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Intellectual capital information and stock recommendations: Impression management?

Abstract

Purpose - This study investigates *what* and *how* intellectual capital information (ICI) conveyed through analyst reports varies by the type of stock recommendation. It draws on the theory of impression management.

Design/methodology/approach – Content analysis is used to investigate ICI in the full text of sell-side analysts' initiating coverage reports. It categorises ICI by type and three qualitative characteristics – *evidence*, *time orientation* and *news-tenor*. It explores how the extent, types and qualitative characteristics of ICI found in analyst reports vary by the type of stock recommendation accompanying the analyst report.

Findings – Given the conflicting interests facing analysts and relative amenability of ICI, it was found that analysts use ICI to manage perceptions. In particular, analysts attempt to use ICI in their reports to subdue the pessimism associated with an unfavourable recommendation, increase credibility of favourable recommendations and distinguish sell from hold recommendations.

Practical implications – This study contributes to the literature on impression management by extending its application to the study of sell-side analysts' decision processes and it alerts future researchers to the wider role played by ICI beyond its use in generation of forecasts and valuations. The findings of this research have implications for consumers of analyst reports as the level of negativity/positivity of forecasts and recommendations may be altered as a result of the semantics associated with ICI.

Originality/value - This paper explores analysts' use of ICI conditional on the type of stock recommendation accompanying the report. Findings are explained using the theory of impression management.

Key words - impression management, intellectual capital, sell-side analysts, stock recommendations

Paper type Research paper

1. Introduction

Sell-side analysts (hereafter analysts) are highly influential capital market intermediaries. Retail and institutional investors rely on analyst research for making trading decisions (e.g., Campbell and Slack, 2008; Fogarty and Rogers, 2005; Holland, 2006). Nonetheless, a number of studies indicate a conflict of interest in sell-side research. It has been claimed that analysts issue buy recommendations on stocks not because they expect them to outperform the market but because doing so will generate investment banking business and trading profits for their firms and increase their compensation (Michaely and Womack, 2005). Analyst optimism is easily observable by looking at the ratio of buy to sell recommendations, which is positively skewed. However, this insincere and manipulative behaviour is detrimental to analysts' reputation. By publishing biased research, analysts may lose credibility in the eyes of investors, and thus risk long-term career prospects. A substantial body of research documents that analyst recommendations are over-optimistic in general despite this risk (Chan *et al.*, 2007; Dechow *et al.*, 2000; Michaely and Womack, 2005).

Investors recognise the bias in analyst research, although not its full extent. Compared to large traders, small traders are more ignorant of this bias (Malmendier and Shanthikumar, 2007). It has been shown that investors are sceptical about favourable recommendations and recommendation upgrades. For instance, Womack (1996) found that investors place greater value on a new sell recommendation than a new buy recommendation and they transact more vigorously in response to a recommendation downgrade compared to an upgrade. Due to the bias in analysts' stock recommendations and earnings forecasts, investors tend to consider other information as well as arguments provided in analyst reports in their decision making, conditional on the type of stock recommendation (Francis and Soffer, 1997; Morgan and Stocken, 2003; Ramnath *et al.*, 2008; Twedt and Rees, 2012; Winchel, 2011).

Given analysts' need to be both optimistic and maintain perceived credibility, in this paper, it is hypothesised that they engage in impression management. Potentially, analysts could utilise their reports to manage impressions. Tsao (2002, p.1) highlighted the importance of qualitative aspects of analyst reports when she stated that "...stock ratings and target prices are just the skin and bones of analysts' research.

The meat of such reports is in the analysis, details, and tone”. This is because analysts need to convince their clients on the appropriateness and the basis of recommendations they issue (e.g., Nielsen, 2008; Previts *et al.*, 1994; Rogers and Grant, 1997). However, existing research does not sufficiently look at the relationship between the nature of information used in analyst reports and the type of stock recommendation.

Central to this paper is the presumption that the extent and types of information used and how that information is used in analyst reports is carefully decided by analysts in furtherance of their agenda for the company analysed. Some types of information are more suitable for this purpose than others (Breton and Taffler, 2001). Of these, arguably information on intellectual capital (IC)[1] of firms is particularly helpful to analysts, as IC is an integral part of ‘corporate value creation’ in firms and it is directly or indirectly linked to the generation of future economic benefits (Kaufmann and Schneider, 2004). A growing body of literature documents the presence of intellectual capital information (ICI) in analyst reports (e.g., Arvidsson, 2003; Flöstrand, 2006; García-Meca, 2005; Orens and Lybaert, 2007). Analysts can exercise considerable freedom in interpreting ICI and easily manipulate it to suit their recommendation, partly due to the challenges associated with its acquisition and use (García-Ayuso, 2003; Holland, 2003; Mouritsen, 2003). Arguably, conscious choices are made not only about the types of ICI but also how ICI is conveyed in furtherance of analysts’ agenda.

The purpose of this paper is to investigate whether *what* and *how* ICI conveyed in analyst reports varies by the type of stock recommendation. Only García-Meca and Martínez (2007) have examined this issue before. However, their study focused on the variability of the extent of ICI by recommendation type. In contrast this study investigates how types and qualitative characteristics of ICI vary by analyst recommendation type. Moreover, this paper draws on the theory of impression management to investigate this phenomenon.

The remainder of this paper proceeds as follows. Section 2 provides a brief review of the relevant literature. This is followed by section 3 on the application of impression management theory to the given context. Section 4 presents the sample and the

methodology used. Section 5 provides the results of the content analysis and discusses the findings. The final section provides some concluding remarks.

2. Related literature

Analysts' research, as found in their reports, contributes to market efficacy by impounding information about a security's fundamentals on its price (Frankel *et al.*, 2006). There is research evidence of the widespread use of analyst reports by various capital market participants. For instance, among the numerous sources of information used by retail investors, analyst reports are considered highly influential (Hirst *et al.*, 1995; SRI International, 1987). Retail investors either directly or through stockbrokers utilise analyst reports for making security evaluation decisions. Analyst reports are also used by buy-side analysts and fund managers as an input to their decision making processes (Fogarty and Rogers, 2005; Holland, 2006), and are considered as one of their most important information sources (e.g., Vergoossen, 1993). As a result, analyst reports have been the subject of a number of studies on analysts' information collection, use and processing behaviour, and their impact on the capital market.

Analysts gather company specific and other related information, analyse it and publish research reports. Analyst reports commonly include three key indicators: an earnings forecast, a price target and a stock recommendation in the form of buy/hold/sell[2] (Asquith *et al.*, 2005; Malmendier and Shanthikumar, 2007). The body of an analyst report contains arguments constructed through the discussion of quantitative and qualitative information in order to support the key summary measures. As documents in the public domain, these arguments tend to be well thought out and carefully worded (Campbell and Slack, 2008). Although the existing analyst literature has largely focused on the summary measures, studies on the information contained in analysts' arguments are now emerging. For instance, Asquith *et al.* (2005) highlight that information contained in analyst arguments are just as important as summary measures. Further, Twedt and Rees (2012) found that the level of detail as well as the tone of arguments in analyst reports is considered as important by investors.

Compared to the literature on other properties of analyst reports prior research on the variability of information disclosed in analyst reports by the type of recommendation is limited. Bradshaw (2002) examined analysts' selective use of target prices in support of recommendations. He argues that analysts do not disclose target prices when it is likely that such disclosure is perceived as bad news or would not have justified the recommendation. More interestingly, this study revealed that justifications provided for favourable recommendations differ from unfavourable ones. In that, favourable recommendations were found to be justified using financial indicators, such as the price-earnings ratio, while unfavourable recommendations were supported with qualitative statements. Also, Ho and Harris (2000) document that analysts' rationale for investment recommendations differs between recommendation upgrades and downgrades. They found that analysts issuing recommendation downgrades support them with quantitative analyses (e.g., earnings forecasts), while recommendations upgrades were attributed to qualitative factors, such as general changes in business prospects, and were not justified quantitatively. The authors attribute this behaviour to analyst optimism associated with asymmetric costs regarding recommendation changes.

On the link between earnings forecasts and stock recommendations, Finger and Landsman (2003) found that there is no association between recommendation changes and concurrent changes in analysts' forecasted earnings growth. In a related study, Bradshaw (2004) documented that analysts' earnings forecasts when incorporated in to present value based models provide valuations inconsistent with their stock recommendations. He submits that analysts rely on valuation heuristics in making stock recommendations. However, no relationship has been found between the type of stock recommendation and the valuation techniques used by analysts (Demirakos *et al.*, 2004).

There have been only two studies on the link between narrative content in analyst reports and the type of stock recommendation. Breton and Taffler (2001) examined both financial and non-financial information in analyst reports. A unique feature of this study is that the authors not only investigated types of information, but also their news-tenor (i.e., positive, neutral and negative). They note that few types of non-financial qualitative information (i.e., firm management, strategy and market

conditions) are significant in distinguishing between the different types of stock recommendations. Furthermore, they attribute the likelihood of making a buy (sell) recommendation to increased (reduced) disclosure of positive and neutral information on management and strategy and positive information on firm profitability. It is noteworthy for the purpose of the present study that management and strategy are important IC attributes. The other study by García-Meca and Martínez (2007) specifically examined whether the amount of ICI communicated in analyst reports varies by the type of stock recommendation contained in it. They found that more ICI is disclosed in buy reports than in sell reports.

None of the previous studies have examined how the type and qualitative characteristics of ICI (or any type of information for that matter) communicated in analyst reports varies with the type of stock recommendation. This paper extends the existing knowledge on analysts' communication strategy by evaluating *how* ICI has been used depending on the type of the stock recommendation. Prior studies reviewed above have essentially been of an exploratory nature. The present study differs from them as it provides an explanation based on the theory of impression management.

3. Impression management and analysts' reports

The theory of impression management, which originated in the social-psychology literature, explains that individuals attempt to influence desired perceptions of themselves in order to gain advantage (Gardner and Martinko, 1988; Schlenker, 1980; Schneider, 1981). Impression management behaviour of individuals using verbal, as well as non-verbal tactics, has been studied in various organisational contexts (e.g., Stevens and Kristoff, 1995; Wayne and Ferris, 1990). Highhouse *et al.* (2009) submit that not only individuals, but also corporations as social actors, engage in impression management to enhance their respectability and impressiveness. One way in which companies engage in impression management is through their annual reporting practices (Neu *et al.*, 1998) by strategically presenting narratives (Cho *et al.*, 2010), visuals (Davison, 2010) and graphs (Penrose, 2008). It has also been found that company management influences the level of detail and complexity in annual reports to obfuscate poor performance (Li, 2008). Likewise, this paper conjectures that impression management motives underpin communications in analysts' research reports.

Fogarty and Rogers (2005), through the lenses of institutional theory and sociology of professional groups, highlight that financial analysts' work cannot be understood devoid of the social fabric that embeds professional claims. The analysts' social milieu includes the corporate culture of the stock broking firm for which they work, institutional investors and their buy-side analysts, and management of the companies they follow. These social actors exert pressure on analysts to act in ways that conflict with each other. On the one hand, analysts face pressure to issue optimistic forecasts and recommendations and on the other hand this behaviour threatens their reputation and career.

Analysts' relative optimism is encouraged by a corporate culture that rewards behaviour resulting in attracting and maintaining underwriting relations and generating trading commission (Jackson, 2005; Mehrana and Stul, 2007). Such analysts are more likely to be promoted in their jobs (Hong and Kubik, 2003). It has also been argued that analysts have increased incentives to issue optimistic forecasts and recommendations to curry favour with management to obtain private information (Das *et al.*, 1998; Westphal and Clement, 2008) or information on a priority basis (Campbell and Slack, 2008). It is the relationships and networks that analysts build and maintain with company personnel that drive their competitive advantage (Johansson, 2007). As a result, analysts are reluctant to issue sell recommendations and include negative statements about the company and its management in their reports (Fogarty and Rogers, 2005). They express such information "in less than direct terms and in terms capable of being overlooked or missed altogether" (Campbell and Slack, 2008, p.7).

However, Jackson (2005, p.674) argues that incentives to generate optimism are short lived:

[t]his incentive is limited in reality by analysts' concerns about their reputation. Since analysts interact with investors repeatedly, opportunistic behaviour may be curtailed by the threat of negative repercussions in the future. In this situation, the analyst must trade off the short-term incentive to lie and generate more trade against the long-term gains from building a good reputation.

Institutional investors and buy-side analysts – the main clients of sell-side analysts – can exert pressure to align analysts’ incentives with accurate and unbiased forecasts and recommendations. The trading business allocated to a stockbroking firm by large institutional investors depends on the quality of research produced by them and as a consequence analysts’ remuneration and career prospects depend on the quality of their research (Frankel *et al.*, 2006). Hence, over-optimism can put their reputation and career at risk. It has been found that highly reputable analysts produce more accurate and less biased forecasts than less reputable analysts (Fang and Yasuda, 2009).

As a result of the conflicting incentives found in the social milieu of the analysts’ world, there is an argument for adopting impression management strategies to protect their reputation and at the same time seem to be loyal to the stockbroking firm, investment banking clients and companies. Lending credence to this point of view, it has been documented that analysts “speak in two tongues” where stock recommendations are targeted at retail investors and earnings forecasts at institutional investors with each having different degrees of optimism (Malmendier and Shanthikumar, 2006). This paper argues that the content in analyst reports could be strategically utilised to manage impressions, which can sometimes be misaligned with the stock recommendations they carry. Thus, the main hypothesis of this paper is that the extent and types (i.e., *what*), and qualitative characteristics (i.e., *how*) of ICI in analyst reports vary by the type of stock recommendation, underpinned by impression management motives.

4. Research method

4.1. Sample

This study collects empirical data using content analysis of analysts’ initiating coverage reports. The sample consists of 64 initiating coverage reports written between 2003 and 2008 on companies in the *S&P/ASX 300* index. The sample was stratified by eight Global Industry Classification System (GICS®) sectors in order to be representative of analyst reports on companies with varying intensity of reliance on knowledge resources and IC value drivers. Between seven and nine analyst reports were selected for each sector depending on availability of reports[3]. The reports were

sourced from the OneSource Global Business Browser database, Thomson Analytics database, company websites and from individual analysts. Table 1 provides descriptive statistics of the sample. Accordingly, the sample represents eight sectors and 15 brokerage houses. The average length of an analyst report is approximately 26 pages. Analyst reports in the sample are almost equally distributed between buy and hold recommendations. Only eight reports have sell recommendations.

Table 1: Descriptive statistics of the sample

Profile	No. of reports	Profile	No. of reports
GICS® sector		Recommendation type	
Consumer discretionary	8 (12.5%)	Buy	28 (44%)
Consumer staples	7 (11%)	Hold	27 (42%)
Financials	8 (12.5%)	Sell	8 (12%)
Health care	8 (12.5%)	No recommendation ^a	1 (2%)
Information technology	8 (12.5%)	Total	64
Materials	9 (14%)	Brokerage firm	
REIT	8 (12.5%)	ABN AMRO Equities Australia Ltd.	21
Utilities	8 (12.5%)	Citigroup Global Markets Inc.	12
Total	64	Commonwealth Securities Ltd.	5
Year of report		Cowan & Company Ltd.	1
2003	2 (3%)	Davenport & Company Ltd.	1
2004	11 (17%)	DBS Vickers Securities (Singapore) Pte Ltd.	1
2005	20 (31%)	Deutsche Bank AG.	11
2006	10 (16%)	Independent International Investments Ltd.	1
2007	17 (27%)	Kaufman Bros., L.P.	1
2008	4 (6%)	Macquarie Securities (Australia) Ltd.	4
Total	64	RBC Dominion Securities Inc.	2
		Wilson HTM Investment Group Ltd.	1
		BBY Ltd.	1
		Tricom Equities Ltd.	1
		Merrill Lynch & Company Inc.	1
		Total	64

^a One analyst report did not contain a recommendation as it was written on a company seeking listing on the Australian Securities Exchange, and thus it had not begun trading at the time the analyst report was written. This report was excluded from further analysis.

When analysing ICI by stock recommendation type both hold and sell recommendations are combined and referred to as ‘unfavourable recommendations’. One reason for this is the relatively small number of analyst reports with sell-recommendations in the sample. This is not surprising given analysts’ reluctance to issue sell-recommendations. Second, finance researchers argue that users of analyst

reports interpret hold recommendations as sell recommendations as they perceive sell-side research as being biased (e.g., Bradshaw, 2002; Fogarty and Rogers, 2005; Malloy, 2005).

4.2. Content analysis

All narrative and visual references to IC were coded into predefined categories using manifest semantic (meaning oriented) content analysis[4]. In this variant of content analysis researcher classifies written content according to their denotative (or literal) meanings into predefined categories (Krippendorff, 2004). When coding content each sentence/visual was first decomposed into information items and then information items containing IC were coded, while those not containing IC were ignored. Following Beattie and Thomson (2007, p.142) an information item was defined as “a single piece of information that is meaningful in its own right”.

In order to address the research objectives and to capture multiple facets of IC information a categorisation scheme was built around four dimensions: *topic*, *evidence*, *time orientation* and *news-tenor*. Table 2 illustrates the four dimensions investigated in this study and the main content categories of each dimension.

Table 2: Main dimensions of investigation

Dimension	Classification	No. of Categories
Topic	External capital, Internal capital, Human capital	3
Evidence	Discursive, numerical (non-monetary), monetary, visual	4
Time orientation	Past-oriented, forward-looking, non-time-specific	3
News-tenor	Positive, neutral, negative	3

The topic dimension is based on the widely used tripartite taxonomy of IC, where IC comprises external, human and internal capital. Subcategories were formulated under each of these three IC categories (see Appendix 1). Topic is the primary variable of investigation and thus information items were further analysed for the remaining three dimensions only if they referred to an IC subcategory.

A coding instrument was used to systematise the data generating process and to increase reliability of data. As recommended by Boyatzis (1998), the coding instrument comprised operational definitions for each content category/subcategory, coding rules for determining whether a recording unit falls within a given category/subcategory, and examples of various types of recording units that can and cannot be classified into a category/subcategory.

Before finalising the coding instrument several rounds of test coding were undertaken. Two coders independently applied the coding rules to 378 randomly selected sentences and visuals from sampled analyst reports to calculate inter-coder reliability. A satisfactory level of inter-coder reliability was achieved. As a result the data collection in the main study was conducted by only one coder. In order to ensure reliability of coding in the main study intra-coder reliability was assessed under a test-retest condition, by re-coding three analyst reports randomly selected from the sample, three months from the initial coding by the same coder. The reliability coefficients were satisfactory[5].

5. Results and discussion

Results are presented on how the extent and types, quality and qualitative characteristics of ICI vary by the type of stock recommendation in subsections 5.1, 5.2 and 5.3 respectively.

5.1. Extent and types of ICI

Table 3 shows the distribution of references to IC and the main IC categories across favourable and unfavourable recommendations and results of Mann-Whitney U tests of difference.

Table 3: References to IC and main IC categories by recommendation

Category	Mean number and % of references per analyst report			Z-Stat	Sig.
	Total sample (N = 62)	Favourable (N=27)	Unfavourable (N=35)		
External capital	24.40(45%)	19.41(36%)	28.26 (52%)	-0.490	0.624
Human capital	21.39(38%)	26.19 (45%)	17.69 (32%)	-1.073	0.283
Internal capital	9.53(17%)	10.44 (19%)	8.83 (16%)	-0.449	0.653
Total IC	55.32 (100%)	56.04 (100%)	54.77 (100%)	-0.589	0.556

The mean IC references per analyst report of the sample firms is 55.32. This number is greater for analyst reports carrying favourable recommendations compared to those having unfavourable recommendations. However, the difference between the means is relatively small and not statistically significant. This is consistent with results reported in García-Meca and Martínez (2007), who did not find the overall use of ICI in analyst reports to vary by the type of stock recommendation. Nonetheless, within analyst reports with unfavourable recommendations a greater variation in the extent of IC references exists between those with sell (35.13) and hold recommendations (60.59). It can be argued that, when issuing sell recommendations, analysts are reluctant to use ICI, possibly to avoid any contradiction in communicating value drivers when the recommendation points toward possible future value depletion. If ICI is to be included in reports with unfavourable recommendations, the references might need to take a negative tone as the company's value is expected to reduce in the future. Impression management motives discourage analysts to implicate pessimism beyond a threshold that is absolutely necessary to communicate an unfavourable recommendation and thus using ICI that would otherwise be detrimental to this motive.

Impression management motives may underpin the greater use of ICI in analyst reports with hold recommendations compared to sell recommendations. Prior researchers demonstrate that investors interpret hold recommendations as sell recommendations because analysts rarely issue sell recommendations (Bradshaw, 2004; Morgan and Stocken, 2003). Hence, if analysts intend to distinguish a 'hold' from a 'sell' in order to create a level of optimism, then they ought to provide strong arguments in reports carrying hold recommendations. Arguably, ICI can be particularly helpful for this cause. Also, it can be argued that analysts provide more details of IC in their reports in an attempt to create an impression that significant effort has been invested in the analysis leading to the recommendation thereby demanding credibility to the hold recommendation (Twedt and Rees, 2012).

In relation to analysts' relative use of information relating to the three IC categories across the recommendation types, a pattern does not emerge. There is a greater proportion of references to external capital than to human and internal capital in analyst reports with unfavourable recommendations. Also, human capital information

is more prevalent in analyst reports with favourable recommendations. Since the extent of references to the main IC categories is not statistically significantly different between favourable and unfavourable recommendations it is important to look at differences at IC subcategory level.

Table 4 shows the results of the Mann-Whitney U tests on the extent of references to each IC subcategory, between analyst reports with favourable and unfavourable recommendations. As shown in Table 4, only the extent of references to the 'corporate image and reputation', 'customer relationships, satisfaction and loyalty' and 'market share' subcategories show significant differences between analyst reports with favourable and unfavourable recommendations. All three of these subcategories relate to external capital. Interestingly, significantly more references are found in relation to each of these subcategories in analyst reports with unfavourable recommendations compared with favourable recommendations. On this basis, analysts appear to be using more of particular types of ICI rather than ICI in general in their arguments in discriminating between stock recommendations. Breton and Taffler (2001) made a similar observation. They found that from a range of financial and non-financial information categories investigated only neutral and positive references to management and strategy, positive references to profitability and negative references to market conditions could distinguish between buy and sell recommendations. Unlike Breton and Taffler's (2001) findings, the references to the three IC subcategories noted above are predominately positive even in analyst reports with unfavourable recommendations. From an impression management point of view these three types of ICI can be more easily utilised and manipulated to create a favourable picture of a company even having an unfavourable recommendation. According to impression management theory analysts who are compelled to issue an unfavourable recommendation (given the circumstances facing the company relative to its market valuation) may use arguments in their reports to reduce the level of negativity in order to manage their reputation among groups that provide incentives for optimistic analysis.

Table 4: Tests of differences between recommendation types

	Mean		Z statistic	P-value
	Favourable	Unfavourable		
External capital				
Brands	2.63	5.74	-1.410	0.159
Business collaborations	4.67	4.43	-0.115	0.909
Corporate image & reputation	1.26	2.26	-1.952**	0.050
Customer relationships, satisfaction & loyalty	0.07	0.66	-1.953**	0.050
Customers (other)	2.22	3.43	-0.530	0.596
Distribution	1.37	1.69	-0.992	0.321
Favourable contracts, licensing & franchising agreements	1.70	1.97	-0.267	0.789
Financial relations	2.96	2.91	-0.060	0.952
Government & other relationships	0.26	0.37	-0.576	0.564
Market share	2.26	4.80	-1.803*	0.071
Human capital				
Educational, professional & vocational qualifications	2.15	0.66	-1.013	0.311
Employee attitudes, commitment & satisfaction	0.00	0.00	0.000	1.000
Employee entrepreneurship	0.19	0.31	-0.322	0.748
Employees (other)	7.93	5.31	-0.841	0.400
Equality	0.00	0.00	0.000	1.000
Management team	0.52	1.14	-1.527	0.127
Remuneration & incentive schemes	0.89	0.29	-0.949	0.343
Skills and capabilities	0.74	0.17	-1.569	0.117
Training & development	0.04	0.03	-0.186	0.853
Work experience	13.48	9.69	-0.348	0.728
Working environment	0.26	0.09	-0.812	0.417
Internal capital				
Business model	1.15	1.37	-0.619	0.536
Corporate culture	0.41	0.09	-0.209	0.835
Corporate governance	1.07	0.17	-0.971	0.332
IP	0.00	0.03	-0.878	0.380
IT & IS	0.41	0.29	-0.402	0.688
Management philosophy	0.11	0.00	-1.623	0.105
Management processes, policies & practice	2.78	1.23	-0.619	0.536
Organisational & business expertise	1.07	0.57	-0.411	0.681
Organisational & management structure	1.30	1.49	-0.895	0.371
Quality	0.07	0.17	-1.125	0.261
Research & development	0.26	0.23	-1.037	0.300
Strategy	1.52	2.77	-1.382	0.167
Technology	0.30	0.43	-0.344	0.731

The columns entitled favourable and unfavourable show the mean number of references per each IC subcategory in analyst reports with buy and hold or sell recommendations, respectively.

* The difference between the groups is significant at the 0.10 level.

** The difference between the groups is significant at the 0.05 level.

5.2. ICI quality

Table 5 shows the Herfindahl Index (HHI)[6] scores for total IC references and references to its main categories calculated based on references to subcategories within them. Also it shows the results of Mann Whitney-U tests of difference between favourable and unfavourable recommendations for the HHI scores. These scores reflect the information quality in relation to IC, external capital, internal capital and human capital. The information quality increases when the HHI score for an information type approaches the calculated minimum score, which reflects an even spread of references across all IC subcategories within the category. As shown in this table, HHI scores for total ICI quality ranges from 0.244 for favourable recommendations to 0.225 for unfavourable recommendations. The difference is not statistically significant between the two recommendation types. Given that minimum score achievable is 0.029, ICI quality in analyst reports is far from optimal in analyst reports regardless of the recommendation type.

Table 5: IC information quality across recommendation types

Variable	Favourable recommendations			Unfavourable recommendations			Min HHI	Z-Stat	Sig.
	N	Mean HHI	SD	N	Mean HHI	SD			
External capital	27	0.435	0.198	33	0.366	0.214	0.100	-2.14	0.032
Internal capital	22	0.508	0.277	29	0.450	0.253	0.091	-0.77	0.440
Human capital	21	0.546	0.227	26	0.540	0.221	0.077	-0.26	0.797
Intellectual capital	27	0.244	0.105	34	0.225	0.134	0.029	-1.20	0.232

Table 5 highlights that information quality varies across the recommendation types in relation to the three main IC categories. Although analyst reports with unfavourable recommendations have better information quality on all three IC categories, only the information quality in relation to external capital shows a statistically significant difference. This indicates that relatively more (less) types of external capital information are utilised by analysts for unfavourable (favourable) recommendations. On this basis, it can be argued that favourable recommendations are a result of specific changes in companies' IC whereas unfavourable recommendations are supported by a more broad brush approach, possibly in an attempt to subdue the negativity associated with the recommendation as explained by impression management motives of analysts.

5.3. Qualitative characteristics of ICI

Table 6 (Panel A) highlights that negative references to IC are low and positive references are high in analyst reports regardless of the type of stock recommendation they carry. This is consistent with prior research that indicates analysts are disproportionately resistant to ‘bad news’ (Fogarty and Rogers, 2005). Interestingly, analyst reports with favourable recommendations do not solely contain positive and neutral ICI but also some negative ICI. Asquith *et al.* (2005) too noted that some negative remarks are made by analysts in their reports even when the recommendation is favourable. From an impression management lens this can be viewed as an attempt to increase credibility of the favourable recommendation. Winchel (2011) argues that provision of negative information together with positive information in favourable analyst reports increases credibility of the recommendation by increasing the perceived trustworthiness and competence. Perceived trustworthiness is enhanced as provision of negative information conflicts with analysts’ optimism bias. At the same time perceived analyst competence is enhanced as two-sided arguments imply evaluation of positives as well as negatives, which require detailed and effortful search of information.

The results also show that analysts use a tone that is more negative or neutral and less positive when referring to IC in analyst reports with unfavourable recommendations compared to favourable recommendations. However, the difference between favourable and unfavourable recommendations is only statistically significant for negative references. Thus, the tone of ICI is broadly in line with the type of recommendation, as analyst reports with unfavourable recommendations are thought to project more negativity.

Nonetheless, the non-significant finding on the extent of positive IC references is interesting as it implies that analyst reports with unfavourable recommendations are not any less positive than those with favourable recommendations. This again lies at the heart of impression management motives of analysts and supports the resultant argument that analysts attempt to create a level of optimism, even for companies for which they have made an unfavourable recommendation.

Table 6: Observations for qualitative dimensions

Recommendation type	Mean number of references per analyst report			Z-Stat	Sig.
	Total sample (N = 63)	Favourable (N=28)	Unfavourable (N=35)		
Panel A: News-tenor					
Negative	2.00 (4%)	0.89 (2%)	2.86 (5%)	-2.915	0.004
Neutral	22.10 (40%)	21.63 (38%)	22.46 (41%)	-0.554	0.579
Positive	31.23 (56%)	33.52 (60%)	29.46 (54%)	-0.788	0.430
Total	55.32 (100%)	56.04 (100%)	54.77 (100%)		
Panel B: Evidence					
Discursive	37.31(67%)	40.15 (71%)	35.11 (64%)	-0.568	0.570
Monetary	1.23 (2%)	1.11 (2%)	1.31 (2%)	-0.573	0.566
Numerical (non-monetary)	15.27 (28%)	13.56 (25%)	16.60 (30%)	-0.043	0.966
Visual	1.52 (3%)	1.22 (2%)	1.74 (2%)	-0.276	0.783
Total	55.32 (100%)	56.04 (100%)	54.77 (100%)		
Panel C: Time orientation					
Forward-looking	12.15 (22%)	11.74 (22%)	12.46 (23%)	-0.064	0.949
Past-oriented	15.52 (28%)	16.44 (30%)	14.80 (27%)	-0.206	0.837
Non-time-specific	27.66 (50%)	27.85 (48%)	27.51 (50%)	-0.895	0.371
Total	55.32 (100%)	56.04 (100%)	54.77 (100%)		

Table 6 (Panel B) shows that the proportion of discursive references to IC is comparatively high and numerical (non-monetary) references to IC are comparatively low in analyst reports with favourable recommendations. This observation is somewhat consistent with the argument put forward by Ho and Harris (2000) that analysts feel a lesser need to quantify their rationale for recommendation upgrades compared to downgrades. However, the differences between the types of recommendations are not found to be statistically significant for any of the evidence categories in the present study.

A further analysis into analyst reports with unfavourable recommendations reveals that discursive statements relating to IC are highest in analyst reports carrying sell recommendations (78 per cent) and lowest in analyst reports carrying hold recommendations (62 per cent) (see Table 7). The converse is found for the two quantitative categories. This analysis also reveals that analyst reports with sell recommendations contain the highest proportion of visual references when compared to the other two types of recommendations. However, the relatively small number of analyst reports with sell recommendations in the sample does not allow for any meaningful statistical testing of differences between sell and hold recommendations.

Based on the descriptive results it could be argued that analysts having issued a sell recommendation may use IC discursively and visually to lessen the degree of negativity surrounding an unfavourable recommendation. Arguably, IC narratives can be manipulated and subjected to different interpretations (Abhayawansa and Abeyssekera, 2009). In contrast, verifiability of numerical expressions hinders similar usage. Also, the need to distinguish ‘holds’ from ‘sells’, as noted elsewhere in this paper, may motivate analysts issuing sell recommendations to better convince the readers through substantial and verifiable claims. The relatively high degree of numerical expressions of IC found in analyst reports with hold recommendations would support this contention, as quantitative information is comparatively easily verifiable.

Table 7: Evidence category by buy, hold and sell recommendations

Recommendation type	Mean number of references per analyst report		
	Buy	Hold	Sell
Discursive	39.96 (71%)	37.44 (62%)	27.25 (78%)
Monetary	1.25 (2%)	1.59 (2%)	0.37 (1%)
Numerical (non-monetary)	13.64 (25%)	19.74 (33%)	6.00 (17%)
Visual	1.21 (2%)	1.81 (3%)	1.50 (4%)
Total	56.07 (100%)	60.59 (100%)	35.13 (100%)

Table 6 (Panel C) shows the mean number and the relative proportion of IC references pertaining to the three time orientation categories. The relative emphasis on the three time orientation categories is more or less consistent across the recommendation types with non-time-specific statements being the most frequently used followed by past-oriented and forward-looking statements for both recommendation types. There are no statistically significant differences across the recommendation types for any of the time orientation categories. Further (untabulated) analysis reveals that within analyst reports with unfavourable recommendations, past-oriented expressions of IC are highest in analyst reports with sell recommendations (33 per cent) and lowest in those with hold recommendations (26 per cent). Although statistical tests of differences between these two recommendation types are not meaningful due to the small sample size, tentative explanations can be provided based on the observations. Poor performing companies attract sell recommendations as the market values are expected to fall in the future. Arguably, such companies lack IC that drives future company value. Viewing this finding from the lens of ‘analyst optimism’ it can be argued that

when a company lacks IC with future implications, analysts may be relying on past investments in IC to portray it less negatively.

6. Summary and concluding remarks

Although numerous researchers have examined what analysts communicate through their reports, there is little research on *what* and *how* information conveyed through analyst reports varies by the type of stock recommendation. This study explored analysts' use of ICI conditional on the type of stock recommendation accompanying the report. Impression management theory was drawn upon to explain the findings.

The study found similarities as well as differences in *what* ICI was conveyed and *how* it was conveyed through analyst reports between those with unfavourable recommendations and favourable recommendations. It was found that compared to analyst reports with favourable recommendations those with unfavourable recommendations carried references to a comparatively broader range of IC, more external capital references, more references to IC that were past oriented and IC references that were not any less positive. At the same time analyst reports with favourable recommendations included references to few specific types of IC, some negative references to IC and more future oriented IC. Looking at the differences in the communication of ICI between analyst reports with unfavourable recommendations, it was found that more reference to IC and more numerical IC references were present in analyst reports with hold recommendations compared to those with sell recommendations. Also, analyst reports with sell recommendations comprised more past oriented IC references and more discursive IC references than analyst reports with hold recommendations.

This paper argues that analysts use ICI in their reports to communicate with their constituents in a self-serving manner. Based on the results of this study it can be argued that analysts use ICI in such a way so as to subdue the pessimism associated with unfavourable recommendations and to increase the credibility of favourable recommendations. In particular, it was found that ICI enables analysts to demonstrate optimism in subtle ways, even when the recommendations are unfavourable. By creating a level of optimism analysts attempt to build an impression of loyalty in the eyes of company management when they cannot issue favourable recommendations.

It is important for analysts to maintain their relationship with management in order to have continued access to company information and secure underwriting business. On the other hand, ICI enables analysts to gain trust in the favourable recommendations from their clients who would otherwise tend to discount such recommendations. Thus, from an impression management perspective, through the use of ICI analysts are capable of moderating the market perception that they are optimistically biased. Also, analysts attempt to strategically use ICI in order to distinguish a 'hold' from a 'sell' recommendation. This is probably due to the tendency in the capital market of treating both these in the same manner. However, analysts' impression management motive to downplay the negativity may be driving these efforts.

The overarching finding of this study is that analysts use ICI as a mechanism to further their agenda for managing impressions. In this regard the present study contributes to the literature on impression management by extending its application to the study of sell-side analysts' decision processes. Also, this study alerts future researchers to the wider role played by ICI beyond its use in generation of forecasts and valuations.

The findings of this research have implications for consumers of analyst reports as the level of negativity/positivity of forecasts and recommendations may be altered as a result of the semantics associated with ICI. It has previously been observed that markets react to information contained in arguments presented in analyst reports as well as the tone and level of detail in them (Asquith *et al.*, 2005; Twedt and Rees, 2012). Accordingly, to the extent that ICI used in analyst reports is inconsistent with the corresponding recommendations, reliance on such information can have distorting effects on share prices. Hence, this paper highlights the need to be aware of analysts' conflict of interests when reading analyst reports.

This study is not without its limitations. First, this study suffers from limitations associated with the use of content analysis methodology in general. Second, it uses a small sample. Hence, there are constraints on the conduct of statistical testing and also on the generalisability of findings. Third, a sampling validity threat could exist due to the limited number of stockbroking firms represented in the sample. Fourth, the IC categorisation scheme used in this study may not capture all ICI referred to in analyst reports, and as a result the inference making is driven by the researchers' conception

of IC. Future studies could adopt different research methods to investigate whether the inferences drawn from this study hold. Another direction for future research is to extend the scope of this study to include the full text of analyst reports without limiting it to ICI. Such an investigation could consider more features in the written text such as various aspects of tone (e.g., certainty, activity, realism etc.).

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Appendix

Intellectual capital categories and subcategories

External capital	Human capital	Internal capital
Brands	Educational qualifications	Business model
Business collaborations	Employee attitude, commitment & satisfaction	Corporate culture
Corporate image & reputation	Employee entrepreneurship	Corporate governance
Customers, relationships, satisfaction & loyalty	Employees (other)	Intellectual property
Customers (other)	Equality	Information systems & information technology
Distribution	Management team	Management philosophy
External contracts, licensing & franchise agreements	Remuneration & incentive schemes	Management processes, policies & practices
Financial relations	Skills & capabilities	Organisational & business expertise
Government and other relationships	Training & development	Organisational & management structure
Market share	Work experience	Quality
	Working environment	Research & development
		Strategy
		Technology (other)

Notes

1. Intellectual capital includes intangible resources, such as customer relationships, firm reputation, business collaborations, management systems, know-how, business models, and employee skills and competencies. Information about IC relates to an entity's existing IC and its' efforts to grow IC for sustained value creation and competitive advantage now and in the future (Boedker *et al.*, 2005).
2. Certain brokerage firms issues five types of recommendations that include strong buy and strong sell in addition to buy, hold, and sell categories. A five-level rating scale is used by I/B/E/S that categorises the recommendations into strong buy, buy, hold, underperform, and sell.
3. It was difficult to expand the sample due to several reasons. First, there was limited representation of *S&P/ASX 300* companies in certain GICS[®] sectors. Second, analyst coverage of companies that could be selected for the sample was limited. Third, content analysis being a laborious process placed excessive demand on researcher's time.
4. A full description of the content analysis method used in this paper can be found in Abhayawansa (2011).
5. Scott's pi coefficients above 0.80 were achieved. Scott's π for sentence coding was 0.864. Coefficients for individual dimensions were 0.908 for the *topic* dimension, 0.974 for the *evidence* dimension, 0.877 for the *news-tenor* dimension, and 0.814 for the time orientation dimension.
6. HHI is Herfindahl Index. It is used as a measure of quality of ICI in this study and is defined as: $HHI = \sum_{i=1}^n P_i^2$, where P_i is the proportion of references in IC subcategory i , and n is the number of IC subcategories investigated (*i.e.*, 34, in this study). The HHI score can range from one, when all IC references pertain to one IC subcategory, to $1/n$, when the IC references are spread evenly across all subcategories. In the context of this study a lower HHI score will indicate that analysts refer to many IC subcategories in their reports. Similarly, a high HHI score will indicate a low spread of IC references across IC subcategories, suggesting that analysts concentrate on few IC subcategories in their reports.