Stichting NLnet Annual Report 2002

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1. Overview

NLnet stimulates network research and development in the domain of Internet technology.

Open Source

NLnet actively stimulates the development of network technology and makes this technology freely available to the community in its broadest sense. To this purpose, a wide range of internet-related projects are currently being funded for which Open Source licensing conditions, and in most cases the General Public License (also known as GPL or GNU license), hold.

NLnet projects

The projects undertaken by Stichting NLnet can be divided into:

- *Network research*: e.g. IIDS, a research group working on interactive intelligent network agent technologies;
- *Network development and engineering*: e.g. NLnet Labs, with a focus on secure DNS and IPv6 in 2002;
- *"Productising" network technology,* development and engineering with a focus on concrete results: e.g. database backend support for secure DNS service (BIND V9 DLZ), safe and robust network infrastructure design for schools (schoolLAN), a generic framework for storing and querying RDF and RDF Schema (Open Sesame), a tool for developing, distributing, and installing software (A-A-P), adaptive web access technology (AHA!), logging report generator (LogReport), and many more;
- *Network technology exchange*: e.g. the international exchange programme ReX in cooperation with USENIX;
- *Sponsoring of other Open Source or educational initiatives* in the area of networking: e.g. Web contests (ThinkQuest), open source development (FSF and ISC), and technology conferences (SANE 2002, BSDCon Europe).

These NLnet projects are described in more detail in chapter 3.

In 2002, Stichting NLnet financed projects to the sum of € 1.565.384 (compared to € 1.331.042 in 2001). NLnet has budgeted € 1.600.000 for projects in 2003 and € 1.700.000 for 2004.

As an organisation, Stichting NLnet does not derive any direct benefits from the undertaken projects or their results.

Projects new in 2002

A-A-P

The A-A-P project will provide a flexible and portable framework for software development, distribution and installation in an Internet environment. It should ease Open Source project development and deployment. The work started in March 2002 and the first phase will end in May 2003. This project involves a total of 1.2 man-years for the first phase.

AHA! Phase 2

The Adaptive Hypermedia for All! work started with a feasibility phase in July 2001 that ended in June 2002. This first phase involved an implementation effort of nearly 2 man-years.

The AHA! phase 2 project is the successor of the phase 1 work and involves better user modelling and improved adaptation possibilities. This second phase will end in July 2003. It involves 1 man-year of work, along with the work done by five MSc students. Release 2.0 is expected to appear in April 2003. The phase 2 implementation work should be completed in July 2003, resulting in Release 3.0.

Atom-Based Routing

The Atom-Based Routing project will develop or adapt a routing protocol (e.g. BGP) that makes use of atoms in order to achieve a protocol of lower complexity for routing Internet traffic. The work started in October 2002 and should end in November 2003. The work is done in cooperation with CAIDA and RIPE NCC and involves 1.6 man-years. One man-year is subsidized via NLnet Labs.

CP2PC

The CP2PC project, started in February 2002, consisted of two phases: a feasibility study of integrating a client into Peer-to-Peer networks, and the implementation of such a client to initially support GDN (a result of NLnet's SIRS project) and Gnutella. It involved about 0.9 man-year total for the pilot phase. The project was planned to end in December 2002. Results are expected in the spring of 2003.

DLZ BIND 9

The DLZ BIND 9 project started in December 2001 with the development of a modular database interface and a Postgres database backend driver for BIND V9. This first phase concluded in June 2002. In August 2002, work on the second phase started, consisting of drivers for MySQL, File System, Berkeley DB, ODBC, and LDAP, together with testing, reporting and BIND V9 configuration tooling.

	Phase 1 & 2 involve 0.5 man-year total. The project will end in the middle of 2003.
LCC	The Local Content Caching (LCC) architecture project is a pilot implementation of an alternative scheme for search engine design. This project started in March 2002 and ended in October 2002. It involved 0.5 man-year total.
Mail::Box phase 1	The Mail::Box project aims to improve the existing Perl Mail::Box (CPAN) library modules by implementing missing e-mail handling features, enforcing conformance to current RFC's for e-mail processing, and expanding and improving the documentation. The project started in May 2002 and ended in February 2003. Beginning in March 2003, this project continues with Mail::Box phase 2. The phase I implementation effort was about 0.3 man-year.
Open Sesame	Open Sesame, a framework for storing and querying RDF and RDF Schema data for the Semantic Web, started in March 2002 and will end in December 2003. It involves 2.6 man-years total.

Upcoming projects for 2003

In 2002, three new projects were defined, with formal start dates in early 2003:

- Mail::Box phase 2. A follow up and finalizing implementation of Mail::Box (2002 project), an e-mail handling Perl library module.
- Ambulant, an Open Source multimedia player for the SMIL 2.0 W3C standard. This player is a test base for later research and development of multimedia protocols.
- A-A-P phase 2. A follow up implementation of the A-A-P project in 2002 to provide a framework for distributed and internet based software developments

Projects finalized in 2002

	The A-A-P Phase 1, AHA! Phase 1, LCC and Mail::Box Phase 1 projects started and were finalized in 2002. These four projects have been mentioned already.
TimeWalker	The TimeWalker project started in April 2001 and was completed in September 2002 with the publication of release 2.1 and user documents on SourceForge. TimeWalker facilitates the view of voluminous time stamped data (e.g. system logging) and uses the human eye as a discriminating factor. NLnet has sponsored this project for close to two man-years of implementation effort.

Projects ended before 2002

AGFL	The AGFL-GNU project (Universiteit Nijmegen, the Netherlands) started in January 2000 and finalized its work on the development of a natural language parser generator in the end of 2001 with a generated parser for English documents. NLnet sponsored this project with € 113.768 in total, with an implementation effort of nearly 2 man-years.
BIND V9	The Internet Software Consortium (ISC) governs the development of BIND V9 software. BIND V9 was the first public domain implementation of secure DNS (RFC 1034 & 1035) and is currently in Release 9.2.2. The initial work was done between 1998-1999. NLnet co-sponsored this effort with US$ 250,000.
MAPS	MAPS is an anti-SPAM (unsolicited e-mail) service initiated in 1999 by Paul Vixie. NLnet sponsored this initiation with a lifetime membership for US$ 25,000. MAPS continues to be a valuable anti-SPAM service.
NILO	The NILO project started in 1998 in order to provide a public domain implementation for PXE Ethernet network interface cards (Eprom). A low-level technical problem stopped this project in 1999. The available code has been taken up by the netboot project.
SIRS	The Scalable Internet Resource Server project lasted for three years (1998-2001). It developed a service that allows internet resources to be widely distributed and replicated across the Internet in a scalable way. The work is continued in the GDN work of the Distributed System research group at Free University in Amsterdam. NLnet has sponsored this project with € 356.218 in total, with a total implementation effort of close to 6 man-years.

2. Project policy

Stichting NLnet's primary goal is to stimulate new developments in network (Internet) technology for managing and maintaining the network connectivity, to improve existing technology, and to encourage new applications of existing technology.
Stichting NLnet has chosen to do this by supporting non-proprietary network-oriented projects.

Policy

Stichting NLnet's methods of contributing to the development of new network (Internet) technology, improvement of existing technology, and new applications of existing network technology are:

1. Subsidise (fully or partially) software development;
2. Finance advanced scientific research into network technology, in co-operation with universities;
3. Provide financial and organisational backing for dissemination and exchange of knowledge about Internet technology through conferences, workshops and contests;
4. Sponsor Internet knowledge development and knowledge exchange programmes between universities, colleges and research institutes.

Open Source

All results of projects are made freely available to the community,

public forum

and are presented, if possible, at one or more suitable international conferences.

The Governing Board decides whether a project proposal is of interest to and appropriate for Stichting NLnet, possibly after consulting the Advisory Board and/or other experts in relevant field(s).

3. NLnet Projects in 2002

AGFL
parser generation for natural languages

Finding information on the Internet is not always easy. Good natural language interfaces could make it easier to search for information and improve the quality of the results. The goals of the AGFL project (Affix Grammars over a Finite Lattice -- University of Nijmegen, professor Kees Koster) are to expand research in the area of grammar development for natural language and to create tools to support automatic generation of efficient parsers for such grammars. The results are meant to be useful to the software development community as a whole.
Due to the lack of time left for the AGFL project, the example application has been cancelled.

Although the AGFL project ended in November 2001, the AGFL software and documentation were delayed and finally released in April 2002. See http://www.cs.kun.nl/agfl/ for more information.
The AGFL software will be made available as a GNU software package. An AGFL workshop was held in January 2002 at the University of Nijmegen. A presentation of AGFL was given in the Freenix track of the USENIX Annual Technical Conference in June 2002 and the ICT Kenniscongres in The Hague, Holland.

The AGFL project started in January 2000 and lasted to the end of 2001. It involved about 22 months of software engineering. The total cost of the project was € 113.768.

The application of the software has been very limited.

A-A-P
distributed software building

The first phase (14 months) of the A-A-P project began in March 2002 by Bram Moolenaar, who is employed full-time by Stichting NLnet Labs for this project.
The implementation effort in Python intends to create a flexible and portable framework for developing, distributing and installing software in the Internet era. The first phase is budgeted for € 82.000. In 2002, the actual costs were € 52.247.
The first Release 0.1 appeared in October 2002. A-A-P has been tested and applied into the VIM project. This project was also presented in a SANE 2002 poster session and at the BSDCon Europe Conference.
It has proven difficult to get other developers involved with the work.

Discussions held early on in 2003 will define the second phase of A-A-P, which phase is scheduled to end in October 2003.
Details of the software and the releases can be found at http://www.a-a-p.org. All releases of the software and the live CVS source tree have been made available via SourceForge. SourceForge showed an average of 95 software downloads per month in 2002, and there were about 180 downloads monthly at the end of the year.

AHA !
Adaptive Hypermedia for All

In January 2001, NLnet signed a contract for Phase 1 of a software development and engineering project at the Technical University of Eindhoven (TU/e). The project aims to develop technology for extending Web servers with user transparent adaptive functionality. The system is called Adaptive Hypermedia for All! (AHA!), and development is under the supervision of professor Paul De Bra (TU/e). It is based on the earlier work of Paul De Bra.
The project focussed on generalizing earlier prototyping efforts, AHA! support for documents from an external source, filtering Hyper Text Markup Language input files to eXtensible Markup Language format, using and modularising XML Document Type Definition for external representation, and developing AHA! tags for XML parsing speedup. In 2002, software development started for the authoring interfaces needed to create concept hierarchies and relationship types, as well as server-side applications that form the open adaptive engine.
Detailed progress reports are available at NLnet's project website http://www.nlnet.nl/project/aha/.
The Phase 1 work has been continued with Phase 2, which started in July 2002. The plan for Phase 2 is to incorporate a number of extensions that will turn AHA! into a much more versatile adaptive hypermedia platform. AHA! Release 2.0 has been severely delayed and is expected to be fully released in spring 2003. The released software will become available via SourceForge in 2003.
AHA! has been presented at the poster session of the SANE 2002 conference in Maastricht, and at a large number of web-technical conferences (ELearn2002, AH2002 , WWW2002, and HT2002 conferences).
More technical information on AHA and demonstrations of the software can be obtained via http://aha.win.tue.nl.

Stichting NLnet is sponsoring the AHA! Phase 1 project for a total of € 91.926. The Phase 1 costs for 2002 were € 45.963. The second year of the project is sponsored for a total of € 87.000. The Phase 2 costs for 2002 were € 37.439.

The application of the software has been very limited to date, and this is probably due to the delay of the release in 2002; however, interest in the software is gaining.

ALIAS
legal aspects of software agents

ALIAS is an interdisciplinary project that focuses on the legal and technical implications of the use of software agents in the context of Dutch, European and US law. The main topics explored in this project are: Autonomy, Identifiability and Traceability, Integrity and Originality, and Trust.

Three academic research groups have combined efforts to explore these topics: the IIDS group (Department of Computer Science, Vrije Universiteit), headed by professor Frances Brazier, the Computer Law Institute (Department of Law, Vrije Universiteit), represented by professor Anja Oskamp, and the Centre for Law, Public Administration and Informatization, (Department of Law, University of Tilburg), headed by professor Corien Prins.

The focus of this interdisciplinary co-operation effort between AI experts, computer scientists, and legal experts is unique. As a result, the initial phases of the project, in which frames of reference needed to be devised, were time consuming. The conceptual framework devised for this purpose identifies a number of intermediary concepts (autonomy, identifiability, traceability, integrity and trust) and relates these to existing legal and technical concepts.

A presentation at the SANE 2002 Conference in Maastricht focussed on the rights of agents, their owners and system administrators. An invited talk presented at the Bileta conference in April 2002 focussed on the conceptual framework, the status of agents in different contexts, and the possible legal implications (http://www.bileta.ac.uk). A presentation on the ALIAS project at the LEA workshop 2002 in Bologna was well received, and led to the invitation to chair the LEA 2003 workshop.

The results of the project, expected in June 2003, will be published in a number of forms, such as a final report in which the legal and technical aspects of the above mentioned topics are explored. Initial recommendations for good practices will be included, along with workshop

and journal papers, and an article for a more general audience.
More information on the ALIAS project is available via http://www.iids.org/alias. This ALIAS website has an electronic discussion forum with links to relevant papers. It has resulted in interesting contacts with other groups, but has not resulted in interactive discussions.
This two-year project started in February 2001. Stichting NLnet will sponsor up to € 188.120 in total for this project. In 2002, € 103.204 (in 2001 € 48.016) was spent on ALIAS. Eight people were involved in this project in 2002, four of whom were financed (part-time) directly by NLnet.
The interest in this topic is growing at national, European and international levels. The ALIAS project has stimulated new inter-faculty initiatives within the Vrije Universiteit in Amsterdam, in proposals for the EU, and in the organisation of workshops at a number of venues (e.g. LEA in Edinburgh).

Atom-Based Routing
reduction of routing tables

The Atom-Based Routing project aims to devise or adapt a routing protocol such as BGP to make use of atoms in order to achieve a protocol for routing in the Internet with a lower complexity, thereby severely reducing the number of routing table entries.
The project is carried out by NLnet Labs and RIPE NCC in cooperation with CAIDA at the San Diego Supercomputer Center in the USA. The project started in October 2002 and will be finished in November 2003 with an evaluation point in February 2003. NLnet subsidizes Stichting NLnet Labs for this project with a total of € 79.177. In 2002, NLnet Labs spent € 15.533 on this project.
The protocol proposals have been and are being discussed at IETF meetings and via the project's e-mail list. There is much interest in this topic.
More details about this project and its progress can be viewed at http://www.caida.org/projects/routing/atoms/.

BIND DLZ
dynamically loadable zones

The BIND DLZ (Dynamically Loadable Zones) project aims to develop some extensions to the BIND V9 DNS server implementation, allowing DNS zone and record data to be stored in a database and modified without restarting or reloading the BIND V9 DNS server. A

generic interface and a specific driver for the Postgres database have been implemented in phase 1 of this project. The first phase has been followed up by database driver implementations for other databases like MySQL and File System in September 2002. The Berkeley DB, ODBC and LDAP drivers and performance testing of the phase 2 work will be completed in 2003. A BIND V9 configuration script adaptation has also been made available.
The project was started in December 2001 by Rob Butler in the USA. NLnet has spent € 32.813 in 2002 (€ 1.115 in 2001) on the project and has committed a total of US$ 20.000 for its first phase and US$ 25.000 for the phase 2 drivers. The work is expected to be completed in the third quarter of 2003.
The project was presented at the poster session of the SANE 2002 conference in Maastricht.
The software has been made available via SourceForge http://www.sourceforge.net/projects/bind-dlz . The project e-mail list also resides there. SourceForge showed an average of 77 software downloads monthly in 2002, and that number grew to around 140 per month at the end of the year.

CP2PC
generalized peer-to-peer API

In February 2002, the CP2PC project started with a feasibility study for three months in order to investigate a general design for a minimal programming interface supporting many different peer-to-peer (P2P) networks. Each P2P network typically has its own protocol set and does not interoperate with other P2P networks. A client-side "gateway" built on top of the CP2PC API can achieve interoperability between such P2P networks. The project has been done by the Distributed Systems research group at the Vrije Universiteit in Amsterdam and is supervised by professor Maarten van Steen.
The study was followed up by a second phase, with an expected finalization date in 2002, in order to provide an implementation of and interfaces to the GDN software (of the same group) and Gnutella. The group has cooperated with the Tristero development group on some of the API definitions.
The work was presented at the SANE 2002 conference in Maastricht and the academic Kenniscongres in The Hague. One of the project members visited the CodeCon 2003 conference in order to attract interest to the work.

NLnet sponsored this project with € 15.880 for the first phase and € 42.348 for the second phase, with about 1 man-year of work total.
The results were made available in March 2003 on SourceForge. After the release, the average amount of downloads was 23 per month. The maximum number of downloads was reached in March with 43 downloads. The e-mail list activity on CP2PC has been minimal.

Free Software Foundation (FSF)

The Free Software Foundation is renown for its efforts in the area of freely distributable software development, most notably the GNU software and licensing policy. The well known GNU Public License (GNU GPL) and GNU Free Documentation License (GNU FDL) are used for many NLnet-sponsored projects. The recently started European FSF section is concentrating on the European aspects of the FSF project philosophy.
Stichting NLnet donated € 15.000 in 2002 to support the work of the FSF and € 5.000 to support the European section FSF Europe. Since 1999, NLnet has made yearly donations of a comparable amount to FSF. More details on FSF can be found at http://www.fsf.org and http://www.fsfeurope.org.

Interactive Intelligent Distributed Systems (IIDS)
network/agent research

In 1999, Stichting NLnet and the Department of Sciences at the Vrije Universiteit Amsterdam formally agreed on a long-term collaboration in the field of Intelligent Interactive Distributed Systems (IIDS). Professor Frances Brazier heads the IIDS research group. The group's primary research directive is to devise a flexible, modifiable architecture for the development of large-scale interactive intelligent agents in a wide-scale distributed network. The research programme distinguishes three main lines of research:

(1) Middleware (an Agent Operating System [AOS] and an agent environment [Mansion])
(2) Services (including an Agent Factory, Directory Services and Management Tools)
(3) Distributed Applications to explore requirements and to test results (mobile co-operative information retrieval agents, embedded internet services, system administration, distributed design).

The management of the group and the professor position required more time than originally anticipated. NLnet's research director currently spends approx 80% of her

time on the research group. At the end of 2002, the group consisted of Niek Wijngaards (researcher), Benno Overeinder (researcher), four PhD students (David Mobach, Guido van 't Noordende, Sander van Splunter, and Elth Ogston, the latter three financed by the VU), Etienne Posthumus (scientific programmer) and Simon Dompeling (student assistant). A new PhD student, Hidde Boonstra, will join the group Jan 1, 2003. In December, Debbie Richards, a research guest from Macquarie University Sydney, joined the group for half a year to work on the Agent Factory Service and the Semantic Web.

Much of the AgentScape middleware development is done in close collaboration with professor Andy Tanenbaum and professor Maarten van Steen of the Computer Systems group that IIDS will join in 2003.

Other parts of research, such as directory services, are done in collaboration with NLnet Labs.

IIDS is also a partner in the above-mentioned interdisciplinary ALIAS project.

Research results have been presented at the following: BNAIC conference in Leuven, ALAD/AMEC Agent SIG meeting, LEA and AMAS workshop in Bologna, AID'2002 conference and workshops in Cambridge, UK, WAID'2002 at MIT, a symposium held at UCL London, IEEE Int. Conf. on P2P Computing in Sweden, BILETA 2002 in Amsterdam, poster session at the SANE 2002 Conference in Maastricht, and at the SAC 2002 workshop in Madrid. Details of the work and publications can be obtained from http://www.iids.org.

NLnet contributed € 307.199 in 2002 (€ 203.157 in 2001) to support the IIDS group, in addition to the extra time (0.4 fte) invested by Brazier directly.

Stichting NLnet Labs

Internet software development

Stichting NLnet Labs was established in late 1999 with a mission to further develop Open Source software for the Internet and all other related scientific developments. The laboratory, a long-term development environment for up to six people, is fully financed by Stichting NLnet and cost a total of € 316.000 in 2002 (€ 153.000 in 2001; the budget for 2003 is € 360.000). It is situated in Amsterdam in one of the Matrix buildings of the ASP (Amsterdam Science Park), and had five employees during most of 2002. Ted Lindgreen is the executive director.

Governing Board	At the end of 2002, the Governing Board consisted of Teus Hagen (Stichting NLnet, chair), Frances Brazier (secretary, Stichting NLnet), and Wytze van der Raay (treasurer, Stichting NLnet).
DNSSEC	NLnet Labs continued its experiments with the deployment of DNSSEC for large domains in 2002. The experiment that started in 2001 with SIDN to set up a secured .nl domain was completed, and it was followed up by a more ambitious collaboration with SIDN: the setup and management of a fully secure shadow registry for the .nl country top-level domain. A similar experiment is also being conducted by the Swedish registry for .se, and NLnet Labs is participating in this as well. As part of the DNSSEC work, NLnet Labs also worked on writing a secure aware resolver. This is more complicated than expected and is still revealing new and unforeseen complications. The IETF discussions about the standardization or not of DS and OptIn are also impacting this work.
NSD root server for DNS	In cooperation with RIPE, development work is being done to write a new DNS implementation, called NSD. This authoritative-only server is geared specifically to root servers and does not contain any code from existing implementations. The 1.0.2 release has been installed on ns.EU.net and k.root-servers.net.
IPv6	In the second half of 2002, NLnet Labs strengthened its involvement in the introduction of IPv6. In collaboration with NIKHEF, CWI and AMS-IX, a successful awareness day for Dutch ISPs was organised, resulting in a doubling of the number of ISPs exchanging native IPv6 traffic over the AMS-IX exchange. A special IPv6 SOHO router image was produced, which is used in collaboration with SURFnet to deploy small IPv6 SOHO routers for IPv6 experiments. IPv6 measurements were carried out in collaboration with RIPE NCC and presented at a RIPE meeting. Contributions were made to several Internet drafts developed by the v6opts working group at IETF. See http://www.nlnetlabs.nl for more detailed information on the work and the availability of the software. In 2002, NLnet Labs started cooperative work with RIPE NCC , CAIDA on Atom-Based Routing (discussed elsewhere in this report) and strengthened collaboration with IIDS, NLnet's research group.

NLnet Labs is providing the employment coverage for the A-A-P project (also discussed elsewhere in this report).

Stichting NLnet Labs publishes an annual report.

LCC

websearch Local content caching

In March 2002, Nexial Systems started work on the Local Content Caching (LCC) project. The implementation work was finalized in September 2002. The pilot project investigated what would be needed to create a system of local content caching, in which a content provider can notify a Local Content Cache of new (or updated or deleted) content. This content is then collected by that Local Content Cache. The cache can be used by a search engine, or any other content "user" such as an intelligent agent, for its own purposes. A proof of concept implementation of the software for a Content Provider, a Local Content cache, and Content Users, has been made publicly available as a result of this project.

The work has been presented at the poster session of the SANE 2002 conference in Maastricht.

The software modules have been tested in Nexial's Nextrieve search facility and were made available together with detailed documentation via SourceForge at http://www.sourceforge.net/projects/lococa .

The interest in the work so far has been minimal. The average number of downloads in 2002 was 10 per month. In the November release time frame, there were 7 downloads.

In early 2003, there has been initial interest for the software from the Ingenuus Institute, a non-profit organization raised to promote free and open software in education, health care and other sectors in Belgium.

NLnet has fully sponsored this project with € 45.791. The implementation effort took about 0.5 man-year.

Stichting LogReport Foundation

log file analysis and reporting

Stichting LogReport Foundation was founded in 2000 as a formal entity to support the activities of a group of developers working to provide report generation software and support for network system administrative log data.

Governing Board

The members of Stichting LogReport's Governing Board are: Teus Hagen (chair, Stichting NLnet), Wytze van der Raay (treasurer, Stichting NLnet) and Jakob Schripsema (secretary, neutral).

international team

Joost van Baal joined LogReport in November 2000 as its first developer and is now co-ordinating an international team of part-time developers and maintainers. This team (Joost van Baal, Josh Koenig, Wessel Dankers and Francis Lacoste), which averaged four people in 2002, is working on LogReport software development and the set-up of a report responder service. In 2002, ten releases of Lire, including three main releases (release 1.0: merging capability, 1.1: more new log file types, and 1.2: enhancements to the reports and more log file types) were made available from the LogReport web site (http://www.logreport.org) and through SourceForge (http://sourceforge.net/projects/logreport).

There was an average of 170 software downloads monthly on SourceForge. From the LogReport server, there are about 1000 downloads on the average per month. Due to the Lire 1.2 release in December 2002, the number of downloads at SourceForge climbed to 695 in January 2003. Installation packages for Debian and RedHat are provided. There are about 330 Lire Debian packages installed.

LogReport report service

The project Web site provides a report responder service: one submits the log file(s) to the LogReport service (by e-mail or web) and receives a report back automatically. This service is used by 30-40 different users with 70-150 log files weekly.

log file coverage

Reports are generated from a variety of logs, including: BIND V8 and V9 query logs, firewall logs (Cisco, ipchains/iptable, IP filter, pix, watchguard, WELF), dns (bind8, bind9), e-mail (argomail, Exim, nms, qmail, Postfix, s1ms, sendmail, Netscape), message store (dbmail, nmsmmp, mmstore), print logs (CUPS, LPRng), ftp transfer logs (ProFTP, WU ftpd, MS IIS, iis ftp, xferlog), web proxy logs (squid, WELF, MS ISA), spam filtering (spamassassin), syslog (syslog), www (combined, common, modgzip, referrer, w3c extended) and database transaction logs (MySQL, pgsql). It is relatively easy to add support for new types of log files.

The supported output formats with, if possible, graphic images included, are: DocBook XML and HTML, Excel 95 (RTF), PDF and plain ASCII.

The LogReport development team is one of the few projects of Stichting NLnet where the developers and contributors are widely spread over the world (Canada, USA, Italy, Russia, Germany, Bulgaria, Netherlands, Swiss).

Stichting LogReport Foundation has been exploring the possibility of alternative funding models (e.g. exploitation of its Open Source software) in order to extend its current efforts. This was not successful and has led to a final planning of developmental effort in order to create a powerful second major release, on which further open source development efforts could be easily based.

LogReport has been presented at the poster session of the SANE 2002 conference in Maastricht, the FOSDEM 2002 conference in Brussels, NE2000 in Nuenen, and at the XML Mini conference in Rotterdam. An article about Lire appeared in Brave GNU World.

Stichting LogReport Foundation is fully sponsored by NLnet. The total amount sponsored by NLnet in 2002 was € 92.480 (€ 140.000 in 2001). Paid employment in 2002 was approximately 1.6 fte during the year. For 2003, NLnet committed a final sponsoring of € 5.000 to Stichting LogReport. After 2003, the financial support from NLnet for LogReport will end as the basic developments for the software will be finalized.

Stichting LogReport Foundation publishes an annual report.

Mail::Box
email handling
Perl modules

The Mail::Box project started in May 2002 and ended in February 2003. The second phase of this project begins in 2003.

The phase 1 part of Mail::Box involved improvements to a new set of modules forming the Perl Mail::Box package version 2. The development has resulted in quality improvements (RFC compliance, documentation, support for more platforms, creation of a user e-mail list), and enhanced functionality (message parser in C).

The software is made available via the standard Perl modules distribution channel CPAN.

Project results were presented at the SANE 2002 conference in Maastricht and YAPC::Europe 2002 conference in Munich.

The project work is carried out by Mark Overmeer. The development cooperation with others was limited. The amount of Mail::Box e-mail list users has been about 225 per month on the average during an 8-month period. The e-mail list has about 70 different users, from which 42 users contributed to changes in the software.

For more details about Mail::Box, go to http://perl.overmeer.net/mailbox.

NLnet sponsored this first phase in 2002 with € 21.897 total. The manpower needed for this work took about 0.25 man-year.

Open Sesame
web RDF querying framework

Open Sesame is a project started by Aidministrator Nederland b.v. in March 2002 and planned to end in December 2003.
The goal of the project is to develop a scalable, modular architecture for persistent storage and querying RDF and RDF Schema, the proposed W3C standard modelling languages for the Semantic Web. It builds upon the results of a European IST project On-To-Knowledge (EU-IST-1999-10132). Key features of Open Sesame are: open source, available under LGPL, scalability, a query engine for RQL, portability, repository independence, extensibility, and separating the communication from the actual functionality by the use of protocol handlers.
The target audience for Sesame is the RDF/Semantic Web community, e.g. SWAP (Semantic Web and Peer-to-Peer), a European Union project.
In 2002, the Sesame code base (and documentation), installation package, a tutorial on RQL and Sesame, the API for the RDF Schema-based repositories, a generic SQL repository (DAML-OIL querying) abstraction layer (e.g. with Oracle 9i), complete support RQL, and a SOAP handler have been developed.
The software has been released via SourceForge (http://www.sourceforge.net/projects/sesame); the latest release in 2002 was V0.7. The average number of software downloads was 150 per month. V0.7 has been downloaded 293 (server) / 67 (client) times. There is a Sesame demo server available via http://sesame.aidministrator.nl/, which is used by 1300 visitors per month on average.
Technical contributions to the project have been received from a.o. OntoText (Bulgaria), University of Karlsruhe, Oracle (Germany), Vrije Universiteit Amsterdam, and TU/e Eindhoven.
Sesame was presented at the ISWC conference in Sardinia and at the poster session of the SANE 2002 conference in Maastricht.
The project of about 2.6 man-years is fully sponsored by NLnet with € 176.000 in total. In 2002, NLnet sponsored this project with € 112.238.

ReX
International research exchange

In the summer of 1999, a unique programme was started, together with USENIX, which supports international research and development: the Research Exchange Programme (ReX), http://www.NLnet.nl/project/rex/.
This programme aims to facilitate the exchange of technology between research institutes world wide by working on computer software projects, especially those involving network technology and open systems.
Research groups with complementary and strongly related research foci can gain from collaborating with each other, broadening the potential scope of their results. Because the results are to benefit the community and be freely available, all software is open source.

Two new exchanges that were approved in 2001 have taken place in 2002 and continue in 2003:

- *University of Pennsylvania and University of Leiden:* a nine-month exchange to jointly develop a prototype for an extensible packet monitor based on Intel's IXP1200 network processor;
- *Lund University (Sweden) and Indian Statistical Institute (India)*: a two times nine-month vice versa visit to develop a software oriented stream cipher for secure communication over networks. This exchange actually started in February 2002.

The total cost of the ReX program in 2002 was budgeted for US$ 60,650. Stichting NLnet paid a total of € 5.197 in 2002 (the budget for 2003 is € 25.000). All costs are expected to be shared with USENIX on a 50/50 basis.

steering committee

The members of the ReX Steering committee responsible for this programme are: Evi Nemeth and Kirk McKusick (USENIX), Frances Brazier (chair) and Teus Hagen (Stichting NLnet), and Mike O'Dell (neutral). The committee's task is to initiate and evaluate proposals and to monitor and evaluate the ReX exchange projects
Due to economic limitations on the USENIX side, this program was frozen in early 2002. The committed projects have continued and are administered by NLnet.

schoolLAN
network infrastructure

The schoolLAN project focuses on the development of a small, robust, and centralised network targeted for primary schools.
SchoolLAN initially started in 1999 as a technical concept and tools for configuration development by Stichting NLnet.
A plan was developed to create support organisations for primary schools in five regions of the Netherlands, but this

regional initiative succeeded only in two regions (Venlo and Arnhem). The regional support organisations were set up in collaboration with regional teacher training colleges and vocational training colleges specialising in IT. The major differentiator of the schoolLAN project is its orientation on the use of an Open Source development mode, not only for the technical network/computer portion but also for the (digital) educational component.

Stichting schoolLAN

In order to boost the cooperative development efforts, NLnet decided in mid 2001 to create an interregional coordination centre: the Stichting schoolLAN, a foundation now employing three full-time technical employees and two trainees. Stichting schoolLAN is fully sponsored by Stichting NLnet. The foundation streamlines the schoolLAN developments, facilitates the distribution of the schoolLAN software with a CD-rom and extensive documentation, and supports the local schoolLAN initiatives. See http://www.schoollan.nl for more information (in Dutch!).

In the second half of 2002, the foundation conducted a study to examine opportunities to intensify and increase the schoolLAN deployment in primary schools and make the foundation self-supporting. The results of the study suggest a more direct approach to schools as opposed to the original indirect regional approach. Stichting schoolLAN is expected to become self-supporting in 2004 with a minimum of 150 – 200 supported primary schools.

SchoolLAN was presented at the poster session of SANE 2002 in Maastricht, and an article about schoolLAN appeared in the Dutch Linux Magazine. 100 CD-roms with schoolLAN were distributed mainly to primary schools after the publication of this article, which boosted the initiative to more individual schools across Holland.

Governing Board

The Governing Board of Stichting schoolLAN consists of Teus Hagen (chair, Stichting NLnet), Wytze van der Raay (treasurer, Stichting NLnet), and Kees Keijzers (secretary, University of Nijmegen).

schoolLAN Arnhem

In January 2001, the efforts in the Arnhem region were formalized. A one-year contract for technical support was awarded to the ROC Rijn IJssel ICT College in Arnhem in 2001. This contract was severely delayed and ended in May 2003. Only ten out of the expected twenty primary schools were equipped with schoolLAN by the ROC at the end of 2002.

The regional foundation, Stichting schoolLAN Arnhem, was shut down in October 2002 due to internal problems.

schoolLAN Venlo

In the region Venlo, the support of NLnet has made it possible for Fontys College, Gilde College, and the foundation Stichting Prisma to install and provide support for schoolLAN at all primary schools of Stichting Prisma (18 schools). Prisma is also supporting schoolLAN at a non-Prisma school in that region. The one-year development contract for this region was somewhat delayed and ended in December 2002.

Friesland

For the region Bolsward in the province of Friesland, Stichting schoolLAN contracted the educational service provider GCO Fryslân. This NLnet-funded initiative started in late 2002 in order to deploy schoolLAN at an anticipated 15 primary schools.

Progress in the regions is slow due to a lack of decision power and sufficient technical knowledge, low motivation, a non-commercial minded culture, and the top-down, regulated structure of the educational organisation.

Stichting NLnet has registered the trademark schoolLAN in the Benelux to prevent misuse by other parties. NLnet subsidized Stichting schoolLAN in 2002 for € 239.206. NLnet expects to sponsor this foundation with a total of € 221.800 for 2003 (an expenditure of € 348.500 and an expected income of € 126.700 for Stichting schoolLAN).

Stichting ThinkQuest

student web contests

Stichting ThinkQuest Nederland (a non-profit organisation) was created at the end of 1999 to promote Internet use in education and to stimulate the development of educational Internet applications. ThinkQuest Nederland (http://www.thinkquest.nl) participates in the international ThinkQuest programme. At the end of 2002, the Governing Board consisted of Frances Brazier (Stichting NLnet, chair), Ferry de Rijcke (Onderwijsinspectie), Pieter Hogebrink (Onderwijs-inspectie Zwolle), Roel Rexwinkel (SURFnet), and John Bronkhorst (Hogeschool Edith Stein).

Kennisnet

As of July 1st 2002, the operational aspects of all the web contests have been contracted out to Stichting Kennisnet (foundation), an Internet service and content provider exclusively for primary and secondary schools. The negotiations and transition took place in 2002 and integration in Kennisnet is still in full swing.

TimeWalker
visualizing huge data sets

TimeWalker is a software development project which will result in a novel software tool for "browsing and data mining" huge amounts of time stamped data. The tool utilizes principles obtained from the information visualisation technology. The visualisation technique makes use of the human ability to recognize patterns in colour representations.

The project started in April 2001 and was expected to conclude in 2001. However, development was stretched out to September 2002. The project was unable to obtain significant feedback from beta testers like network and system managers.

TimeWalker was presented at the poster session of SANE 2002 in Maastricht.

The first public beta release was made on December 2, 2001. This was followed up by a final release R2.1 in September 2002. Source code maintenance and software distribution for TimeWalker is handled via the SourceForge web site. More information on TimeWalker can be obtained via http://sourceforge.net/projects/timewalker. The SourceForge statistics show an average number of 33 downloads per month in 2002, with the highest amount being 71 in September for the latest release.

The project was done by Prometa Ratum b.v. and driven and managed by Theo de Ridder, in co-operation with Pim Buurman. The total NLnet funding for this project is € 150.000. In 2002, NLnet spent € 50.000 on TimeWalker.

3.2 Conferences

SANE 2002

The NLUUG (http://www.nluug.nl/), Stichting NLnet and USENIX (http://www.usenix.org/) have sponsored SANE 2002, the third Systems Administration and Networking Conference in Europe. SANE 2002 was held from May 27 to May 31, 2002 at the MECC in Maastricht. The conference had a three-day tutorial program, followed by a two-day technical program. In addition, a poster session and a small tradeshow were held in conjunction. Most of the active NLnet projects presented their work at SANE 2002.

Stichting SANE is responsible for organising this event. Stichting NLnet is represented on the board of Stichting SANE and also provides financial and administrative

support. The fourth SANE conference will be held in Amsterdam in 2004.

Stichting NLnet provided a guarantee of € 25.000 and an interest-free loan of € 15.000 to Stichting SANE for SANE 2002. NLnet also donated € 5.000 to this conference (excluding the conference costs of the NLnet project participants).

EuroBSDCon

EuroBSDCon was held from November 15-17, 2002 in Amsterdam. The conference featured less formal presentations from the BSD UNIX field of OS software (FreeBSD, OpenBSD, NetBSD, etc.). The conference attracted 280 visitors, with a large number (ca 15%) of students.

Stichting NLnet has supported the organisation of EuroBSDCon by a guarantee of € 10.000 and an interest-free loan of the same amount. A charge of € 2.842 was taken with respect to the guarantee to cover the predicted loss of EuroBSDCon.

3.3 Other activities in 2002

Stichting NLnet is continually in pursuit of new projects. To this purpose, NLnet maintains relations with organisations such as USENIX, NLUUG, RIPE, and SURFnet.

Relations with universities are another potential source of projects. A few universities (Nijmegen, CWI, and Amsterdam) were visited in 2002.

Open Source and business

Relations with some small high-tech companies and the Ministry of Economic Affairs were established by Stichting NLnet. NLnet takes part in an Open Source specialist panel for OASE, an Open Source stimulation project from Syntens (Ministry of Economic Affairs) for mid-size and small businesses.

computer science, education

The schoolLAN project has had an unexpected influence on the way network technology is taught at two colleges (HBO Fontys and ROC RIJC ICT College). The education there has become more practical and technologically oriented, as opposed to focusing mostly on software configuration management. Both students and teachers have been highly motivated and enthusiastic.

Internet Software Consortium (ISC)

ISC governs the development of BIND V8 and V9, as well as DHCP software. These software packages implement

the domain name server and dynamic host configuration protocols. ISC runs various research/development projects including DNSSEC, root server anycast, BIND V9 performance and DNS API. ISC is looking for funding to continue its software releases.
ISC has initiated a BIND Forum for the DNS BIND V9 software distribution and support.
Teus Hagen is a member of ISC's Board of Directors.

4. Stichting NLnet organisation

NLnet's history started in April 1982 with the announcement of a major initiative to develop and provide network services in Europe.

NLnet birth date

Stichting NLnet was formally established as a "stichting" (Dutch for foundation) on February 27, 1989 and is situated in Amerongen, the Netherlands. It is registered at the Chamber of Commerce, Amsterdam under number 41208365. Since 1999, Stichting NLnet has had a non-profit tax status (so-called Article 24 status, "algemeen nut status").

funding

In November 1994, NLnet Holding BV was formed by the foundation in order to create a commercial base for its Internet activities. The merging of NLnet's Internet Service Provider (ISP) activities with MCI (formerly WorldCom/UUnet) in 1997 provided Stichting NLnet with the means to actively stimulate the development of network technology and to make this freely available to the community in its broadest sense.

NLnet foundations

To be able to maintain a clear separation between Stichting NLnet's funding operations and the project technology related operations, Stichting NLnet has created separate legal entities for some of its more specialized projects, such as 2000's Stichting NLnet Labs and Stichting LogReport and 2001's Stichting schoolLAN. These foundations, directed in full or in part by Stichting NLnet, have obtained a full non-profit tax status.

Governing Board

The Governing Board of Stichting NLnet consists of:
Chair: Teus Hagen teus@NLnet.nl
Treasurer: Wytze van der Raay wytze@NLnet.nl
Secretary: Frances Brazier frances@NLnet.nl
Board member: Jos Alsters jos@NLnet.nl
Since December 2002, Hans Onvlee hans@onvlee.x4all.nl participates in the Governing Board.

operations

For daily operations, a Board of Directors has been selected from the Governing Board:
General director: Teus Hagen
Financial director: Wytze van der Raay
Research director: Frances Brazier

Frances Brazier holds a part-time position (two days per week) as full professor at the Vrije Universiteit (IIDS research group) in Amsterdam.

Upon examining the experiences with the NLnet projects, it was determined that there was a need for:

- more PR concerning the current activity of the projects;
- more propagation in the early stages of the projects;
- more guidance while the projects are in progress to enable better deployments;
- more follow-up work after the projects have ended.

Based on these needs, a decision was made to increase the operational staff with one person. However, NLnet was unable to fill this vacancy in 2002, and due to different circumstances at the end of 2002, this vacancy was dropped.

Advisory Board

An Advisory Board of three people supports the Governing Board of Stichting NLnet:

- *advisor on technology*: Paul De Bra, full professor, University of Eindhoven;
- *advisor on legal affairs*: Anne-Marie Kemna, director ICT/IE, KLegal Advocaten;
- *advisor on finances*: Erik Esseling, director, Esseling Beheer b.v..

For external (financial and legal) advice and consultancy, Stichting NLnet is supported by: CMS Derks Star Busmann (legal, tax and notary advice), PriceWaterhouseCoopers (accountancy and salary affairs), Lombard Odier (investment management), and Attica Vermogensbeheer (investment management).

5. Finances

means

Stichting NLnet finances its projects and activities from the revenues obtained from its invested capital. If possible, subsidies from the government and/or third parties will also be used for project activities, but to date this has not been the case.

5.1 Fiscal status

tax exemptions

Stichting NLnet has not been running a commercial company since mid 1994 and does not plan to do so in the future. Therefore, the foundation is not subject to Value Added Tax (BTW in Dutch) or company tax (vennootschapsbelasting in Dutch).

general benefit status

As of March 9, 1999, Stichting NLnet has been classified, at its request, by the Dutch tax office (Department Registratie en Successie) as an entity with general benefit objectives within the meaning of the Successiewet 1956 (article 24 sub 4).

foreign taxes

In addition to this, Stichting NLnet obtained a so-called place of residence declaration (woonplaatsverklaring) from the Dutch tax office for companies on June 8, 1999. This declaration enables the foundation to reclaim part of the foreign taxes withheld on foreign dividends. In September 2000, a request was filed with the tax office to obtain a separate declaration enabling the foundation to be exempt for source tax withheld on USA dividends, according to article 36 of the Double Taxation Convention between the USA and the Netherlands. This request was granted on January 16, 2002.

5.2 Administration

euro

A switch of base currency from guilder to euro was made on January 1, 1999. This guarantees a proper alignment between the books and the investment management reports by Lombard Odier and Attica; the latter reports are also based on the euro, because of the switch of the equity and bond markets to euro starting January 1, 1999. Stichting NLnet has not experienced any internal administrative problems with the permanent introduction of the euro on January 1, 2002.

Current accounts in non-euro currency with a non-zero balance are subject to a currency adjustment at the end of each month, based on the end-of-month exchange rates supplied by the external investment managers.

salary administration Salary administration has been contracted to Salarisadviesgroep Rayon Centrum of PricewaterhouseCoopers in Utrecht. This group also prepares the salary tax forms. Due to capacity problems at PricewaterhouseCoopers Utrecht, PricewaterhouseCoopers requested that Stichting NLnet Labs switch to the Financial Management Solutions group of PricewaterhouseCoopers in Amsterdam on July 1, 2002.

accountant PricewaterhouseCoopers has been charged with compiling and auditing Stichting NLnet's Annual Accounts in 2002. The accountancy report is a separate document with this annual report.

Cost of activities in 2002 and budget for 2003

cost of activities in 2002 The cost and revenue of Stichting NLnet's activities in 2002 are summarised and compared with numbers for 2001 below (all amounts in euro):

	2002		2001	
	debit	**credit**	**debit**	**credit**
Net interest income		48.879		37.658
Cost of projects	1.565.384		1.331.043	
Cost of staff	323.356		321.462	
Depreciation of inventory & equipment	4.325		3.985	
Other costs	61.894		45.386	
Withdrawal from capital		1.906.080		1.664.218
Total	1.954.959	1.954.959	1.701.876	1.701.876

cost of projects 2002

A specification of the "Cost of projects" item in relation to the original budget and to previous years follows (all amounts in euro):

Project	Cost 2002	Budget 2002	Cost 2001	Cost 2000	Total cost until 2002
A-A-P	52.247	-	-	-	52.247
AGFL	-	-	45.508	67.260	113.768
AHA!	83.402	94.000	45.963	-	129.365
ALIAS	103.204	95.000	48.016	-	151.220
Atom-Based Routing	15.533	-	-	-	15.533
cp2pc	60.498	75.000	-	-	60.498
DLZ	32.813	50.000	1.115	-	33.928
EuroBSDCon	2.842	-	-	-	2.842
Free Software Foundation	19.837	16.000	16.336	11.761	56.879
HAL2001	-	-	10.000	-	10.000
IIDS	307.199	310.000	208.157	200.000	739.353
ISC/BIND V9	-	-	199.362	-	347.562
LCC	45.791	-	-	-	45.791
LogReport	92.480	92.000	140.000	19.370	251.850
Mail::Box	21.897	-	-	-	21.897
MAPS	-	-	-	-	22.077
NILO	-	-	76	-	16.832
NLnet Labs	316.000	316.000	153.000	234.165	703.165
Open Sesame	112.238	126.000	-	-	112.238
ReX	5.197	50.000	25.967	9.986	41.150
SANE 2002/2000/1998	5.000	20.000	-	-	5.000
SchoolLAN	239.206	300.000	190.343	6.297	438.139
SIRS	-	-	145.210	131.029	356.218
ThinkQuest	-	-	-	-	226.890
TimeWalker	50.000	56.250	100.000	-	150.000
Twinsite	-	-	-	4.538	4.538
YAPC::Europe 2001	-	-	1.990	-	1.990
Other	-	-	-	-	2.326
New projects	-	303.550	-	-	-
Total	1.563.384	1.903.800	1.331.043	685.406	4.113.746

budget 2003

The provisional budget for 2003, as approved by the board, is as follows (all amounts in euro):

	budget 2003 debit	budget 2003 credit
Net interest income		45.000
Cost of projects	1.600.000	
Cost of staff	342.000	
Depreciation of inventory & equipment	5.000	
Other costs	58.000	
Withdrawal from capital		1.960.000
Total	2.005.000	2.005.000

projects budget 2003

The specification of the "Cost of projects" item, expanded with an extrapolation to 2004 for multi-year projects, is as follows (all amounts in euro):

Project	Budget 2003	Budget 2004
A-A-P	55.000	
AHA	53.000	
ALIAS	8.000	
Atom-Based Routing	60.000	
BSDCon Europe	3.000	
DLZ	16.000	
Free Software Foundation	20.000	20.000
LogReport	5.000	
NLnet Labs	325.000	341.250
NLnet Labs / Donkey	35.000	
Open Sesame	70.000	
ReX	25.000	
SANE 2004	-	10.000
SchoolLAN	268.000	150.000
IIDS	400.000	420.000
New projects	257.000	758.750
Total	1.600.000	1.700.000

Investment policy

start of year status

On January 1, 2002, Stichting NLnet had a capital of 31,0 million euro at its disposal. The majority of this capital, namely 30,4 million euro, was invested under two separate investment management agreements.
The first (and oldest) investment management agreement was with Lombard Odier Asset Management (Nederland) N.V., also operating under the name Lombard Odier Institutional Asset Management, with funds held at Kas-Associatie N.V. in Amsterdam as the custody bank. The managed value under this agreement was 18,9 million euro on January 1, 2002.
The second investment agreement (initiated in 2001) was with Attica Vermogensbeheer B.V., with funds held at Effectenbank Stroeve in Amsterdam as the custody bank. The managed value under this agreement was 11,5 million euro on January 1, 2002.

Lombard Odier

Lombard Odier has been charged since the end of 1997 to perform investment management for Stichting NLnet with a "neutral" investment profile (global distribution 70% equities, 30% bonds) to obtain the best return with limited risk. The investment performance is measured each quarter by comparison with a composite benchmark, which consists of the weighted average of a number of financial indexes:

weight	index
55 %	MSCI Europe Index
15 %	MSCI USA Index
20 %	EFFAS EMU Government Bond Index (maturity > 1 year)
10 %	EFFAS USA Government Bond Index (maturity > 1 year)

The results of the stock markets have been very disappointing in 2002. Much to our regret, the results of the portfolio managed by Lombard Odier were staying even below the negative market results. With both short-term and long-term investment results (discussed below) unsatisfying for Stichting NLnet, it was decided to terminate the investment agreement with Lombard Odier on November 1, 2002, using the month of October to liquidate the remaining portfolio.

The development of the benchmark index and the result obtained by Lombard Odier (net, after subtraction of costs) over the year 2002 is shown in the following table:

Ultimo	benchmark	result LO
December 2001	100,0	100,0
March 2002	101,5	99,4
June 2002	88,0	86,0
September 2002	76,4	75,7

As can be seen, the net investment result of Lombard Odier over the first three quarters of 2002 has been a negative return of -24,3%, in comparison to -12,0% in 2001, -2,4% in 2000 and +30,2% in 1999. In relation to the benchmark, which showed a negative return of -23,6% over the first three quarters of 2002 (and -7,1% in 2001, +1,2% in 2000 and +24,4% in 1999), the performance of Lombard Odier has been disappointing both in absolute and relative terms for three consecutive years. Only when looking back over the full period of the investment agreement (January 1998 - October 2002, 4.75 years), a small total net return has been achieved of +4,3% in comparison to a benchmark result of +3,5% (or annualized: +0,89% versus +0,73%).

Attica

Attica Vermogensbeheer was selected as NLnet's second investment manager in July 2001. They are following an alternative investment management strategy, based on alternative investments like market-neutral funds and long-short funds (also known by the more generic name hedge funds) and geared towards positive, low-volatility net returns. Attica is charged with obtaining a positive net investment result in absolute terms, where the quality of the results is measured by comparing both the return and the risk (expressed as volatility) with those of the same benchmark discussed above in conjunction with Lombard Odier.

While performance simulations have shown great potential for this approach, and the initial results in 2001 were also positive, the extreme dynamics of the financial markets over 2002 have resulted in a negative absolute return over 2002, even with this alternative strategy.

Nevertheless, volatility was reduced significantly, and also the relative results (in comparison to the benchmark) were quite encouraging in comparison to the "traditional" approach. The following table shows the performance results on a monthly basis in 2002:

Ultimo	benchmark	result Attica
December 2001	100,0	100,0
January 2002	99,8	100,5
February 2002	98,7	100,3
March 2002	101,5	102,3
April 2002	98,1	101,1
May 2002	94,7	100,3
June 2002	88,0	96,2
July 2002	83,4	93,4
August 2002	83,5	93,3
September 2002	76,4	88,4
October 2002	81,0	91,3
November 2002	83,7	94,7
December 2002	74,5	91,7

As can be seen from the above, the net investment result of Attica over 2002 was a negative return of -8,3%, in comparison to +4,4% in 2001 (partly). The benchmark showed a negative return of -25,5% over 2002, and -3,5% over the equivalent part of 2001. Also, volatility of the benchmark was around 15,7% over 2002, while the Attica-managed portfolio experienced a volatility of only 9,8%.

combined result

Stichting NLnet's combined investment result over 2002 came out to -18,6%, negatively influenced by the greater sum of funds managed by Lombard Odier for most of the year.

end of year status

At the end of 2002, Stichting NLnet's capital had decreased to 24,0 million euro, including unrealised investment results. 21,3 million euro of this end-of-year total was managed by Attica Vermogensbeheer.

To cover the liquidity needs over the year 2002, an amount of 1,75 million euro has been withdrawn from the capital managed by Lombard Odier in March 2002.

After the termination of the Lombard Odier investment management agreement in November 2002, 11,0 million euro of the remaining funds has been transferred to the funds managed by Attica. The remainder has been placed in savings accounts to cover the liquidity needs over 2003 and the start of 2004.

Cost and revenue of investment management

investment results 2002

The cost and revenue of managing the invested capital of Stichting NLnet in 2002 can be summarised and compared with numbers for 2001 as follows (all amounts in euro):

	2002	2001
Realised result from investment funds	- 287.065	- 27.646
Realised result from equities	- 4.900.880	- 1.341.380
Realised result from bonds	- 9.373	263.688
Realised result from derivatives	173.348	0
Realised result from forward exchange contracts	628.847	- 8.383
Realised currency differences in cash accounts	- 46.084	27.508
Investment revenue: interest on bonds and deposits	231.017	391.259
Investment revenue: dividend on equities and funds	233.550	396.484
Total realised result	- 3.976.640	- 298.470
Delta in unrealised result on investment funds	- 1.692.824	644.247
Delta in unrealised result on equities	600.265	- 3.264.974
Delta in unrealised result on bonds	- 62.655	- 79.500
Delta in unrealised result on forward exchange contracts	275.828	- 135.745
Delta in unrealised result on transactions in progress	- 59.871	0
Adjustment to revaluation reserve	-172.308	0
Total delta in unrealised result	- 1.111.565	- 2.835.972
Total result (realised + delta unrealised)	- 5.088.205	- 3.134.442
Transaction costs	60.237	55.858
Custody charges	5.010	9.897
Derivatives costs	5.090	0
Dividend taxes	27.257	85.310
Cost of reclaiming dividend taxes	989	1.654
Investment management fees	101.678	117.516
Total cost of investments	200.261	270.235
Net capital gain / loss (-)	- 5.288.466	- 3.404.677

revaluation reserve

The unrealised result of the investment portfolio at the end of 2002 and at the end of 2001 can be summarised as follows: (all amounts in euro):

	2002	2001
Unrealised result on investment funds	- 1.048.578	644.247
Unrealised result on equities	4.332	- 595.932
Unrealised result on bonds	- 3.116	59.539
Unrealised result on forward exchange contracts	155.319	- 120.510
Unrealised result on transactions in progress	- 59.871	0
Unrealised result charged to profit & loss account	1.111.565	0
Total revaluation reserve ultimo 2002 (2001)	159.651	- 12.657
Idem ultimo 2001 (2000)	- 12.657	2.823.316
Increase / decrease (-) of revaluation reserve	172.308	- 2.835.972