

**PERFECTION – Performance Indicators for Health, Comfort
and Safety of the Indoor Environment**
FP7 Grant Number 212998

D 2.1 A framework for user engagement

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1. INTRODUCTION

1.1.General overview

The general aim of the PERFECTION project is to support the application of new building design and technologies that not only take into account but also improve the impact of the indoor built environment on the human being in terms of health, comfort, feeling of safety, accessibility, positive stimulation of people and sustainability aspects like adaptability or usability in a form that designers can communicate to clients.

Therefore as a first step current standards, regulations, technologies and ongoing research activities and policies concerning optimal indoor environment have been identified. Following analysis of current indoor performance indicators and their applicability positioned within a generic framework will be performed and identification of areas where new indicators for health and safety should be developed. In order to make the stakeholders widely use the performance indicators possible barriers and solutions/incentives will be identified in the later course of the project as well as PERFECTION results will be widely disseminated through an extensive expert network. Reaching a wide range of user groups, which ensures the maximum potential for dissemination, is a crucial element in the success story of PERFECTION project. Dissemination is however not the only user oriented task. PERFECTION Partners have put great focus on the end-user role, making all approaches elaborated within the project more user-oriented. The idea is that the uptake of any technology or policy will depend primarily on providing the European user with a clear metric of its impact on the indoor performance and its sustainability footprint. The more clear is the impact of a new technology, the faster increases the awareness creation and the higher the penetration of the technology in the building domain will be. Thus the user orientation in the project has two dimensions, as an objective itself as well as a way to secure effective dissemination of results. After all, by taking a real-life and user-oriented approach in the assessments and indicators (user engagement element), much greater interest on the demand side (the large European community of building stakeholders) will be secured.

It is also crucial to mention at the beginning of this report what is meant by the term “users”. For the purpose of PERFECTION project the more broad sense of the word is more appropriate, including many possible construction industry stakeholders e.g. designers, contractors, engineers, investors but also informed citizens who may wish to participate in decision making process in terms of building features and qualities. The elaborated within the project tools will also be used by the PERFECTION product developers thus the Partners who take part in the PERFECTION project and who invented the innovative and PERFECTION related products and services. In this sense the tool will enable them to publish information on their products/services that will be also in the first step evaluated against the PERFECTION methodology.

The approach in buildings designing taken in the PERFECTION project (Performance-Based Building Design) can be summarized with the three following statements⁵:

- the performance approach is thinking and working in terms of ends rather than means,
- performance is concerned with what a building or building product is required to do and not with prescribing how it is to be constructed,
- a design solution, traditional or novel, will always need a quantitative base for testing and evaluation of its performance.

⁵Marcel Loomans, Performance Based Building – performance indicator – definitions, Perfection, 2009, p.1

leads to engagement of more parties/wider range of persons than in traditional prescriptive approach (Szigeti, Davis 2005). Furthermore, according to this methodology, future building users play equally significant role in decision making process as designers, contractors and other related professions who are supposed to rationalize their requirements taking existing possibilities into consideration. Thus, designing as such is a process of constant communication between what is wanted and what is possible in which the first mentioned makes up a core factor in setting solutions. It is clearly reflected in a ‘hamburger bun’ model described e.g. by Ang, Groosman, and Scholten (2005) and recalled at the early stage of PERFECTION project:

‘the dialog between client and supplier can be described as two halves of a “hamburger bun”, with the statement of the requirement in functional or performance language (FC - functional concept) matched to a solution (SC- solution concept) in more technical language, and the matching, verification/validation that needs to occur in between⁶.

1.2.Introduction to KIPI - Key Indoor Performance Indicators - tool

Taking initial assumptions into consideration, PERFECTION team members created a tool, called the KIPI (Key Indoor Performance Indicators), to ensure the important user engagement in the enhancement of building and products performance. Therefore a relationship model between the scientific Indoor Environment Quality (IEQ) model of WP1 and the practice implemented in building domain has been elaborated in an IT environment. Generally speaking, the tool is to:

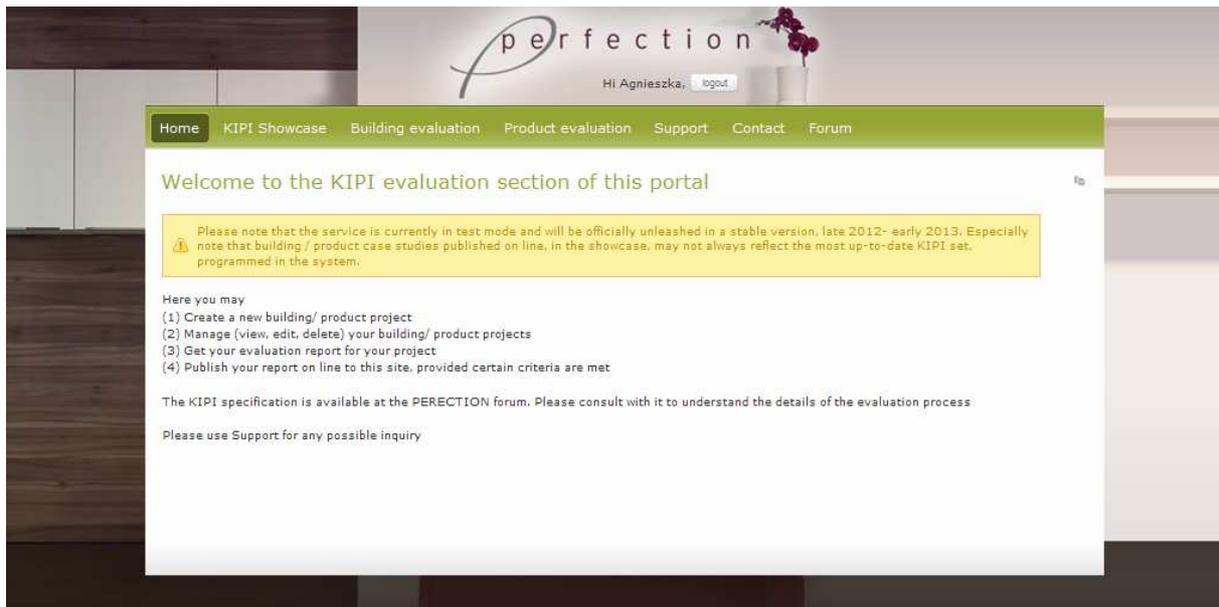
- be used by all parties involved into the building creation to optimize final products,
- operate to the mutual benefits of both supply and demand sides,
- be available to the widest possible public thanks to the internet access.

To be more specific the following main objectives have been determined as to be met by the tool, now available at: <http://www.indoorperformance.net> (see print screen below), namely:

- to allow building stakeholders to have their buildings, that have been evaluated against the KIPI model, published,
- to allow service and product providers to publish their products/services that have been at first evaluated against the KIPI model ,
- to help building designers to identify the critical points that need to be monitored in a building during the design phase,
- to help building designers to check and review the critical points that have been identified in the design phase,
- to help building designers & owners/managers in the initiation/design phase of the building to define requirements & good practice,
- to provide to citizens knowledge on aspect of indoor performance,

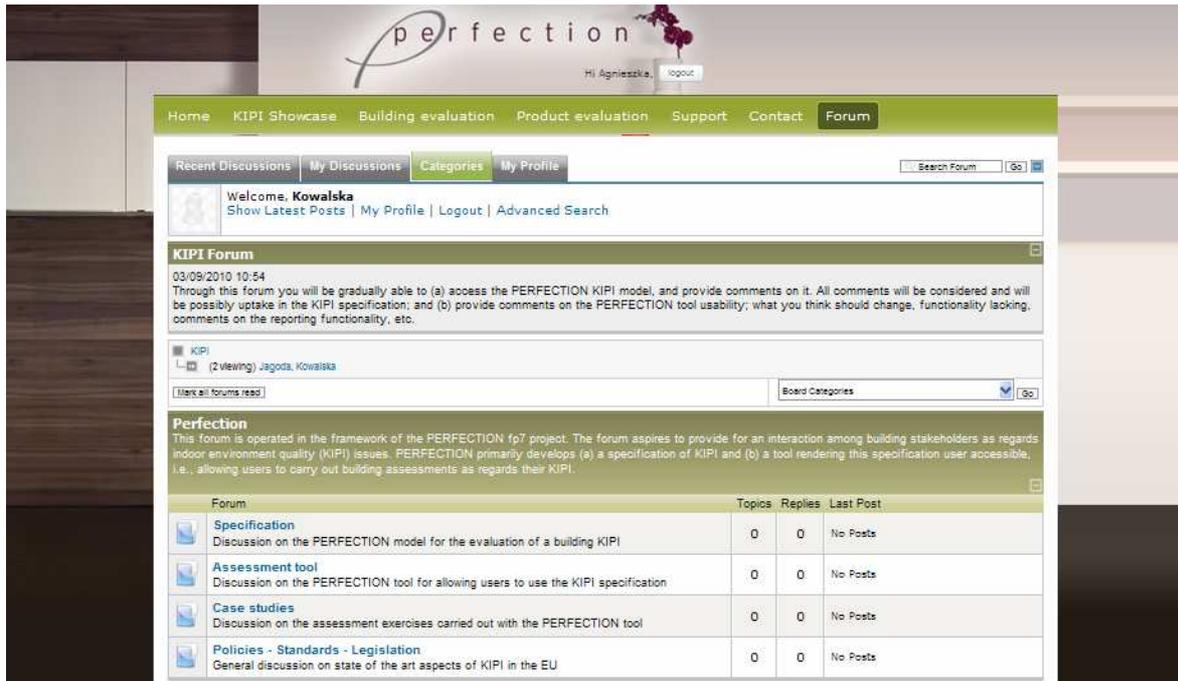
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Szigeti, F. and Davis, G., Performance Based Building: Conceptual Framework, 2005



There are numerous reasons for introducing and developing such a channel of communication and exchange of information. For building providers it means possibility of assessing their products in comparison to others, access to best practice in the market as well as simply opportunity of advertise their products. This aspect can be clearly described through the use of benchmarking concept. On the other hand there is a clients' side who, thanks to the tool, are provided with accessibility to best practice in the designing field and possibility to be up to date with new solutions on the market. Furthermore, demanding and well informed (aware) clients are a basis for innovations and development as they encourage active and creative approach from providers. Still there is a party that should be considered in this paper and was not mentioned yet. Namely, those who are responsible for shaping policies in the area of construction market. It is policy makers, after all, whose voice makes up a decisive factor. Their engagement, therefore, is as well of utmost importance to translate the PERFECTION project's goals into practice.

Thus, the KIPi tool, if enriched by the final users' attention and policy makers' support, will make the portal an efficient communicational channel coordinating all key parties interested in the building performance improvement. The newest and most advanced solution for this purpose is a users' forum (see print screen below) that helps to cope with a time factor and therefore enables a 'real time' communication. It makes the portal alive and attractive mean of interaction and gathers potentially infinite number of people interested in the field [e.g. can generate discussion on PERFECTION model for evaluation of the building KIPi; usage of KIPi specifications; case studies; state of the art of KIPi in the EU (policies, standards, regulations) and others initiated by users].



The aim of this paper is, therefore, to present opportunities that the portal provides to all aforementioned groups of users (chapter 3) as well as to describe how those opportunities might be communicated (chapter 2) and fulfilled (chapter 4).

2. USER ENGAGEMENT

2.1. Definition

In the recent years engaging the user is becoming more and more crucial. Nowadays, if for example a website interface is boring, a speech does not captive participants’ attention or a new innovative product is not used by the users, it quickly becomes forgotten. This is especially true when it comes to engaging users in Internet as this mean of communication is already one of the most influential and effective way to draw user's attention and engage in different types of activities. If the website fails to do it people will go somewhere else as the possibilities nowadays are almost unlimited. Therefore if someone wants to achieve success the technologies they offer to people does not have to be only usable but they have to engage users.⁷

Therefore in the PERFECTION project different tools have been created with the intention to not only make people aware of the projects’ results but also to engage potential users in elaborating the results by strong interaction and transfer of knowledge across the whole European Union.

As the term “engaging of users” is quite new or to be more precise its’ importance and potential has been recently appreciated, there is no agreed definition of this term. The authors of an article “What is User Engagement” from Centre for Management Informatics from Dalhousie University in Canada after having analysed existing literature on engaging users and conducted field research with relevant target groups (inter alia shoppers, web searches) proposed following definition:

“Engagement is a quality of user experiences with technology that is characterized by challenge, aesthetic and sensory appeal, feedback, novelty, interactivity, perceived control and time, awareness, motivation, interest, and affect.”⁸

In this definition the authors tried to show all identified attributes of engagement, elements that PERFECTION Partners has to take into account while entering the European Market with an innovative development.

2.2. PERFECTION ways to attract and engage potential users

The most important method of engaging the users in the PERFECTION project is the KIPi tool, which acts mostly as a decision support tool, with the forum possibility. However actions have to be developed in order to support dissemination of the information about the portal (create awareness) in order to give users the chance to state their opinion and comments on the usability and then, if satisfied with the product, use it for own purpose. Trying to encompass all the potential end-users of KIPi tool is for sure hardly possible because they are too numerous to be literally “coordinated”. Therefore several steps have been identified in order to identify and engage the users what will guarantee the maximum potential for dissemination and usage of PERFECTION results.

For this purpose in the project not only Partners, representing industry, the research community and educational sector, are itself a mean to increase the impact of the project results’ on building practice in the long term. Also the CES Network Partners from industry (from SMEs to LSEs),

⁷ Heather L. O’Brian, Elaine G. Toms, What is User Engagement? A conceptual framework for defining User Engagement with Technology, Journal of the American Society for Information science and Technology, 59(6), 2008 (p.938)

⁸ Heather L. O’Brian, Elaine G. Toms, What is User Engagement? A conceptual framework for defining User Engagement with Technology, Journal of the American Society for Information science and Technology, 59(6), 2008 (p.949)

academia and research, consisting of 32 experts from different European countries will have an enormous influence on the successful realization and implementation of the obtained results.

Raising awareness will be performed by means of following dissemination activities:

- Organization of five events all across Europe (North, East, South-East, South-West, Central), two with a policy focus, two with a research focus and one business focused. A sixth smaller-scale event will be organized for EC officers and will be focused on EC policies in the areas of environment, enterprise, transport and energy, employment, social affairs and equal opportunities.

By means of mentioned above workshops strong interaction between participating target groups e.g. researchers, policy makers and users will be the basis for obtaining valuable feedback, establish further cooperation and encourage to use and further promote PERFECTION tools.

Furthermore based upon the final meeting and taking into account the feedback of the Commission officials, the draft Policy white paper will be finalised and communicated at the end of the project. Moreover, PERFECTION will use the channels offered by ECTP and the national platforms for dissemination of knowledge and results.

- Production of publication which will act as a sort of showcase of a number of case studies across all EU-27 countries, whereby the impact of innovative and well defined technologies as well as policies on specific buildings will be presented in a user friendly way. The publication/CD will be entitled as “Indoor Environment and Building Sustainability Indicators in Use”. The CD will include a video presentation of 3 to 5 minutes and will take the user with an interactive presentation tool through the main concepts and tools of PERFECTION.
- Production of other promotion materials informing about progress in the project and reached results (website, leaflets, posters, newsletters).

2.3.Process of Engagement⁹

A crucial issue in effectively engaging the potential end-users is the analysis of the process of engagement. Engagement is considered as a process with distinguishable features inherent at each following stages in that process:

- the point of engagement
- period of engagement
- disengagement and
- reengagement.

The point of engagement describes how the engaging experience is initiated. These can be done having different goals in mind. In PERFECTION project the users may begin to engage their experience by the layout and aesthetics of the KIPI tool interface, as our product is a web tool. They may be attracted to images and features that first caught their attention. This is the most usual way of drawing users’ attention on a particular web tool. Therefore, such attributes of engagement as aesthetic appeal and attention are of great importance for the project in this step. Those who seek relevant information - construction industry stakeholders – browse sites specifically to “see what catches their eye” by “scanning the site to see if there is anything new” (Heather L. O’Brian, Elaine G. Toms, 2008). During the PERFECTION workshop for example a speaker may say something that is

⁹ Heather L. O’Brian, Elaine G. Toms, What is User Engagement? A conceptual framework for defining User Engagement with Technology, Journal of the American Society for Information science and Technology, 59(6), 2008 (p.943-945)

relevant to the listeners’ interest and capture his attention, or by use of the multimedia. It also happens often that participants are drawn in when speakers presenting the innovative tool use humour, reveal their personalities or make funny comments that reveal themselves. Thus, in general, the engagement process is initiated by the sense of “*the aesthetic or informational composition of the system interface with users*” (Heather L. O’Brian, Elaine G. Toms, 2008). When speaking about KIPi tool it might be the aesthetic and appealing interface that can capture visitors’ attention and interest and move them forward into engagement. There are cases when for example users’ – in a broad sense – are motivated to click on the website for social reasons while others may just search for a website to satisfy a specific goal (i.e., buy a product, promote a product) or simply want to have an engaging experience.

In the second step of engaging users – period of engagement - **attention** plays a crucial part. Participants, if they are highly engaged, are focused much on the task and the application and often the time passes very quickly. This depends highly on how we are able to communicate our message and of course on the topic, as this is what maintains users’ attention. During workshops presenting the KIPi tool this might be achieved for example also by the speaker having a very “engaging” voice and presence (e.g. demanding, interactive).

Another important thing in this step is **novelty** which means searching for something that is new, innovative or unusual in one’s environment in order to keep participants’ attention for a longer time. It is also defined as “a sudden and unexpected change that occurs on the interface that evokes a reaction from the user” (Aboulafia & Bannon, 2004, p.4–15.). A good method to keep the engagement is to show new things at different steps of action e.g. while looking through the website for a longer time or listening to a speaker - to “shock” with novelties after some time.

After the user is already engaged, the **interest** must be sustained, which means more or less wanting to go deeper into searching for more detailed information on a topic that caught our attention. Information about a web tool for example has to be so interesting that this becomes the basis for a search for more information.

One cannot forget also the **challenge**, which level is described on the basis of amount of effort users perceive they are extending. This does not mean that the website has to be so innovative and complicated. On the contrary, from the questionnaire that were conducted by Heather L. O’Brian and Elaine G. Toms it turns out that (Heather L. O’Brian, Elaine G. Toms, 2008):

- Web users preferred computer applications that were easy to use, as this influenced their “feelings of success”. They chose less functional challenge in their use of the application, not wanting at the same time to be intellectually challenged by the content.
- Shoppers wanted well organized online stores that enabled them to “see through it fairly quickly”, as well as purchases to be convenient and straightforward.

In this respect, the KIPi tool was so designed to encourage you to engage by the attracting appearance of the interface, well organised sub themes and easiness of searching for information.

One of the most crucial issue in PERFECTION project is the **feedback** of users regarding the information communicated to users about actions taken and results that have been achieved. Feedback may be visual, auditory, or tactile (Stone, Jarratt, Woodroffe, & Minocha, 2005). In terms of web tools it may be communicating with other remote visitors through the text-chat or video-chat features. During events it is clearly the number of people in the room asking questions. In PERFECTION project the feedback will be guaranteed by organisation of several workshops in different European countries as well as setting up a forum on KIPi tool that will encourage to interact, create feedback but which can also enable and support users when they have a specific problem/question and they seek the other users’ opinion/advice.

To make the user even more engaged it is recommended that the participant perceives that he/she is in **control** of the interaction (Schneiderman & Plaisant, 2005) and has the feeling of possessing the skills and abilities to meet the challenges (Mandel, 1997). Here a “do-it-yourself” method can be applied when the web visitor (or web tool user) is not dependant on the web owner (administrator).

He/she can change the pages, application whenever he/she wants and is up to the user whether e.g. he/she buys or uses the product/service.

Summing up, the period of sustained engagement is to be reached when the users' attention and interest is being maintained in the interaction. This is achieved by the presence of feedback, novel information in the interface and can sometimes depend on level of users' control of the interaction and if they are appropriately challenged.

When it comes to disengagement the reasons that make the user to stop the activity – having in mind that this may be also caused by external factors (not dependant from the participant) - are following:

- participants choose just to “cut themselves off”,
- the task is not urgent,
- starting the task consciously knowing that not enough time or energy can be put in the task which ends in postponing the task for later,
- other participants influencing the task (e.g. telling him to stop because of some reasons),
- losing interest because of too long time spent on the task (looking through website, using web tool, listening to a speaker),
- physiological circumstances (eye fatigue, need to eat/drink or use the washroom),
- being interrupted because of:
 - environmental factors: e.g. alarm clocks, phone ringing, other people - answering a question),
 - technological factors: e.g. small video window of the application/interface, pop ups, too complicated interface, lack of novelty.

Therefore knowing the possible internal and external factors that can cause the disengagement PERFECTION Partners have to keep in mind to constantly update and develop the KIPI interface so the user will not want to stop his/her activity because they loose interest or would feel under the pressure of opinions of others, time or other tasks. External issues, such as distractions and interruptions, lack of novelty in the KIPI application, and usability issues with the technology, also influence participants' level of engagement. A big advantage is having the forum on the KIPI tool as it delivers building stakeholders' feedback through interaction (users can provide comments on KIPI tool, indoor environment quality issues, which will be possibly included in the KIPI specifications; model usability etc.), attracts in the sense that users can find there pursued information.

Disengagement not always means stopping the activity completely. Sometimes users reengage when the system disengaged them before they have obtained satisfactory level of knowledge/information required or when they stopped the activity in order to think over /“digest” or compare the data gathered. Returning to a KIPI tool in the future must be a result of positive past experience with that application.

*‘These motivations were about having fun, being rewarded with convenience and incentives, and learning or discovering something new.’
(Heather L. O’Brian, Elaine G. Toms, What is User Engagement, 2008)*

One last important thing worth mentioning is that there might be also a nonengagement situation which can be caused by potential below mentioned issues, which everyone trying to engage users has to keep in mind and try to minimise as much a possible:

- the fact that the online application is not as enjoyable as the real-life experience,
- not enough time possessed,
- distance barrier (websites, web tools, chat forums)
- multitasking,
- being interrupted,

- content that is too complex, not clear, overwhelming or that fails to interest
- poor usability of the tool
- technical problems with application/interface/computer (e.g. delays in switching the sites, transmitting messages),
- inability to control.

Table 1. below shows in a very clear way all the attributes that appear in stages of engagement described above in division on threads of experience, which can be either emotional, spatiotemporal and sensual. The compositional thread on the other hand shows the engagement as a whole process (groups the stages). Reengagement has similar features as point of engagement therefore it wasn't included in the table.

Table 1. Summary of the engagement attributes according to the threads of experience

| Compositional thread | | | |
|--|--|---|--|
| Process of engagement | | | |
| Threads of experience | Point of engagement (and Reengagement) | Engagement | Disengagement |
| Sensual | <ul style="list-style-type: none"> • Aesthetic elements are pleasing or attention getting • Novel presentation of information | <ul style="list-style-type: none"> • Graphics that keep attention and interest or evoke realism • “Rich” interfaces that promote awareness of others or customized views of information | <ul style="list-style-type: none"> • Inability to interact with features of the technology or manipulate interface features (usability) • Lack of/too much challenge |
| Emotional | <ul style="list-style-type: none"> • Motivation to accomplish a task or to have an experience • Interest | <ul style="list-style-type: none"> • Positive affect: enjoyment, fun, physiological arousal | <ul style="list-style-type: none"> • Negative affect: uncertainty, information overload, frustration with technology, boredom, guilt • Positive affect: feelings of success and accomplishment |
| Spatiotemporal (having both spatial dimension and temporal duration) | <ul style="list-style-type: none"> • Becoming situated in the “story” of the application • Ability to take one’s time in using the application | <ul style="list-style-type: none"> • Perception that time passed very quickly • Lack of awareness of physical surroundings • Strong awareness of others when the engagement revolved around social interaction • Feedback and control | <ul style="list-style-type: none"> • Not having sufficient time to interact with or time to devote to the application • Interruptions and distractions in physical environment |

Source: Heather L. O’Brian, Elaine G. Toms, *What is User Engagement? A conceptual framework for defining User Engagement with Technology*, *Journal of the American Society for Information science and Technology*, 59(6), 2008, p. 948

3. USER GROUPS

Now that we are provided with a theoretical background of the engagement process, let's consider a more empirical point of view. Namely, who and for what purpose should be involved into the portal operation and development?

3.1. Building industry stakeholders

This group varies greatly as it embraces numerous professions such as engineers, designers, building materials producers as well as contractors and developers. In other words, into this category fall representatives of occupations that are entitled to take decisions concerning a particular building (or its elements) and its performance from the earliest stage of its life cycle. Decisions require choice and choice based on inadequate knowledge, unsupported assumptions or intuition can lead to fatal consequences. It is especially true in sectors where, as in the case of construction market, the consequences of any decision have long-term character and, therefore, are of a high risk (Bhushan, Rai London 2004).

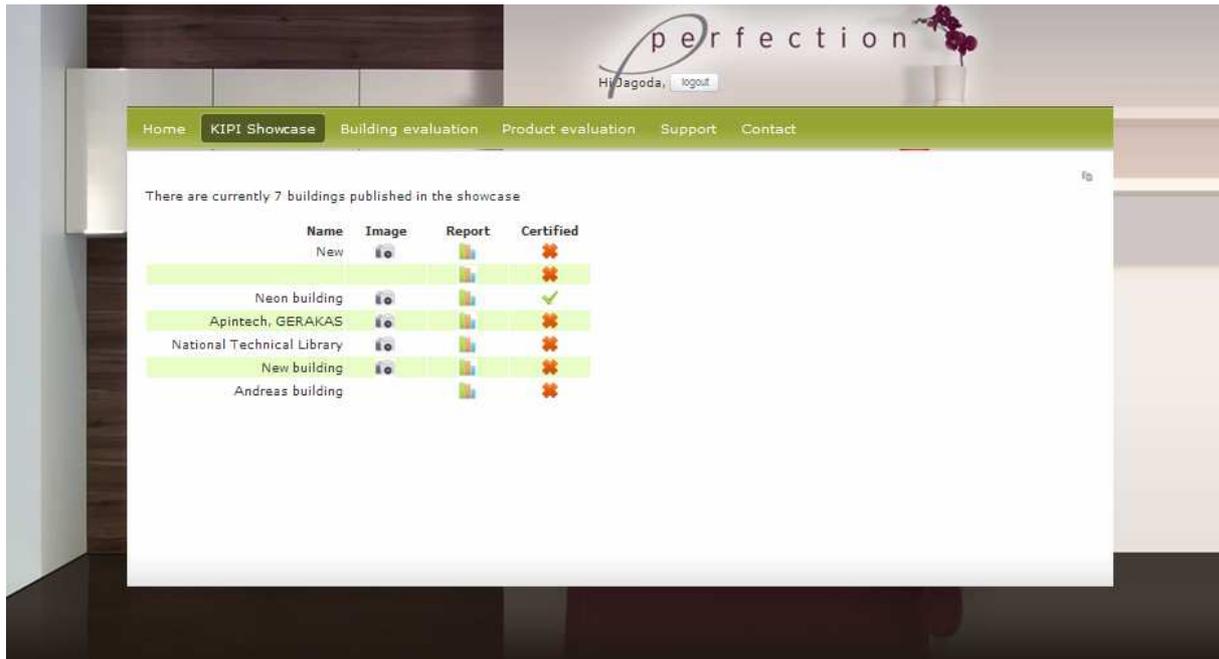
One way of minimizing the risk is a good information flow or, more precisely speaking, information exchange. World-class companies cope with this issue through the use of benchmarking methodology (process). Following quotations may give a better familiarization with the concept.

'Benchmarking is the process of comparing and measuring your organization against others, anywhere in the world, to gain information on philosophies, practices, and measures that will help your organization take action to improve its performance. In simple terms, benchmarking is the practice of being humble enough to learn how to match, and even surpass, them at it.' (APQC, 2001)

and

'I like to define benchmarking as a systematic way to identify, understand and creatively evolve superior products, services, design, equipment, processes and practices to improve your organization's real performance.' (Zairi, London 1996)

The PERFECTION tool is not able to support the user to go through a whole benchmarking process, as it involves long-term and a complex procedures. Nevertheless, it can serve as a study cases library (database) that provides the user with the access to the best practices on the market. After all, comparing a particular building or product against most successful running undertakings is a best way to improve the performance quality of one's own 'branch'. In this respect, goals of this part of PERFECTION project and benchmarking assumptions do not differ. In both cases, it is expected to engage key stakeholders whose solutions may act as a basis (models) for identifying gaps in performance for other "new" stakeholders who have just entered the market. Secondly, it is supposed to abolish concerns related to changes introducing as it shows successful undertakings. Moreover, it encourages excellence through popularization of best practices. Thus, the PERFECTION tool – acting both as a database and information exchanging channel – poses a decision support tool, at large. And internet access turns it into ever-expanding source of data on products conforming to the PERFECTION standards in respect of health, comfort, safety and accessibility. This can be achieved by report generated on the basis of users' opinion on particular solutions applied in building already published in the portal (see print screen below).



But internet base tool not only enables producers to compare performance of their products but also facilitates publishing their own solutions if they emerged to be successful.

Few specific internet features makes it most efficient mean of communication¹⁰.

- **Global coverage** – Internet abolishes any geographic and time boundaries. For PERFECTION project it means that buildings and products suppliers can look for clients around the world. Furthermore, it is possible to get in touch with new partners regardless the country of their origin. Internet, in the end , allows maximum possible dissemination of the project as such. In this respect, time makes up as well a main conductive factor as it facilitates immediate access to information required.
- **Thorough selection of offerers** – Internet provides its users (companies) with unlimited access to the variety of consumers segments and therefore facilitates contact with desired public. It is profiled forums and portals that serve as a mean of communication between producers and clients. It is claimed that targeted transmission is most efficient way of advertising. Because of high level of involvement presented by a chosen (thematic) group they are more likely to provide a company with satisfactory feedback. KIPi portal has a clearly defined goals and target groups which are described on the home page. Together with the registration requirement in order to be provided with full access to the service it limits the number of users to those seriously/really interested in the subject.
- **Interactivity** – It means a capability of gaining new as well as maintaining old relations. Internet based applications have a wide range of means which can be used in order to spread their influences in both qualitative and quantitative manner. Namely, e-mails, newsletters, forums or chat-rooms. In some communication channels subscription is required. That additionally enables the company to create its own personal database embracing those interested in the subject who most likely may become its clients. PERFECTION together with

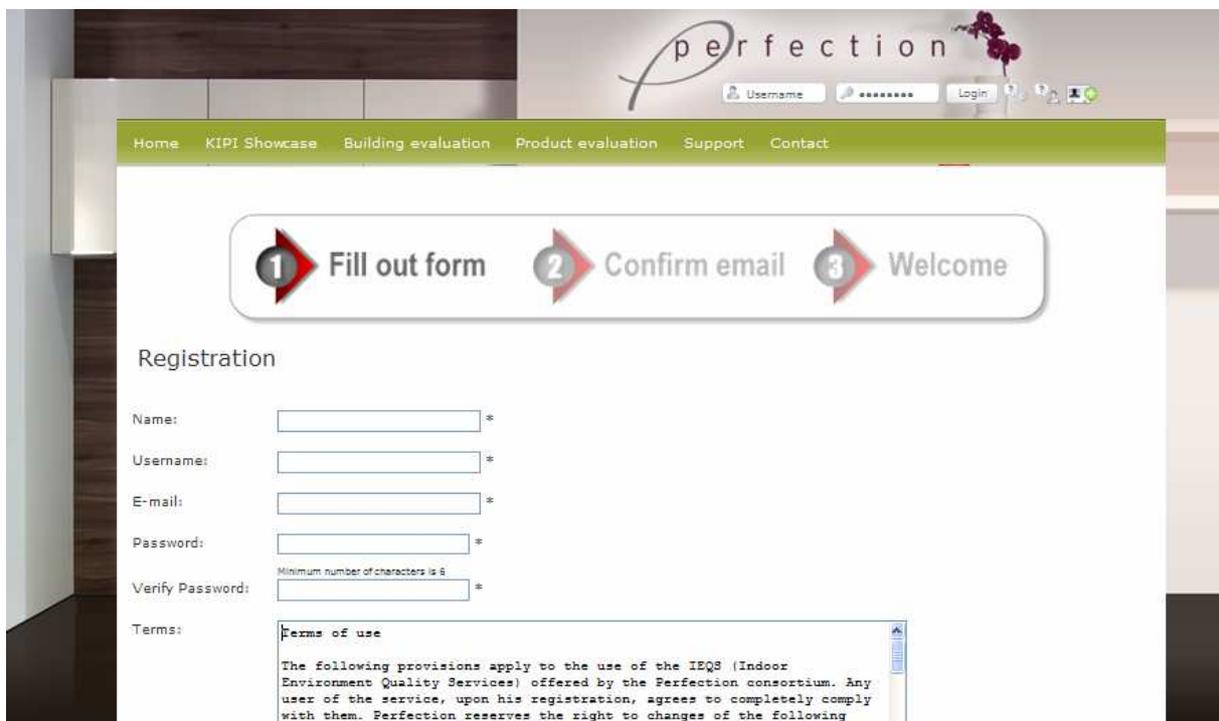
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Adamczyk, J. Features of Internet Advertisement, Internet Magazine, October 2002, p.4

constant access through its website, provide interested parties with high level of user support. It includes technical (how to use it?) as well as knowledge (what is the background?) assistance. Furthermore, a direct contact to the portal administrator enables its optimal deploying.

- **Low costs** – Internet is the cheapest advertisement medium. For small enterprises it sometimes makes up the only affordable way of communication with their clients. What is needed is only the awareness of the rules that govern the net (sometimes called as ‘nethics’) and the focus on gaining loyal users. The aim of PERFECTION in this regard is that financial matters will not limit dissemination of best practice and gathering the knowledge through forum and data on different buildings and products.
- **Flexibility** – Which, in fact, means continuous controllability of the effects that a particular piece of information have triggered. In other words, internet’s superiority over other means of communications (e.g. leaflets, newspapers, etc.) enable company to transfer immediately users’ feedback into action and modify its actions accordingly. Through the KIPI portal PERFECTION team would be able to gather feedback on both products and buildings published as well as the usability and functionality of portal as such.

The PERFECTION tool is widely accessible and requires registering only in order to be entitled to publish a building or product and to have full access to ‘Support’. A user can become registered as soon as he provides some credentials (name, username, email and password). Please see a print screen below.



But what is worth emphasizing, publishing a product does not only mean setting up benchmarks or advertising. It, primarily, makes it subjected to evaluation against PERFECTION standards by its users and, as a result, certified. Thus the tool facilitates providing feedback

3.2. Building Users

PERFECTION project, as it was stated at the early stage of the Consortium actions in the Description of Work document, aims to support a more user-oriented approach in the field of buildings construction. Indeed, bearing in mind that citizens of developed countries spend approximately 90% of their time in different types of buildings, their feelings about variety of aspects concerning those buildings cannot be ignored.

Through the research that was conducted within the project a set of parameters of utmost importance were collected, defined and subjected to further specification. That is:

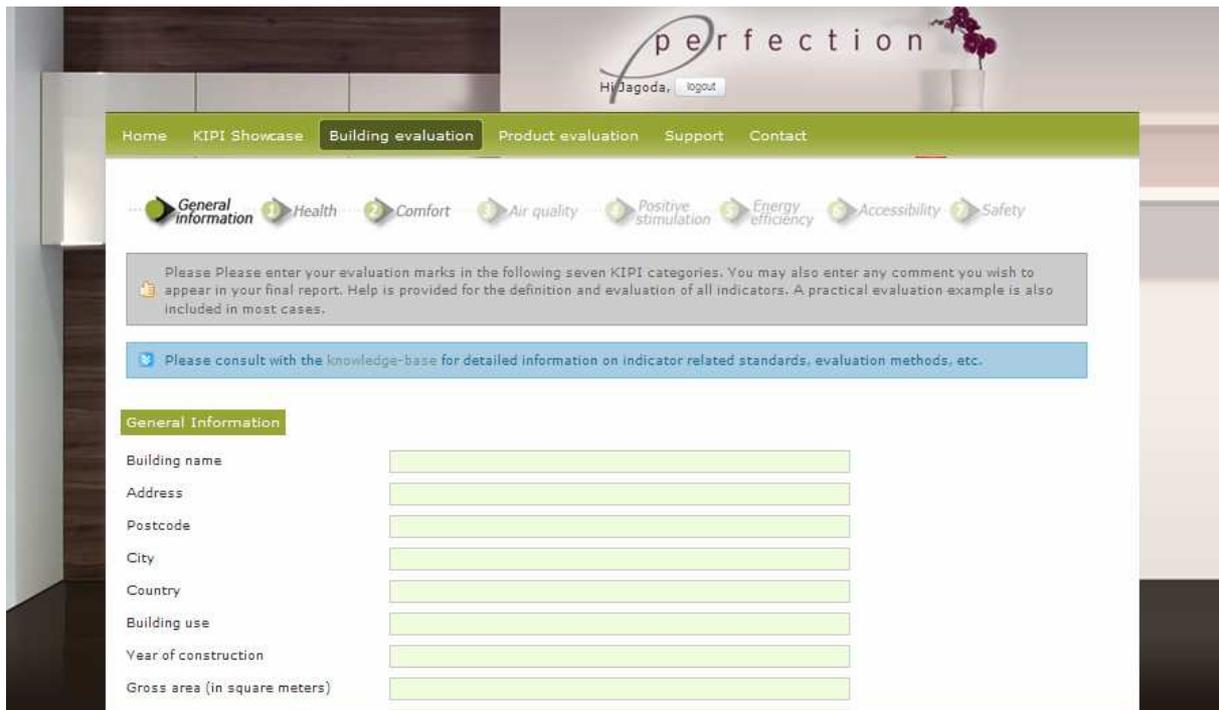
- health
- comfort
- safety
- accessibility

Definition of **health** applied in the project was derived from the HOPE-project (Cox 2005). According to the definition a building is defined ‘healthy’ if it does not cause or aggravate illnesses in the building occupants and it assures a high level of comfort for the building occupants. Nevertheless it is assumed that a high level of comfort is a minimum, but not sufficient, requirement to arrive at a healthy indoor environment (Loomans, M. 2009. Perfection: Review of health and comfort indicators, p.5).

As to **comfort** set of indicators, they have been defined by thermal comfort concept understood as “such a condition of mind that expresses satisfaction with the environment”. Within this indicators category fall as well perceived **air quality**, lightning and acoustic comfort. Also **positive stimulation**, expressed as intended actions towards adjustment building environment in order to enhance the feeling of comfort, should be mentioned at this stage (Loomans, M. 2009. Perfection: Review of health and comfort indicators, p.5).

The level of **accessibility** specified by particular services and facilities availability, adjustment to disabled people needs as well as implementation of policies aiming at total accessibility of a building. While **safety** concept includes both types of building abilities: ensuring ‘safe and resistant space for the users and occupants of the building and maintaining the value of the property and goods (Hajek, P., Perfection: Review of accessibility, safety and positive simulation indicators, 2009, p.5).

All those aforementioned factors became not only a theoretical frame for building/product specification but also, thanks to the tool, users may in this scope evaluate buildings they occupy and products they deploy (see print screen below).



Moreover, access to information on already applied solutions and reports concerning performance of particular buildings allows to take more conscious and knowledge-based decisions concerning users' own real properties.

Such attitude towards an end-user-role is as well applied for more practical and general reason.

'At the end, the uptake of any technology or policy will depend primarily on providing the European user with clear metric of its impact on the indoor performance, and its sustainability footprint. The less ambiguous the impact of the technology, the faster the awareness creation and the higher the penetration of the technology in the building domain will be.' (PERFECTION project Description of Work, 2008)

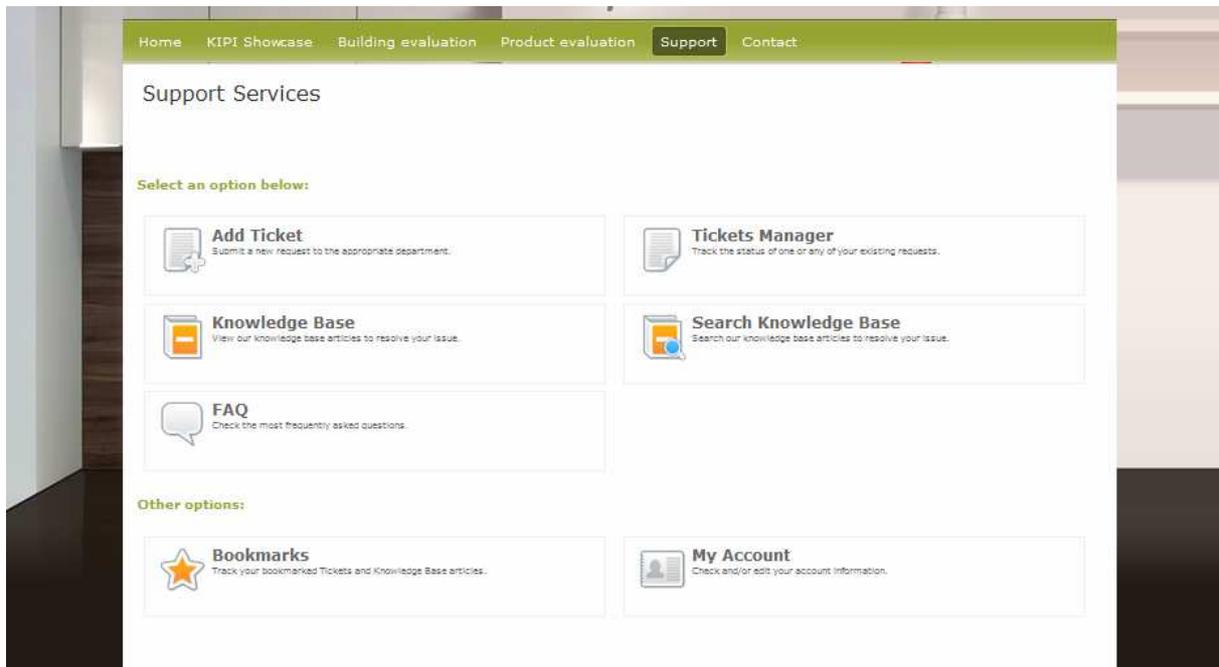
In other words, involving end users in new technology/concept creation and evaluation allow for its better understanding and higher level of acceptance. This, on the other hand, would stimulate the development of the construction as aware clients tend to present more sophisticated demands.

3.3. Policy makers

The last but not least important group that the PERFECTION tool is dedicated to is made up by decisive persons in the area of construction related policy. The primary objective of involving this group is to provide it with access and possibility to comment on the assessment model elaborated within the project. Although the model is based on the newest research results, its verification from more practical (not only theoretical) point of view is required for its enhancement.

Nevertheless such a feedback is not the only reason for engaging this group. New opportunities for this interaction keep on emerging while testing and discussing the tool.

First of all, and what is applicable to all aforementioned groups, the tool plays a role of library of best practices in the construction area. But while in suppliers' case the aim is to benchmark their own products and in users' one – knowledge broadening for own purpose, in the policy makers' instance it would have more significant consequences. Initially, it means creating awareness of new solutions/technologies to be applicable in order to improve buildings performance. Consequently, it would have an impact on refurbishment and designing in public building domain and which may be possibly extended through introducing respective laws and regulations. Therefore policy makers should be also regarded as potential accelerator of sector development. Moreover, two-way communication is enabled by high level of user support built in the portal which includes knowledge and technical aspect as well as direct contact to the portal administrator which allow to deepen information when required (see print screen below).



4. USE CASES

A Use Case is a concise description of interaction between system/product considered and its' user. The main part of the Case is made up by a list of actions leading to the goal achievement. This scenario can differ depending on the changes in actors' behaviour and system reactions, which cause extension or increase complexity of the Case. Once the list of all the Use Cases is completed it provides the information on all possible system behaviours and triggering actions required.

One possible way for presenting the KIPI portal usability is to consider groups of its future users' separately. In the end, building and product suppliers, end users, and policy makers has different goals while browsing through the portal resources.

However, aforementioned division of possibilities (by the type of KIPI portal users) is not the only one applicable. The other solution is to consider them taking the stages of building life cycle into consideration. In an initiation/design phase, construction phase as well as in an operational phase people interested in the building performance require different types of support and have varied expectations related to the portal, consequently. Thus, those two approaches – user and life cycle oriented, in fact, overlap and interfere with each other. Let's shortly consider usability of the KIPI portal taking both approaches, if possible, into consideration.

4.1. Building industry stakeholders

4.1.1. Publishing of a product/service

USE CASE SUMMARY: A telecare service provider would like to introduce a new product (a fall detector) to the market. Therefore he looks for efficient means of communication which means reaching both individual investors (end users) as well as building owners/managers.

GOAL: To introduce a new product (a fall detector)

MAIN ACTOR (triggering the interaction): a telecare service provider

MAIN SCENARIO (see also Scheme 1):

Step 1. Telecare service provider enters the portal (<http://www.indoorperformance.net>)

Step 2. He inserts his Username and Password

Step 3. He presses 'Log in'

Step 4. He chooses 'Product evaluation' from the menu

Step 5. He chooses 'New' from the drop-down menu

Step 6. He fills in General Information section

Step 7. He inserts any other details required

Step 8. He presses 'Submit'

Step 9. The system automatically places the fall detector in the KIPI Showcase section

Step 10. The fall detector is published

EXTENTIONS:

A

Step 4. Telecare service provider chooses Product evaluation from the menu

Step 4a. He learns that he has to be registered in the portal

Step 4b. He chooses 'create an account' command (top right button)

Step 4c. He registers (inserts his details)

Step 4d. He agrees to the terms of the service

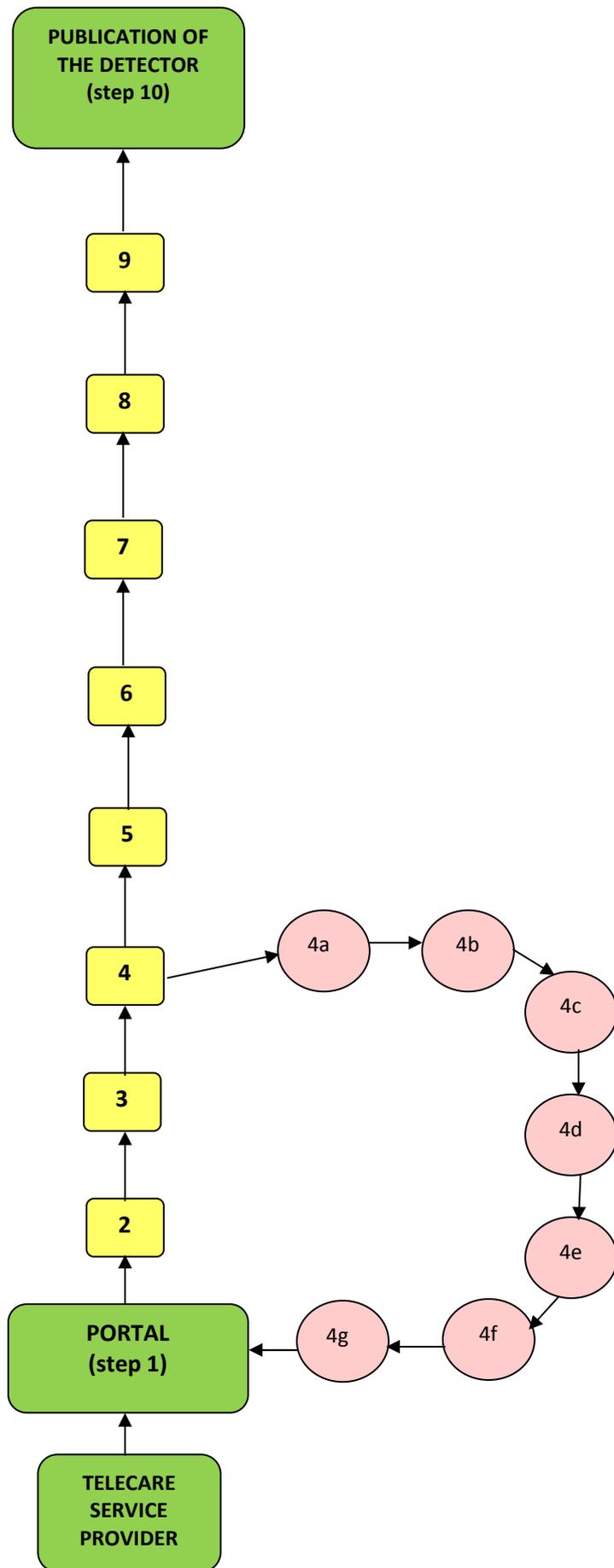
Step 4e. He learns that he will be provided with activating link

Step 4f. He opens his mailing box

Step 4g. He follows the link delivered automatically by the system

....

... see MAIN SCENARIO from **Step 1.**



Scheme 1
KIPI portal as a channel for publishing

4.1.2. Achieving compliance with best practices

USE CASE SUMMARY: A building designer has got a new contract. He is supposed to design a detached house which would meet the requirements of both sustainability and maximum comfort (widely defined). As he would like to follow best solution already applied he therefore looks for an example of a successful undertakings he would learn on.

GOAL: To be provided with information regarding best practices in a building domain

MAIN ACTOR (triggering interaction): a building designer

MAIN SCENARIO (see also Scheme 2):

- Step 1.** A building designer enters the portal (<http://www.indoorperformance.net>)
- Step 2.** He chooses 'KIPI Showcase' from the menu
- Step 3.** He chooses Buildings section from a drop-down menu
- Step 4.** He chooses a case from the list
- Step 5.** He opens the relevant image
- Step 6.** He closes the image
- Step 7.** He opens the relevant report
- Step 8.** He analyzes features of the building one by one
- Step 9.** He learns about best practice in a building domain

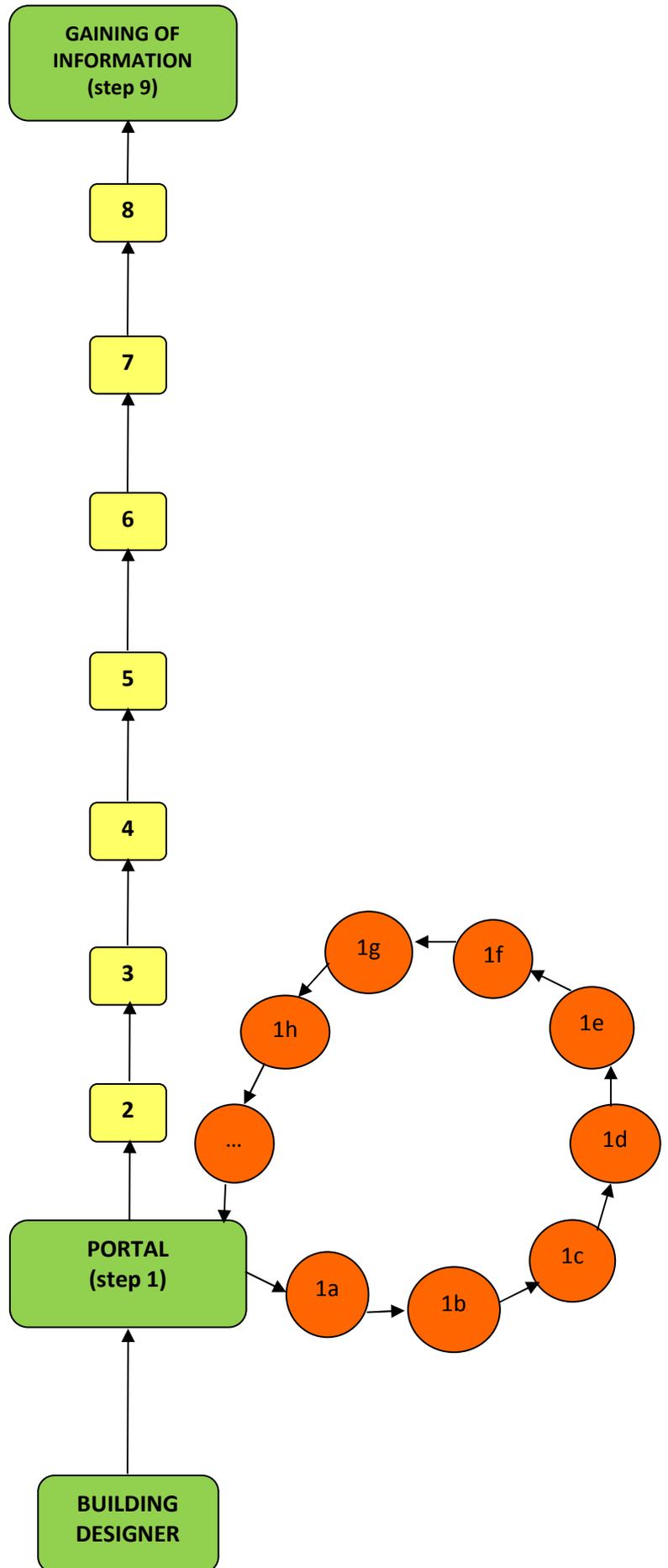
EXTENTIONS:

A

- Step 1a.** A building designer chooses 'Support' from the menu in order to have better understanding of the methodology implemented
- Step 1b.** He chooses Knowledge base
- Step 1c.** He chooses 'Building evaluation category' from the available list
- Step 1d.** He chooses one article
- Step 1e.** He reads it
- Step 1f.** He comes back to the list
- Step 1g.** He chooses another article
- Step 1h.** He reads it

....

... see MAIN SCENARIO from **Step 2.**



Scheme 2
KIPI portal as a best practice library

4.1.3. Identifying of critical points to be monitored in construction phase

USE CASE SUMMARY: A building designer has got a new contract. He is supposed to design a detached house which would meet the requirements of both sustainability and maximum comfort (widely defined). He therefore looks for a ‘building scheme’ that would provide him with critical points that should be concerned during the design as well construction process.

GOAL: To identify the critical points to be monitored during the construction phase

MAIN ACTOR (triggering the interaction): a building designer

MAIN SCENARIO (see also Scheme 3):

- Step 1.** A building designer enters the portal (<http://www.indoorperformance.net>)
- Step 2.** He inserts his login details
- Step 3.** He chooses ‘Support’ from the menu
- Step 4.** He chooses ‘Search knowledge base’
- Step 5.** He chooses ‘Building evaluation’ from a drop-down menu in Advanced search option section
- Step 6.** He chooses an article he is interested in
- Step 7.** He reads it
- Step 8.** He gains an understanding of the ideas

EXTENTIONS:

A

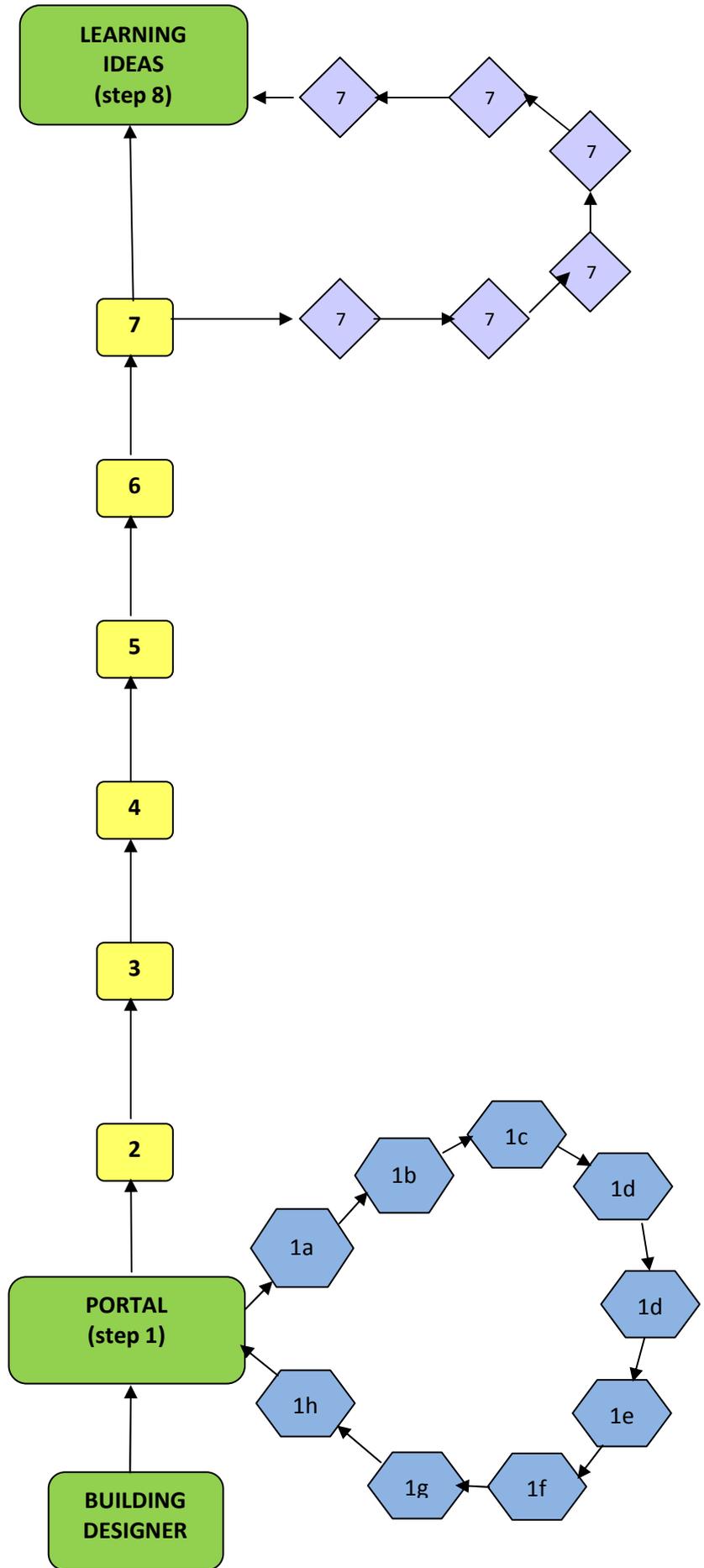
- Step 1.** A building designer enters the portal (<http://www.indoorperformance.net>)
- Step 1a.** He chooses ‘Support’ from the menu
- Step 1b.** He chooses ‘FAQ’
- Step 1c.** He learns that he has to be registered in order to have full access to the service
- Step 1d.** He chooses ‘create an account’ command (top right button)
- Step 1e.** He registers (insert his login details)
- Step 1f.** He agrees to the terms of the service
- Step 1g.** He learns that he will be provided with activating link
- Step 1h.** He opens his mailing box
- Step 1i.** He follows the link delivered automatically by the system

....

... see MAIN SCENARIO from **Step 2**

B

- Step 7.** A building designer reads it
- Step 7a.** He enters ‘Showcase’ in order to see how the indicators operate in practice
- Step 7b.** He chooses a case from the list
- Step 7c.** He opens an image
- Step 7d.** He closes the image
- Step 7e.** He opens a report
- Step 7f.** He analyzes indicators he is interested in
- Step 8.** He gains an understanding of the ideas



Scheme 3
KIPI portal as an information channel

4.1.4.Reviewing the critical points identified during the design phase

USE CASE SUMMARY: A building designer supervises a construction process of a building he has design. The building should meet requirements of both sustainability and maximum comfort (widely defined). In the design phase he identified several critical points that should be under his charge especially. Nevertheless he finds it necessary to be provided with the newest information from the market in order to implement new solutions where required and possible.

GOAL: To check and review the critical points identified during the design phase

MAIN ACTOR (triggering the interaction): a building designer

MAIN SCENARIO (see also Scheme 4):

- Step 1.** A building designer enters the portal (<http://www.indoorperformance.net>)
- Step 2.** He inserts his login details
- Step 3.** He chooses ‘Support’ from the menu
- Step 4.** He chooses ‘Search knowledge base’
- Step 5.** He chooses ‘Building evaluation’ from a drop-down menu in Advanced search option section
- Step 6.** He chooses an article he is interested in
- Step 7.** He reads it
- Step 8.** He gains a knowledge on new ideas

EXTENTIONS:

A

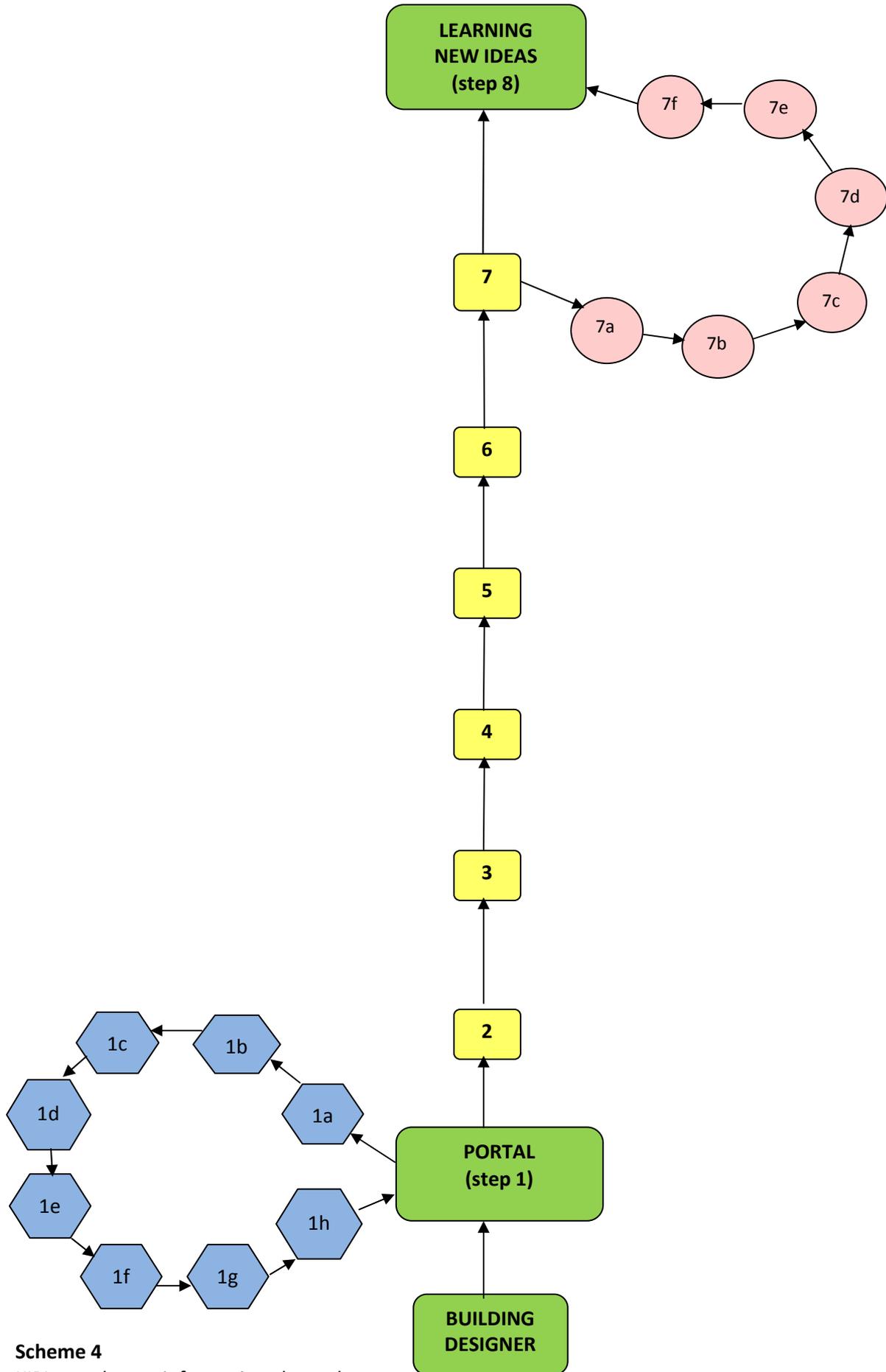
- Step 1.** A building designer enters the portal (<http://www.indoorperformance.net>)
- Step 1a.** He chooses ‘Support’ from the menu as he does know how to use the portal
- Step 1b.** He learns that he has to be registered in order to have full access to the service
- Step 1c.** He chooses ‘create an account’ command (top right button)
- Step 1d.** He registers (insert his details)
- Step 1e.** He agrees to the terms of the service
- Step 1f.** He learns that he will be provided with activating link
- Step 1g.** He opens his mailing box
- Step 1h.** He follows the link delivered automatically by the system

....

...see MAIN SCENARIO from **Step 1**

B

- Step 7.** A building designer reads it
- Step 7a.** He enters Showcase in order to see how the indicators operate in practice
- Step 7b.** He chooses a case from the list
- Step 7c.** He opens an image
- Step 7d.** He closes the image
- Step 7e.** He opens a report
- Step 7f.** He analyzes indicators he is interested in
- Step 8.** He gains a knowledge on new ideas



Scheme 4
KIPI portal as an information channel

4.2. Building users

4.2.1. Gaining of knowledge on existing requirements in a building domain

USE CASE SUMMARY: A company owner is going to open a new office in a new location. She therefore would like to build a new office building for the purpose. He would like to adjust the building to the current needs and standards but he does not know anything on how fulfill this goal.

GOAL: To gain knowledge on existing requirements in a building domain

MAIN ACTOR (triggering the interaction): a company owner

MAIN SCENARIO (see also Scheme 5):

- Step 1.** A company owner enters the portal (<http://www.indoorperformance.net>)
- Step 2.** He inserts his login details
- Step 3.** He chooses 'Support' from the menu
- Step 4.** He chooses 'Search knowledge base'
- Step 5.** He chooses 'Building evaluation' from a drop-down menu in Advanced search option section
- Step 6.** He chooses an article he is interested in
- Step 7.** He reads it
- Step 8.** He gains an understanding of the ideas

EXTENTIONS:

A

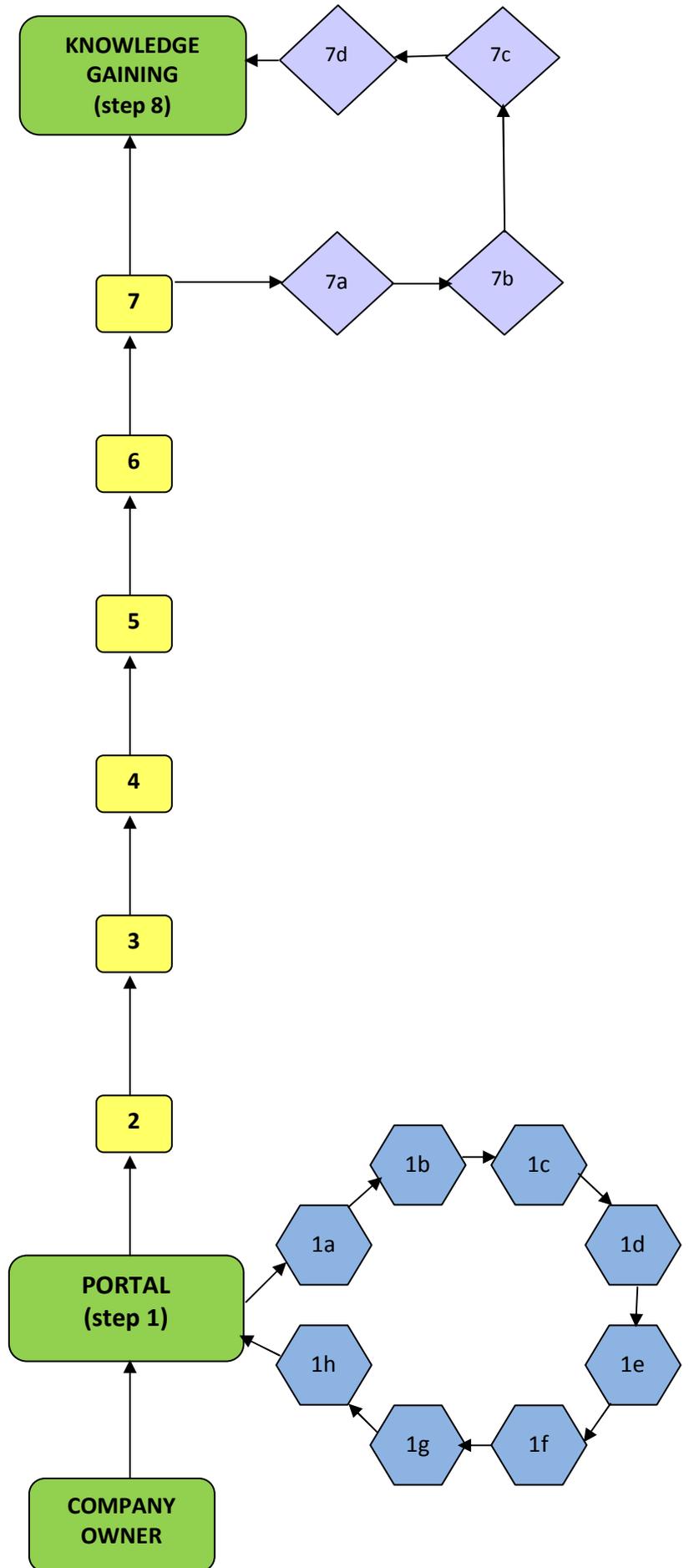
- Step 1.** A company owner enters the portal (<http://www.indoorperformance.net>)
- Step 1a.** A financial adviser chooses 'Support' from the menu as he does know how to use the portal
- Step 1b.** He learns that he has to be registered in order to have full access to the service
- Step 1c.** He chooses 'create an account' command (top right button)
- Step 1d.** He registers (insert his details)
- Step 1e.** He agrees to the terms of the service
- Step 1f.** He learns that he will be provided with activating link
- Step 1g.** He opens his mailing box
- Step 1h.** He follows the link delivered automatically by the system

....

... see MAIN SCENARIO from **Step 1**

B

- Step 7.** A financial adviser reads it
- Step 7a.** He enters Showcase in order to see how the indicators operate in practice
- Step 7b.** He chooses a case from the list
- Step 7c.** He opens a report
- Step 7d.** He analyzes indicators he is interested in
- Step 8.** He gains an understanding of the ideas



Scheme 5
KIPI portal as an information channel

4.2.2. Monitoring and enhancing of a building indoor performance

USE CASE SUMMARY: A building owner would like to enhance the performance of his real asset in order to meet the criteria of competitive procurement organized by local foundation for disabled people. The aim of the procurement is to appoint the best location for organization’s headquarter. The asset considered has been used as a residential building nevertheless required restoration/refurbishment in order to be adjusted to the disabled needs.

GOAL: To choose the best solution for enhancement of the accessibility aspect of the building

PRIMARY ACTOR (triggering the interaction): a building owner

MAIN SCENARIO (see also Scheme 6):

- Step 1.** A building owner enters the portal (<http://www.indoorperformance.net>)
- Step 2.** He enters ‘KIPI Showcase’
- Step 3.** He chooses one of the cases available
- Step 4.** He chooses report related
- Step 5.** He enters Accessibility section
- Step 6.** He views solutions implemented and omitted
- Step 7.** He analyzes marks and comments ascribed to each indicator
- Step 8.** He finds the solutions reasonable and applicable in his particular case
- Step 9.** He decides to implement the ideas

EXTENSIONS:

A.

- Step 1.** A building owner enters the portal (<http://www.indoorperformance.net>)
- Step 1a.** He does not know in which section he should find appropriate information
- Step 1b.** He chooses ‘Video tutorial’ from drop-down menu in ‘Support’ section
- Step 1c.** He comes back to Home page

....

... see MAIN SCENARIO from **Step 2.**

B.

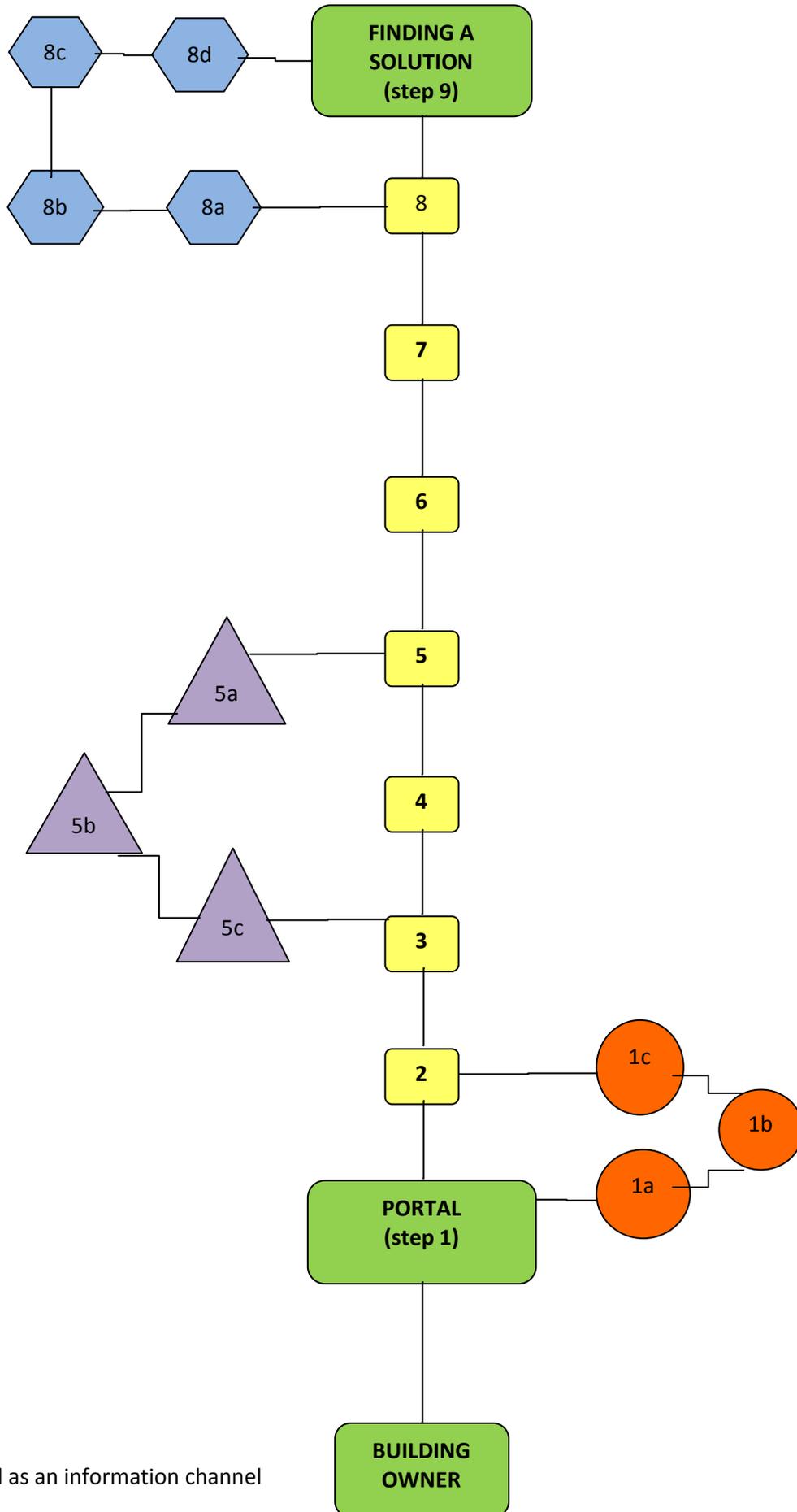
- Step 6.** A building owner views solutions implemented and omitted
- Step 6a.** He finds the solution inapplicable in his particular case
- Step 6b.** He exits the report

....

... see MAIN SCENARIO from **Step 3.**

C.

- Step 8.** A building owner finds the solutions reasonable and applicable in his particular case
- Step 8a.** He would like to deepen his knowledge on the background of the solution
- Step 8b.** He chooses Support from the menu
- Step 8c.** He enters Knowledge Base in order to be provided with information required
- Step 8d.** He reads an appropriate article
- Step 9.** He decides to implement the ideas



Scheme 6
KIPI portal as an information channel

4.2.3. Gaining of knowledge on indoor performance

USE CASE SUMMARY: A financial adviser is planning to redecorate his office in order to improve the sense of well-being and productivity. Its current décor does not meet his expectations any more due to increased number of responsibilities and working hours consequently.

GOAL: To gain knowledge on aspect of indoor environment influencing the sense of well-being and productivity

MAIN ACTOR (triggering the interaction): a financial adviser

MAIN SCENARIO (see also Scheme7):

Step 1. A financial adviser enters the portal (<http://www.indoorperformance.net>)

Step 2. He inserts his login details

Step 3. He chooses 'Support' from the menu

Step 4. He chooses 'Search knowledge base'

Step 5. He chooses 'Building evaluation' from a drop-down menu in Advanced search option section

Step 6. He chooses an article he is interested in

Step 7. He reads it

Step 8. He gains an understanding of the ideas

EXTENTIONS:

A

Step 1. A financial adviser enters the portal (<http://www.indoorperformance.net>)

Step 1a. A financial adviser chooses 'Support' from the menu as he does not know how to use the portal

Step 1b. He learns that he has to be registered in order to have full access to the service

Step 1c. He chooses 'create an account' command (top right button)

Step 1d. He registers (insert his details)

Step 1e. He agrees to the terms of the service

Step 1f. He learns that he will be provided with activating link

Step 1g. He opens his mailing box

Step 1h. He follows the link delivered automatically by the system

....

... see MAIN SCENARIO from **Step 1.**

B

Step 6. A financial adviser chooses an article he is interested in

Step 6a. He prints the article

Step 6b. He comes back to the list of articles

Step 6c. He chooses another article

Step 6d. He prints the article

Step 6e. He leaves the portal

Step 7. He reads it

....

... see MAIN SCENARIO from **Step 8.**

C

Step 7. A financial adviser reads it

Step 7a. He enters 'Showcase ' in order to see how the indicators operate in practice

Step 7b. He chooses a case from the list

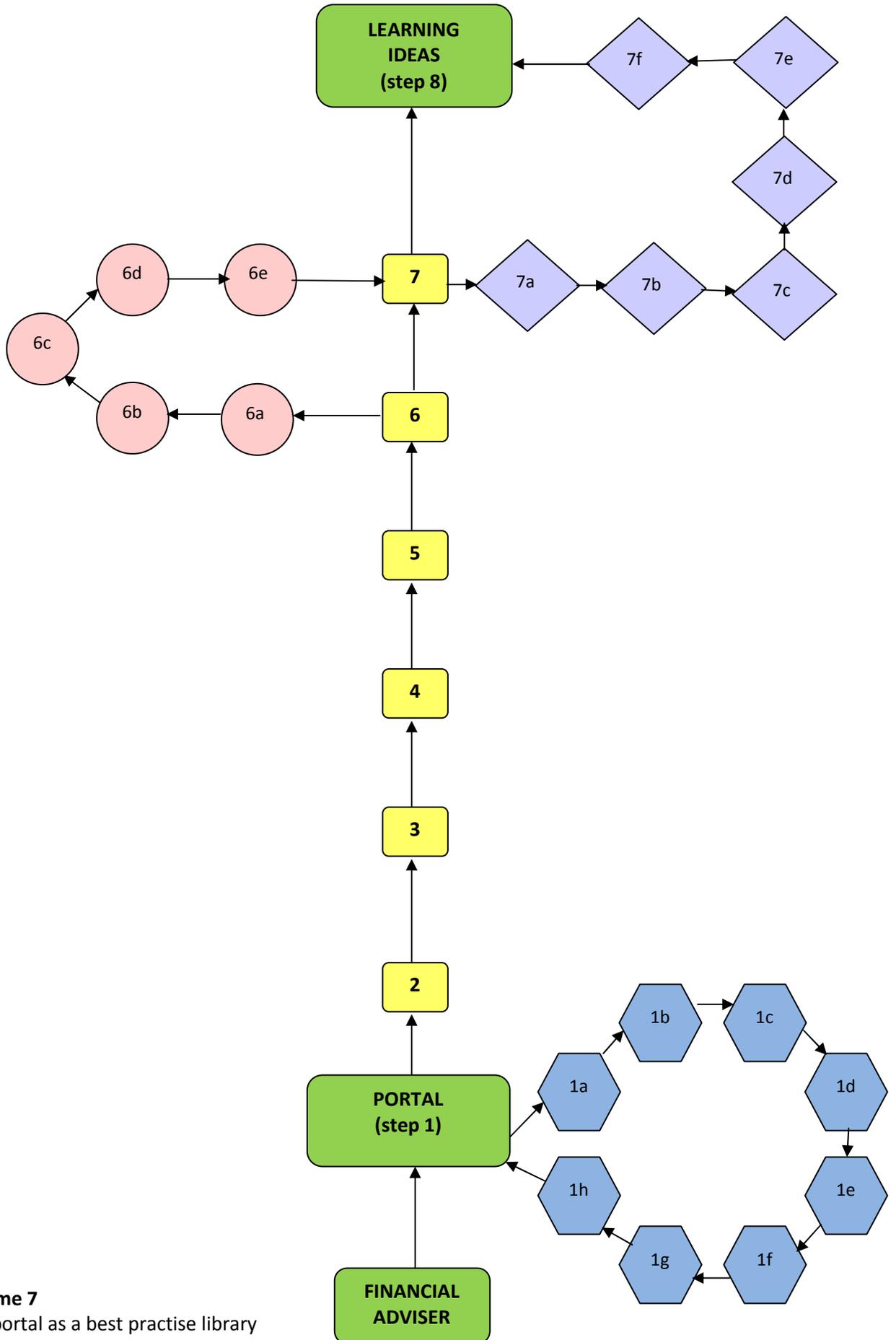
Step 7c. He opens an image

Step 7d. He closes the image

Step 7e. He opens a report

Step 7f. He analyzes indicators he is interested in

Step 8. He gains an understanding of the ideas



Scheme 7
KIPI portal as a best practise library

4.3. Policy makers

4.3.1. Gaining of knowledge on indoor performance

CASE SUMMARY: A participant of the 1st policy oriented PERFECTION workshop has become interested in the KIPI portal knowledge background (indicators, measurements, etc.). As he is a member of local authority board dealing with dwelling conditions of the citizens he would like to have a better understanding of the ideas in order to incorporate them into policy actions.

GOAL: To be more aware of indoor performance and identify critical areas for policy actions

MAIN ACTOR (triggering the interaction): a local authority member

MAIN SCENARIO (see also Scheme 8):

Step 1. A financial adviser enters the portal (<http://www.indoorperformance.net>)

Step 2. He inserts his login details

Step 3. He chooses 'Support' from the menu

Step 4. He chooses 'Search knowledge base'

Step 5. He chooses 'Building evaluation' from a drop-down menu in Advanced search option section

Step 6. He chooses an article he is interested in

Step 7. He reads it

Step 8. He gains an understanding of the ideas

EXTENSIONS:

A

Step 1. A financial adviser enters the portal (<http://www.indoorperformance.net>)

Step 1a. A financial adviser chooses 'Support' from the menu as he does not know how to use the portal

Step 1b. He learns that he has to be registered in order to have full access to the service

Step 1c. He chooses 'Create an account' command (top right button)

Step 1d. He registers (insert his details)

Step 1e. He agrees to the terms of the service

Step 1f. He learns that he will be provided with activating link

Step 1g. He opens his mailing box

Step 1h. He follows the link delivered automatically by the system

... see MAIN SCENARIO from **Step 1.**

B

Step 7. A financial adviser reads it

Step 7a. He enters 'Showcase' in order to see how the indicators operate in practice

Step 7b. He chooses a case from the list

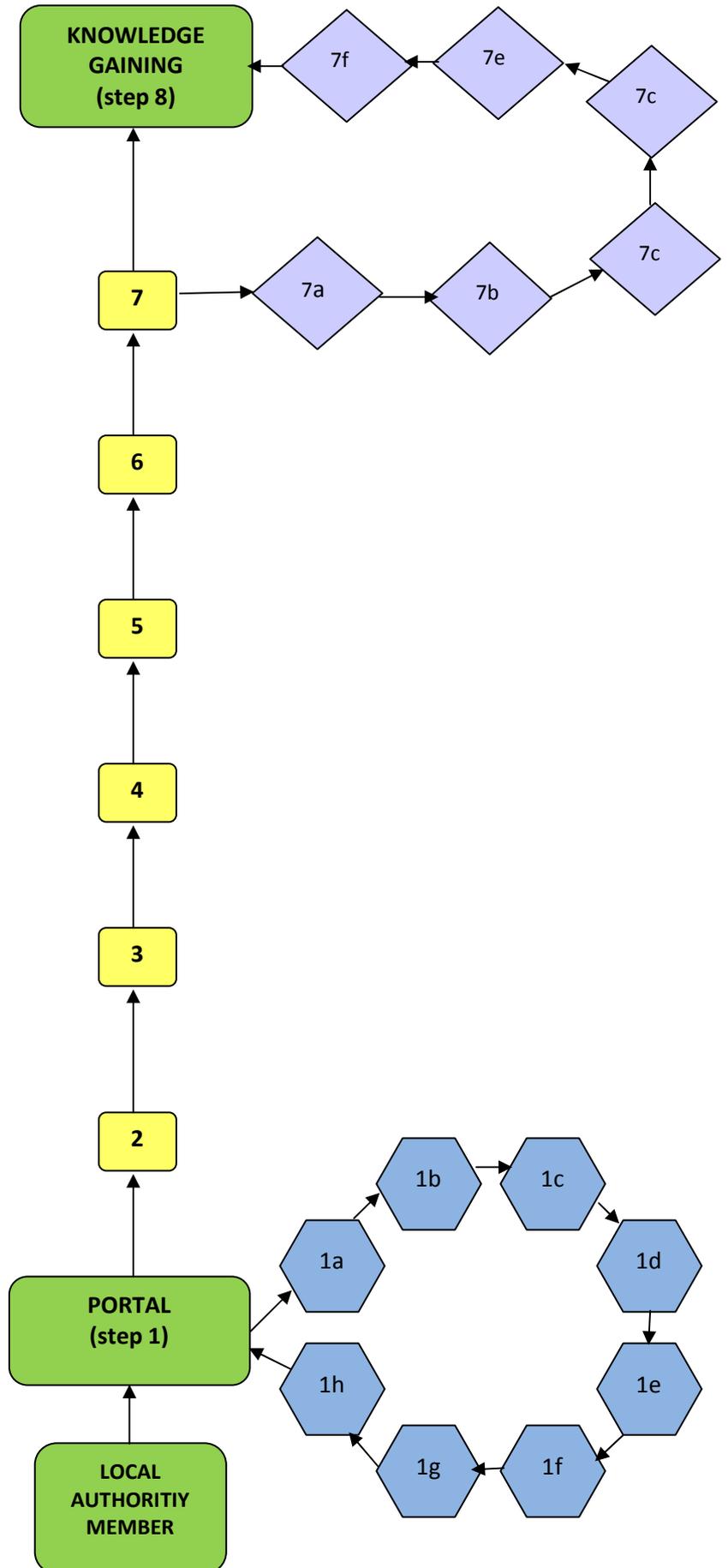
Step 7c. He opens an image

Step 7d. He closes the image

Step 7e. He opens a report

Step 7f. He analyzes indicators he is interested in

Step 8. He gains an understanding of the ideas



Scheme 8
KIPI portal as an information channel

4.3.2. Contributing to the KIPI tool development

USE CASE SUMMARY: A participant of the 1st policy oriented PERFECTION workshop has become interested in the KIPI portal knowledge background (indicators, measurements, etc.). As he is a member of local authority board dealing with dwelling conditions of the citizens he also has been encouraged to contribute to the tool development.

GOAL: To comment on the portal knowledge background

MAIN ACTOR (triggering the interaction): a local authority member

MAIN SCENARIO (see also Scheme 9):

Step 1. A local authority member enters the portal (<http://www.indoorperformance.net>)

Step 2. He chooses ‘Showcase’ from the menu

Step 3. He chooses one case

Step 4. He opens a report

Step 5. He analyzes the indicators and measurements

Step 6. He chooses ‘Contact’ from the menu

Step 7. He writes a message to the portal administrator

Step 8. He sends the message with his comments

EXTENTIONS:

A

Step 5a. He chooses ‘Support’ from the menu

Step 5b. He chooses ‘Knowledge base’

Step 5c. He chooses ‘Building evaluation category’ from the available list

Step 5d. He chooses one article

Step 5e. He reads it

Step 5f. He comes back to the list

Step 5g. He chooses another article

Step 5h. He reads it

....

... see MAIN SCENARIO from **Step 6.**

B

Step 5a. He chooses ‘Building evaluation’ from the menu

Step 5b. He learns that he has to be registered in the portal

Step 5c. He chooses ‘Create an account’ command (top right button)

Step 5d. He registers (insert his details)

Step 5e. He agrees to the terms of the service

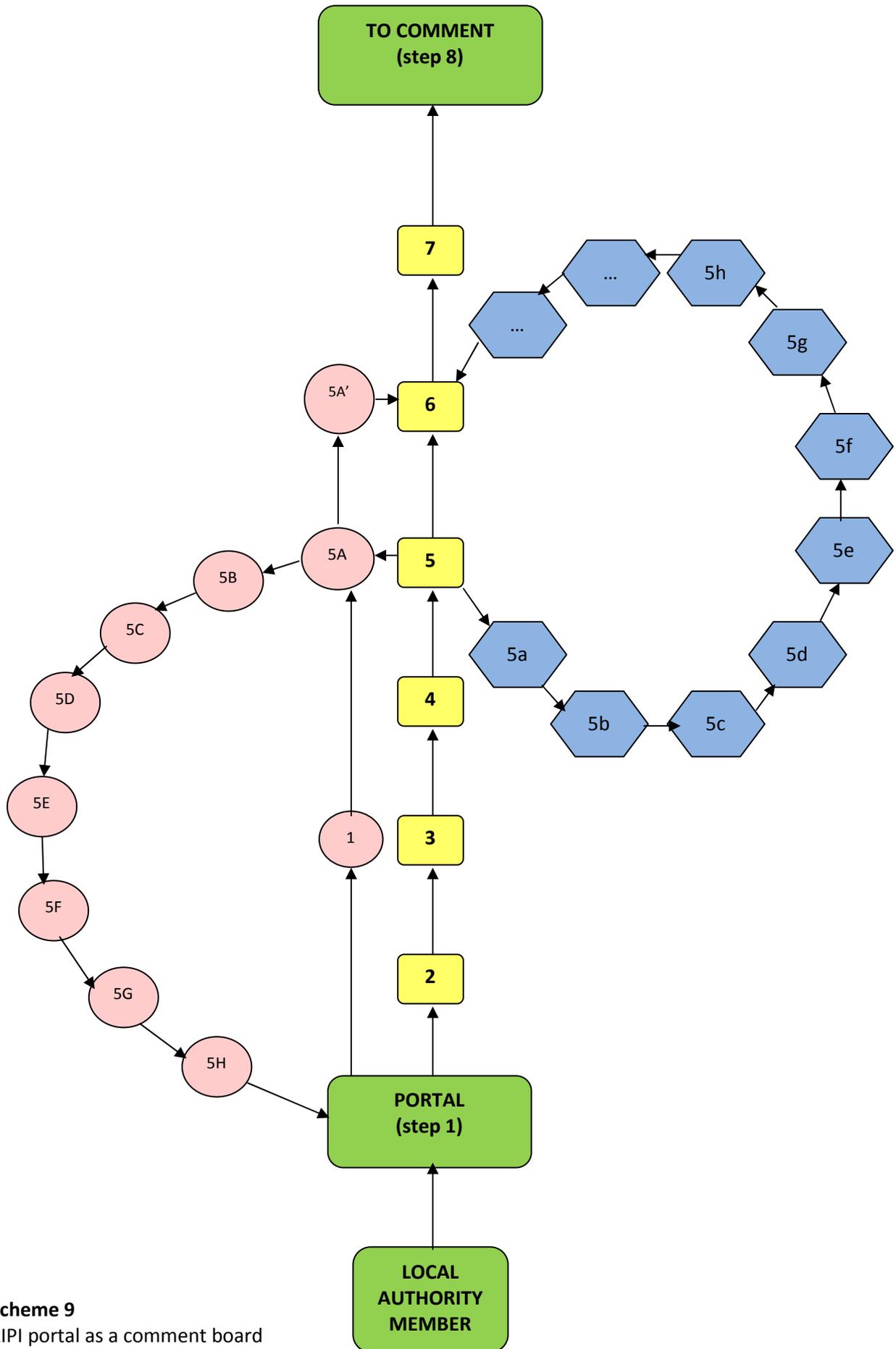
Step 5f. He learns that he will be provided with activating link

Step 5g. He opens his mailing box

Step 5h. He follows the link delivered automatically by the system

....

... see MAIN SCENARIO from **Step 6.**



Scheme 9
KIPI portal as a comment board

5. CONCLUSIONS

One of the many objectives of the PERFECTION project, ensuring the important user engagement in terms of obtaining and using the achieved results was the topic of this report. By engaging the users the project Consortium means first of all to reach the end-users (occupants, owner buildings, other actors in the building construction chain), to create awareness and guarantee bigger usability of the indicators by the building industry stakeholders and by the user community. The incentive to use the PERFECTION tool is to show to the end-user by means of different dissemination activities the direct gains or indirect benefits (regulatory adaptation, ethical approach, positive branding) of sustainable building design.

To start with this we need to be aware of the conceptual model which shows the engagement as a process in which the KIPi tool user initiates the engagement (point of engagement), continues and sustains their involvement, disengages with the application and potentially reengages (possibly several times). In each stage different attributes appear, some are more some less important nevertheless while creating, updating and developing the KIPi tool we need to have in mind the most crucial ones: attention, aesthetics, interest, challenge, control, motivation, novelty, feedback but also as flow, aesthetic experience, play, and information interaction which all influences and facilitates engagement.

The engagement of this portal is pursued by the KIPi tool thus, summing up, four general advantages of the KIPi portal can be identified and highlighted. Namely, the features of the Portal as well as Use Cases clearly indicate that the service may lead to more reasonable, knowledge-based decisions related to a building performance, better communication between services suppliers and their clients, promotion of best practices (healthier, safer and more comfortable internal building environment) as well as smoother information exchange.

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ANNEX 1. FREQUENTLY ASKED QUESTIONS IN KIPI TOOL

Question (Q): What is KIPI portal & what does KIPI stand for?

KIPI stands for Key Indoor Performance Indicators.

KIPI portal is a decision support tool for different user groups applicable to different building types that has been developed as one of the PERFECTION project deliverables. KIPI portal will allow evaluating well defined products, processes, services and product-service systems against the PERFECTION specification. PERFECTION specification will deliver a full specification of the user experience of a building based on four indicator typologies including health, safety, comfort and accessibility. You can find more information on PERFECTION project in the webpage <http://www.ca-perfection.eu> .

Q: How can i register?

To register you have to click the ‘Create an account’ up right window, enter some basic data about yourself and to select your username and login password.

Q: How do I know that my registration has been accepted by the service?

You will receive within a few minutes time an e-mail confirming your registration to the KIPI portal.

Q: I have not received such an e-mail. What may have happened?

It is likely that your mail client considers messages from KIPI portal as spam. You will need to take action to whitelist our address. Another chance is that you may have not entered all the, limited yet necessary, data for your registration. Do try again, taking note of all possible validation replies of the system. For example no e-mail address without an ‘@’ will be accepted. You will be prompted to re-enter. Also, do not forget to correctly enter the Verification password. Your registration will be confirmed both on line as well as by e-mail.

Q: Can I change my login details?

Yes, of course. Register, enter in the ‘Support’ area, then in ‘My account’ area, make the desired changes and click ‘Save’.

Q: What about my personal data?

All data you enter in the system are never delivered to any third party, outside the system.

Q: Is registration needed for all KIPI portal's services?

No, registration is needed to set up, manage and publish your projects in evaluation pages. To view KIPI Showcase no registration is needed.

Q: What is common among indoor environmental quality and accessibility? why you have brought such indicators under a common umbrella?

The aim of PERFECTION is to help enable the application of new building design and technologies that improve the impact of the indoor built environment. In order to enhance the quality of life for all citizens construction section should take into account not only environmental issues but also unresolved social issues such as accessibility. And accessibility is a really important issue for disabled and elder people.

Q: Is the evaluation restricted to certain types of buildings?

No, the assessment methodology that has been developed in KIPI tool can be implemented in almost all types of buildings.

Q: Who are the users of the portal service?

There are 3 different usergroup categories, which include many types of users. Those are the following: 1. Building industry stakeholders (engineers, designers, product developers, contractors, investors etc.) 2. Building users (building owners/managers & citizens) 3. Policy makers.

Q: How can I use KIPI portal for my use case?

For each type of use case you can consult a relevant video that makes you familiar to the portal and appears in 'Support' entry . Apart from that a document with all the use cases and directions on how one can use the tool according to his use case is included in Knowledge base.

Q: How can product developers & service providers benefit from KIPI portal?

Product developers and service providers can assess their product/services in evaluation pages against the PERFECTION specification and advertise them and their impact on the building in the areas that define the PERFECTION scope. Products and services will appear in KIPI Showcase.

Q: How can I inform the portal service about my product affecting IE quality?

You register at the service as it has already been described, enter your codes, log in, choose 'Product evaluation' from the menu, then 'New' from the drop-down menu, enter the required information and submit the form. Then the product with its evaluation included will automatically be published in the KIPI Showcase.

Q: What is KIPI Showcase?

In KIPI Showcase you can find all of the building/product projects that have been evaluated against PERFECTION specification.

Q: How can end users (individuals, builders, designers, etc.) benefit from KIPI portal?

KIPI portal will provide users help in the decision making procedures in the building processes. Purchase decision will be those that will be more supported. Individuals can also gain knowledge on aspect of indoor environment.

Q: How can KIPI tool serve as a decision support tool?

KIPI Showcase can serve as a study cases library (database) that provides the user with the access to the best practices on the market. Comparing services and products that have been evaluated in KIPI tool against PERFECTION specification is the best way to choose the best solution for enhancement of the indicators you are interested in.

Q: Can i change my building data?

Yes of course, the only thing you have to do is to login to the system, choose 'Building evaluation' from the menu, then 'Edit' from the drop-down menu, make the desired changes and submit them. After that procedure your new buildings data will appear in KIPI Showcase.

Q: Can i enter data on many buildings?

No, you can enter data only in the building projects you are owner of.

Q: Is my product information immediately uploaded or is it first evaluated for accuracy?

For the time being, there is no product or building evaluated under the guarantee scheme of KIPI. Your product is published automatically in the Showcase as soon as you submit the form with the required information included.

Q: How can i make a suggestion?

To make a suggestion either you can fill in the contact form with your suggestion or send a forum message through the KIPI' s tool forum in the relevant category.

Q: What happens if I cannot evaluate one indicator?

At first, you can consult the information icon that appears under each indicator. If you still can't evaluate your building according to this indicator, write a comment explaining the reason for that and continue with the next indicators.

Q: Are indicators weighed against some context (e.g. country, area, type of building, etc.)?

For the time being, the service doesn't provide you with weighting system. But when it will be officially unleashed in a stable version, late 2012-early 2013, weighting indicators will be adopted to suit to the local conditions, national requirements, building types and users. For example, to the disabled people's home, accessibility will be considered as an important indicator and consequently a major weight.

Q: Will I be able to use the tool after the project lifetime?

Yes, the tool will remain on line & in use after the end of the project.

Q: Apart from this FAQ is there any other help for the KIPI portal?

Yes. You may find more information in the entry 'Support'. If you register you will find even more information in the entry 'Support' comparing to public access. Also, you may fill in the 'Contact' form with your inquiry and we will respond within 5 days