NTG's Lustrum

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Abstract

NTG's youth in context is depicted, with a wink to the future.

Congratulations

First of all I like to express my congratulations to the board and membership for what we have accomplished together, and for the help given to each other. I also like to thank TUG and other LUGs for their cooperation and support. Thank you all!

Introduction

I'll walk through NTG's history lane, paying attention to the TeX activities of us Dutchies and to the highlights of our friends elsewhere. At the end I'll ponder aloud about the directions Electronic Publishing, and more remotely Information Technology, might take, and the role of TeX in this. This paper illustrates one of TeX's greatest virtues, its stability, if we take its quality and its availability on every conceivable platform for granted. Most of the material has been reused from the earlier paper One year NTG. I chose to start from that paper because it is easier to grasp the evolution from the activities envisioned some 5 years ago augmented with those which joined us on our way.

Notations. A dagger, †, is used to denote activities which have stopped.

1 Why still NTG?

Paging through the MAPS issues 1–10 clearly witnesses what we have attained. The contributions from us Dutchies are growing in number and quality. Moreover, good work from elsewhere is redistributed. Nevertheless, it is not perfect of yet, but NTG has grown up, has become a mature user group. The first year can be characterized as 'Getting started', the second as 'Getting organized', with from the third year onward we face the problem of 'Warranting continuity.' We enjoyed a steady rise of the number of memberships, more than we expected, three times more.

Apparently there is a need for NTG. Moreover, we still need to exchange information and to assist each other with the intricacies of Electronic Publishing—if not for knowing what goodies are available, where, and how to use these at best—as can be seen from the traffic on the tex-nl network.

1.1 Name

NTG still sounds good to me, especially the abbreviated form, because it is so easily changed into for example New TeXnology Group. Actually the name has been changed once. At Karlsruhe Johannes Braams and I changed the name from Nederlandse TeX Gebruikersgroep into Nederlandstalige TeX Gebruikersgroep, that is Dutch TeX Users Group into Dutch language-oriented TeX Users Group.

1.2 Life-line

The important life-line of NTG has been the willingness of the members to share their experience and knowledge and to communicate with each other. Another issue is respect, mutual respect. We had our difficulties here when entering netland. It is a general truth that email is a great virtue but, one has to know each other, read through the lines, otherwise it will become a real pain in the neck. I'm happy to state that we matured in the use of the net too,[1] a lot of tolerance and respect! A conditio sine qua non for a volunteer-based organisation, and therefore keep it that way.

I like to think of NTG's meetings as happenings—with the MAPS reporting after—followed up and extended by discussion via the (email) network.

2 Aim NTG

The aim is formulated in our bylaws. Loosely speaking it comes down to the following.
Short term: To facilitate the use of TeX and related products.
Long term: To promote electronic publishing.

3 Board

The composition of the board has proven to be stable, in view of (and despite) the gradual reelections. All members have passed elections. The current board consists of Kees van der Laan (chair), Gerard van Nes

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[1] In the early days we had our 'priests and vicars,' who gospeled what to do.

(secretary; ECN), Johannes Braams (treasurer; PTT, Neher Lab), Jos Winnink (CPB), and Erik Frambach (RUG, Econometrics department). We also have a Belgian commissionar, Philip Vanoverbeke, informal for the time being.

An important aim was to keep the (organizational) overhead as low as possible, without becoming an anargy-like group, which TUG was in its younger days. That we have succeeded in that so well can be demonstrated by the meetings where the organizational part has been modest, and can be distilled from the contents of the MAPS. At most some 5% is devoted to organizational matters. Of course, we had our minutes, reports from working groups, the budgets, the year reports as well as the trip reports accounting for what was going on elsewhere. Next to the printouts of the membership database, the subscription list of the listserver, the contents of the fileserver, the reviews and the TEXnical articles.

Another success was the timeliness way of working. In a volunteer-based organisation much frustration can be suppressed by just starting well ahead of time. So that people can more easily plan things, in harmony with their busy and overcrowded agenda. Early in our existence a formal group was formed, minutes were taken seriously, and the fileserver and listserver were there form the beginning. The meetings are scheduled well-ahead, at least a year. The pace of the meetings is fine too: not too frequent nor too infrequent. The dates earn some critics now and then.[2]

The well-ahead planning of the meetings facilitates also the scouting for speakers, and contributions for MAPS, at the TUG and EuroTEX meetings.

Email is indispensable for the board's functioning. We never had a formal board meeting. All was done by phone meetings supported by email. This way of working requires a high discipline, well-preparedness, and a mandate style of working. It turned out to be very efficient and effective.[3] To prevent the contacts becoming a bit loose, we decided to have an informal dinner after each meeting, together with the speakers and open for the members to join. It has grown out into a nice tradition.

Furthermore, we are rather realistic and pragmatic. Well aware of the energy it all takes. There is a flavour of professionalism in that we try to do things 'right, once and internationally.' Let us say we are Dutchies.

4   Membership benefits

The benefits envisioned 5 years ago were
- Help of colleagues (awareness via membership database; once a year the members receive several prints of the membership database sorted on the keys: member names, hardware, drivers/peripherals. The primary key is the membership number. The database is handled via dBASE.)
- Joint activities (e.g. working groups)
- Meetings (2 per year) with the well-known MAPS afterwards
- NTG-days† (1 per year with courses along the same lines as EuroTEX and TUG meetings, aimed at members as well as nonmembers)
- TUG-like courses
- Use of listserver TeX-NL, and other T/LUG list-servers (anonymous help)
- Use of fileserver TeX-NL, and other TEX servers (sharing of styles and macros etc.)
- Floppy service (for those deprived from e-mail access)
- Cooperation with TUG and other LUGs, duo membership, and reduced fee TUG annual meetings

More recent are
- Low-budget courses[4]
- MAPS Specials
- PD MS-DOS set (starter and complete set)
- Bulletin Board Service
- Cooperation with Wiskundig Genootschap, CWI, AMS, and in general scientific societies
- NTG's shop (MAPS (specials), PD ware, . . .)

5   Membership issues

At the moment we enjoy some 220 members, of which ≈35 institutions. Profit and nonprofit companies subscribe along with private persons.[5] The due has been unaltered since the beginning of NTG.[6] We have insisted and agreed upon joint memberships with TUG!

6   Activities

Happily not all activities have been started and fulfilled by the board. Some very good activities have been done out there, to surprise friends and colleagues with their result to share.
- Board (organizational)
  to coordinate, stimulate, initiate, create, organize,

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[2] Alas, it is impossible to account for everybody's wishes.

[3] Efficiency in time and money. Phone meetings lasted an hour and costed some Fl 175,– each. A face-to-face meeting will take a day, and cost some Fl 350,–.

[4] After having built up the financial reserve we considered it useful to invest in people, and offer courses without a financial threshold. Nevertheless, we pay our teachers the usual salary. Because the RUG offered hospitality and because some applicants became member after the course, we even gained some money via this low-budget approach. Another beneficial side-effect of paying the teachers well is, that it stimulates them to bring their courseware out.

[5] Special rates for students.

[6] The first 'Getting started' year was for free.

. . .
to maintain membership database
to supply information (provide minutes of meetings, prints of membership database, references to TeX related publications, . . .)
to ensure meetings twice a year
to organize courses now and then
to ensure TeX-NL listserver and fileserver
to handle financial matters (once a year (financial) plans and treasurer's report must be agreed upon)
to explore and maintain contacts (DANTE, GUTenberg, 'Nordic' TUG, TUG, ukTeXug,. . . , the Mid and Eastern European Groups . . . ; scientific societies, . . .)
- Working groups
  Function: centre of know-how, starting point for development
- Editorial board/team for MAPS (and specials) composition and production
- Maintenance of TeX-NL fileserver
  to take care of contents
  to update index
  to guard for (minimal) documentation
  to guard for time-stamps
  to guard for version indication
  to synchronize with other servers, . . .
- Individual
  publications (books)
  answering questions via TeX-NL
  various submissions to fileserver(s), TUGboat, TUG 'xx, EuroTeX 'xx, MAPS, . . .
  cooperation in international projects/committees (TUGboat editorial team, various committees, lxiii,. . .)
  facilities (floppy service, fileserver, bulletin board, 4TeX, . . .)
- Help via listserver TeX-NL.

7   Working groups

The idea is good. In practice much of the work has been done by individuals, however. For historic reasons I have supplied the following list.
- Education (courses (NTG-days, RC-RUG, THE, TAJ, Insights & Hindsights . . .); courseware: MAPS '92 Special)
- Guidelines for authors†
- Evaluation of products (PC sets)
- Fonts
- Drivers, printers, previewers, POSTSCRIPT
- Photosetters (Who? What price and service? Quality?)
- PC's (PD set MS-DOS, PD set Atari, Amiga, Macintosh)

- Organization NTG-days†[7]
- Pictures and TeX[8]
- SGML-TeX
- Local and/or installation guides†
- Aspects specific for the Dutch language (National sty-files, hyphenation patterns)
- Communication (TeX-NL listserver and fileserver)
- TeX3.1415. . . , Metafont2.7. . . (in general new developments: lxiii, NTS, ...)

Apart from the above we enjoyed more and more the fruits of the editorial team.

When we started with the working groups my expectation was that only 50% would be effective. Looking back I'm happy to state that I underestimated that. Compare the list of highlights with the list of WGs, and one can't but arrive at the conclusion that the WGs played their role.

8   History

I like to distinguish the pre-historic phase of TeX— before NTG existed, ahummm—from the historic phase, and the recent history. The former is not dealt with here, however interesting it might be.

It is nearly impossible to account for the past. Always something will be forgotten or classified as unimportant, doing injustice to somebody.

Universities introduced in the Netherlands the use of (La)TeX. At the moment (La)TeX's use is a minor stream compared with Wordperfect, for which SURF has agreed upon a national licence.

TUG's first generation of people can be characterized as the 'implementers.' They ported TeX to every conceivable platform, not to mention the various successful PCs (TeXtures, PC/μ-TeX, the PD emTeX). NTG still enjoys its first generation of people.

1986	Request CVDUR about status EP
jan 87	Gerards'[9] TeX-rapport
	TeXtures, PC/μ-TeX appear
april 88	KNUB (Dutch AAP) initiated SGML-Holland
june 88	RC-RUG and ENR initiative to start NTG
	1st NTG meeting at Groningen (RUG)
july 88	EuroTeX '88 meeting at Exeter
sept 88	Looking for sharing experience: ukTUG, DANTE
fall 88	NTG made itself known to the World
	NTG's public listserver and fileserver
nov 88	2nd NTG meeting at Petten (ECN)
	Beebe's driver family appears

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[7] Superseded by EuroTeXs!

[8] Via encapsulated POSTSCRIPT and via the TeXniques treated in 'When TeX and METAFONT work together.'

[9] Not to confuse with Gerard van Nes.

may 89 3rd NTG meeting at Leidschendam (PTT)
European delegates meet at GUTenberg meeting (Paris)[10]

june 89 1st open NTG meeting at Utrecht (RUU)

aug 89 TUG '89: Ten Years of TeX and Metafont, at Stanford
Chair persons national/language groups vice-presidents of TUG
Aston, Heidelberg fileservers emerge
lxiii dawns

sept 89 EuroTeX '89 meeting at Karlsruhe

oct 89 DANTE, ukTUG meetings

nov 89 DANTE's Komödie appears
4th NTG meeting at Tilburg (KUB)

early 90 Knuth stopped development of TeX and METAFONT
2nd open (joint SGML-)NTG meeting at Groningen (RUG)
AmS-TeX, AmS-LaTeX, LAmSTeX appear
NTG TUG-like courses
emTeX dawns

9 Recent history

I like to characterize the LUGs and TUG after Stanford '89 as the second generation of TeXies. This second generation pays more attention to descriptive mark up issues, and to the non computer science based user. Especially the creation of realistic document preparation workbenches (ASTeX, 4TeX,...)

In the world outside the Word*whatever* and desktop publishing credos came into existence, backed by the affordable PCs and (laser) printers.

The biggest achievements of TUG and the LUGs are their publications: TUGboat as scholarly journal for computer(TeX)-assisted typesetting, next to GUTenberg cahiers, Die TeXnische Komödie, Baskerville, TeXline, MAPS, Czech bulletin, GUST bulletin, ...

Since '89 the Europeans have become more involved: Schöpf and Mittelbach; LUGS and TUG cooperation, especially TTN creation as international newsletter; rise of user groups in Mid and Eastern Europe; PD emTeX. Special for the Europeans (and to a lesser extend for the Canadians) are the multi-lingual issues, with Babel a significant contribution to lxiii.

Knuth finished and froze TeX and Metafont! Some projects emerged: TUGlib, lxiii, BiBTeX, ...

The biggest contribution of the 2nd generation TeXies

are the listservers and fileservers with the wealth of formats and macros, next to the formats and macros proper of course. Equally important have been the experiments with the use of (La)TeX coupled to POSTSCRIPT.

spring 90 5th NTG meeting at Nijmegen (KUN)
NTG formalized, gradual elections
RUU's fileserver in the air

summer 90 EuroTeX '90 and Euro-Summit at Cork
TUG '90 at TeXas
DC font tables

fall 90 6th NTG meeting at Utrecht (DEC)
ukTUG's Baskerville appears

spring 91 7th NTG meeting at Amsterdam (ESP)
NTG cooperates with CWI and Wiskundig Genootschap

summer 91 TUG '91 at Boston
Encapsulated POSTSCRIPT & TeX
Malcolm Clark resigns as (TUG) European coordinator[11]

fall 91 EuroTeX '91 at Paris
8th NTG meeting—Fun with TeX—at Eindhoven (TUE)
TTN appears
AsTeX appears

spring 92 9th NTG meeting—Scientific publishing with TeX—at Amsterdam (CWI)
Advanced TeX course: Insights & Hindsights (low-budget!)
Start of NTS by DANTE

summer 92 TUG '92 at Portland
TUE's server in the air
TeXMaG stopped, TeXHaX changed home basis and hiccups
Jones' index appears

fall 92 EuroTeX '92 at Prague (lxiii in progress)
10th NTG meeting—The future of (La)TeX—at Meppel (Boom Pers)
Vens' Obelix server in the air
4TeX appears

spring 93 11th NTG meeting—From font to book—at De Bilt (KNMI)
NTG's BBS
NTG's shop (NTG's PR set, Revised Courseware, PC Set)
Various other LUGs meet
GUST bulletin appears
Complete TUGboat set at RUG
Greenwade's CTAN emerges

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[10] The incentive for European cooperation due to Bernard Gaulle. I had on my agenda: T/LUG cooperation especially keeping each other informed via making each LUG (secretary) a member of the other, and discuss the cooperation with respect to fileservers, European bulletin, reciprocal memberships. Bernard pushed forward with warranting European TeX meetings, and inviting representatives from other LUGs to participate, if I'm not mistaken. Reality has it that France and Germany cooperate with respect to their fileserver, GUTenberg stimulated the various EuroTeXs to happen, and that TTN, the international newsletter appears.

[11] The BoD decided not to appoint a new coordinator.

and in sight

summer 93	TUG '93—A world-wide window on TeX—at Aston
fall 93	12th NTG meeting—(La)TeX User Environments—at Den Bosch (Océ) GUST, ukTUG (Ukraine),[12] and CyrTUG take off
spring 94	13th NTG meeting—(La)TeX, Metafont, and tools education—at Groningen (RUG)
spring 94	TEP94 workshop about Electronic Publishing and Digital Typography, Darmstadt 12–13 April (contact Mary Dyson: ltsdyson@rdg.ac.uk) GUST annual meeting, May
summer 94	TUG '94 Santa Barbara (Ca)
fall 94	EuroTeX 94 by GUST 14th NTG meeting, in Belgium.
summer 95	TUG '95 Florida?
summer 96	TUG '96 Europe?

10 TUG

Since '89 the following aspects can be mentioned

- Steady, high-quality TUGboat
- Regular annual meetings (proceedings in TUGboat)
- Ample course offerings
- TUG metamorphosed into an International TUG
- Support disadvantaged/beginning LUGs, bursary fund
- BoD: from autocratic into democratic
- New resource guide
- New TTN
- Revived TeXnical council, and WG on multiple language coordination
- TeXHaX changed home, TeXMaG†
- Some WGs are thriving (Archives, Drivers), others are pending
- Knuth Scholarship awards are revived
- No TUG fileserver (But Labrea, Houston, Aston, Heidelberg, . . .), CTAN
- New executive director, office moved (west coast), reduced staff
- Reduced number of members (from 4,500 to some 3,000)
- Reciprocal memberships with LUG's members
- TUG's shop (backcopies,[13] PD PC sets, TeXniques series, T-shirts, gadgets. . .)

TUG distributes among others the flyer '8 Great reasons to join TUG.'

11 TeX around the world: LUGs

DANTE is the biggest, some 2K members. GUTenberg is stable with some 500 members. Japan has a group of another .5K members. There are 5 Western European user groups (DANTE, GUTenberg, Nordic Group, NTG, ukTUG), and 7 Eastern/Mid European user groups (CSTUG, CyrTUG, Estonian TeX User Group, GUST, HunTUG, SibTUG, ukTUG (Ukraine)).[14] The LUGs of Mid and Eastern Europe promise growth. There have been activities in China and in the Mid-East too.

Activities are

- Organization of local meetings, EuroTeXs
- Various LUG bulletins appear
- Language specific issues are treated
- Maintenance and synchronization fileservers
- NTS (initiated by DANTE)
- lxiii project
- the total number of organized (La)TeX users increases steadily

12 NTG's highlights

Many good things have happened. Imagine NTG being absent and your highlights will come to mind. I hope that the items mentioned below will earn general agreement.

- Lively meetings with good speakers
- Information exchange via
  elaborate minutes and appendixes, our proud MAPS
  membership database printouts
  various publications
  various submissions to listserver and fileserver
  floppy service
  bulletin board
- 1st open NTG days; joint TeX-SGML meeting at Groningen
- Build up (inter)national contacts (participation BoD TUG)
- Cooperation with SGML-Holland, LUGs and TUG, (Dutch) scientific societies (Wiskundig Genootschap, CWI, AMS)
- Low-budget Advanced TeX course
- Information exchange with TUG and LUGs (Bulletins)
- Support financial disadvantaged LUGs, especially GUST
- Support lxiii
- TeX-NL listserver for anonymous help
- TeX-NL fileserver[15] (macros on demand)
- FGBBS (bulletin board)
- Dutch (standard/template) sty-files & Babel option
- Public domain hyphenation patterns

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[12] To be founded officially in the Fall.

[13] With a discount for members.

[14] It is unclear to me whether the Rumanian users have organized themselves.

[15] Not to forget the fileserver of RUU, TUE and RUG.

- MAPS specials (courseware and PR set)
- PD PC sets (MS-DOS, Atari, Amiga)
- 4TEX document preparation workbench
- A sound financial reserve has been built up[16]

13 Future

It is difficult to grasp the main lines from the past, the more so with a prophesy about the future. Nevertheless, I estimate that TEX etc. will be around for some time to come, despite the commercial EP software, and the scientific workbenches.[17]
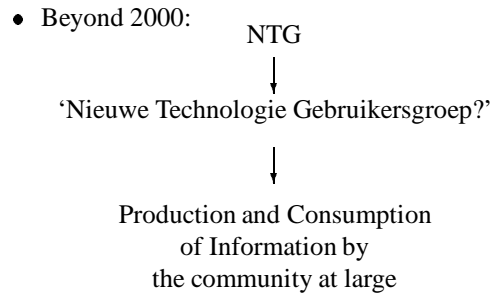
NTG can't do much better, given the volunteer-based organizational structure.

The NTS activity is good. Some have to provide for the bright ideas and do the implementation. For the moment, I see its role to increase awareness of the limitations of fully automated computerized typesetting.

Badly needed are user's guides along with the styles/formats supported by publishers, within a context so to say, in the spirit of the good examples: LATEX book, TUG styles, AMS Guides.
Also needed are the contributions from the community at large.

- Short term:
  Volunteers are wanted (MAPS styles, NTG's shop, proofing, HR,[18] ...)[19]
  PD PC set via SURF
  Awareness of NTG by scientific societies
  Feedback/contributions from members
  'Education permanente'
- Remote:
  Rise in membership dues.[20]
  European sty-file? (e.g. EuroTEX proceedings.sty?)
  Specialization and intelligence of fileservers?
  European newsletter?
  European/international courseware?
  Joint activities with other users groups: lxiii, NTS, ...
  More professional education: University courses in EP, ...

- Beyond 2000:

  NTG

  ↓

  'Nieuwe Technologie Gebruikersgroep?'

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  Production and Consumption
  of Information by
  the community at large

13.1 Dangers

TEXing is too complex.

My greatest concern is that TEXing is too complex. It is very difficult to fulfill your purpose with minimal mark-up, unless you are very, very modest in your typographical wishes. Compare your number of lines of marked up copy with the number of lines in print and you will notice the difference. And what about the trial-and-error runs when you are not satisfied with the result obtained via the used format?[21] Therefore, I consider (professional) education on the one hand, and user's guides on the other fundamental issues. Not to confuse with to get your results out. To achieve your aim in a simple and (cost-)effective way, and knowing your way in the complexity. How about that?

Sheer size.

My concern for NTG is paradoxically its size.[22] It might be the case that we will become too large for a volunteer-based user group, and too small for a professional one, that is with employed people. Not only 'Some friends gathered ...' but also '... groeiden wij in tal en last!' With a continuous growth we might also enter the phase of more work done by committee instead of the work done via the creative mandate style of working.

But, many hands can make the work a trifle. Realize and accept that when somebody else will do something it will always be done differently from the way you would have done it yourself. Macroscopically it does not matter, as long it is done good or better. Let us go for that!

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[16] Thanks to the revenues of the courses, and the savings due to the hospitality received by companies to host our meetings, and thanks to the listserver and fileserver being for free.

[17] I for one expect TEX to be my formatter for the rest of my life, although I'll use whatever is appropriate for the job.

[18] 'Huishoudelijk Reglement' creation and acceptation.

[19] The real good ones may spread their wings and prosper within TUG.

[20] For the moment we are subsidized by various parties: use of network, meeting locations, fileserver. If this will change we have to pay more, and that means rise in membership dues. The main reason for keeping a substantial financial reserve is in my opinion to create time to react appropriately when changes happen, and to embark projects with some financial risk. Examples of the latter are Salomons low-budget course and courseware.

[21] We have two issues here: using (La)TEX with an—*as is*—format, and using (La)TEX with your modifications. The former is easy, and the latter hard and tiresome. I like to call the latter that TEX encoding is unusual.

[22] As with many things 'A strength is also a weakness.' Let us consider this concern for the moment as a luxury problem.

Be polite, respectful and communicate!

Furthermore, it can't be overestimated to be polite, respectful, and to communicate. Sound and constructive criticism is welcomed of course.[23] Always remember that the best way is to express your opinion, and to leave room for the other side to accept it or not. To build upon it or even neglect it. That is their freedom. It is difficult to maintain a good and diverse atmosphere, while adhering to the democratic principles. It is really so easy to offend or otherwise maltreat somebody—unintended of course—in the name of whatever. As each and every relation therapist will tell you: when a relation is on fire, communication is (involuntary) hampered! Keep the communication lines open and clear. Be careful and prudent. Don't 'Loop als een olifant door de porceleinkast.' But 'maak je van hart ook geen moordkuil.' As always it is a matter of the right balance. If not, your volunteers will flee away and you have had it.

Be realistic.

My concerns for the 'Future of TEX' is the lack of realism. Only Knuth is able and in a position to grant the quality we are after. So using TEX—essentially *as is*—is more or less guaranteed for ample time to come. With respect to the evolution we have to pay for what we need, as usual. But then we like to know what we are buying. This is not to be confused with stimulating each other in research. No, it is development that is hard if not impossible in a volunteer-based world, especially when we strive after top-quality; we all have to make a living. For the time being I would say 'Een vogel in de hand is beter dan 10 in de lucht,' next to the old adage 'Leven en laten leven.'

On the (La)TEXnical side I would prefer that we adhere less wishful thinking. An example on that is the wide-spread believe that in general switching from one-column format into two-coulmn format or vice versa can be done just by change of the style option. Not true. Even changing from TUGboat.sty into the TUGproceedings.sty needs a significant amount of adaptation. More than just the mentioning of the correct style. In principle yes, in practice no.

Sub-optimization.

My concern with NTS and lxiii is that these concentrate too much upon the formatting issues. As I can see it the big fish is the real Information Technology accessible by the masses.

13.2   Directions tool development

As stated above the area of production and consumption of information by the community at large has just started. So TEX and the like are the start of a real new era.
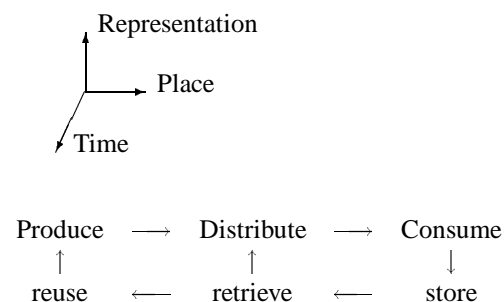
In order to envision the direction the development of tools for EP might take, we have to realize what we are going to use it for, in other words we must be explicit of the life-cycle of publications. Can we expect revolutions in there? We are familiar with the hypertext idea, and I for one think that in this direction much multi-media applications will develop. Let us become a bit loose about the media of the publication parts, and abstract to the highest level, in order to find invariants.

The life-cycle of publications consists of the biological invariant: produce, consume and reuse.

If production needs special tools the consumer must use the corresponding 'reading' tools. This means that there is mutual dependency. Production is limited by what the consumer is willing to use, and the consumer is limited by what the producer will develop, and make available. This means that not only a technical factor is there, but also the human and the social factor.

Producing

Important factors next to the here-and-now production are: distribute (place), reuse (time), foresee and prepare the optional representations to choose from.[24] The factors form an orthogonal system. A diagram of the life-cycle is depicted below.

Representation

Place

Time

Produce	$\longrightarrow$	Distribute	$\longrightarrow$	Consume
$\uparrow$		$\uparrow$		$\downarrow$
reuse	$\longleftarrow$	retrieve	$\longleftarrow$	store

In want for better SGML is there, as a (mental) production tool. It falls essentially short in that it can't account for the dynamical behaviour of documents.[25] Copy in computer memory can be changed on the fly.[26] Some

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[23] We are no saints, we have had our share of the patronizing attitude already.

[24] The automatic transformation of one representation into another is too far away, still science fiction.

[25] At the moment the SGML parser is an extra to the production loop, which can easily be replaced by procedural mark up. Moreover, SGML parsers are not generally available, and I have not heard of ones in the public domain. Parsers and DTDs (document type definitions) cost money. Moreover DTDs vary. They are flexible. It is difficult to develop standard DTDs. Up till now there are no PD standard DTDs which are accepted by the users. See my earlier Cork paper on the issue. It is good to work with SGML on your mind, and TEX in your hands.
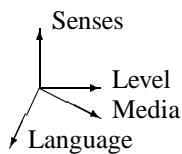
[26] For examples of the latter see NTG's Fun with TEX MAPS, especially Tutelaers' chess, and my plain bridge, to name but a few.

people allude to this as active documents. Deterministic tables for example can be typeset by programs, we don't provide explicit data for this copy anymore.[27]

The hard thing in this all is, however, the data representation, to have only one representation of the data and various processes for the transformations. The variant representations are not stored but created on the fly. I won't be surprised if the mixed form will show up, especially in near future.

Consuming

The demand of the consumer will heavily influence the production.[28] The developments will be guided by the dimensions: the human senses, the language variety, the media and the required flexibility in choosing the level of detail. Driven by social pressure, by what is needed to survive, to make a living.

Senses
Level
Media
Language

Senses	:	eyes, ears, tactile
Level	:	abridged, full, ...
Language	:	English, Dutch, ...
Media	:	Paper, CD, ...

For formatting electronic copy there are many tools available today. (La)TEX, and all those others are there and when we like to use the copy electronically the consumer must know how to use the tools, and at least have a PC. This entails that computer literacy will take off.

(La)TEX

A conditio sine qua non for tools is the user-friendliness, next to the quality and stability. TEX is very strong with respect to the latter two issues, and falls short on the first one. How come? Could 'The-art-of-computer-program'-mer not account for this? No, of course not, he could and can! First the 'weakness.' TEXies get lost in the TEXbook, it is all there mixed up, even gurus have difficulties in looking up issues, despite its table of contents, index, and its electronic availability. (The latter can be searched by programmable editors.) The reason is that Knuth did not envision that this result of research in computer-assisted typography would be used by such a large community. He started the project because he needed better tools to continue publishing his magnum opus: The art of computer programming.

As far as I can see it, he has been persuaded by TUG to pay attention to the use by the community at large. His reply: TEX 3.14..., and that the kernel is frozen, but that anybody can add additional layers on top, to suit the author, the publisher, and the typist, albeit with names different from TEX.

> Much needed therefore are simple and concise user's guides, and with respect to style developers a professional software engineering attitude.

The lxiii project promises many—if not all—solutions to our typesetting needs. Each and every NTG member likes this project to become a success, me included, there be no doubt about that. However, I'm personally doubtful whether we will ever get what is suggested, simply because it all has to be done by volunteers. I don't consider that realistic. Is there an alternative? I persoanlly use whatever is suited for the purposes. Within the TEX context I use the (l)tugboat styles. They are fine, flexible, although not perfect. They allow switching from TEX into LATEX and vice versa. Moreover they can be extended with independent tools, and more importantly they have been in production for a dozen of years. The needs of TUGboat authors have continuously led to fine-tunings. Other goodies are: they are understandable, take a user's guide, know-how about them is accessible, and last but not least they are maintained. For detailed arguments see my BLUes trilogy: Manmac, AMS, TUGboat.

For developments with respect to other tools I'm not in a position to say much.

13.3   Trends
- TEX's role: formatter[29]
- Increased self-publishing (email, fileservers, listservers)
- Computer literacy will take off, next to hypertext applications
- Electronic Production & Consumption
  – Photography
  – CD
  – TV/Radio, video
  – PC
  – Phone, fax, email
  – Holography
    . . .
- Increased involvement of linguists and behaviourists

with the functionalities
- Various inputs (o.a. voice, photography, . . .)

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[27] For examples on these issues see for example my Tower of Hanoi, and Bordered tables.

[28] The good old book will be with us for a long time to come, for its added values: the selection and creative composition of the material by the author, the typeset quality, next to the pleasant format. The solution to the problem of change are solved by the usual new editions for some to come.

[29] An unambiguous procedural mark-up tool, if you like. In the scientific world it might become—or perhaps is already—the lingua franca for scientific communication especially via the networks, because for scientists its power, next to the well-known quality, general availability, and stability are very beneficial.

- Diverse outputs (language, level, media and representation,. . .)

A good way to stimulate iteractivity—while doing a presentation—is to pose questions. For example: What do you think your working environment will look like in 2000 or beyond? What publishing tools will you be using? How do you think you will access (and store) information? What functionalities would you like to have at your finger tips? More concrete questions are: Will lxiii be available? What equipment will you use? Will tele-working spread?

I have for myself some answers to those questions. I'm more than happy to discuss these with yours.

13.4   The Gordian knot—a prophesy about IT

After One Year NTG I envisioned that eventually our name might be changed into New Technology Group,[30] because at that time already I was convinced that we should not sub-optimize, but get the priorities right within the appropriate and realistic context.

> For instance when a tool is so complex that it needs another couple of volumes to explain it properly, then there is something wrong.

Another sub-optmization is that we strive after top-quality of publications formatted by (La)TEX, and therefore we are completely out of balance with mapping the contents onto other media than paper.[31]

The place of (La)TEX in there?

Let us go back to the roots and make it really simple to use. In the mean time let us envision the appropriate context and get the priorities right. Investment in people can't do any harm, especially when strategically handled it might yield a real momentum.

13.5   TUG and LUGs

The past had it that TUG was the user group. Of late LUGs emerged and the questions about ordering caused some confusions. As I see it, what really matters is that the number of organized (La)TEX users is still increasing steadily. At the moment of writing I estimate that the organized users account for some 7,500. TUG's role is changing, however. I consider a federative organizational structure beneficial, with the exchange of information paramount and the cooperation attitude vital.

Of course it is very good to have TUGboat as the schol-

arly journal on the issue,[32] but it has its problems, if not for getting it cost-effectively out. Not in the least to the growth areas of the late-nineties, to those in financial disadvantaged countries for the time being. So some form of redistribution must be stimulated, acknowledging the source. How to finance TUGboat in that situation is a problem which must be faced and solved.

And what about METAfont?

NTG has not paid until now much attention to font development, nor exercised the virtual font concept. I expect this to happen in the coming years.
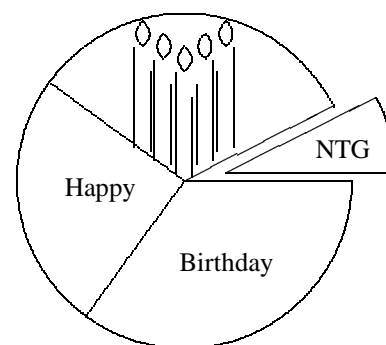
And what about literate programming?

We all had enough on our minds with LATEX and TEX during our first 5 years of existence. No much attention seemed to have gone to literate programming. For me the 'relational programming' approach—better know as Web-like—with some fancy navigation and logging, is by far superior to the classical hierarchical approach as required by the languages of the 60-ies. In this area much development can be expected. Recent projects are: Hypercode, and Igor of CMU.

Conclusion

The NTG has functioned very well, and is healthy. Let us give a big, BIG, very BIG hand to all of us, and our helpful friends.

The area of automated computer-assisted typography, EP and Information Technology in general, will be exciting areas for years to come. Join the party, hang on, and let's go for it.

A piece of cake?

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[30] Not to confuse with NTS.

[31] I like to compare this with playing bridge. In that game there are three phases: bidding, play and defense. In order to become a real good player all the three fields must be developed in balance. Furthermore, defense needs cooperation, and bidding a lot of understanding between the partners. Similarly within the (La)TEX world: cooperation and understanding are vital.

[32] Wait a minute, is it? Can it be? I mean we don't have a scholarly journal about FORTRAN issues to name but one language, do we? So be realistic.