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KNOWLEDGE EVALUATION IN ORDER TO GAIN SUSTAINABLE COMPETITIVE ADVANTAGES BY PROVIDING VIRTUAL SERVICES: MUSEUM AS A KNOWLEDGE AND HERITAGE KEEPER

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New era of technological development requires the review of existing control mechanisms, which facilitate information flows within organization by the example of museum. Structure and accountability as two interconnected issues of knowledge coordination are presented. Evolution of resources leads to comprehension of knowledge as a key intangible asset to gain sustainable competitive advantages. As far as modern organizations as a virtual services providers are not only knowledge consumers, but also knowledge producers, the output and goodwill evaluation have been included in problem statement.
Keywords: knowledge management, accountability, virtual organization, knowledge evaluation.

«The idea of becoming virtual might not be a pleasant one for some museums, but this development is inevitable because of the increasing digitization of cultural heritage and the demand to make collections more accessible»
W. Schweibenz

INRODUCTION

Public sector organization existence is impossible without financial donations. Government plays important role providing fund and activity support. Cost reduction is an important task for local administration to become less dependent and vulnerable from external inflows. Such support is not renewable, because organization spends resources and needs more. Otorowski and Wojcieck argue, that virtual organization is a new form, characterized by separated individuals, connected by electronic communications to accomplish performance. Virtual museum can be considered as a virtual face type, because of the presence of real, prototype organization (authors also discuss virtual strategic alliance, market alliance, co-alliance, value and parallel alliances). Other features include technology (by virtue of Internet, software), continuous improvement, opportunities, trust between real and virtual entity (or between network), absence of borders and clear identity. Virtual organizations were emerged by virtue of globalization, strong competition, social invention, change requirements, knowledge workforce and technological development.

Understanding the notion of virtual organization is incomplete without virtual space insight. This new dimension has appeared by virtue of digital innovations and has emphasized on initiative team work. Three building blocks are imagination (knowledge and creativity are underlying assumptions to push the process of idea submission), technology (the secondary system, followed by imagination) and culture (information space, where all the perceptions, beliefs and values of organization performance meet in a certain point). Previous research argue, that culture as an information space has been considered in empirical part of Master thesis, which is build upon employees values and

beliefs. Culture (or information space) is a "glue", which unites together real physical organization and its virtual form of existence.

Imagination is a driving force or dynamic capability for creation virtual space. Technology, people and culture are the three pillars of insight, where the technologies are bricks; people are evaluated by their knowledge (the most important asset of a virtual organization); culture is a perception (borderline, where physical organization ends and virtual begins). Customers (or citizens for public sector) are real who require services to be delivered to satisfy their needs.

Notions of virtual organization are not concrete. This form of entity can be characterized by insignificant physical structure, hence, slight importance for physical assets. The ultimate goal of existence is not profit maximization, but knowledge maximization (profit can be maximized by its real commercial form). The more options can be proposed, the more variations can be achieved to fulfill and improve knowledge. Virtual forms do not pay attention to a certain location (geographical area); they function through the communications via Internet. Physical organization more prefers tangible assets and minor communications, while virtual one emphasizes on small real assets, but develops communication net to achieve fame, to be available for the customers. Internal and external borders are missed and delineated just by information space, which is subjective for each firm according to internal culture.

Virtual organization is partly integrated with parent firm. Integration exists as far as both benefits from this alliance. Despite it is difficult to understand where one organization ends and another begins, integrative control mechanisms are implemented. Virtual organization presents an umbrella above real entity. New type of thinking is required. Comprehensive control is changed by flexible structure to decentralized monitoring, where trust plays an important role. Bureaucratization avoidance leads to greater flexibility, but problem of control is originated.

Bohl et al. provide chronology in transition to knowledge as a crucial asset in a virtual firm: global economy ⟶ industrial economy ⟶ commercial organizations ⟶ digital firms. Evolution of resources is presented as follows: land for global economy, manpower for industrial economy, capital (machines, energy) for commercial organizations, information and knowledge for digital firms. Contemporary world has given preference to knowledge as a main productive and strategic asset. Starting from the land at Ricardo's time, it was noted, that fertilized land is more valuable, therefore, knowledge is a fertility for modern production and creation process adds value to the output.

Virtual museum is *"a logically related collection of digital objects, composed in a variety of media which, because of its capacity to provide connectedness and various points of access, lends itself to transcending traditional methods of communicating and interacting with visitors…; it has no real place or space, its objects and the related information can be disseminated all over the world"* (Schweibenz, 2004). Virtual space provides interaction between digital and physical parts to see the performance of museum exhibits (Myrivili, 2007). "*A virtual museum has no real place or space and its objects and related information can be disseminated all over the world."*, where *" individuals find their own meanings by using state of the art animation, sound, and search*

capabilities" … by virtue of *"online entrance hall for a global audience in a presentation that brings to life the potential dynamism of objects and their stories"* (Castle, 2004).

Virtual museums have a common denominator, referred to any kind of collection of material (instead of "historical" or "cultural" value) issues, displayed in web (Huhtamo 2002). Virtual reality gives an opportunity to overcome a number of limitations: display exhibits (in case of lack of space), simulate environments, constructions or objects that do not exist anymore, or cannot be visited. Virtual reality provides more realistic experience rather than multimedia: exhibits can be observed from different angles. Environment, where users are able to learn or guided by virtual employees, can be artificially created (Lepouras and Vassilakis). Virtual museum aims to preserve digital memory space for future generations and support MCS over time. Virtual museum cannot provide real objects to society, anyway, it can support essential nature of the museum to preserve and popularize cultural heritage (Schweibenz, 2004).

New era of technological development can be considered as a *"wind of change"* for museums. Public organization has to provide service to variety of customers, hence, virtualization can bring closer wider group of citizens and engage them in an active participation and interaction (so-called new type of democratization). E-museology is a second birth for real ones: opportunity to create cultural knowledge, memory and community in a digital space (Myrivili, 2007). Input and output assessing becomes not clear understanding, because knowledge of an individual as an intangible input asset is hardly accounted. The problem for accountants is knowledge/goodwill evaluation as an additional intangible asset, which play the most important role in information period of economic development.

FRAME OF REFERENCE

Previous research concerning museum performance (Paulus, 2003; Ebrahim and Rangan, 2010; Fox, 2006; Poole, 2011) shows, that there are still many issues to future exploring. Museum as a service organization produces value by virtue of educational, cultural, heritage preserving functions. Museum provides use and inspiration of memorial collections, improve existent and develop new knowledge. Cultural value promotes interaction between access to heritage and its preservation. Museum performance does not have single appropriate system of evaluation. New era of transition to virtual public service to wide spread access to cultural heritage have to take into account knowledge needed to perform such activity. Input knowledge has to be evaluated in output or outcome. Accountability mechanisms are inevitable for knowledge accounting and performance evaluation.

Armesh et al. (2010) state, that new issues in MCS design have emerged due to technological development. Intangible property and knowledge, which are the key points in contemporary management accounting, have been changed significantly. Intangible assets are *"powerful rival"* for accounting to evaluation. Managers tend to perform with flexible structure to increase both efficiency and effectiveness, to become more adaptive to meet environmental changes in contemporary organizations. Decentralization causes increase in performance results. Despite the decentralization leads loss of control, new technologies emergence and knowledge as a driving force ultimately increases performance. The responsibility is more decentralized. Hence, departments become more

effective and measuring performance based on organization mission accomplishment is considered to become easier. According to non-cybernetic process, mission accomplishment cannot be measured precisely (see Hofstede, 1978), because of impossibility to translate knowledge and goodwill into measurable output. Organizations, which maximize social surplus rather than profit, carry out many operations, where the use of just financial indicators are not sufficient to evaluate the performance (Bois et al., 2003; Singth and Mirchandadi, 2006; Larsson and Kinnunen, 2007; Anthony and Young, 2003). Understanding of real picture of organization output and mission accomplishment comes to managers throughout developing and measuring financial and non-financial key performance indicators (Fitzerald, 2007). Managers are accountable to different groups of stakeholders, their relationships and interests constitute strategic pattern to satisfy all requested requirements.

Organizations are confused by the complexity of accountability notions, where no one entity is separated any more (Ibrahim). The challenge is to determine to whom organization is accountable and for what (Neale and Anderson, 2000) and to ensure that mechanisms work (Ibrahim). Public sector organizations strive for freedom in actions, emphasizing that they implement the best possible strategy fit and innovations to meet the need of community (Frumhin, 2001); develop "win-win" strategies to satisfy variety of stakeholders (Haily and Sorgenfrei); manage community expectation by being accountable (Kearns, 2009). These organizations have to produce surplus for sustainable development and acquiring more independence from their donors (Kearns, 1994); they have external pressure concerning performance outcomes (Ebrahim and Rangan, 2010), because public has to ensure what is actually going on and how organization contributes value and trust conducting excellent performance (Salamon and Geller, 2010; Hug, 2011), meaning possibility of successful knowledge management.

Accountability implies the relationships between the parties (donors and recipient for public organizations), which include reporting, enforcement, responsibility, compromise, etc. (Ebrahim, 2003; Timoshenko, 2006). Stakeholder's identification is a key issue for accountability (Unerman and O'Dwyer, 2006). These organizations perceive pressure from stakeholders: contributors, government, clients, etc. The success of public sector bodies depend not only on quality of rendering services, but on reporting their performance to multiple stakeholders: they focus on stakeholder's satisfaction (determining key subjects and their needs) and stakeholder's contribution (what organization requires and how it develops) (Singh and Merchandadi, 2006). Stakeholder's variety is a feature for public sector (Ospina et al., 2002; Ebrahim, 2010). Performance measurement is an important tool for providing transparency, because stakeholders require *"ongoing evaluation and continuous improvement"*, so they need to monitor the performance (Causton, 2008, p.130).

Salamon and Geller (2011) in their research concerning museum accountability state, that museum accountability depends more upon community trust and desire instead of regulations. Accountability standards could damage performance in a museum, because reporting and interpreting results need more staff, while museum has lack of financial resources, so that insufficient or "ill structured" accountability (Kearns, 1994) is an appropriate solution. Performance measurement (knowledge evaluation) and

accountability go together in public organizations and both are quite difficult to understand and successfully implement. Board asks a question of how successful are we? Do we make any difference? Variety of stakeholders with multi claims and expectations make this task interesting and difficult for the discussion (Fishel, 2003); government requires the highest possible level of accountability, while organization can have personal understanding of the accountability extent (Frumhin, 2001). There is no exact definition of performance measurement in a research literature, the accountability notion has many facets, the questions "to whom we are accountable" and "for what" demand significant attention in a research literature.

Kearns (1994) defines central questions such as for what? to whom? through what mechanisms? to be accountable for the performance. Not-for profit organization defines performance effectiveness through mission accomplishment, program completeness and meeting stakeholders expectations. Ebrahim (2003) emphases on duality of accountability structure: external (behavior standards) and internal (perception). Causton (2008) reminds that each actor should have personal ethics obligation.

The components of accountability are: transparency (collecting available and accessible information), answerability or justification (understanding for decision-making and actions), compliance (monitoring and evaluation the outcomes), enforcement or sanction (Ebrahim, 2010). Actions are transparent through mechanisms such as rule of law, self-regulation (setting standards) and transparency itself (Bovens, 2007). Public sector organizations are dependent on donors (financial support [Hug, 2011]), institutional actors, staff, suppliers, etc. Three crucial questions of accountability are to whom? which means to the all multiple actors; for what? which includes all of the multiple goals. These organizations are accountable for finance (usually coercively), performance (what it delivers), mission (public goods and service rendering), governance; how? means various of mechanisms of reports and disclosure statements, evaluation and performance assessment, industry self-regulation, participation and adaptive learning (Ebrahim 2003; 2010).

Accountability implies understanding that there are at least two participants where one has certain extent of responsibilities and answerability (Kearns, 1994; Sinclar, 1995; Ebrahim, 2003). Accountability has many facets (Sinclair, 1995) and directions (Kearns, 1994; Ebrahim 2003, 2010). Not-for profit organization depends upon donation from the stakeholders, who requires it to be accountable, because they have to see fund allocation and results (or whether organization makes difference). Accountability will be altered according to the willingness to meet digital technology. Number of stakeholders can be increased. Government remains the main financial donor for real museum. Virtual organization requires not just funds, but knowledge donations as well. Technology is a process of cognition. Virtual museum support is inevitable without suppliers of relevant knowledge. Donations are upgraded to digital level to greet knowledge management, where managers are responsible for delivering such "smart packages".

Konovalenko (2012) provides "coordination kaleidoscope" of knowledge flows. Structure and accountability are interconnected mechanisms in knowledge circulation within organization. Their dimensions are: power and legitimacy relations, organizational tasks and functions, established order of rules and norms. Structure implies relation of

"who is subordinated to whom", while accountability involves understanding of *"who accounts to whom"* (p. 61). Structure defines employees' tasks and responsibilities, while accountability emphasizes on employees' reports about tasks performed. Structure provides norms, rules, behavior, while accountability justifies these norms, rules, behavior. Thereby structure and accountability is integral parts or *"two sides of the same coin"* (p.61). Implementation of virtual form of service delivering makes structure less visible, but the mechanism of accountability is still relevant. Public sector has not clearly defined accountability (Kearns, 1994).

Situational factors or contingencies delve in a sense of possible factors which can influence management control system design. Leweling (2007) states, that contingent variables affect how organization will adapt environment to achieve best possible performance. The choice will be in favor of environment as a stakeholder's haven and main indicator of external changes (Hartmann, 2000; Merchant and Stede, 2012; Chenhall, 2003), organizational size, structure, strategy and technology (Gupta and Govindarajan, 1984; Miles and Snow, 1978; Haldma and Laats, 2007; Chenhall, 2003; Matyusz, 2012) to show their interrelation and match with the design of control mechanisms. External environment is the basis of emergence of contingency researches, the resistant variable (Leweling, 2007; Achcaoucaou et al., 2009). Muafi (2009) distinguishes it as a hostile or benign. Matyusz (2012) attributes environment with levels of stability, complexity, diversity, hostility; defined it by objects, attributes, perception; characterizes by complexity, dynamism, competitive threat. Environment doesn't appear appropriateness as the best possible tool to adapt to organization pattern, because underlying features of contingency are both in absence of one best approach and way of organizing to be effective for all organizations under any conditions (Betts). Performing in a changing environment, organizations, which are under government support, are more prone to imply new technologies (Thompson et al., 1998). This is applicable to public sector to improve service delivering for customers, because they feel beyond organizational protection. Chenhall (2007) discusses straightforward dependence between the level of uncertainty and openness of MCS as the way to fit environment with internal variables to improve performance. This is possible to achieve by virtue of strategy. Muafi (2009) states, that environmental and strategic interactions lead to better performance.

Strategy has many definitions in research literature which indicate keen interest (Langfield-Smith, 2007). Chenhall (2007) suggests that strategy isn't contextual element, it serves to fit. Effectiveness is a significant indicator of "match" between strategy and organization, it has an intermediate position between external environment and internal context (Gupta and Govindarayan, 1984; Langfield-Smith, 2007). Assuming that control design is mostly defined by the contextual variables, the role of strategy in performance improvement by mean of evaluation best possible combinations of technology and structure (Pock, 2007). Looking for single patterns to facilitate tasks, strategy provides organizational adaptation and adjustment to external environment: *"change and uncertainty – of maintaining an effective alignment with the environment while managing internal interdependencies – is enormously complex"* (Miles et al., 1978, p.547). It shows mechanisms through what managers can influence environment and predict future

outcomes (Chenhall, 2007). According to Langfield and Smith (2007) strategy implies stakeholder's expectations. This is quite important for public sector performance.

Matyusz (2012) argues that there is no universal organizational structure which is suitable to all organizations, while size of organization can be determined through number of employees and value of assets. Pennings (1975) distinguishes structure as mechanic or organic and interaction with environment; it can be seen as the most appropriate for a given environment or technological contingencies. Achcaoucaou et al. (2009) states that fitting the structure to external environment gives better performance results; because best possible structure depends upon uncertainty beyond organizational boundaries, which (uncertainties) determine most appropriate and effective structure; it can be adjusted according to contingent requirements if necessary (Chenhall, 2003). Size variable got much less attention in a research literature (Chenhall, 2007); it is mostly assumed to be not significant variable (Matyusz, 2012), but Achcaoucaou et al. (2009) defines environment, technology and size as deterministic variables.

Pennings (2007) defines technology within frame of uncertainty. Matuysz (2012) attributes it with subset of techniques to improve service delivery. Recent research shows that organizations in public sector have recognized the importance of introduction of new technologies (Woods, 2007). Innovation as a tool to improve performance is discussed in Danneels (2002). Chenhall (2007) argue the importance of combination of modern technologies with non-financial measures to improve performance. Introduction of modern technologies in public sector provide quality in service delivering to answer mission accomplishment. Recent trends show, that technologies have become inevitable for conducting and evaluation of performance in a public sector organizations as well.

Transition to virtual organization forms can be considered as a contemporary strategy, while organization structure has to follow strategy to be more flexible and adaptive. Virtual services enter our life with the Internet by virtue of common tendency of technological development. Intellectual resources become more and more important, hence, a new look of organizational management has appeared as a response to rapid dissemination of digital technologies. According to Tomic (2006), it is not necessary to be multimillion entity to become virtual; it requires software, which provides flexibility, ensures in more free money (no needs in building) and innovations. Positive externality for society is absence of air pollution and occupied space.

Uncertainty has strong impact on management control system design (Merchant and Stede, 2012), it has taken the researcher possession because of rapid changes in contemporary business environment which required best possible adaptation of MCS design within organization to new conditions (Asel, 2009), but there is no single model is applicable to all market actors in all circumstances (Merchant and Otley, 2007; Merchant and Stede, 2012; Otley, 1980). Uncertainty relates to inability of prediction future results and outcomes (Pennings, 1975). Technological development leads to rapid changes in environment increasing uncertainty in control mechanism. Public sector organizations have to provide service to society quickly and at the highest possible quality level to satisfy the needs of consumers and stakeholders. Virtual organizations aimed to reduce costs and time of providing services to consumers, increase flexibility (structure and strategy), response to global internationalizations, enlarge innovation activity in the

region. Accomplishment of such conditions leads to meeting the needs of consumers, reducing barriers to worldwide renown, increase service velocity. All these ultimately lead to cost minimization. Stages of virtual organization include designing, resources evaluation, exploitation, monitoring and control mechanisms. Human capital requires new knowledge management implementation.

Hellstrom and Jacob (2003) emphasize on problem of creation and transferring knowledge within organization to get output or result, which indicates mission accomplishment. Managers have to determine what to evaluate: process or product (short-term or long-term outcome), making difference between goals and outcomes. B Czarniawska (2003) distinguishes *"knowledge we have"* or theoretical and *"knowledge we teach"* or practical one (p.355). Theory of virtual organizations is not the same that practice of services they really produce. Practical rational choice deviation from theoretical postulates is a serious problem to apply knowledge in the real life. Lesson and Karajan (2002) state, that *"knowledge elicitation techniques" among personnel management specialist, "the measurement of intangible assets" among accountants* (p.283). They also refer to problem of defining knowledge in theory and its studying in practice. Knowledge is not equal to information, asset or network, but it is rather a key to success performance. Knowledge is dynamic, the process of its creation needs attention (Chou, 2004). Museum provides use and inspiration of memorial collections, improve existent and develop new knowledge (Paulus, 2003; Ebrahim and Rangan, 2010; Fox, 2006; Poole, 2011). Cultural value promotes interaction between access to heritage and its preservation, like interconnection between theory and practice of knowledge, between real museum and its virtual performance.

Schweibenz (2004) describes virtual museum as a *"museum without walls"*, where digital collections, translated into digital heritage, have no duplicate (unique itself). Museum collections tend to become more accessible worldwide by virtue of increased digitalization of cultural heritage. Consumers are not in a real museum, hence, they can not touch of feel the atmosphere, but that is the solutions for those, who can never come to visit such real museum because they have no time or live in thousand miles. Possibility to read virtual brochure, content, provide learning opportunities and creating virtual museum become possible in a new digital era. Museum is a not-for profit organization which provides services according to its unique functions. All organizations need to measure the performance in order to see whether they make any difference. Companies, where performance is measured properly, are usually more successful, than companies, where the performance is not measured accurately enough. This is a call to knowledge evaluation in order to gain more sustainable preferences in new world.

Evaluation of knowledge as an asset for virtual service providers

Knowledge evaluation becomes more and more important issues for both: theory and practice in the contemporary world of technologies. Knowledge is an asset as an input, but how to distinguish, define and use tacit and explicit knowledge, which belong to employees? How to transform this *"powerful rival"* through the black box of organization into visible output? Konovalenko (2012) states, that knowledge is an important resource, which attributes organization with sustainable competitive advantage. Organizations

create and transfer knowledge for further implementation. Coordination of such flows can be considered through *"knowledge-enabling"* and *"knowledge-management"* perspectives (p.19), where enablers refer to structure and management refers to accountability in order to measure and manage. Extraction of tacit or hidden knowledge and making them visible for measuring is a chance for competitors to copy some techniques or strategy. Gaining sustainable competitive advantages by making intangible assets visible is on the one side of scale, while the other scale is a jeopardy of loss of sustainable competitive advantages.

Knowledge adds value or creates it, which have influence on organization goodwill. John W. Day (2008) states, that problem of goodwill evaluation is in its nature. Goodwill is a difference between the value of a business enterprise as a whole and the sum of the current fair value of net asset. Net assets are left after subtracting the company's liabilities. Goodwill is only recorded when its amount is substantiated by an arm's-length transaction. Unlike intangible assets, goodwill can not be sold separately. Accountants can see goodwill value only after the realization of an asset (or entity). Knowledge is an intangible asset as an input, hence, it could be separated; but knowledge becomes integral as an output, because is adds value and recorded as goodwill after selling. The problem is how to evaluate this input in order not to make it visible for competitors? FAS 142 (2001) states, that shall not be amortized (first goodwill shall be tested for impairment: the condition that exists when the carrying amount of goodwill exceeds its implied fair value). Financial statement presentation is the same for intangible asset and goodwill: intangible asset and goodwill shall be aggregated and presented as a separate line item in the statement of financial position, but the aggregate amount of goodwill impairment losses shall be presented before the subtotal income from continuing operations.

According to IFRS IAS 38 "Intangible Assets" it is identifiable, if it is either separable, ie is capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable asset or liability, regardless of whether the entity intends to do so; or arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from entity or from other rights and obligations. An intangible asset shall be recognized if, and only if, it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity; and the cost of the asset can be measured reliably. Intangible assets can be with finite useful lives or with indefinite useful lives, where the latter whenever there is an indication that the intangible asset may be impaired (e.g. cultural heritage). Collings (2011) argues about necessity to be able to measure reliably the expenditure referred to intangible asset and the existence of a market for the output of intangible asset (its usefulness).

IPSAS 31 (2010) defines intangible asset "*an identifiable non-monetary asset without physical substance"* (p.11). Accountants can recognize intangible asset only if *"it is probable that the expected future economic benefits or service potential that are attributable to the asset will flow to the entity"* and *"the cost or fair value of the asset can be measured reliably"* (p.13). Shinhan Financial Group, according to FASB, provides some aspects of goodwill evaluation problems, such as excess of fair value over booking value of the acquired entity's net assets at the date of acquisition; the fair value of other net assets, that had not been recognized by the acquired entity at the date of acquisition;

the fair value of the "going-concern" element of the acquired entity's existing business; overpayment or underpayment, because it is not possible to evaluate goodwill until selling an asset or it is not possible to evaluate it quite precisely. Internally created goodwill shall not be recognized as an asset (point 46). Normative literature shows real problem of intangible asset and goodwill evaluation.

MAIN FINDINGS

Museum has many responsibilities for the variety of stakeholders; service organization is aware of how quickly services are delivered to community (Davidson, 2006). Facets of accountability demand a certain extent for museum to be accountable for performance results (Sinclair, 1995; Kearns, 1994). System of performance evaluation has been changed throughout museum life, influenced by altering environmental factors by virtue of transition to new public administration. Accountability is inextricably linked with performance measurement, because results should not only be measured, but delivered. Accountability implies understanding that there are at least two participants where one has certain extent of responsibilities and answerability (Kearns, 1994; Sinclar, 1995; Ebrahim, 2003). Not-for profit organization depends upon donation from the stakeholders, who requires it to be accountable, because they have to see fund allocation and results (or whether organization makes difference). Managers confused of issues to whom and for what they are accountable and through what mechanisms they should deliver the results of their performance (Kearns, 1994). This question requests about accountability perceptions through different points of views, where most are agree that it requires determining the extent of responsibility; provides with definitions of accountability in research literature and explains its different shades.

Understanding value creation under the main goal of existence (Souster, 2009) the question arises of how can these organizations contribute in creation value? Limited resources and the set of activities which provide the delivering service to community are the features of NPO (Ferreira de Sousa, 2012). Commercial organizations provide services which earns profits, while public sector aims to get funds which at least equal to expenses (Anthony and Young, 2003). Not-for profit organizations are intended to produce *"the best possible service with the available resources"*, so their success *"is measured by how much it contributes to the public well-being"* (Anthony and Young, 2003, p.48); main goal for public sector is evaluation how well it carries out the mission (Singth and Mirchandadi, 2006). Measures of evaluation the performance can also rely on effectiveness or the extent of goal achievement, economy which is about resource use and efficiency (Souster, 2009). Public sector has complex, hard to define objective functions (Bois et al., 2003). These organizations have goals and services which are intangible comparing with financial measures, so that to evaluate the performance is a challenge (Larsson and Kinnunen, 2007). Donors are customers of services, but they are more important group for nonprofits while for commercial organizations customer is a King.

Performance measurement exists both in public and private sectors: organizations of private sector prefer to measure the results in indicators of profit, while measuring the performance in public sector is much more complicated (Souster, 2009; Grau, 2008; Singth and Mirchandadi, 2006; Anthony and Young, 2003), because there is no interest in financial outcome (Larsson and Kinnunen, 2007) Public organizations do not distribute

profit (Singth and Mirchandadi, 2006; Merchant and Stede, 2012) and traditional framework of profit maximization results is not applied for public ones (Bois et al., 2003). Assumption is incorrect, as soon as some such organizations get profit from their activity, calling it "surplus" (Souster, 2009). Public organizations and commercial ones have different reasons for existence: former meets social needs of community with no profit motives, where multiple indicators of performance difficult to measure, while commercial firms have "bottom-line" indicator to evaluate activities results (Singth and Mirchandadi, 2006; Larsson and Kinnunen, 2007; Anthony and Young, 2003); presence of several "bottom lines" in public sector enhances and complicates the challenges of measuring their performance (Anheir, 2000). New task of knowledge evaluation, provoked by existence of virtual services, implies new challenges for managers.

Information technologies have changed our world and have been penetrated in our minds during the last 20 years. Free time is occupied by permanent search for the better, cheaper, more interesting or more exciting place for holidays, shopping, studying or having party. Possibility to order staff in virtual shop or to become a member of online library is limited by having real place for vacation. Information treatment has been altered significantly due to appearance of digital space. Contemporary people have to process huge amounts of raw data in the shortest time periods in order to highlight crucial points to use obtained knowledge in the future. Competition in the market of digital technologies is extremely high. Products and services, which can improve and accelerate communication flows, while being accessible at any time in any place where Wi-Fi is and enforced by big-name brands as guarantors of their quality, are demanded.

Technology has penetrated into all spheres of our life (except those, who consciously renounced to be with the progress). Public sector organizations have met a new era of development as an opportunity to facilitate, accelerate and systematize processes in order to improve performance results by providing their specific social functions to the community. E-learning in universities by virtue of online libraries, service, aimed to simplification tax application routines, and many others are included. Obtaining necessary information in such way gets rid of an employee- mediator. Public sector organizations themselves become prototype, as consumers are no longer interested in a "physical" construction with its parameters of length, width, height, etc. Services, provided by the organization, are the only priority to save time and other resources to visit. New information level of public sector service rendering development implies a thorough review of management control mechanisms. Creating a virtual museum suggests considerable changes of the parameters in performance evaluation process as part of management control mechanism. Creating virtual organizations make vague nature of the formal line organizations to such an extent that it is often difficult to distinguish, where one ceases and the other just begins. The real and the virtual museum represent a single organization, but at the same time, one virtual museum can easily create a network with other virtual museums, where they will have to manage and control inter-organizational relationships.

Performance assessment becomes even more problematic. Goodwill can be an evaluation challenge for accountants; knowledge also has to be assessed. The museum provides not only an educational function (otherwise, receiving quick information should

improve performance results in evaluating customers satisfaction), but it also preserves cultural heritage and gives much inspiration. Museum is not just culture and knowledge storage, but a unique place. Location is not important for virtual organizations at all, while it presents considerable value for the museum. Famous Cameron's film Titanic has been viewed many time (to see unique footage from the crash site and to listen to detailed information report), but during visiting the Titanic Museum in San Francisco, it is possible actually (really) to see the liner wreckage and stuff, picked up from the Atlantic bottom. Museum provides emotions. Information about Chekhov writer, his life and work, is available in Internet, but the picture would not be completed without visiting the White cottage. Citizens can be completely satisfied with some application forms, received by mail or post, but culture heritage or events have their real place in space, because it stores the past. Otherwise, the current trends in technology innovations are kept up with the time.

Entity virtualization has three stages: market (meet target group); space (information and knowledge creation); virtual construction form. Brand or name is significant element, because customers have to feel the need of such service and recognize it. Decentralization is the feature of transition to virtual form, whereas the full orientation to consumer is required. Agency costs can be additional expenses as far as creation of such organization requires strong support. Virtual museum creation provides an opportunity to costs reduction, which is important for the public sector organizations due to inevitable budget support. Limited resources and the set of activities which provide the delivering service to community are inherent or public sector (Ferreira de Sousa, 2012).Contemporaneously, virtual organization is more flexible to strategy adaptation and the information dissemination all over the world becomes possible (for example, the promotion of Chekhov heritage is proclaimed as a mission due to case). What about business? How to protect intangible value, provided by museum, due to definition, from the commercialization? Performance results improvement can provoke business interest, while museum should be accessible to the non-profit segment of the population. This public body is a mediator in the G2C relation due to functions. Great amount of available consumers can lead to meet business oriented interests to take the position in B2C relations. Effective integration of different management styles (real public and virtual private under state control) for the implementation of digital technologies can improve the performance of museum. The state will benefit from the mass popularization of the cultural heritage, the private sector will benefit from the implementation of innovative projects of technological implementation under the government support (definitely meet demand).

CONCLUSION

Museum performance measurement system has been neglected for many years in research literature. There were many investigations in hospitals, educational establishments, volunteer organizations. Museum is popular and important public body, which provides services to population. Variety of stakeholders is involved to maintain its activity. This research study is limited by the choice of research questions; another research problems or angles of investigation could give opportunity to see issues from the other point of view. Museum is a building block of cultural and educational processes. Digital technologies have increasingly penetrated into the private space and the

consciousness of the different group of consumers. Attempt to control and use the outcomes of modern technology products require making up the right decision timely in the era of globalization and rapid changes of contingency environment. The importance of obtaining reliable information fast is the issue for people who strive for practical, theoretical knowledge or self-developing as well. Proposition of further investigation is about the creation of virtual museum. Many different groups of society are interested in visiting museum to relax or to extend their intelligence borders. Museum provides the delivering of services which are related directly to its main activities. Non-profitable organizations do not have "bottom line", so that it a challenge to avoid "free visitors", who also want to be consumers. Creation of a virtual museum aims to satisfy the needs of all groups, facilitate access to information for visitors far away the real place, complete the existing goal which is to popularize knowledge about the research subject within organization. Creating "museum without borders" explains the practical use of further research and proves its cultural and educational significance.

Contemporary technology tends to improve service delivering for public sector organizations, hence, digital innovations penetrate into consumers' minds as an integrative part of social development. Internet opens access for end user with organization: any service can be presented and delivered worldwide. Physical assets become less important, because virtual world is intangible by its nature, hence, physical resource allocation is less significant. Inability to touch virtual space makes it less preferable for investors, but consumers need quick service delivering. Transition to virtual forms of service delivering is a solution for both: public sector bodies receive high performance result by virtue of rendering services to the greater variety of consumers (even closed parties of museum can be presented in a virtual tour to consumers, but not to be accessible for real customers), visitors can get whatever they need any time at any place by virtue of Internet. Visiting museum can be distinguished by the aims: research, entertain, excursion, casual, etc. If customer needs just information concerning this monument or library, the virtual tour will be enough; if customer needs to touch the history or heritage, he will come to get this inspiration. Both cases provides knowledge as an output.

Virtual organization aimed to create and transfer knowledge by media of Internet channels, emphasizing the important role of technologies directed to increase the rate of receiving service (knowledge) for society. Knowledge is a basis for creating virtual organization together with technology and people. Economists of earlier schools had noted that knowledge added value to labor, hence, to the end product or service (knowledge is a function of labor, whereas technological implementation increases this dependence). Education creates certain patterns in human minds to transform them into performance. Each human is unique driving force with intellectual resources, which operates in artificially created information space. Recent research show, that financial measure only is insufficient to understand whether organization make any difference conducting performance. Outcome is hard to measure, because it presents desired result. Outcomes can be long-term, such as measuring influence of cultural and knowledge heritage to future generations, which is impossible to evaluate today. Throughput presents current activities and events in a museum, which maintain it in mission accomplishment.

Impact is suggested to be positive as influence on community: increase educational and cultural level in society.

Introduction of knowledge management, which implies knowledge evaluation, embeds duality in evaluation process: the more tacit knowledge becomes "visible", the more competitors can "borrow" it; the other side is that only visible knowledge can be assessed. Accountability and knowledge (performance) evaluation still "go together", while the structure coordinates knowledge flows as well.

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Федулкина Ю.С. **Оценка ресурса знаний для получения устойчивых конкурентных преимуществ при предоставлении виртуальных услуг: музей как сокровищница знаний и культурного наследия** / Ю.С. Федулкина // Ученые записки Таврического национального университета имени В.И. Вернадского. Серия:Экономика и управление. – 2013. – Т. 26 (65), № 2. – С. 201-217.

Новая эра технологического развития требует пересмотра существующих механизмов осуществления контроля, которые улучшают прохождению информационных потоков в рамках организации на примере музея. Структура и отчетность как два взаимосвязанных компонента координации потоков знаний также рассмотрены. Эволюция ресурсов ведет к пониманию знания как ключевому неосязаемому активу для получения устойчивых конкурентных преимуществ. Поскольку современные организации как проводники виртуальных услуг являются не только потребителями знания как ресурса, но они также и производят знания как конечный продукт, то оценка стоимости этого продукта и гудвила также включены в проблематику данной статьи.

Ключевые слова: менеджмент знаний, отчетность, виртуальная организация, оценка знаний.

Федулкіна Ю.С. **Оцінка ресурсу знань для отримання стійких конкурентних переваг при наданні віртуальних послуг: музей як скарбниця знань і культурної спадщини** / Ю.С. Федулкіна // Вчені записки Таврійського національного університету імені В.І. Вернадського. Серія: Економіка та управління. – 2013. – Т. 26 (65), № 2. – С. 180-196.

Нова ера технологічного розвитку вимагає перегляду існуючих механізмів здійснення контролю , які покращують проходженню інформаційних потоків в рамках організації на прикладі музею. Структура і звітність як два взаємопов'язані компоненти координації потоків знань також розглянуті. Еволюція ресурсів веде до розуміння знання як ключовому невловимі активи для отримання стійких конкурентних переваг. Оскільки сучасні організації як провідники віртуальних послуг є не тільки споживачами знання як ресурсу, але вони також і виробляють знання як кінцевий продукт, то оцінка вартості цього продукту і гудвілу також включені в проблематику даної статті.

Ключові слова: менеджмент знань, звітність, віртуальна організація, оцінка знань.

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