ISSN (Print) 2307-6968, ISSN (Online) 2663-2209
Вчені записки Університету «КРОК» №2 (50), 2018

Розділ 2. Інноваційна діяльність

УДК 330

ТРАНСФОРМАЦІЯ ФУНКЦІЇ БЕК-ОФІСІВ З МЕТОЮ ПІДТРИМКИ КУЛЬТУРИ ІННОВАЦІЙ ТА РОЗГОРТАННЯ ІНТЕЛЕКТУАЛЬНОГО КАПІТАЛУ

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TRANSFORMATION OF BACK-OFFICES FUNCTION TO SUPPORT A CULTURE OF INNOVATION AND INTELLECTUAL CAPITAL DEPLOYMENT

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DOI: https://doi.org/10.31732/2663-2209-2018-78-95

Annotation. The most important attribute of intellectual capital is the company's ability to innovate, which makes it possible to gain sustainable competitive advantage. In addition to critical parts of the intellectual capital management system, such as the human capital management system and the knowledge management system, another important aspect is to be considered - the formation of the company's ability to be adaptive and agile. So, if a key competence-the ability to innovate-is a function of the front office, then the creation of adaptive capacity, which is a certain combination of

human capital and a knowledge management system, manifests itself in a back-office meaning. The main back-office function is to support generation of innovations and their implementation through key competencies that ensure the rapid alterations of all processes and structures that are supposed to change. The main purpose of the research is to create company expertise, organizational structure, processes, performance measurement and a team that will be able to maintain steady changes and remain successful. It is obvious that the key component of such a company will be a well-formed team with the necessary skills, knowledge, and competencies, a team whose propensity for transformation is one of its basic characteristics, a team for which resistance to change is unacceptable. The goal of this research is to show how implementing culture of transformation in the back-office helps to promote innovations and improve the company's performance. Additionally, monetary assessment of back-office performance is done to demonstrate what exactly the business will receive in terms of market share, financial results, and company value.

Key words: intellectual capital, culture of innovation, back-office transformation, knowledge management system, performance, value added operations.

Formulas: 0, fig.: 2, tabl.: 2, bibl.: 12.

Анотація. У цій статті йдеться про можливості трансформації функції бек-офісів з метою підтримки культури інновацій та розгортання інтелектуального капіталу. Безперечно, найважливішим атрибутом інтелектуального капіталу на сьогодні є здатність компанії до інновацій, що дозволяє отримати стійку конкурентну перевагу. На додаток до критично важливих частин системи управління інтелектуальним капіталом, таким як система управління людським капіталом і система управління знаннями, слід враховувати ще один важливий аспект - формування здатності компанії бути адаптований і гнучкою. Таким чином, якщо ключова компетенція - здатність до інновацій - є функцією фронт-офісу, то створення адаптивного потенціалу, що представляє собою певну комбінацію людського капіталу та системи управління знаннями, проявляється в

бек-офісі. Основна функція бек-офісу полягає в підтримці генерації інновацій та їх реалізації через ключові компетенції, які забезпечують швидкий зміни всіх процесів і структур, які повинні змінитися. Основна мета дослідження полягає в тому, щоб створити досвід компанії, організаційну структуру, процеси, вимір продуктивності і команду, яка зможе підтримувати стійкі зміни і залишатися успішною. Очевидно, що ключовим компонентом такої компанії буде добре сформована команда з необхідними навичками, знаннями та компетенціями, команда, схильність до трансформації якої є однією з її основних характеристик, команда, для якої опір змінам стане неприйнятним. Мета дослідження представленого у цій статті - показати, як відбувається впровадження культури трансформації в бек-офісі, що сприяє просуванню інновацій та підвищенню ефективності компанії. Крім того, проводиться грошова оцінка ефективності роботи бек-офісу, щоб продемонструвати, що саме отримає бізнес з точки зору частки ринку, фінансових результатів та вартості компанії.

Ключові слова: інтелектуальний капітал, культура інновацій, трансформація бек-офісу, система управління знаннями, результативність, операції з доданою вартістю.

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Introduction. Traditional factors of generating added value, such as fixed assets, are becoming less and less relevant. New opportunities have shifted attention to intangible assets - intellectual capital and knowledge management systems - that are difficult to imitate by competitors and, therefore, play the role of drivers for the corporate performance nowadays.

Intellectual capital has been considered largely irrelevant for the most part of financial history which is the reason why intellectual capital and knowledge management systems that an organization possesses are not officially recognized as companies' assets. However, with recent economic developments, specifically, the use of more and more of intangible assets in company's operating activities, the

introduction of information technology into business structure and the creation of knowledge management systems particularly highly relevant to organizations working in fields with high value-added operations. In these industries, the significance of non-material properties has risen to essential to company's success. Still, although it is now recognized that intellectual capital is of much greater importance than it was a hundred (or even a dozen) years ago, it is not a common practice to reflect it in a firm's financial statements entirely, even for internal use. Anything more abstract is omitted, e.g., the potential to innovate or the ability to create, distribute, preserve, and, for many companies, even sell knowledge and knowledge management system. Although there is no universally accepted theory for intellectual capital valuation, each has its own strengths and weaknesses in deriving approximate value of intellectual capital.

Setting objectives. The main objective of the study was to assess the impact of creating and managing intellectual capital and a knowledge management system on optimizing the functioning of the back office. For this purpose, we evaluated the following:

- the current measurement of the key business indicators;
- efficiency of the business process;
- sufficiency of the performance;
- appropriateness of the personnel management system;
- speed, timeliness and adequacy of the response of supporting units and functions to changes in the external and internal environment.

Additionally, the research analyses the current reflection of intellectual capital and knowledge management system as a part of intangible assets and provides some rationale for employing intellectual capital based on the benefits of creating back office functions which reflect the company's operations, transformational activities, financial state and health, and closing the gap between its market and book value. Subordinate goal of the research is to study how dynamic capabilities creation can help companies enhance their performance with flexible back office support.

Analysis of recent research and publications. As it has been noted, creation of back-office and transformation of its functions in order to support ongoing changes within the company requires that intellectual capital deployment and robust knowledge management system are designed and established upon companies' needs.

The Proposed Project is based on the methodology of Evaluating Knowledge Management Performance which was conducted by Clemente Minonne and Geoff Turner, in Switzerland and University of South Australia, Adelaide, South Australia and University of Nicosia, Cyprus. This paper includes particular stages of the project and extracts from the stages. The four forms of knowledge management (KM) integration are associated with managing and leveraging human oriented and system oriented KM practices. Greater awareness of this, along with appreciation of optimum proportion of each KM practice, will enable organisations to be better suited to create a performance management system that accounts for the integrative management of an organisation's knowledge assets. Fundamentally, there is a need for KPIs that measure effectiveness and efficiency of an organisation's both front-office and back-office functions' delivery [1; 2].

The foundation of strategic success primarily depends on how well a company's knowledge assets are designed to support innovative products and processes introduction and execution. Naturally, there needs to be an effective way to evaluate performance of such operation (Turner and Jackson-Cox, 2002). Development of such a way has become the most important economic task for most organisations, especially, for companies working in high-tech industries, IT companies etc [3].

The growing importance of knowledge made companies face the difficult problem of setting up a set of KPIs that evaluate the company's performance in introducing an integrative strategy of being innovative, adaptive, agile and able to answer all modern challenges. However, it is not enough to account for what is easily measurable. This will only assess one part, the efficiency, of activities and costs (Pfeffer, 1997). Instead, it is better to focus on developing a way to measure what is a real need in the organisation. Such needs, among others, include innovation, technological

development and employee attitudes, experience, learning, tenure and turnover [4]. These indicators, however, are only useful if they can measure ongoing performance of the company. Therefore, it is necessary that senior managers who clearly understand the goals of their organisation are involved in developing such KPIs.

It is more difficult to evaluate other indicators, but they also focus the company on decisions and actions most essential to success. In this setting, the main task is to assess company's performance in each of the four forms of integration (cultural, organisational, methodical and procedural integration) in such a way that it will help enable an organisation to assess its competitive position. KPIs used in evaluating the progress of companies in this necessary strategic activity of integrative KM has to be lined along with one or another of these forms of integration.

The other book, written by Juergen H. Daum whose works I find the most important in relation to this paper, "Intangible Assets and Value Creation" (2003) does great job exploring the subject of adapting business management to nowadays financial climate [5]. The book also features interviews with leading experts such as Leif Edvinsson, Baruch Lev and David Norton as well as some practical examples. As for the author himself, even though his works are more focused on high technology industries, he shows some clear trends in development of intangible assets. His diagrams clearly show that intellectual capital has been getting more and more relevant lately. Reflecting on those trends, Daum makes some very rational points of how to improve management and corporate reporting models by considering intangible assets as more influential on business [6; 7].

Another work I find to be important for the paper is an article by Patricia Seemann, David De Long, Susan Stucky and Edward Guthrie titled "Building Intangible Assets: A Strategic Framework for Investing in Intellectual Capital" (1999). This work does a general outline of what intellectual capital is, how to manage it and what problems might arise with recording it as an intangible asset. It also provides some key definitions and strategies which will be helpful in improving the existing practices of knowledge management [8].

In practice, the present systems do not give direct indicators, but rather indirect assessment of the intellectual capital of the company, in terms of results (for example, company's value-added, customer satisfaction) or external statistics of activity to increase the value of the company (for example, the costs of training and education of employees). The reports about the intellectual capital do not clarify calculation of indicators, even those that do not have commonly recognised approaches to the calculation (Customer Satisfaction Index, etc.). In addition, comparison reports of one firm for several years lead to the conclusion that the composition of indicators was changing rather arbitrarily and without explanation, therefore the information becomes poorly suited for investment decision making (Wayne S. Upton, Jr. 2001) [9].

Some indicators of the presented models are certainly possible to standardize. However, the problem is that the meaning of indicators should reflect the specifics of the company's activities, otherwise intellectual capital cannot be disclosed. Therefore, the total standardization in this case is impossible, and the indicators of intellectual capital lose against the calculation procedure of financial accounting indicators, which are known to all who run and use the official financial reporting system, where procedure is the same for all companies, regardless of industry, type of activity and other features. This ensures comparability of financial indicators across time and range.

Next, an article by Carol Corrado, Charles Hulten and Daniel Sichel, titled Measuring Capital and Technology (2005): An Expanded Framework, is important in that it gives theory on how to estimate the effect of intangible assets on production, which is essential to proving the research question stated in this paper. The work provides mathematical background to how tangible assets efficiency is estimated and then tries to show how to apply the mathematical models to intangible assets and see clearer how to estimate the output of possessing intellectual capital [10].

A dissertation by Blaise M. Sonnier "Intellectual Capital Disclosure Practices of U.S. High Technology Companies and their Relationship to Performance, Value and Size metrics" (2006) is also useful in that it studies what methods high technology companies from the USA use to evaluate and account intellectual capital. This is

important in particular because of the increased significance of intangible assets for IT firms compared to other fields of business and therefore such organizations have more experience in the subject of this paper [11]. However, we know that not only IT industry utilize intellectual capital to generate profit.

Some online sources will be used in researching theoretical background and developing strategies to implement in realizing the subject of this paper. In particular, an online resource called Econ Papers contains articles from various authoritative sources, including leading economic universities. The resource contains a lot of works on the subject of this paper and will be very useful in proving the points risen. Another useful web site is The Journal of Applied Management and Entrepreneurship (JAME). It is a journal which features articles on different areas of entrepreneurship and management and some of the articles have very relevant subjects of managing intellectual capital and accounting for intangible assets. The articles are written by professors of reputable universities and practitioners in the field, so their thoughts would be invaluable addition to the paper.

Research results. The project of transformation of back-office functions has been started in several IT companies, which meet most of the criteria of being innovative, working in a rapidly changing environment, and for which it is crucial to transform backing functions to support change and makeovers on permanent basis.

The first stage of the research project is evaluation and measurement of the existing organizational structure, processes, management system, performance appraisal. The first stage also includes measuring how the companies react to the emerging opportunities and challenges, how quickly they are able to respond to uncertainty, create and launch new products, adjust the products to the clients' needs, etc. The next stage is identification of the bottlenecks that prevent flexibility and competitiveness, and the role of supporting functions in these processes. The methodology of the analysis is based on the results of interviewing a company's employees, measuring the performance, processing results, and comparing against the data of other companies. The contribution of the project is a set of proposed changes

for the organizational structure, processes and key competencies, and suggestions to alter the methods for assessing the success of the performance. The model is evaluated and is either implemented in the company or subjected to iterative improvements. Simultaneously, the old and new models of back office staff performance are being assessed.

Such an approach will allow to assess the potential for changes and create an optimal model of companies' supporting functions that will support execution of breakthrough tasks by the front office.

The Project Stages and Outcome

To enhance value to customers, employees, public entities, communities and to offer collaborative support to all clients and stakeholders the chosen company has the ambition to be a truly global provider known for its highly innovative projects and trendsetting initiatives.

The basic stages of the project are associated with the definition of the strategy as a critical part to set all other objectives for the back-office functioning assessment and implementation of transformational stages.

After approval of the strategy as part of forming knowledge management systems, the following were shaped: culture, processes, methodology and organisational integration. Then, Performance Management system was appraised, re-developed and implemented. At the same time, all expenses relating to the project system were defined [12].

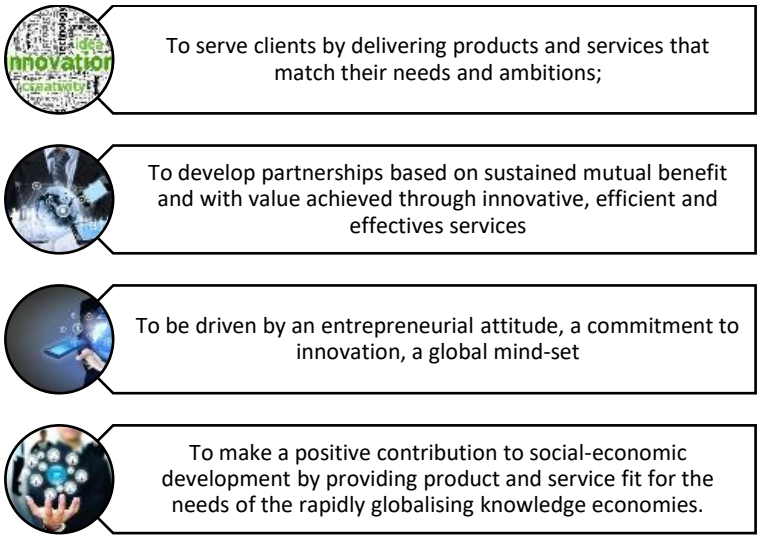
The company has now been in existence for a few years. It is the right time to express the values of the company (Pic. 1):

– To serve clients by delivering products and services that match their needs and ambitions;

– To develop partnerships based on sustained mutual benefit and with value achieved through innovative, efficient and effectives services;

– To be driven by an entrepreneurial attitude, a commitment to innovation, a global mind-set;

– To make a positive contribution to social-economic development by providing product and service fit for the needs of the rapidly globalising knowledge economies.



Picture 1. Company's value definition

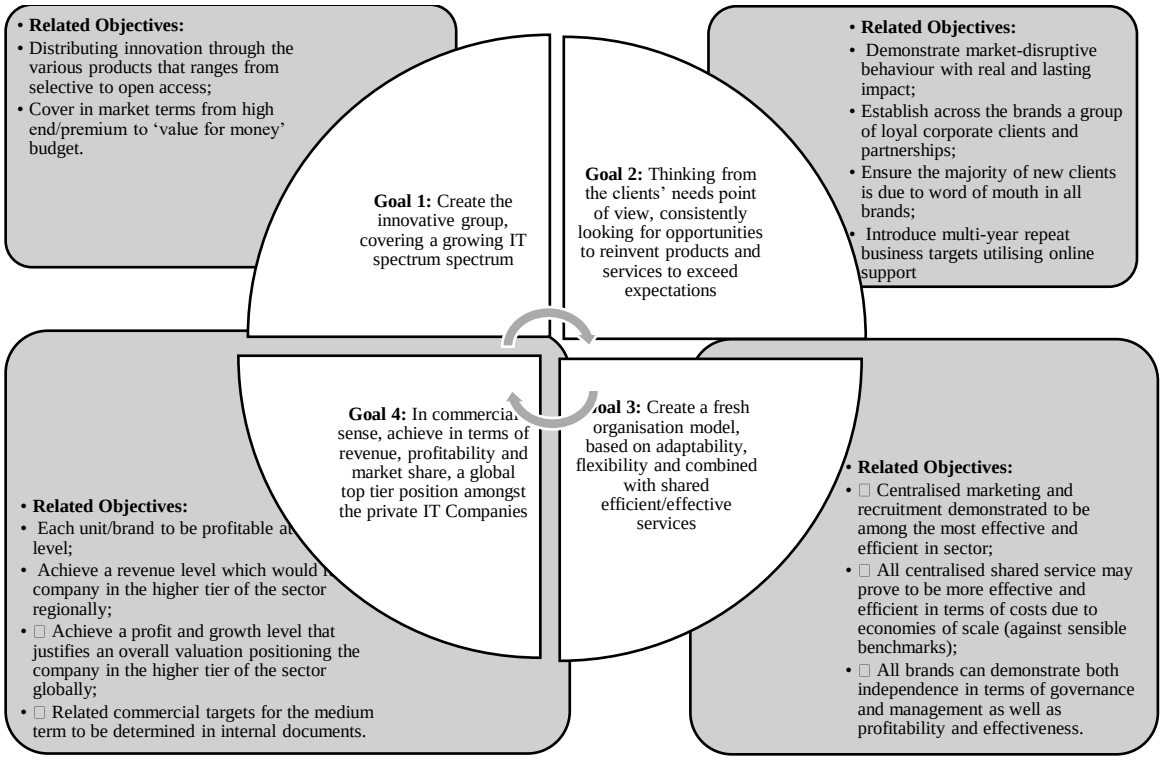
Next step was about setting up goals and related objectives for the company (Picture 2):

Goal 1: Create the innovative group, covering a growing IT spectrum. Related Objectives: Distributing innovation through the various products that range from selective to open access; Cover, in market terms, the range of products from high end/premium to 'value for money' budget.

Goal 2: Thinking from the clients' needs point of view, consistently looking for opportunities to reinvent products and services to exceed expectations

Related Objectives: Demonstrate market-disruptive behaviour with real and lasting impact; Establish across the brands a group of loyal corporate clients and partnerships; Ensure the majority of new clients is due to word of mouth in all brands; Introduce multi-year repeat business targets utilising online support

Goal 3: Create a fresh organisation model, based on adaptability, flexibility and combined with shared efficient/effective services



Picture 2. Goals and related objectives

Related Objectives: Centralised marketing and recruitment demonstrated to be among the most effective and efficient in sector; All centralised shared service may prove to be more effective and efficient in terms of costs due to economies of scale (against sensible benchmarks); All brands can demonstrate both independence in terms of governance and management as well as profitability and effectiveness.

Goal 4: In commercial sense, achieve the global top tier position amongst the private IT Companies in terms of revenue, profitability and market share

Related Objectives: Each unit/brand should be profitable at the targeted level; Achieve a revenue level which would rank the company in the higher tier of the sector regionally; Achieve a profit and growth level that justifies an overall valuation positioning the company in the higher tier of the sector globally; Related commercial targets for the medium term to be determined in internal documents.

The back-office units were subsequently asked to outline how they plan to support the various units to deliver on these goals and objectives. Further, not at the back-office level, the goals were decomposed into key elements of the performance system, namely

culture, organization, methods and processes, and for each of these prospects, top-level goals, initiatives and lower-level goals were defined. The results are shown in Table 1.

Table 1

Selected objectives, initiatives and targets (Extract)

	Objectives	**Initiatives**	**Targets**
Culture	KM encourages and facilitates the exchange of organisational knowledge	Create an organisation-wide job-rotation scheme	Internal job rotation frequency of employees of 2 years
Organisation	KM supports interdepartmental collaboration	Create a KM team comprised of representatives from each business function	Year-on-year increase in employee satisfaction with inter-departmental collaboration
Method	KM supports the exploration, innovation, dissemination and automation of knowledge	Create and execute a KM strategy using an integrated model	Year-on-year increase in the stock of knowledge assets
Process	KM supports the reduction of work processing time	Conduct an audit of the speed of business processes and initiate appropriate KM practices to make them faster	Year-on-year improvement in the speed of business processes

Source: compiled by the author

Then, for each low-level goal, an indicator is determined and the cost is calculated, namely, which item of expenditure is influenced, whether this leads to an increase in costs or a decrease. In the following it is necessary to determine where exactly the effectiveness grows and in what form: growth of productivity, efficiency, reduction of fixed costs, support for innovations, acceleration of processes, etc. The results are presented in Table 2.

Table 2

Provisional Key Performance Indicators (Extract)

	Targets	KPI	Impact on Costs
Culture	Internal job rotation frequency of employees of 2 years	Percentage of employees engaged in a planned two-year job rotation scheme	Staff costs: Revenue within operating expenses; administrative and general staff costs
Organisation	Year-on-year increase in employee satisfaction with inter-departmental collaboration	Continuously updated on-line employee satisfaction survey, based on a Likert scale, producing an average satisfaction rating	Staff costs connected to HR processes implementation; Consultancy costs
Method	Year-on-year increase in the stock of knowledge assets	The average, weighted according to organisational significance, of the percentage change in average employee service, average level of education, value-added by KM initiatives and return on investment in information systems	Costs allocated to all products, partnerships, product development and service; Marketing and promotion costs; Costs of IT systems implementation and adaption (CRM, The Bing, Sage, SDB); Staff advanced training Costs allocated to the system of internal service
Process	Year-on-year improvement in the speed of business processes	Year-on-year change in processing time for a basket of organisational transactions	Different type of transactional costs, Costs within business processes, IT costs, staff costs

Source: compiled by the author

Further, it is necessary to move on to measuring new indicators and processes and to compare the state and situation in the company before and after the introduction of the adapted control system of back office functions in order to support innovation.

Future Steps for the Project Development. The chosen company will form a project group and engage several change agents who will ensure most suitable and most correct employment of the adapted knowledge management system and intellectual capital, while supporting the company's current operational activity so as not to lose the market share. Once the observations with respect to efficiency of operation and competitiveness in the field are made, the project will be expanded to several more companies in the same field to ensure stable response to the research results.

The expected result is to see improvements in the companies' efficiency of operational activities, supporting functions and competitiveness in the field as a consequence of adapting and employing intellectual capital and knowledge management systems. These results are expected to compensate for the possible difficulties that could be experienced with introducing such a drastic change to performance, functional execution, financial and accounting records.

Thus, some Ukrainian IT companies involved in the project will benefit from the outcome, moreover, the industry will receive stable insights to changes. It is supposed that there will be structural change at macro-level as well due to significant contribution of IT sector to the country's GDP and perspective growing importance of the sector and developing efficiency of operations domestically and internationally.

Conclusions. It should be noted that an explicit answer about the future of intellectual capital is still not found. However, in my opinion, not even the ideal but maximally adapted deployment, management and assessment methodology can, and should be, used by high-tech companies, as well as sectors with high value-added performance and insufficient numbers of fixed assets. Such an approach will ensure better manageability of companies' activities, transparency of the future prospects of businesses for both management teams and investors, and will become the basis for the performance enhancement and sufficient usage of any resources. Finally, it is a good opportunity for companies to get long term competitive advantage by employing global human capital tendencies, and ensuring the growth of business efficiency at micro and macro levels.

Additionally, it makes sense to examine valuation of intellectual capital and, probably, to attract quality exploratory approach, like intellectual capital, might include a lot of non-financial measures, since not every aspect of corporate functioning can be expressed in financial numbers and reflect in financial statements. Often, non-financial indicators are related to functions like new products, new research and development, methods and technologies of sales and marketing, people, scientific potential and development, environment, business processes etc. Some advantages of including such

non-financial measures and binding them to more measurable systems based on financial data could help with:

Close connection to long-term organizational strategies. Financial systems of evaluation typically concentrate on annual or short-term work and do not necessarily define progress relative to customers' or competitors' demands, competitiveness and long-term strategic goals.

Intangible assets are the determiners of success in many non-industrial branches. Such intangible assets as intellectual capital and customer loyalty are much more important in this sense than "hard assets", especially in high tech and service based industries, where it is literally the most important driver of business development and the most significant competitive advantage.

Thus, at the current stage of the project, it can be stated that the proposed changes in the management and performance evaluation of the back office led to the fact that the transformed back office reacts faster to changes in the market, forms better response and supports the front office in the process of introducing new products and services more efficiently. The speed of response, decision-making, support for change has increased and processes have become more productive. To obtain further stable results, the project will be expanded into two directions, namely, further evaluation and improvement of processes in the current company and opening out of the project to other companies in the IT industry.

However, it is necessary to understand that creating more complex accounting systems to assess intellectual capital along with all non-financial processes, procedures, outcomes has some limitations and disadvantages:

Expenses on the system that tracks the majority of financial and non-financial measures might outweigh its advantages. Development can take a long time and be very costly.

Additionally, a big number of various performance indicators often requires substantial investments into information systems to extract information from several databases, which are often incompatible with each other.

Absence of statistical assurance; much of the non-financial data, like customer satisfaction, is based on analysis from several respondents and inquirers. Such methods usually have poor statistical assurance

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