



ICT professional societies
in Europe



MOST IMPORTANT RESULTS **OBTAINED FROM ON-LINE SURVEY**



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ONLINE SURVEY AND ITS RESPONDENTS

This report presents results of the online survey conducted in the framework of SMART 2009/0061 "Role and impact of professional and scientific societies in ICT research, education and innovation" research project. The survey was conducted between September and November 2010 among professionals involved in ICT sector.

The main objective of this survey was to gather the views of ICT industry representatives on the following topics:

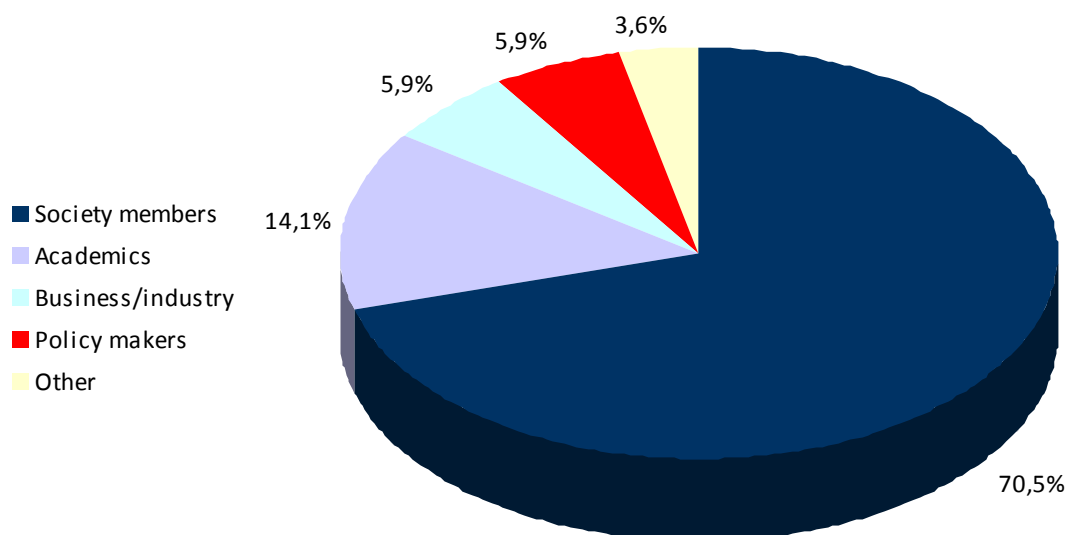
- Roles of ICT societies operating in Europe,
- Products of ICT societies,
- Impact of ICT societies' activities,
- Models of cooperation between national, European and International (worldwide) societies
- Competitiveness and leadership in European ICT societies.

The data collected in the online survey play an important role in the development of strategies for the ICT sector in the European Union. The development of these strategies is the main goal of the SMART 2009/0061 project.

In the online survey, quota sampling model was exploited. Prior to data collection, a number of key groups (quotas) of respondents (meeting the recruitment criteria) has been specified. Then, participants meeting these criteria were recruited. The total survey sample size was 474. Due to the adoption of the non-probabilistic sampling model, statistical significance of the results was not determined.

Among the respondents, members of the ICT societies operating in Europe were the largest group (70.5% of all participants). The second largest category of respondents were university employees (mainly scientists) who deal with topics in the field of ICT domain (they accounted for 14.1% of respondents). Other categories of participants were: engineers working in ICT industry (5.9%) and officials (or experts) responsible for creating policy for the ICT sector (5.9%, Chart 1).

Chart 1. Types of respondents in the online survey (100% = 474).



Participants were recruited in all countries of the European Union. The largest share of respondents was constituted by respondents working in Poland (7.8% of the whole sample size), Hungary (6.5%) and Spain (6.5%). Also respondents working in Romania, Portugal, Greece, Estonia, Holland, Germany, Sweden, France and Slovenia were relatively numerous (Table 1).

Table 1. Respondents' countries (100% = 474).

Country	N	%
Poland	37	7,8%
Hungary	31	6,5%
Spain	31	6,5%
Romania	30	6,3%
Portugal	29	6,1%
Greece	28	5,9%
Estonia	22	4,6%
Netherlands	21	4,4%
Germany	20	4,2%
Sweden	20	4,2%
France	19	4,0%
Slovenia	19	4,0%
Latvia	17	3,6%
Lithuania	17	3,6%
Italy	15	3,2%
United Kingdom	14	3,0%
Luxembourg	12	2,5%
Czech Republic	11	2,3%
Austria	10	2,1%
Denmark	10	2,1%
Malta	10	2,1%
Other countries	51	10,8%



ROLES OF ICT SOCIETIES

Professional and scientific ICT societies play a significant role in Europe especially in terms of influencing government and EU policies by means of their different activities performed and roles taken which affect research, innovation, education and society.

The EC report “ICT scientific societies at the dawn of the 21st century: which opportunities for Europe?” identified main activities of EU societies which can be classified into following groups:

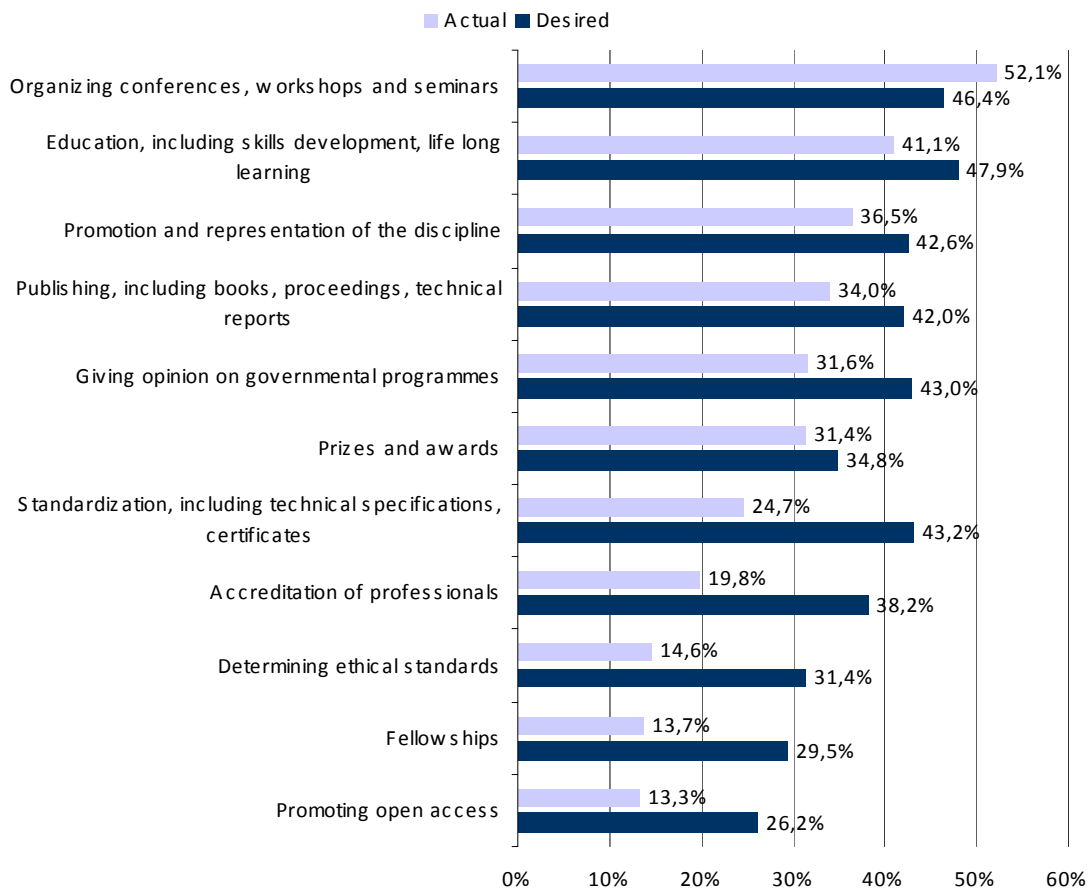
- Education, including skills development, life long learning, schools, etc.
- Publishing, including books, proceedings, technical reports, etc.
- Standardization, including technical specifications, certification, etc.
- Conferences, workshops and seminars
- Accreditation of professionals
- Prizes and awards
- Fellowships
- Promotion and representation of the discipline.¹

From the on-line survey performed within SMART study 474 respondents have given their opinion on the most popular - actual and desired - roles of European ICT scientific and professional societies. On the basis of obtained data, it can be confirmed that the existing societies cover a wide range of topics, engaging in many types of different activities. The respondents’ opinion on this issue showed those activities the societies should concentrate on, which can be a supportive data for one of the strategy options proposed.

Among the most frequent actual activities of **professional associations**, organization of different type of events like conferences, seminars or workshops was mentioned . More than half of the ICT related respondents pointed at this role (52,1%), however only 46,4% think of this role as a desired one. This could indicate that there is a lot of events of this kind and therefore the demand for them has been saturated. No thesis concerning low quality of these events can be put forward as the later results on products assessment show that the events are perceived as of “rather high” and “very high” quality (see Chart 7).

Other popular roles of the professional societies are: education, including skills development and life long learning (41,1%), promotion and representation of the discipline (36,5%); publishing (34%), giving opinion of governmental programmes (31,6%); and prizes and awards (31,4%). All of those mentioned activities (apart from events organization) have a bigger percentage of responses in “desired roles” category. This indicates that, societies should put more emphasis on educational aspects of their operations (skills development, life long learning) – 47,9% of respondents express this opinion. Another noticeable result concerns standardization aspect of societies’ activities. As it appears, only 24,7% of ICT representatives think that this is the actual role of the societies whereas nearly twice more of them (43,2%) think that this role *should* be played by ICT societies in Europe. This activity is ranked third as desired one, followed by giving opinion on governmental programmes where the difference (11,4 percentage points) between actual and desired is also quite noticeable. More results are presented on Chart 2.

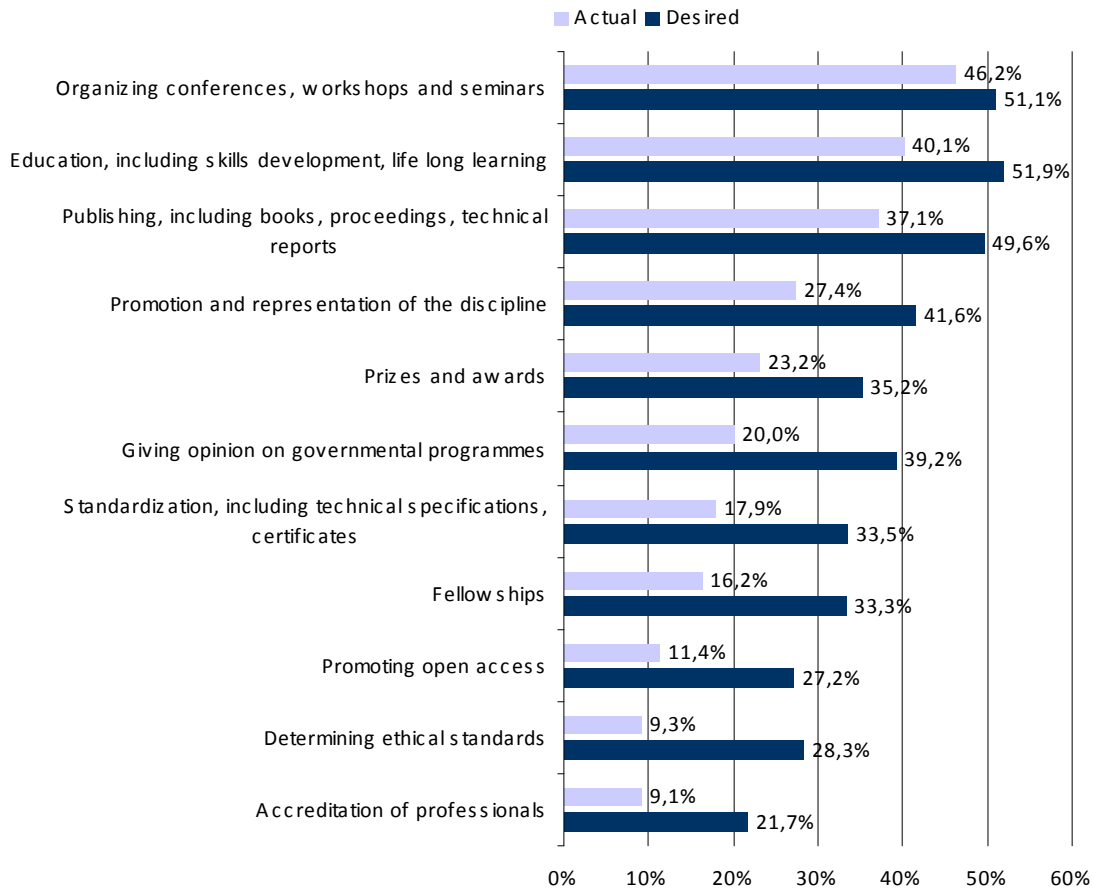
¹“ICT scientific societies at the dawn of the 21st century: which opportunities for Europe?”, European Commission, Directorate-General Information Society and Media, Directorate F “Emerging Technologies and Infrastructures

Chart 2. Roles of national professional ICT societies in Europe (100% = 474)².


Comparing the answers regarding national **scientific societies** similar observations can be made. The most interesting difference concerns events' organization. As actual role of existing societies it was mentioned by 46,2% of respondents, whereas 51,1% stated that this was a desired activity. Moreover a bit more desired role than conferences', workshops' and seminars' organization turned out in the case of scientific organizations - education, including skills development and life long learning – 51,9%. Together with publishing (49,6%), events' organization and - placed first - education are, in the opinion of ICT related Europeans the most desired activities of national scientific societies. Two more desired roles should be highlighted: promotion and representation of the discipline (41,6%) and giving opinion on governmental programmes (39,2%).

One more difference should be also noticed here. In case of professional societies promotion of the discipline is on third place (actual role) whereas amongst scientific societies, publishing (of books, proceedings, technical reports) is much more frequent activity, ranked fourth. More results are presented on Chart 3.

² Percentages do not add to 100 because respondents could choose more than one answer.

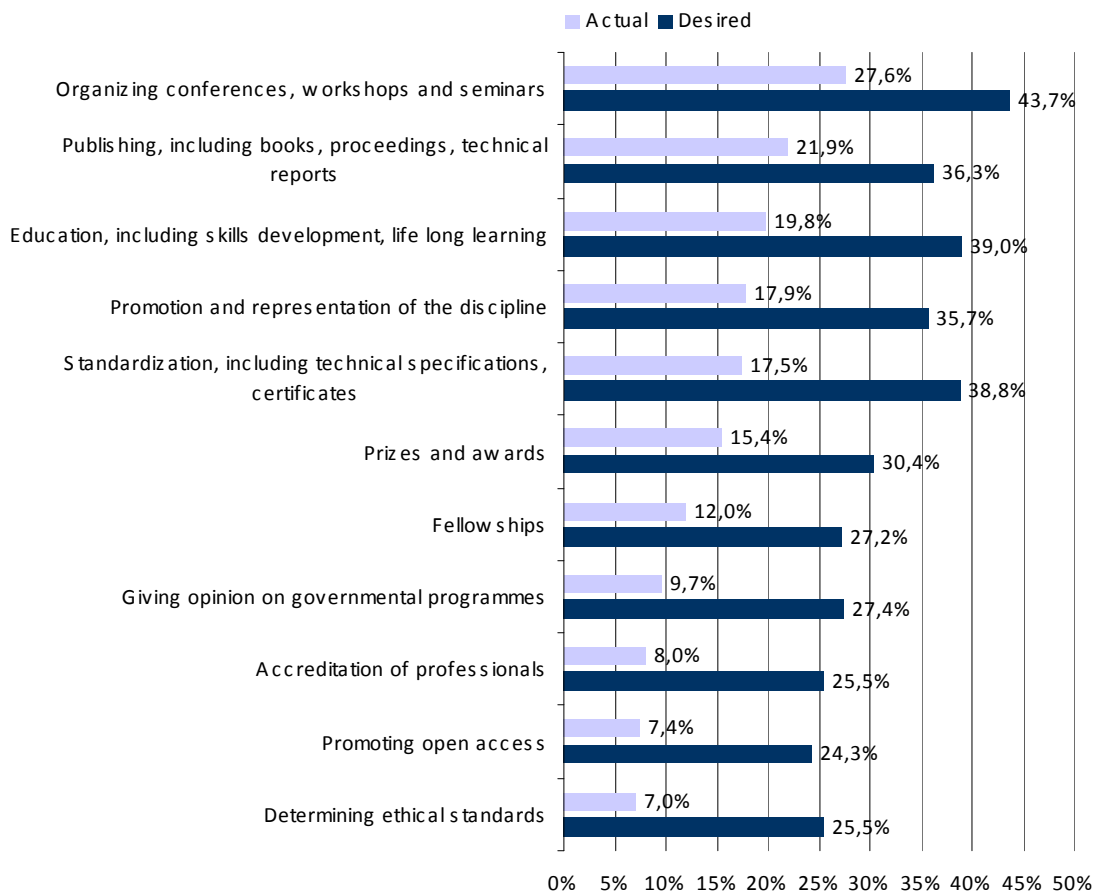
Chart 3. Roles of national scientific ICT societies in Europe (100% = 474)³.


The survey participants were also asked a question concerning the roles of **European societies** (Chart 4). The general picture here shows that organizing conferences and workshops is the most desired role of these societies (43,7% of respondents mentioned it). Also education-related activities (36,3%) and standardization (38,8%) are very important. Especially standardization is perceived as too less emphasized nowadays, as compared to a desired future state (the biggest difference between actual and desired: 21,3 percentage points among European societies and 18,5 percentage points among national professional societies).

These are the most crucial aspects of European ICT societies in the opinion of SMART study respondents. The obtained results have straightforward implications for the development of strategy options for European ICT societies. Leading European ICT societies should base their operations on the mentioned activities in order to be competitive at International level and contribute to future of research, education and innovation policies.

³ Percentages do not add to 100 because respondents could choose more than one answer.

Chart 4 Roles of European ICT societies (100% = 474)⁴.



Next crucial aspect of ICT societies' operation in Europe is the ability to generate new knowledge and to translate it into innovation opportunities. The research infrastructure is already there as Europe can pride itself on existing excellent education and research institutions. Moreover, as it was mentioned in the EC report:

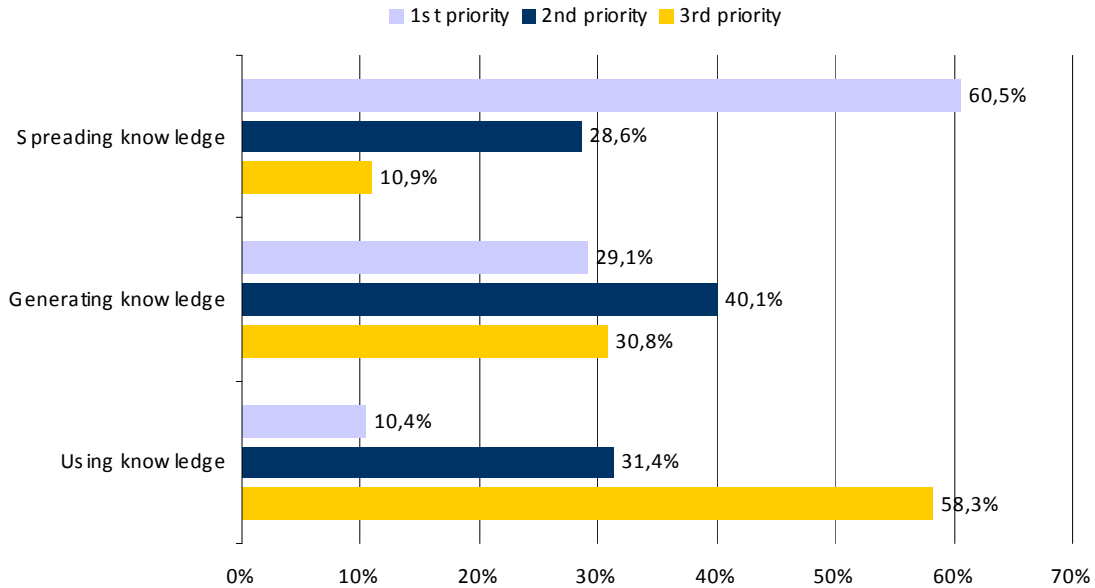
“to build the "critical mass" necessary for innovation, the connections between these institutions and the business world need to be increased and made more profitable⁵”.

However the survey results show that generating new knowledge is seen more often as a second priority of ICT societies and spreading the knowledge as the most important one - (Chart 5). Therefore, one of the current activity should be first to make sure that ICT societies are aware that generating new knowledge is crucial for the development of European ICT domain.

⁴ Percentages do not add to 100 because respondents could choose more than one answer.

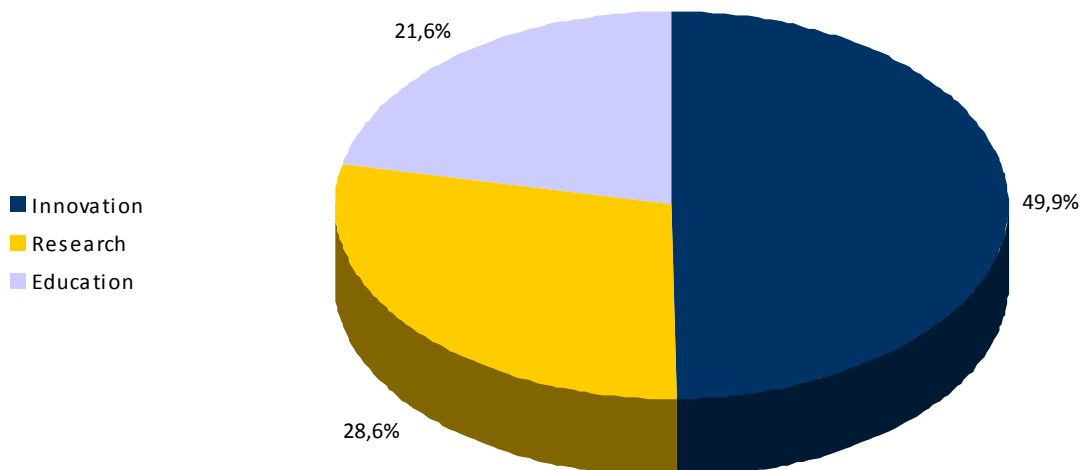
⁵ “ICT scientific societies at the dawn of the 21st century: which opportunities for Europe?”, European Commission, Directorate-General Information Society and Media, Directorate F “Emerging Technologies and Infrastructures

Chart 5 What should ICT societies concentrate on?



Coming to the Knowledge Triangle (Higher Education, Research, Business-Innovation) it should be highlighted that the innovation aspect should be strengthened mostly by the societies operating in Europe . The European Institute of Innovation and Technology (EIT) had already addressed this issue by fully integrating the three sides of the "Knowledge Triangle" and also by creation of "Knowledge and Innovation Community" (KIC) is enabling cooperation between business stakeholders, large industry, SMEs and academic institutions. Thus, according to the survey results the collaboration should focus on innovation aspects (49,9%) in the first place, research in the second (28,6%) and education in the third (21,6%).

Chart 6 Which element should be strengthened by the ICT scientific and professional societies operating in Europe? (100% = 357)



PRODUCTS AND IMPACT OF ICT SOCIETIES - GENERAL ASSESSMENT

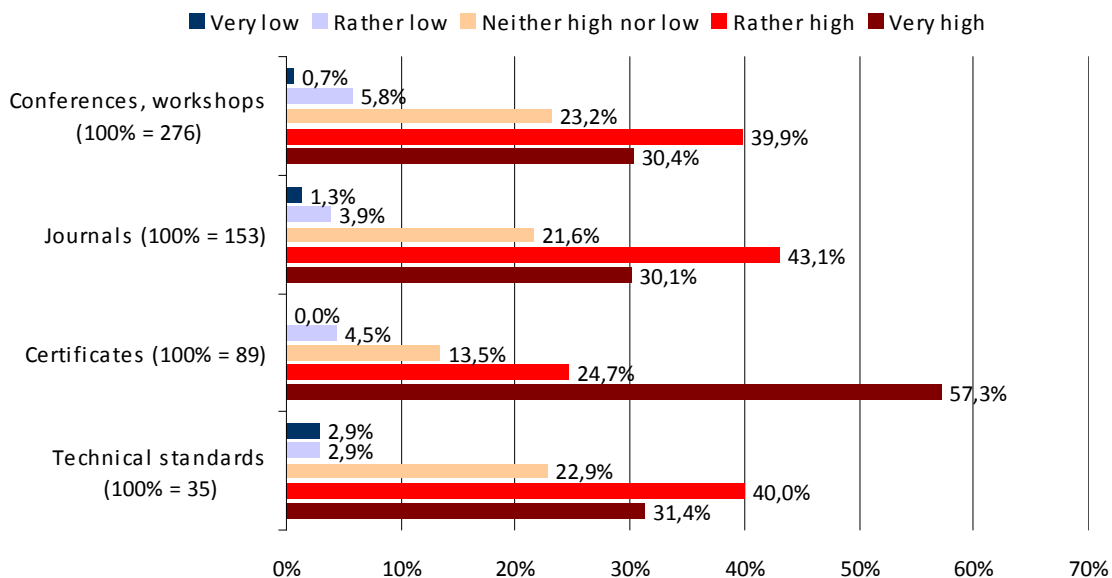
Participants of the survey were asked to identify and assess the most important products of ICT societies in their countries. These products are divided into four categories:

- Conferences and workshops,
- Journals,
- Certificates,
- Technical standards.

Products in the category of "certificates" were best rated by the survey participants. The best ratings ("very high quality") accounted for 57.3% of all grades of products belonging to this category. Another 24.7% were "rather high quality" ratings. Negative ratings ("rather low quality" and "very low quality") accounted for only 4.5% of all evaluations.

The other product categories were also rated well. For conferences, as well as for journals and technical standards, share of "very high quality" ratings was ca. 30% and "rather high quality" – ca. 40%. Negative ratings accounted for only ca 5% of all evaluations (Chart 7).

Chart 7. Assessments of quality of ICT societies' products.



In order to assess the impact of societies on the situation in the ICT sector, respondents were asked to express their opinions on five sentences:

- Papers and conferences organized by national ICT societies in my country have strong impact on ICT research and innovation development.
- National ICT societies that operate in my country contribute to ICT-related skills ("e-skills") development.
- National ICT societies that operate in my country encourage/support cooperation between researchers and ICT industry.
- Prizes issued by national ICT societies that operate in my country are widely recognised within the ICT environment .
- Certificates issued by national ICT societies that operate in my country are required/sought by the consumers.
- National ICT societies that operate in my country encourage/support International cooperation in the ICT sector.

These sentences describe the effects of the ICT societies' activities in the crucial areas such as research, innovation, education, transfer of knowledge to the ICT sector, International cooperation, and promotion of outstanding achievements in the ICT.

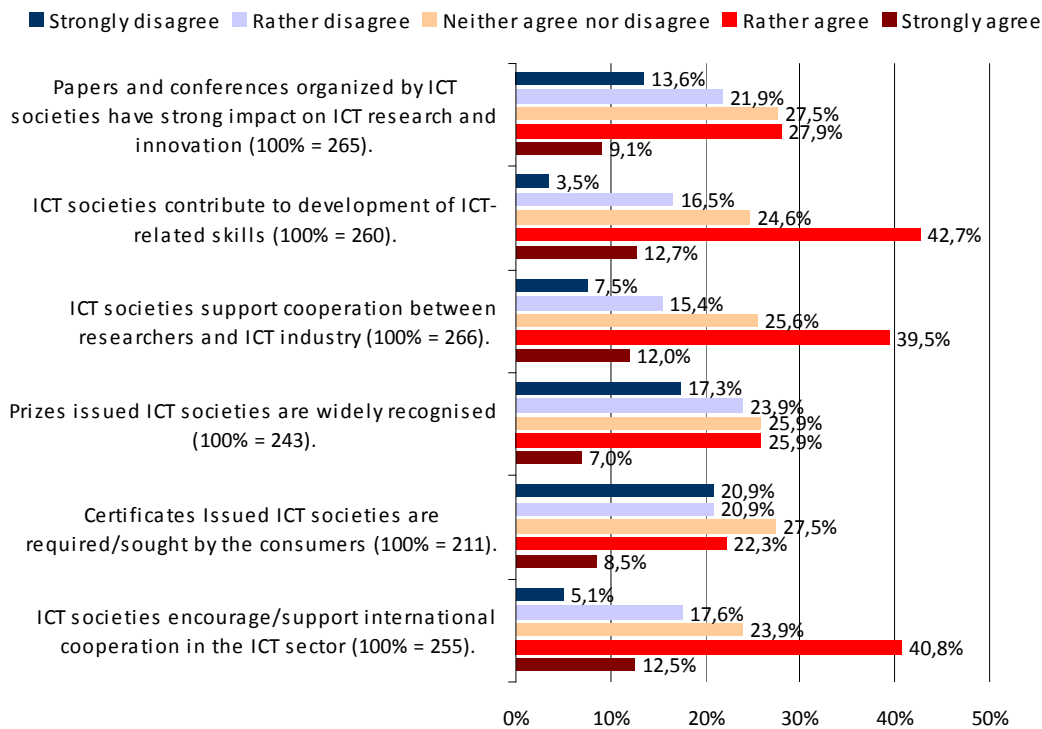
The societies' impact in the field of education was perceived as most important. More than 55% of respondents expressed their agreement with the sentence "National ICT societies operate in my country contribute to ICT-related skills ("e-skills) development". Every fifth person did not agree with this thesis and every fourth did not have a clear opinion on this issue.

Also the areas of science-industry cooperation (transfer of knowledge) and International cooperation were well rated. The sentence "National ICT societies that operate in my country encourage/support cooperation between researchers and ICT industry" was approved by 51.5% of respondents (12% strongly agreed and 39.5% rather agreed with it). 23.9% disagreed with it (7.5% strongly disagreed and 15.4% rather disagreed). Similar attitudes were expressed in case of the sentence "National ICT societies that operate in my country encourage/support International cooperation in the ICT sector." 53.3% of respondents agreed with it (12.5% strongly agreed and 40.8% rather agreed with it) and 22.7% disagreed (5.1% strongly disagreed and 17.6%, rather disagreed).

The impact of certification-related activities was rated least favourably. Only 30.8% of respondents agreed that certificates issued by national ICT societies are required/sought by the consumers. 41.8% of participants had the opposite opinion. Minor impact of certificates may be surprising, regarding the fact that certificates were a group of best evaluated ICT products (in terms of quality, see Chart 7). Low certificates' impact assessment probably stems not from their poor quality, but rather from the lack of public awareness of the benefits, which are connected with certification.

For other aspects of ICT societies, positive and negative assessments were balanced. 37% of respondents positively evaluated the influence of publications and conferences organized by the ICT societies on research and innovation. About 35% of respondents had a negative opinion on this issue. The phrase "Prizes Issued by ICT societies in my country are widely recognised within the ICT environment," was approved by 32.9% of respondents and was opposed to by 41.1% (Chart 8).

Chart 8. Assessment of impact of national ICT societies operating in Europe.

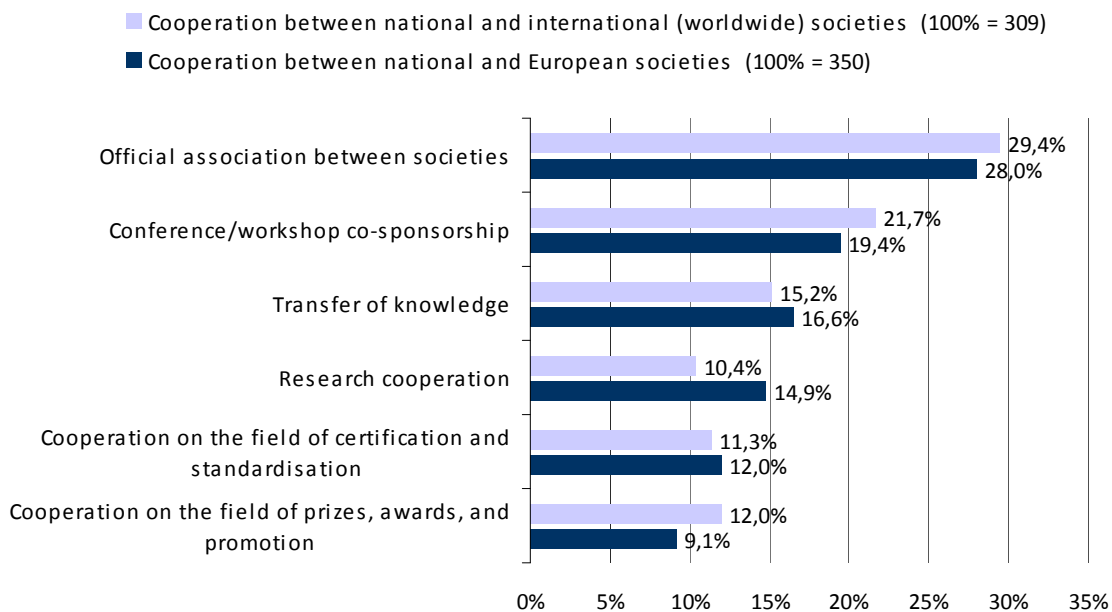


MODELS OF COOPERATION BETWEEN ICT SOCIETIES

Members of the ICT societies who participated in the survey were asked to describe the principles on which their societies cooperate with other societies (European and worldwide). The collected data allowed to identify the most popular models of cooperation.

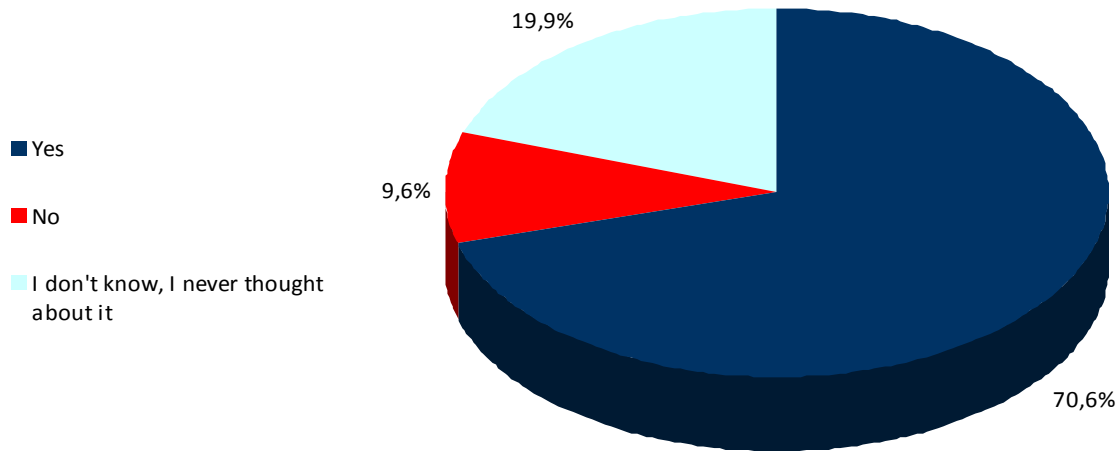
Both in cooperation with European and International (worldwide) societies, official association between societies was the most common (29.4% of all responses in case of cooperation between worldwide societies and 28% in case of cooperation with European societies). Other popular forms of cooperation were: co-sponsorship of workshops and conferences (respectively 21.7% and 19.4%), and cooperation in the transfer of knowledge (15.2% and 16.6%; Chart 9).

Chart 9. Dominant models of cooperation between ICT societies.



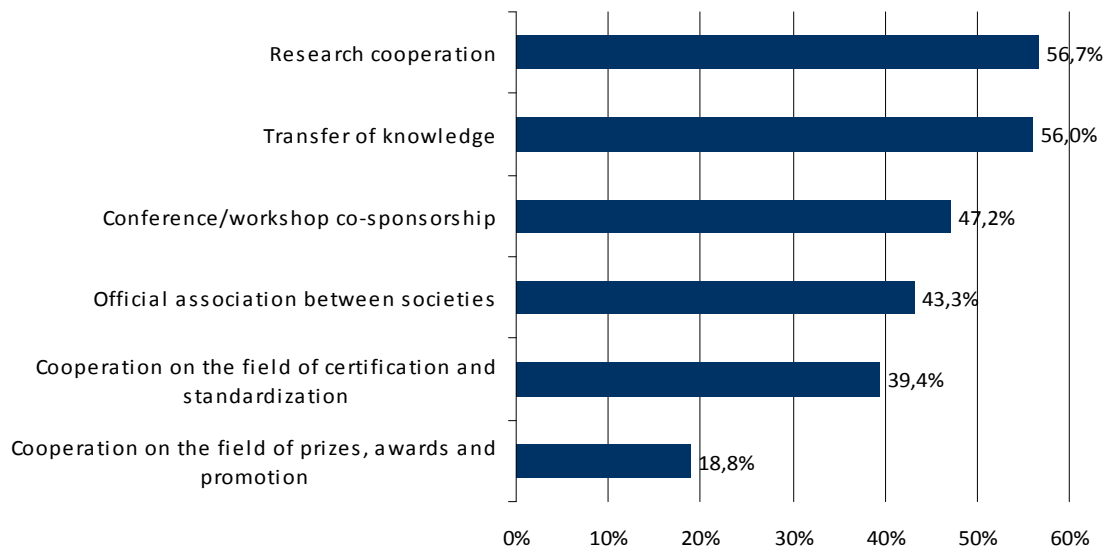
Participants were also asked whether they perceived a need for closer cooperation between national and European ICT societies. Up to 70.6% of respondents claimed they did (Chart 10).

Chart 10. Do you perceive a need for stronger cooperation between national and European ICT scientific and professional societies? (100% = 282)



Persons who perceived the need for closed cooperation were asked what form it should take. Research cooperation (the answer was chosen 56.7% of respondents) and transfer of knowledge (56%) were considered particularly relevant here. Creating formal associations between societies and cooperation in organizing conferences, were considered somewhat less important (these answers were chosen by, respectively, 43.3% and 47.2% of respondents). Cooperation in the field of promotion and awards was considered least important (Chart 11).

Chart 11. Desired models of cooperation between national and European ICT societies (100% = 282)⁶.

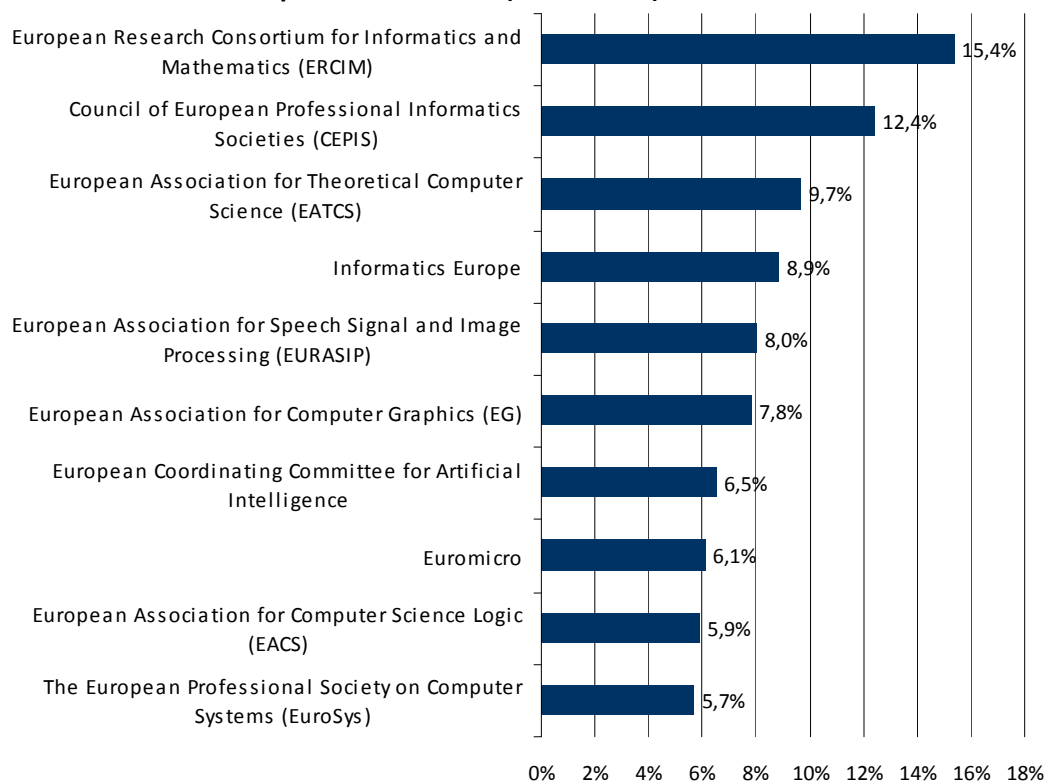


⁶ Percentages do not add to 100 because respondents could choose more than one answer.

LEADERSHIP AND COMPETITIVENESS IN ICT SOCIETIES OPERATING IN EUROPE

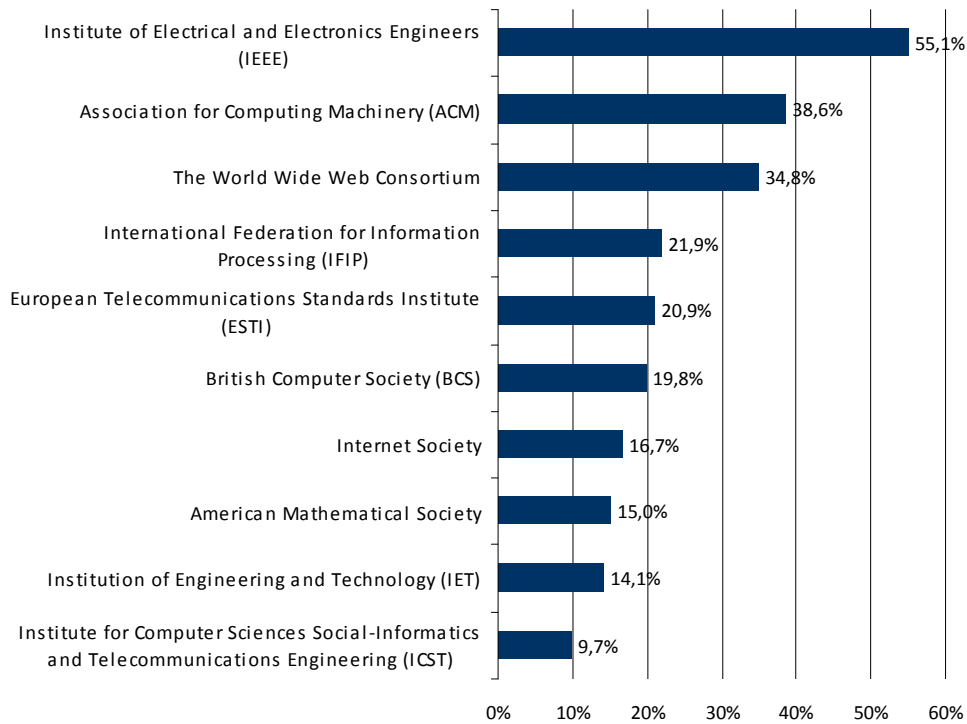
Online survey has also provided information about which of the ICT societies operating in Europe are the most recognizable and perceived as leaders. Among the European societies whose names were presented to the survey participants, the European Research Consortium for Informatics and Mathematics (ERCIM), proved to be the most recognizable (15.4% of respondents were aware of its existence). Among the best-known European societies were also: Council of European Professional Informatics Societies (CEPIS; 12.4% of responses), European Association for Theoretical Computer Science (EATCS, 9.7%), Informatics Europe (8,9%), European Association for Speech, Signal and Image Processing (EURASIP, 8.0%) and European Association for Computer Graphics (EG, 7.8%, Chart 12).

Chart 12. Awareness of European ICT societies (100% = 474)⁷.

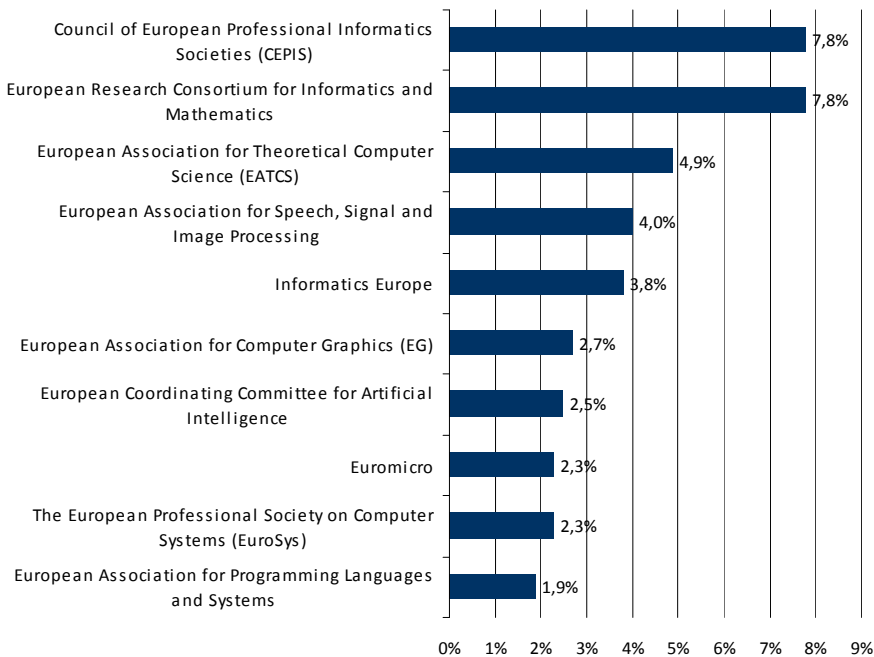


The survey results clearly showed that European societies are far less recognizable than the societies operating on the worldwide level. The best known among the latter, the Institute of Electrical and Electronics Engineers (IEEE), was recognized by as many as 55.1% of respondents. The existence of Association for Computing Machinery (ACM) and The World Wide Web Consortium (W3C) was acknowledged by, respectively, 38.6% and 34.8% (Chart 13). It is worth noting that if the lists of the most recognized European and worldwide ICT societies were combined, only one European society could be in the top ten.

⁷ Percentages do not add to 100 because respondents could choose more than one answer.

Chart 13. Awareness of International (worldwide) ICT societies (100% = 474)⁸.


Survey participants were also asked a direct question about which societies operating in the European arena can be regarded as leaders. The respondents answers did not differ from those expressed in the awareness test – CEPIS, ERCIM and EATCS were most frequently identified as leaders (Chart 14).

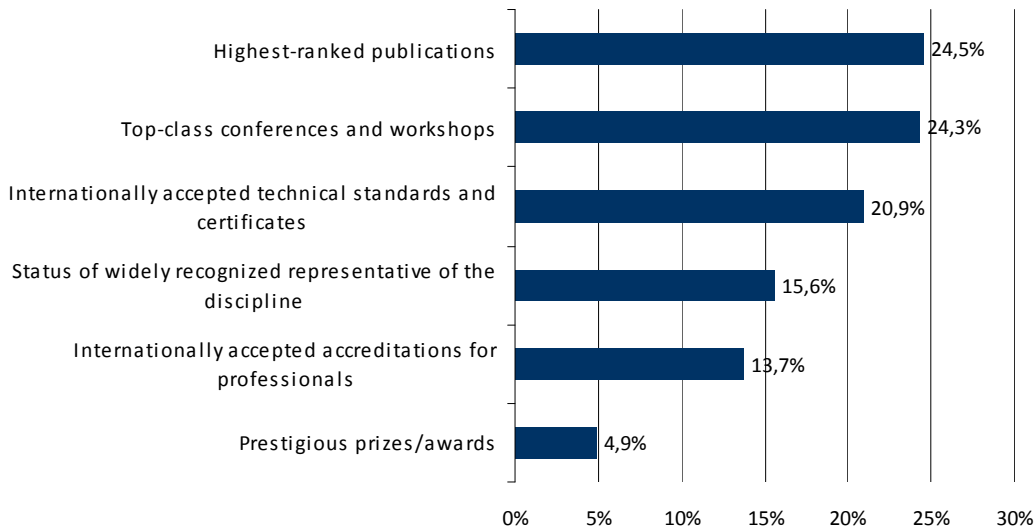
Chart 14. European ICT societies recognised as leaders (100 % = 474)⁹.


⁸ Percentages do not add to 100 because respondents could choose more than one answer.

⁹ Percentages do not add to 100 because respondents could choose more than one answer.

Another requested information concerned factors that are, in the opinion of respondents, essential to achieve the position of leader society. Respondents most frequently chose the factors related to quality of societies' products: publications reaching top places in the citations rankings (25.4% of respondents) as well as top-class conferences and workshops (24.3%). Also issuing widely recognized standards and certificates was pointed at (the importance of this factor was noted by 20.9% of respondents; Chart 15).

Chart 15. Factors of leadership in ICT societies (100% = 474)¹⁰.



¹⁰ Percentages do not add to 100 because respondents could choose more than one answer.



CONCLUDING REMARKS

- A leading European society which is perceived as an option by the ICT environment should concentrate on 3 most crucial society roles: events' organization such as workshops, conferences, seminars (43,7%), education related activities (36,3%) and standardization (38,8%). Together with maintaining efficient official relations with business and industry and collaboration among ICT societies, also worldwide, some issues of ICT sector like: shorten time to market of ICT research results, nurture fast-growing ICT companies in Europe, reduce the shortage of ICT skills, ensure the widest dissemination of scientific knowledge, can be addressed.
- ICT societies should focus in the first place on innovation aspects (49,9%), then research (28,6%) and education (21,6%).
- Certificates were best rated top-rated products of ICT societies - almost 60% of all ratings assigned to them were "very high quality" ratings. On the other hand, the effects of societies related to the certification, have been evaluated negatively. This results indicate little awareness of the benefits of certification and, perhaps, little interest in such products.
- Effects of ICT societies activities (impact of societies) was best assessed in the areas of education (e-skills development), cooperation between science and business, and International cooperation.
- Developing official associations was the most common form of cooperation between the ICT societies. On the other hand, according to respondents, the most desirable form of cooperation is cooperation on the field of research and knowledge transfer. This result, shows that the research aspect of the ICT societies (related to the creation of knowledge) should be reinforced.
- European ICT societies are clearly less recognizable than the worldwide societies. The best-known organizations from Europe - ERCIM, CEPIS, EATCS - have been recognized several times less than the best-known global organizations - IEEE, ACM and the W3C.
- According to respondents, the most important factors determining a society's position are factors related to the quality of its products – top class publications and conferences.