

T_EX SUPPORT

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In the preceding article, Bob Morris presents his position on TUG's role as it relates to the maintenance and support of T_EX. As I understand his comments, Bob feels that T_EX should be left to evolve independently at those computer science departments which have the resources to maintain it. He takes the position that T_EX is in the public domain for the benefit of the educational user, and that the production user must make his own arrangements for software support of T_EX.

Bob's comments represent fairly, I think, the opinions expressed by a majority of the Steering Committee at its recent meeting in San Francisco. Most of those present represented the research community, coming either from universities or from the research departments of large corporations.

I believe that if TUG does adopt the position articulated by Bob, it may limit the ability of production users to make use of T_EX. I stress these two points:

1. If no central maintenance facility exists from which production users can purchase the required software support, potential production users may be unlikely to become users at all—especially those firms which have no need otherwise to acquire the necessary systems programming resources. In those cases, T_EX's cost may have been raised beyond a reasonable level for other than large firms with existing research programs (or universities, for whom systems programming is among the most available of resources).

2. If undisciplined evolution of T_EX occurs, the hope of easy communication of machine-readable T_EX between centers (authors and publishers, for instance) may be dashed. It's unlikely that a common interchange language can be maintained in spite of a proliferation of versions of T_EX.

It is hard to overemphasize the importance of cost reduction in scientific publishing, nor the importance to the academic community of stable and viable publishing channels. Dick Palais, Chairman of TUG and a Trustee of the American Mathematical Society, calculated some years ago that a total elimination of the tasks of copy-editing, retyping, proofreading, and correcting manuscripts would cut nearly in half the costs of publishing the Society's journals (and one would expect that that statistic could be generalized roughly to other scientific journals). In the last issue of TUGboat,

Ellen Swanson, the Society's Director of Editorial Services, described those costly steps in detail.

The Society embarked on its strong support of T_EX in the hope that at least some reduction in these tasks ultimately could result from the ability of authors to submit machine-readable, debugged T_EX-input manuscripts to publishers in the language of T_EX (and not because other mathematical-composition systems don't exist—they do, and the Society uses one of them).

It seems very unlikely that the standardization necessary to bring about these cost savings can be accomplished without a central coordinating facility. It seems equally unlikely that such a facility can come into being without the active, continuing financial support of the T_EX user community—TUG—which, at least at present, consists almost exclusively of educational users. It's my personal opinion that such support would have to amount, at least for the time being, to something like \$1,000 per year on the part of each institutional user, to support a TUG budget of \$25,000 to \$40,000 for each of the next two or three years.

These contributions (in the form, perhaps, of contract fees for software support), would be collected by TUG and applied to the various functions needed to keep T_EX alive, growing, and responsive to changing needs, ideas, technology—all the things that good software stays in touch with. An essential role of the central maintainer, in addition to bug fixing, program distribution, information exchange and telephone consulting, will be to continue to weave into the definitive version of T_EX the improvements and new features conceived by users—what I'll call here the process of "dynamic standardization". This way, the language grows; if it can't, it probably withers.

The Steering Committee can find volunteer help for some tasks, like publishing the newsletter, but it will almost certainly, if this standardization is to be achieved, have to pay either a competent employee (housed, perhaps, at some willing university) or a "software" firm of some description actually to do the real maintenance work.

Other ways of providing the necessary support were suggested at the Steering Committee meeting. One was for each production user to provide itself with its own systems programming capability in enough depth to support its version of T_EX. But most small or medium-sized production users (possibly, the majority), even those like the AMS which have some applications-programming capability, won't otherwise need to undertake operating system maintenance on the

level likely to be required for the kind of \TeX software support which will allow enhancements generated in the user community to be incorporated. To have to acquire such a competence just for \TeX might price \TeX beyond their reach; not to have it leaves the user with an increasingly provincial version of \TeX .

A second possibility suggested for " \TeX Central" was to persuade some user to accept responsibility. Since the very concept of a widely shared language implies the merging of the interests of a diverse group of users, an undertaking to support such a language in any meaningful scope would mean a substantial commitment, almost certainly beyond the resources of, say, the AMS by itself. It is even unlikely that any single university computer science department could commit itself to such an undertaking. The more this alternative is considered, the more it appears that the most reasonable approach to the centralized support and standardization of \TeX is through the user community as a whole.

A third approach offered was creation of a separate (or TUG sub-) organization, composed only of production users, and for these together to support the central \TeX software support facility they need. But no active body of production users yet exists, and even if it did, that solution would be likely to provide for standardization of the language among commercial \TeX users (publishers) while tending to allow dialects to proliferate among educational users, where most authors of journal articles reside. \TeX as a language of communication between author and publisher would still be unrealizable.

A fourth suggestion was to freeze \TeX in its present form, and refuse to allow changes to destabilize it. Don Knuth will soon stop making alterations and improvements to \TeX . When he does, AMS could probably, as the holder of the \TeX logo copyright, maintain an essentially static "official" \TeX system, requiring use of only that system for computer-readable manuscript submissions to it. This would limit submissions to those from authors at installations willing to ignore all other versions of \TeX , no matter what advantages those versions might have acquired, or willing to maintain both our "fixed" version and whatever other evolving versions they chose. In such circumstances, fewer and fewer computer-readable manuscripts would appear (if any ever did), until the Society found itself using \TeX only for its own internal purposes, much as it now uses other computer typesetting systems. The Society would have gained whatever improvement in typesetting quality \TeX might represent over earlier

systems, but would have lost, with other scientific publishers, the chance to cut that large portion of its costs representing manuscript re-preparation.

A final suggestion would have a commercial firm take over \TeX as a software product acting as a vendor, charging a fee for initial distribution of the programs and an additional fee annually for software support. This idea would be good except that, since \TeX is in the public domain, it's not likely that any firm would offer to involve itself without some sort of endorsement, if not financial guarantee, from TUG. Such an arrangement might work, but only if TUG were willing to put itself on the line to ensure it. Pursuing this idea further might suggest the formation of a small, non-profit organization, under TUG and backed financially by it, to perform \TeX Central services.

I hope that the members of TUG, when the Steering Committee meets at Stanford in May, will see it in their interest to give real financial support to this effort. If TUG does not make the effort to convert \TeX to a production system, then it will probably not be converted (except for some specialized classes of users), and potential production users will not be convinced that \TeX represents a viable choice. \TeX will remain an educational tool, available in universities, and perhaps in places like AMS where it is used for its competence at certain kinds of typesetting, but it will not become the communications channel which we had hoped for.

It is important that you express your opinions on this subject, no matter what your point of view. Write to TUGboat; your letter will be part of a report to the Steering Committee in May. As many letters as possible will be published in the next issue, which will report on the May meetings.

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UPDATE ON PASCAL METAFONT Scott Kim

Work has just started on the Pascal implementation of METAFONT, which was originally written in SAIL. It is too early to estimate how long the translation will take—stay tuned to TUGboat for news as it develops. Those interested in keeping up with new developments in METAFONT, or knowing more about digital typeface design in general, are invited to correspond with Scott Kim at the Stanford Computer Science Department.