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**INTANGIBLE ASSETS IN ANNUAL REPORTS:
A DISCLOSURE INDEX**

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Abstract

Introduction of the IAS/IFRS entails important changes for Italian companies, characterised by civil law accounting culture, including assessment and accounting of intangible assets which is one of the most fundamental issues. Our attention focuses on companies listed in the main Italian Stock Exchange Indexes (S&P/Mib, Star and TechStar) in which the intangible assets are some of the most critical elements of company management. After a brief comparison between IAS 38 and Italian law, the aim of this paper is to study the effects of IAS 38 application on financial disclosure via an empirical analysis. The level of disclosure regarding the intangible assets is summarised via the construction of a “disclosure index” and is studied in greater depth by identification of the possible influencing factors. In the paper the focus is on disclosure since, as the scholars also agree, financial communication does not represent a neutral process but affects the behaviour of the recipients, and consequently that of the preparers. Financial statements as of 31st December 2005, which are the first IAS/IFRS-compliant documents, will be analysed.

Keywords: IAS/IFRS, intangible assets, disclosure.

1. Introduction: the Italian background

Transition to International GAAP represents a complex process for Italian companies. The move to the new regime is having a considerable impact on both accounting traditions and organisational procedures (such as personnel training) and operations (including new assessment procedures) involving amendments to both the administrative structure and the information systems within the organisation (Veneziani M., 2004). The reason for this profound cultural change, which affects the accounting system first and foremost, is connected with the environmental factors (legal system, tax system, accounting theory, company type, role of the financial market) typical of the national economic backgrounds: there is a considerable difference in these factors between Italy and the Anglo-Saxon countries, the originators of the IAS/IFRS (Nobes C.W. and Parker R., 2002; Choi F.D.S. and Meek G.K., 2005).

For instance, in Italy Roman law prevails, characterised by the importance of written codified law, as opposed to custom and usage, with which the community must comply. Written law takes precedence over practical concrete aspects and governs individual cases. This system is also characterised by the existence of a rigid hierarchical order as regards the sources of law: analogy is permitted only in cases not explicitly provided for by the legal system. Therefore, Italian companies have always applied legal regulations which, substantially, have not changed greatly over time and are of a general and abstract nature; national accounting standards have always played a secondary role in drawing up of the financial statement (the primary role is played by the law), a situation which has been identified and highlighted by empirical studies and research (Marchi L., 2000). Following the process of international accounting harmonisation, the Italian listed companies have had to adapt to a completely new accounting regulation. Since 2005 they have had to apply international accounting standards which, due to their very different characteristics from those of the law, are constantly evolving and are very detailed.

Furthermore, the most important differences between the IAS/IFRS and the Italian accounting rules derive from the different public addressed; the basic rationale of the financial statement revolves around its information needs and justifies certain choices in terms of assessment criteria and principles for drawing up the financial report (Veneziani M., 2005). The IASB gives priority to investors as the main user of the financial statement, who are primarily interested in

assessment of the company performances with orientation also towards the future (Quagli A., 2004; Cattaneo C., 2004). As the IAS/IFRS are of Anglo-Saxon origin, they are affected by the environmental factors characteristic of these countries: the presence of public companies and, above all, well-developed stock exchange markets in which the investor plays a very important role. In this case, accounting practice will tend towards a greater diffusion and completeness of the accounting information. In particular, for the numerous minority shareholders, the financial statement is one of the main sources of information on the performance of the company.

Italian accounting practice, on the other hand, while providing for financial statements characterised by understandability and neutrality, tends to give priority to one particular class of stakeholder, the creditors. This focus justifies the emphasis on the principle of prudence (Lacchini M. and Trequattrini R., 2002) and more generally on a more conservative assessment rationale (Sterling R.R., 1967) with the aim of safeguarding the integrity of the equity to avoid inadequate representations due to overestimation of the assets. This characteristic, which represents the ratio of the Italian legislator, derives mainly from the fact that the banks have always been the main financiers of companies, the companies are mainly SMEs with family shareholding and the financial market is consequently relatively underdeveloped. In this situation, the main stakeholders (family shareholders and banks) are less interested in an informative financial statement since they have direct access to detailed information concerning the performance of the company.

In this context, Italy has a limited (but growing) stock exchange market characterised by many companies with family shareholding. More in detail, at the end of 2005 there were 264 companies listed on the main equities market divided as follows:

- 89 companies in the Blue Chip segment, dedicated to companies with a capitalisation of over 1 billion euro (capitalisation on average 7,450 million euro);
- 71 companies in the Star segment, for companies with a capitalisation between 1 billion and 40 million euro which voluntarily comply with the high requirements regarding liquidity, transparency and corporate governance as these requirements enhance the company's visibility and image on the market (capitalisation on average 264 million euro);
- 104 companies in the Standard segment, for the other companies with a capitalisation between 1 billion and 40 million euro (capitalisation on average 257 million euro)¹.

Introduction of the international accounting standards, strongly oriented towards the financial markets, undoubtedly represents a profound change for Italian companies, a break with the past, and it is important to understand the scope of this change. For historical-cultural and economic reasons, the IAS/IFRS reflect a very different conceptual model from the one existing in Italy.

For this reason we believe it is useful to study the propensity towards disclosure (in the first IAS/IFRS-compliant annual report), much broader in the IAS/IFRS than in the Italian Gaap, with reference to the IAS 38 (*Intangible assets*), one of the most innovative standards both in theory and in terms of impact on performance.

This is therefore the background to the study, which we believe it is useful to illustrate, albeit briefly, for a better understanding of the aims of the research and the results obtained and presented below.

This paper proceeds as follows. Research questions are discussed in section two. Section three outlines the literature review. The main differences on intangible assets between IAS/IFRS and Italian rules are presented in section four. Section five contains the methodology applied.

¹ Of the 264 companies, 7 are foreign and 6 are temporarily suspended from the quotation: they are not considered for calculation of the mean capitalisation.

Section six presents the research sample and documents analysed. Section seven contains the empirical results and discussions. The final section summarises and concludes.

2. The aim and the research questions

The aim of the paper is to define the reference framework for the problems deriving from systematic introduction of the new process connected with accounting and assessment of intangible assets in the drawing up of corporate financial statements (Andrei P., 2006; Carini C., Teodori C. and Veneziani M., 2006). In particular, taking into consideration a specific standard, the IAS 38 (*Intangible assets*), which entails important changes in Italy in terms of assessment and accounting of intangible assets, the following research questions will be addressed:

RQ1: what is the level of disclosure, i.e. what choice do companies have in terms of financial communication, in the first IAS/IFRS-compliant annual financial statement? What are the main issues?

RQ2: do differences exist between companies belonging to different Stock Exchange indexes? What are the possible determining factors?

The theme of disclosure, the main subject of the paper, allows us to identify, considering the information available vis-à-vis the first IAS/IFRS-compliant annual document, the policies adopted by the companies as regards communication, above all in terms of transparency and completeness. Disclosure is studied in particular, since, according to a widely-held opinion, financial communication does not represent a neutral process but affects the behaviour of the recipients and consequently that of the preparers. The level of disclosure on the intangible assets will be summarised via the construction of a disclosure index.

The IAS 38 has been chosen for various reasons: the first is the growing importance and criticality of intangible assets in recent years in scientific literature, in the economic world and in companies²; the second relates to the important differences existing between national and international standards, hence we have chosen to focus on Italian companies as the subject of our study³; the third concerns the expectation of a significant level of communication transparency, in the light of the connotations of these assets.

As regards the companies, we chose those belonging to different Stock Exchange indexes since, as described below (par. 6), they are characterised by significant differences in terms of capitalisation, business, and information requirements to be met and they are therefore representative of the different realities that exist in the Italian economic context and, more generally, in any national context.

In relation to the documentation analysed, the consolidated financial statement as of 31st December 2005 was chosen as it is the first IAS/IFRS-compliant annual financial statement. The reasons for the choice of the annual financial statement instead of the interim reports are the following:

- it is the most complete accounting document, drawn up by all companies on the same date (in the research we selected 31st December 2005);

² See par. 6.

³ See par. 4.

- use of the interim reports would not have permitted a uniform comparison, as some companies have made the first document compliant with the international standards coincide with the first quarterly report, others with the six-monthly report and the remaining with the third quarterly report. The difference in terms of breadth and content between the quarterly reports and the six-monthly report makes it inadvisable to use them jointly⁴.

3. Literature review

The process of accounting harmonisation has been a topic of study for years at both international and national level. The following can be distinguished:

- studies connected with the environmental factors characterising the socio-economic fabric of the various countries (Alexander D. and Nobes C.W., 1994; Onesti T., 1995; Zambon S., 1996; Rusconi G., 1999; Poselli M., 2000; Di Pietra R., 2002; Nobes C.W. and Parker R., 2002; Zambon S., 2002; Choi F.D.S. and Meek G.K., 2005);
- studies on comparison of national accounting systems (Mezzabotta C., 1995; Provasoli A. and Viganò A., 1995; Di Pietra R. and Riccaboni A., 2003);
- studies on comparison between accounting principles and the IAS/IFRS (Maglio R. 1998; Quagli A., 1999; Rossi C., 2003; Pizzo M., 2000; Pizzo M., 2004; Hague I.P.N., 2004; Walton P., 2004; Lionzo A., 2005; Wüstermann J. and Kierzek S., 2005; Tokar M., 2005);
- studies on the first applications of the IAS/IFRS in the European countries (Delville P., Ebbers G. and Saccon C., 2005; Colwyn Jones T. and Luther R., 2005; Hong T. Dao P., 2005; Andrei P., 2006; Teodori C., 2006).

The paper focuses on intangible assets which represent an increasingly topical and critical element of study (Barth M., 1998; Lev B., 2003; Young D.W., 2006; Zambon S., 2006). In literature we can distinguish studies relating to:

- the strategic role of the intangible assets in corporate administration (Rappaport A., 1986; Hall R., 1992; Buttignon F., 1993; Corno F., 1996; Guatri L., 1997; Allee V., 2000; Andriessen D. and Tiessen R., 2000; Low J. and Cohen Kalafut P., 2002; Daum J.D., 2003);
- accounting of intangible assets (Choi F. and Lee C., 1998; Canibãno L., Garcia-Ayuso M. and Sanchez P. 2000; Vichery G., 2000; Lev B., 2001);
- disclosure connected with intangible assets (Liberatore G., 1996; Aboody D. and Lev B., 2000; Gelb D., 2002; Mancini D., Quagli A. and Marchi L., 2003; Cordazzo M., 2004; Teodori C. and Veneziani M., 2005; Bergamini I. and Zambon S., 2005).

Disclosure can be analysed using different techniques. In this study we refer in particular:

- to content analysis (Holsti O.R., 1969; Kassarian H.H., 1977; Andren G., 1981; Weber R.P., 1985; McTavish D.G. and Pirro E.B., 1990; Krippendorff K., 2004) which is widely used in literature (Gray R.H., Kouhy R. and Lavers S., 1995 a) and b); Beretta S. and Bozzolan S., 2004; Dunne T.M. *et. all*, 2004);
- construction of the disclosure index (Marston C.L. and Shrivess O.J. 1991; Diamond D.W. and Verrecchia R.E., 1991; Hopkins P., 1996; Botosan C.A., 1997; Beattie V., McInnes B. and Fearnley S., 2004).

⁴ Also the interim reports represent a significant element of analysis. In this regard see Carini C., Teodori C. and Veneziani M., 2006.

The paper concerns the accounting harmonisation process in Italy in the initial application phase of the IAS/IFRS and focuses in particular on analysis of disclosure relative to the intangible assets under the IAS 38, via the use of content analysis and the construction of a disclosure index.

4. The main differences between IAS 38 and Italian rules

First of all we focus attention on the main differences (Table 1) between IAS 38 and Italian rules (Veneziani M., 2006).

In terms of definition it appears immediately clear that in Italy the class of intangible assets is narrowed (Felleghara A.M., 1995; De Cicco R., 1996; Guatri L., 1997; Superti Furga F., 1997; Pozza L., 1999; Fontana F., 2001; Mancini D., Quagli A., Marchi L., 2003) by introduction of the IAS 38: this is due to the non-possibility of capitalising the long-term costs (start-up costs, research, and advertising costs) since, although they are costs that could indirectly contribute to the production of future economic benefits, they do not actually generate an asset.

A particular interpretation of accrual basis appears to emerge from the international accounting standards due to a vision based more on the concept of assets/liabilities. In other words, it would seem that the IAS 38, rather than a “correlation between costs and revenue” looks for a “correlation between cost and generation of an asset”.

TABLE 1 – *Some of the main differences between IAS 38 and Italian rules*

Themes	IAS 38	Italian rules
Definition	More restrictive definition, only the intangible assets in the strict sense are considered.	Wider definition, long-term costs are also considered in accordance with certain conditions.
Recognition in financial statement	After the first entry it is possible to apply two models: cost model or revaluation model.	The cost model is always used.
Useful life	Distinction between assets with a finite useful life subject to amortisation and assets with an indefinite useful life subject to impairment test at least once a year.	Only intangible assets with a finite useful life (never more than 20 years) subject to amortisation are considered.
Impairment loss	For assets with indefinite useful life the impairment test must be performed at least once a year.	Correctness of the value of the asset is verified when an impairment loss is assumed. The method used to determine impairment losses in the IAS/IFRS is much more wide-ranging and complex.

The different approach justifies on the one hand the possibility of capitalising some costs within certain limits (Italy) and, on the other, the prohibition on recognising a cost as an asset if the link between the cost and its ability, even indirect, to produce future economic benefits is too “far” and if the other two conditions characterising an asset (IAS 38) are missing. Probably between the two positions there is also a different concept of “indirect ability” to generate future economic benefits, certainly understood in a narrower sense for the Board and in a wider sense for the Italian legislator: applied research costs are a clear example of this.

From a theoretical point of view, the choice of the Italian legislator would appear to be more correct as it respects to a greater extent the principle of the accrual basis (Devecchi C., 1979; Nova M., 1997; Palma A., 2003) and at the same time, with the legal limits imposed for the capitalisation of long-term costs (art. 2426 Civil Code), it is in line with the principle of prudence (Lacchini M. and Trequattrini R., 2002).

From the point of view of prevalence of substance over form (Maglio R., 1998; ASB – FRS 5), the choice of the Board would appear to be more appropriate also because (as also admitted by Italian legal theory) it is not easy to establish the contribution of certain costs to the generation of income, especially to what extent they contribute to the production of income via the revenue they help to produce: in this sense the link between sustaining of the cost and production of income therefore becomes difficult to quantify in a reliable way.

Another important difference emerges concerning recognition of the intangible asset after the first entry in the financial statement: this is due to the assessment at *fair value* (Pizzo M., 2000) introduced by the IAS/IFRS for certain assets and not provided for by Italian law based on the *historical cost* (Ijiri Y., 1970). In this case the problems linked to the assessment criteria come into play. In our opinion, one of the main changes that the Italian firms subject to the international accounting harmonisation (Viganò A. 1997; Parker R.H., 2001; Campedelli B., 2003) are dealing with consist in application of the logic of assessment and accounting linked to the fair value, abandoning, for some classes of value, the basic criterion of cost. It is fundamental to take account of the fact that assessment according to fair value produces effects on the methods of income determination (Edwards E.O. and Bell P.W., 1965; Sterling R.R., 1979; Lee T., 1985; Parker R.H. *et. all*, 1986; Pizzo M., 2005) and, therefore, on financial communication (Coda V., 1991; Salvioni D.M., 2002; Corvi E., 2000; Quagli A. and Teodori C., 2005). In particular, introduction of the IAS/IFRS modifies the main user of the financial statement (from the creditors to the investors) and, consequently, the cognitive aim: the primary purpose of assessment at fair value is, in fact, to provide information on company performances, on capital structure and on financial position, with greater attention to the present and with orientation to the future at each accounting period (Lionzo A., 2005). At theoretical level the argument could be studied in greater depth but in the case of assessment of the intangible assets, assessment at fair value should not produce any substantial effects: the Board considers, rightly in our opinion, occurrence of the conditions necessary for use of the revaluation model to be rare.

With reference to the useful life of the intangible assets, the aspect which is most certainly innovative with respect to Italian legislation, but also with respect to the previous version of the IAS 38, is represented by the category of intangible assets with indefinite life, including goodwill (Bianchi Martini S., 1996), no longer subject to amortisation but to impairment test at least once a year (Guatri L. and Bini M., 2003; Fazzini M., 2004). With particular reference to goodwill the Board observes that “*the useful life of acquired goodwill and the pattern in which it diminishes generally are not possible to predict, yet its amortisation depends on such predictions. As a result, the amount amortised in any given period can at best be described as an arbitrary estimate of the consumption of acquired goodwill during that period*”⁵. Therefore the Board agrees that if a rigorous and operational impairment test could be devised, more useful information would be provided to users of financial statements under an approach in which goodwill is not amortised, but instead tested for impairment. This approach links up with the provision of the IAS 38 (par. 93) in which the Board affirms that prudence cannot in any case lead to unrealistic definition of excessively short useful asset life. Here again the importance assumed, in the logic of the IAS/IFRS financial statement, by the economic substance of events emerges, while the principle of prudence does not appear to be emphasised (Rossi C., 2003).

While agreeing with the decision of the Board not to amortise goodwill since in practice it is very difficult to establish the duration of its useful life, this solution may involve a problem of assessment due to the possible influence of the goodwill generated internally on the value of the goodwill acquired externally: only adequate disclosure by firms can demonstrate the correctness

⁵ IFRS 3, Basis for Conclusions BC 140.

of the assessment process. Furthermore, replacement of amortisation, usually straight-line, with the impairment test will tend to make the financial performances of the Italian firms more volatile: hence company disclosure becomes even more fundamental in the relationship with the investors (Teodori C., 2006).

With regard to the impairment losses, on the other hand, what differentiates the two positions compared is not so much the theoretical concept of impairment losses as the method used to determine them, which in the IAS/IFRS appears much more wide-ranging and complex than the provisions of the Italian legislator.

Given these differences which reflect in practice on the determination of company performances, it is interesting to study if and how the companies communicate this important change to stakeholders.

5. The methodology applied

For analysis of the disclosure we used a disclosure-scoring system (Robb S.W.G., Single L.E. and Zarzeski A., 2001; Vanstraelen A., Zarzeski M.T. and Robb S.W.G, 2003), i.e. an analysis technique that provides for classification of the information in pre-selected categories and subsequent measurement of the related disclosure level. This technique is considered a partial form (Beattie V., McInnes B. and Fearnley S., 2004) of content analysis (Kassarjian H.H., 1977; Krippendorff K., 2004).

More specifically, the research consisted of the following phases:

- analysis of the IAS 38 and specific requirements in terms of disclosure;
- identification, by the research group, of the categories and individual variables contained in them, in the light of the findings of the international accounting standard study phase;
- construction of the disclosure-scoring sheet and definition of the rules for identification of the individual variables;
- application of the investigation technique by two researchers on the same sample of financial statements, highlighting any differences in the findings. In this pre-analysis phase, in order to make the behaviour of the researchers as uniform as possible, some modifications had to be made to the basic scheme, and only after achieving 90% identity between the results did we begin analysis of the documents pertaining to the study⁶;
- analysis of the documents and application of the detailed rules defined in the pre-analysis phase to the parts of the financial statement significant for the research (in particular the explanatory notes and statements) attributing the score 0/1 to each variable, considering all equally important in terms of disclosure;
- identification of the data and subsequent processing of the results.

The variables used for analysis of the documentation amount to a total of 60, grouped into four categories (Appendix – Panel 1):

- a) *recognition and measurement*, with specific reference to the various possibilities provided for by the Board and to the criteria for identification and assessment adopted by the companies analysed;
- b) *measurement after recognition*, taking account of the peculiarities relative to the different accounting treatment permitted by the standard in question;

⁶ Kassarjian (1977) affirms that if the analysis is performed by several researchers, to ensure the reliability of the information, the level of homogeneity of the results must not be below 80%.

- c) *useful life*, with particular attention to the distinction between intangible assets with finite useful life and indefinite useful life;
- d) *retirements*, taking into consideration the various methods provided for by the IAS 38.

The studies on the disclosure indexes are based on the general principles of content analysis. With regard to these indexes, the main problem is to assess the relationship between quantity and quality of the disclosure. In this regard, Botosan affirms that “*although important, assessment of the quality of the information is very difficult*” (Botosan C.A., 1997). It should be pointed out that in this study we shall not be investigating the quality of the disclosure (Diamond D.W. and Verrecchia R.E., 1991; Hopkins P., 1996) and the indicators that can be constructed with regard to the quality of the information (Beattie V., McInnes B. and Fearnley S., 2004) but the level of disclosure, via the construction of an index score (Marston C.L. and Shrivies O.J. 1991), taking account of the information complexity of the company. In other words, we shall not simply be assessing the presence/absence (0/1) of a variable but its actual availability vis-à-vis the existence of a specific information requirement. By way of example, it is not significant to use in the calculation the variables connected with development costs if the company does not carry out research; there is no point considering the variables connected with the revaluation model if this is not used. This approach permits the avoidance of unjustified over/under-estimations.

For this purpose, all the variables used in the research have been divided into three types:

- a) *the introductory or context variables*, to which no score is attributed, because although useful for defining the environment in which the disclosure of a company develops, they cannot be directly connected with it. For example, what is important is not the mere presence of intangible assets with indefinite useful life but the level of disclosure associated with them. The introductory variables also avoid possible duplication of information. For example, in the descriptive analysis phase, it is significant to know not only if the criteria used to determine the fair value are presented but also what these criteria are in specific terms. In construction of the index, the second variable cited is a context variable, to prevent duplication of information: the score will therefore depend on the presence of the criteria and not on the choice of the specific criterion used;
- b) *the subordinate variables*, which are taken into account only when the communication need is present within the company. For example, the topic of development costs (subordinate variable) is examined in detail only if this activity is carried out by the firm (introductory variable);
- c) *the autonomous variables*, which do not depend on other variables and for this reason must always be disclosed in the financial statement. For example, given the presence of intangible assets, companies must always indicate the assessment criterion adopted.

It should be pointed out that the difference between autonomous and subordinate variables refers not so much to the importance (the same for all) as the connection with/dependence on the introductory or context variables. In other words an autonomous variable does not depend on others while a subordinate variable is considered for calculation of the disclosure index only upon the occurrence of an event; when the event takes place, the disclosure becomes significant. In the Appendix, the category of each variable is indicated beside it.

In the study, there are 2 autonomous variables, 30 potential subordinate variables and 28 introductory variables.

The procedure described above gives us, for each company, a disclosure indicator that could be defined relative, between 0 and 1 (better between 0% and 100%), obtained by the ratio between the score achieved by the company and the actual situations in which the information has to be

communicated. The latter is obtained from the sum of the autonomous variables – always considered – and the subordinate variables, only when the information need recurs in the company. In short, the value of the numerator represents what the company has actually communicated; that of the denominator what it should have communicated in the light of the existing “information complexity”: for this reason also the denominator can vary from company to company.

The disclosure index (Teodori C., 2006) commented on below⁷ is the overall or summary mean, which can be constructed at several levels: for the entire sample or for each stock exchange index. In both cases the disclosure index corresponds to the mean calculated considering the disclosure indexes of the individual companies.

$$(DI) = \frac{\sum_{i=1}^n (x_i + y_i)}{\sum_{i=1}^n (X + Y_i)} / n$$

where:

x_i = effective autonomous variable

X = number of autonomous variables

n = number of companies

y_i = effective subordinate variable

Y_i = number of subordinate variables

Lastly, to understand the factors affecting the level of disclosure on the intangible assets, the following hypothesis has been formulated:

H1: there is a positive relationship between level of disclosure and incidence of the intangible assets on the total assets; incidence of the intangible assets on the equity; variation in the value of the intangible assets during transition from the national to the international standards; level of capitalisation (a variable that discriminates inclusion of the individual company in a specific Stock Exchange indexes); number of transactions performed (both in terms of annual total and daily mean); volatility on an annual basis; turnover ratio on an annual basis. There is a negative relation between level of disclosure and performance on an annual basis.

The analysis took as its reference three different Stock Exchanges indexes also in an attempt to understand the existence of links between communication choices – measured summarily by the disclosure index – and some variables expressing on the one hand the importance of the intangible assets and, on the other, the characteristics of the individual Stock Exchange indexes. The variables belonging to the first group are connected with the quantitative importance of the intangible assets: incidence on the total assets, incidence on the equity and variation occurring during transition from the national to the international standards. With the increase in the quantitative importance of the intangible assets in the economy of the company, the level of disclosure towards the outside should increase, thus offering a better understanding of its strategic role.

The second group comprises the variables relative to the stock exchange market: capitalisation, number of transactions, volatility on an annual basis, turnover ratio on an annual basis, performance on an annual basis. For the first four, a positive relationship exists, as they identify situations in which there is greater attention to and demand for information on the part of the

⁷ See par. 7.

investors. More specifically, as the capitalisation increases, the number of stakeholders increases; as the number of transactions increases, the greater the number of subjects involved in the market; with increase in volatility, an indicator that measures the uncertainty or variability of the return of a financial asset and therefore its level of risk, the greater the demand for information; higher turnover levels (indicator of liquidity) indicate widespread interest in the company. As regards performance on an annual basis, reduction should involve a greater information flow towards the outside.

Having specified the starting hypothesis, we wish to ascertain the existence of a linear relation between the level of disclosure and the explanatory variables, via calculation of the linear correlation index (Pearson) highlighting the R^2 (Draper, 1966).

$$\rho_{xy} = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 \sum (y - \bar{y})^2}}$$

6. The research sample

In the context of the companies quoted on the Milan Stock Exchange, those with shares traded on the Mercato Telematico Azionario (Telematic Share Market)⁸ were selected, on the basis of the market index criterion. The following three were selected in particular:

- The S&P/Mib, the main index for the Blue Chip segment, totalling 40 companies. We selected it due to its high level of capitalisation (over 1 billion euro), which should presuppose, given the number of national and international stakeholders, a high qualitative level of disclosure. The S&P/Mib index was set up in conjunction with Standard & Poor's to provide a broad accurate representation of the Italian share market. The components of the basket are chosen not only with reference to the capitalisation but also on the basis of a sectorial classification, in order to better reflect the characteristics of the Italian market.
- The Star, the main index of the Star segment, consists of 49 companies, and is dedicated to companies with capitalisation below one billion euro but above 40 million, which respond to specific requirements in terms of liquidity, transparency and corporate governance, characteristics that make it an interesting subject for study as we would expect advanced communication processes. The companies in the Star index are traditional businesses.
- The TechStar, also an index of the Star segment, consisting of 23 companies operating in the technological field.

The choice of the three indexes is due to their importance on the stock exchange market, the significant differences in terms of capitalisation and business and, therefore, their representativity in the Italian economic context.

The importance of intangible assets in Italian companies has already emerged in previous studies, connected with analysis of the transition to the IAS/IFRS (Teodori C., 2006). With reference to all the companies belonging to the three indexes examined, the mean incidence on total investments is around 14%. In these studies it emerged that, considering the business

⁸ The reference date is 31st December 2005.

carried out by the companies, the greatest investments in intangible assets are made by non-finance companies. More specifically, in these companies the mean incidence is 16%, as against 1% in the finance companies: this difference, again on the basis of a previous study (Teodori C., 2006), affects the level of disclosure, with lower index values.

When we change the reference term (from the capital invested to the equity), the differences do not change: at overall level the incidence is on average 50%, with values of 53% for the non-finance companies and 12.5% for the finance companies.

On the basis of these considerations, we decided to exclude the finance companies from the analysis, reducing the overall number from the 112 companies initially selected to 90; a further 13 were excluded for the following reasons: absence of obligation to draw up the consolidated financial statement, year end of the financial statement not compatible with the research timescale, use of accounting standards (US Gaap) not coherent with the aim of the research, foreign head office. The final sample therefore consisted of 77 companies. The complete list of the companies included in the sample is given in the Appendix – Panel 2.

To conclude, we highlight some elements differentiating the three Stock Exchange indexes (Table 2).

TABLE 2 – *Some differences between indexes*

	Number of companies	Capitalisation on average (ml euro)	Trading (daily average)	Trading (total number)
S&P/Mib	22	12,282	2,863	695,917
Star	37	237	183	44,201
TechStar	18	203	493	48,682
Total	77	3,670	1,021	231,453

As regards the quantitative importance of the intangible assets, the mean incidence on the total assets drops from 22% in the S&P/Mib to 12% in the Star (17% for the TechStar), while the incidence on the equity varies from 92% in the S&P/Mib to 35% in the Star (39% in the TechStar): a fairly clear picture therefore emerges, in which the intangible assets are more important in companies with greater capitalisation. The quantitative importance of the intangible assets concerns mainly goodwill, brands and patents.

7. Empirical evidence and discussion

7.1 The disclosure index

The disclosure index represents a summary indicator of the completeness of the external communication, applied to intangible assets. The results obtained can be examined on two levels: in overall terms (77 companies) and in relation to the Stock Exchange index they belong to (Table 3 and Picture 1).

In the analysis phase, we will start from the overall results and then identify and comment on the main elements of differentiation at analytical level.

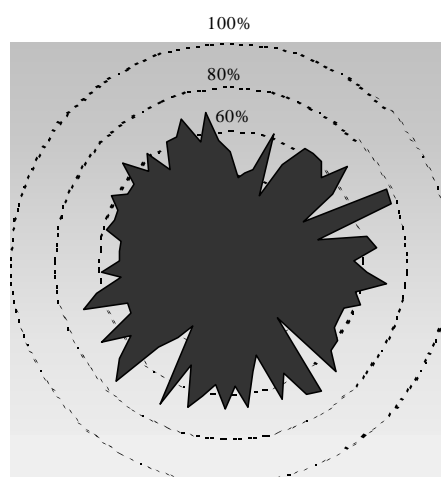
The disclosure index reaches a mean value that is not particularly high (58%), only just sufficient in overall terms: the minimum value does not exceed 50%, a figure that is certainly negative and common to 22 companies; in 3 cases, however, results superior or equal to 75% are obtained, a value very near to the maximum (79%).

TABLE 3 – *Summary results of the analysis*

	<i>Total</i>	<i>S&P/Mib</i>	<i>Star</i>	<i>TechStar</i>
Disclosure Index	58%	57%	57%	60%
SD	10%	11%	10%	10%
Median	56%	56%	56%	62%
MAX	79%	75%	78%	79%
MIN	33%	33%	33%	33%
Number of companies	77	22	37	18

The index highlights that on average only 58% of the information required by the IAS 38, and for which the pre-conditions for communication exist, is actually present: it should be noted that it is not 58% of the disclosure required overall by the standard but 58% of the disclosure connected with the specific individual situations.

Given the importance of the annual report in terms of information, more satisfactory results were expected: after the broad disclosure relative to the transition (Teodori C. 2006)⁹, there is a return to the condition that could be described as “ordinariness”, in which the situation undergoes a significant change, almost as if after application of the IFRS 1, the “novelty” phase introduced by the international accounting standards is considered to be over: again using the data of the study referred to, in 90% of the companies the indicator of disclosure, with respect to the transition, deteriorates.

PICTURE 1 – *The disclosure index: distribution of the companies*

Alongside the value of the index, the variability between the companies must be considered, which is relatively limited, indicating a substantially uniform behaviour; furthermore, the median has values very near the mean, indicating an analogous distribution of the companies above and below the mean.

⁹ The disclosure index was 79%, with minimum value 46% and maximum 100%.

With reference to the Stock Exchange indexes, on the other hand, the most communicative one is the TechStar (60%), followed by Star (57%) and S&P/Mib (57%) but the differences are very limited.

These results must be read according to the characteristics of the companies in each Stock Exchange index: the companies in the TechStar, on average smaller companies many of them with modest short-term performances, require more detailed communication processes above all vis-à-vis the classes of assets that are critical for the overall performances, such as the intangible assets studied here.

There is a convergence between S&P/Mib and Star, in terms of both mean and variability. This is a very interesting finding as there is substantial uniformity of disclosure, which did not emerge in previous research on financial communication in Italy. In fact, it is widely known that companies with greater capitalisation communicate quali-quantitatively to a greater extent: the similarity recorded here depends on both the specific item observed (intangible assets – IAS 38), certainly more important – in terms of innovativeness – for those with lower capitalisation¹⁰ and even more the high level of information which the companies in the Star index are required to provide.

It is therefore worth pointing out that the results obtained depend on the partial nature of the analysis: observing only one type of asset and the disclosure associated with it does not allow us to formulate considerations on the overall communication policy of the companies; however, it is certainly interesting to see whether, vis-à-vis the importance of a phenomenon, the companies coherently adapt their policies concerning disclosure of information to the outside.

Examining the analytical results relative to application of the content analysis to each company for identification of the 60 variables used in the study, according to a more qualitative approach (Veneziani M., 2006), the first general observation to be made is that there is a certain superficiality as regards information, which becomes incompleteness as can be seen, for example, in definition of the purchase cost, introduction of the term fair value without further specifications (concerning acquisition via business combination) and the reference to parts of the IAS 38 practically as is, without going into any particular detail. The similarity of information is striking, analogous in all the types of companies, whereas in the case of research and development costs, we would expect some differentiation, also at definitional level.

The second general observation concerns the distinction between assets with a finite and indefinite useful life: on this crucial aspect, a certain gap emerges between information expectations and actual behaviour of the companies. In fact, not all of them deal with the question in accounting documents and when they do, they concentrate more on the types of assets than on the elements used to support identification of the economic duration. Goodwill is established as having an indefinite useful life by the IAS/IFRS and therefore all companies quote it as an example but none of the other assets are examined in detail, contrary to what is required by the standards. From the empirical analysis it emerges that the most widespread type of asset with indefinite useful life is represented by the goodwill, although there are also other assets, for example brands.

In this regard, there is widespread approval in the financial community of the decision of the Board not to amortise the intangible assets with indefinite useful life but to subject them to annual impairment test, since in this way the asset will have a value that is more realistic and representative of the expected economic potential.

Without going into the subject of impairment, this observation is important in terms of communication as it identifies one of the classes of assets where disclosure must be greater than

¹⁰ See par. 7.2 for more specific results on capitalisation.

in the past, not only because it is required by the new standards but also as a result of the changes affecting the international economic context. This is necessary to allow the market to appropriately assess both the greater profitability – due to lack of amortisation – and the correlated policies adopted concerning self-financing and distribution of the dividends. The greater disclosure will also allow for improved assessment of the depreciation, in order to understand the strategic impact connected with it.

For these reasons we believe there is plenty of scope for improvement in this area, in order to make the IAS/IFRS financial statement useful for all external users, first and foremost the investors.

7.2 *The factors affecting the level of disclosure*

After illustrating and commenting on the disclosure index, the next step is to verify the existence of specific factors that affect its value. For this purpose, as illustrated in the paragraph dedicated to methodology, some variables have been identified that can be classified into two groups: the first expressing the quantitative importance of the intangible assets and the second the characteristics of the individual Stock Exchange indexes.

Here again, the results obtained (Tables 4 – 5) can be examined both at overall level and with reference to the individual Stock Exchange indexes.

In general terms, very weak relations appear between the disclosure index and the individual explanatory variables, with a prevalence of those belonging to the first group, but with low and therefore non-significant values. The signs of the correlations are substantially as expected, even though some differences are found in the variables connected with the Stock Exchange, in particular as regards the Star index.

In the context of the individual Stock Exchange indexes the situations are different, indicating the different characteristics and importance of the individual variables even though, here again, the values are of limited significance.

TABLE 4 – *The results of the analysis: the variables connected with the quantitative importance*

	<i>Variation IA</i>	<i>IA/Total Assets</i>	<i>IA/E</i> ¹¹
Total	0.30	0.31	0.16
R ²	0.09	0.10	0.02
S&P/Mib	0.22	0.37	0.16
R ²	0.05	0.13	0.03
Star	0.31	0.34	0.24
R ²	0.10	0.12	0.06
TechStar	0.37	0.23	0.36
R ²	0.14	0.05	0.13

¹¹ IA = intangible assets; E = equity.

TABLE 5 – *The results of the analysis: the variables connected with the stock exchange market*

	<i>Capitalisation</i>	<i>Transactions (daily mean)</i>	<i>Transactions (total number)</i>	<i>Volatility</i>	<i>Turnover</i>	<i>Performance</i>
Total R ²	0.16 0.03	0.17 0.03	0.11 0.01	0.07 0.00	0.16 0.03	-0.16 0.03
S&P/Mib R ²	0.37 0.13	0.42 0.18	0.39 0.15	-0.18 0.03	0.13 0.02	-0.01 0.00
Star R ²	-0.23 0.05	-0.22 0.05	-0.22 0.05	-0.16 0.03	0.08 0.01	-0.16 0.03
TechStar R ²	-0.10 0.01	0.27 0.07	-0.06 0.00	0.21 0.04	0.28 0.08	-0.45 0.20

In the S&P/Mib, the highest values are connected with the market variables in particular as regards the transactions – a signal that as trading increases, the information on the topic investigated improves – and capitalisation. The variables on the incidence of the intangible assets are less important: this result means that the communication policy does not depend on the quantitative incidence of the individual classes of assets.

At the other end of the scale are the TechStar companies, the communication policies of which appear to be coherent with the connotations highlighted previously (importance of the intangible assets and criticality of the level of performance): in this index there are many companies with short-term economic performances that are not fully satisfactory and this justifies the greater correlation with the performance variable, of almost nil importance in the other cases. Capitalisation also appears to be non-significant, characterised by negative sign and modest variability within the segment. Modest company size (in relative terms) is an important factor in explaining why the specific variables on the intangible assets take on greater importance with respect to the S&P/Mib, because as size decreases, companies tend to focus their attention more on the strictly accounting aspect of treatment of the intangible assets, since it represents an important novelty for them. As it is a new problem, they are inclined to provide more information for the stakeholders.

The Star companies occupy a substantially intermediate position, although the greatest similarities are with the TechStar, also due to the similar dimension: this is the Stock Exchange index where the lowest values were obtained and where it is not easy to identify a unifying element between the companies other than the high communication requirements which, in terms of intangible assets, are considered sufficient. The Star has a disclosure index analogous to the S&P/Mib while recording a much lower incidence of the assets. Lastly, the fact that the values identified in the Star index are generally less significant has partly to do with the high level of information which the companies in this index are required to provide a part from specific situations.

8. Conclusions, limitations and future

In the concluding remarks we wish to reiterate that the problem of financial communication is of fundamental importance in general but in Italy in particular because, taking the companies as a whole, financial communication has always been subject to legal obligations, with little attention paid to the national accounting standards and to the financial market. The international accounting standards, based on a conceptual model very different from the one existing in Italy, are strongly oriented towards the markets and towards the future, identifying the investors as the reference

subjects: the difference of approach and the considerable importance of the change are therefore obvious.

The first annual IAS/IFRS-compliant document is a fundamental step towards full assimilation of the new standards, but so far the results have not been particularly satisfactory. The theme of intangible assets – and therefore also disclosure – certainly features elements representing significant change with respect to the past: on the one hand, therefore, a greater drive towards innovation was expected but on the other, the high level of innovation involved, which requires lengthy assimilation times, may have had a negative effect. In fact, in the initial phase, which is still in progress due to the sole (and first) application of the standards to the consolidated financial statement, the need for adaptation prevails over that of developing a new communication approach. In the future companies will certainly be required to provide greater information than at present, significantly increasing voluntary disclosure, a process which so far has only been partially implemented: the information needs to be more detailed, focusing attention on the most important themes according to the new accounting standards.

It becomes important to see the process of adoption of the international standards in the correct light. It should not be considered by companies simply as an accounting change: they must go beyond this, in order to fully appreciate the effects and potential opportunities of this cultural change which, whether judged positively or negatively, represents, at least for Italian companies, the most important break with the past that has occurred over the last decades. It should be remembered, in fact, that the international accounting standards are based on a conceptual model very different from the one existing today in Italy: this difference is particularly evident with reference to the IAS 38. We therefore expect significant increases in the disclosure index over the next few years, accompanied by a reduction in variability.

The study contains an initial investigation of the factors explaining the level of disclosure concerning the intangible assets. Differences are observed between the individual indexes: in the S&P/Mib the biggest link is with the market variables while the variables connected with the incidence of the intangible assets are less important as the communication policy does not depend on the quantitative incidence of the individual asset classes; in the TechStar, on the other hand, although the major correlation is with the performance variable, the specific variables concerning the intangible assets are also important, since the strictly accounting dimension becomes increasingly significant as the dimension is reduced; the Star companies occupy a substantially intermediate position, with greater similarities with the TechStar, although the significance of the results is inferior and the unifying element identified in the specific information requirements becomes more important.

We believe that the analysis and methodology proposed should be considered a first attempt to verify the level of disclosure and its determinants with reference to a very important asset category which, since 2005, has been characterised by a new accounting treatment owing to the application of the IAS/IFRS in Italy.

We note here two limitations of the research. First, it may be necessary to consider almost two years, to verify the evolution of the results and the changes in the culture approach to financial statements by Italian companies. A second limitation is that all the variables used for the disclosure index are equally counted: the quality of communication depends on quantity.

To refine the proposed results, future research should address a few critical issues. First, the variables related to impairment should be considered in the disclosure model, to evaluate the communication level facing the assessment of loss on intangible assets. Second, further analysis should be conducted by questionnaires to be submitted to worst and best companies to know the reasons for their choices. Third, other statistical models will be used to verify other types of relations between level of disclosure and explanatory variables.

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Appendix

Panel 1 – Disclosure variables about IAS 38

a)	Recognition and measurement		29	Evidence that revaluation model is applied at the whole of the classes	I
1	Initial recognition	A	30	Accounting method for any accumulated amortisation	S
	<i>Separate acquisition</i>		31	Accounting treatment for the increase in the carrying amount	S
2	Evidence of the separate acquisition	I	32	Value of the revaluation	S
3	Composition of the acquisition cost	S	33	Specific information about the revaluation	S
4	Information about costs price equivalent	I	34	Accounting treatment for the decrease in the carrying amount	S
	<i>Business combination</i>		35	Value of the depreciation	S
5	Evidence of the acquisition as part of business combination	I	36	Specific information about the depreciation	S
6	IA not recognised in the balance sheet of the seller	I	37	Review in the measurement criteria	I
7	Existence of definition of the fair value	S	c)	Useful life	
8	Criteria for defining fair value	S	38	Evidence of IA with finite useful life	I
9	Specific information about fair value	I	39	Evidence of IA with indefinite useful life	I
	<i>Government grant</i>		40	Factors used to estimate useful life	A
10	Evidence of the acquisition by way of government grant	I	41	Specific information about these factors	I
11	Evidence of the initial recognition	S	42	Specific information about change in useful life	I
12	Evidence of the accounting criteria	S	43	Amortisation method	S
	<i>Exchange of assets</i>		44	Specific information about amortisation method	I
13	Evidence of the acquisition by way of the exchange	I	45	Evidence of the amortisation period	S
14	Evidence of the initial recognition	S	46	Line item in the P&L for the amortisation charge	S
	<i>Internally generation</i>		47	Review in the amortisation method	I
15	Evidence of the internally generated IA	I	48	Value of the review	S
16	Development phase	S	49	Factors used to estimate amortisation period and to decide amortisation method	S
17	Elements used to assert development phase	S	50	Evidence of the legal right period	I
18	Evidence of development activities	S	51	Evidence of the residual value	S
19	Research expenses recognised as costs	I	52	Residual value assumed to be zero	I
20	Financial resources needed to develop the project	I	53	Factors used to assume residual value different from zero	I
21	Types of the development investments	S	54	IA not yet amortised	I
22	Contractual commitments for the acquisition of IA	I	55	IA fully amortised	I
23	Value of the contractual commitments	S	56	IA controlled but not recognised	I
b)	Measurement after recognition		57	Impairment test for the indefinite useful life IA	S
24	Use of historical costs as accounting model	I	58	Frequency of the impairment test	S
25	Use of fair value as accounting model (revaluation model)	I	d)	Retirements	
26	Frequency of the revaluation	S	59	IA retired or disposed	I
27	Difference in IA between revaluation and historical cost models	S	60	Evidence of the retirement and disposal way	S
28	Date of the last revaluation	S			

A = Autonomous variable; I = Introductory variable; S = Subordinate variable

Panel 2 – Companies

S&P/MIB INDEX	STAR INDEX	TECHSTAR INDEX
AEM	ACTELIOS	ACOTEL
ALITALIA	AMGA	BUONGIORNO VITAMINIC
AUTOGRILL	ASTALDI	CAD IT
AUTOSTRADE	BIESSE	CDC
BULGARI	BREMBO	DADA
ENEL	CDB WEB TECH	DATALOGIC
ENI	CEMBRE	DATAMAT
FASTWEB	CEMENTIR	DMT
FIAT	CENTRALE LATTE TORINO	EL.EN
FINMECCANICA	CREMONINI	ENGINEERING
GRUPPO EDITOR. L'ESPRESSO	DMAIL GROUP	ESPRINET
ITALCEMENTI	DUCATI	EUROTECH
LOTTOMATICA	EMAK	FULLSIX
MEDIASET	FIDIA	GEFRAN
MONDADORI	GRANITI FIANDRE	REPLY
PARMALAT	GUALA CLOSURES	SAES GETTERS
PIRELLI	IMA	TAS
SAIPEM	INTERPUMP GROUP	TXT
SEAT PAGINE GIALLE	IRCE	
SNAM RETE GAS	ISAGRO	
TELECOM ITALIA SPA	JOLLY HOTEL	
TERNA	LA DORIA	
	MARIELLA BURANI	
	MARR	
	MIRATO	
	MONDO TV	
	NEGRI BOSSI	
	PANARIA	
	POLIGRAFICA SAN FAUSTINO	
	PRIMA INDUSTRIE	
	RENO DE MEDICI	
	SABAF	
	SOCOTHERM	
	SOGEFI	
	STEFANEL	
	TARGETTI	
	TREVISAN	