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D8 Summary analysis on user groups and their needs (Full version)

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PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Table of content

Preface	3
Executive summary	4
Introduction	5
1 Intellectual efforts: stakeholder interactions in EDIT institutions	6
2 Direct engagement: User needs surfacing from EDIT activities	9
Conclusions and next steps	12
References	13
ANNEX Photo gallery	14

Preface

This report looks at the activities developed and intellectual efforts made during EDIT Third JPA that focus on compiling and dissemination of knowledge about users of taxonomic information and at activities that aim to involve users directly in the EDIT framework.

The rationale behind the stakeholder activities in EDIT is that taxonomy is not produced by scientists in a vacuum. To create the most favourable environment for taxonomy, EDIT promotes integration of excellence among its members, the taxonomic community and among social partners. Like taxonomists social partners will profit from an integrated taxonomy on the level of quantity a quality of taxonomic data. EDIT encourages collaboration with and consultation of stakeholders in taxonomy as this is seen as valuable to the progress of science. Stakeholder activities of EDIT aim to create awareness of the diversity of stakeholder needs and towards potential collaborative partnerships. EDIT offers an environment where taxonomists and stakeholders can meet, where they can experiment with joint research and outreach activities and, if proven successful, where an agreement (e.g. MoU) can be signed to formalise the collaboration.

Everyone who uses taxonomy or contributes to it is a possible partner for taxonomic institutions and networks like EDIT. This makes the list of potential affiliations between taxonomy and partners almost infinite. EDIT concentrates its activities around the following taxonomic stakeholder categories:

- Scientific users of taxonomic knowledge (professional and amateur taxonomists, agriculture, archaeology, conservation science, ecologists, environmental studies, genomics, genetics, molecular sciences, medicine etc.)
- Professional users (conservation management, environmental assessment industry, custom services, pest management, cosmetic and pharmaceutical industry, national governments, international governance bodies etc.)
- Taxonomic facilitators (funding bodies, educational facilitators, developers of research tools, taxonomic information facilities etc)
- The general public (nature lovers and anyone using vernacular or scientific names)
- Other networks and projects in taxonomy and biodiversity science.

The stakeholder activities in EDIT are cross-work package activities and are supported by a number of individuals from different EDIT institutions. Special acknowledgements should be made to the staff of WP 2 and WP 4 for the excellent organisation of the different user workshops as well as the very fruitful collaboration with the SYNTHESY NAC staff. We would like to mention the creative and inspiring workshop on scientific names under supervision of Bob Allkin from the Royal Botanic Gardens, Kew.

Contributions to the stakeholder objective which are not in this report but which are important to the objective are: the promotion of data-sharing and social networking for taxonomists (WP6); public awareness and communication activities on taxonomy towards the general public (WP8) the creation of partnerships between EDIT and the nature conservation community (WP7); and liaisons with international infrastructures (WP3).

Executive summary

This deliverable contributes to EDIT's objective 5 "stakeholder forum" and indirectly also to objectives 1 and 2 "reduction of fragmentation" and "strengthening the scientific, technological and information capacities". During the Third JPA EDIT used a two-way approach to engage with stakeholders of taxonomy: 1) compile, make visible and analyse what kind of collaborations already exist between different actors in taxonomy and 2) take a proactive role in creating a collaborative environment by inviting stakeholders to EDIT meetings and activities and by participation in stakeholder meetings.

Under the umbrella of the first approach the stakeholder subject was given a more prominent visibility through the EDIT website, information disseminated on users and other stakeholders and we started a social network analysis of the taxonomic field. The social network analysis of the EDIT co-author network was used as an explorative exercise to investigate the possibilities of the methodologies for strategic planning purposes in EDIT. The analysis provided interesting information about number of co-authored papers published among EDIT partners and the number of co-author pairs. Furthermore, we concluded that the social analysis indicators produced very rich information about the various roles and groupings of the actors (EDIT institutions) in the EDIT co-author network. The social network analysis tools and methods provided insights in the connectedness of the EDIT institutions, if they kept a strategic "gate keeper" positions in the network, the level of activity of their network participation and on the clustering of sub-networks between some of the institutions in the network.

Under the second approach three workshops have been held with representatives of different user communities: amateur/non-professional/volunteer taxonomists; users of collections; and users of scientific names. Based on the outcomes of different workshops with uses of taxonomy (approach 2) EDIT recommends its member institutions to cherish the collaborations of its staff with the stakeholder community, to compile collaborations carried out in their institutions, to give their staff a stage at the institutional level, to use these collaborations in communication with the general public, their governments and other funding bodies and to reward their staff for developing these collaborations. From the outcomes of the three workshops several recommendations for EDIT and EDIT institutions were filtered out and are brought (and will be brought) to the attention of the different EDIT hierarchies, NSC, BOD, SAC. A further effort towards the implementation of the recommendations will be made during year four.

Introduction

The terminologies “user” and “stakeholder” are concepts which carry different meanings in different contexts. It seems like both concepts are used interchangeable in EDIT publications and meetings (see also the preface) although they do not have the exact same meaning. “Stakeholder” refers to all categories mentioned in the preface of this report (i.e. taxonomists, researchers from other disciplines, professional users, taxonomic facilitators, the general public, and other networks in taxonomy and biodiversity research), “users” to one particular category of stakeholders. EDIT makes this focus clear in its communication on the subject on the website <http://www.e-taxonomy.eu/node/412>. Furthermore, EDIT takes the position that taxonomists are the central stakeholder group of EDIT and of taxonomy in general. Additionally, several activities in EDIT focus on those users and other stakeholders coming from *outside* taxonomy - who have a stake in taxonomy or are using taxonomic information within their own profession. These activities are part of the conclusions in this report.

During the third year EDIT used a two-way approach to engage with stakeholders of taxonomy: 1) compile, make visible and analyse what kind of collaborations already exist between different actors in taxonomy and 2) take a proactive role in creating a collaborative environment by inviting stakeholders to EDIT meetings and activities and by participation in stakeholder meetings. Furthermore, EDIT staged its interactions with the stakeholder community (from outside taxonomy) so they generate output useful at different levels in the network. We acted on the following levels:

- Encouraging EDIT members to work with stakeholders at an institutional/national level
- Promotion of formal signed relationships (e.g. ATBI + M with national parks) between EDIT partners and stakeholders
- Creation of partnerships at a European level

In this report we will describe the intellectual efforts and activities involved in compiling information and knowledge about who users of taxonomy are and what their needs are. These activities aim to contribute to objective 5 in EDIT “stakeholder forum”. The activities described in this report are building blocks ready to build a stakeholder forum and where possible to bring stakeholder relations from an intrapersonal to an institutional level, and to make visible what collaboration do exists. They aim to collect information, knowledge, experience and (grass-root) support to launch a stakeholder forum (stakeholder interaction mechanisms) as part of the consortium after the EDIT funding period. Therefore in our view it would be more precise to say that our efforts contribute “towards of a stakeholder forum”. The following components are the building blocks of this report:

- C4.2.2 Report on case-studies of users-scientists collaborations in EDIT institutions.
- C4.2.6 Report on social network analysis and bibliometric methodologies as tool to map actors in taxonomy
- C2.3.3/C4.2.8 Report on guidelines on how to meet mutual needs of non professional and professional taxonomists.
- M4.2.8 Series of workshops with users of different taxonomic services

In the two next sections we will discuss the intellectual efforts carried out and the activities that involved direct engagements of user communities – which intend to engage them in taxonomy

and where appropriate, to integrate taxonomy in their professional activities.

1 Intellectual efforts: stakeholder interactions in EDIT institutions

One of EDIT's approaches is to compile knowledge by examining existing stakeholder collaborations and behaviour on who stakeholders in taxonomy are and what their needs are. During the Third JPA two intellectual efforts were carried out that looked into collaborations

(independent from EDIT) between taxonomic institutions and stakeholder/user groups. Taxonomic institutions are often labelled as inward looking. However, we would like to argue that for some institutions this is a false image. For example, the work mirrored in the cases studies (C4.2.2 report on case-studies of users-scientists collaborations in EDIT institutions) - stresses that there are collaborations one does not

The screenshot shows the EDIT website interface. The main content area is titled 'The EDIT stakeholder information library' and contains text about the library's purpose and a list of documents. A calendar for March 2009 is visible on the right side of the page.

EDIT - European Distributed Institute of Taxonomy

The EDIT stakeholder information library

EDIT promotes, supports and facilitates initiatives of its members which contribute to the transfer of taxonomic knowledge and services towards the broader taxonomic stakeholder community.

One of services EDIT provides is the dissemination of information on taxonomy's stakeholders. What are their needs? What are the existing collaborations between natural history institutions and stakeholders? What are the collaborative mechanisms used? Individual staff members, management of EDIT institutions and other natural history institutions may find this information useful when planning their own stakeholder activities. This online information section will be extended in the course of the EDIT funding period.

If you know about an interesting initiative from the taxonomic community on successful stakeholder collaborations, contact [Daphne Duijn](#).

The stakeholder information library

EDIT documents:

- Case studies on collaborations between natural history institutions and their stakeholders. Demonstration cases on services provided by institutions to the broader user community.
 - Swedish Museum of Natural History - University of Amsterdam
 - Natural History Museum London (in preparation)
- EDIT report on rationales, methodologies and results of stakeholder engagement in different European environmental projects

Other:

- Why Taxonomy Matters - Bio-Net International. Database of case studies on the social benefits of taxonomy
- Uses of Primary Species Occurrence Data - GBIF report

Events

March 2009

Mon	Tue	Wed	Thu	Fri	Sat	Sun
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

News

- Recent news
- Job offers

Links

- Institutions
- EDIT's websites
- Other networks

User login

Username: *

observe easily. The case studies in EDIT Stakeholder Library want to be a window for these activities. Currently, two case studies are available online, however several others are forthcoming and will become available during the Fourth JPA. In the search for case studies we focused on collaborations at an institutional level and discovered numerous collaborations between stakeholders and individual researchers, groups of researchers or other staff (e.g. IT, curating). In this light, EDIT recommends its member institutions to cherish these intrapersonal initiatives, to compile the collaborations carried out by institutional staff, to give them a stage at an institutional level, to use it in communication to general public, their governments and other funding bodies and to reward their staff for creating these collaborations. In short, EDIT encourages its members to make these staff-level collaborations part of their institutional presentation.

The second intellectual effort that has been carried out is reflected in the Report on social network analysis and bibliometric methodologies as tool to map (a part of) actors in taxonomy (C4.2.6). It was shown in a previous report [C 4.1.2BIS] that an analysis of a stakeholder environment is not straight forward and often based on networks of usual suspects. To be able to have a fresh and systematic look at the actors in field of taxonomy and to develop analytical observations of its dynamics, EDIT is working with the Science System Assessment Centre of the Rathenau Institute in The Hague on a social network analysis with (bibliometric data) of taxonomy. This study will be an extensive analysis based on scientific publications in taxonomy and related fields that attempts, among others, to give insight into the actors publishing about taxonomy, the uses of taxonomic publications by other fields and the co-authorships of different actors in the field. EDIT and the Rathenau Institute started their collaboration in 2008 and will continue to work on this study during the Fourth JPA (e.g. C1.4.5). Some preliminary results of this collaboration were collected in C4.2.6 Report on social network analysis and bibliometric methodologies as tool to map (a part of) actors in taxonomy. We explored whether and how social network analysis indicators and bibliometrics can be used compute networks maps, useful for strategic decision making purposes in EDIT. We used co-authorship statistics of EDIT members to explore the usability of the methodology for EDIT.

The data we drew on are scientific papers indexed in the ISI, and co-author networks

were constructed by using the social network analysis tools Netdraw and Pajek. The results show that co-authorships between EDIT members generate a “natural” network at research level. Every EDIT member published at least once with one other EDIT member between 2005-2008 and no isolated mini networks occurred in the larger network. The analysis revealed that to study the networks’ characteristics it is useful to look at highest numbers of co-authorships between two institutions *and* at the ‘degree centrality’, the occurrences of ‘cores’, and ‘domain’ in the network.

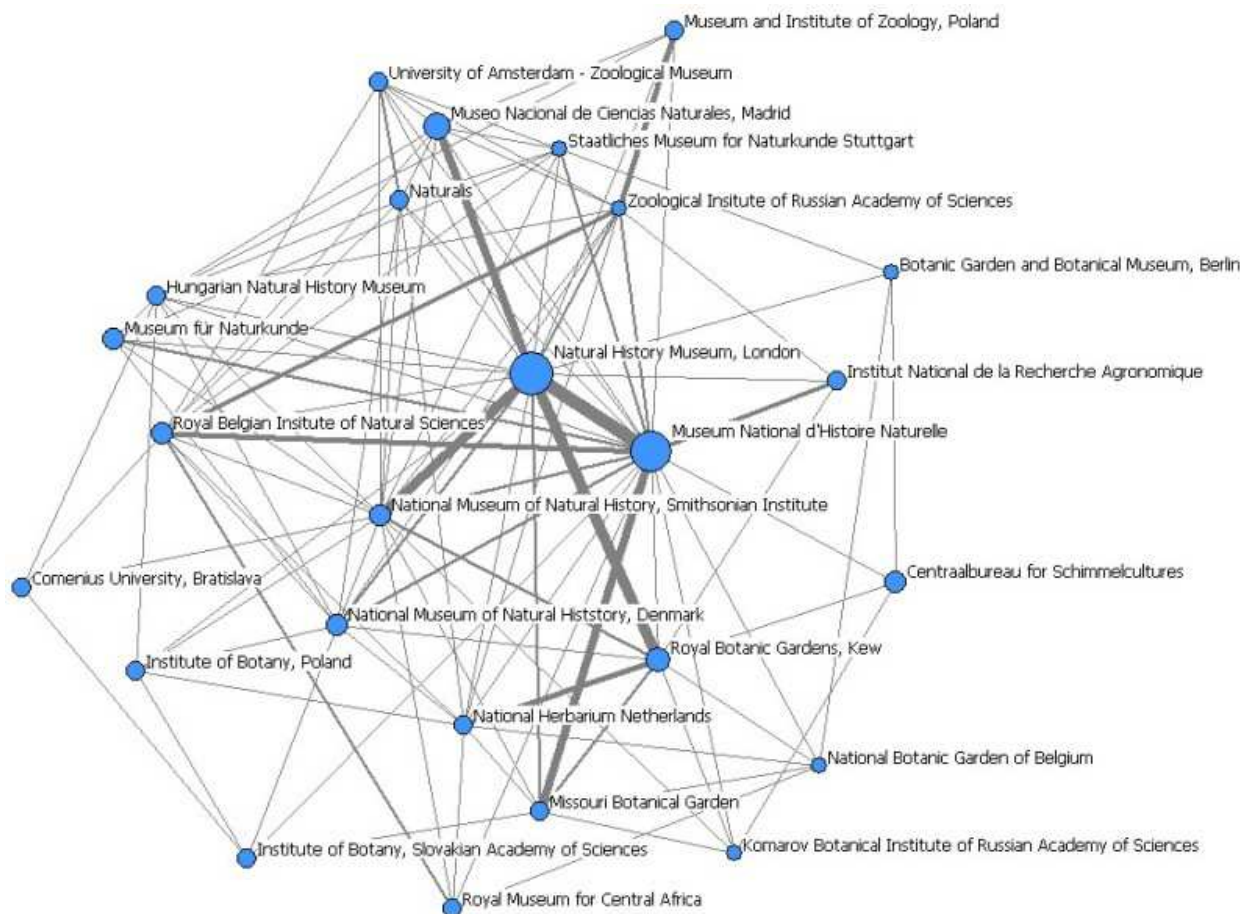


Figure 1. Co-authorships between EDIT institutions 2005-2008. Node size indicates the total number of publications of an institution, tie strength the number of co-authorships. Total number of papers published =11780, total co-authorships 970. Based on ISI/ Web of Science.

Degree centrality of actors in a network measures the centrality of an actor in a network based on the number of co-authorships it has with different other members. The higher the number of different co-author institutions one actor has, the more central the actor is in the network. The core measurement (k-core) of co-authorships gives us information about the minimum number of co-authorships of ranges of actors in the network. The domain measurement gives information about occurrence of small sub-networks in the larger network. Table 1 gives an overview of the total number of papers published by each institution, the number of co-authorships and the number of pairs

Table 1. Number of EDIT institutions each EDIT member has co-published with, 2005-2008 WoS.

Contract number	Institution name	Number of papers	Number of co-authorships in EDIT network	EDIT co-authored papers as % of total number	Number of pairs (MNHN published with 21 institutions)
2	Muséum National d'Histoire Naturelle (MNHN)	2071	153	7	21
3	Zoological Museum, National Museum of Natural History, Denmark (UKBH-NHMD)	469	36	8	12
4	Museo Nacional de Ciencias Naturales (CSIC-MNCN)	831	39	5	10
5	University of Amsterdam- Zoological Museum Adam	200	19	10	8
6	National Herbarium Netherlands (NHN)	256	35	14	12
7	National Natural History Museum Naturalis (NHM)	237	28	12	10
8	Centraalbureau voor Schimmelcultures (CBS)	358	8	2	4
9	Botanic Garden and Botanical Museum, Berlin (FUBGBM)	64	10	16	4
10	Natural History Museum, London (NHML)	2202	174	8	18
11	Royal Botanic Gardens, Kew (RBGK)	581	70	12	9
12	Staatliches Museum for Naturkunde Stuttgart (SMNS)	104	18	17	9
13	Royal Belgian Institute of natural Sciences, Brussels (RBINS)	461	48	10	12
14	Royal Museum for Central Africa, Tervuren (RMCA)	182	16	9	5
15	National Botanic Garden of Belgium (NBGB)	99	15	15	6
16	Museum and Institute of Zoology, Poland (MIZPAN)	162	28	17	5
17	Institute of Botany, Poland (IBPAN)	148	11	7	6
18	Hungarian Natural History Museum (HNHM)	235	17	7	11
19	Comenius University, Bratislava (CUB)	190	7	4	4
20	Institute of Botany, Slovakian Academy of Sciences (IBSAS)	154	11	7	5
21	Institut National de la Recherche Agronomique (INRA)	261	20	8	4
22	Society for management of European biodiversity data (SMEB)	0	0	0	0
23	Species 2000	0	0	0	0
24	Komarov Botanical Institute of Russian Academy of Sciences (BINRAS)	146	7	5	5
25	Zoological Institute of Russian Academy of Sciences (ZINRAS)	474	56	12	11
26	Missouri Botanical Garden, (MO)	384	51	13	8
27	National Museum of Natural History, Smithsonian Institute, Washington (UNSM)	1215	69	6	17
28	Museum für Naturkunde (MfN)	296	24	8	6
	TOTAL	11780	970		222

The preliminary results of the social network analysis of EDIT co-authorship network conveyed interesting and rich material on the actors in taxonomy field of taxonomic research. We are aware that the data indexed in the ISI is not a complete overview of taxonomic publications. Nevertheless, we are convinced that the methodologies used in the EDIT - Rathenau Institute

study generate rich information. Furthermore, we believe that in the future the methodologies used can be applied to other data sources. As soon as taxonomic databases will have standardised downloadable bibliographic information, one will be able to study networks arising from the full taxonomic effort.

2 Direct engagement: user needs surfacing from EDIT activities

The second approach in EDIT towards engaging with stakeholders takes a proactive role in creating a collaborative environment by inviting stakeholders to EDIT meetings. In year three EDIT made an effort to engage stakeholders from outside taxonomy into its framework. The general objective of the meetings was to get to know stakeholders and their needs, to create a network environment for staff of EDIT member institutions, and to gain grass-root support from EDIT members. In the Third JPA three meetings were held, with the following user groups involved:

- Amateur taxonomists (C2.3.3/C4.2.8)
- Users of collections (M4.2.8)
- Users of scientific names services (M4.2.8)

The three meetings produced information on the stakeholder organisations, the purposes for which they use taxonomic information, how they (currently) collaborate with the taxonomic community and how they would like to see that exchange of information, information formats and interactions are improved in the future.

The amateur taxonomy workshop stressed the following needs from the amateur community where EDIT is asked to play a role:

- Promote the excellence of the amateur taxonomic work force and stress the synergies of collaboration between the amateur and professional community to a wide audience working in biodiversity
- Inform the biodiversity community (policymakers, wider biology community, end-users of taxonomy) about the diversity and competence of amateur taxonomists
- Promote and train editors of periodicals to motivate and coach amateurs to publish on their work
- Promote ‘open to all-taxonomists’ institutional behaviour: by encouraging transparency on institutional (im)possibilities for amateurs, appointing one contact person for amateur taxonomists, abandoning the 9-5 mentality, easing restrictions on specimen loans and collection access, providing access to equipment
- Promote intuitional/administrative freedom for individual researchers to collaborate with amateur taxonomists
- Promote ‘open to all-taxonomists’ mentality among researchers by: opening up meetings, field trips, collaborative research projects, publications
- Promote fair recognition for all good quality taxonomic work
- Put on the (political) agenda the restrictions on collection permits for all taxonomists.

The second meeting organised in the Third JPA was an EDIT-SYNTHESYS initiative called “Broadening the user base of Natural History Collections” (M4.2.8a). The meeting brought together users and collections managers/curating staff and discussed how collections could

broaden the user base of the collection services. In the workshop report detailed user needs are described for different groups (population genetics, agriculture/pests, public health research other) (Report, M4.2.8a). Additionally, the following general recommendations were drafted. Collection user needs at the EDIT action level:

- Create/identify and advertise a contact point within (EDIT) institutions that deals with enquiries and communication to the broader user community looking for collection information or access to collections. In parallel, support a European or EDIT contact point that has an overview of collections services, access regulations and the institutional contacts in Europe.
- Develop mechanisms to offer facilities and charge fees for the accommodation of commercial collections
- Build partnerships with the user community at institutional and EDIT level by encouraging scientific staff to participate in user meetings and conferences.
- Assign PR/communication department to target the broader user community. Preferably this should be based on a joint-communication strategy recommended by an umbrella body like i.e CETAF.
- Create optimal conditions for staff to interact with users and user demands (e.g more flexibility to employ temporary staff to match needs, include dealing with users in job grading/description)
- Base institutional priorities on a cost-benefits analysis before engaging in activities to broaden their user base (impact versus effort).

The third user meeting was organised around “the needs of those that use scientific names” and gathered professionals from outside the taxonomic research community to discuss scientific names and name services. Scientific names are one of the core “products” coming from the taxonomic community. These names are used by taxonomists themselves but also by conservation agencies, environmental assessment consultancies, agriculture, food and fishery departments, environmental studies, ecology, public health and veterinary research and many others. EDIT was interested to understand how the professionals working outside taxonomy use scientific names. For what purposes do they use names, how do they like to see name services work, who are the users of their services and what is the impact on their work of having the wrong name. In the report of the workshop will summarise at a detailed level how these users use scientific names and how they would like name services to be improved (Report, M4.2.8b¹). The most pertinent needs they expressed are listed below.

Improvements suggested for electronic name services:

- Synonyms
- Full publication data
- Images
- Distributions
- Descriptions
- Uses of names in legislation
- Indication of data reliability
- Common names

¹ Report was not yet made public when this document (D8) was delivered

Finding names, things that help finding names (according to participants):

- Online databases
- Regularly updated databases
- Consensus on taxonomic practices
- Online databases with facility for feedback and online moderation from users
- New technology to allow better information management / distribution data

In the workshop we asked the participants to come up with suggestions on how finding names can be improved for them (Fig. 2). They listed their suggestions and indicated if these would have a “low impact” or “high impact” on their work. In addition we asked them to give an estimation of the implementation costs.

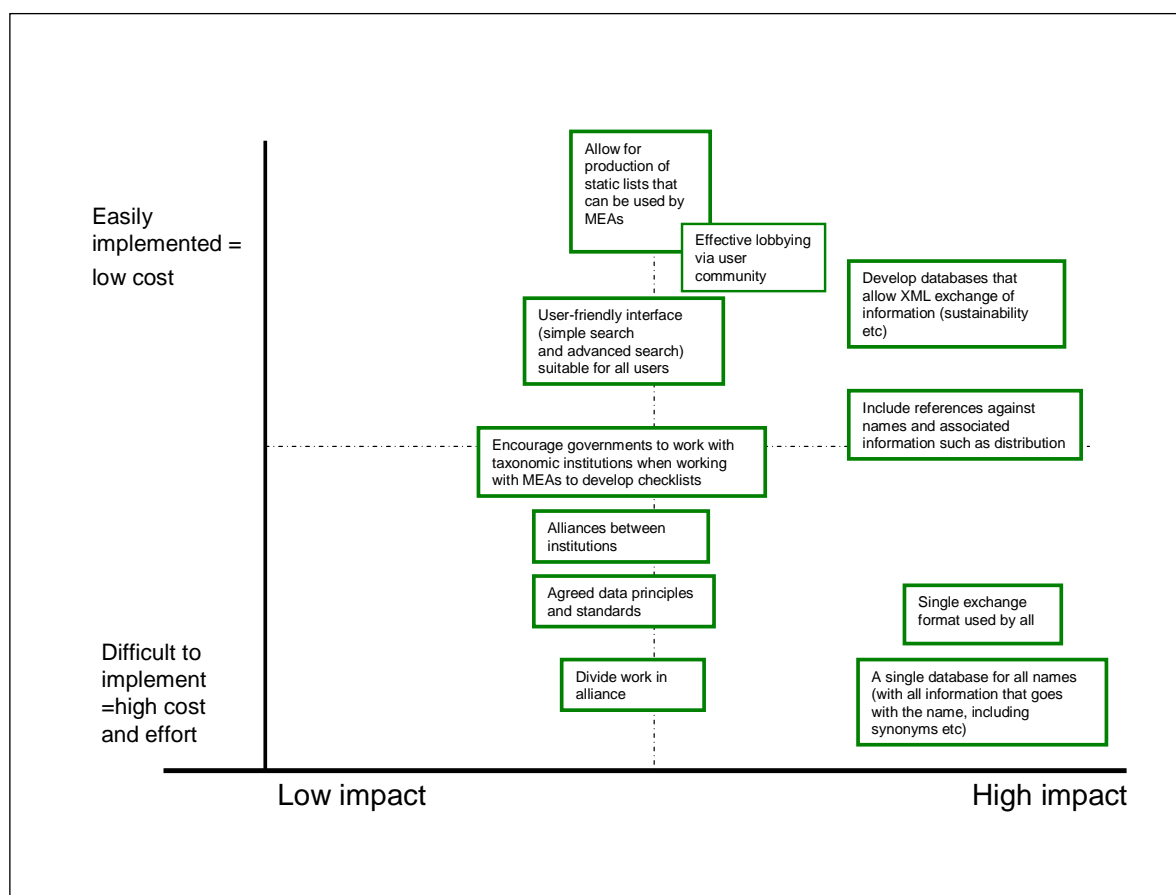


Figure 2. How to improve finding names, suggestions and judgments by participants.

The majority of the participants manage their own name resources (databases) which are adjusted to the needs of their organisations. They feed their resources among others with data “produced” by the taxonomic community. We asked them to tell us how the taxonomists or taxonomic institutions can help them so they can better and easier manage their own lists. They used a similar diagram as above (Fig. 3) and listed their suggestions as having a “low impact” or “high impact” on their work and the estimated implementation costs (low costs or high costs)

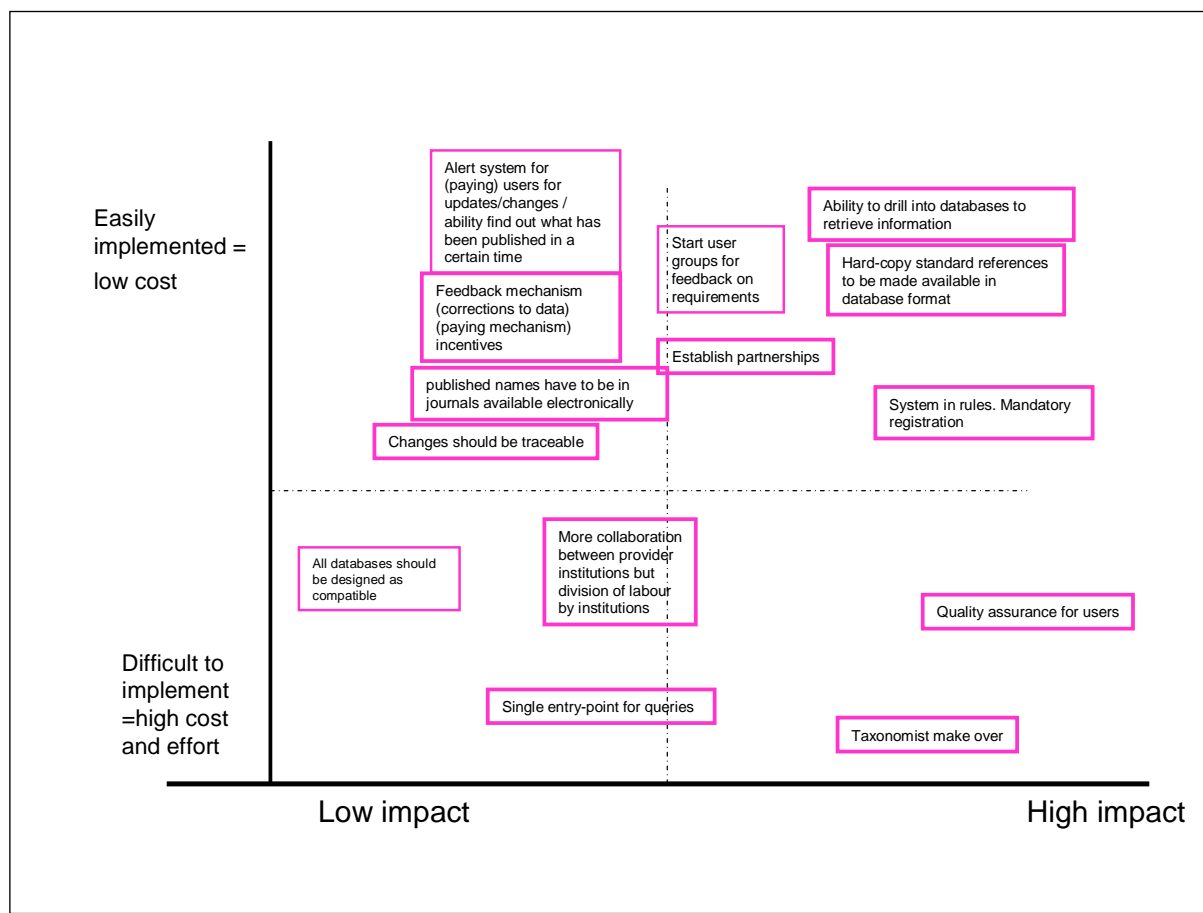


Figure 3. How to improve managing names suggestions and judgments by participants.

The users participating in this workshop expressed a need for an efficient operating taxonomic community, integrated online taxonomic information with sophisticated search tools and feedback options to communicate their future needs.

Conclusions and next steps

In this report we discussed the vision of EDIT on why it is important in the context of the networks' framework to engage with users of taxonomic information, the efforts which are carried out to contribute to this vision and activities that have taken place during the Third JPA.

We stressed that more interaction exists between taxonomic institutions and the broader user community than is often assumed. EDIT acknowledges that these examples are hidden and dispatched. Therefore EDIT aims to make these activities of individual members visible and accessible. The Stakeholder Library and the Case Studies on stakeholder collaborations are just one example of how EDIT facilitates this. The newsletter and EDIT meetings are other platforms where EDIT - stakeholder collaborations can be presented and can serve as inspiration for member institutions. The visibility of existing collaborations and future user activities will be further developed in the Fourth JPA under activity 1.4. In this context EDIT recommends to the member institutions to nurture intrapersonal interactions of its staff with the stakeholder community and to make these collaborations part of their institutional presentation

The second approach applied in the Third JPA involved direct engagement of users and other stakeholders of taxonomy by organising meetings to investigate who they are and what their needs are regarding interaction with the taxonomic research community and the use of

taxonomic information (services). General needs expressed in the three users groups are:

- Have a systematic interaction with the broader stakeholder communities as institutions (currently too dependent on individual staff-stakeholder relations) and listen carefully
- Facilitate this engagement by communication mechanisms (one entrance point) contact details, experts lists etc
- Make visible what is available in institutions in terms of expertise, information, collections.
- Facilitate access to taxonomic information and services (e.g. online databases). Adjust these to different uses
- Create incentives and optimal work conditions for staff to interact with broad user demand (e.g. training)
- Further digitise information, develop sophisticated data storage and search options

In the Fourth JPA EDIT will continue to work on analysing stakeholder needs and will look into mechanisms for the implementation of the recommendations drafted during the Third JPA on direct engagement with stakeholders. The heart of the activities in year four will be the finalisation of the “Dynamics of taxonomy” study with the Rathenau Institute, the Conservation and Taxonomy meeting (M7.1.7), the collection of examples of stakeholder collaborations from EDIT members and making them visible. Finally, recommendations will be developed on stakeholder interaction with the Consortium after the EDIT funding period.

References

C4.1.2BIS Stakeholder report 1 Stakeholder engagement in biodiversity and environmental projects

C4.2.2 Report on case-studies of users-scientists collaborations in EDIT institutions
<http://www.e-taxonomy.eu/node/471>

C4.2.6 Report on social network analysis and bibliometric methodologies as tool to map actors in taxonomy

C2.3.3/C4.2.8 Report on guidelines on how to meet mutual needs of non professional and professional taxonomists

M4.2.8a Report: Broadening the user base of natural history collections (draft). <http://www.e-taxonomy.eu/collectionusers>

M4.2.8b Meeting the needs of those that use scientific names.
<http://www.e-taxonomy.eu/node/443>

ANNEX Photo gallery



Workshop
Professionals and non-professionals as
producers and users of taxonomic
knowledge – synergies, conflicts and the
role of taxonomic societies

An EDIT activity of WP2 and WP4
Hosted by Cabo de Gata – Níjar Natural Park
Rodalquilar, Almería, Spain
April 23 – 24, 2008

Workshop
“Broadening the user base of natural history collections”

An EDIT WP4 and SYNTHESSYS initiative
4 and 5 November, 2008

Hosted by the Royal Belgian
Institute of Natural Sciences,
Brussels



Workshop
Meeting the needs of those that use scientific names.

A workshop organised for professionals from outside the scientific taxonomic community.

Organised by EDIT WP4,
Royal Botanic Gardens - Kew
& Natural History Museum,
London.
February 18-19, 2009

Hosted by Museo Nacional de Ciencias Naturales, Madrid.

