**RECOMMENDATION**

It is recommended that this report be received.

**ISSUE /OPPORTUNITY**

This purpose of this report is to provide information regarding London Public Library’s Internet content filtering software solution.

This report provides information about:

- Filtering software and how it works;
- Software selection criteria;
- Accreditations and compliances that help establish standards determining the overall effectiveness of content filtering programs;
- Comparison of selected commercial content filtering products; and
- Product features of Netsweeper that are utilized at London Public Library (LPL).

In 2008, the Library Board also received a staff report: *Internet Service Research Report: Open Source Filtering* which provided an overview of the viability of this option and the resources required for such a filtering solution (L08/57.1). The web link to this report is:

BACKGROUND & REVIEW

Filtering Software

Filtering software is a technological mechanism used to restrict access to content. There are different ways to filter Internet content using technology solutions:

- Filtering by Internet Domain Names and Addresses
  o Examines name of website against a preexisting list generated by the filter vendor
- Filtering by Textual Analysis
  o Examines all of the text on the site or page against keyword list generated by the user or filter vendor or
  o Analyzes the text as a whole, taking into account occurrence of various words, co-occurrence of pairs or other combinations of words, and other statistical parameters of text
- Filtering by Image Analysis
  o Examines and compares pixels based on color or tone
- Filtering by Labels
  o Examines labels associated with web pages, such as HTML or XML tags, that encode how information is structured on a page or metadata that provide information about a site or page as a whole
- Filtering Using Combinations of Methods
  o Combines various techniques to reduce level of error (e.g. combines image analysis which is the most error prone with textual analysis)
- Technologies for Authentication and Age Verification
  o Involves assessing validity of an assertion about the identity of a user
  o Age verification is often based on user having a credit card but can also be based on databases of public records or a coupling of both
  o Age verification in libraries may be based on a script based on library card patron type
- Encryption (and End-to-End Opacity)
  o Hides or denies information from all but authorized users, e.g. parental controls
- Anonymizers
  o Decouple an individual from a specific online identity (and/or location)
- Location Verification
  o Uses geographic location on an IP address
- Monitoring of use
  o Remote viewing of what is on user’s screen, recording of web sites visited, logging of keystrokes to monitor use.

Information on the Netsweeper methodology is provided below.
Software Selection Criteria

LPL scans the marketplace on an ongoing basis to identify and assess current and emerging technologies. The following criteria designed to meet policy and service outcomes are used to assess specific solutions and products:

- Filtering architecture, i.e. ways of examining webpage content per list above;
- Effectiveness rating of software through an accreditation and compliance process;
- Filtering settings allowing/disallowing various Internet (communication) protocols such as FTP (file transfer protocol) or POP (post office protocol);
- Reporting capabilities allowing usage review and analysis;
- Management capabilities such as software updates and use feedback, e.g. Net Alerts to request URL re-categorization;
- Implementation requirements, i.e. server based network version;
- Support/help desk including response time;
- Staff time to manage application, generate reports, etc.; and
- Direct costs, e.g. hardware, yearly subscription.

Accreditations/ Compliances

Many software developers request to have their products rated through an accreditation process. Meeting or exceeding the minimum requirements demonstrates that the software supplier has met and complies with these standards.

Some of those accreditations have specific components that deal with the filtering of pornographic material. Libraries and schools then as part of their procurement process request that companies have accreditation or comply to be eligible for consideration.

- **Children’s Internet Protection Act (CIPA)**

  In October 2000, US. Congress passed the Children’s Internet Protection Act (CIPA), which requires schools and libraries that receive federal funds for discounted telecommunications, Internet access, or internal connections services to adopt an Internet safety policy and employ technological protections that block or filter certain visual depictions deemed obscene, pornographic, or harmful to minors.

- **Becta (formerly British Educational Communications and Technology Agency)**

  Becta is the British government’s lead agency for the use of technology to improve education and training in this country. It supports the strategic objectives of two government departments – the Department for Innovation, Universities and Skills (DIUS) and the Department for Children, Schools and Families (DCSF). Becta works to make sure that technology is used well to help learners of all ages to learn better, for the benefit of the learners themselves, their families, the economy and society as a whole.
London Public Library’s Netsweeper filtering capabilities are CIPA compliant and Becta accredited. Further information can be found at:

http://www.fcc.gov/cgb/consumerfacts/cipa.html

**Comparison of Selected Commercial Content Filtering Products**

There are a number of commercial content filtering products that offer a variety of features for many different types of organizations and needs. Most commercial software packages features available on the market meet and or exceed LPL’s requirements.

For comparative purposes, several top rated commercial content filtering products on the market were selected and their software features currently available were compared. The products included in this comparison were selected on the basis of current market share and range of clients.

See Appendix 1: Selected Commercial Content Filtering Software Vendors with Comparative Features.

**Netsweeper Filtering System**

LPL’s content filtering system is a proprietary content filtering system developed by Netsweeper.

Netsweeper Inc. is headquartered in Guelph, Ontario and has other regional offices in the UK, India and Australia, plus additional distributors in The United States, Middle East and South America.

Netsweeper has grown to be a global company whose filtering software is used by corporations, internet service providers, educational institutions, government organizations and libraries in many different countries. Netsweeper serves a global community with just over 44 million end users. Netsweeper is used by a number of Canadian public libraries such as Kitchener Public Library and Toronto Public Library along with several provincial library systems.

This product meets all LPL selection criteria and is a competitive with other products in the marketplace.

The Netsweeper filter uses dynamic filtering capabilities to analyze and categorize sites based on Netsweeper’s proprietary categorization engine that reviews the actual content of the page and assigns a category in near real-time, i.e. less than one second. The software has over fifty categories in which to filter, such as “match making”, “gambling” and “pornography”. Filtering architecture allows LPL to determine categories that will be allowed or denied on specific workstations. An example of this would be to block the category “pornography” specifically on workstations in children’s areas.
LPL has chosen to filter for the category “pornography” on selected workstations according to the LPL *Internet Service Policy*. This category, by definition of Netsweeper, “contains URLs that reference, discuss, or show pornography, pictures, videos, or sexually oriented material. This category includes nudity, soft and hard-core pornography, sadomasochism, bestiality, child pornography, fetishes, stories, adult magazines, toys, or any sexual related purchase. This category excludes sex education sites.”

LPL has implemented the “net alert” option, whereby users of filtered workstations, who encounter a blocked site that they believe has been incorrectly categorized as “pornography” (and therefore filtered), may send an alert to Netsweeper. Netsweeper’s process is to then review the categorization of the site.

Automatic updates to the system occur on a regular basis.
### Selected Comparable Filtering Software Vendors with Features

<table>
<thead>
<tr>
<th>Filtering Architecture/Algorithms</th>
<th>Netsweeper</th>
<th>Websense</th>
<th>Smoothwall</th>
<th>FortiNet</th>
<th>Blue Coat</th>
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<tbody>
<tr>
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<td>Application Protocol Blocking (ex. POP)</td>
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* CIPA  - CHILDREN'S INTERNET PROTECTION ACT  
*** Becta  - formerly British Educational Communications and Technology Agency

Information on the selected vendors is available through the following:  
[http://www.netsweeper.com](http://www.netsweeper.com)  
[http://www.websense.com](http://www.websense.com)  
[http://www.smoothwall.net](http://www.smoothwall.net)  
[http://www.fortinet.com](http://www.fortinet.com)  
[http://www.bluecoat.com](http://www.bluecoat.com)