Towards a complementary intangibles reporting approach

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Abstract

Purpose - The aggregation and exploitation of knowledge edges has settled the appearance of multiple approaches that put intangibles as the most important key driver towards the strategic and financial level achievements. Our key aim is to identify the intangibles recognized by the Portuguese Airlines companies, their impact in the companies' strategies and their inclusion in the internal management reporting standards.
Design/methodology/approach – The research is based on the Portuguese Civil Aviation Sector, specifically focused in the air transportation activity. The research has evolved all 21 Portuguese Airlines companies and the National regulator. Structured inquiries were conducted in the companies' financial departments and in the National Activity Regulator. Non-parametric tests were performed in order to identify possible clusters and dependence linkages between companies' features and intangible policies and procedures.
Practical implications –Findings evidenced the need of a complementary intangible resources scorecard report. Significant dependence does not exist between the inquiries' results and the airlines company's features. Results have shown that the intangibles objectives and recognition detractors have a transversal and structural nature, and are not focussed on a discrete company type or cluster.
Originality/value –This methodology clarifies the stage of knowledge management implementation and intangible assets measurement and recognition in the companies' reporting systems. Several intangible were identified, some of them supporting strong and sustainable competitive advantages. This research also constitutes a deep sector diagnosis, the first step for an organizational culture change as regards of intangibles reporting requirements.
Keywords – knowledge management, intellectual capital, intangibles, recognition, reporting
Paper type – Research Paper

1. Introduction

In the last decades several issues have arisen concerning organizational value creation. Concepts as intellectual capital, knowledge capital or intangible assets have come out in the management literature, supporting several approaches towards value drivers' identification, measurement and reporting. These semantic divergences have implied several concepts and approaches that have instilled the academic and scientific debate in depth, sharpening and focussing in the knowledge boundaries but have also induced an increase in the theoretical dispersion around a reality structured on the same genesis and essence. Concepts such as intellectual capital (Edvinsson and Malone, 1997, Roos *et al.*, 1997), intangibles (Lev, 2001, Sveiby, 1997) or even digital capital (Tapscott *et al.*, 2000) assume a complementary approach in the traditional view of knowledge, including the processes linked with its dynamic capture, transformation and dissemination (Von Krogh *et al*., 2000; Nonaka and Takeuchi, 1995).

The debate around the recognition, measurement and reporting of intangibles has been stretched in the last two decades aligned with knowledge management development theories. Being allocated the feature to translate the invisible side of organizations, financial and accounting models have been permeable in pursuing those objectives. Several approaches have been followed concerning their measurement (cost based approach, a market price approach or a revenue based approach), multiple metrics have been experienced in their financial recognition and dissemination (indexes, scorecard programs, ratios, accounting based indicators, etc.). Those metrics are notably more complementary and aligned than pursuing an alternative. However, organizations have improved, or at least diversified, the types of

information that they actually provide to their stakeholders, trying to warn other sources of value away from the traditional sources based solely on assets characterized by their tangibility.

The issue around intangible assets does not relate only with their identification and measurement. Several upstream issues were found linked to their recognition and impact in the organizational value creation process, including competitive advantage achievements. The boundaries of financial-accounting were largely overcome. Cultural and even sociological effects may explain the inertia in the process of improving the internal and external accounting and financial reporting standards.

Throughout this paper, we go through the boundaries of organizational value drivers, trying to identify the relative importance of intangibles, their contribution to the organizational value creation and to their inclusion, or not, in the corporate economic and financial reporting. The harmonization of international accounting standards (namely IAS 38 adopted in 2005 by European Union for listed companies), characterized by its unusual normative nature, is for us the broader focus, not only in the field of intangible assets recognition and measurement but also in its dissemination process.

2. Intellectual capital and intangible resources

The search for sustainable economic value, notably in an organizational setting, has created a new lexicon for a discrete variety of concepts and approaches, most of them reflecting the weightiness that knowledge has achieved in the management theory. Terms as intellectual capital, knowledge capital, knowledge-based organizations, organizational learning, knowledge era, intangible assets, social capital, intangible assets management, have been applied as the main descriptors of a paradigm in which organizational knowledge is in its essence, embodied and embedded in individuals and groups.

2.1 Towards value creation

Intellectual capital concept was, in an ontological approach, used by John Kenneth Galbraith, in 1969, recovered in depth twenty-five years later and broadly applied in the characterization of post-capitalist societies. Indeed, after this management mark stated by Peter Drucker (1999), the proliferation of the term by the economic literature has been evident. This assertion is, in an idiosyncratic exploitation, what Roos *et al.* (1997) have mentioned as new words for a new world. Positively, it results from the sum of the organizational knowledge, deriving from the translation of its member's practices into processes, products and services. Negatively suggests everything that can create organizational value but that cannot be measured or even disclosed. This dichotomy launches in the management theory developments, the need to assume that organizational value has largely surpassed their financial strength. It also comes from the human and structure dimensions which are disaggregated and managed as intellectual capital approaches.

In a purely accounting terminology, that side is designated by intangible assets. It comprises, according to Marr and Schiuma (2001), Sullivan (2000), Bontis *et al.* (1999), Sveiby (1997) or Hall (1992), a set of several features including human capital, customer capital, intellectual property, tacit knowledge, intellectual assets, research and development, structural capital, innovation, codified knowledge and information technology. This diversity, whose borders, almost diffuse, requires a functional breakdown, can lead us into a more pragmatic and rationalist stage of thought. Hence, following the first line breakdown, four types of capital were identified and managed: human, renewal, structural and relational.

2.2 The accounting approach

The increased focus on value-based paradigm has leveraged the scientific research to the realm of which can be identified and measured. Consolidated in the broad description of knowledge, catalogued by others as intellectual capital or knowledge assets, the accounting theory refers to intangibles sources of potential future economic benefits, not having physical or

financial substance. However, when interacting with physical or financial assets, those assets provide the organizational value creation and sustainable economic growth. From an accounting approach, the preposition recommended in the International Accounting Standard 38 (IAS 38) to designate them as intangible assets, is widely corroborated.

The growth of intangibles as sources of value has been an asymmetric treatment because it has been disclosed, till now, through the external but limited financial reporting. They have been treated within the organization in combination with the high investment in physical assets but investors and market regulators in general, claim its disclosure through multiple approaches, including their dissemination through electronic platforms. Urge to avoid the undesirable consequences arising from information asymmetry in economic theory. Moreover, the difficulties associated with the accounting treatment of intangible assets has led to the disclosure of information and often unreliable, hence the need for a more consistent and objective regulation.

2.3 Resources categorization

The issues surrounding the non-inclusion of intangibles in financial reports, albeit recognised their importance and impact by investors in their financial decisions, is already an unquestionable evidence (Zéghal and Maaloul, 2010; Moller, 2009; Seppanen, 2009; Griggs, 2008; Mard *et al*., 2007; Quesada, 2006; Blair and Wallman , 2003; Lev and Zarowin, 2003). The key question truly concerns to the extent and boundaries of financial reporting and its usefulness to stakeholders. Lev and Zarowin (2003) highlight the decline of the financial reporting based in results, in cash flows, in assets' values for supremacy of other activities, broadly linked to investments in intangibles, particularly in research and development, information technologies, brands, strategic alliances, human resources, networks, among others.

Lev's approaches (2001) show the critical trend in the extensive discussion around the limitations of the traditional accounting systems and subsequent financial reporting models. We refer to its inclusion in the financial reporting as real drivers of value, but also as objectives and essential contributions to a better identification of the information usefulness. In his research, he has identified nine categories of intangibles (included in his value chain scoreboard). From our point of view, this scorecard should be highlighted because we believe that those nine categories of intangibles can contribute to ensure a greater adjustment and adaptation to the purposes of an integrated and complementary financial reporting standard.

The search for alternative *Intellectual Capital Reports* or *Intangibles Reports* can complement the recommendations stated in the accounting standards, and contribute to improve one of the main qualitative information characteristics - its comprehensibility. We also believe that the approach taken by Edvinsson and Malone (1997), in building the *Intellectual Capital Index* under the Skandia Navigator Project, is one that has positively contribute for a feasible financial reporting improvement. We consider that the intangibles recognized in a certain organization as important drivers and as leverage enablers may be grouped in several dimensions despite the feasibility, or not, of their measurement and valuation. This identification of intangibles and its aggregation in categories is probably the first step to achieve their measurement and valuation and subsequent index construction. As mentioned by Seppanen (2009), a categorization should be built in order to facilitate the communication and understanding of the system as a whole and categories integration, in a cause and effect chain.

3. The Portuguese Civil Aviation sector

The Civil Aviation Sector, by its nature, is worldwide strongly marked by its wide range of regulations in several fields which include: transportation and aerial work, airlines companies' certification and licensing, ground handling, passenger handling, code-share agreements, slots setting, harmonization of technical requirements, insurance, civil aviation safety and security, and reservation systems, among others. The activity of commercial air transportation of passengers, cargo and mail is regulated by EEC Regulation 2407/92 of the Council of 23 July. The specificities resulting from the different types of transportation, in particular Regular Transport (RT) and/or Non Scheduled Transport (NST) are framed in specific legislation. However, the air transportation activity represents, in Portugal, about 98% of the turnover of the

broad air activities which states the residual impact of the aerial work activity (includes research and rescue activities).

4. Construct and data collection

The pursuit of an academic or even practical research involves the identification and consideration of advantages/disadvantages of several techniques that more accurately could ensure the feasibility of the research topic. Our overall goal is the identification of intangibles that, for the particular case of the 21 Portuguese airlines company's view, better contribute for their financial and strategic position (Moeller, 2009). Complementary, we went through the main detractors to their financial measurement and recognition. Thus, the methodology followed in the primary data collection was the structured and directive interview.

A non-exhaustive list has been produced based on intangible resources mentioned in the literature review namely based on generic models of intellectual capital (Jacobsen *et al.*, 2005, Saint-Onge and Armstrong, 2004; Edvinsson and Malone, 1997, Roos *et al.* 1997; Edvinsson and Sullivan, 1996, among others), on the analysis of accounting standards (IASB, FASB, APB) and civil aviation regulations, policies and procedures (ICAO, 2004). Although their impact in the company's performance, only the intangibles effectively known could be measured, valued and/or disseminated (Stankosky, 2008).

5. Results

5.1 Variables association

Regarding the degree of association between the characteristics of the airlines companies under analysis (through a secondary data analysis), table 1 evidences the most significant correlations (Spearman's Rho). We are conscientious that some variables have in itself a dependence degree. However, we decide to not exclude them in order to better understand the real relationship intensity.

Table 1 – *Spearman's* coefficients

VARIABLE	Type of License	Type of Air Transportation	Integration in a Business Group	Capital Ownership	Net Sales and Services	Number of Routes	Number of Aircrafts	Number of Employees	Number of Passengers Transported
Type of License	1	0,181	-0,33	0,462*	-0,627**	-0,714**	-0,136	-0,6**	-0,533*
		0,433	*0,144*	*0,035*	*0,002*	*0,000*	*0,556*	*0,004*	*0,013*
Type of Air Transportation		1	-0,335	0,767**	-0,498*	-0,514*	-0,631**	-0,603**	-0,636**
			0,138	*0,000*	*0,022*	*0,017*	*0,002*	*0,004*	*0,002*
Integration in a Business Group			1	-0,42***	0,625**	0,469**	0,481*	0,660**	0,484*
				0,058	*0,002*	*0,032*	*0,027*	*0,001*	*0,024*
Capital Ownership				1	-0,583**	-0,438*	-0,498*	-0,717**	-0,533*
					0,006	*0,047*	*0,022*	*0,000*	*0,013*
Net Sales and Services					1	0,795**	0,685**	0,858**	-0,868**
						0,000	*0,001*	*0,000*	*0,000*
Number of Routes						1	0,544**	0,717**	0,645**
							0,011	*0,000*	*0,002*
Number of Aircrafts							1	0,618**	0,519*
								0,003	*0,016*
Number of Employees								1	0,807**
									0,000
Number of Passengers Transported									1

* Significant correlation at a 5% level. ** Significant correlation at a 1% level. *** Significant correlation at a 10% level.

According the information stated in the table above, there are several statistically significant correlations between the fundamental characteristics of airlines companies and some activity indicators. Regarding the type of license (ATC - *Air Transportation Certification* and/or AWC - *Air Work Certification*) and the type of transportation effectively made (Regular Transportation and/or Non-Scheduled Transportation), there is a negative association between these variables and the airlines company's turnover, the number of routes used and the number of employees. In a first analysis, this type association seems to evidence a lack of practical sense. However, it is not true. Companies with licenses for both activities (ATC + AWC) are actually those with lower turnover achieved ($\rho_{0,05}$=-0.627), fewer routes coverage ($\rho_{0,01}$=- 0.714) and fewer employees in their staff ($\rho_{0,01}$=-0.714). Companies assigned for both activities are those ones whose capital is privately owned. Similar trend can be observed for the type of transportation carried out. Indeed, the airlines companies licensed to non-scheduled air transportation, have a poor turnover rates ($\rho_{0,05}$=-0.498). For this indicator, also contributes the number of aircrafts included in their fleets ($\rho_{0,01}$=- 0.631) and the lower number of routes actually covered ($\rho_{0,01}$=-0.603). Moreover, and as expected for the Portuguese context, a positive association exists between the transportation made and the capital ownership variable ($\rho_{0,01}$ = 0.767). The most airlines companies performing non-scheduled air transportation are private companies owned.

5.2 The intangible resources identification

In a first approach to the airlines company's data, particularly through their annual management reports, we found a weak reference to intangible assets or to intellectual capital models that could supplement the standard financial reporting. These reports are purely normative-based and do not disclose or identify other sources of value in a systematic way that could contribute to a better understanding of information management provided to stakeholders. The first stage in this research consisted in identifying a list of intangibles that, in the perspective of the airlines companies, could contribute to its strategic and financial position. This list was later complemented during the field work and then validated either by a specific company airline as by the national activity regulator (INAC).

Table 2 – Intangible resources identified by the airlines companies

I_i	*INTANGIBLE RESOURCE*	I_i	*INTANGIBLE RESOURCE*
1	Licenses and certificates	**29**	Service innovation capabilities
2	Commercial secrets legally protected	**30**	Teamwork capabilities
3	Non-commercial secrets legally protected	**31**	Training programs – pilots
4	Code-share agreements	**32**	Training programs – Cabin crew personnel
5	Patents	**33**	Training programs – Aircraft maintenance
6	Copyrights	**34**	Training programs – Land assistance
7	Commercial brands and trademarks	**35**	Maintenance technical reputation
8	Non-commercial brands and trademarks	**36**	Crews reputation
9	Publicity rights	**37**	Other Human Resources capabilities
10	Registered design	**38**	Accident score image
11	Strategic alliances between operators	**39**	Organizational culture
12	National commercial agreements between airlines companies	**40**	Management systems
13	European Union commercial agreements between airlines companies	**41**	Customer satisfaction programs
14	Non Europe commercial agreements between airlines companies	**42**	Customer retention programs
15	Databases internally developed	**43**	Publicity and promotion agreements
16	Databases externally acquired	**44**	Goodwill/Negative Goodwill
17	Software internally developed	**45**	Research and development expenses
18	Software externally acquired	**46**	Air routes control and privileges
19	Preventive maintenance programs	**47**	Exclusive air routes use
20	Electronic reservation systems	**48**	Non competitiveness agreements
21	Quality management systems	**49**	Airport special rights (hangars use, etc.)
22	E-ticketing	**50**	Local geographical agreements
23	Service reputation	**51**	Franchise agreements
24	Institutional reputation	**52**	Restructuring expenses
25	Special suppliers' relations	**53**	Slots (landing and takeoff permanent rights)
26	Special franchises' relations	**54**	Traffic rights
27	Special customers' relations	**55**	On board mobile communication facilities
28	Frequent flyer programs	**56**	Safety and security programs

After the intangibles identification, the respondents have classified each intangible in a five level scale (Not important, Less Important, Important, Very Important, Extremely Important).The most valuable intangibles are those ones that, in our view and analysis, fall into three structural pillars of the air transportation business: Training programs (pilots, maintenance staff, cabin crew, landing assistance); Reputation (service, maintenance staff, lack of disasters, company reputation); Maintenance programs and Safety. Another key pillar have emerged which is related to the overall quality (intangible I_{21}) but also the certificates and licenses obtained (intangible I_1), in particular the quality certification standard NP EN ISO 9001 and licenses for technical aircrafts assistance.

Broadly, there are no significant degree of dependence between the characteristics of the airlines companies and the most valued intangible resources. The exception is the intangible "*Training programs – Cabin crew personnel*" which depends from the company size indicator "Number of employees" (Cramer's V = 0.627, p = 0.01). From an economic approach, it is undeniable because this dependence occurs in companies with a large number of crews (including the regulatory requirements associated with them). The initial and subsequent pilots training variable follows the same trend ($\chi 2$ = 9.246, df=4, p= 0.055) as already identified for cabin crew personnel. Nevertheless, while we are on the brink of rejecting the null hypothesis for a significance level of 5%, we consider that this evidence reinforces the idea already stated that the emphasis on pilots training is different according to this company size indicator.

5.3 Constraints to intangibles measurement and valuation

Except in some particular cases (development expenditures, goodwill, patents, software externally acquired, routes developments, alliances agreements), companies do not recognize those expenditures as intangible assets but they expense them in the correspondent fiscal period. Given this evidence of non-recognition of intangibles in most of the financial statements of the airlines companies, we went through the possible reasons that can support the non-recognition and disclosure procedure and policy. These reasons stated by companies' airlines for that procedure are summarized in the table below.

Table 3 – Obstacles in the intangibles recognition process

Description	%
Lack of an intangibles based culture inside the organization	**57,1**
Lack of legal requirements for measurement and disclosure of intangible assets	**33,3**
Weaknesses in policies and rules for intangibles recognition in the financial statements	**4,8**
Difficulties in processing the internal data and information	**4,8**

A first analysis suggests some reasons based on organizational culture and legislative-based weaknesses and not with features associated to the impact of intangibles in the organization management and its consequent contribution for the entity strategic and financial positioning.

Through the appropriate non-parametric statistical tests, we have concluded that the obstacles mentioned above are independent of airlines companies' characteristics. We are therefore beyond a structural issue, which consolidates the idea associated with the absence of a legal framework that requires the inclusion of intangibles in a standard business reporting systems.

5.4 Intangibles reporting approaches

The search for an intellectual capital or intangibles model or disclosure for the civil aviation sector in Portugal remains still valid. In this research there is no evidence of any structured model or report that can, on a feasible basis, contribute to increase the management reporting quality and comprehensiveness.

In this context, we propose the intangibles aggregation in eight key categories in order to improve the responsiveness for a better information management. These categories (Internal Renewal, Acquired Capabilities, Alliances and Networks, Intellectual Property, Technical Strengths, Customers, Performance, Growth) should complement the traditional financial reporting system towards a better business comprehensiveness as required by IAS in its conceptual structure.

Table 4 – Intangible resources aggregation

INTERNAL RENEWAL	Databases internally developed Preventive maintenance programs Quality management systems Service innovation capabilities Organizational culture Management systems Restructuring expenses	Licenses and certificates Commercial secrets legally protected Non-commercial secrets legally protected Databases externally acquired Software externally acquired Teamwork capabilities Training programs – pilots Training programs – Cabin crew personnel Training programs – Aircraft maintenance Training programs – Land assistance Maintenance technical reputation Other Human Resources capabilities Non competitiveness agreements Slots (landing and takeoff permanent rights) Traffic rights Safety and security programs	**ACQUIRED CAPABILITIES**
ALLIANCES AND NETWORKS	Strategic alliances between airlines companies National commercial agreements between airlines companies European Union commercial agreements between airlines companies Non Europe commercial agreements between airlines companies Special suppliers' relations Special franchises' relations Special customers' relations Publicity and promotion agreements	Patents Copyrights Commercial brands and trademarks Non-commercial brands and trademarks Publicity rights Registered design Research and development expenses	**INTELLECTUAL PROPERTY**
TECHNOLOGICAL STRENGTHS	Software internally developed Electronic reservation systems On board mobile communication facilities	E-ticketing Frequent flyer programs Customer satisfaction programs Customer retention programs	**CUSTOMERS**
PERFORMANCE	Service reputation Institutional reputation Crews reputation Accident score image Goodwill/Negative Goodwill	Code-share agreements Air routes control and privileges Exclusive air routes use Local geographical agreements Airport special rights (hangars use, etc.) Franchise agreements	**GROWTH**

Finally, it should be noted that the construction of a system for intellectual capital or intangible assets dissemination, applicable to an air transportation company airlines, has provided us a simple conceptual framework in order to improve the range and hence the responsiveness of its economic and financial impact. That framework should be periodically updated with other resources which contribute for the financial and strategic performance achievements, as stated by Zéghal and Maaloul (2010) or by Moeller (2009).

6. Conclusions

Financial statements do not reflect the intangibles impact in the financial and strategic positioning, in particular in the sector under analysis. The actual emphasis on intangibles broadly supports the premise stated by Erickson and Rothberg (2008) that the non-development

of intangibles creates a competitive disadvantage, but their non legal protection can also create disadvantage. The existence of intangibles that are effectively key drivers for the airlines companies had not yet result in any conceptual approach for their integrated management.

The importance given to the most valued intangibles seemed to be independent from the main characteristics of the airlines companies. Broadly, the recognition, measurement and disclosure issues of intangibles are transversal and structural to the air transportation sector. However, the adoption of an *Intangibles Reporting Standard* is the way ahead towards abetter business comprehensiveness. This report can complement the traditional financial reporting, required by the accounting and financial rules and procedures.

The lack of practical application of the models developed in the literature reflects the assumption that several barriers still exist in the recognition and measurement of intangibles and their subsequent relief in the companies' financial statements. Cultural reasons seem to be the main detractors to the implementation of a knowledge-based management, even in a sector deeply characterized by proactive strategies to grant the Human Safety and Security.

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