Since its inception in Barbados in 2002, the Caribbean ICT Stakeholders Virtual Community (CIVIC) has relied mainly on D-Groups to achieve its mission. Since then, CIVIC has evolved and the community has agreed that the existing group's platform does not meet all the needs which are required for an active and vibrant knowledge sharing community. Thus, a working group has been created with the following objectives:

- Develop a needs statement for a technical platform for CIVIC based on Open Source software
- Identify existing options, existing solutions and implementation steps
- Identify management and other technical implications/requirements for sustainability
- Provide an estimation of costs (for development and maintenance) and feasible solution

1. CIVIC Characteristics

CIVIC is comprised of a range of members. There are IT professionals and lobbyists, social entrepreneurs, individuals doing social work, NGO's, researchers and academics, government officials, with varying degrees of computer skills. CIVICers are involved in many different types of activities. Among the things that constitute the life of CIVICers within CIVIC are:

- Information Exchange/Sharing
- Discussion and debates
- Consensus building on issues of interest
- Voting / surveys / polls
- Collaborative document drafting
- Project development and implementation
- Workshops preparation and other events

Also, the CIVIC community has the particular characteristic of being multilingual. The accessibility of information in several languages is then a key principle of the community. In 2003, automatic translation was inserted into email. Under Carisnet, the community has relied on automatic translation outputs in web page, a feature that had mixed results.

While the mailing list allows for easy general communication and is easy to use by practically everybody, it has a number of limitations when it comes to more advanced uses like the ones cited above. Even for discussions, it has some limitations, for example to follow threads, or for time-based discussions since time is dependent on the correct (or incorrect) date settings on each user’s computer\(^1\). Therefore, more suited tools are

\(^1\) Though one can organize his emails by using thread view, filters and folders depending on the features of the mail client, but the problem is that the burden of organization falls on the user’s shoulders and on his
needed in order to be able to fully exploit the potential of this Community and to improve its efficiency.

2. Needs assessment and feature list

Here we list a number of features that the CIVIC community would be interested in. We have not reached a consensus on all features. When a consensus has not been reached, it will be noted.

2.1. General Communications

General communications is the basis of the whole community. Even if we develop and use more advanced tools, we should still keep using the mailing list for general communications. The proposal is to keep the mailing list live while using more advanced tools for more advanced uses, but to make the archives better searchable.

2.2. Resource section

CIVIC already has a resource section, but its access is rather cumbersome for the average user and not very user-friendly. The result is that few really access it. The resource section must be easy to access and, ideally, users should be automatically notified when new materials are posted there. The community will decide whether or not this section will be world-readable or only accessible to members, or a combination of both. The resource section could have links, documents, and images. Ideally, it should be integrated into the clearinghouse (see below).

2.3. Online community web site

When it comes to present CIVIC, the task is difficult because CIVIC doesn’t have an online representation. This conveys the perception of being really virtual and nothing more. Having an online presence with a well fed-up web site gives a sense of... “reality” to people. Thus, a web site that reflects well the liveliness of the community is essential.

2.4. News section

A lot of news, articles and information have been exchanged through the mailing list. Unfortunately, it is now very hard or impossible to retrace them. Newcomers to CIVIC definitely are totally unaware of the vast amount of information and news exchanged since the beginning of the community. It is, incidentally, also impossible to make any comprehensive searches through this ad-hoc database. Thus, the News section is really a must so we can classify, publish, link to and aggregate all news and articles of relevance to CIVIC members. Of course, news syndication and RSS/ATOM feeds are standard with this feature.

2.5. Blog section

level of computer literacy
A lot of CIVIC members are opinion leaders and have a lot to say. This new platform should encourage CIVIC members to publish and voice their concerns on various issues. The blog section would allow CIVIC to have thematic blogs that members could contribute to.

2.6. Discussion forums / mailing lists

Online forums seem to be the tool of choice of some people when it comes to discussions, while others prefer mailing lists. The ideal choice would be to have a tool that allows people to participate in a discussion in the manner that suits them, whether online, or through email. The tool should allow to create thematic sections with their own web space (docs, members, agenda, calendar…).

2.7. Wiki

Some people prefer to use Wikis to work on documents collaboratively and build consensus. Others prefer to use the old document circulation process with “track changes” option. Maybe the wiki tool should be there for those who like to use it. No consensus has been reached for this feature.

2.8. Extensible user profiles

Most systems come with a way to manage users and membership in general. Some also let you define other characteristics and data to store for each user/member. Extensible user profiles allow tailoring the membership system to the actual CIVIC membership and user characteristics.

2.9. Polls

The possibility to create and manage simple polls.

2.10. Robust Event Calendar and management

The event calendar and management must allow members, at least, to publish events into a public calendar. Upcoming events will then be highlighted on the web site. Ideally, other features are also of interest, like:

- The ability to manage online registration of users in particular events,
- The ability to receive reminders for upcoming events by email

2.11. Voting mechanism

In order to improve voting in CIVIC, it is important to use a better suited tool. The tool should allow people to vote on particular matters by sending or replying to pre-constructed emails, or by replying online. The system should allow implementing the
whole voting mechanism, from the deposit of candidates, seconding candidates and validating actual candidates to the voting itself.

For votes on choices, referendum and other simple matters, the poll mechanism can be used to receive and count votes. The system will allow managing deadlines and being transparent enough for the Community.

2.12. Integration of the clearinghouse

This feature is to find a way to integrate the clearinghouse into the Community Web site. This can imply that the clearinghouse be converted into an add-on module that can be plugged into the chosen platform, or to go the other way: taking an existing module and implementing the clearinghouse by importing the clearinghouse data.

2.13. Content syndication and aggregation (RSS/ATOM)

RSS and ATOM feeds should be standard in the system to allow content syndication and aggregation from and to the site.

2.14. Workflow engine

The workflow engine should allow implementing the governance and participation rules adopted by the CIVIC community. In the publishing of an article, for example, the process might involve several steps with posting, editing/revising, approval and publishing per se.

2.15. Multi-level user privileges

This feature commands the ability to have several levels of users with different responsibilities and privileges. This will allow having a more structured Community and a more balanced workload.

3. Choice of platform

3.1. Methodology

Based on the list of features and requirements for the CIVIC Community, we managed to research the list of Open Source Content Management Systems (CMS) that could fulfill the needs and feature requirements. The idea is to choose the one that is closer to what we need and to adapt it to our requirements.

In order to come out with a list of CMSes to compare, we had a brainstorming session where all members of the group would tell which CMS they know or have heard about. Since we do not have time to test each one of them, we relied on comparison tools to have an idea of the suitability of each product.
The CMSes mentioned are:

- Drupal
- eZpublish
- Joomla!
- Mambo
- Plone
- Socialtext
- TYPO3
- Xoops

We also mentioned a platform used by DiploFoundation, but it seems that this platform is custom built and is not something you find in the market.

In order to compare those CMSes, we used the comparison matrix found at [www.cmsmatrix.org](http://www.cmsmatrix.org). This matrix uses the following criterias for the comparison:

- System requirements
- Security
- Support
- Ease of use
- Performance
- Management
- Interoperability
- Flexibility (of which multilingual capability)
- Built-in applications
- Commerce

We could find all the CMSes mentioned listed on the web site, except for Socialtext, which we could not compare, therefore. We tried to weigh the criterias by classifying them in terms of priority based on the needs of CIVIC. Here is the classification, although we couldn’t have everyone’s answer:

1. Flexibility
2. Interoperability
3. Ease of use
4. Support
5. Management
6. Security
7. Performance
8. System Requirements
9. Built-in applications
10. Commerce
Thus, the more a tool satisfies the top ranked criterias, the better the tool is suited for CIVIC.

3.2. Comparison results

One thing to note is that there is no one tool superior than the other, when the tool has reached its maturity. Some tools are better in certain aspects than others. For example, for publishing, typo3, Xoops, EZPublish have a comprehensive set of tools, while Mambo, Joomla and Drupal are more overall and multi-purpose CMS tools. Joomla and Drupal are better for commerce, while Joomla is better for visual presentation and Drupal is more flexible/configurable at the expense of ease of implementation.

The two most “complete” systems seem to be Drupal and Typo3, and our choice finally went to Drupal for the following reasons:

• Drupal seems to be better known than Typo3. Therefore, we can find more support from the user community,
• A few members, particularly in the group, already have experience with Drupal in a production environment. This is important, because we know that we will be able to use their contribution for maintaining and deploying the platform, even if we hire a developer for that

Finally, besides the reputation of being developer-centric, a recent usability report made by APC and Web Networks show that most of the more common administration tasks in Drupal are, in fact, usable, even though there are debates on whether the bar has been put high enough for the criterias of the study.

The report can be accessed at: http://web.net/DrupalUsabilityReport.pdf

4. Implementation steps

The stock installation of Drupal comes with core modules that offer a number of features and functionalities out of the box. Other required features can be added by installing other modules (free add-on). Drupal has some interesting characteristics that are important for CIVIC:

• Granular User Privileges: Drupal has a detailed system for creating several levels of users with different privileges and responsibilities. It allows creating roles to which you assign granular permissions, not broad permissions.
• Multilingual capability: Not only we can display the site on various languages (the interface) based on each user preference, there is also the possibility to auto-translate content at the click of a button. This feature is based on a free add-on.
• Extensible user profiles: This is the possibility to extend the default system of user profiles by adding other parameters.
• Complex taxonomy system: The taxonomy system in Drupal allows classifying content published on the site into different categories and sub-categories. Thus,
we have the possibility to create categories or subjects with hierarchies to “tag” all the content published on the site. This allows also for comprehensive searches.

**4.1 Main implementation steps**

However, this flexibility comes at a price: in order to have a really functional, well thought and lean installation of Drupal, there is some work to do, including, among others:

- **Main decisions**
  - What will be private, what will be public
  - Member subscription rules (needs approval or not?)
  - Comments on published content (can be anonymous or not? needs membership to see other users’ comments or not?)
  - Participation in polls, forums (must be member or not?)

- **Determining different user roles for the Community, with different responsibilities**

- **Creating a taxonomy of subjects for the Community,**

- **Determining the main architecture and navigation system of the site** (Carlos Miranda Lévy has made some interesting work in this field at [http://civic.socinfo.com](http://civic.socinfo.com) that we could take and improve). For example will the navigation be tools/feature-oriented or subject-oriented?

- **Choosing a hosting plan**

**4.2. Further implementation steps**

Two requirements need further implementation steps: the integration of the clearinghouse and the systematic translation of messages.

**The clearinghouse**

Studying the integration of the clearinghouse into the Drupal system needs further research. The idea is to determine whether:

- it is feasible to turn the clearinghouse into a Drupal module,
- it is feasible to use existing Drupal modules to reproduce the clearinghouse,
- it is feasible to find a kind of light integration with just an interface on the Drupal site that links to the clearinghouse itself (the interface, for example, could list the recent addons/changes to the clearinghouse)

**The systematic translation of messages**

Translation services are done through a FUNREDES service based on Babelfish ([http://babelfish.altavista.com](http://babelfish.altavista.com)) and it will continue until the end of 2006. We tried to see
how this could be continued and improved after. We received the following answers from FUNREDES itself (edited for typo errors):

“Many would prefer the inline translation as with the CARDICIS mailing list. This is only possible if we open one (if all languages are merged) or several (one per language) parallel lists for outputs. Those lists will not serve for contributing but for distribution. Those lists could be non moderated Dgroups lists. People would remain subscribed to the actual list and must contribute from there but will receive from the parallel list if they wish translation.

Funredes is maintaining the service in a per cost basis and it is slowly growing functionality depending on demand (each new development become available for all) but not on planned investment since Funredes at this time is not in possibility to invest.

If the service will be renewed for another year it will cost an additional 1000 US$ per year as it is. If the other functionality is required it will cost 500 US$ additional for a single list or 1000 US$ for 3 lists (one per language).”

In résumé, FUNREDES proposal is to have one main list to contribute and three one-way parallel lists to receive only translated messages. But, we need to have the capacity of autotranslations with output integrated/concatenated in the mails for the main list and all sub-groups.

5. Organization and estimated costs

5.1. User roles

In order to animate the community, there needs to be a system of responsibilities among the members of the Community. These responsibilities can be implemented by creating different user roles that CIVIC members can be a member of. The table below provides some suggestions for the user roles, along with their description. There is a hierarchy of roles, a role inheriting the privileges of the role above, augmented with additional privileges specific to its responsibilities.

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anonymous</td>
<td>Anonymous visitor of the web site. Has almost no privileges; has access to public content of the web site</td>
</tr>
<tr>
<td>Authenticated User</td>
<td>A CIVIC member, having an account on the web site, but has no administrative responsibilities. Can participate in polls, voting, forums, etc. and any other features available to members</td>
</tr>
<tr>
<td>Webmaster</td>
<td>The webmaster maintains the overall site, seeks news and information relevant to the community, helps maintain the event calendar</td>
</tr>
<tr>
<td>Moderator</td>
<td>The moderator can publish without approval, and has the duty of approving content published by Content Contributors and the webmaster</td>
</tr>
<tr>
<td>Thematic Facilitator</td>
<td>Is responsible for a specific section/thematic of the site. Animates the section and encourage publication of information relevant to the thematic</td>
</tr>
<tr>
<td>Administrator</td>
<td>Manages subscriptions, user profiles and other site-wide parameters</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sysadmin</td>
<td>The superuser of the system</td>
</tr>
</tbody>
</table>

In this setup, all roles are voluntary, except for the webmaster(s) and the thematic facilitator(s) which should be people with a contractual agreement.

5.2. Estimated costs

For the operation of the web site, we came out with the following figures for a year:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web site development</td>
<td>$3000 (one-time fee)</td>
</tr>
<tr>
<td>Hosting fees</td>
<td>$600 ($50 x 12)</td>
</tr>
<tr>
<td>Webmaster</td>
<td>$2400 ($200 x 12)</td>
</tr>
<tr>
<td>Thematic facilitator</td>
<td>$6000 ($500 x 12)</td>
</tr>
<tr>
<td>Translation services</td>
<td>$2000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$11000 per year ($14000 the first year)</strong></td>
</tr>
</tbody>
</table>

6. Final recommendations

The final recommendations of the group are to hire a web developer to implement and deploy in the details the new CIVIC platform. This developer would help create the organizational structure of the web site, the taxonomy vocabularies and deploy the system per se. The developer would also be responsible for the analysis of the integration of the clearinghouse and its actual implementation.