INTERNATIONAL DESIGN CONFERENCE - DESIGN 2004
Dubrovnik, May 18 - 21, 2004.

DESIGN 2004

TOWARDS MORE EFFICIENT ORGANISATION OF DESIGN SOCIETY CONFERENCES

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Keywords: engineering design conference, organisation, information flow control and management

1. Introduction

The Design 2004 conference is the eighth conference in the row since 1981. This paper has emerged from author's experience as organisers of four conferences form "Design" series – Design '98 and Design 2000 as WDK conferences, and Design 2002 and Design 2004 as Design Society conferences. Therefore this paper is not a scientific paper about research, rather it is a report about a long term process, kind of "learning-by-doing" in development of communication means for design research community. Continuous efforts for improving the conference organisation and the overall quality of published papers resulted in constant growth in number of received abstracts and published papers from 1998 to 2004 (see table 1.)

	1998	**2000**	**2002**	**2004**
Received abstracts	165	176	330	432
Accepted abstracts	165	174	297	379
Received full papers	138	143	250	297
Published full papers	127	134	211	230

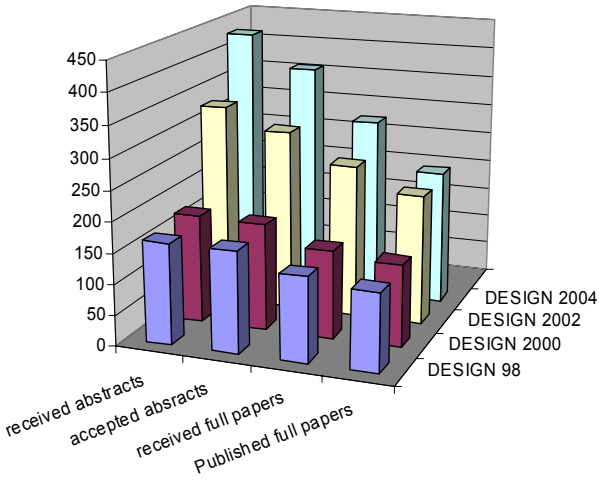

Table 1. The development of "Design" conference series

In those years we have gained some experience that could be useful to share in order to improve the design community collaboration. The basic aim of this paper is to suggest some ideas that could further improve the organisation and quality of conferences organized by the Design Society.
The goal of "Design" conference series development is to establish a "medium sized" conference with selection of high quality papers, having the smoothest and best possible organisation procedure. Such a goal requires a general recognition of such conference from design community and of course a

significant effort in development of the conference in every detail, long term commitment and gradual improvements, adopting technology changes between events.
The organisation of DESIGN conference series after 1996 has been strategically different. From a local conference on technical systems, methods and tools, the profile has been changed to a multidisciplinary design conference aimed to present a research integrating over the disciplines. Emphasising a high quality in organisation and scheduled in between ICED conferences the DESIGN conference has established to be a regular event where design community meets.
The figure 1 schematically depicts the main steps of the conference organisation process, well known in scientific community. Most steps and rules of a particular conference are common to all scientific conferences. However, there are still many open issues that could be improved and many problems that should be solved. With this report we want to initiate the discussion about these issues, initiating broader collaboration of engineering design community in order to get more efficient and more common process of organizing the scientific conferences under the sign of the Design Society. More efficient and more common process should results with cheaper and easily manageable conference (for all the parties involved: conference organisers, reviewers and the conference participants).

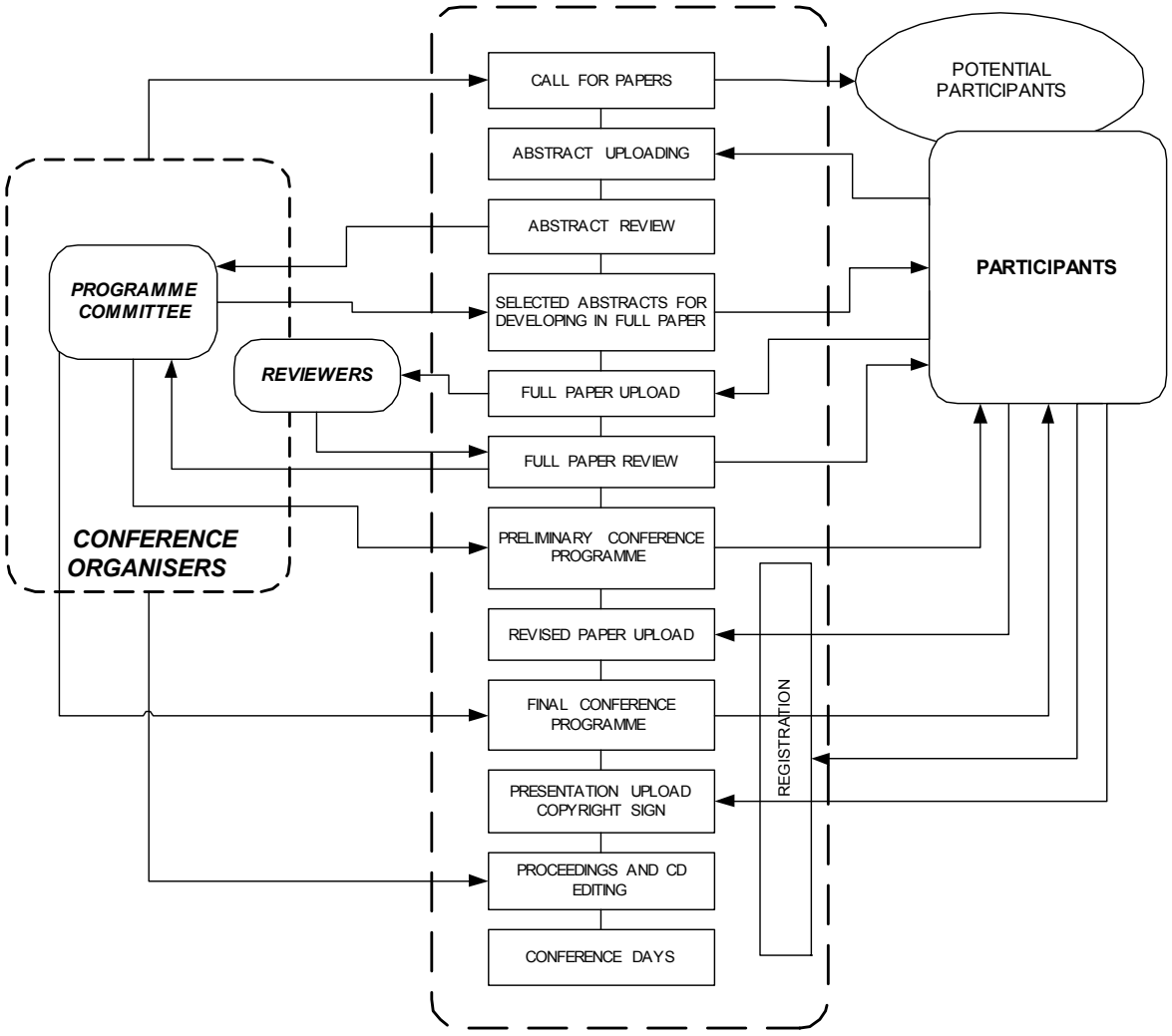

Figure 1. Conference organisation process

In the rest of the paper we will discuss several issues and aspects of the organisation process, emphasising the main problems and bottlenecks together with suggestions for possible improvements. The majority of the organisation job deals with profiling, scheduling and organizing the flows of information, documents and tasks between conference organisers, reviewers and participants, therefore this will be the major and "integrating" issue of the following chapters.

2. Announcing issues – initial concept of programme and scope

According to "Design" conference policy, the task of abstract reviewing is primarily to determine whether the abstract fits the conference scope or not. Therefore, in the process of announcing, it is very important to precisely define the conference scope, which is the demanding task, especially if multidisciplinary topics are included.

The first call for papers according to current practice does not include the description of the conference organisation procedure. A number of misunderstandings could be avoided if an additional document with detailed conference description would be available at the conference announcement. This document should contain a definition of conference scope and policy, detailed explanation of the abstract and full paper review process, the detailed plan (schedule) of the organisation process steps, information flow and full instructions for paper preparation. Such information should also be available on the conference website. This is not the usual practice, but it could be an interesting experiment to see if it will lower the number of misunderstandings.

One of the key problems of dispatching the first call for papers is managing the database of potential participants. New addresses should be found and added, and the existing members' data should be updated before dispatching the call. In the two years cycle between two conferences e-mails and other data of many people changes. The Design Society should establish a means for efficient manipulation of prospective conference participants. Such a system should serve all the Design Society conferences, as well as all the organizers should participate in managing it. It could be very useful for all the organisers if partial databases of each conference would be merged together, and after that, managed together. In such a process, by using an appropriate architecture shown on figure 2, each organiser could maintain its own independent database.

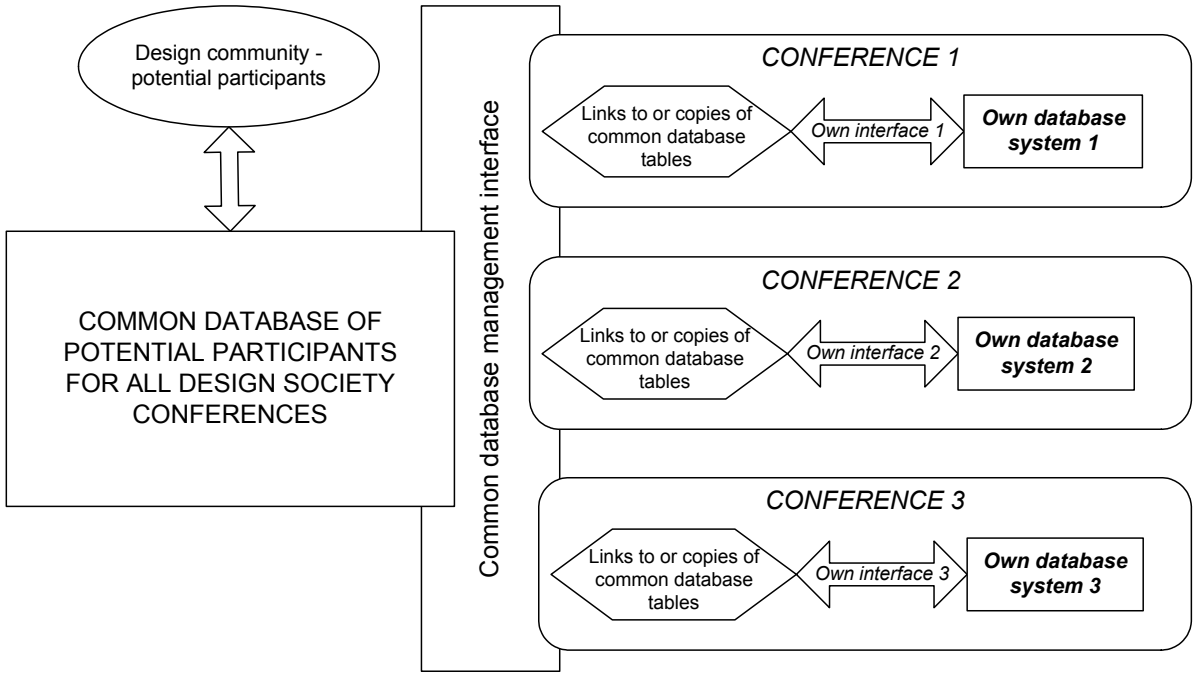

Figure 2. The proposal of common database architecture for Design Society conferences

3. Organizing the information flow

From the participant's point of view, maybe the key aspect of the conference organisation process quality is the smoothness of the information flow. In the whole conference cycle every participant should receive about a dozen of necessary e-mail messages, and should send or upload at least four files and fill a few forms on the website.

Many problems and misunderstandings could be avoided if participants are aware of the information flow procedure and organisation, as well as the time schedule of the information flow.

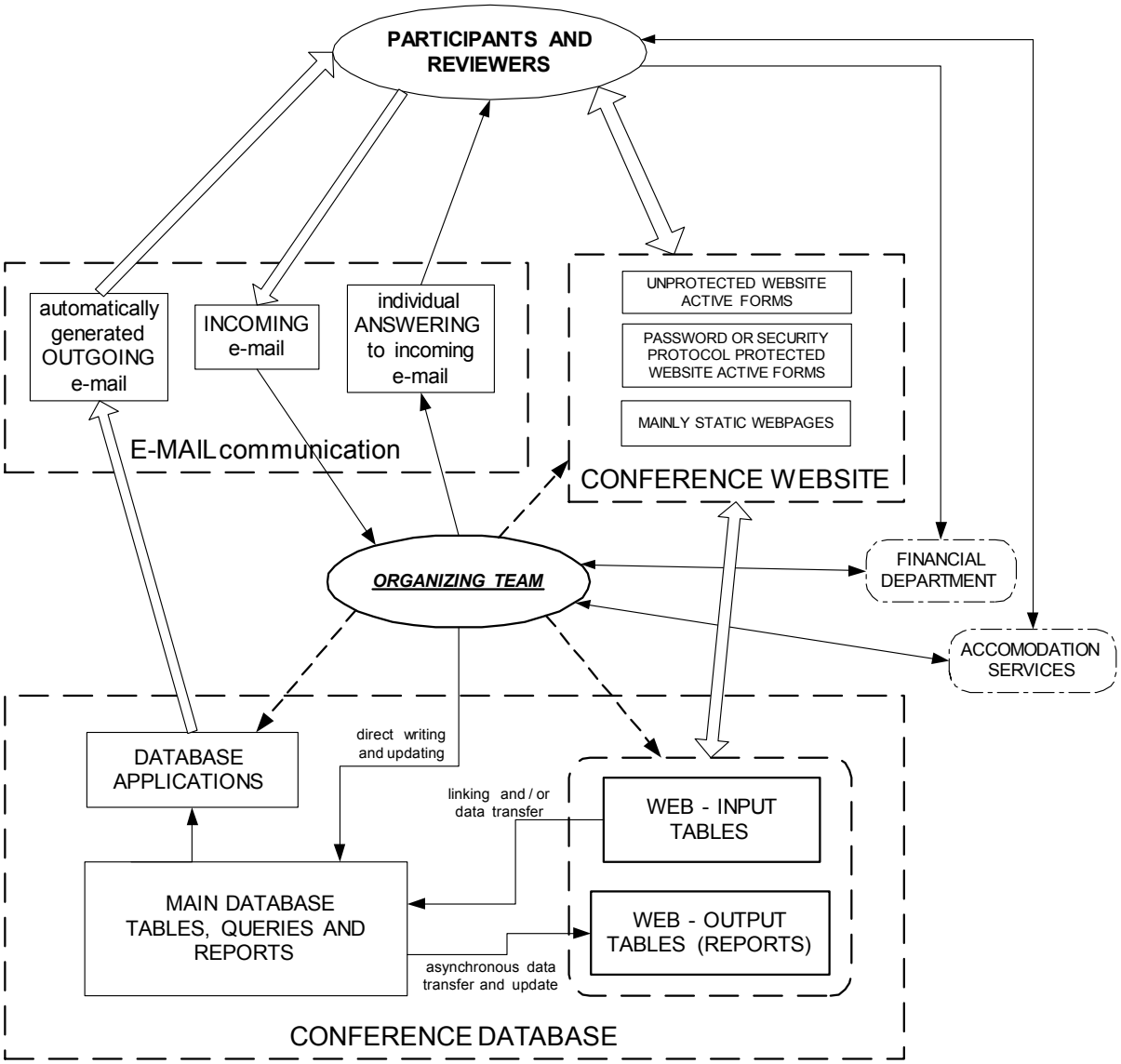

Figure 3. Design 2004 conference information and communication system

There are three main groups that communicate during the period of conference preparation: *participants*, *reviewers*, and the conference *organizing team.* Additional parties include the faculty *financial department* and professional *accommodation services.*

Three main software components of the conference information system may be distinguished:

- *conference database – as a repository of all the conference data and documents;*
- *, conference website – as a main conference interface for all the players involved and*
- *e-mail communication system – a set of applications developed for a bulk mailing.*

The “Design” conference series policy is to use the electronic means for information transfer as much as possible. At Design 2004 conference, the call for papers was the only document sent by surface mail. The website and the e-mail are two main interfaces for participants and reviewers. The direct access to the conference database is enabled only to the members of the organising team. The website is used for uploading the abstracts, full papers and presentations, including registration and accommodation reservation.
This year, for the first time at the “Design” conference, a full paper review subsystem managed by website applications has been used. The system was developed on the Design Society initiative, to improve the review procedure. That was an experiment which could be used for further Design Society conferences.
Some of the conference website functions are password protected –namely full paper upload and the review system. The password system protects the database from unwanted content. Unfortunately many people have lost their password, demanding many additional correspondence. The pages for registration and accommodation reservation are protected by internet security protocols.
For the security and some programming reasons, the tables bounded to website pages and the main database tables are physically separated. All “web input and output tables” are linked in main database. Procedures are developed for the data transfer where it was necessary.
The main function of database applications is to automatically generate “outgoing” e-mail messages to all participants or reviewers that should get the appropriate message in the particular step of the organisation process. Those procedures are based on queries prepared for each step.

Let us point out the events in the information flow procedure (incoming events are indicated as italic):

- sending the call for papers by e-mail and by regular mail
- asking the reviewers if they are willing to participate in the review process of the conference, sending the instructions for the reviewing process
    - *the process of applying for the conference and uploading the abstracts*
- notifying the acceptance or rejection of the abstract by e-mail,
- sending the instructions for formatting and uploading the full paper
    - *the process of uploading the full papers and stand-alone abstracts (password protected)*
- notifying the reviewers that the papers allocated to them papers are available for the review
    - *the process of entering the review results through website*
- notifying the acceptance or rejection of the full paper by e-mail, with links to review forms
    - *uploading of the final paper versions (corrected according to review suggestions)*
    - *registering for the conference, accommodation reservation*
- sending the copyright forms and instructions for all kinds of presentations
    - *uploading of the presentation files, sending signed copyright forms*
- sending invoices and confirmations for the registration fee payment
- notifying the authors about the final conference schedule – timeslot and kind of presentation for each paper
- asking the chairmen if they are available to chair a particular session, sending them the papers belonging to their session

After the phase of notifying the acceptance of abstracts, all outgoing mail messages should be repeated several times in forms of selectively dispatched “reminders”. After establishing the information flow structure remains the problem of scheduling, synchronization of components and management – one person must take the role of the conference information system manager.
The majority of the participants carefully read the instructions, understand them and obey them. About 5-10 percent of participants cause about 90 percent of problems. Additional efforts and resources are required from the organisation team to keep the records of such cases and to take the care for solving the each particular problem. Generally these problems could be divided to delaying, (not obeying the deadlines), misunderstandings of conference process rules and details and some unpredicted special requests.

4. Review and scientific issues

The full paper review process is one of the most demanding phases for all the parties involved – authors, reviewers and organisers. All the papers have to be collected before the deadline, the reviewers usually have short period for doing the reviews, the organisers has to allocate and dispatch the papers, and must constantly remind late authors and late reviewers to do their tasks on time. How to ensure the efficiency of the review process and to provide the authors with reviews of high standard and quality in such situation? The majority of the problems here are being generated by the reviewers who haven't done their work on time, or haven't done it at all. The role and the duties of the reviewer should be more seriously formalized and documented in order to avoid unpleasant situations for both the reviewers and organisers.

The Design Society should initiate the project of the "pool of the reviewers". This should be the web-interfaced database and information exchange system for the reviewers and organisers of the Design Society conferences. Such a database could significantly improve the process of gathering the required number of the reviewers, and allocating the papers to them. Each reviewer should be responsible to maintain its own data including: general personal data, levels of expertise in design science topics, and the availability schedule.

The other important and very subtle issue is establishing and equalizing the paper evaluation criteria. There are many cases where authors got almost the opposite opinions and marks from two different reviewers. A detailed review instructions with definitions of each Design Society conference scope, policy, goals and requirements may be helpful, although we must be aware that a scientific review would forever remain a highly subjective process.

Unification of the formal aspects of the review process for all Design Society conferences could also significantly contribute in solving above mentioned problems. Such a goal requires broader discussions and consensus about many details: paper categorization, review questions, review forms, etc.

The other difficult scientific issue is the definition of topics and subtopics for the conference. This is the area with permanent changes and growth. The organisers and programme committee have to redefine the topics list for every conference. The particular problem occurs when the abstract distribution over topics differ significantly from the expectations.

Considering the usage of the keywords, there are two options:

- organisers provide a list of recommended keywords from which the authors choose the appropriate for their paper
- the authors are free to use any keywords they want to

Both options have advantages and disadvantages – maybe a compromise solution could be found?
A research considering some of the above discussed issues is reported in [Lowe et al., 2003].

5. Automation of conference organisation tasks

E-mail is the primary mean of communication in the conference organisation process. Unfortunately, some problems in this area recently become more and more significant:

- If a message contains hyperlinks there is a big chance that it will be detected as "spam" and rejected by receiver without any feedback information
- Some of people have set the options in e-mail clients (programs) that rejects almost any type of the attachment file (even pdf files could be rejected)
- viruses are permanently dangerous, especially for organisers
- problems with network (Internet) and servers on the receiver's side – sometimes the messages have been undelivered without feedback information

Above mentioned cases generate unpleasant situations both for the participants and conference organisers - the organisers do not have the information which messages have not been delivered, and participants wait for the necessary information, both unaware that the communication has been stopped.

These problems may be partially avoided with following suggestion:

- The organisers should provide a communication plan containing the dates when the participants should receive the communication – if somebody does not receive anything after the scheduled date, he/she should contact the organisers
- After each important message has been sent, this should be recorded in a list permanently available on the conference website

As could be seen from figure 3, the conference website is the main interface for conference participants and reviewers. For "Design 2004", all "input" information and file transfer goes through website. Various forms with control procedures have been developed for these functions. Only the special requests and inquiries are being handled by e-mail. We hope that the prototype web-site software have fulfilled the required functions properly, but in this area remains a lot of space for further automation and improvements. The password system may be a little bit inconvenient for the authors, but unfortunately it is a necessity. “Main” conference database is physically separated from the database tables bounded to website forms. Such approach is chosen because of following reasons:

- the structure of each component could be easily defined and managed according to particular functions and requirements they should fulfil
- different programming languages, database systems and operating systems could be used for each component, using the one that suits better for particular requirements
- it is easier and cheaper to develop the procedures for automation of particular tasks separately for the website environment and for the environment of the relational database

The gap between two components is bridged with “linking” the “website” tables in the “main” database as also by developing special procedures for data transfer.

In the “ideal” situation, on the basis of the current architecture (figure 3), the whole information flow system could be automatised. If all of the information could be sent and provided in (automatically generated) packages, strictly obeying the planned schedule a lot of organisational job could be done more easily and efficiently. Unfortunately, the problems discussed in previous chapters require different approaches, enabling only partial automation of the conference organisation process tasks.

6. Summary of suggestions and conclusion

As already said in the introduction, the basic aim of this paper is to suggest some ideas that could further improve the organisation and quality of conferences organized by the Design Society.
We have tried to emphasise some of the key problems we have experienced so far, and we believe that these are the common problems for all conference organisers. When analyzing several engineering design conferences we may conclude that a certain common level of organisation quality has been reached. It seems that for further improvements of organisational issues, a broader collaboration and coordination of design community is needed. The Design Society should a take a role of coordinator of some projects and documents that could enhance the collaboration of engineering design community in the process of conference organisation.

Let us here summarize the ideas and suggestions from previous chapters:

- The conference scope, paper quality requirements and organisation procedure should be precisely defined in the process of announcing the conference.
- The detailed plan (schedule) of the organisation process steps, and the scheme of the information flow, as well as the detailed explanation of the abstract and full paper review process should be dispatched to the authors of the applied abstracts
- After the phase of accepting the abstracts, authors should receive detailed schedule of all further communications
- The common database with potential participants for all Design Society conferences should be established
- Initiating and developing the “Pool of the reviewers” database, more seriously defining and documenting the role and duties of the reviewers.

- Further developing of the review forms and procedures, the definition of paper categorization, the review criteria
- Authors should be more informed about the review process and criteria
- Improving the review marks system in order to enable statistical analyses of the review results
- Initiate the exchange and use the research results for topics and keywords issues – using that knowledge for defining and maintaining the common list of topics, subtopics and keywords.
- Special attention should be made to getting the feedback and suggestions form participants.
- Establish the collaboration between design society conference organizers to exchange the experiences, data and software solutions.

To conclude, we hope that this report would initiate discussions and collaboration between members of the Design Society as well as other members of the engineering design community. All suggestions and recommendations from the readers of this paper will be welcomed.

Acknowledgements

The authors wish to thank Mogens Myrup Andreasen, Tim McAloone and Herbert Birkhofer for their initiative and the contribution in the development of the new website review system forms and procedures.

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