

FINAL REPORT

Ad-Hoc Committee on Electronic Services and Camel

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Peter Deutsch, Michael Doob, Ian Goulden, David Rodgers, Tom Salisbury

EXECUTIVE SUMMARY

The CMS needs a strong web presence, supervised by one overall Director. Camel provides that presence, and should act as the "web site of the CMS". The Electronic Services Committee should be reconstituted, both in terms of its function and its membership. The delegates from other CMS committees, SSC and CAIMS should be removed from the ESC. The new ESC should be asked to develop (1) a detailed, clear statement of functions and priorities for Camel; (2) detailed, clear administrative structures for ongoing decision-making about Camel; (3) a job description for the Camel Director. The responsibility for fund-raising should not be part of the ESC mandate, but should be carried out under the direction of the Executive Director, who should develop a business plan for Camel.

1. The CMS needs a strong web presence.

A successful, professionally run web site is necessary to the present and future well-being of the CMS. When Camel was set up, the CMS was perhaps ahead of its time, and it was not clear to all that the internet would be so necessary to carrying on business in 1999; what was speculative in 1994 is now essential. Electronic services will only become more important in the future, though the precise form of these is hard to predict. The present generation of students expects to function fully via the web, and will view the CMS in this light. For the foreseeable future, on-line publishing will become rapidly more complex and sophisticated, and especially given the importance of publications in the CMS mission, it is essential that these are well supported.

2. The web site should serve the CMS in a dedicated manner.

The web site should be fully integrated with the activities of the CMS, and those running it should be fully accountable to the CMS. From the point of view of the CMS, Camel should act as the "web site of the CMS", with services to the broader mathematical sciences community consistent with the mandate of the CMS to this community. Camel was created with CANARIE support, as a Canadian Mathematics server with CMS as one of the sponsors. The SSC and CAIMS have shown no interest in participating in Camel. The CMS should move on with Camel as a dedicated web site.

In the remainder of the report, we will use "Camel" to mean the web site of the CMS.

3. Camel needs one overall director.

Camel should function under a single administrative umbrella, unified with a Director, and a CMS reporting structure that provides oversight and accountability. The web site must maintain its integrity, and not be subdivided administratively; for example, hardware and software can be expected to change significantly, and especially on the small scale of the CMS, we cannot afford the inefficiencies of multiple, independent sites (e.g., development, production). However, there can be the flexibility, under this umbrella, to have Camel staff and contributors at a number of different physical locations.

4. In broad terms, clear policies about the functions and priorities of Camel should be adopted by the CMS.

It is the Committee's understanding that, through this report and their discussion of it, the Exec/Board is fully in the position, ON THIS SINGLE OCCASION, of directing what the web site should be and how it should operate, in as much detail as they wish, or to delegate any particular aspects of this, say, to the ESC. However, the Exec/Board, ON AN ONGOING basis, would only know/monitor/discuss the general directions of the CMS web site. Thus, in this report, we recommend that ESC be charged with developing a detailed, clear statement of functions and priorities for Camel (see #6(b) below) that includes any specific items that the Exec/Board specifies.

We suggest that at a minimum, these specific items are to support the work of the Executive office, maintain membership lists, announce meetings, post policies, inform the membership; to aid in fund-raising for the CMS; to provide the vehicle for the electronic publications of the CMS; to support the educational and research activities of the CMS; to act as outreach to the school system, and to publicize the role of the CMS in Canada. We also suggest, as a priority, that all web pages must be maintained on an ongoing basis. The ESC should also review the suggestions made in response to the survey of Camel use, to be found as Attachment 2, below.

A mandate in web research and development beyond the electronic publications of the CMS has been part of Camel (at least informally). This should be maintained, and formally be part of the mandate in the following way: It is essential to keep up to date on technological developments that impact the CMS. For example, at present such developments include MathML, relocatable links, electronic publishing, e-commerce, as well as the activities of other societies and publishers. Part of the job description of the Camel Director (see #6(a) below) must be to ensure that such developments are tracked, either by the Director or designated staff. The budget must provide time for this crucial, somewhat open-ended function. It must also provide for the means to implement new developments that arise from this, either by the Director, designated Camel staff, or others specifically hired for a project.

5. In broad terms, clear policies about the funding and budget of Camel should be adopted.

As in #4 above, we suggest that the Exec/Board discuss this item now, with implementation and ongoing maintenance described in #6(c) below.

Camel is a significant budget item for the CMS. Starting in the 2000 budget year, all subscriptions to the CMS' scholarly journals CJM and CMB include an electronic subscription, and the revenue attribution from this in the proposed 2000 budget almost balances the budgeted costs of Camel. Nevertheless, Camel is a potentially attractive fund-raising vehicle, and fund-raising through Camel should be actively pursued. Payment of memberships, registration fees, subscriptions via Camel should be supported by the Camel Office. Camel needs a business plan; Attachment 1 is a Discussion Paper, entitled "Revenue Opportunities for Camel", that should be an aid to developing a business plan.

The hardware costs of the web site on an ongoing basis will be minor compared to personnel costs. Given the rapid changes in technology, even the one year budget cycle of the CMS may be too long a time period for accurate budget forecasts in detail, but certainly an amount of approximately \$5000 per year, based on a two year replacement cycle, should be sufficient for hardware needs.

The apportionment of Camel's budget 100% to the Publications Division is not a realistic reflection of its present function within the CMS, though it is a pragmatic reflection of the budgeting realities of the CMS. If feasible, the Camel budget should be changed over time to include some apportionment for the General Division (to which most of the Executive Office expenses are allocated, for example) and possibly even the Education and Research Divisions.

6. In specific terms, clear administrative structures for ongoing decision-making about Camel and its funding should be adopted.

There are many activities of the CMS that are involved in the web site now, and they will only grow in the future. It is very difficult to balance competing needs by different parts of the CMS concerning their use of Camel resources. In many ways this is a microcosm of the competition for resources within the CMS as a whole at budget time. Thus, it is important that governance and accountability for Camel be clearly specified, and as open as possible. We suggest the following structure:

- a) The position of Camel Director, as discussed in #3 above, should be maintained, to provide day-to-day supervision and decision-making for this vital CMS function.

The present (and founding) Camel Director's term ends at the end of 2000. At some point, the CMS will have to find someone else to occupy this key position, so some discussion is appropriate about the possible profile that such a person might have. The terms are for three years at present, which seems appropriate, with the understanding that normally the CMS would expect to make a reappointment for a subsequent term (or terms). Three year terms provide flexibility, both for the CMS and the Director, and "normal" reappointment, given the learning curve, provides some of the stability that is needed. The present Director is technically very knowledgeable, with active research in electronic publishing. It seems difficult to imagine that the CMS could find a replacement with such a profile for this unpaid

position (currently highly subsidized by CECM), and the Camel budget would need to be increased substantially if the CMS were to hire a Director with such a profile, at market value. However, it is certainly possible for a Mathematics faculty member with a strong interest in web technology to serve as Camel Director. The Director could then be supported by a full-time (or large fraction thereof) staff member, together with the ESC, to provide technical expertise.

- b) The Electronic Services Committee (ESC) should be maintained, but reconstituted both in terms of its function and its membership. It should be responsible for Camel's operations and its functions and priorities within the CMS. (One of the first jobs for the modified ESC as described below would be to finalize and maintain on an on-going basis the list of functions and priorities discussed in #4 above.) The Camel Director should report to the ESC, for example, as the TeX Editor reports to the Publications Committee. (Another job for the modified ESC would be to finalize and maintain a job description for the Camel Director.)

It seems essential that the ESC be an effective decision-making body, as well as a forum for discussion, and the membership should be changed from this point of view. Firstly, the CAIMS and SSC delegates should be removed from the membership list, as discussed in #2 above. Secondly, the five delegates from other CMS Committees should be removed from the membership list. Thirdly, the Executive Director should be added as a consultant to the Committee. This more compact group should then act much like a "Camel Advisory Board", making a scholarly journal comparison.

Liaison between Camel operations and the other functional areas of the CMS, such as Research and Education, should be a key responsibility of the ESC, and the Committee should determine a reasonable means of accomplishing this, and the two-way communications with other committees that this might involve. It would be best if much of this communication could come between the two CMS meetings per year, rather than at them alone.

- c) The Executive Director should be responsible for the business plan for Camel, initially developed with the aid of Attachment 1, as discussed in #5 above. This will require interaction with the Fund Raising Committee, Finance Committee, Publications Committee, as well as the ESC and Camel Director. The Executive Director (also presently the Development Officer), is particularly well placed to carry this out, having connections with all of these Committees already. It should also help strengthen the relationship between the Camel Director and Executive Director; since the web site is essential to the Executive Office, so the relationship between the Executive Office and the Camel staff must be strong, clear and smooth; and thus the relationship between the Executive Director and the Camel Director must be smooth. The responsibility for fund-raising as described in Attachment 1 should be the responsibility of the Development Officer and the Fund Raising Committee.

ATTACHMENT 1

Revenue Opportunities for Camel

Camel is an aggregation of scholarly, professional, and administrative applications of interest to mathematicians, teachers, and students. Resources and services may be classified as developmental/experimental (1), production (2), or archival (3) in nature. Each type of application contributes a component of added-value benefit to CMS members. Typically, applications will cycle through stages and unsuccessful/unused/high-maintenance applications are candidates for pruning in the face of competing priorities.

The next evolutionary step is to forge for Camel applications a more natural progression from experimental to production to archival status. It implies a need for a greater degree of executive oversight and a full project lifecycle process for allocating and tracking Camel resources. It requires a delicate balance (4) be struck between the "can do" attitude of Camel staff and the requirements for running a successful CMS business operation.

Scholarly societies like the CMS typically generate 75% or more of their revenues from publishing related activities. Publishers everywhere are under heavy pressure to develop electronic products and services.

For these reasons, we advocate moving Camel forward based on three working assumptions:

- a business model based on producing multiple revenue streams, over and above the portion attributed from electronic subscriptions, increasing to 67% of Camel costs over a three year period
- a full project lifecycle based on an allocation scheme for effort, for example: 40% new development, 40% maintenance, and 20% unanticipated activity
- a tiered prioritized list of priced (e.g., 1 week, 3 weeks, two months effort) projects that reflect milestones and schedule for three classes of work: active work plan, back-burner, and under consideration categories

in an organizational environment that requires approval of the Electronic Services Committee.

Background

A review of Camel financials with the CMS Treasurer revealed that out-of-pocket expenses for current operations total \$87K for roughly 3.25 FTE effort. Approximately \$73K is allocated to staff salaries and benefits. [It should be noted that the Director contributes 0.25-0.33 FTE under an arrangement that costs CMS just \$8K (\$5K released time contribution to salary/benefits and \$3K in travel expense).] SFU contributes space and facilities for the Camel West operation as well as a hidden subsidy for the Director. Interviews with the Camel Director established that hardware requirements for Camel should be budgeted at \$5K/year with the explicit expectation of a rotating, 2-year replacement cycle for computer systems, with highest capacity equipment located in the production environment. [The approximately \$120K of hardware purchased under the CANARIE grant can be replaced for \$20K with current price/performance ratios.]

An adjusted budget of \$92K + 5K contingency is recommended. [It is anticipated that the contingency for the first year would be absorbed replacing one of the two existing server systems.]

Revenue Sources

This section identifies revenue sources that can support Camel activities and move the program forward to a 67% level of Camel costs in a 3-year timeframe.

The remaining 33% of costs explicitly recognizes the following components (N.B. The proposed CMS budget for 2000 attributes more than 80% of Camel costs as a revenue contribution from Camel due to the first of these components alone):

- revenue contribution from electronic version of the Journal and other scholarly publications.
- services provided or used by the Ottawa office (membership, meetings, general information).
- CMS activities in support of students.
- CMS visibility to research mathematicians.
- CMS visibility to mathematics teachers.

At the recommended rate of expenditure, the program would need to generate \$64K/year by the end of the three years.

A 3-tier approach is recommended:

Tier 1 (Active Workplan)

- on-line ordering capability for CMS materials (included in CMS subsidy)
- full on-line membership (new members, renewals) capability (included in CMS subsidy)
- employment register free to readers with fees for employers: (1-, 2- 3-month rates. Discounted rates for CMS institutional members, fair market rate to others)
- affiliate agreements with 4-8 selected portal sites (e.g., Amazon, Borders, Barnes and Noble) that involve creation of special interest pages for ordering with a commission paid on sales generated by Camel transactions
- affiliate agreements with selected peer organizations (e.g., Springer-Verlag, CISTI, AMS, MAA) with a commission paid on sales generated by Camel transactions

- sharing excess server capacity with other organizations
- use of math.ca net address (\$500/year)
- stewardship based corporate/publisher sponsorships (\$1,000, \$2,500)
- sustaining corporate sponsorships (\$5,000, \$10,000) for publishers and software developers
- sponsorship of specific on-line CMS contests and competitions (\$500- \$10,000)

Tier 2 (Back Burner)

- affiliate agreements with a broader collections of commercial vendors after research (e.g., rental cars, travel) and policy review and approval
- hosting other organizations (negotiated)
- expediter for document delivery for items that travel through Canadian Customs

Tier 3 (Under Consideration)

- affinity credit/debit cards (e.g, Visa, credit union)
- textbook credit program (logo in book and small commission for each copy sold) — raises issue of imprimatur
- contracted development (\$50-75/hour)

Implementation

The goal should be certainty over uncertainty. It should provide CMS members and leaders with a clear picture of what to expect and when to expect it. It is important to work off a project list that has organizational approval and mechanisms for resolving issues related to priorities, status, and schedule:

- Disengage business from the technical role of Camel staff
- Make Camel a target program for the CMS fund-raising initiative just planned or underway
- Someone must be specifically responsible for setting up and implementing the Camel program — leaving it to a collective is a recipe for failure

- Don't invest much up front in any one idea but put in place multiple, relatively small and low-risk programs, each of which involves little if any human intervention
- Match the complexity of the solution to the complexity of the problem statement in its simplest form (You can spot losers but can't predict winners.)

The Electronic Services Committee, or a working sub-committee composed of its members, should review and endorse the Camel work plan in an action taken by the whole committee. The current work plan should be modified to incorporate those components in Tier 1 (and possibly some Tier 2 activities) that are recommended by the review committee and approved by the Executive Committee. Other activities endorsed by the Executive Committee should be factored into the version of the work plan that comes to the Electronic Services Committee at its December meeting. Revised work plans should be reviewed by the Finance and Executive Committees. In this way, the work of Camel staff will have the full support of the CMS organization.

Endnotes

- (1) Generating Journal pages with MathML is an example of a developmental/experimental application.
- (2) Generating Journal pages in TeX, DVI, or PDF format is an example of a stable production application.
- (3) Generating Journal pages from issues that precede the TeX system in image format is an example of an archival application
- (4) It is important to define an agile communication mechanism (e.g. e-mail, conferencing) to facilitate Camel decision making. It is not realistic for ALL Camel decisions to be made in 6-month intervals at CMS membership meetings.

ATTACHMENT 2

Camel Survey

The following questionnaire was sent to all members of the cmath-l mailing list in June of 1999, with the request that department chairs forward it to members of their departments.

The Canadian Mathematical Society is in the process of reviewing its electronic services, including the effectiveness of its Camel website (<http://math.ca/>). In connection with this review, responses to the following brief questionnaire would be greatly appreciated.

Please send responses to Tom Salisbury, at salt@nexus.yorku.ca

1. Have you ever used the Camel (the CMS's website). If so, which services or features have you used, and how frequently?
 2. How useful do you find the information currently available on Camel?
 3. How could Camel be improved?
 4. What new services should the CMS explore adding to Camel?
 5. Can you suggest ways Camel could generate revenue to pay for such services? More generally, what methods of generating revenue do you see as appropriate for Camel?
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Only 24 responses were received. Comments are reproduced below, in some cases with annotations by the committee.

***** Question 1 *****

11 people said they'd never used Camel. Of these, it is not clear how many had heard of Camel before the survey. 2 specifically said that they had not.
13 people had used Camel. Of these 2 had abandoned it, while 4 used it frequently

Usage cited included:

- member addresses / e-mail addresses (3)
- placing job postings (2)
- reading job postings (1)
- committee information (1)
- CMS notes (1)
- Crux (1)
- education links (1)
- meeting information (1)

The 2 individuals who abandoned Camel gave their reasons as follows:

"I don't use Camel. Several times I tried, but user id and password are required. I tried to find out what these are from CMS. The numbers they gave me don't seem to work. I can't get in. I always look up addresses of Canadian mathematicians on the AMS website."

"I have tried to use camel twice, I think, to find out some mundane information, both with unsatisfactory results. Once I wanted to know where the future meetings of the CMS were to be held ... I could not get information other than the next meeting in preparation and left frustrated. Another time I actually tried to find out committee membership from the past ... Again I failed."

***** Question 2 *****

"Our department has used Camel to advertise several positions and this worked very well: the advertisement was circulated promptly and the response was very good."

"Actually, the more I explore Camel, the more I think it is a fabulous resource. I often have trouble finding specific information. I do best (with all web sites) on those rare occasions when my mind has stopped functioning and I just click, click, click, until something of interest appears. This happens regularly with Camel. It would be great if every mathematician in the country was always just a click away from camel. There is some very good stuff there. I wonder how many people know?"

"For my CMS administrative work I find it very useful."

"Reasonable, but I can live without it."

"Very useful"

"Information is useful and very important."

"It is a good site and should be maintained. "

"There is a lot of good information. If I were not getting a lot of input on the CMS from other sources, I would probably use camel more."

"I looked at it today but I don't think it would be that useful to me in its present form"

Note: this individual went on to identify himself as a Statistician.

"It's not terribly useful for my needs. For example, I lost my password to access my Camel account shortly after I received it. I am not sure what, if anything, I am missing by not accessing my Camel account. Life goes on well without it." Note: this individual did use the public pages.

"Have tried to find members, but now keep hardcopy handy as I cannot keep track of a password!"

***** Question 3 *****

"Well one thing they could do is remove the password protection. As it is I can never remember my password, so I use only the free services ... E-math manages to survive without this."

"More info about math publishing on the web and what CMS is doing to promote this. Repairing some of the links where pages cannot be displayed."

"Get a new name. I thought I was being asked to give an opinion on cigarettes" Note: perhaps the camel home page should remind readers of the acronym upon which Camel is based.

"Make it easy to put up papers on Camel from any platform. It was very difficult the last time I tried (using Word with Equation Editor on a Mac)" Note: In fact, the preprint server was not a success, and has been discontinued.

"I wish Camel looked like a CMS operation and not conversely. I have links from my own web site to the AMS, MAA (lots of other places) and currently, a link to Camel which, frankly, I only use to get to the CMS. What precisely is the URL of the CMS???? I like the appearance of the Camel page, by the way, but the CMS is BORING - General Information, Activities, Membership, Camel Accounts. Looks terrible."

"I was trying to find KaBoL the other day, having heard many people brag about this. How to find? I would have looked under education, but education is not listed as a CMS "Activity". I hit the search button at the bottom of the CMS page, typed in "kabol" and was directed to a link which does not work. This sort of thing turns people off in a big way. I clicked on /CMS/Rendezvous/index2.html where another request for a password came forth. I presume (but don't know for sure) I couldn't get access to this area because [my institution's] membership in the CMS doesn't give electronic access to the journals. (I am glad this policy is going to change.) (Twenty minutes later. I can't believe I can't find KaBoL. It was there the other day, but I can't find it today.)"

"The archival material is good. The postings of jobs was a huge step forward."

"I would like a list of conferences all over the world to be available there. However, this to some extent duplicates what the AMS Notices does. Do they have their conference information on-line? If so, perhaps we could have a link from camel?"

"It would also be nice to have a list of, and links to, funding opportunities for mathematicians and math ed people. I am thinking of the NSERC programs, MITACS, the recent gov't of Ontario program for the support of math education etc."

"One thing to avoid is a link that goes nowhere. This happens with, for instance, A mathlete's training guide' and 'Mathpro Press'."

- “(a) It does not receive enough publicity. Many mathematicians do not know it exists.
- (b) It is hard to find things on the server unless it is mentioned on the extremely cluttered main page. For example, there is a list of web sites of Mathematical Departments. However if you do not know it is there, then you would likely never find it. Even if you know it is on the site, then it is still hard to find (personal experience).
- (c) The over-use of abbreviations is unnecessary and obscures information for anyone who has never seen the abbreviation or who does not have a good memory. There are at least 16

such on the English part of the main page. Some have the full wording as well, but most do not."

- " a. Register www.cms.ca as a URL for it.
- b. Make it more reliable. It is down an awful lot.
- c. Put members' postal codes on the first screen of the member information form, so that it is available without password. I suspect the rationale for the current setup is to thwart bulk mailings -- but since you have to know whom you are looking up, I don't see that advertisers would find it efficient to use the member information search feature to generate bulk mail lists.
- d. Bulletin boards related to publications should be available to the public, rather than protected by userid/password (as is the case with the "Digital After-Math" attached to Crux with Mayhem).
- e. Make it possible for people to submit photos of themselves as part of their personal data (I think of this as a service for someone who would like to visualize people with whom they are corresponding)."

***** Question 4 *****

"Provide free access to a list of names and addresses of members of the CMS and an up-to-date list of Chairs of Math. Departments in Canada and their addresses and telephone numbers."

"Have complete listings of members of all math departments in all Canadian post-secondary schools (not just cms members) and their e-mail addresses."

"A bulletin board associated to the CMS Education Notes (and perhaps to other sections of the CMS Notes)."

"A jobs page for sure, and a registry of all (most?) grad students, post-docs, maybe even honours undergrads. The CMS should facilitate contact between employers looking for mathematicians and mathematicians looking for work."

"MathML"

"There are many ways the website could branch out, such as having the math problem of the week."

- "(a) The career information part is weak It seems to concentrate on academic jobs and some US job listings. Mathematics students will want to know about other types of jobs. Even our departmental site seems to offer more than Camel does (though still with a US emphasis): www.umanitoba.ca/faculties/science/mathematics/careers.html
- (b) General information about the usefulness of mathematics seems to be lacking (or I did not find it). Information such as the following page is at the B.C. Institute of Technology useful: www.scas.bcit.bc.ca/sas/math/examples/table.htm"

***** Question 5 *****

"No, because there is very little that I would be willing to pay for. I still generally prefer hard copies to electronic."

"I think the jobs page I mentioned [above] could generate revenue, as well as sponsorships for things like KaBoL, if it were easily found!"

"Sell advertising. Some companies are interested in the people who view camel. eg publishers of math materials, hi tech distributors. We could even get travel agencies interested - mathematicians do a lot of travelling far from home as part of the job."

"I think I wouldn't mind the CMS "selling links" to information about professional products (e.g. links to publisher or reseller sites for books, software, product reviews, etc.)."

"Public sector awareness"