M and the Internet: Opportunities Galore!

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Abstract

This paper seeks to collate a review of M uses of the Internet as it is currently evolving. The rate of change is rapid, and the list incomplete, but impressive. The paper provides some historic background, lists major ways in which M is seen on the Internet, and speculates on potential uses of the Internet to benefit the M community. An appendix lists many of the sites known to the authors.

Introduction

The growth of Internet usage in the last two years has exceeded the wildest predictions anyone might have made. Average monthly increases in users exceed 20%. International use is beginning to catch up with the phenomenal growth in this country, and commercial firms are starting to recognize a need to use the net both for information gathering and to maintain or increase market visibility.

In this issue of *M Computing* you will find a wide range of articles describing different uses of the Internet for M-related purposes. The previous issue of *M Computing* (Vol. 4, No. 3) has two articles: one, by Chris Bonnici, describes his introduction to M through the Web (pp. 26-28). De Moel gives details of creating hypertext links to M-related bibliographic data, among other things (pp. 20-24). This article is intended to supplement the material already available, adding a few details as to specific sites, approaches, and guidelines for Web users interested in tracking down M-related information.

The strength of the Internet growth is due in large part to the World Wide Web, a network of data that was hardly known two years ago. With tens of thousands of servers providing terabytes of information on almost any known subject, it is almost imperative for people in many walks of life to keep an eye out for new developments that are posted, usually for the first time, on the Internet.

About a year ago (summer, 1995), as we prepared for the MTA annual meeting in conjunction with the March annual meeting of Database & Client/Server World in Boston, the organizing committee felt that it might be "interesting and relevant" to schedule a discussion session dealing with the Internet and its impact on the M community. Several of us agreed to coordinate the discussion, which was indeed held early in the conference schedule. It was well-attended by a diverse and enthusiastic audience who contributed at least as many ideas as those involved in preparing the session. The results seemed important enough that we agreed to write an article for *M Computing* summarizing some of the ideas presented and adding to those ideas new contacts and uses that have come to our attention since the conference (and there are a great many of them!).

During the intervening four-plus months, so much more has happened in terms of real or potential involvement of M with the Internet that what seemed at the time to be a relatively modest article on some good starts and interesting opportunities has exploded into a very large presence of M on the Internet. At the same time a host of new thoughts has arisen as to how M might make even more effective use of the Web and Internet in order to serve its own needs and those of the computer world.

It is fitting, given the subject and its remarkable expansion over the recent past, that this article be written by people whose principal contact is the Internet. We live in widely spaced cities: San Diego, CA; Davis, CA (about 450 miles north of San Diego); and Arlington, MA, nearly 3,000 miles distant from the other two sites. Our main correspondence in preparing this article has been through email on the net, occasionally augmented by fax messages and perhaps, as we near the end of this process, an occasional telephone call. Three of us were at the Boston meeting, but a great deal of the leg work for this article comes from the fourth member (Jeff Loeb), whose assiduous monitoring of activities on the net have spurred us on to present this snapshot of M's involvement with the WWW and Internet taken during the summer months of 1996. With a target moving as rapidly as the subject of this paper, we are likely to find major new areas that should have been included but simply had not yet emerged or else had gone unnoticed by us as we prepared this summary.

In a recent talk, a keynote speaker at a conference on multimedia in education stated that the definition of "obsolete" is the computer he bought that day. This paper will certainly be obsolete by the time it makes its way through the paper publishing process, even though *M Computing* does a remarkably good job of turnaround for its articles. Herein lies yet another potential use of the Internet: putting *M Computing* out in electronic form.

But we are getting ahead of ourselves. Let's go back a little and review what happened that led to the creation of this article.

The Internet Before the WWW

Before embarking on a review of web-based activities, it is appropriate to review briefly the Stone Age of Internet use, activities dating back as long as five years or even more! Let's not forget the pioneering tools that got us started and made the expansion due to the Web possible.

Electronic Mail: the medium that allows us to keep current

Many now rely on electronic mail, or email for short, to carry on their business. The degree of dependence on email is growing with time, gradually replacing, to a large extent, postal service, fax, and telephone for the vast majority of communications.

M use of email has permeated almost every facet of the MTA's scope of activities. To mention a few areas that could scarcely function without email, MDC does an increasingly large percentage of its business via email, reducing (perhaps not yet enough!) the need for interim paper copies of documents as they evolve, allowing for more rapid exchange of ideas and revisions. MTA staff communicates with its membership through the use of email. Publication of *M Computing* is managed almost exclusively by email. Business is transacted, work done and reported, jobs advertised and filled, and friendships made through the medium of email. (Dick Walters met in person for the first time at the MTA Annual Meeting's discussion session an individual with whom he had been collaborating on an M-related project for over a year.)

We could go into depth on time saved, contacts made and expanded, dollars earned, and crises averted through email. But to do so would be akin to preaching to the choir— we already know how vital this means of communication has become in our lives, and there are a great many other areas to cover in this report.

Newsgroups

Although related to email, newsgroups offer the M community a wider range of opportunities for communication. There are at present several newsgroups serving the M community. Comp.lang.mumps is used for discussions related to the use of M and the evolution of the standard. It was established around September, 1994 (See FAQ in that newsgroup for its date of origin and objectives).

Local User Group Support

Several local user groups ("LUGS") have adopted the Internet and newsgroups to advertise their activities. This is an extension of the newsgroup concept, and it represents an important avenue for greater and more timely visibility of these groups. Through wider notification of its meetings, LUGs are able to attract visitors to their meetings, in town at a time coincidental with the event and, thanks to the Internet, aware of time, place, and agenda. Atlanta and Germany are particularly active in this regard. One of the most prominent, MUG Atlanta, has been cited earlier. A new users' group in Dallas has also established its own Web home page.

File Transfer Protocol

Although File Transfer Protocol (ftp) is an active component of WWW activities, it predates WWW and was used by the M community long before the Web assumed its prominence. FTP relies on the presence of publicly available files, located on thousands of servers around the world. Search Engines for ftp such as ARCHIE made it possible for users to locate files by title on any server that had an "anonymous ftp site." The use of these sites has grown dramatically in recent years, but their presence dates back a very long time, measured in the blinding speed of the technological advances of the Internet. Six years or longer would be a reasonable estimate of the date for early M uses of ftp.

One such activity reflects the ways in which M gained some added visibility. One of us developed a package based on M that made it easier for people to look up Japanese and Chinese characters, get their meaning and identify compounds in which they occur [Walters, et al., 1992]. People reading this paper wrote asking whether the package might be made available, and a mechanism for distributing floppy disks and documentation evolved. With the advent of ftp, however, it became possible to put all of this material on an anonymous ftp site, notify interested parties of its availability and location, and avoid the hassle of disk copying, postal mailing etc. One professor at Monash University,

Melbourne, Australia downloaded the PC code to his UNIX machine and then to his PC, and within the same day sent mail back critiquing the positive and negative aspects of the package. (Dick met this professor for the first time during a trip to Melbourne in July, 1996, four years or more after their first electronic exchange.) The site for this public domain program is tiger.cs.ucdavis.edu in the directory pub/kanji. (For instructions on using ftp, contact your local Web users, most of whom are already familiar with this process.)

An important ftp site for the M community is the University of Missouri's School of Veterinary Medicine, where you can find the VA FileMan, Kernel, and other useful information about these public domain packages.

One site which offers promise for the future is the GUM site for public domain M implementation software. GUM stands for Generic Universal M and was developed by a team spread across two continents. At present, these people have made available a Global Handler. Other components are on the drawing board. Their goal is to produce a public domain compiler that can be used to test new MDC proposals before they reach final Type A status. The site is tiger.cs.ucdavis.edu, in the directory pub/gum. A readme file gives details of the current status of this project.

Then Came the World Wide Web

It is hard to believe that "the Web," as it is commonly referred to today, was all but unknown three years ago. Since then, servers containing information available to Web browsers have grown to figures in the thousands, number of users to the millions, and the rate of growth has progressed at astonishing rates of 20% per month or more.

The Web contains several kinds of information. Home pages give information about individuals, institutions, and groups (such as the MTA and many of its members). Hypertext files, some of them in home pages, contain useful (and less useful) information on almost any topic known to man. Browsers provide clues to help Web surfers locate this information more efficiently. Specialized viewers permit users to examine files in different specific formats.

In among this rich treasure trove, there lies a great deal of M-related information. We cannot presume to be complete in listing these sites, but we present a few as examples, hoping that others will add to the collection.

Universal Resource Locators (URLs)

The addressing scheme used by the Web is referred to as Universal Resource Locators, or URL's for short. You will hear people say, "what is the URL for ..." regularly in Netspeak. Often, the material stored on Web sites has been converted to a hypertext format, in which links to other pages of information appear in a highlighted form in the regular text, and by simply clicking on these highlighted texts, you are automatically taken to the correct page containing further information on that topic. Hypertext is generated by a "language" referred to as HyperText Markup Language, or HTML for short. HTML is easy to learn, and there is an excellent beginner's guide to HTML stored on-line on the Web to help you get started. This is a must for generation of your own personal home page, discussed in the next section.

Home Pages

(Note: From this point on, the article will reference specific sites on the Web where information may be found. The appendix at the end of this article contains a reasonably complete sampling of M-related WWW sites at the time this article was being written.)

Web surfing often leads to inadvertently stumbling on home pages that prove to be interesting in unexpected ways. All of us who have our own home pages on the Internet have been contacted by such people who usually start with a message such as, "I was surfing the net the other day, and ...." It happens that there are a great many M users who have home pages in which the language and its applications are mentioned. At the end of this article we list some of the ones we are aware of. However, there are a few that should be accessed by all. They include:

MTA Office: http://members.aol.com/mta1994/mta.htm
MDC: http://world.std.com/~demoel/mdc
MUMPS of Georgia: http://www.mindspring.com/~mga

The MTA home page address is in a state of flux as we go to press; the current address may change, but it will point to the new one, wherever that may be. Beginning with this issue, *M Computing* will include the home page address on the masthead of each issue of the journal. The content is also evolving, but plans call for it to include information about the next annual meeting (May with Database & Client/Server World) in Boston, information about MTA membership, frequently-asked questions about MTA, a job referral service, vendor information, Internet links to M sites, a bibliography of the last 5 years of *M Computing* with keyword and author indexes, electronic ordering information and other items.

The MUMPS of Georgia home page is referenced here because it contains one of the most complete compendia of useful M-related Web information found anywhere.

Search Engines

One of the better-known search engines available for Web-based information is called Yahoo, developed by two erstwhile Stanford graduate students whose sudden rise to millionaire status persuaded them to abandon their graduate degrees. M is currently listed under Yahoo: the M.comp.lang newsgroup may be found under:

http://www.yahoo.com/Computers_and_Internet/Programming_Languages/M__MUMPS/

At this time, we are not aware of other search engines directly linked to M URLs.

Answers to M-Related Questions

The MTA home page has many answers to questions (FAQ's or Frequently Asked Questions) asked about many facets of M. Some other FAQ sources include:

M Home Page UC Davis School of Veterinary Medicine
http://www.vmth.ucdavis.edu/us/jaself
Chris Bonnici's M Home Page (on the isle of Malta!)
http://www.geocities.com/SiliconValley/7041

Aids to Programming in M

One way in which the Web can prove useful is to provide information about the M language: how to write programs, interface M to other languages, etc. There are a few sources of such information already on the Web, with more on the horizon.

The text entitled *M[UMPS] Programming By Example* is available at the same site as the MDC home page referenced earlier. Written by one of the authors of this text (de Moel), it is a guide to all features of the 1995 standard, with helpful examples of the use of every component of the language.

Another author (Walters) teaches courses in which M is introduced at novice and intermediate levels. The material for these courses is also on the Web and can be found through the home page of the Department of Computer Science, University of California, Davis: cs.ucdavis.edu. He is also negotiating to make available a complete course in programming M up to the intermediate level via distance learning on the net. Announcement of this course's availability will be forthcoming later in fall, 1996.

One of the well-known texts on M is called the *ABCs of MUMPS*, published in 1989 by Digital Press. This book is currently being updated by one of the authors of this article (Walters). It will include a new section on M for experienced programmers. While the full text will not be on-line, Digital Press has agreed to allow one chapter to be put on-line when the completed text is received by them for publication (expected the end of September, 1996). This chapter: *An Overview of M for Experienced Programmers*, is in effect an abbreviated tutorial for computer programmers. It set forth the basics of M in a concise format that may prove helpful both as an aid to M programmers and also as a promotion tool for further publicity about M (and Digital's new book).

Public Domain Versions of M

At least two commercial vendors of M (InterSystems and Micronetics) have public domain versions of M available. Their sites are listed in the appendix.

Reference has already been made in the section on ftp of the GUM directory. There is also an out-of-date version of M available for PC systems only, UCD MicroMUMPS. The ftp site for this object code is tiger.cs.ucdavis.edu in the directory pub/mumps. This version is robust, but does not contain updates incorporated in the 1990 and 1995 revisions of the standard (features like NEW, MERGE, $TRANSLATE, and $QUERY are missing in this version).

Vendor Information

We know there are a goodly number of vendors who have home pages and email addresses used for marketing and promotional purposes. The appendix to this article lists a few, but we would appreciate being given further information so that, in a future update of this compendium, we could include a more complete listing of home pages and contacts.

What Might We Expect in the Future?

The subject areas listed above cover the state-of-the-art of Internet usage by and for the M community today. However, there are many other ways in which M might prove especially helpful in the future. Some ideas raised at the 1995 MTA conference in Boston included the following:

* A Virtual User's Group. The idea here is to generate an on-line user community of people around the world wishing to share ideas, programs, research results, tutorials, and many of the other things done at the local user group level (and even at the MTA level) currently off-line. A beginning might be made through conversations started in the M newsgroup cited above.

* Current information about ISO and ANSI progress on

approval of the latest standard.

* Information about funding opportunities for specific projects related to M activities.

* Advertisements of M products (suitably linked to other M resources already noted above).

* Extended bibliographies of articles about M or of interest to M users in different categories, suitably indexed by keywords.

* Browsers of medical or other domain-specific areas written in M but made available to broader sources (the remarkable success of browsers such as Yahoo should provide sufficient incentive for this area to stimulate some enterprising M-ster to embark on an activity of this sort!).

These were ideas generated during an active discussion in Boston last March. There are, however, many other ways in which the Internet might serve M, and by the same token, the world might become better acquainted with M. This article is intended to provide a stimulus to additional reflection and specific suggestions that would help the M community take full advantage of the growing potential of the Web and Internet to gain greater visibility in the world.

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Appendix

Email Addresses pertinent to M:

*** Authors of this paper:**

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walters@cs.ucdavis.edu

***Other email addresses:**

MTA-Europe: 100332.670@compuserve.com
Paul Willis, President MTA-E
100330.3375@compuserve.com
Bob Rothstein, Exec. Secretary MTA-E
100446.1215@compuserve.com
Wolfgang Kirsten, Editor *M Professional*
W.Kirsten@add.uni.frankfurt.de
Pam McIntyre, Managing Editor, *M Computing*
71321.2635@compuserve.com

*** Individuals Who Manage/Control Major M Sites:**

Bonnici's M Home Page: chribonn@keyworld.net
MGA (Georgia)Dan Baer: mga@mindspring.com
UC Davis Vet Med Web Server:
Jim Self:jaself@ucdavis.edu
M Technology Resource: info@mcenter.com
MUG Germany: W.Giere@add.uni.frankfurt.d400.de
Art Smith: art@vets.vetmed.missouri.edu

*** WEB Sites for M-related Associations:**

Home Pages:
MDC: http://world.std.com/~demoel/mdc/
M Technology Resource Center:
http://www.mcenter.com/mtrc
Bonnici's M Home Page:
http://www.geocities.com/SiliconValley/7041
MUMPS of Georgia User's Group:
http://www.mindspring.com/~mga/
Southwest MUMPS User Group
http://rampages.onramp.net/~crickets/mumps.htm
Kevin O'Kane's useful download info address list:
http://www.cs.uni.edu/~okane
UC Davis Vet Med Web Server:
http://www.vmth.ucdavis.edu/us/jaself

Standards Bodies:

ANSI: http://www.ansi.org
ISO: http://www.iso.ch
ISO/IEC 11756:1992:
http://www.iso.ch/cate/d19978.html#0
(M standard 1992)

*** International:**

MTA-EUROPE: http://www.ua.ac.be/mta/
Finland: http:// www.uku/~ruonamaa/myhistys/
MUG-DEUTSCHLAND:
http://www.klini.uni-frankfurt.de/zinfo/mug-d.htm/
MTA United Kingdom and Ireland:
info@mtauki.co.uk

*** Commercial Vendors:**

Note: This list is also woefully incomplete, but these individuals did respond to specific requests to be included. Others have not yet done so, but we promise updates when we receive new names!

Atlas Development Corp. http://www.atlasdev.com
Career Professionals Unlimited:
http://www.mindspring.com/~mga/corp-01.html#CPU
Email: Cpumumps@aol.com
Connex Systems Inc.: http://www.connexsys.com/
CyberTools: http://www.cytools.com/
Emergent Technologies:
http://members.gnn.com/Emergent/et-top.htm
ESI Technology Corp. email: 73563.150@compuserve.com

George James Software:
http://www.georgejames.com/marina/
Email: info@georgejames.com
IDX Systems Corporation: http://www.idx.com
IM&T Consulting Ltd/Health Web Services, Ltd:
http://www.hwsl.co.uk/mgw
InterSystems Corporation: http://www.intersys.com
M Gateway: http://www.hwsl.co.uk/mgw
MTA Information: http://www.tickit.com
Micronetics Design Corporation:
http://www.mnetx.com
Sea Change Systems: http://www.seasystems.com
Sentient Systems: http://sentientsystems.com./
Sheehan Computer Services:
http://ourworld.compuserve.com/home pages/eManate
Tech Associates: http://www.charm.net
X-Tension Software Corporation:
http://www.xtension.com

*** FTP Sites:**

Some anonymous ftp sites: (use anonymous as usercode, your email address as password)
Generic Universal MUMPS:
ftp tiger.cs.ucdavis.edu directory pub/gum/
VA FileMan etc: ftp vets.vetmed.missouri.edu

*** Organization: URL**

DECUS: http://www.decus.org
M/Gateway: http://www.hwsl.co.uk/mgw
MTA-NA: http://members.aol.com/mta1994/mta.htm
MTRC: http://www.mcenter.com/mtrc/
Yahoo information service:
http://www.yahoo.com/Computers_and_Internet/Programming_Languages/M__MUMPS/ M

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Kate Schell is President of Jacquard Systems Research, a firm specializing in reengineering of M Systems. Web page: http://www.world.std.com/demoel/mdc/jrs.html

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