



ICT 4 E2B Forum - European stakeholders' forum crossing value and innovation chains to explore needs, challenges and opportunities in further research and integration of ICT systems for Energy Efficiency in Buildings

Deliverable D4.4: Periodic Forum activities report with intermediate input from stakeholders to roadmap.

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1 Introduction

ICT4E2B Forum is a European Project that brings together ICT and Building stakeholders to identify needs, challenges and opportunities in further research and integration of ICT systems for Energy Efficiency in Buildings.

ICT4E2B Forum fosters the cooperation between researchers, end-users/practitioners, building owners, technology-suppliers, and software developers as regards the use of ICT for an efficient use of energy at building and district level.

1.1 Purpose of this Document

This report is a document delivered in the context of WP4, Task 4.3: Forum activities management and interaction with stakeholders.

This is the second periodic forum activities report for the period of 1st March 2011 to 30th September 2011.

Document presents statistics and analytics regarding the website of the project as well as a dedicated collaborative platform, the real forum, accessible only for authenticated stakeholders. During the analyzed period a set of workshops across Europe were organized in order to gather information and opinions from the relevant stakeholders. An executive summary presents main outcomes of these workshops. In order to learn more about workshops methodology, stakeholders opinions, performed analysis, full reports from workshops are available on the Forum main website as well as in the Forum internal part.

1.2 Main Tools of ICT4E2B Forum

The main objective of ICT4E2B Forum is to create a community of stakeholders which are sharing future challenges and research priorities in the area of energy efficient buildings and beyond. To allow for effective engagement and communication among stakeholders, the following tools are used:

- **Project main website**, available at www.ict4e2b.eu, should be considered as a window on Europe, where visitors, stakeholders and selected experts on energy, construction and ICT domain could find any information about ICT4E2B news by using dedicated newsletters, workshops, events, and EU commission project announcements;
- **Workshops** organized at different locations in Europe, in particular 3 workshops held in Helsinki, Nice and London for the definition of Future Application Scenarios and 2 workshops held in Genoa and Brussels for the Prioritization;
- **Project online forum**, available at <http://forum.ict4e2b.eu/share/>, has been made available by the deliverable D3.2. This web platform contains mostly discussions on different relevant topics arguments. Moreover there is the possibility to interact among stakeholders in order to retrieve contributions useful to improve and to enhance the expected roadmap. This Collaborative platform has been made also available for other discussion site prepared by EC on the following topics:
 - EEB Data Models;

- EEB Validation Methodologies and Metrics,
- ICT for Energy Efficiency: Local and Regional Initiatives.

In addition, for each discussion site has been published a specific and simple to use Wiki area regarding the subject discussed.

- **Social network** presence on LinkedIn, available at <http://www.linkedin.com/groups/ICT4E2B-Forum-3744557?> , and an Twitter, available at <https://twitter.com/#!/ICT4E2BForum>.

Thanks to these tools the project has leveraged inputs from more than 150 different stakeholders.

1.3 ICT4E2B Forum Public Website Activity

Main web site of ICT4E2B Forum is being analysed in AWStats tool, which is a free tool that generates advanced web, streaming, ftp or mail server statistics.

The table below shows a summary of the most important statistics of the website in period of 1st April 2011 to 30th September 2011.

Table 1. Summary of most important statistics.

Unique visitors	Number of visits	Pages	Hits	Bandwidth
3663	5904	32986	191725	1947.88 MB

In the past six months, more than 3500 unique visitors viewed the site with number of visits almost 6000. Comparing to the first 7 months since the web site start up, number of unique visitors increased from 1000 and number of site visits increased from 1800 (previous summary was made for 31st March 2011).

Further in the document a set of more detailed statistical data will show activity on the website.

1.4 History

Set of figures in this section inform in more details about quantity of visits on the ICT4E2B Forum website regarding previous six months as well as days of the week and hourly distribution during the day.

Table 2 presents statistics of visits in period of 1st April to 30th September.

Table 2. Statistics for 1st April – 30th September.

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
April	535	898	5371	28125	199,52 MB
May	686	1207	6140	46343	282,81 MB
June	561	858	4548	31320	251,25 MB
July	604	923	5742	34230	593,09 MB
August	596	942	5732	26114	314,58 MB
September	681	1076	5453	25593	306,53 MB

Figure 1 below, presents numbers from the table in graphical form.

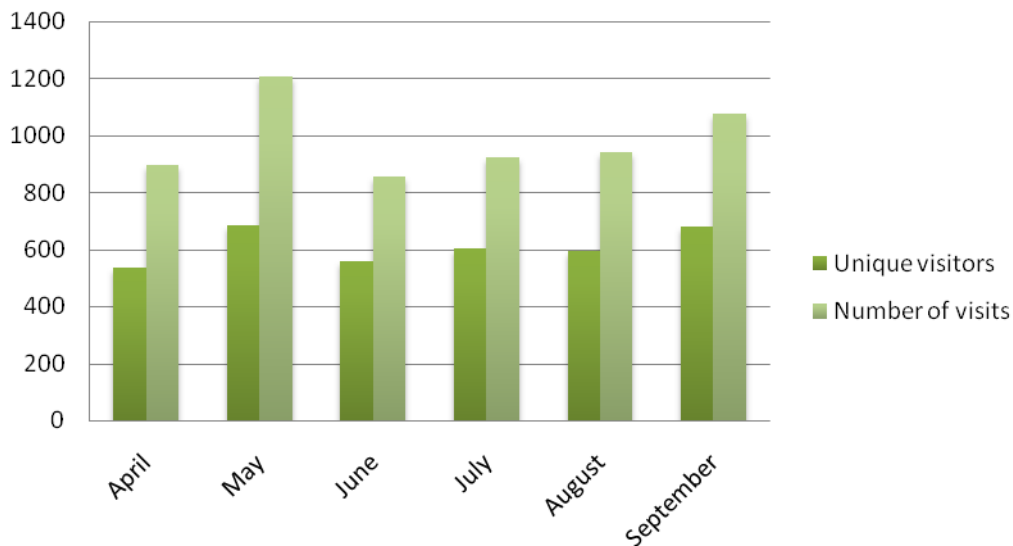


Figure 1: Unique visitors and number of visits on www.ict4e2b.eu site

From the table above, a conclusion is, that the number of unique visitors, as well as number of visits, is rather constant. Small increase was noticed in May and in September. This might be connected with the series of workshops, which were organized in May and with the European Construction Technology Platform conference which was organized at the beginning of October, where ICT4E2B Forum project was presented.

The next figure presents distribution of visits in the described period in terms of days of the week.

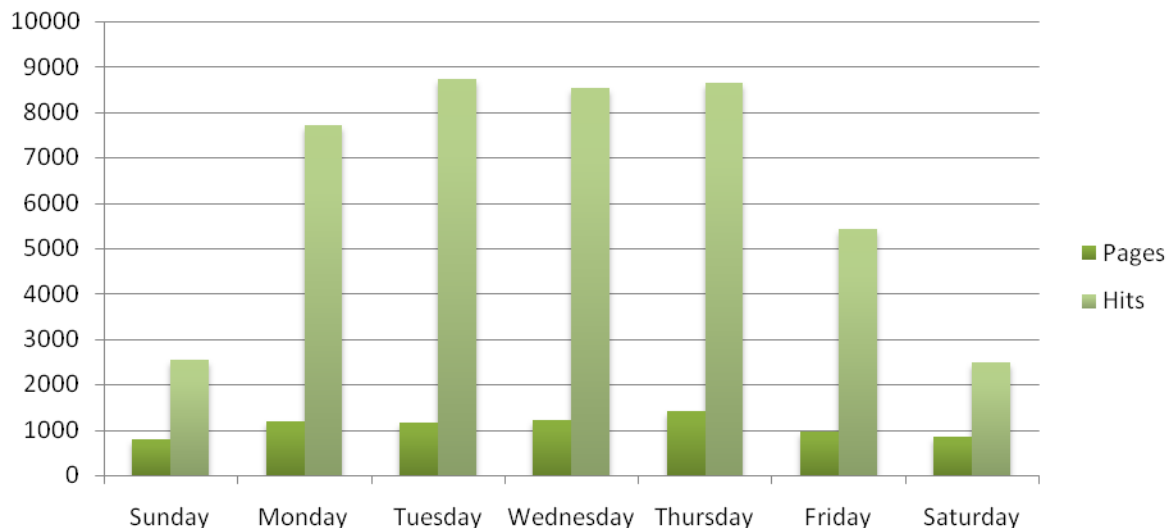


Figure 2: Daily distribution of visits in the analyzed period

The largest numbers of visits were on Tuesdays, Thursdays and Wednesdays. That covers with typical working week of average employee.

Figure 3. shows distribution of visits in terms of the hour of the day in the analyzed period (1.04 – 30.09). The most visits were recorded at hours: 9 to 12. There is a large difference in hours 13 – 14 in relation to other hours as there is usually a lunch break during these hours.

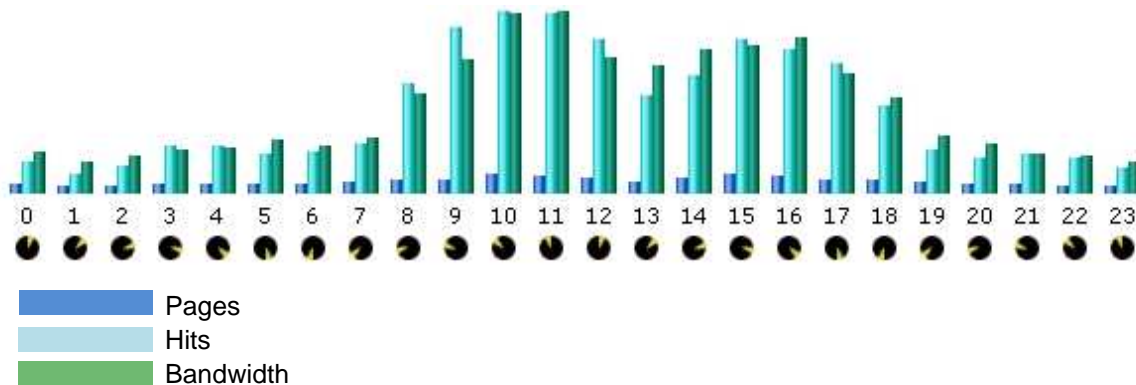


Figure 3: Hourly distribution of visits in analyzed period

From the figures above it is possible to conclude that users visit ICT4E2B Forum web site mostly during working hours, working days. As Forum is mostly visited by professional stakeholders, they browse website at office hours and slightly of them check it in home or free time.

1.5 Navigation and visit duration

In this section it is analyzed the time spent on the website since the 1st of April 2011 to 30rd September 2011.

In the analyzed period, number of visits was 5904, with the average time 180 seconds spent on the web site. Most of the visits (4367) lasted no longer than 30 seconds. Comparing to the previous period, number of visits increased, however average time spent on the website decreased from 430 seconds to 180 seconds.

Table 3: Visit durations in April - September 2011

Visit duration	Number of visits	Percent
0s-30s	4367	74,0 %
30s-2mn	712	12,1 %
2mn-5mn	252	4,3 %
5mn-15mn	279	4,7 %
15mn-30mn	98	1,7 %
30mn-1h	131	2,2 %
1h+	65	1,1 %

From the table above, a conclusion might come, that very many users came to the home page containing the project Blog and they are redirected by the Blog posts to the actual content of the post (or in the Project Forum or elsewhere in the web).

1.6 Referrers

This section describes the most popular key words and key phrases that have been used to find ICT4E2B forum website. Search engine used to find the web site was in most cases *Google*.

As shown in Table 4, considering the analyzed period, most of the words regard directly to forum or the project name. There is a very large group of other – not defined words.

Table 4: List of most popular key words analyzed period

Keywords	Percent
ict4e2b	8,5 %
lct	7 %
forum	3,9 %
for	3,8 %
smart	3,3 %
2011	3,0 %
energy	3,0 %
grid	1,8 %
e2b	1,7 %
and	1,5 %
Other words	62 %

The next table presents list of different key phrases that was leading users to the ICT4E2B Forum website. Phrases consist of single, couple of words, or the whole statements.

In the analyzed period most of the inquiries were referring directly to the project name or the website address. Other phrases form the largest group of inquiries.

Table 5: List of most popular key phrases in analyzed period

Key phrases	Percent
ict4e2b	17,9 %
ict4e2b forum	6 %
ict4e2b.eu	2,6 %
ict for energy-positive neighbourhoods	2,1 %
smart grid workshop 2011	1,4 %
ict 4 e2b forum	1,3 %
smart grids for Europe benefits challenges and best practices	0,8 %
ict 4 e2b	0,7 %
ict budapest	0,7 %
what is ict	0,7 %
Other phrases	65,4 %

2 ICT4E2B Forum Collaborative Website Activity

The core of the ICT4E2B Forum project is the creation of a useful common space that should be used by stakeholders to discuss exchange and retrieve contributions and suggestions about the impact of ICT in Energy Efficiency in Buildings, in order to improve and to enhance the ICT4E2B Forum roadmap.

This platform is based on the Alfresco system that is an open source enterprise content management system, which in community edition is free software, LGPL licensed open source and open standards.

Alfresco includes a content repository, an out-of-the-box web portal framework for managing and using standard portal content, a Common Internet File System interface that provides file system compatibility on Microsoft Windows and Unix-like operating systems, wiki websites, blog pages, calendar pages, links pages, discussion pages and other.

Joining the forum requires invitation and each user has to create a profile with contact data and attributed role in the forum. Each user can create own dashboard, where discussion, flow of documents can take place. Total number of users is above 260 persons. So far, four collaborative sites are available on the platform:

- Technology Roadmap in ICT4E2B (set up and managed by ICT4E2B project),
- EE Data Models (set up and managed by EC),
- EEB Validation Methodologies and Metrics (set up and managed by EC),
- ICT for Energy Efficiency: local and regional Initiatives (set up and managed by EC)

It is important to underline that, the three collaborative sites managed by EC can provide interesting and meaningful content for the RoadMapping activities. Furthermore, the active users from these three sites can participate in ICT4E2B technology RoadMapping activities as well.

Figure below is a screenshot from the ICT4E2B RoadMapping main page.

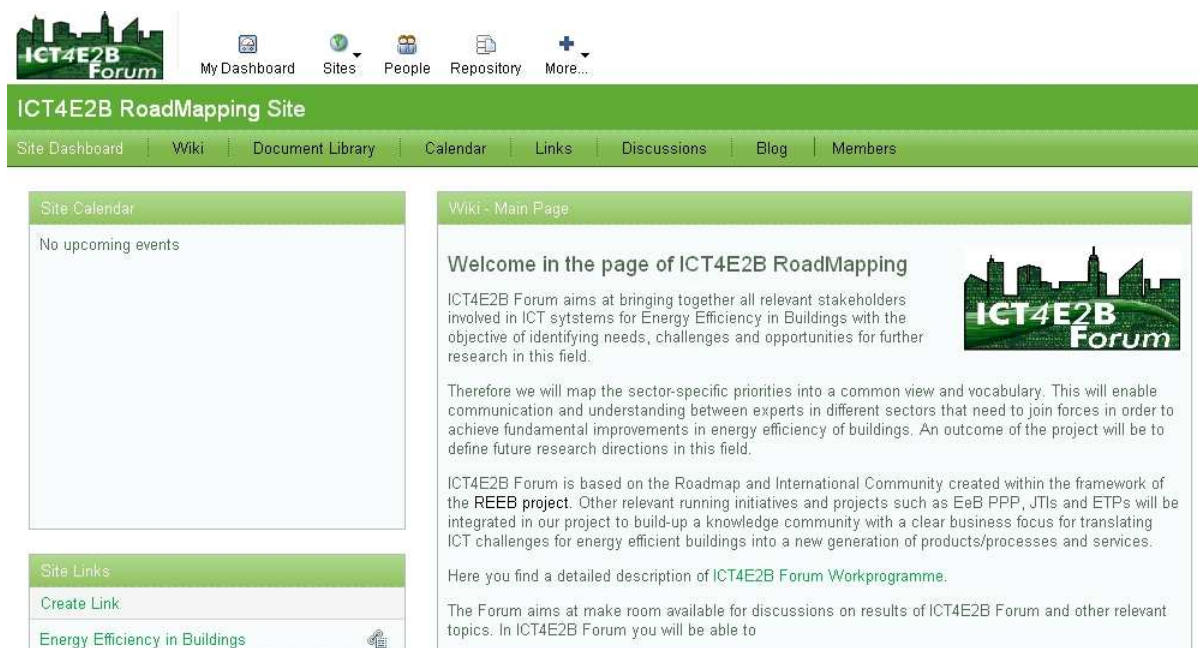


Figure 4: Screenshot of ICT4E2B RoadMapping page in the internal forum

In the next tabs, different functionalities appear. For example, in document library, it is possible to share documents, assign them to specific folders, attribute tags and edit them. The platform Alfresco, presented in this document, assures efficient and easy to use tool for all the stakeholders. Moreover, managing issues directly related to the project is possible with selected users, participants of the ICT4E2B Forum project. At the beginning of the project problems with choosing of the platform and managing it appeared. Since February 2011 Forum has been operating continuously with small maintenance troubles (always fixed).

2.1 Collaborative Platform Community Building and Management

Since the beginning of 2011 the number of active members of the entire platform has grown up constantly, reaching the current number of 268 authorized members, with a strong increase during the summer between June and July.

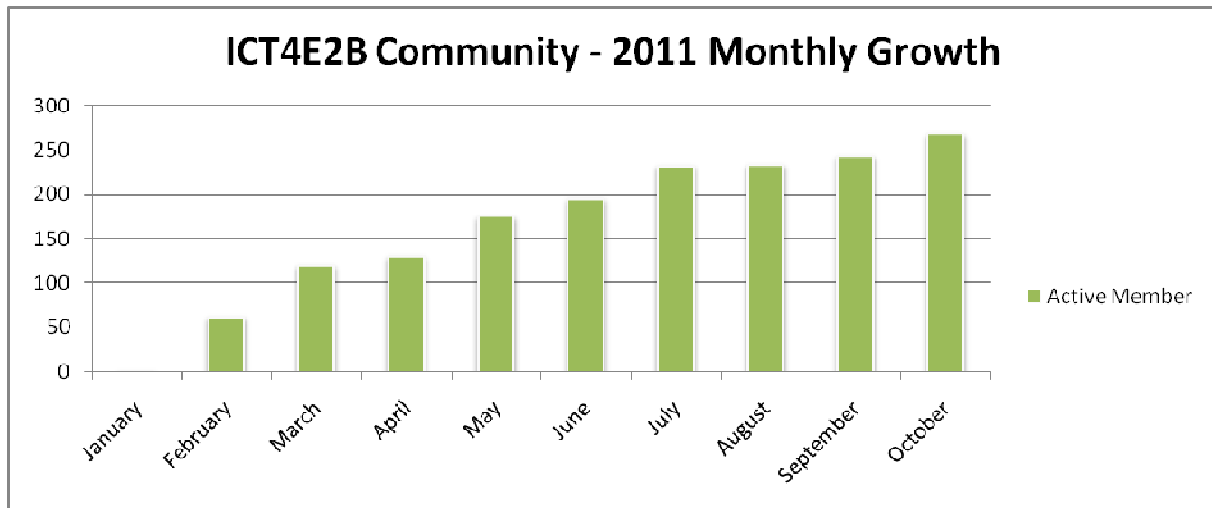


Figure 5: 2011 Monthly Growth

The access to the collaborative space of ICT4E2B is free. To become part of the ICT4E2B Forum platform the potential forumers should submit their voluntary candidature. So far, 479 request of invitations has been send to ICT4E2B team, 268 is the current number of authorised members, 118 requests has been deleted by the system administrator due the reached expiring date of the invitation and while 93 request are still pending, the rate of acknowledgment is more than 56%.

Starting the analysis from the 28th January 2011 to 19th October 2011, in figure below is splitted by week the number of requested invitations and the number of accepted request, according to the data mentioned above.

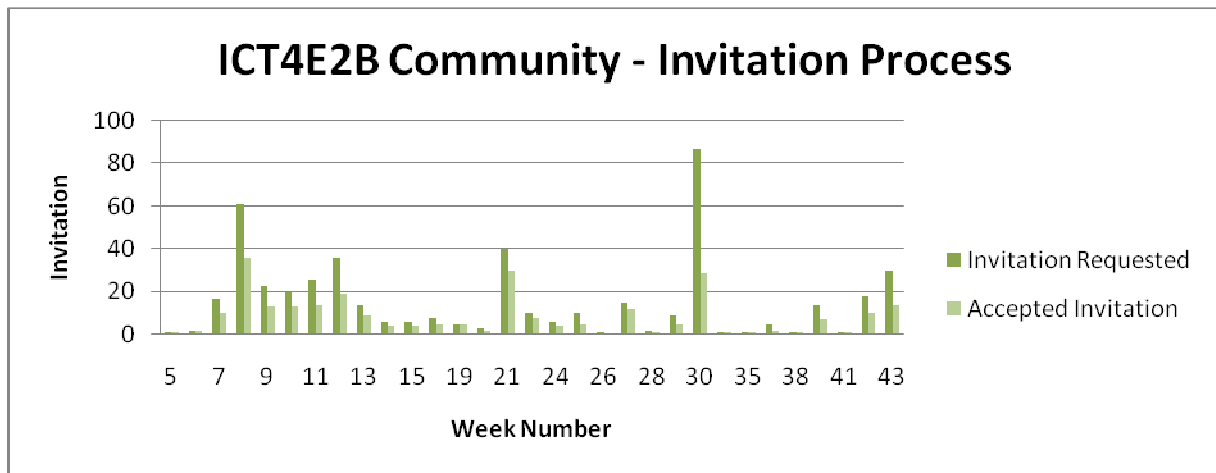


Figure 6: ICT4E2B Invitation Process

Beside these data, the typification of registered user, showed in the table below, is useful for understanding which kind of stakeholder (researcher, end users, building owner, technology provider, consultancy) are mainly active in platform discussion and dialogue.

Table 6: ICT4E2B Platform Members Typification

	Typification	Number of active Member
Sector	Research	89
	Industry	72
Type of Company	SME	51
	LE	35
	No-profit	75
Role in the value chain	ICT technology provider	51
	ICT consultancy	38
	End-user	14
	Construction technology provider	47
	Construction consultancy	27

User members belong quite homogeneously to both “research” and “industry” sectors with a main involvement of stakeholders from “no-profit” companies (universities and research centers), SMEs and last at LEs. “ICT technology provider” and “construction technology provider” are the predominant roles of the value chain of the ICT for Energy Efficiency in Buildings domain addressed to ICT4E2B member users.

2.2 ICT4E2B Forum discussions

Discussions process started recently and there is a need to encourage users to comment and actively participate in the Forum moderation adding constantly new topics. Some of them are intentionally controversial to attract attention and push discussion forward. Users can comment an article or start a new topic. Discussions are related to drivers for future ICT development, lack of technological revolution or concepts for Nearly Zero Energy Buildings in terms of ICT development.

In order to encourage users to take part in discussions, creating a bidirectional interaction between them and ICT4E2B Forum people disseminating project results and collecting external data from stakeholders, new topics are being announced on the main web page, short news on Linkedin are added, and twitters are published on ICT4E2B Forum Twitter account, and newsletters with detailed information are being sent to the recipients from the mailing list.

In the following table are summarized relevant data on the number of open discussions, the amount of uploaded document, the number of wiki pages published for each of the collaborative site available on the platform.

Table 7: ICT4E2B Platform Activities

	SITE				TOTAL
	ICT4E2B Roadmap	ICT4EE WIKI	EE Data Model	EEB Validation	
Open Discussion	7	0	3	0	10
Uploaded Document	33	47	130	1	211
Wiki Pages	9	349	200	3	561

We can consider that about 20 different users can be considered as active users that created flow of information and fostered the discussions. Of course it will be necessary during the second part of the project to involve as many users as possible into discussion, taking into account the large number of subscribed users that so far are simply “passive” participants of the Forum activities.

As example Figure 7 is a screenshot from the internal forum and respectively from the discussion tab.

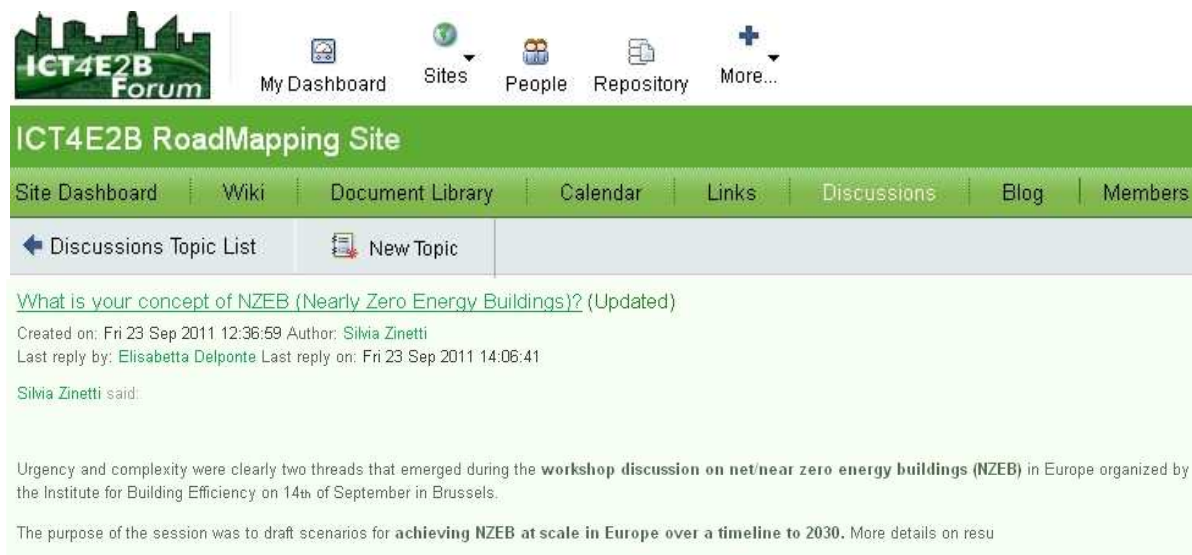


Figure 7: Screenshot of Discussion tab on the internal forum

2.3 ICT4E2B Forum presence on social networks

In order to provide a direct link to allow to stakeholders to follow the relevant news about the activities of ICT4E2B Forum, and completing the web dissemination channels of the project, an ICT4E2B Forum community on Linkedin and also a Twitter account has been set up, in order to help a continuous updating of stakeholders on the activities performed by the forum and foster their participation to the discussions sharing ideas and expertise.

3 Executive summary of Workshops

One of the tools to engage stakeholders and create discussion around future challenges has been dedicated workshops, where construction companies, ICT experts and energy stakeholders have been invited, together with local authorities in their role of planners and promoters leveraging on the political side and the local implementation of directives. ICT4E2B Forum has organized in the past six months 5 workshops on Application Scenarios and Prioritization and 140 people attended to these 5 events. This action belongs to the core of Project activities. Workshops were organized across Europe in: Helsinki, Sophia Antipolis, London, Genoa and Brussels. They were organized in different locations around Europe to ensure that the roadmap takes into account the needs from stakeholders in the ICT community.

3.1 Workshop in Helsinki

The first workshop took part in Helsinki on 4th May 2011. 9 Stakeholders attended this event. During the workshop there have been two group discussions: the first dedicated to “Design for Energy Efficiency” and the second dedicated to “Performance assessment”. Discussions was divided into particular aspects including:

- Scenario,
- Key idea/Keywords,
- Technologies,
- Impacts,
- Stakeholders.

Each group was referring to this sections by placing sticky notes with the signals and ideas. An example of brainstorming during workshop in Helsinki is shown on the Figure below.



Figure 8: Poster with sticky notes from the group discussion¹

During first group session, the thematic area to be analysed was Tools for Energy Efficient Design and Production Management. After the discussion, the group agreed that two main technologies should be present in the future ICT tools: first is related with the definition of a specific 3D model for Energy Efficiency, that is something that has not been developed. The second technology is also related with interfaces and data exchange: the model server should be a model where people can cooperate simultaneously on the realization of a design model. Therefore there is the need to real-time access to data and efficient sharing of information.

During the second group discussion, focused was put on Performance estimation. From the results of the first brainstorming it was possible to cluster all of the ideas in three steps that are fundamental for an efficient implementation of performance estimation in the context of energy efficient design:

- Preliminary research
- Preliminary collection of information that are required for design
- Early step of design process

In these areas one of the main focus of the discussion was on the fact that it is important that Energy Efficiency should be studied as a real “science based” engineering discipline, this meaning that it is essential that the scientific method should be applied also in this context. This means that there is the need to stop proceeding by trial and error.

3.2 Workshop in Sophia Antipolis

On the workshop in Sophia Antipolis, discussion was focused on “Energy management and trading” thematic area. 10 Stakeholders attended this event. First discussion session started with a brainstorming, where the experts identified key elements, related to the thematic area under analysis, following the paradigm ICTs (Impacts, Challenges, Technologies,

¹ Results of the Workshop on Application Scenario from group dedicated to Tools for EE design.

Stakeholders), the same as on the workshops in Athens. Figure below shows poster with sticky notes created during the workshop in Sophia Antipolis.



Figure 9. Poster with sticky notes from the group discussion²

In each of the key elements, experts described different stories for the description of a scenario. Finally there was an agreement on a common summary that takes into consideration different aspects arisen during the discussion.

A parallel discussion was focused on “User awareness and decision support” thematic area. Similar to first discussion a poster with sticky notes was created.

² Results of the Workshop on Application Scenario from group dedicated to Energy management and trading.

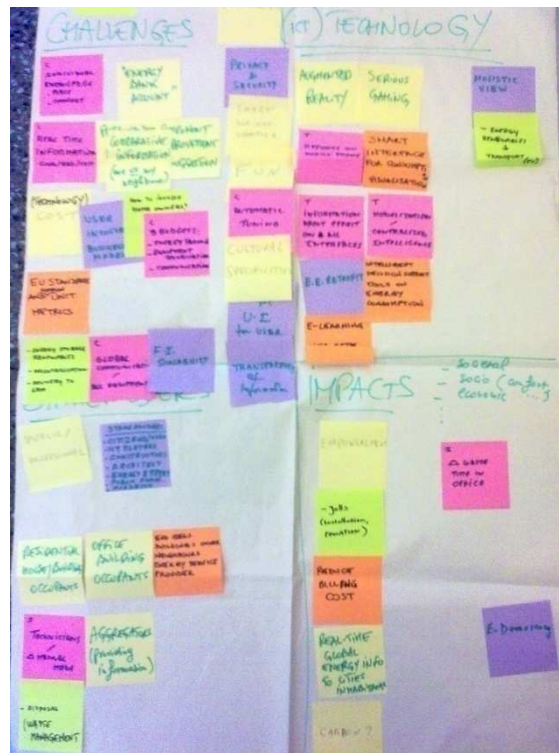


Figure 10: Poster with sticky notes from the group discussion³

Participants of the workshop have focused on the awareness of end users and answer to this issue is a need of development of smart, simple and usable interfaces for visualisation and management of energy consumption. The information provided by these interfaces should be accessible and understandable by end users. In addition, end user shall access these data, own data coming from of their private energy consumption, with quick actions done easily wherever they are by using mobile and smart phone or other wireless devices.

3.3 Workshop in London

On the workshop in London on 25th May, four discussion panels were held. 16 Stakeholders attended this event. First group was discussing in two sessions: Intelligent and integrated control and Integration Technologies. Second group was discussing on User awareness, decision support and Integration Technologies.

Group 1, at the first session, participated in a brainstorming exercise to identify the breakthrough innovation in 10 years in the area of Intelligent and Integrated Control. **Error! Reference source not found.**elow shows poster with sticky notes, describing the results of each group members' brainstorm and the subsequent group discussion and agreed scenario.

³ Results of the Workshop on Application Scenario from group dedicated to User awareness and decision support.



Figure 11: Poster with sticky notes from the group discussion⁴.

The focus of all the ideas that have been identified during the brainstorming and the following discussion among the experts could be briefly summarized with the concept that there is the need of really making use of all of the systems and technologies that are already available. One of the issues highlighted is that even if the number of installed systems for managing energy is high, they are not made operatives. This is due to lacking of different issues related with the four categories of Impact, Challenges, Technologies and Stakeholders.

During second group session, the scenario topic analysed was dedicated to Integration Technologies. Participants were asked to design one breakthrough object/tool/product that will be key to ICT4E2B in the next 10 years.

In this session, teams created the physical “box” that sells their idea - whether that idea will ultimately become a tangible product or not. By imagining the package for their idea, the group made decisions about important features and other aspects of their vision that are more difficult to articulate. In all cases, the box is a focusing device: it wraps up a lot of otherwise intangible information into a nice physical object, prompting decisions along the way. When group present or “sell” their boxes to each other, a number of things come to life, including the natural translation of features into benefits.

Group 2 at morning session participated in a brainstorming exercise to identify the breakthrough innovation in 10 years in the area of User awareness and decision support. The group settled on a particular scenario that was personal, fun and community-based with energy efficiency awareness “in the background”. Similar as in previous exercises a poster with sticky notes was created.

⁴ Results of the Workshop on Application Scenario from group dedicated to Intelligent and integrated control and Integration technologies.



Figure 12: Poster with sticky notes from the group discussion⁵

As the focus in the discussion on challenges and technologies was on personal, fun, community-based technologies that enable visualisation, engagement and empowerment, there was agreement that in order to achieve impacts, the technologies and supporting context needed to be personally relevant to the individual. There was agreement that technology is only one of the available tools that could be used to achieve energy saving and that in order to achieve maximum impact, ICTs would need to be combined with non-ICT tools in a suite of energy efficiency measures available to users.

During second group session the scenario topic analysed was dedicated to Integration Technologies. The session focussed on an exercise based on the “Design the Box” game (same as Group 1), where participants were asked to design one breakthrough object/tool/product that will be key to ICT4E2B in the next 10 years. By chance, many of the participants in Group 2 were the same as the participants from Group 1’s morning session. This allowed for some continuity of theme, although some participants who were not part of Group 1’s morning discussion found it challenging to ‘catch up’ with the rest of the group.

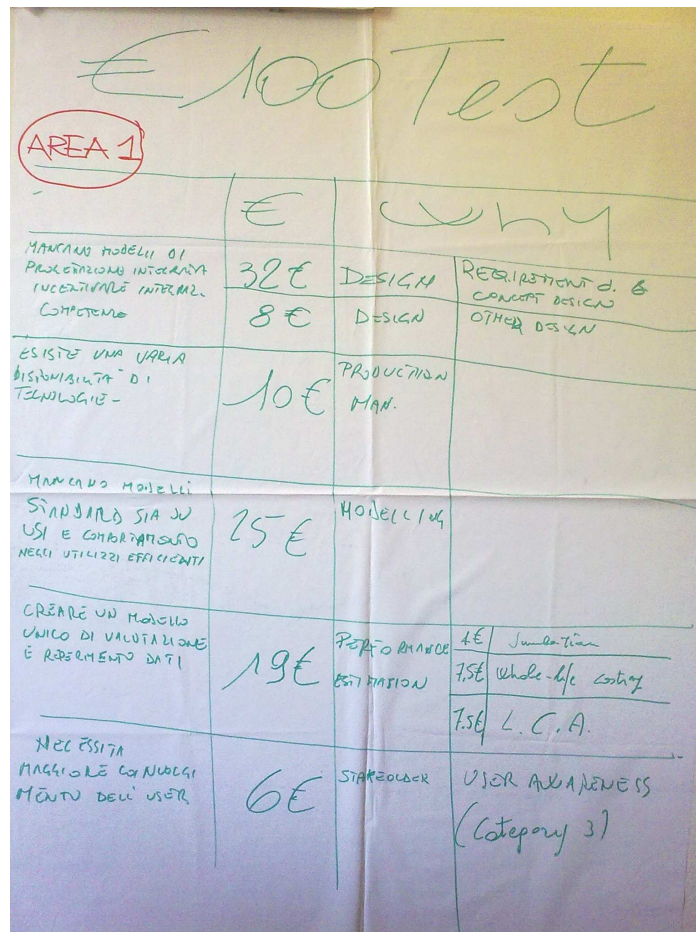
3.4 Workshop in Genoa

Workshop in Genoa on 4th July provided to Italian stakeholders represented different stakeholder groups (municipality, social housing, business, research) a better understanding of the context of the ICT4E2B Forum project and allowed them to share their needs and vision for the roadmap prioritization. 33 Stakeholders attended this event.

⁵ Results of the Workshop on Application Scenario from group dedicated to User awareness and decision support.

During the workshop there have been five group discussions, one for each of the five thematic area addressed by ICT4E2B Forum, following participants commitment and interest. During the brainstorming session, the participants addressed their company/city/organisation vision on energy efficiency in the built environment, as well as the gaps between the current situation and desired future development.

An example of brainstorming during workshop in Genoa is shown on the Figure below.



€100 Test			
AREA 1			
	€	WHY	
MANCANO MODELLI DI PROIEZIONE INTERNA INCENTIVALE INTERNA. COMPATIBILI	32€	DESIGN	REGISTRATION D. & CONCEPT DESIGN
	8€	DESIGN	OTHER DESIGN
ESISTE UNA VERA BISOGNABILITÀ DI TECNOLOGIE -	10€	PRODUCTION MAN.	
MANCANO MODELLI STANDARD SIA SU USI E COMPORTAMENTO NEGLI UTILIZZI EFFICIENTI	25€	HOUSING	
CREARE UN MODELLO UNICO DI VALUTAZIONE E RENDIMENTO DATI	19€	PORTFOLIO ESTIMATION	4€ Simulation 7.5€ Whole-life costing 7.5€ L.C.A.
NECESSITÀ MAGGIORE CONOSCERE MENTU DELL'USO	6€	STAKEHOLDER	USER AWARENESS (Category 3)

Figure 13: Result of a brainstorming group discussion

In a closer common dialogue with the stakeholders, the technical and non-technical gaps for prioritisation were identified, as well as the R&D topics that must be considered for future research and innovation priorities.

3.5 Workshop in Brussels

The last workshop on ICT Application Scenarios for energy efficiency in buildings were organized on 12th July 2011 in Brussels. 74 Stakeholders attended this event. This workshop provided European stakeholders a better understanding of the context of the ICT4E2B Forum project and allowed them to share their needs and vision for the roadmap prioritization. In a closer dialogue with the stakeholders, the technical and non-technical gaps for the prioritization roadmap were identified, as well as the R&D topics that must be considered for future research and innovation priorities.

The speakers represented different stakeholder groups (municipality, social housing, business, research). Each of them addressed their company/city/organisation vision on energy efficiency in the built environment, as well as the gaps between the current situation and desired future development. Best practices were shared, including the identified success factors in these pilot projects. Each of the speakers focused on one of the 5 thematic areas as set out in the ICT4E2B project. These are:

- Tools for integrated design and production,
- Intelligent and integrated control,
- User awareness and decision support,
- Energy management and trading,
- Integration technologies.

The speakers clearly divided the challenges and existing gaps in ICT solutions for the built environment into those of people and those of capacities.

Awareness and involvement of the citizens and end users was said to be key at all time (this is in line with the outcome of previous ICT4E2B Forum workshops). Involvement of communities in ICT solutions is a matter of demonstration impact and explaining how lives will be affected. It is not a matter of conviction. The human factor, which also implies stakeholder awareness, was seen as the most important differentiating element in successful pilot projects, with ICT being the facilitator. Transparency is an important component of both stakeholder and citizen awareness. More transparency is also key to address the issue of people being hesitant for privacy issues and it adds to address the challenge of funding.

Many EE solutions can be feasible, but banks must understand how their money is invested, which requires a different way to evaluate and monitor projects (real time). To obtain more funding, we need figures on the table. Accurate predicting costs and prove of results are needed. ICT solutions such as building simulation are mentioned as a tool to provide better insight in (cost) benefits over the longer term.

While a business model usually covers a shorter period of time than that of a building, we need a new business model and new stakeholders. This requires flexibility in tools, however, at the same time solutions need the right level of detail.

Finally, regulation by government, such as tax reliefs for applying ICT in buildings, was discussed as being crucial to give E2B a strong push forward. However, despite the need for a long term strategic planning and the need for regulation, there are energy savings to be gained right away. Providing people with tools to measure their energy use at work or at home could be an easy first step to be made, in line with the need for citizen awareness and involvement.

Priorities to address identified Challenges, Gaps and potential Solutions and are presented in the table 6 below.

Table 8. Identified areas among challenges, gaps and potential solutions.

People	Capacities
<ul style="list-style-type: none"> • Communication <ul style="list-style-type: none"> • More awareness • Explain how lives will be affected • Avoid lack of information • Neutral information • Forum • Involvement <ul style="list-style-type: none"> • Knowledge management • Transparency • Education • Social and cultural values • Privacy issues • Mindset <ul style="list-style-type: none"> • Political / Social will • Acting step by step 	<ul style="list-style-type: none"> • Long term strategic planning <ul style="list-style-type: none"> • Common, holistic view • Political / Social will • List of smart actions • Simplify bureaucracy • Integrated approach • Commitment stakeholders <ul style="list-style-type: none"> • More control of business performance • Paid membership association • Awareness/knowledge management • Funding <ul style="list-style-type: none"> • Different evaluation of projects • Accurate predicting costs • Clear retrofit schemes • Transparency <ul style="list-style-type: none"> • Open up data • Facilitate transparency between local events • Regulation <ul style="list-style-type: none"> • Intervention of public powers through regulations and subsidies • Tax relief for applying ICT in buildings • Technology solution <ul style="list-style-type: none"> • Flexibility in tools • Building simulation tools • Real time information/control • Data security • Focus on storage systems • Open protocols • Monitoring <ul style="list-style-type: none"> • Infrastructure to collect data • Identify measuring parameters • Transparency in figures

On each workshop a set of different exercises were performed in order to gather information and opinions. Traditional approach was changed to more game and puzzle exercises. The photo collage below illustrates workshop courses and how the results were gathered.



Figure 14: Pictures from ICT4E2B Forum workshops

4 Conclusions

One of the main objective of ICT4E2B Forum is to create a community of stakeholders which are sharing future challenges and research priorities in the area of energy efficient buildings. To allow for effective engagement and communication, the project website and the project online forum as well as a number of workshops organized in different European locations are the main tools. They have been used not only to inform about the project itself, but especially to engage the different stakeholders, in order to collect their inputs for the progress of the Roadmapping activities.

In this sense the project website should be considered as a window on Europe, where visitors, stakeholders and selected experts on energy, construction and ICT domain could find any information about ICT4E2B news by using dedicated newsletters, workshops, events. It is relevant to underline a rather constant interest on the project activities, with an average number of unique visitors at the level of 600 per month.

Even more important, from the communication perspective, is the organization of 5 different workshops that allowed to bring physically together 140 different stakeholders, fostering the discussion on ICT for Energy Efficient Buildings theme. In particular to identify the Future Application Scenarios (workshops held in Helsinki, Nice and London) and Thematic Areas Prioritization (workshops held in Genoa and Brussels). During these workshops it has been relevant how the different visions on the topic brought very different approaches on how the priority areas already defined in REEB and further refined during our project can evolve. Within this framework, for the project the relevant challenge of the next months will be to fully integrate these visions in the roadmapping process, allowing a clear synthesis of the different perspectives.

Additionally to the physical discussions, it has been set up, at the beginning of 2011, the collaborative ICT4E2B Forum platform, based on Alfresco technology, that allows stakeholders to continue the discussion in virtual space. Since its set-up, the platform has reached the current number of 268 authorised members and this number is growing up month after month. It is worth to say that this collaborative platform contains mostly discussions on different relevant topics arguments:

- Technology Roadmapping on ICT for Energy Efficient Buildings;
- EEB Data Models;
- EEB Validation Methodologies and Metrics,
- ICT for Energy Efficiency: Local and Regional Initiatives.

With the aim to provide a complete and co-operative tool to stakeholders, for each discussion site has been set-up a specific and simple to use Wiki area where all registered member can add technical arguments and documentation regarding the specific subjects discussed in each site.

In addition, trying to increase the level of participation inside the platform encouraging users to take part in discussions, new topics are being announced on the main web page, short news on LinkedIn are added, and twitters are published on ICT4E2B Forum Twitter account, and e-mails with detailed information are being sent to the recipients from the mailing list.

This dissemination actions, shall be constantly improved during the next months with the introduction of video interviews, in order to attract more users and to reach a successful rate of participation as the ones obtained during the project workshops. These have been main activity in the last months and outcomes are very valuable for further works on the final road map. Full summaries from these events, including stakeholders lists, workshop courses, pictures, analysis and conclusions are available on the Forum website as well as on the internal forum.

Taking into account the Forum activities performed at physical and virtual level, it is very relevant to say that we have so far involved more than 150 different stakeholders, that can be considered as active users (more than 100 as expected results by DoW), in the sense they actively provide inputs to our project.

But if we look in more detail to this number we have to consider that:140 is the number of people that have attended the 5 workshops around the Europe, and this data highlight how ICT4E2B Forum is still working on the development of human relationships among stakeholders; but although the 268 authorised members of the web tools, the number of active member that use frequently the web tools is too low, that is less than 20 users. This shows clearly that there is still room for improvements for the number of active stakeholder contribution.

In fact considering the importance of the role of the platform authorised users, the project consortium shall actively involve them in the “Road Mapping” activities of next months. Different discussions processes, based on workshop findings and roadmapping preliminary results, has started recently with the aim to encourage users to comment and share their ideas on specific subject on ICT4E2B domain such as identification of drivers for future ICT development, lack of technological revolution or concepts for Nearly Zero Energy Buildings in terms of ICT development.

5 References

- [1]. Annex I Grant Agreement – Description of Work
- [2]. Workshops results as appear in different documents:
- [3]. <http://www.ict4e2b.eu/teaser/documents>
- [4]. Results of the Workshop on Application Scenario from group dedicated to Tools for EE design
- [5]. Results of the Workshop on Application Scenario from group dedicated to Energy management and trading.
- [6]. Results of the Workshop on Application Scenario from group dedicated to User awareness and decision support
- [7]. Results of the Workshop on Application Scenario from group dedicated to Intelligent and integrated control and Integration technologies.