

Enforcing Internet Safety for Children with Spector Pro[®], eBlaster[®] and Spector[®] for Mac OS

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ABSTRACT

SpectorSoft Corporation, the leading provider of Computer Monitoring software, offers several consumer products to assist parents in enforcing Internet safety for their children. Specifically, SpectorSoft software empowers parents to monitor their children's online activities, including their eMails, Chat/IMs, Website visits, File Transfers and more to ensure that their Internet experience is positive, healthy and safe. Other product features allow parents to isolate their children from potentially harmful content and other inappropriate sources and to alert them when the child deviates from what is deemed acceptable as established by the parent.

Keyword Terms

1. Computer monitoring
2. Internet monitoring
3. Keystroke logging
4. Screen recording
5. Monitoring

Functional Goals

Please indicate the functional goals of the submitted technology by checking the relevant boxes:

- Limit harmful contact between adults and minors
- Limit harmful contact between minors
- Limit/prevent minors from accessing inappropriate content on the Internet
- Limit/prevent minors from creating inappropriate content on the Internet
- Limit the availability of illegal content on the Internet
- Prevent minors from accessing particular sites without parental consent
- Prevent harassment, unwanted solicitation, and bullying of minors on the Internet
- Other – Comprehensive recording of all computer and Internet activity

PROBLEM INTRODUCTION

Left uncontrolled the Internet can be an extremely dangerous place for a child. Unknowing children are often the target of bad intentioned adults who often try to arrange for physical meetings after gaining the trust of the child online. Children also can accidentally stumble upon adult oriented content including pornography or can intentionally visit these sites in an act of rebellion. Excessive use of the

computer for game playing and such is also a prolific problem amongst children especially teenagers who typically spend hours upon hours on Chat/IM and at social networking sites such as MySpace, Facebook and other popular sites such as YouTube. Inappropriate and unethical use of computers is also on the rise by children which includes but is not limited to cyberbullying, alcohol and drug abuse and sex.

Traditionally the approach has been to try blocking access to all the potentially harmful content, illicit activities, and bad intentioned adults that a child may come in contact with on the Internet. The problem with those traditional approaches is that they do a poor job of determining what should be prevented and often block content that should be allowed in the first place.

In reaction, parents are becoming more proactive in the monitoring of their children when online to ensure that they are being safe and presenting themselves appropriately to their peers while using the Internet. The SpectorSoft approach allows the child's behavior to be monitored affording the parent the opportunity to provide the guidance for what is appropriate.

PROPOSED SOLUTIONS

Solution #1:

With SpectorSoft's eBlaster software (Figure 1), parents can observe exactly what their children are viewing online, who they communicate with and the content of their chats, emails and instant messages. eBlaster continually records this information, organizes it into an easy to read activity report and then sends the report to the parent's email address instantly — no matter where they are in the world. In addition, eBlaster can be configured to instantly forward copies of their chat sessions and email messages. With eBlaster, parents can see what their kids are up to on the Internet, whether at work, at home or traveling for business.



Figure 1

Solution #2:

To give the parent a clear picture of what their child is doing on the computer, SpectorSoft's Spector Pro software continually takes snapshots of whatever is on the computer screen. These snapshots can be taken as frequently as once a second, or they may be taken based on user activity, such as mouse clicks, page scrolling, new web page visits, or the opening of new programs. This gives the parent an extremely accurate and visual view of what the child they are monitoring has been doing on the computer. Reviewing the recordings is simple with easy to use VCR-like controls (Figure 2). Move forward one screen at a time to see step by step what the child was doing on the computer, or click "PLAY" and the snapshots play back like a video recording. Skip ahead, instantly rewind, jump to a specific date and time or even print individual snapshots.



Figure 2

What will a parent be able to see?

- See everything they are doing on MySpace and Facebook, and find out if they are posting pictures of themselves, or providing their telephone number or address where strangers can gain access.
- See every web site the child visits, but more importantly, the parent will see exactly what they do on each web site. They will see what they are reading on the web site as well as the pictures they are viewing on that web site and they will be able to see how much time they spend on that web site.
- See their emails, including web-based emails like Hotmail, AOL email, Gmail, Yahoo mail and hundreds of others.
- See their chats and instant messages as they are being typed. (Spector Pro also saves the entire chat conversation and all instant messages for later review.)
- See the programs they run and what they type into those applications, such as in word processors, spreadsheets, databases, presentations, games, etc.
- See what they are searching for on Google, AOL, Yahoo, MSN and any other sites.

- See what they are shopping for on sites like eBay, Amazon and any other sites.

All of this event information is then categorized and displayed in an intuitive viewer (Figure 3) that can be launched with a special keystroke sequence and password known only by the parent. This viewer can also be configured to run over a home network so physical access to the child's computer is not required. In addition to the categorized events, the viewer displays the Top 10 of each event category and reports on specific contextual activities within MySpace and Facebook.



Figure 3

Often, a parent will inform their child that they are being monitored so they can use the collected information to make a judgment call about what behavior on the Internet is appropriate and then take the necessary actions to educate and modify the child's behavior.

Both software products run in stealth mode for those parents who choose not to inform their children that they are being monitored.

If necessary, websites and chat/IM can be blocked once a parent determines something is inappropriate. Tools are also included to provide alerts when specified content is encountered.

If a parent is the least bit concerned about their child being contacted by a sexual predator over the Internet, these solutions will address this issue head on. In fact, according to a Pew Internet Research Project study^[1] published in September 2007, Internet monitoring software -- like SpectorSoft's Spector Pro and eBlaster -- is more effective than web filtering in limiting contact with strangers.

Use Cases

Problem: A parent is at work until 6 pm but their 13 year old child arrives home on the school bus at 3 pm and immediately goes online. The child is naïve and often chats with strangers. The parent wants to ensure that the child is using their computer and the Internet properly from their office or on the road and is not interacting with a stranger or revealing personal information that would allow a sexual predator to meet with them.

Solution: SpectorSoft eBlaster sends out a detailed report to the parent on regular intervals via email. This report includes Chat/Instant Messages, Online Searches, Web Sites Visited, Email Activity, Files Transferred, Keystrokes Typed, Program Activity, User Activity, Keywords Detected, Document Tracking and MySpace activity. If the child does something they shouldn't be doing the parent will find out when they receive the next report. For immediate notification, keyword alerts are available which are sent out via email when the keyword is detected.

Problem: Child misrepresents themselves on the Internet by misstating their age on several Social Networking sites.

Solution: Both Spector Pro and eBlaster will alert the parent of inappropriate use of the computer. eBlaster achieves this by emailing an Activity Report and Spector Pro achieves this via a Viewer which segregates all recorded events including the replay of screen snapshots that are captured on a regular interval.

Problem: A Child Predator attempts to contact a child by claiming they are the same age as the child. After establishing a relationship online the predator requests a meeting at a nearby park after school.

Solution: Parent doesn't recognize the individual as a friend and thwarts the meeting by intervening.

Problem: A child uses inappropriate language when chatting or emailing with peers. At other times the child types in their street address, school name or credit card number into email, chat and website forms.

Solution: With Spector Pro and eBlaster, specific keywords and phrases can generate email alerts to the parent nearly instantaneously. In addition, the detection of this keyword can trigger a screen snapshot to be taken that can also be emailed to the parent using eBlaster. In Spector Pro the interval of screen snapshot recording can be increased after a keyword is detected.

What Technology Solves and What it Does Not

Spector Pro, eBlaster and Spector for Mac OS empower a parent to keep tabs on their children to ensure a safe and positive online experience. A parent can establish a schedule for when Internet access is allowed or they can block certain application protocols such as Chat/IM programs like AIM or MSN Messenger. In addition the parent can create a white-list or black-list of websites to establish a basic web filtering policy. In addition, specific chat IDs can be blocked preventing those individuals from communicating with the child.

These products are primarily computer monitoring tools and do not offer content protection or parental controls outside of what is described above.

Strengths-Weaknesses Analysis

Spector Pro and eBlaster records everything a child does on their computer, down to lone keystrokes and single mouse clicks. The software segregates these keystrokes into categorized events and displays them either graphically with an intuitive viewer or activity report. The screen snapshot functionality in Spector Pro is unsurpassed in the industry offering the granularity to record up to once every second. Screen snapshots can also be taken when specific events occur such as detection of a specific keystroke pattern, keyword alerts or one of many other events. The software can monitor multiple users of the computer each with their own policies and monitoring rules.

These products do not offer category based web-filtering or device blocking, however these features are under consideration for future versions of the software.

Implementation Requirements

It is a requirement that SpectorSoft products are only installed on computers that are owned by the purchaser. The software installation for both Windows and Mac OS based computers utilizes intuitive installation wizards to guide the user through the process. No specialized skills or insight is required to install or use these products however it is advisable that the parent review the documentation provided to properly configure the software to suit their specific monitoring needs. For example, setting up the monitoring of a 10 year old is typically different than monitoring a teenager. Technical Support is also available 24 hours a day, 7 days a week to assist parents with installation and setup.

Technical Standards

SpectorSoft products are developed to meet stringent Object Oriented Development and Object Oriented Programming practices and adhere to Microsoft Graphical User Interface design standards where applicable.

Reliance and Use of Law and Policy for Success

SpectorSoft products must only be deployed on computers and networks owned by the purchaser. SpectorSoft reserves the right to disable the license of the product if this condition is violated. In some countries where monitoring is permitted with exceptions, SpectorSoft products allow the user configure the granularity of the recording ... for example, to only record documents sent to a printer or USB device, but nothing else.

Viability of the Technology in Both the US and International Context

When it comes to monitoring children and ensuring their safety on the Internet, no responsible parent is going to look the other way no matter where they live. As a result, the popularity of Spector Pro and eBlaster and Spector for Mac OS is therefore very strong internationally. Spector Pro has been translated to Japanese and German and the English versions of all SpectorSoft products are sold worldwide.

Effectiveness

Spector Pro and eBlaster have received the highest accolades and reviews from the industry critics. In fact, Spector Pro has won the prestigious PC Magazine Editors' Choice Award on two occasions and is frequently mentioned in the press especially in conjunction with news involving sexual predators. In addition, Spector Pro also won the iParenting Award for software^[2] as well as The National Parenting Center Seal of Approval^[3] in 2008.

EXPERTISE

SpectorSoft directly employs a team of veteran software engineers that are responsible for the development of all software produced by the company. No outsourcing or offshore development resources are used to create the SpectorSoft products described in this paper.

COMPANY OVERVIEW

SpectorSoft Corporation, a privately held company, was founded in 1998 and is headquartered in Vero Beach Florida. The company develops, markets and supports PC and Internet monitoring and surveillance products for education, business, government and home users, including Spector Pro, eBlaster, Spector for Mac, Spector CNE Investigator, and Spector 360. SpectorSoft has been profitable since 1999.

The founders of the company were pioneers of remote control technologies with a product called Carbon Copy in the '80s and a product called ReachOut in the '90s.

SpectorSoft products have been mentioned in many well known media outlets, including ZDNET, PC/Computing, Time Magazine, CNN, NBC Nightly News, The New York Times, and The Wall Street Journal.

More than 50,000 companies and more than 400,000 consumers have purchased SpectorSoft solutions to crack down on Internet abuse in their business or home. SpectorSoft has been selected for three years by Inc. Magazine as one of the Fastest Growing Private Companies in America^[4] ^[5]^[6].

The technologies used in the parental market have been extended to the business market with Enterprise installations of the software as large as 8,000 seats.

BUSINESS MODEL OVERVIEW

SpectorSoft sells its software online, through direct sales, and through retail outlets and other third party distributors. SpectorSoft offers discount pricing for its corporate network versions of the software to qualified education entities.

MORE INFORMATION

For addition information on SpectorSoft products please visit the following websites:

SpectorSoft Home Page:

<http://www.spectorsoft.com>

Spector Pro website:

http://www.spectorsoft.com/products/SpectorPro_Windows

eBlaster website:

http://www.spectorsoft.com/products/eBlaster_Windows

Spector for Mac OS website:

http://www.spectorsoft.com/products/Spector_Macintosh

CONTACT INFORMATION

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CERTIFICATION STATEMENT

I certify that I have read and agree to the terms of the Internet Safety Technical Task Force Intellectual Property Policy described here: <http://cyber.law.harvard.edu/research/isttf/ippolicy>

USE OF THIS DOCUMENT

This document does not contain information that cannot be made available to the public. This submission is available to the Technical Advisory Board, the Task Force, and the Attorneys General. Once reviewed this submission may be made public and published online for public commentary.

REFERENCES

1. Pew Internet Research Project Study (2007): http://www.pewinternet.org/pdfs/PIP_Stranger Contac t_Data_Memo.pdf
2. iParenting Award (2008): <http://iparentingmediaawards.com/winners/19/27391-4-274.php>
3. The National Parenting Center Seal of Approval (2008): <http://www.tnpc.com/search/tnpcarticle2.asp?rec=5844>
4. Inc Magazine, Inc 500 Award (2004): <http://www.inc.com/inc5000/2007/company-profile.html?id=2004226>
5. Inc Magazine, Inc 500 Award (2005): <http://www.inc.com/inc5000/2007/company-profile.html?id=2005497>
6. Inc Magazine, Inc 5000 Award (2007): <http://www.inc.com/inc5000/2007/company-profile.html?id=200733140>