International Financial Reporting Standard (IFRS) Regulations for Supply Chain Management

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***Abstract*— The purpose of this study was to investigate the adaptation of International Financial Reporting Standards (IFRS) in supply chain management. This article provides a comprehensive critical analysis of the provisions of IFRS for accounting for intangible assets from the point of view of their practical application in supply chain. The objects of the study were Russian companies, because generally while composing financial statements in accordance with IFRS, there might be problems of accounting for intangible assets due to the imperfection of these regulations. The authors studied the consolidated financial statements of the 40 largest Russian organizations of the non-financial sector, composed for 2014 - 2017. As a result, there have been disclosed a number of IFRS regulations on supply chain for intangible assets, leading to significant problems in their practical application by modern organizations. The main conflicting points were the definition of intangible assets, the regulation of their valuation, the determination of the depreciation method, the ratio of goodwill and intangible assets, the presentation of general information about this type of asset. The imperfection of the regulations of IFRS on supply chain leads to the incomparability of the information presented, which negatively affects the adoption of economic decisions. The article presents options for solving the disclosed problems in order to minimize the risk of distortion of financial statements and increase the usefulness and reliability for its users.**

***Keywords*—** *supply chain management, goodwill, measurement subsequent to acquisition, depreciation, accounting, disclosure.*

1. Introduction

In recent decade, supply chain analysis, growth and development has grown rapidly. Supply chain management (SCM) is a quickly developing sector which has considerable impact on academicians and business management experts. Research related to intangible assets is common in a lot of countries. Thus, [1] consider issues of impairment of intangible assets and disclosure in the financial statements of Italian banks [2]. Some scholar concluded that IAS 38 Intangible assets contain the extensive list of norms regulating initial recognition and approaches to the assets evaluation at initial and further recognition and determines the rules of intangible assets [4]. The purpose of the study is to identify the main problems that arise in practice as a result of applying IFRS on SCM to the accounting of intangible assets.

2. Methods

The foundations of the methodology for accounting for intangible assets in the IFRS system were founded 40 years ago with the approval of IAS 9 “Accounting for Research and Development Activities” [5]. During this time, the international accounting rules for these assets have significantly changed. However, despite the fact that these standards have been approved for a long time and actively improved throughout this time, our studies show that the current IFRS regulations on accounting for intangible assets are not perfect and in some cases lead to significant problems when practical application. The problems of the practical application of the IFRS provisions on SCM for accounting for the above assets in this article were studied on the example of Russian organizations that prepare financial statements according to these standards. Financial reporting has prompts audit activities, which facilitates enterprise risk management in supply chain companies. Experimental confirmations demonstrated that the utilization of IFRS has expanded the value relevance of financial reports in a developing market such as Indonesia. There will be a wide range of factors to take into account in going concern judgments and financial projections including travel bans, restrictions, government assistance and potential sources of replacement financing, financial health of suppliers and customers and their effect on expected profitability and other key financial performance ratios including information that shows whether there will be sufficient liquidity to continue to meet obligations when they are due. Therefore, the

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following hypotheses are proposed:
H1: There is a significant relationship between IFRS and efficiency.
H2: There is a significant relationship between IFRS and supply chain management.

3. Results and discussion

The main objective is to find the effect of IFRS on SCM for improving the company performance. For this purpose the company should regulate the rules abased on the IFRS and SCM interaction. Our critical analysis of IFRS regulations on accounting for particularly in supply chain companies and consolidated financial statements of 40 largest Russian organizations of the non-financial sector, formed for 2014 - 2017, revealed the following main problems that arise when applying these regulations to modern organizations. One of the most important problems in this area is to determine the relation between intangible assets and goodwill. Thus, according to IFRS 3, in a business combination, the acquiring entity must recognize identifiable acquired assets separately from goodwill [6]. Such regulation of international standards leads to practical questions about whether goodwill is an intangible asset. And these issues are solved by different organizations in different ways, which are clearly demonstrated by the data in the fig.1. Our studies have shown that 20 organizations reviewed by us reflect in their financial statements goodwill as part of intangible assets, and 10 organizations, on the contrary, consider goodwill as an independent accounting object, qualitatively different from intangible assets, and disclose information about it separately from the latter. At the same time, 4 of the organizations studied by us in one part of their financial statements speak of goodwill as part of intangible assets, and in the other part of the financial statements present these assets as fundamentally different accounting objects. Thus, there are contradictions in the reporting of such organizations when determining the relationship between intangible assets and goodwill.

Figure 1. Determination by various organizations of the relation between intangible assets and goodwill

The next problem is related to the subsequent valuation of intangible assets [7]. It should be noted that IAS 38 does not require information about the selected model for the subsequent measurement of the aforementioned assets (the historical cost model or the revalued model). As a result, in practice, most organizations do not disclose such information in the financial statements (table 1).

Table 1: Reflection of information on the selected model for the subsequent evaluation of intangible assets in the financial statements

Options	Number of organizations	Percentage ratio
No information is provided on the selected model for the subsequent valuation of intangible assets	22	55 %
It is stated that intangible assets are carried at cost less accumulated depreciation and impairment losses	18	45 %
Result	40	100 %

As can be seen from table 1, more than half of the organizations reviewed by us do not provide information in the financial statements about the selected model for the subsequent valuation of intangible assets. It should be noted that most of the organizations (12 out of 18) that disclose such information reflect it somewhat “vaguely”. So, these entities simply present in the notes to the financial statements a phrase that intangible assets are carried at historical cost less accumulated depreciation and impairment losses. Our studies have shown that only 6 of the reviewed organizations indicate in the notes to the financial statements that they apply the model for the subsequent measurement of intangible assets at historical cost less accumulated depreciation and any accumulated impairment losses (Fig . 2).

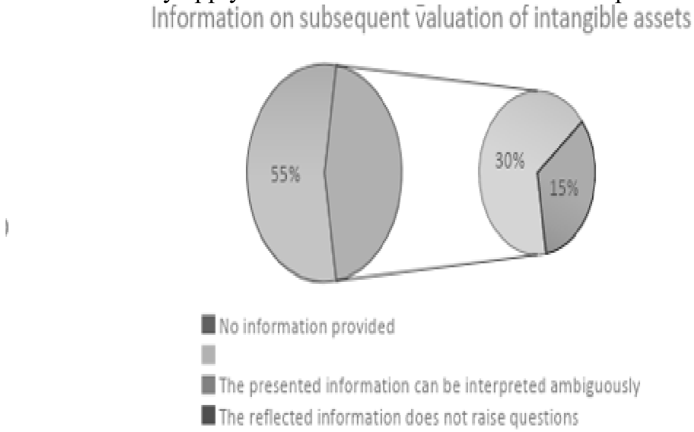

Figure 2. Disclosure by organizations of subsequent measurement of intangible assets

The points that are mentioned above allow us to conclude that in most cases, users of financial statements cannot obtain the information they need to make economic decisions regarding organizations. To solve this problem, it seems necessary to introduce in IAS 38 the requirement to disclose in the financial statements information about the selected model for the subsequent valuation of intangible assets. It should be noted that IAS 38 does not contain regulation for calculating depreciation of intangible assets using the reduced balance method [8, 9]. At the same time, the initial absorption of intangible assets by the method of reduced balances can be caused by different variations [10].

For example, it might be possible to calculate depreciation using the specified method according to the 20/80 principle, which is a slightly modified Pareto rule, which assumes that the first 20% of the effort provides 80% of the result (in our case, 80% of the economic benefits correspond with expected asset). Moreover, if the useful period of an intangible asset is 2 years, then the formulas for calculating its depreciation will look like this [11, 12]:

$D_{1\,y}$ = HC * 80 %
$D_{2\,y}$ = HC * 20 %

Where: $D_{1\,y}$ - is depreciation amount of an intangible asset for the first year; $D_{2\,y}$ - is depreciation amount of an intangible asset for the second year; HC - is the historical cost of an intangible asset.

If the useful period of an intangible asset is 3 years, then the depreciation calculation formulas for the aforementioned option of the reduced balance method will take the following form [13]:

$D_{1\,y}$ = HC * 80 %
$D_{2\,y}$ = HC * 20 % * 80 %
$D_{3\,y}$ = HC * 20 % * 20 %

Where: $D_{1\,y}$ - is depreciation amount of an intangible asset for the first year; $D_{2\,y}$ - is depreciation amount of an intangible asset for the second year; $D_{3\,y}$ - is depreciation amount of an intangible asset for the third year; HC - is the historical cost of an intangible asset.

If the useful period of an intangible asset is 4 years, then the following formulas for calculating its depreciation can be presented with the aforementioned option of the reduced balance method:

$D_{1\,y}$ = HC * 80 %
$D_{2\,y}$ = HC * 20 % * 80 %
$D_{3\,y}$ = HC * 20 % * 20 % * 80 %
$D_{4\,y}$ = HC * 20 % * 20 % * 20 %

Where: $D_{1\,y}$ - is depreciation amount of an intangible asset for the first year; $D_{2\,y}$ - is depreciation amount of an intangible asset for the second year; $D_{3\,y}$ - is depreciation amount of an intangible asset for the third year; $D_{4\,y}$ - is depreciation amount of an intangible asset for the fourth year; HC - is the historical cost of an intangible asset.

Taking into account the above formulas, we can continue to determine the depreciation of an intangible asset at other useful periods.

There are other examples of various variations in calculating the depreciation of intangible assets using the reduced balance method. One of such variations is the application of the sum of the number of years of the useful period of these objects. In this case, depreciation of these assets will be calculated using the following formula [14]:

D = HC * NYE / SY

Where: D - the annual amount of depreciation of the above assets; HC - is the historical cost of an intangible asset; NYE - is the number of years remaining until the end of the useful period of the specified assets; SY - is the sum of the useful period years of these assets. As another variation in determining the depreciation of intangible assets using the reduced balance method, there might be proposed

the following calculation formula:
D = B * C / UP
Where: D - the annual amount of depreciation of these assets; B - the balance amount of intangible assets at the beginning of the reporting year; C - is the acceleration coefficient determined by the organization; UP - is the useful period of the above assets.
Thus, it is obvious that the use of different variations of the reduced balance method leads to the determination of unequal depreciation amounts of intangible assets. Consequently, it leads to the formation of different amounts of financial reporting indicators, which will include these amounts [15].
The relevance of making these adjustments to IAS 38 is also confirmed by the fact that in practice a number of modern organizations use the reduced balance method to calculate the depreciation of intangible assets (Fig. 3).

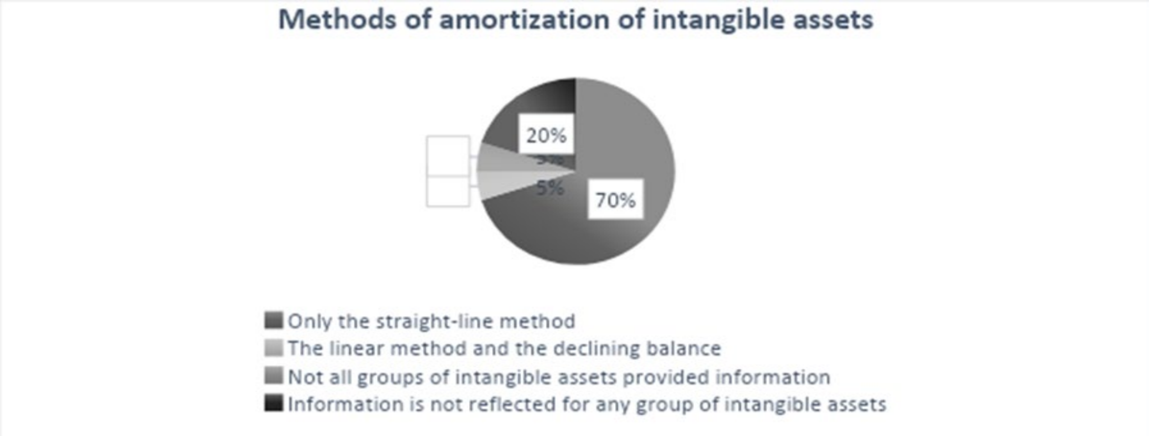

Figure 3. Methods for calculating intangible assets depreciation disclosed in financial statements of organizations

As it might be seen from fig. 3, currently a small percentage of organizations report on the application of the reduced balance method for calculating depreciation of intangible assets. At the same time, we draw attention to the fact that a quarter of the considered organizations do not disclose or do not fully reflect in their financial statements information about the selected methods for calculating the depreciation of these assets. Theoretically, 25% of organizations can use the reduced balance method for intangible assets.
Depreciation of intangible assets has another problem. IAS 38 defines the depreciable amount for these assets as historical cost or another amount accepted as historical cost, net of residual value (Barth, 2018). Thus, the value of the latter affects the amount of accrued depreciation of intangible assets, what means it affects the value of many indicators of financial statements. Indeed, as the studies showed, not a single of the 40 examined organizations disclosed information on the liquidation value of intangible assets. As a result, users of financial statements can only make assumptions of the reasons of absence of information about the indicated in the financial statements. The assumed reason is the liquidation value of intangible assets is zero or this value is significant, but not disclosed in the financial statements due to the fact that it is not required IAS 38. The points mentioned above in the preceding paragraphs clearly indicates the need to amend IAS 38. It is believed this standard should include the requirement to present in the financial statements information on the liquidation value for each class of intangible assets, including an indication that this value is equal to zero (as appropriate).
Results of the study have shown that IFRS had significant role in supply chain management. IFRS has maintained the key contribution to boost up supply chain management practices in Indonesian dairy firms. As it is discussed in the literature, this study has investigated the effect of IFRS on accounting quality measures. Supply chain accounting quality includes; value relevance, earning management and timely recognition of loss. At the end of the study, it should be highlighted that the general problems associated with the disclosure in accordance with IFRS of information on intangible assets in the financial statements of organizations. The studies have shown that some organizations do not reflect in their reports any information about these assets due to incorrect interpretations.
To eliminate discrepancies in practice, the requirements of IAS 38 to reflection of information on intangible assets in financial statements, it seems appropriate in each clause of this standard containing information disclosure requirements to clarify that the relevant information must be presented in the financial statements regardless of the materiality of intangible assets (with the exception of the item on the description, book value and the remaining depreciation period in respect of an individual intangible asset that is material for the organization, as well as the item on the change in the accounting estimate associated with intangible assets that has a significant impact in the current period and subsequent periods).

4. Conclusions

To sum it all up, the studies allow us to draw the following conclusions. Today, not all IFRS regulations on supply chain for intangible assets, in our opinion, allow us to generate in practice the necessary and useful information for users of financial statements. The recommended adjustments to IFRS regulations for SCM are systematized in table 2.

Table 2 Proposed Adjustments to IFRS for Intangible Assets.

Areas where the most important problems have been identified	**Recommended changes in the requirements of IFRS**
1. Determining the relationship between intangible assets and goodwill	In IAS 38 and IFRS 3 it is necessary to introduce regulations that clearly define whether goodwill is one of the types of intangible assets or these objects are two qualitatively different objects of accounting
2. The assignment of other objects of intangible assets	Adjust the definition of intangible assets presented in IAS 38 to accurately reflect the economic substance of the object of accounting
3. Subsequent valuation of intangible assets	Introduce in IAS 38 the requirement to disclose information on the selected model of subsequent valuation of intangible assets in the financial statements
4. Amortization of intangible assets	Include requirements in IAS 38: 1) disclosures in the financial statements of information on the liquidation value of each class of intangible assets, including an indication that such value is zero (where applicable); 2) presentation in the financial statements of information on options for accrual of amortization of intangible assets by the method of reduced balance
5. General problems related to disclosure of information on intangible assets in financial statements in accordance with SCM	Each IAS 38, which contains requirements for disclosure of intangible assets, specifies that the relevant information is to be presented in the financial statements regardless of the materiality of the said assets (except for the item on description, carrying amount and remaining amortization period in respect of an individual intangible asset that is material to the organization, as well as the item on change in accounting valuation related to intangible assets that has a significant impact in the current period and subsequent periods)

To sum it all up, there is a hope that mentioned proposals will contribute to the improvement of IFRS regulations for SCM. Therefore, supply chain managers should use effective IFRS to improve the supply chain process and accordingly the efficiency of the company.

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