial Bulletin delayed	n	gb	n	n
25/10/2007	10:01:11	05	VACON PLC FINANCIAL BULLETIN 1 JANUARY - 30 SEPTEMBER 2007	n	gb	gb	b
02/08/2007	10:00:33	05	VACON PLC FINANCIAL BULLETIN 1 January - 30 June 2007	n	gb	gb	g
21/07/2009	12:30:00	05	KONE Corporation's Interim Report for January-June 2009	n	gb	gb	g
23/04/2007	12:00:00	05	Cargotec's Interim Report for January-March 2007	n	gb	gb	g
18/10/2007	12:01:38	05	Cargotec s Interim Report for January-September 2007	n	gb	gb	g
20/07/2009	12:00:00	05	Cargotec's Interim Report January-June 2009 - Demand Remained on Low Level	n	gb	gb	b
07/08/2007	12:48:51	05	Vaisala Oyj s Interim Report January - June 2007 (6 months)	n	n	gb	n
27/02/2009	16:00:00	05	Vacon's summary of year 2008 releases published	n	n	gb	n
25/04/2007	18:11:33	05	VACON PLC FINANCIAL BULLETIN 1 January- 31 March 2007	n	n	gb	n
13/04/2007	15:15:00	05	KONECRANES PLC ANNUAL REPORT	n	n	gb	n
27/04/2007	10:00:07	05	KONECRANES JANUARY - MARCH 2007 INTERIM REPORT	n	n	gb	g
25/01/2008	12:37:28	05	KONE Corporation's Financial Statement Bulletin 2007	n	n	gb	g
22/07/2008	12:30:00	05	KONE Corporation's Interim Report for January-June 2008	n	n	gb	g
23/04/2009	12:30:00	05	KONE Corporation's Interim Report for January-March 2009	n	n	gb	g
18/04/2008	12:00:00	05	Cargotec's Interim Report for January-March 2008	n	n	gb	b
22/10/2009	13:00:00	05	Cargotec's Interim Report January-September 2009 - Demand unchanged	n	n	gb	g
11/03/2009	15:30:00	05	Vacon's Annual Report 2008 published	n	g	n	n
27/04/2007	12:00:00	05	Metso Corporation's Interim information 1 January to 31 March 2007	n	g	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
			Cargotec's Year 2008 Annual Report and Financial Statements as well				
10/02/2009	15:30:00	05	as Summary of Year 2008 Releases published	n	g	n	n
26/01/2010	13:00:00	05	Publishing of Outotec's Financial Statements Review 2009	n	b	n	n
19/03/2010	13:15:00	05	China Customs doing audit at Vacon's China factory	n	b	n	n
25/07/2007	11:30:49	05	Announcement of Vacon Plc s Interim Report 1-6/2007	n	b	n	n
28/10/2010	12:00:00	05	Metso Corporation´s Interim Review, January 1 - September 30, 2010	n	b	n	n
03/08/2007	13:00:15	05	Publication of Wärtsilä s financial information 2008 and 2009	n	gb	n	n
26/01/2010	13:45:00	05	KONE's financial statements for 2009 published	n	gb	n	n
06/03/2008	15:00:00	05	Huhtamaki's Annual Report and Annual Accounts 2007	n	n	n	n
01/07/2010	13:00:00	05	Publishing of Outotec's January-June 2010 Interim Report	n	n	n	n
12/04/2010	14:30:00	05	Publishing of Outotec's January-March 2010 Interim Report	n	n	n	n
25/02/2010	15:15:00	05	Outotec Oyj Annual Report and announcements 2009 as well as Corporate Governance Statement published	n	n	n	n
12/10/2009	14:30:00	05	Publishing of Outotec's January-September 2009 Interim Report	n	n	n	n
			OUTOTEC'S JANUARY-JUNE 2009 INTERIM REPORT BRIEFING ON FRIDAY JULY 24				
23/07/2009	11:00:00	05	AT 2.00 PM	n	n	n	n
08/07/2009	13:00:00	05	Publishing of Outotec's January-June 2009 interim report	n	n	n	n
			Publishing of Outotec's January-September 2008 interim report				
15/10/2008	11:30:00	05	report	n	n	n	n
06/03/2008	15:30:00	05	Outotec's Annual Report 2007 published	n	n	n	n
			Outotec - publishing of January-June 2007 Interim Report on July 25				
18/07/2007	10:51:26	05	July 25	n	n	n	n
10/11/2010	14:00:00	05	The Schedule for Vaisala Oyj's Financial Information in 2011	n	n	n	n
			Vaisala's January - June (Q2/2010) results published on August 11, 2010				
02/08/2010	11:30:00	05	August 11, 2010	n	n	n	n
19/03/2010	12:30:09	05	Financial Report 2009	n	n	n	n
			Vaisala's annual report and summary list of 2009 releases published				
10/03/2010	14:00:00	05	published	n	n	n	n
			Vaisala's 2009 financial results published on 19 February 2010				
12/02/2010	11:00:00	05	2010	n	n	n	n
16/11/2009	14:30:00	05	The schedule for Vaisala Oyj's financial information in 2010	n	n	n	n
			Vaisala's January - June (Q2/2009) results published on August 11,				
27/07/2009	13:30:00	05	2009	n	n	n	n
			Vaisala's January - March (Q1/2009) results published on May 8, 2009				
29/04/2009	15:45:00	05	May 8, 2009	n	n	n	n
06/11/2008	14:07:09	05	Vaisala Oyj's financial information in 2009	n	n	n	n
			Vaisala's January-September 2008 will be published 11.05.2008 at 9:00 am				
28/10/2008	13:03:20	05	11.05.2008 at 9:00 am	n	n	n	n
			Comparative information from year 2007 of the new Vaisala segment				
30/04/2008	12:30:00	05	segment	n	n	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
05/11/2007	14:41:10	05	Vaisala Oyj s financial information in 2008	n	n	n	n
30/11/2010	13:00:00	05	Vacon Plc's Financial Calendar for 2011	n	n	n	n
19/02/2010	16:00:00	05	Vacon's summary of year 2009 releases published	n	n	n	n
15/12/2008	15:30:00	05	Stock Exchange Announcement: Vacon Plc Financial Calendar for 2009 Vacon's Year 2007 Annual Report and Summary of Year 2007 Releases	n	n	n	n
12/03/2008	14:00:00	05	published	n	n	n	n
26/04/2007	13:54:43	05	Vacon Plc s Invitation to teleconference	n	n	n	n
16/03/2007	13:21:22	05	Vacon's Annual Report 2006 published	n	n	n	n
20/12/2007	15:00:00	05	Vacon Plc Financial Calendar for 2008	n	n	n	n
14/03/2008	12:00:00	05	Metso's Annual Report 2007 published	n	n	n	n
24/04/2008	12:00:00	05	Metson Interim information 1.1.-31.3.2008	n	n	n	n
24/07/2008	12:00:00	05	Metso's Interim Review, January 1 - June 30, 2008	n	n	n	n
03/02/2009	10:30:00	05	Metso's release summary in 2008	n	n	n	n
04/02/2009	12:00:00	05	Metson Annual financial statement 1.1.-31.12.2008	n	n	n	n
28/04/2009	12:00:00	05	Metson Interim information 1.1.-31.3.2009	n	n	n	n
08/02/2010	15:18:14	05	Metson Annual financial statement 1.1.-31.12.2009	n	n	n	n
08/03/2010	14:00:00	05	Metso's release summary in 2009	n	n	n	n
29/04/2010	12:00:00	05	Metso Corporation's Interim Review, January 1- March 31, 2010 Metso Corporation's Interim Review, January 1- June 30, 2010	n	n	n	n
29/07/2010	12:00:00	05	30, 2010	n	n	n	n
05/03/2007	13:46:49	05	Wärtsilä's Annual report for 2006 published Wärtsilä publishes January-September 2007 Interim Report on 30	n	n	n	n
19/10/2007	14:00:28	05	October 2007, at 8.30 a.m. local time Wärtsilä's Financial Statement Bulletin 2007 to be published on 5	n	n	n	n
28/01/2008	15:30:00	05	February 2008, at 8.30 a.m. local time Wärtsilä Corporation's annual report and annual summary of releases	n	n	n	n
03/03/2008	12:30:00	05	2007 published	n	n	n	n
30/01/2009	12:50:00	05	Correction to Wärtsilä's Financial Statements Bulletin 2008 Wärtsilä Corporation's annual report and annual summary of releases	n	n	n	n
12/02/2009	15:36:56	05	2008 published in PDF-format	n	n	n	n
20/03/2007	15:51:34	05	KONECRANES YEAR 2006 KONECRANES PLC'S ANNUAL REPORT FOR 2007	n	n	n	n
29/02/2008	16:00:00	05	HAS BEEN PUBLISHED	n	n	n	n
04/02/2009	16:00:00	05	KONECRANES PUBLISHES A SUMMARY OF YEAR 2008 RELEASES	n	n	n	n
20/02/2009	10:30:00	05	KONECRANES PLC ANNUAL REPORT 2008 IS PUBLISHED	n	n	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
26/10/2009	13:15:00	05	KONECRANES PLC'S FINANCIAL REPORTS IN 2010	n	n	n	n
21/02/2008	10:15:08	05	Cargotec Oyj, Annual report ja Tilinpäätös 2007	n	n	n	n
31/10/2008	14:00:00	05	Cargotec's Financial Information in 2009	n	n	n	n
30/06/2008	10:30:00	06	Prosecution against Mr. Mikael Lilius, Chairman of the Board, dismissed	b	g	n	n
03/07/2007	15:00:09	06	Supreme Court not granting leave to appeal: Wärtsilä s subsidiary and employee found not guilty	g	n	n	n
10/11/2008	10:08:31	06	Austrian Cartel Court's decision remains unchanged	b	n	n	n
15/03/2010	16:29:35	06	Civil damage claims served in the Austrian cartel case	b	n	n	n
02/07/2010	17:30:00	06	The United States Department of Justice has closed its investigations related to 2006 subpoena received by Metso	g	n	g	g
08/06/2010	17:30:00	06	Metso settles intellectual property dispute in United States	g	b	n	n
07/12/2010	11:00:00	06	A favorable verdict for Metso in a patent infringement lawsuit in the United States	g	b	n	n
11/06/2010	13:30:00	06	Prosecution against Mr. Mikael Lilius, Chairman of the Board, dismissed	g	n	n	n
14/05/2010	13:15:00	06	Metso settles IP Dispute in Australia	g	n	n	n
14/12/2007	13:14:26	06	Austrian Cartel Court's Decision on Anticompetitive Practices	n	n	b	b
21/02/2007	13:33:06	06	The European Commission's decision to the local anti-competitive behavior in the elevator and escalator industry	n	n	g	g
22/07/2008	14:50:00	06	The Public Prosecutor appeals against the decision made in the matter relating to Mr. Mikael Lilius', Chairman of the Board, failure to comply with disclosure obligation	n	n	n	n
02/03/2007	13:59:23	06	KONE will appeal the decision of the European Commission	n	n	n	n
22/06/2009	10:05:00	07	Cargotec continues its On the Move change programme by planning to merge Hiab and Kalmar operations globally	g	gb	n	n
14/08/2009	14:00:00	07	Cargotec merges Hiab and Kalmar and re-names business areas	g	n	n	n
10/01/2008	17:15:00	07	Metso's Nomination Committee proposes seven members to the Board	n	gb	g	g
20/04/2007	11:30:04	07	Outokumpu Technology changes its name to Outotec on April 24, 2007	n	n	g	g
09/11/2009	11:15:00	07	The composition of Metso's appointment committee (is as follows)	n	g	n	n
24/03/2010	16:25:00	07	Composition of Huhtamäki Oyj's Board Committees	n	n	n	n
27/01/2010	16:15:00	07	Metso's Nomination Committee proposes seven members to the Board	n	n	n	n
09/02/2010	14:30:00	07	Metso's Corporate Governance Statement 2009 issued	n	n	n	n
05/11/2010	15:00:00	07	Nomination Board representatives of Metso Corporation	n	n	n	n
15/04/2008	15:30:00	07	KONECRANES new reporting practice, the figures for 2007	n	n	n	n
26/01/2009	14:00:00	07	Cargotec's Compensation and Nomination Committee and Audit Committee	n	n	n	n
26/01/2009	14:00:00	07	Present Proposals for Composition of the Board of Directors	n	n	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
17/03/2009	11:00:00	08	Metso to reduce 718 employees in the Paper business line's Finnish operations	b	n	g	g
24/03/2010	10:30:00	08	Assignment of Vacon's own shares - share bonus scheme 2008-2010	g	n	b	b
07/05/2009	17:45:00	08	KONECRANES GROUP MANAGEMENT COMPANY INVESTING IN SHARES AS PART OF THE MANAGEMENT INCENTIVE ARRANGEMENTS	g	n	gb	g
03/03/2008	14:00:00	08	New incentive program for Outotec's key personnel	g	n	n	n
17/06/2010	12:30:00	08	Vaisala completes the consultation processes/Vaisala's personnel negotiations completed	n	n	n	n
19/02/2008	14:15:00	08	The Board of Directors of Vacon Plc resolved on an incentive plan for key personnel	n	n	n	n
01/10/2010	14:30:00	08	Metso's new long-term incentive plan for key management	n	n	n	n
05/12/2008	11:00:00	09	Outotec's third water supply facility project in Sri Lanka will not go ahead	b	b	b	b
18/12/2008	13:05:00	09	Metso's delivery of Lee & Man Paper PM 17 cancelled	b	n	n	n
03/07/2007	10:00:11	09	Metso supplies power boiler to UPM Caledonian for green energy production in Scotland	g	g	b	b
13/12/2007	10:30:00	09	Metso to supply fine paper machine to MCC Paper Yinhe in China	g	b	b	b
03/11/2008	11:00:00	09	Metso supplies multifuel-fired boiler to Poland	g	gb	b	b
28/10/2008	16:00:00	09	Outotec's project for Russian Copper Company's Miheevsky concentrator suspended	g	n	b	b
18/06/2008	14:00:00	09	Metso to supply fiber line to Century Pulp & Paper in India	g	n	b	b
18/03/2010	15:00:00	09	Metso to supply containerboard line to Saica Containerboard in the UK	g	n	b	b
16/10/2007	13:15:19	09	Outotec to deliver concentrator technology for Hellas Gold in Greece	g	g	g	g
13/09/2007	10:15:55	09	Vaisala signs a contract for the long-term supply of automatic weather stations	g	g	g	g
16/07/2008	14:00:00	09	Metso to supply grinding equipment to Minera Petaquilla in Panama	g	g	g	g
25/06/2007	11:18:02	09	Outotec to deliver the world's largest sulfuric acid plant	g	gb	g	g
26/11/2010	15:00:00	09	Saudi Arabia Outotec to deliver turnkey drinking water treatment scheme to Sri Lanka	g	n	g	g
03/10/2008	15:00:00	09	Outotec to deliver concentrator technology worth over 175 million euro for the Miheevsky project in Russia	g	n	g	g
12/08/2008	14:30:00	09	Outotec to deliver large iron ore pelletizing plant for Tata Steel in India	g	n	g	g
11/07/2007	12:38:20	09	Outotec to deliver alumina calcination plant to CBA, Brazil	g	n	g	g
23/11/2010	13:00:00	09	Vacon signs supplier contract with KONE	g	n	g	g
11/10/2007	13:00:13	09	Vacon delivers AC drives to hundreds of wind turbines	g	n	g	g
19/09/2007	15:10:07	09	Metso supplies a power boiler to Kalmar Energi Värme s new heat and power plant in Sweden	g	n	g	g

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
			Metso supplies a power boiler to Stora Enso's Langerbrugge Mill in Belgium	g	n	g	g
30/11/2007	14:00:30	09	Metso to deliver two board machines to Nine Dragons Paper	g	n	g	g
07/01/2008	13:30:00	09	Metso to supply grinding equipment to Norilsk Nickel in Russia	g	n	g	g
15/12/2008	14:00:00	09	Wärtsilä delivers 203 MW gas power plant to South Texas Electric Cooperative in Texas, USA	g	n	g	g
14/01/2008	15:00:00	09	Wärtsilä to deliver 331 MW power plant project to Brazil - value EUR	g	n	g	g
28/08/2008	13:00:00	09	159 million	g	n	g	g
30/03/2010	13:00:00	09	Cargotec receives a major order in the USA	g	n	g	g
			Outotec to deliver a 100 million USD water treatment facility to Sri Lanka	g	g	gb	g
03/09/2007	12:00:02	09	Vaisala to supply radiosondes to Australia	g	g	gb	b
16/07/2008	11:00:00	09	Vaisala to supply synoptic upper-air observation network to Canada	g	g	gb	n
01/08/2007	10:01:15	09	Konecranes wins record-port crane orders from St. Petersburg	g	g	gb	g
01/07/2008	14:45:00	09	Vaisala signs a significant radiosonde contract	g	gb	gb	g
08/01/2008	10:30:00	09	Wärtsilä wins 160 MW power plant order from Pakistan	g	gb	gb	b
30/07/2007	10:00:45	09	Metso supplies two power boilers to EDP Produção - Bioelétrica in Portugal	g	n	gb	g
26/06/2007	10:00:34	09	Metso to supply energy and pulping technology to CMPC, Chile	g	n	gb	g
09/12/2009	14:00:00	09	Metso supplies pulp mill equipment for Horizonte Project in Brazil	g	g	n	n
14/06/2007	11:00:59	09	Metso to supply minerals processing equipment to Canada	g	g	n	n
08/07/2008	13:30:00	09	Metso to supply pulp mill technology to Zhanjiang Chenming in China	g	g	n	n
20/08/2008	14:00:00	09	Metso to supply containerboard line to Chinese Zhejiang Ji'An	g	g	n	n
04/03/2010	10:30:00	09	Metso supplies rebuilt white liquor plant for Mondi, Syktyvkar mill in Russia	g	b	n	n
21/12/2007	12:30:00	09	Outotec to deliver technology worth EUR 40 million for Talvivaara nickel project in Finland	g	gb	n	n
21/08/2007	11:00:30	09	Outotec to deliver a copper plant for Centenario Copper Chile	g	gb	n	n
21/12/2007	10:58:32	09	Metso to supply fine paper line to APRIL Fine Paper (Guangdong) in China	g	gb	n	n
15/07/2010	10:30:00	09		g	gb	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
19/11/2010	16:00:00	09	Outotec delivers technology for the expansion of Outokumpu's ferrochrome plant in Finland	g	n	n	n
30/09/2010	14:00:00	09	Outotec to supply technology for a copper concentrator expansion in Iran	g	n	n	n
11/04/2008	13:00:00	09	Outotec to deliver modern iron ore pelletizing technology to China	g	n	n	n
26/07/2007	12:27:05	09	Outotec to supply anode plant technology for aluminum smelter in Abu Dhabi	g	n	n	n
20/06/2007	13:00:19	09	Outotec to deliver the world's largest chromite pelletizing plant in Kazakhstan "	g	n	n	n
02/12/2010	14:00:00	09	Vaisala to Supply Oman Airports with Comprehensive Weather Observation Systems	g	n	n	n
26/02/2007	13:01:07	09	Vacon wins contract in sugar industry in Brazil	g	n	n	n
22/03/2007	15:00:00	09	Metso to supply grinding Boliden in Sweden	g	n	n	n
23/03/2007	11:00:00	09	Metso will supply a coated board production line in Shandong International Paper & Sun Coated Paperboard in China	g	n	n	n
03/04/2007	12:23:25	09	Metso to supply grinding equipment to Osisko Exploration in Canada	g	n	n	n
23/05/2007	13:00:00	09	Metso supplies pulp mill equipment Celbille Portugal	g	n	n	n
07/06/2007	14:00:47	09	Metso supplies heat recovery boiler for Fortum s power plant in Finland	g	n	n	n
05/07/2007	15:30:11	09	Metso to supply minerals processing equipment to Gold Reserve in Venezuela	g	n	n	n
09/07/2007	15:16:01	09	Metso supplies power boiler to Mölndal Energi s combined heat and power plant in Sweden	g	n	n	n
18/09/2007	14:47:14	09	Metso to deliver containerboard line to Mondi Packaging	g	n	n	n
19/11/2007	10:30:24	09	Metso supplies a power boiler to Keravan Lämpövoima's new combined heat and power plant in Finland	g	n	n	n
22/07/2008	14:00:00	09	Metso to supply minerals processing equipment to China Metallurgical Group in Australia	g	n	n	n
04/08/2008	12:00:00	09	Metso confirms Propapier paper making line order	g	n	n	n
15/09/2008	13:00:00	09	Metso to supply rotary railcar unloader systems to Pilbara Infrastructure Pty Ltd in Australia	g	n	n	n
30/10/2008	15:00:00	09	Metso supplies multifuel-fired boiler to Finland	g	n	n	n
31/10/2008	13:00:00	09	Metso to supply two tissue lines to HengAn International Group, China	g	n	n	n
13/03/2009	13:30:00	09	Metso supplies modernization of chemical recovery line to Korsnäs in Sweden	g	n	n	n
12/05/2009	15:00:00	09	Metso supplies power boiler for green energy production in Poland	g	n	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
06/07/2009	13:00:00	09	Metso to supply fine paper line to Zhanjiang Chenming in China, earlier received pulp mill order cancelled	g	n	n	n
30/07/2009	13:00:00	09	Metso supplies power boiler to SAICA in Spain	g	n	n	n
10/11/2009	11:45:00	09	Metso's paper machine project confirmed to Shandong Chenming in China	g	n	n	n
05/01/2010	13:00:00	09	Metso to supply biomass power plant to Belgium	g	n	n	n
03/02/2010	12:00:00	09	Metso to supply biomass boiler to RWE npower renewables, UK	g	n	n	n
24/03/2010	13:00:00	09	Metso to supply board making technology to Cheng Loong Corporation in Taiwan	g	n	n	n
02/06/2010	14:15:00	09	Metso to supply pulping technology for Ilim Group in Russia	g	n	n	n
22/06/2010	13:00:00	09	Metso to supply mining equipment to TISCO in China	g	n	n	n
04/08/2010	14:00:00	09	Metso to supply mining equipment for Nordic Mines in Finland	g	n	n	n
02/04/2008	16:00:00	09	Wärtsilä's gas power plant order to California received permissions	g	n	n	n
11/04/2008	14:15:00	09	Wärtsilä delivers 200 MWe power plant to Pakistan - value of order EUR 134 million	g	n	n	n
09/05/2008	11:30:00	09	Wärtsilä delivers a power plant to Brazil at value of EUR 80 million	g	n	n	n
29/09/2008	14:30:00	09	Wärtsilä to deliver 200 MWe million power plant to Pakistan - value EUR 131 million	g	n	n	n
02/06/2010	13:30:00	09	Cargotec signs EUR 20 million contract for MacGregor subsea load and module handling systems	g	n	n	n
17/06/2010	11:30:00	09	Cargotec signs around EUR 20 million orders for MacGregor cranes and hatch covers for bulk carriers	g	n	n	n
07/07/2010	14:00:00	09	Cargotec receives EUR 20 million order for MacGregor electric-driven cranes	g	n	n	n
19/01/2010	14:30:00	10	Outotec supplements the offer document with a stock exchange release published by Larox	g/v	b	b	b
23/12/2009	10:30:00	10	Outotec's ownership in Ausmelt increased to 37,4 percent	g/h	n	b	b
11/10/2010	11:00:00	10	KONECRANES BUY INDIAN WMI CRANES LTD: N	g/h	b	g	g
05/02/2010	14:30:00	10	Outotec's holding in Ausmelt above 90%* maybe acquisitions	g/h	n	g	g
18/12/2009	14:00:00	10	Outotec completes acquisition of control in Larox through directed share issue and makes mandatory public tender offer for the remaining Larox shares	g/v	b	n	n
03/01/2008	11:00:00	10	Vacon to complete acquisition of TB Wood's AC drives business	g/h	gb	n	n
10/06/2010	14:30:00	10	Outotec has gained title to all the shares in Larox* maybe this will be shares related/related to row 117	g/v	n	n	n
22/01/2010	13:45:00	10	More than 90% of all Larox shares and votes tendered to Outotec	g/v	n	n	n
29/12/2009	13:00:00	10	Outotec supplements the offer document with the statement by the Board of Directors of Larox concerning the tender offer	g/v	n	n	n
30/12/2008	13:00:00	10	Vaisala acquires Aviation Systems Maintenance Inc.	g/v	n	n	n
01/04/2008	16:00:00	10	Metso to establish "Metso Park" in India	g/new inv	n	n	n
07/05/2008	15:30:00	10	Metso acquires MAPAG Valves GmbH in Germany	g/h	n	n	n
13/06/2008	13:00:00	10	Metso completes the acquisition of Mapag Valves GmbH	g/h	n	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
			Metso to enter solid waste recycling equipment business through				
02/10/2009	12:30:00	10	acquisition of Danish M&J Industries A/S	g/h/new inv	n	n	n
07/10/2009	13:30:00	10	Metso completes the acquisition of M&J Industries A/S	g/h	n	n	n
10/07/2009	13:00:00	11	Outotec established a joint venture with Eesti Energia	g	n	b	b
			Outotec and Geological Survey of Finland agreed on partnership				
27/03/2008	13:05:08	11	Vacon and Veolia Water Solutions & Technologies sign a global supply	g	n	n	n
			agreement				
26/05/2008	13:00:00	11	Metso and Wärtsilä's joint venture cleared by regulatory authorities	g	n	n	n
			- name of the joint venture is MW Power Oy				
14/11/2008	13:30:00	11	Wärtsilä's and Metso's joint venture cleared by regulatory authorities - name of the joint venture is MW Power Oy	g	n	n	n
			Wärtsilä enters rail market through joint venture with				
27/05/2010	17:43:44	11	Transmashholding in Russia	g	n	n	n
			KONECRANES and HEWLETT PACKARD SIGN A				
26/02/2008	14:00:00	11	global IT infrastructure services	g	n	n	n
08/10/2007	13:01:06	12	INVITATION TO A NEWS CONFERENCE	n	b	b	b
17/04/2009	12:30:00	12	Invitation to a briefing and teleconference	n	n	b	b
02/02/2009	11:00:00	12	Invitation to a briefing and teleconference	n	n	b	b
31/07/2008	15:00:00	12	Invitation to a briefing and teleconference	n	n	b	b
			Metso Annual General Meeting, April 2, 2008: President and CEO Jorma				
02/04/2008	15:00:00	12	Eloranta's review	n	g	g	g
22/02/2010	13:30:00	12	Notice to the Annual General Meeting	n	n	g	g
19/02/2009	16:00:00	12	Notice to the Annual General Meeting	n	n	gb	n
08/09/2010	14:00:00	12	Invitation to a Q&A session with Outotec's CEO	n	g	n	n
16/10/2008	13:30:00	12	Invitation to a briefing and teleconference	n	g	n	n
27/02/2008	11:25:05	12	Invitation to the Annual General Meeting of Vaisala	n	b	n	n
09/12/2010	14:00:00	12	Invitation to a Q&A session with Outotec's CEO	n	n	n	n
14/06/2010	12:00:00	12	Invitation to a Q&A session with Outotec's CEO	n	n	n	n
19/03/2010	12:00:00	12	Invitation to a Q&A session with Outotec's new CEO	n	n	n	n
26/02/2008	16:00:00	12	Invitation to the Annual General Meeting of Outotec Oyj	n	n	n	n
22/02/2010	14:00:00	12	Invitation to Vaisala's Annual General Meeting	n	n	n	n
20/10/2010	15:00:00	12	Invitation to a briefing and teleconference	n	n	n	n
21/04/2010	14:00:00	12	Invitation to a briefing and teleconference	n	n	n	n
29/01/2010	15:00:00	12	Invitation to a briefing and teleconference	n	n	n	n
20/10/2009	15:15:00	12	Invitation to a briefing and teleconference	n	n	n	n
31/07/2009	10:15:00	12	Invitation to a briefing and teleconference	n	n	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
18/04/2008	14:30:00	12	Invitation to a briefing and teleconference	n	n	n	n
29/02/2008	12:00:00	12	Notice of Annual General Meeting of Vacon Plc	n	n	n	n
04/02/2008	14:00:00	12	Invitation to a briefing and teleconference: Publishing of Vacon Plc's 2007 Financial Statement	n	n	n	n
20/04/2007	15:15:04	12	Invitation to a briefing and teleconference: Publishing of Vacon Plc's Interim Report for January - March 2007	n	n	n	n
09/03/2007	14:30:24	12	NOTICE OF ANNUAL GENERAL MEETING OF VACON PLC	n	n	n	n
29/06/2007	13:00:11	12	Invitation to a news conference	n	n	n	n
15/04/2009	11:45:00	12	INVITATION TO A NEWS CONFERENCE	n	n	n	n
04/02/2010	18:00:00	12	Notice to the Annual General Meeting of Wärtsilä Corporation	n	n	n	n
30/06/2010	14:00:00	13	Restated operating segment information for 2009 and 2010 according to the new operational model	n	g	n	n
18/09/2007	10:00:25	13	Vaisala seeks growth from service and solutions business	n	n	n	n
08/04/2009	15:45:00	14	Konecranes signed a EUR 200 million. REVOLVING CREDIT AGREEMENT	g	g	n	n
10/06/2009	11:00:00	14	Metso obtained EUR 200 million of long-term funding	g	n	n	n
13/03/2008	11:00:00	15	CEO Pekka Lundmark comments KONECRANES PLC'S ANNUAL GENERAL MEETING Recent Demand DEVELOPMENT AND PLAY THE OUTLOOK FOR 2008	n	g	gb	b
12/04/2007	17:10:33	15	Resolutions of Huhtamäki Oyj's Annual General Meeting of Shareholders	n	n	b	b
13/03/2009	16:50:00	15	KONECRANES SUPPLEMENT 03/12/2009 The information given decision of the AGM	n	g	g	g
04/03/2010	17:50:00	15	Decisions of Wärtsilä's Annual General Meeting 4 March 2010	n	g	n	n
18/03/2009	16:30:00	15	Resolutions of Outotec Oyj's Annual General Meeting 2009	n	b	n	n
02/04/2007	15:17:44	15	Resolutions of Outokumpu Technology Oyj's Annual General Meeting 2007	n	b	n	n
18/03/2008	15:00:00	15	Resolutions of Outotec's AGM 2008	n	gb	n	n
18/03/2010	14:30:00	15	Resolutions of Outotec Oyj's Annual General Meeting	n	n	n	n
31/03/2009	17:20:00	15	Decisions of the Annual General Meeting of Metso Corporation	n	n	n	n
30/03/2010	17:15:00	15	Decisions of the Annual General Meeting of Metso Corporation	n	n	n	n
11/03/2009	17:25:00	15	Decisions of Wärtsilä's Annual General Meeting 11.3.2009	n	n	n	n
31/08/2009	13:30:00	15	RESOLUTIONS OF KONECRANES PLC'S EXTRAORDINARY GENERAL MEETING	n	n	n	n
01/03/2010	13:20:00	15	Decisions taken by KONE Corporation's Annual General Meeting and Board of Directors	n	n	n	n
29/02/2008	11:55:00	15	Decisions Taken at Cargotec Corporation's Annual General Meeting	n	n	n	n
05/03/2009	15:50:00	15	Decisions Taken at Cargotec Corporation's Annual General Meeting	n	n	n	n
05/03/2010	13:10:00	15	Decisions taken at Cargotec Corporation's Annual General Meeting	n	n	n	n
03/04/2009	18:00:00	15	Resolutions of Huhtamäki Oyj's Annual General Meeting of Shareholders	n	n	b	b

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
28/03/2007	17:51:27	15	Vacon Plc's Annual General Meeting of Shareholders	n	n	b	b
22/03/2007	18:15:00	15	Annual Meeting of Shareholders	n	n	n	n
12/03/2009	16:20:00	15	KONECRANES PLC'S ANNUAL GENERAL MEETING	n	gb	n	n
08/03/2007	14:43:00	15	KONECRANES ANNUAL GENERAL MEETING KONECRANES NEW BOARD OF DIRECTORS MEETING	n	n	n	n
25/03/2010	14:40:00	15	Cargotec's President and CEO review the Annual General Meeting	n	n	n	n
26/02/2007	14:30:30	15	Wärtsilä's CEO at AGM: "Strong growth in orderintake continued in January-February 2008 - growth 47% on the same period last year"	n	n	n	n
19/03/2008	15:30:00	16	Wärtsilä publishes January-September 2008 Interim Report on 24	g	n	gb	g
07/10/2008	11:15:00	16	October 2008 at 8.30 a.m. local time KONECRANES ANNOUNCES INTERIM REPORT	n	g	b	b
21/04/2009	17:00:00	16	JANUARY-MARCH 29/04/2009 Correction to KONE's Interim Report schedule for January-March, 2008	n	b	b	b
09/04/2008	10:12:47	16	Interim Report on April 22, 2008 Cargotec to publish its January-June 2009 Interim Report on 20.7.2009	n	b	b	b
06/07/2009	14:00:00	16	KONECRANES ANNOUNCES INTERIM REPORT JANUARY-JUNE 30/07/2008	n	gb	b	b
15/07/2008	13:30:00	16	KONE publishes January 1-December 31, 2008 Financial Statement	n	gb	b	b
13/01/2009	10:13:37	16	Bulletin on Friday, January 23, 2009 at 12:30 p.m. Metso Corporation's largest shareholders according to the shareholder register on November 2, 2009	n	gb	b	b
03/11/2009	11:15:00	16	Wärtsilä's Interim Report January to March 2010 to be published 23 April 2010 at 8.30 a.m. local time	n	n	b	b
12/04/2010	13:30:00	16	KONECRANES ANNOUNCES FINANCIAL STATEMENTS FOR 2009 ON THURSDAY 02/04/2010	n	n	b	b
19/01/2010	10:30:00	16	KONECRANES ANNOUNCES INTERIM REPORT JANUARY-JUNE 29/07/2009	n	g	g	g
21/07/2009	10:30:00	16	Wärtsilä's Interim Report January to September 2009 to be published	n	g	g	g
07/10/2009	11:00:00	16	22 October 2009 at 8.30 a.m. local time KONECRANES ANNOUNCES INTERIM REPORT	n	gb	g	g
11/04/2008	15:00:00	16	JANUARY-MARCH 29/04/2008 Wärtsilä's Financial Statements Bulletin 2009 to be published	n	gb	g	g
11/01/2010	13:00:00	16	28 January 2010 at 8.30 a.m. local time KONE Publishes January 1-December 31, 2007 Financial Statement	n	n	g	g
11/01/2008	13:20:15	16	Bulletin on Friday, January 25, 2008 at 12:30 p.m.	n	n	g	g

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
10/10/2007	14:30:00	16	CORRECTION TO Reuters News KONECRANES ANNOUNCES INTERIM REPORT	n	gb	gb	n
05/07/2010	11:30:00	16	APRIL-JUNE 07/22/2010 Cargotec to publish its January-June 2009 Interim Report on 20.7.2009	n	n	gb	n
16/07/2009	11:45:00	16	at 12.00 pm (EEST) Wärtsilä publishes January-March 2008 Interim report on 25 April	n	n	gb	b
18/04/2008	11:00:00	16	2008, at 8.30 a.m. local time Wärtsilä publishes January-June 2008 Interim Report on 24 July, 2008,	n	g	n	n
27/06/2008	15:00:00	16	at 8.30 a.m. local time Wärtsilä's Financial Statement Bulletin 2008 to be published 30	n	g	n	n
19/01/2009	11:00:00	16	January 2009 at 8.30 a.m. local time Cargotec to Publish its 2008 Financial Statements Release on Monday,	n	g	n	n
16/01/2009	11:00:00	16	February 2, 2009 at 12.00 p.m. Finnish time The largest owners of Metso Oyj according to the list of shareholders in 2.11.2010	n	g	n	n
02/11/2010	13:30:00	16	Wärtsilä's Interim Report January to June 2010 to be published 21 July 2010 at 8.30 a.m. local time	n	b	n	n
07/07/2010	11:00:00	16	KONECRANES ANNOUNCES INTERIM REPORT JANUARY-MARCH 04/28/2010	n	b	n	n
13/04/2010	11:45:00	16	ANNOUNCEMENT BY MIKAEL LILIUS, CHAIRMAN OF THE BOARD	n	b	n	n
21/09/2007	15:20:07	16	Cargotec to Publish its 2007 Financial Statements Release on	n	gb	n	n
11/01/2008	10:30:00	16	Thursday, January 31, 2008 at 8.00 a.m. Finnish time HUHTAMÄKI OYJ: Summary of stock exchange releases and announcements	n	gb	n	n
01/03/2007	11:40:50	16	2006 Metso Corporation s largest shareholders according to the shareholder	n	n	n	n
02/11/2007	11:00:59	16	register on November 1, 2007 Metso Corporation's largest shareholders according to the shareholder	n	n	n	n
04/11/2008	11:15:00	16	register on November 3, 2008 Wärtsilä's Interim Report January to March 2009 to be published 24	n	n	n	n
14/04/2009	13:30:00	16	April 2009 at 8.30 a.m. local time Wärtsilä's Interim Report January to June 2009 to be published 22	n	n	n	n
07/07/2009	11:00:00	16	July 2009 at 8.30 a.m. local time KONECRANES publish its Financial Statements 2007	n	n	n	n
24/01/2008	11:30:00	16	FRIDAY 02/08/2008 AT 10:00 AM	n	n	n	n
28/01/2009	11:45:00	16	KONECRANES ANNOUNCES FINANCIAL	n	n	n	n

Date	Time	Class	Description	intrinsic nature of announcement	pre	post	final class
07/10/2010	14:26:26	16	KONECRANES ANNOUNCES INTERIM REPORT JANUARY-SEPTEMBER 10/21/2010	n	n	n	n
04/07/2007	10:09:35	16	KONE Publishes January-June 2007 Interim Report on 20 July, 2007 at 12:30 PM	n	n	n	n
08/10/2007	13:45:39	16	KONE Publishes January-September 2007 Interim Report on October 23, 2007 at 12:30 PM	n	n	n	n
06/10/2008	12:04:09	16	KONE publishes January-September 2008 Interim Report on October 21, 2008 at 12:30 p.m.	n	n	n	n
19/02/2007	15:40:30	16	Cargotec's 2006 Releases	n	n	n	n
06/07/2007	11:15:49	16	Cargotec to Publish its January-June 2007 Interim Report on Thursday, July 19, 2007 at 12:00 p.m. Finnish Time	n	n	n	n
09/10/2007	14:50:13	16	Cargotec to Publish its January-September 2007 Interim Report on Thursday, October 18, 2007 at 12:00 p.m. Finnish Time	n	n	n	n
09/04/2008	13:30:00	16	Cargotec to Publish its January-March 2008 Interim Report on Friday, April 18, 2008 at 12:00 p.m. Finnish time	n	n	n	n
07/07/2008	13:15:00	16	Cargotec to Publish its January-June 2008 Interim Report on Thursday, July 17, 2008 at 12:00 p.m. Finnish time	n	n	n	n
06/10/2008	13:45:00	16	Cargotec to Publish its January-September 2008 Interim Report on Monday, October 20, 2008 at 12:00 p.m. Finnish time	n	n	n	n
09/04/2009	13:00:00	16	Cargotec to Publish its January-March 2009 Interim Report on April 28 Cargotec to publish its January-September 2009 Interim Report on 22	n	n	n	n
09/10/2009	13:15:00	16	October 2009 Cargotec's January-March 2010 Interim Report to be published 29 April 2010 at 8:30 am EEST	n	n	n	n
13/04/2010	15:00:00	16	KONECRANES ANNOUNCES INTERIM REPORT APRIL-JUNE 07/22/2010	n	n	n	n
05/07/2010	11:30:00	16	Cargotec's January-September 2010 Interim Report to be published 27 October 2010 at 8:30 am (EEST)	n	n	n	n
08/10/2010	10:30:00	16		n	n	n	n