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Idea Management and Web-Based Idea Management Systems Situation and Potential in Latvia

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***Abstract* – Idea management and web-based idea management systems application situation and potential in Latvia have been identified by applying qualitative and quantitative methods – community survey and expert interviews.**

It has been found that there is a tendency in Latvia that ideas in the organisations are generated within the frame of the same groups of people and there is no definite idea management system or effective idea management. It is important to stress that the results of the research also show that web-based idea management systems are not widely used in Latvia, but there is a perspective to apply them in private, public and academic sectors. Perspective areas to apply web-based IMS are cultivation of open and user-driven innovation, encouragement of civic participation, contribution to public communication and a wide range of creative cultural promotion.

***Keywords* – Idea management, idea management systems, web-based idea management systems.**

I. Introduction

In the 21st century, knowledge and idea management (IM) in organisations has become more crucial than ever before. This situation brings in the search of new tools to accomplish this task and one of such tools is web-based idea management system (IMS), which makes possible generation, evaluation and development of ideas.

This topic is important because the changes in the world are dependent on the growth of IT and knowledge application. Unfortunately, Global Innovation Index data, which reflect application of IT (including web-based IMS) in innovation development, prove that these opportunities are not used in Latvia to their full extent. Although in total Latvia takes the 33rd place, in figure related to the application of internet technology opportunities to create innovation, Latvia occupies only the 59th place, but in figure connected with the integration of internet technologies in company activities – the 35th (INSEAD, 2015). For this reason, it is vitally important to research different IT opportunities, including web-based IMS, their application and potential in Latvia as well as the influencing factors and how to deal with them.

There are many studies (for example, Deichmann, 2012; Westerski, 2013; Narvaez & Gardoni, 2015) about IM and IMS and their application, which are developed in different countries and spheres, and the results obtained give the possibility to use them while researching the use and potential of web-based IMS in Latvia. However, it should be highlighted that there are a few studies focused on IM and web-based IMS application trends. In their previous studies (Miķelsone, 2013; Miķelsone & Lielā, 2014), the authors have researched IM and web-based IMS application from idea management systems developer perspective – exploring web-based IMS market using Porter's 5-force model, developing web-based IMS basic application model, and revealing potential web-based IMS application enhancement opportunities in Latvia. In the present research, the authors are going to explore the situation and perspectives of IM and web-based IMS application in Latvia from the organization perspective.

Research aim: to determine the current IM and web-based IMS application trends in organisations, evaluate web-based IMS potential in Latvia, and discuss influencing factors to develop recommendations on how to apply and enhance the web-based IMS application in Latvia.

Research objectives: (1) the overview of IM and web-based IMS, (2) interviews with experts, (3) the survey of 1111 respondents, (4) the overview of web-based IMS application and influencing factors and potentials in Latvia.

Research base: the research is based on primary data – interviews with experts and community survey, secondary sources (scientific papers, books etc.), and some tertiary sources (scientific paper abstracts).

The methods of the research included:

1. Survey of people (chosen randomly) at working age (age 15–62) with work or internship experience in Latvia (n = 1111). The aim of the survey was to reveal the main IM habits in organisations and public opinion about potential application of web-based IMS. The results of the present research are compared to the results of the survey conducted in 2013.
2. Semi-structured interviews with experts to evaluate and discuss the survey results.

II. Theoretical Framework of IM and IMS

Previous literature reviews (Miķelsone & Lielā, 2015, 2015a) on IM and IMS have revealed that there are many definitions of the terms – IM and IMS. For example, Applegate (1986) described IM as a decision support system with the focus on idea generation. Bjork and Magnusson (2009) also focused on the idea generation stage. However, according to other studies, IM includes not only ideation as authors in reviewed literature offer the definition of additional stages. Fritz (2002) has mentioned storage of ideas, Couglan and Johnson (2008) – an idea communicating stage, Shani and Divyapriya (2011) declared the distribution of ideas, Sandstrom and Bjork (2010) marked the selection of ideas as an important stage etc. However, Miķelsone and Lielā (2015a) have revealed that while definitions of multiple stages can be found in literature, each of them can be categorised as

corresponding to one of these three stages – idea generation, idea evaluation, and idea development. On the basis of the results of the previous research (Miķelsone & Lielā, 2015a), the authors introduced definitions of terms IM and IMS. IM – a systematic, manageable process of idea generation, evaluation and development, and IMS – a tool, a tool kit or a complex system, which provides systematic, manageable process of idea generation, evaluation, and development. In the present paper, these definitions are applied.

IM and IMS are represented in innovation management literature (for example, in Galbraith, 1982; Green, Bean & Snavely, 1983), and in information technology literature (for example, in Nilsson, Elg & Bergman, 2002; Poveda, Westerski & Iglesias, 2012). The present research is based on both types of literature because in the research the authors concentrate on IM and web-based IMS applications.

According to Gamlin (2007), web-based IMS development started at the beginning of 1990s, when the first "passive" web-based IMS was created ("passive" web-based IMS provides unfocused idea generation). The first "active" web-based IMS was created in 2005 ("active" web-based IMS provides focused and more effective IM). In 2014, more than 70 companies offered web-based IMS on a global level, compared to just two in Latvia. Application of web-based IMS is growing worldwide, in the future its role and importance will only increase (Miķelsone & Lielā, 2014), and many well-known companies already use web-based IMS, for example, Adidas, BMW, Cisco, Google, Dell, Henkel, IBM, 3M, Lego, Toyota, Microsoft, Starbucks, Samsung, Rocher, Tchibo (Roebuck, 2011).

There is not only growing application of web-based IMs in commercial sector, but also, according to Gish (2011), a growing interest for idea management from researchers. Literature on web-based IMS mainly deals with IM and IMS research, exploring their application and problems. Recent literature has begun to probe on how IMS could be used for specific objectives, for example, technology transfer or community involvement (Miķelsone & Lielā, 2015). According to Miķelsone and Lielā (2015), the most often used concepts in IM and IMS studies are open innovations and cooperation (for example, in Bothos, Apostolou & Mentzas, 2009; Iversen *et al*., 2009), behavior of cooperation (for example, in Bansemir & Neyer, 2009), human information processes (for example, in Green, Bean & Snavely, 1983), creativity (for example, in Flynn, *et al*., 2003), new product development (for example, in Barczak, Griffin & Kahn, 2009), social networks (for example, in Bjork & Magnusson, 2009), involvement (for example, in Bansemir & Neyer, 2009), etc. The main concepts used in the present research are the concepts of open innovation and involvement.

III. Methodology of the Research

The empirical research is based on quantitative and qualitative methods of general public survey and expert interviews, which allowed identifying the IM and web-based IMS application and perspectives in Latvia as well as highlighting the influencing factors.

The aim of the survey was to reveal the main idea management habits in organisations and public opinion about potential application of web-based IMS. The survey was conducted in 2014 (April–June). The results of the present research were compared with the results of the survey conducted in 2013 to explore the tendencies. The latest survey has been added with questions about some strategic development document aspects, like open innovation, public participation, etc.

Survey of 1111 people (chosen randomly) at working age (age 15–62) with work or internship experience in Latvia was carried out. According to Mārtinsone *et al*. (2011), this selection reduces random error to 3 %, when a sample set is 985.9 thousand (CSB, 2014), which is a number of economically active residents in Latvia during the research period. The survey was conducted on the internet, the invitation to participate in this survey was sent (twice) to 4500 randomly chosen people in Zemgale Region Competences Development Centre database (the database contains more than 10 000 contact people in different sectors, organisations and institutions). The survey was closed when 1111 respondents had submitted their response. The same approach was used in 2013 and it proved itself as appropriate and effective.

The survey consisted of three parts: (1) introduction – general view of the role of individuals in the innovation process; (2) IM habits in an organisation; (3) web-based IMS application and perspectives in Latvia. The topics were exploited through 13 questions each with several sub-questions.

The evaluation of participants in the survey revealed that it was appropriate for the research because it provided an insight into all regions of Latvia, all sectors and IM experience levels in 2014. 274 respondents from Zemgale took part (25 %), 168 from Kurzeme (15 %), 110 from Latgale (10 %), 180 from Vidzeme (16 %) and 379 from Riga (34 %). Comparing this statistics to economically active residents in regions, i.e., Zemgale – 12 %; Kurzeme – 13 %; Latgale – 14 %; Vidzeme – 10 %; Riga – 51 % (CSB, 2014), the authors conclude that the share of the respondents from Zemgale is higher than it should be statistically, but the authors consider that this disproportion is not significant, and the results of the survey could be referred to Latvia generally. The respondents have had working experience in different sectors – 56 % in the private sector, 36 % in the public sector, and 8 % in the academic sector. Out of 622 respondents from the private sector, 35 % worked at micro enterprises, 12 % at medium-sized enterprises, and 5 % at large enterprises. 28 % of the respondents from enterprises of the private sector worked in manufacture, and 72 % – in the service sector.

Semi-structured expert interviews helped evaluate and discuss the survey results to identify the influencing factors as well. The interviews were conducted with the help of Cross-Resource Coordination Centre (CRCC) experts Māra Sīmane and Elīna Krūzkopa, IMS "Academy of Ideas" CEO Andris Čeksters and Zemgale Region Competences Development Centre (ZRCDC) entrepreneurship support main specialist Ilze

Osīte. Experts from ZRCDC and Academy of Ideas were selected because they had the most experience working with web-based IMS, but experts from CRCC were chosen because of their expertise in this field in the public sector and their knowledge about state policy concerning IM and web-based IMS (like, open innovation, user-driven innovation, public participation). It should be noted that there are only a few experts competent in IM and web-based IMS in Latvia. All interviews were conducted in 2014.

IV. IM and Web-Based IMS Situation and Perspectives in Latvia

To determine the situation about IM and web-based IMS opportunities in Latvia, the survey of 1111 participants and interviews of experts was undertaken.

In the introduction of the survey and the interviews, the authors gathered general view on the role of individuals in the innovation process. 73 % of the survey respondents confirmed that the main innovation driver was an individual and his/her skills. 19 % of the respondents marked strategy and management as the main driving force behind innovation, but only 8 % supported opinion that technologies were the main promoters of innovation. It should be noted that the opinion on this issue remains unchanged in both study periods.

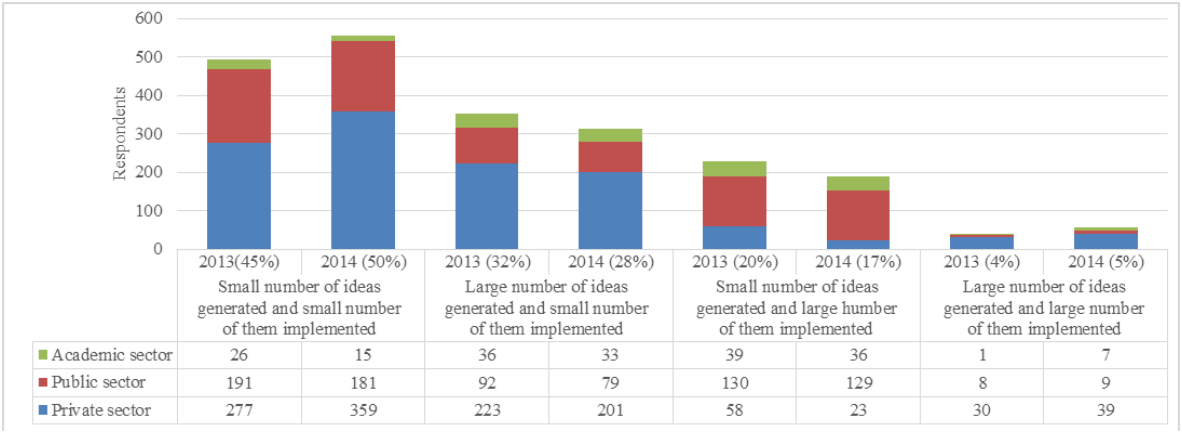
The survey results indicate not only the fact that individuals and their abilities are the most important driving force of innovation, but it is considered that in Latvia there is a large number of people capable of developing innovative solutions. 90 % of the respondents believed that more than a half of residents in Latvia were able to create innovative solutions. 56 % of respondents said that the number could be as high as 80 % of all individuals. The authors argue that this result indicates that the respondents are convinced that people in Latvia are able to develop innovative solutions. It should also be noted that there is a tendency for the number of people who believe that more than 80 % of people in Latvia are able to develop innovative solutions to increase. The authors believe that it is a positive trend, which organizations can use to their advantage to get ideas for innovative solutions. Unfortunately, the results of the study in 2014 indicate that only 14 % of the respondents admitted that people's skills to develop innovative solutions were used actively, but 49 % concluded that the application of those skills was limited. There is a tendency for a slight decrease in the number of people who believe that these skills are used actively or limited and this situation should draw attention because people believe that they are able to generate ideas, but do not get enough opportunities. The attention should also be paid to the fact that in 2013 33 % of the respondents and in 2014 37 % of the respondents admitted that their skills to develop innovative solution were unused or used minimally. It should be taken into account as an important indicator because it shows that, perhaps, people do not have the opportunity or they are not motivated to be engaged in the development of innovative solutions (also IM).

In the second part of the survey and interviews, IM habits in organizations were explored, the main conclusions in Table I show that the prevailing trends in the development of innovative solutions have not significantly changed in comparison with 2013.

TABLE I

IM Habits in Organisations

Factor	Situation	Comments
IM habits in organisations		
Type of organisations (based on number of generated and implemented ideas)	Generally there are organisations where a small number of ideas are generated and a small number of them are implemented	It was revealed that only 5 % of the respondent organisations generate and implement a large number of ideas (this number has increased by 1 % from a previous survey in 2013) – these organisations are recognised as innovation leaders. In these organisations, IM and innovation processes are managed well. 50 % of the respondents answered that in their organisations a small number of ideas are generated and implemented, 17 % – a small number of ideas are generated but most of them are implemented, 28 % – a large number of ideas are generated, but a small number implemented
Idea generation habits in organisations	There is a tendency that ideas are created by small unchanging groups of employees, by managers or a specific department	54 % of the respondents agreed that there is a tendency that ideas are generated by managers or specific departments and/or within the same small unchanging group of employees. In 2013 the general type of idea generation with 57 % was idea generation within the same group of employees. According to the survey in 2014, a well-considered IMS is only used in 12 % of the organisations where respondents of the survey worked; this is a positive tendency because in 2013 it was only 5 %
IM experience	The majority has experience in IM	Both in 2013 and 2014, the majority of the respondents admitted that they had participated in IM. 94 % of those who operated in the public sector noted that they had participated in IM, 88 % of the respondents operating in the academic sector and 74 % of the representatives of the private sector
General idea generation tools	The most applied idea generation tools are brainstorming and creative thinking methods	The tendencies do not change but there is an increase in the number of organisations, which use specific idea generation tools. It was concluded that 95 % of the respondents had had experience of innovative solution development only in real environment, but in virtual only 5 % and only 7 respondents had had experience with web-based IMS. The respondents in innovative solution development are generally involved in it at their work places and only 6 % outside work
Web-based IMS perspective	Respondents would like that the organisation they work for use web-based IMS	The respondents are positive about web-based IMS to be used in their organisations because it would give them the opportunity to be involved in the innovation development process, widen and apply their knowledge. Previous research (Miķelsone, 2012) shows that entrepreneurs in Latvia would welcome the use of web-based IMS and use it to improve business opportunities
Motivating factors to involve in IM in web-based IMS	General motivators are immaterial awards and financial rewards	The main motivator to become involved in IM among the 2014 surveyed was immaterial award (79 % of the respondents marked it as motivating force) and financial reward (76 %); the same situation was in 2013



	2013(45%)	2014 (50%)	2013 (32%)	2014 (28%)	2013 (20%)	2014 (17%)	2013 (4%)	2014 (5%)
	Small number of ideas generated and small number of them implemented		Large number of ideas generated and small number of them implemented		Small number of ideas generated and large humber of them implemented		Large number of ideas generated and large number of them implemented	
Academic sector	26	15	36	33	39	36	1	7
Public sector	191	181	92	79	130	129	8	9
Private sector	277	359	223	201	58	23	30	39

Source: the authors' survey results

Fig. 1. Answer to the question: "How would you characterise your organisation?"

The survey results in Fig. 1 clearly indicate that in most organisations ideas are created by small unchanging groups of employees (50 % of respondents in 2014) – these organisations do not have an effective innovation process and IM; they do not have the opportunity to become leaders in innovation if they do not change IM (Wood, 2003). A small number of ideas indicate that the company does not have an effective IM as a component of the innovation process (Wood, 2003). By contrast, a large number of ideas are created and implemented only in 5 % of organisations, so these organisations have the potential to become innovation leaders with well-managed innovation process, including IM (Wood, 2003). 17 % of the respondents admit that in the organisation they work for a small number of ideas are generated but most of them are implemented; these organisations have an effective process of innovation implementation and realisation, but there might be problems with IM (Wood, 2003). 28 % of the respondents note that in the organisation they work for a large number of ideas are generated, but a small number of them are realised, leading to the conclusion that the ideas are generated, but there are problems in the further process of innovation (Wood, 2003). However, in 50 % of organisations a small number of ideas are generated and implemented, this shows that mostly in the organisations there is an ineffective IM. Explanations to questions and answers are set out according to Wood's (2003) publication.

Experts in interviews confirmed that there were problems in IM and innovation process in Latvia. CRCC expert Māra Sīmane expressed the opinion that there were problems regarding IM in Latvia, and IM in Latvia could be advanced by improving communication – encouraging conversations, dialogues and idea transfer. The expert also commented that totalitarian heritage from the Soviet Union might have impact as well, as people in Soviet times were afraid of saying what they thought. She said to have noticed such habit to remain and have observed it in the public sector, concluding that it had always been an issue in the public sector to encourage communication, including IM. Although positive changes are noticeable, Sīmane emphasises that a lot of improvements should be made regarding IM. The other expert from CRCC Elīna Krūzkopa believes that there are various good examples of IM in Latvia. She expresses the view that IMS most commonly is used in private and academic sectors and believes that IMS contributes to inter-sectoral cooperation. Krūzkopa also stresses that the most important thing for every institution or department is to have at least one person who is responsible for coordination of the IM. In her opinion, it is also important to create the environment that supports IM and continuity of this information and is favorable for interactions and feedback. The authors conclude that IM quality and efficiency are more connected with the organisation environment and IM support system rather than characteristics of a specific sector.

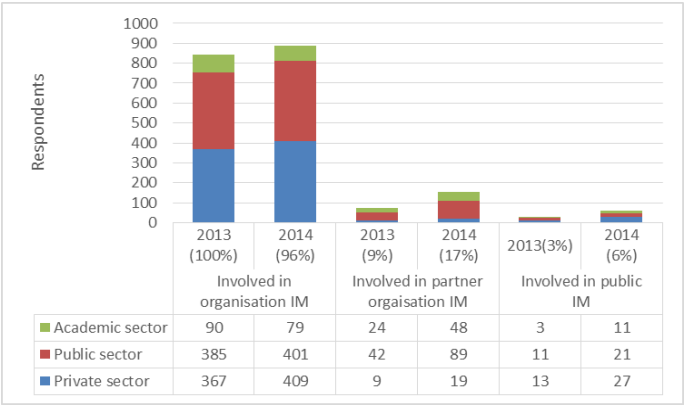
The same problems concerning IM in Latvia were also noticed by CEO of the Academy of Ideas Andris Čeksters. In his view, opportunities to acquire ideas are not used to their full extent in Latvia. In most cases, the acquisition of ideas is only a PR event with the aim to show that the organisation has interest in the ideas of others, but without any intention to use them. Local mentality and the way of thinking focus on the ideas being put forward by the organisation manager, and the development and implementation of ideas from outside are mostly perceived as a burden. It might be concluded that the IM effectiveness is mostly dependent on organisation management attitude and the way of thinking.

The view that IM is not effective in the organisations of Latvia is also supported in the interview with the expert from ZRCDC Ilze Osīte. She expressed the opinion that IM was an essential part of innovation development in all areas and sectors, including business. Osīte revealed that IM in large companies was likely to be more effective because of the existing IMS, but small and medium-sized enterprises were less effective because such a system should be created.

The survey shows that there is a tendency for the ideas to be created by certain groups of people. A relatively large number of the respondents admitted that the ideas were mostly generated only by managers or a particular department. Only 30 % of the respondents noted that everyone in the organisation could get involved in ideation, but without a definite system, while 12 % confirmed that there were certain IMSs, but only in 2 % of these IMSs included external IM source involvement. However, there is a positive tendency

because in survey of 2013 only 5 % of the respondents agreed that their organisations had well designed IMS, which ensured involvement of a broad range of employees and even in some cases (1 % in 2013) external forces.

Both in 2013 and 2014, a majority of the respondents admitted that they participated in IM. 94 % of those operating in the public sector noted that they participated in IM, 88 % of respondents operating in the academic sector and 74 % of the representatives of the private sector participated in IM. The results obtained show that most people in Latvia have been involved in IM. It should be noted that there is a positive reduction trend in the number of people who have never participated in IM.



Source: the authors' survey results

Fig. 2. Answer to the question: "How have you been involved in IM?"

The survey results in Fig. 2 clearly indicate that the respondents in IM have been mostly (96 %) involved in the organisations where they work, 17 % have also taken part in partner organisation IM, and 6 % have been involved in public IM. The respondents involved in partner organisation IM are mostly those from the academic and public sectors. There is a positive trend that more people who have been involved in IM outside their own organisations have also been involved in partner organisation and public IM. The results of the survey indicate that in Latvia it is not a common practice to participate in other organization IM.

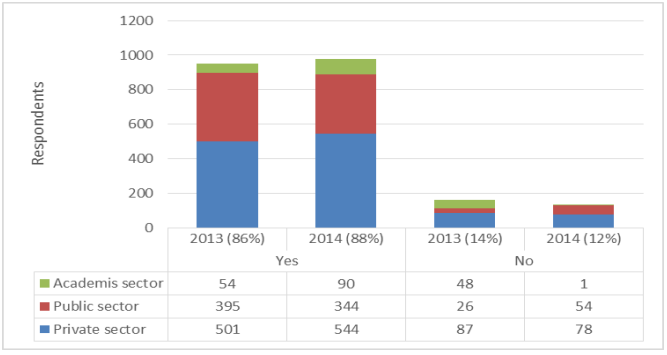
The situation has changed concerning most widely used web-based IMS to gather ideas from general public, if in 2013 the Academy of Ideas was the most used web-based IMS, then in 2014 Stakeholde.rs surpassed it. 41 % of the people who have public IM experience have generated and evaluated ideas in IM Academy of Ideas, but 64 % in IMS of Stakeholde.rs – a vast improvement from just 3 % in 2013. The situation could be explained by the fact that Stakeholde.rs started its expansion only in the second half of 2012 and gained its popularity during the following years. 10 % of the respondents noted that they had gained opportunity to be involved in public IM using other web-based IMS, such as party "'Vienotība" website or the association "Latvijas attīstībai" website, etc. It indicates that the variety of applied web-based IMSs in Latvia is growing. Additionally, commercially available web-based IMSs are not the only type of web-based IMS used in Latvia – some companies have their own private web-based IMSs. Web-based IMS developers in Latvia should promote the opportunity outside work processes to improve skills and participate in IM since this option is currently used by a small number of people.

Most organisations use different idea generation methods. Brainstorming method and different methods of creative thinking are most widely applied in organisations in Latvia. Only seven respondents admitted that they had used the web-based IMS, so it could be concluded that web-based IMS as an innovative solution development tool is not extensively applied in Latvia. The context in which IM occurs remains unchanged, 95 % of the respondents, who participated in IM, have done it in the real life sessions, 4 % on the internet, but only 1 % – in both environments. This shows that the most common practice of IM is in real life sessions. The authors deem that organisations should consider web-based IMS, and real life sessions should be connected with web-based IMS – it has been proven to be effective in various studies. For example, Bayer Material Science study of classical brainstorming was organised by having simultaneously real-life IM session and web-based IM session. The "brainstorming" during the experiment was very productive and the process which called for the cooperation made it possible to create up to 150 ideas within one hour (Gamblin *et al*., 2007). It would be advisable for innovation support organisations and IMS developers to promote various IM approaches highlighting the advantages offered by the web-based IMS, for example, there are no boundaries in terms of time and geographic space and everyone can submit their ideas at the same time, etc.

Views of the experts about the most commonly used idea generation methods in Latvia coincide with the findings of the survey. Čeksters admitted that the most commonly used methods were brainstorming in larger or smaller groups and advice from experts. Osīte also acknowledged that brainstorming was the most common method for extracting ideas, noting that the most common creative thinking methods were De Bono's six hats method, method 6-3-5, brain writing as well as various web-based IM solutions, such as social networks and e-mail. Sīmane admitted that in the state administration the most common IM methods to obtain ideas and information outside the organisation were different working groups, various topical seminars, trans-European networks, their representatives and events, various foreign and local idea carriers, ideas generated by leaders, ideas from various studies, etc. Krūzkopa believes that a variety of real life meetings (public consultation, etc.) are a very effective way of IM, as a great example she mentions the creation of National Development Plan, which involves a wide range of people of different ages and professions. More than 4,000 proposals were submitted and feedback was provided for each proposal, stating whether the proposal was accepted, partially accepted or not accepted and why. She also notes that great support tools for IM in the public sector are different cooperation councils and web-based tools (most commonly e-mails and social networks). Experts agree that there is a wide variety of tools for obtaining ideas, ranging from

surveys, focus groups, individual examples of good practice, etc. and self-development methods as well.

Sīmane notes that virtual tools have proven to be effective and people use them to submit their proposals on platforms such as *mazaksslogs.lv*. She emphasises that the main advantage of IMS is that evaluators give instant feedback to people who have submitted proposals. However, Sīmane also points to the problem that too many proposals may result in confusion, some of the ideas may duplicate or stated incorrectly. The expert also believes that more should be done to popularise the opportunities given by IMS, putting the emphasis on the results obtained by implementation of submitted proposals. It should be stated that the above-mentioned problems – too many proposals resulting in confusion, duplicates and inadequate ideas – might be resolved by choosing more appropriate web-based IMS that sends automatic response to people who have submitted duplicates and allows submitting ideas by distinct topics. Čeksters has observed that theoretically there is a vast supply of web-based IMSs, but they are viewed more as a curiosity by potential clients and less as a meaningful addition to their work process and due to this factor people are reluctant to use these tools. Another reason is a complicated structure of government institutions and big companies that complicates the development of an idea that comes outside the organisation.



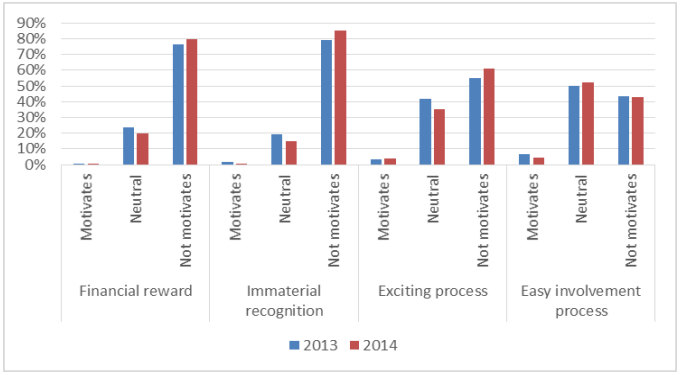
	2013 (86%)	2014 (88%)	2013 (14%)	2014 (12%)
Academis sector	54	90	48	1
Public sector	395	344	26	54
Private sector	501	544	87	78

Source: the authors' survey results

Fig. 3. Answer to the question: "Would you like to have and use web-based IMS in your organisation?"

Although only 7 of the 1111 respondents said to have used web-based IMS, the survey results in Fig. 3 indicate that the respondents would like to have and use web-based IMS if their organisation had one. Such high interest in web-based IMS was common in all sectors. The research conducted in 2012 (Miķelsone, 2012) shows that also senior executives of companies are interested in using web-based IMS because they see their potential in improving business opportunities by encouraging innovations and increasing trust in the organisation. The conclusion drawn from these two surveys/studies is that both the general public and senior management of companies are interested and willing to use web-based IMS. The majority of general public is willing to use web-based IMS because they see the opportunity to improve innovation process (92 %); use their knowledge (67 %); influence processes (63 %); improve their knowledge (62 %); share ideas (56 %); participate in the exiting process (56 %); satisfy thirst for knowledge (45 %); compete with others (19 %). For the respondents who said that they did not want to use web-based IMS the main reason (77%) stated was that they did not see the necessity for such actions. For senior company managers the main reasons were additional costs and that they did not see the necessity (Miķelsone, 2012).

The research (Miķelsone, 2012) proves that the information about web-based IMS is inadequate and ineffective. Čeksters also reaffirms this conclusion by stating that the Academy of Ideas is not widely used because of the lack of information available to potential clients about the benefits that the use of web-based IMS would bring to them. The expert also admits that meanwhile clients that already use the Academy of Ideas are satisfied and the activity of idea creators shows that this project is effective. Čeksters states that there is a growing interest in the commercially available web-based IMS but it does not result in improved sales. Osīte also notices the growing interest but believes that one of the main obstacles for web-based IMS in Latvia such as the Academy of Ideas is frequent downtime of these systems.



Source: the authors' survey results

Fig. 4. Answer to the question: "How will these elements motivate involvement in IM in web-based IMS?"

The survey results in Fig. 4 indicate that the respondents as the main motivators for participation in IM in web-based IMS noted immaterial recognition and financial rewards. Osīte also noted that financial rewards are important motivators, but immaterial recognition can be effective as well especially if a person can see his or her idea implemented and thanked for it.

The conclusion is that users and developers of web-based IMS should put greater emphasis on motivators (immaterial recognition, financial rewards, fun prizes, exciting and innovative processes). If such motivators are not integrated in the web-based IMS itself, the organizers of the IMS can offer rewards to participants by offering prize for the best idea creators or by paying fees to the best idea creators.

The third part of the survey and interviews explored web-based IMS perspectives in Latvia, the main conclusions in Table II show that the most perspective idea sources to be involved in web-based IMS are organisation managers, cooperation partners and employees. Relatively smaller number of the respondents believed in the society as an idea generation source. However, this figure has slightly increased. The authors consider that it would be wise to promote public IM because at present a majority of the respondents see more potential in the internal sources.

TABLE II

WEB-BASED IMS PERSPECTIVES IN LATVIA

Factor	Situation	Comments
Web-based IMS perspectives in Latvia		
Most perspective idea sources	Organisation managers, cooperation partner organisation employees and own organisation employees	There is a tendency that the respondents see higher potential in use of internal idea generators than external. The most appropriate idea generating sources stated in the survey 2014 were organisation managers (92 % of the respondents noticed as appropriate), cooperation partners (87 %), employees (78 %) and customers (71 %), suppliers (30 %)
Most appropriate organisations /institutions to involve society in IM with web-based IMS	Local/state authority institutions and private enterprises	Entrepreneurs in the previous research (Miķelsone, 2012) as the most appropriate web-based IMS applicators noticed information technology and communication, catering and accommodation service companies. The research results reflect that it is perspective to involve society in IM with web-based IMS by different organisations. For example, to the question "Evaluate the possibility to involve the society in IM with web-based IMS for organisations mentioned?", 63 % approved state authority institutions/enterprises as appropriate to apply web-based IMS to involve society in IM, 66 % – private enterprises, 57 % – state government (ministries etc.), 50 % – local governments, 32 % – foundations, 32 % – universities, 29 % – self-employed. 61 % of the respondents evaluate all organisations and institutions as appropriate or partly appropriate to apply web-based IMS for public involvement and most of the respondents themselves would be willing to be engaged in IM with web-based IMS
Potential web-based IMS application aims	To increase civil participation and public communication with community, user promoted innovation, open innovation practice, and wide culture of creativity	The most appropriate of these aims are open innovation practice (71 % of all the respondents marked as an appropriate aim, 25 % – semi-appropriate, 4 % – inappropriate), user promoted innovation (71 % of all the respondents marked as an appropriate aim, 26 % – semi-appropriate, 3 % – inappropriate), and civil participation increase (63 % of all the respondents marked as an appropriate aim, 34 % – semi-appropriate, 3 % – inappropriate)

Experts conclude that it cannot be determined which is the most relevant source of ideas, because everything depends on a particular project and project stage. They emphasise that it is important to identify both internal and external resources and build IM networks with them. Krūzkopa admits that the involvement of a person outside the organisation in IM is a positive factor because the person brings a broader view, thus, supplementing the already specialised process of idea synthesis.

The respondents from the public sector recognised the government (both local and state) institutions and enterprises as the most appropriate organisations for web-based IMS application and public involvement. 61 % of the respondents evaluate all organisations and institutions as appropriate or partly appropriate to apply web-based IMS for public involvement and most of the respondents themselves would be willing to be engaged in IM with web-based IMS. Only 6 % would not be willing to be engaged in public IM at all. The authors believe that these results indicate that there is a potential to involve public in IM and in web-based IMS for different organisations. The previous research (Miķelsone, 2012) supports that the most eligible enterprises to apply web-based IMS are IT, accommodation and catering service providers and the most appropriate areas are cultivation of economic development and the increase of administrative effectiveness. Experts have observed that among small and medium-sized enterprises the interest for different IMS is growing, including for web-based IMS, the use of which could allow engaging wider audience in IM.

Experts have also noticed that more important than ideas are the use and the development of these ideas after the submission. It is important for the people involved in IM to get feedback and it is a natural way to increase people's interest to share ideas and get involved in IM. Experts also agreed that web-based IMS as a tool for public involvement had a potential to be used in all sectors and to solve different kinds of issues. Čeksters considers that there is a potential to involve public from all sectors for a boarder range of problem solving, like ideas for events, development ideas, new project / product ideas, indicating that in the Academy of Ideas it is possible to generate ideas for new events, new programmes, new products and existing products, service improvements, etc. Additionally, Osīte admitted that the web-based IMS had a potential to be applied in all sectors, especially in the public sector, indicating that it would give more benefits for the whole society, because it would give opportunities to explore public opinions. Even if bright ideas are not created, but when applied to the academic sector, one could expect really innovative and development-oriented ideas. The authors conclude that the web-based IMS has a potential to be used in a very wide range of issues in different sectors.

The results are encouraging for various organisations from all sectors to involve public in IM, as the respondents are willing to be engaged in it. The most appropriate areas to apply web-based IMS are cultivation of open and user-driven innovation, encouragement of civic participation, contribution of public communication and a wide range of creative cultural promotion. Experts also sum up that such objectives are the core tasks for the web-based IMS.

The authors conclude that the web-based IMS has the potential to be used for the implementation of some directions of the National Development Plan of Latvia for 2014–2020, like civic participation and public communication which are included in the National Development Plan of Latvia for 2014–2020, course of action "Human cooperation, culture and civic participation as the home base for Latvia". By contrast, user-driven innovation, open innovation practices and a wide range of creative cultural promotion are mentioned in the framework of priorities of Latvia until 2030 "Innovative and Eco-efficient Economy". Although specific web-based IMS

and realisation are not mentioned, Sīmane acknowledges that it does not exclude the possibility that such tools could be applied. Sīmane emphasises the potential of web-based IMS as such tools have been used successfully to promote innovation in various sectors, including strategic planning documents.

To sum up, there is a tendency that ideas in organisations are generated within certain groups of people and there are no definite IMS and effective IM. It is important to stress that the results of the research also show that web-based IMS are not widely used in Latvia. Most respondents have been engaged in IM at their workplace and the most common method for idea generation is a brainstorming method, but web-based IMS are used rarely. It is concluded that there is a perspective to use web-based IMS in various sectors and areas, and the most important way is to use web-based IMS to involve a wider society both for ideation and surveying opinion. Involvement of a wider society is the most relevant for public institutions – public administration and public authorities, and private enterprises. The research supports that the most eligible enterprises to apply web-based IMS are IT, accommodation and catering service providers. The results encourage various organisations from all sectors to involve the public in IM as the respondents are willing to be engaged in it. The most appropriate areas to apply web-based IMS are cultivation of open and user-driven innovation, encouragement of civic participation, contribution of public communication and a wide range of creative cultural promotion.

V. Web-Based IMS Influencing Factors

By adjusting "The Circle of Influence Model" (CSR in Action, 2008), the authors have created the web-based IMS development and application influencing factor model, describing factors at 4 levels – individual, organisational, national and global. The description is based on the survey conducted, expert interviews, authors' previous research results (Miķelsone & Lielā, 2014, 2015, 2015a). The model is presented in Fig. 5. Identification of the influencing factors will help avoid impedimental factors as well as toidentify the opportunities how to use conducive factors and enhance web-based IMS application in Latvia.

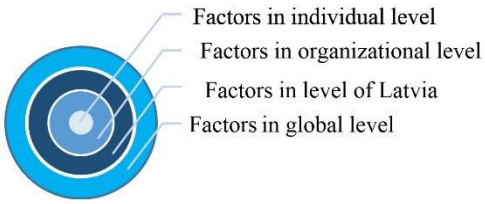


Fig. 5. Web-based IMS influencing factor model (the model created by the authors based on CSR in Action (2008)).

The main factors are summarised in Table III.

The authors conclude that there are impedimental and conducive factors at all levels. The authors of the research have developed suggestions on how to use conducive factors and how to avoid impedimental factors. The main suggestions on enhancing web-based IMS application in Latvia are as follows: (1) for IMS developers: (1.1) to develop suggestions for State Chancellery on web-based IMS potential in the public sector to encourage public participation, open innovation, user supported innovations and public communication development; (1.2) to popularise good case studies; (1.3) to create informative material about idea management potential in Latvia; (1.4) to run training session for organisations on IM; (2) for IMS applying organisations: (2.1) to maintain and motivate individuals to be involved in IM; (2.2) to use the potential of external idea source involvement through web-based IMS.

TABLE III

Web-Based IMS Influencing Factors

Level	+/−	Factor
Individual	+	People in Latvia are with a high potential to generate ideas; according to the survey most of the respondents believe that more than 80 % of all people in Latvia are able to create innovative solutions
	−	Fears to express the opinion, low confidence level between partners; perceptual barriers; the lack of absorbing ability
Organizational	+	Employees and interns in organizations would like web-based IMS to be used in organisations where they work; organisations seek new ideas and idea management tools
	−	Innovation discouraging environment; managers and responsible employees do not understand the potential of web-based IMS application; lack of time to acquire new tools; seems too complicated; the offer does not satisfy, prejudice and lack of belief in a positive result
Latvia	+	Organisations and institutions are looking for new development opportunities in different sectors; government institutions and enterprises endeavor to become more open to external ideas; there is a slight experience in web-based IMS application; IT infrastructure is in a good condition; access to the internet is optimal as well as most people use it – that shows that there are technological opportunities to use web-based IMS to involve wider society etc.
	−	Low level of marketing activities from web-based IMS developers, so there is a lack of information, in the academic sector only a few people are familiar with these tools; fear that the use of web-based IMS could be interpreted as a waste of money; there is a lack of functionalities in web-based IMS how to develop and promote ideas; web-based IMS possibilities are not used to a full extent as well as opportunities are not appreciated; a lack of finance
Global	+	Growing tendencies (like crowdsourcing, co-innovation, open innovation etc.) that increase web-based IMS application and popularity, as well as ICT and knowledge application importance increase stimulates web-based IMS application
	−	There are barriers for new entrants in the market
+ conducive factors; − impedimental factors		

On the basis of the research, 38 suggestions with more than 60 sub-suggestions for 11 addressees have been developed. The suggestions are aimed at web-based IMS application increase and development. All suggestions are available to the public and the authors can be contacted personally.

VI. Conclusion

In this paper, the authors have discussed IM and web-based IMS application and perspectives in Latvia.

It has been found that there is a tendency in Latvia that the ideas in the organisation are generated within the same group of people and there is no definite idea management system and effective idea management. Most respondents have been engaged in IM at the workplace and the most common method for idea generation is a brainstorming method.

According to Kohn, Levermann, Howe and Husing (2003), there is a large variety of software that supports the innovation process in an organisation, but organisations very seldom use it. Additionally, the research results prove that web-based IMS are not widely used in Latvia.

According to the research, there is a perspective to apply web-based IMS in many fields and all sectors, but the most appropriate organisations to involve the society in idea management with web-based IMS in Latvia are government and local authorities, organisations and enterprises. These perspectives are consistent with the situation in Latvia and at the global level, because both private sector enterprises and public sector institutions use web-based IMS. For example, NASA, GlobalGiving, European Commission and 25 local governments in Latvia have used web-based IMS and, according to the research, the main reason for representatives of the public sector to use web-based IMS is to increase participation (public, member etc.), promote open innovation and creativity. The results encourage various organisations from all sectors to involve the public in IM as respondents are willing to be engaged in it.

The most appropriate areas to apply web-based IMS are cultivation of open and user-driven innovation, encouragement of civic participation, contribution of public communication and a wide range of creative cultural promotion.

The authors conclude that there are impedimental and conducive factors at the individual, organizational, national and global levels. Specific factors influencing web-based IMS application at the web-based IMS level are researched and solved by a lot of studies. For example, Westerski and Inglesias (2012) deal with one of the major challenges in idea management systems – rapid and automatic assessment of idea value. To address this problem, the paper proposes the use of opinion mining technique and a new metric that summarises sentiments in the community about ideas introduced. Additionally, Westerski, Dalamagas and Iglesias (2013) focus on the assessment process and propose a number of solutions that allow filtering, comparing and evaluating the submitted ideas in idea management. The authors suppose that opposing research could be conducted to summarise the influencing factors at the product level from previous studies, report factors and possible solutions for negative factors.

The authors consider that future studies should research IM and web-based IMS application in the Baltic States and Europe and compare the results to identify specific factors in these regions. Future studies should imply web-based IMS data from IMS developers that could provide information on how these tools are applied. Additionally, the factors explored in studies should be evaluated and ranged.

The authors hope that this article will stimulate scholarly dialogue and studies on idea management, as well as increase web-based IMS application.

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