An Alternative to Government Regulation and Censorship: Content Advisory Systems for Interactive Media

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BACKGROUND

> The RSACi system was developed to provide parents and consumers with objective, descriptive information about the content of an Internet site, allowing them to make informed decisions regarding site access for themselves and their children. (RSAC home page)

There are now over one million online users below the age of eighteen. A recently pronounced goal in the United States for the National Information Infrastructure (NII) is to enable it to provide a level of education to all students that surpasses the highest levels of education available today. Throughout the history of the NII, education and research were key motivations for the development of the technology, first as the ARPANET, then the Internet, the NREN, the NII, and as part of the United States Department of Education project GOALS2000. Many recent initiatives have focused on the educational capabilities of these networks for K–12 students. In addition, a significant reason for the presence of young people on the Internet has been the explosive growth of online services and Internet access, especially through services such as America Online (AOL), CompuServe, and Prodigy. Ironically, this surge of new users has also brought an increase in the availability of adult-oriented content and services, much of which is considered inappropriate for young people.

In addition, the rapid adoption of the World Wide Web (WWW) as the most popular Internet browsing platform has meant that the types of material available on the Internet have expanded from a primarily text medium to a whole range of media including graphics, sound, animation, and full-motion video. Thus, the potential impact of the Internet, both

positive and negative, has dramatically increased. For those who find this alarming, the situation is further complicated by other Internet controversies involving censorship, anonymity, and government control; the decentralized nature of the Internet; and ill-informed media attention. Hence, those who are sincere about preventing censorship on the one hand, and providing appropriate child protection measures on the other hand, are left in a difficult position. One solution that has been proposed that will meet the dual goal of noncensorious content selection and screening has been content labeling. Several different labeling schemes now available allow Internet content providers to either self-label or to be labeled by third parties with respect to any number of attributes. The areas of greatest concern relate to attributes such as sex, violence, nudity, and language.

The saga of content labeling on the Internet actually started in the murky realm of computer games. In 1994, Senators Joseph Lieberman (D-Conn.) and Herbert Kohl (D-Wisc.) chaired a number of Senate hearings with senior executives of the computer and video game industry regarding the increasing levels of violence in computer games. Legislation in the form of the Video Game Ratings Act of 1994 was drafted and held as a potent threat over the heads of the industry to get their houses in order. As with the recent V-chip legislation, there was a clause that allowed the industry a one-year period to create a self-regulated rating system for computer games and be spared from the new law. Otherwise, Congress would create and administer a rating system itself. Further, Senator Lieberman laid out three aspects that were essential for a self-regulated ratings system to be seen as credible: it must be subject to sanctions; it must provide as much information about the reason for the rating as possible; and it must have "tough, conservative standards" (Balkam, 1997).

To address these concerns and to deflect possible government regulation of this media, two major content classification systems for interactive electronic entertainment were developed in the United States. These are known as the Recreational Software Advisory Council (RSAC), developed by a coalition of over twenty-five organizations led by the Software Publishers Association (SPA), and the Entertainment Software Rating Board (ESRB), sponsored by the Interactive Digital Software Association (IDSA). Both were established in 1994 as independent, nonprofit organizations, but the two content advisory systems are fundamentally different from each other. The RSAC system is a content-based advisory system based upon self-disclosure using an interactive ratings package. The ESRB system is an age-based advisory system based upon the decisions of a rating board. The RSAC system has been used mainly by manufacturers of computer games, while the ESRB system has been used for both video platform games, such as Sega and Nintendo, and computer games.

THE RSAC COMPUTER GAME RATING SYSTEM

The RSAC system, developed by the industry-based Computer Game Ratings Working Party, was based upon the following criteria established for a "good" rating board: (1) be independent; (2) have members who reflect the interest of the public, not the industry; (3) have the power to penalize wrongdoers; (4) be able to keep pace with technological advances; and (5) be able to advertise the ratings so that they become as well known to consumers as movie ratings are today. These ambitious goals were later transformed into

the nonprofit organization now known as RSAC, which administers a new kind of rating system based upon content descriptions rather than age appropriateness.

To fully understand the RSAC labeling system, it is first necessary to understand content advisory systems in general. The basis of any rating system is the way in which it classifies content. Federman (1996) has used the terms "descriptive" versus "evaluative" to characterize content labeling methodologies. In addition, Reagle et al. (1996) used the terms "deterministic" versus "nondeterministic" to characterize the labeling process itself. They also introduce the dimension of voluntary versus mandatory to the rating process. These terms can be defined as follows:

> *descriptive*—a rating system that provides a description of the content of the labeled media and can provide a set of indicators about different content categories;
> *evaluative*—a rating system that makes a judgment about content using a standard of harmfulness and typically provides a single rating indicator, usually based upon age;
> *deterministic*—a rating process based upon some objective methodology in which the final rating is the result of following the methodology;
> *nondeterministic*—a rating process based upon the opinions of a rating body;
> *voluntary*—the content producer is free to choose to rate or have product rated;
> *mandatory*—the content producer is required to rate or to have product rated by some other agency.

No rating system is purely descriptive or deterministic. Rather, each system varies with respect to where it falls between extremes. Our usage of these terms is with the understanding that no system is completely without bias or arbitrariness. Most people are familiar with the Motion Picture Association of America (MPAA) rating system in which a board of reviewers examines the content of a movie and then issues an evaluative, nondeterministic rating. The process is nondeterministic because while general rules of thumb may guide reviewer decisions, the process itself is opaque and the results are sometimes at odds with other ratings. It is evaluative because the ratings do not describe the content of the film but what age group may see the film.

Unlike a motion picture, which averages just over two hours to view, a typical computer game can take up to one hundred hours of playing before all the material has been uncovered. This fact alone posed an enormous challenge to the Working Party when they began to design a rating system for interactive CD-ROMs. In addition, there has a growing dissatisfaction with the MPAA system for being too subjective, secretive in its criteria and decision-making process, lenient on violence and unduly tough on sex, and providing ratings that were too broad to allow members of the public to appropriately discriminate among films based upon personal values.

In contrast to the MPAA, the RSAC system is based upon specific deterministic criteria by which content is rated in a descriptive manner. Content producers, such as video game makers, answer a detailed questionnaire (either in paper or electronic format) about their content with respect to the three categories of violence, sex/nudity, and language. RSAC then processes the questionnaire, registers and returns the consequent

rating to the company. The company is able to use that label in advertising or on their product. The label consists of a number, between 0 and 4, for each of the three categories. A rating of All 0 means that the content has no objectionable material in any category. The system is represented in graphical form by a thermometer. The number, or the temperature of the thermometer, informs the customer about the level of the content in question followed by a brief descriptor to indicate the specific type of content causing the rating. Examples of the levels and descriptors are shown below in the RSAC advisories for violence:

RSAC Advisories on Violence

> **0:**   Harmless conflict; some damage to objects
> **1:**   Creatures injured or killed; damage to objects; fighting
> **2:**   Humans injured or killed with small amount of blood
> **3:**   Humans injured or killed; blood and gore
> **4:**   Wanton and gratuitous violence, torture, and/or rape

The RSAC system does not say for whom the content is appropriate; instead it describes the content with respect to characteristics that may be of concern to parents. Since content providers fill out the questionnaire, it is a self-labeling and voluntary system. To ensure public confidence in the RSAC system, the content producer is contractually obligated to rate the content accurately and fairly. Every month a number of registered titles are randomly sampled. Producers who have willfully misrepresented the nature of their content may be fined up to $10,000 and may be required to recall their product from the shelves. Using this system, RSAC has rated over five hundred game titles including the popular "Myst" by Broderbund, "Doom II" by id Software, and "Dark Forces" by LucasArts. Only two companies have ever requested an appeal, and so far no suits have been filed for misrepresentation. A key part to making the computer game rating systems effective was the active involvement of major retailers such as Wal*Mart and Toys R Us. In early 1995 they announced that they would no longer offer unrated titles for sale in their stores. Other major retailers soon followed suit (Balkam, 1995).

CONTENT REGULATION ON THE INTERNET

In July 1995, Sen. Grassley (D-Iowa) chaired a Senate Judiciary Hearing on the issue of pornography on the Internet. These hearings were "held in an atmosphere of near hysteria following the cover article in *Time* magazine on the Rimm report suggesting that pedophiles and pornography peddlers roamed the Internet unchecked and that merely switching on your computer would expose you and your children to an avalanche of smut, porn, and bestiality" (Balkam, 1997, p. 5). As a result of those hearings, an amendment, called the Communications Decency Act (CDA), was attached to the Telecommunications Act moving through both houses of Congress to make transmission of indecent material over the Internet a criminal offense. Further, it held Internet Service Providers (ISP) such as AOL or CompuServe responsible for material that passed through their services. It stated that the display or transmission of indecent or patently offensive material in a manner available to minors would result in fines up to $250,000 and two years in prison. In spite

of the outcry over censorship of free speech, the CDA passed along with the rest of the Telecommunications Act at the end of 1995.

The president signed the bill with the CDA into law in early 1996, but recognizing the impending constitutional challenge to the CDA, he instructed the Justice Department not to start enforcing it. A broad coalition of organizations, including the American Library Association, the American Civil Liberties Union, and the Electronic Freedom Foundation, immediately challenged the constitutionality of the CDA based upon the First Amendment protection of free speech. During the first round in the district court in spring 1996, a preliminary injunction against the CDA was upheld by a three-judge panel. In throwing out the CDA as "unconstitutional on its face," Judge Stewart Dalzell emphasized the unique nature of the Internet:

> It is no exaggeration to conclude that the Internet has achieved and continues to achieve, the most participatory marketplace of mass speech that this country—and indeed the world—has yet seen. . . . My examination of the especial characteristics of the Internet communication, and review of the Supreme Court's medium specific First Amendment jurisprudence, lead me to conclude that the Internet deserves the broadest possible protection from government-imposed, content-based regulation. (Sieger, p. 14)

Thus, the Internet was ruled to be more analogous to print media than broadcast media, which does not enjoy the same protection of free speech. It was recognized that material on the Internet is not broadcast by content providers, but accessed by interested parties seeking specific material. The finding was unanimously upheld by the Supreme Court, which handed down its ruling in June 1997, that the CDA as written was unconstitutional.

PICS-Based Content Labeling Systems for the Internet

In the meantime, the major players in the Internet industry organized to consider the development of a voluntary, self-regulatory system to provide workable child protection features to obviate the need for government regulation. Such a system would have to provide both content labeling and the ability to use the labels to block objectionable content from being accessed, like a virtual version of the V-chip for television. During the year leading up to the passage of the CDA, a number of Internet specific labeling activities had occurred related to the development of technical solutions and standards:

1. The Information Highway Parental Empowerment Group (IHPEG), a coalition of three companies (Microsoft Corporation, Netscape Communications, and Progressive Networks), was formed to develop standards for empowering parents to screen inappropriate network content.
2. A number of standards for content labeling were proposed including Borenstein and New's Internet Draft "KidCode" (June 1995).
3. A number of services and products for blocking inappropriate content were announced, including Cyber Patrol, CyberSitter, Internet Filter, NetNanny, SurfWatch, and WebTrack.

By August 1995, much of the standards activity was consolidated under the auspices of the World Wide Web Consortium (W3C) when the W3C, IHPEG, and twenty other organizations agreed to merge their efforts and resources to develop a standard for content selection. The result of the agreement is the Platform for Internet Content Selection (PICS) standard that allows organizations to easily define content rating systems and enable users to selectively block (or seek) information. It is important to stress that the standard is not a rating system like MPAA or RSAC, but an encoding method for carrying the ratings of those systems. Those encoded ratings can then be distributed with documents or through third-party label bureaus.

To alleviate the necessity of a content provider going through the onerous task of rating each individual page of large sites separately, labels may apply to whole directory structures (hierarchies) of a Web site if the label is appropriate to all the content. Labels can also be put on individual Web pages or individual assets on a Web page. This flexibility to rate at different levels is referred to as the *granularity* of a particular rating. The following example demonstrates an RSAC label that describes language (l=3), sex (s=2), nudity (n=2), and violence (v=0):

(PICS-1.0 "http://www.rsac.org/vl.0/" labels
on "1994.11.05T08:15-0500" until "1995.12.31T23:59-0000"
for "http://www.gcf.org/stuff.html"
by "John Doe" ratings (l 3 s 2 n 2 v 0))

The PICS encoding specifies the rating service, version number, the creation and expiration date, the page, the rater, and the ratings themselves (other options may be specified but are not shown). Multiple labels can exist for any page. That is, the PICS labels can be used to describe content on one or more dimensions. It is the selection software, not the labels themselves, that determines whether access will be permitted or prohibited. Thus, "parents have the choice of prohibiting access to any unlabeled documents, [thereby] confining children to a zone known to be acceptable, or they can allow access to any document that is not explicitly prohibited" (Resnick and Miller, p. 89). PICS was designed to enable the labels to be handled in several ways. They can be included in html documents within the metatag, they can be fetched from the http server using the http "get" command, or they can be fetched from label bureaus. Hence, the author of a homepage could include a variety of labels on the page itself (i.e., the RSAC, MPAA, or Golf-Fan systems). The http server on which the page resides could have a label or labels for that particular page, and a third-party label bureau like the Good Housekeeping Seal of the Web could be queried for its opinion of the quality of the Web page.

The multiple distribution methods lead the authors of PICS to stress the difference between rating systems and rating services. A rating service provides content labels for information on the Internet. A rating service uses a rating system to describe the content. For instance, the Unitarian rating service and Christian Coalition rating service could both use the MPAA rating system to describe what each thought was the appropriate age for viewing the information.

In the rapidly evolving market of the Internet, label systems and services have a

significant stake in maintaining the public confidence in the authenticity of their ratings. Malicious users who falsely label content could damage the reputation of a service, a rating system, or PICS in general. To prevent the manipulation of labels or the content to which they apply, PICS includes the capability to ensure the integrity of a label using message integrity checks (MICS) and its authenticity using digital signatures. In this way, compliant browsers can ensure that a document has not changed or been manipulated since the labeling of the document and that the label is genuine. An important part of PICS compliance is the requirement that PICS-compatible clients read any label system definition from a user accessible configuration file.

The PICS standard has already been adopted by major software vendors. By early 1996, IBM, Microsoft, Microsystems, Netscape, NewView, and other software vendors had announced PICS-compatible products. In addition, major ISPs such as AOL, AT&T, WorldNet, Compuserve, MSN, and Prodigy have promised to develop free blocking software to their customers that is PICS-compliant (Resnick and Miller, 1996).

RSACi on the Internet

In April 1996, the RSAC computer game rating system was adapted for rating Internet content under the name RSACi using the PICS encoding standard. The RSACi system is a Web-based questionnaire that queries the user about the content of a Web page or directory tree based upon the content categories shown in figure 1. Upon completion of the questionnaire, a PICS metatag similar to the one shown previously is returned to the user to be placed in the file header. There is also the option to place the RSACi symbol on the Web page.

Use of the RSACi system is free to anyone interested in labeling the contents of a Web site. In the eighteen months after its introduction in April 1996, over 40,000 sites had rated with RSACi with the number increasing by 150 per day. A new streamlined rating process, developed to address concerns about the slow speed of the first RSACi system, was brought online in April 1997. Although the service does not currently provide message integrity checks or digital signatures, by using a Web crawler program, RSAC has instituted a procedure to sample sites for labeling veracity and compliance with the terms of service that a user agrees to before receiving the label.

PICS-Based Blocking Mechanisms

Providing labels on Internet content is only half of the content control problem. Internet users must have the capability to use the labeling data to make decisions about what content they want to be able to access from their computers. For this reason the efforts of IBM, Microsoft, Microsystems, Netscape, NewView, AOL, AT&T, WorldNet, Compuserve, MSN, and Prodigy to develop PICS-enabled browsers is laudable. A PICS-enabled browser is able to detect a PICS label on a Web site being accessed and to decode it. It is also able to block that site from being accessed if it has a label that has been designated inaccessible to the requesting computer. This mechanism is established by activating the blocking feature of the browser.

LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
VIOLENCE: content may include				
Harmless conflict; some damage to objects	Creatures injured or killed; damage to objects; fighting	Humans injured or killed with small amount of blood	Humans injured or killed; blood and gore	Wanton and gratuitous violence; torture; rape
NUDITY: content may include				
No nudity or revealing attire	Revealing attire	Partial nudity	Non-sexual frontal nudity	Provocative frontal nudity
SEX: content may include				
Romance; no sex	Passionate kissing	Clothed sexual touching	Non-explicit sexual activity	Explicit sexual activity; sex crimes
LANGUAGE: content may include				
Inoffensive slang; no profanity	Mild expletives	Expletives; non-sexual anatomical references	Strong, vulgar, or hate language; obscene gestures	Crude, explicit sexual references; extreme hate language

FIG. 1. RSACi Content Advisory Categories

For example, in Microsoft Internet Explorer 3.0 under the Security options, there exists an option called Content Advisor. When a parent enters that option, he or she is presented with the RSACi content labeling system. A parent can use a slider to set the level from 0 to 4 for each of the four content areas of nudity, sex, violence, or language. He or she can also decide whether to block all unrated sites or not. The feature is then enabled with a password known (hopefully!) only to the parent who can disable or enable the feature with the password. After activating the blocking capability, the computer will not allow any sites with a higher rating to be accessed on that machine. Instead a message that states that the "site is inaccessible to this machine" will appear on the screen if such a site is requested by the user.

IMPACT OF LABELING SYSTEMS ON THE INTERNET

The potential impact of labeling systems on Internet content is complex. Just as the production and distribution of Internet content is more than a matter of placing an html document on a server, RSACi and other PICS-compliant rating systems are more than the voluntary insertion of labels into documents by their creators. This simple act is only the first step in a complex flow of information from origin to destination. This section presents an analysis of the relationship of a labeling system like RSACi to the production and distribution of content on the Internet.

The production and flow of content is neither a vertically integrated production

chain—the same people who create the content do not necessarily provide the conduit and browser—nor is it a purely distributed and segmented market. Although this market is highly compartmentalized, the need for market efficiencies will drive the creation of strategic alliances and standards between functional domains (such as online companies and browsers). This consequently affects the delivery paths and quality of content. Included in this rapidly evolving market are content producers, content hosts, other rating services, bots, search engines, directories, filters, Internet Service Providers (ISPs), online services, protocol developers, and browser/software companies (Reagle et al. 1996) (see figure 2).

Content Producers. Commercial and noncommercial developers of Internet information and Web sites; they can range from single individuals to huge multinational corporations. They may or may not have incentives on their own to provide content advisories with the information they produce. Sites that want access to homes with young children, such as the Disney site, would have the greatest incentive to rate their content.

Web Farms/Content Hosts. Web farms and content hosts provide server services to individuals and organizations that lack the means or interest to support their own server. As a defense against charges of harboring objectionable material without proper safeguards, these entities may encourage or require content developers to self-label. For example, CompuServe has endorsed the RSACi system through an implementation with CyberPatrol and has encouraged individual and institutional content developers on its systems to employ the RSACi system.

Search Engines and Agents. Search engines and agents lay outside of the direct path of content flow—one does not need a search engine. However, they often provide an important value-added service in channeling and selecting information. As such, search engines may gain from being compatible to PICS because label information may improve searching and indexing capabilities. This may provide more incentive to adopt PICS-based rating systems like RSACi.

Bots. Bots travel from site to site retrieving information of interest to their owners. Since bots are personal, discriminatory spiders, their ability to search and retrieve content with content labels has implications similar to that of search engines As they gain the ability to communicate with each other (one could now call them "agents"), PICS-compliant labels could become the language for communicating about the preferences of their owners.

Internet Service Providers (ISPs). Internet Service Providers provide the means for connectivity from one point on the Internet to another. They have been viewed by governments as convenient points of control. Legislators have been eager to make ISPs legally responsible for the material they carry. Since ISPs have been a focus of much of the controversy, they have been very interested in adopting or supporting content labeling systems such as RSACi.

Browsers. Browsers are used to access information on the World Wide Web. For example, Microsoft has incorporated the RSACi PICS implementation into its most recent browser product, the Microsoft Internet Explorer 3.0. The value of such an agreement for browser companies is that it addresses parental and institutional concerns about restricting
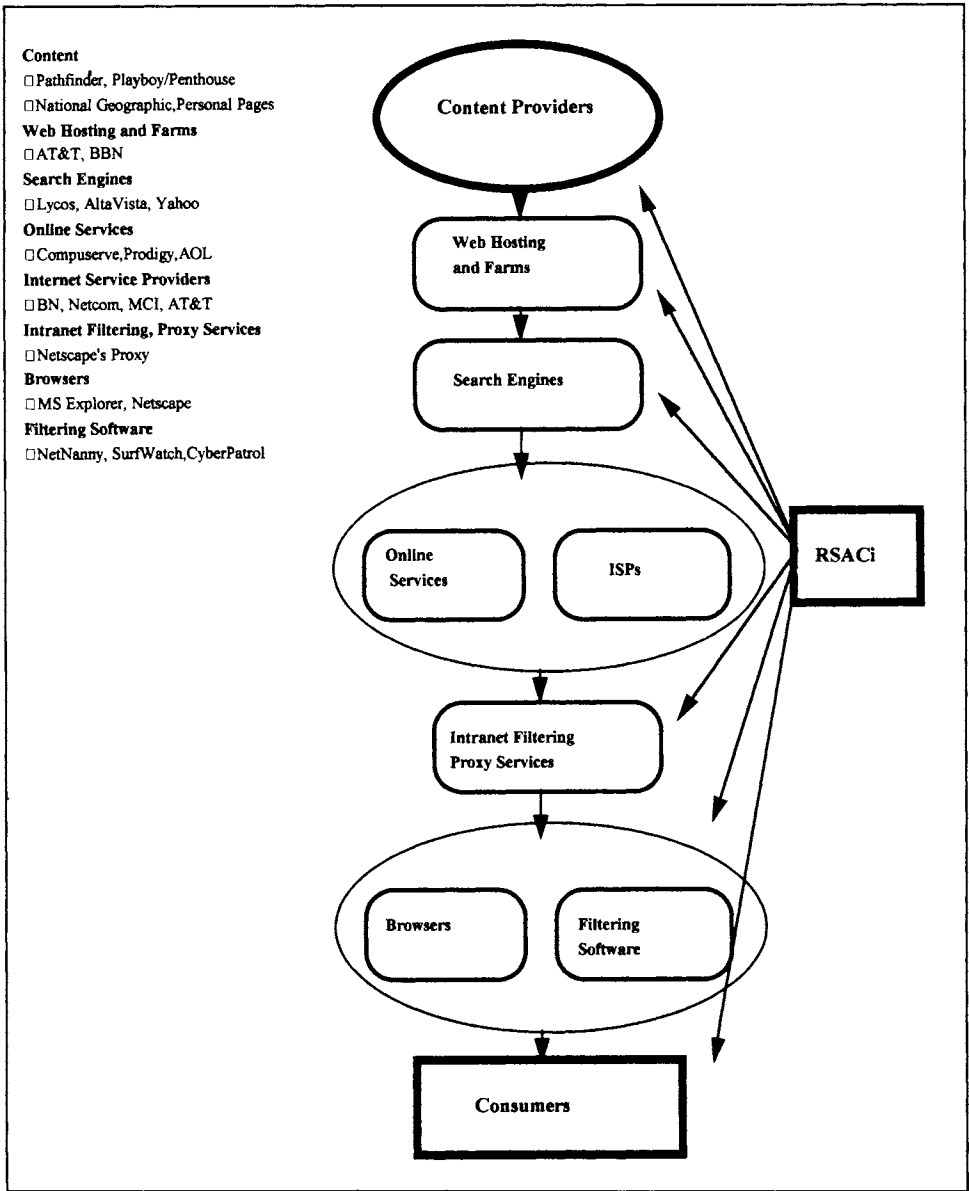
Content
☐ Pathfinder, Playboy/Penthouse
☐ National Geographic, Personal Pages
Web Hosting and Farms
☐ AT&T, BBN
Search Engines
☐ Lycos, AltaVista, Yahoo
Online Services
☐ Compuserve, Prodigy, AOL
Internet Service Providers
☐ BN, Netcom, MCI, AT&T
Intranet Filtering, Proxy Services
☐ Netscape's Proxy
Browsers
☐ MS Explorer, Netscape
Filtering Software
☐ NetNanny, SurfWatch, CyberPatrol

Content Providers

Web Hosting
and Farms

Search Engines

Online Services

ISPs

RSACi

Intranet Filtering
Proxy Services

Browsers

Filtering Software

Consumers

FIG. 2. Structure of Content Flow on the Internet

access to inappropriate material. One point of particular interest is that while many of the PICS recommendations will be implemented by these and other browsers, the companies have thus far declined to implement signature verification of the labels, an omission that may put the trustworthiness of RSACi and other PICS-compliant systems at risk.

Online Services, Firewalls, Proxies, and Intranets. These categories include both publicly accessible (AOL, CompuServe, Prodigy) and private/corporate networks. This market has been particularly concerned with inappropriate material. While ISPs have argued for common carrier status, online services have invested significantly in the creation of a family-oriented image. Hence, they have been the quickest adopters of content selection and screen software, such as SurfWatch and CyberPatrol. Corporations are also concerned about the inappropriate activity on their networks, and some are seeking the ability to monitor or screen the activities of their employees using systems like NetShepard. Network services such as Intranet servers, firewalls, and proxies are also points of control for the dissemination of information to an organization.

The relationships between all of these entities is analogous to a plumbing system made of reservoirs (containing a variety of liquids), conduits (with a variety of delivery capacities, operating pressures, and flow rates), and control systems (upstream versus downstream regulation), with filtering mechanisms interposed at various points in the plumbing. At each step, information may be redirected, collected, or amplified by a value-added service (Reagle et al. 1996).

Non-RSAC Rating Mechanisms

Some browser filtering systems have similarities with the RSACi system in that they are PICS compliant and content descriptive, but they may differ in significant ways. In the case of SafeSurf, it's rating system provides an example of a PICS compliant system that is more evaluative than the RSACi system: (1) it includes an appropriateness rating with regard to age; (2) it provides descriptive labels that have highly judgmental definitions and descriptions.

Other methods for content filtering include mechanisms like SurfWatch, which maintains lists of URLs with objectionable content. NetNanny has filters that block objectionable material (such as curse words) in real time. Although non-RSAC filtering mechanisms may be synergistic in some cases (meaning they may be able to cooperate at some levels), these blocking technologies are different from the RSACi system because they: (1) require proprietary software; (2) are labor-intensive; (3) are not extendible to other areas of concern or interest; (4) realize no economies of scale as the volume of content grows; (5) employ standards that are obscure, somewhat arbitrary, and ultimately restrictive.

CONCERNS

In spite of what appears to be a technically elegant solution to the issue of content control for the Internet, there are still a number of concerns related to the nature of the Internet, the rapidly changing technology platforms upon which it is based, and the efficacy of systems such as RSACi.

Who's In Charge? The implicit assumption with the PICS-compatible labeling and blocking systems described in this paper is that the parents are in control of and responsible for setting the system options on their home computers. Many naysayers have stated that this is actually not the case in many homes; instead, it is the children who are more computer savvy than the parents, and they would be able to circumvent any security features that the parents try to institute. This problem can be best addressed with a vigorous public education campaign to help inform parents how to activate the new features now available in their browsers. It can also be addressed by the browser developers making the feature very easy for parents to use.

Content Context. One of the major criticisms of the RSACi system so far is the one-dimensionality of its ratings. Whether the content is a work of art, an educational encyclopedia, a NASA site, a news site, or an online adult bookstore, it is all rated by the same standards. This means that a picture of the famous statue of David would be rated at the 3 level for nudity (full-frontal nudity) and a work of Shakespeare might receive a 2 level for bawdy language. The dilemma faced by organizations such as RSAC as well as the PICS standards group is the trade-off between complexity and context.

In order to take the context of the content into account, the system would have added complexity at both ends. The content provider doing the labeling would have to answer additional questions so that additional tags such as education, art, and news could be incorporated into the tag. A more difficult problem, however, is the change to the PICS standards and to the browsers that are needed to allow for a multidimensional blocking capability. And this would translate into added complexity for the parent to activate the blocking capability. For example, a parent might select nudity=2, sex=1, language=1, and violence=2 for regular content; but choose nudity=3, sex=2, language=2, and violence=2 for educational or art material; and nudity=2, sex=1, language=1, and violence=4 for news. Each new context adds another dimension to the rating process.

Several major news organizations have objected to the fact that they will have to rate their content on a daily basis since their sites typically contain hundreds of new stories each day. Right now they have the choice of rating each story separately or rating their entire site at the highest level of content contained in any story. Additionally, since they have been exempted from having to rate their television content, they object to having to rate their Internet content. They view news as a special kind of content, protected speech that is above any kind of rating system.

The obvious answer to this issue is for news sites not to rate at all (after all, the rating process is voluntary). However, they further object to the browser feature that enables the blocking of all unrated sites and claim that it is a form of censorship of the news. Again, the response to that complaint is that the blocking of unrated sites is not automatic but must be activated by parents exercising their parental discretion. In fact, a number of the studies about the harmful effects of violence on children have shown that real violence as shown in news is actually more disturbing to children than fantasy violence. The issues related to content context are still being resolved as the PICS standards and labeling systems continue to evolve on the Internet.

Digital Signatures and Label Integrity. Elsewhere we discuss digital signatures with

respect to the PICS standard. To engender public trust in labeling systems, any organization like RSAC must ensure that its labels correspond to the content, and that no unauthorized content developers use their labels and their respective icons. On the Internet the important "content" with respect to selection software will be the validity of the rating that is accessed by the content seeker. How easily can this text be misappropriated? If a digital signature is provided by RSAC and checked by the browsers for authenticity, it is very difficult. If digital signatures are not incorporated, it can be misused very easily. One could create such a label for an adult Internet service without consulting the RSAC questionnaire, and one may do so with malicious intent. Hence, simple encryption technologies would seem to provide the only protection to widely used labeling systems.

Instability. The process of content screening and selection will continue to be highly unstable for the near future. One must remember that it is only within the past year that many of these standards and services became available to users of the Internet. As an example of the tremendous pace of events, consider the case of CompuServe. CompuServe has offered SurfWatch as part of its Internet in a Box, a suite of Internet access applications including software from Spry. A competitor of Spry, SpyGlass, has now bought SurfWatch!

International Issues. The threat of governmental censorship of electronic media provided the main impetus for the formation of RSAC and the development of PICS. "What began as a response to threatened legislation in the U.S. has, unwittingly, become a major factor in discussions regarding content on the Internet with governments around the world. In virtually every case, governments are struggling with the issue of whether to wade in with draft legislation, or to encourage, or even coerce, the Internet industry to regulate itself" (Balkam, 1997, p. 7). In each case they must first deal with the issue of the fundamental nature of the Internet. Should it be dealt with like print, broadcast, or some hybrid media? The response to that issue by particular governments seems to determine their attitude toward regulation or nonregulation of the Internet within their borders.

An often-cited characteristic of the Internet is its global, and some would say therefore ungovernable, scope. This global scope increases the difficulty of developing an international content labeling system because the cultural norms of violence, language, sexuality, and political freedoms differ across the globe. Hence, content that may be considered appropriate within one culture may be considered inappropriate to others. A number of governments, such as the government of Singapore, have been attempting to legislate technical infrastructure requirements to address their specific cultural concerns. Even though there may be no national borders in cyberspace, local cultural sensitivities are still very real.

An immediate difficulty with evaluative labeling systems is that what may be appropriate for one culture may be highly inappropriate for another. Fortunately, the PICS system allows for multiple rating systems, services, and label bureaus. As an example of a potential problem, consider the aversion for Nazi propaganda by the German government. Without requiring draconian regulation of infrastructure or ISPs, Germany could require that all browsers and ISPs use a labeling system and label bureau for filtering information pertaining to Nazism. All PICS-compliant browsers must be able to read label system definitions from a configuration file, and the government could be responsible for

developing the appropriate rating and labeling services. However, this technique can also be extended to filter sensitive information even further by totalitarian nations such as China. There the government could require that the only Internet access into the country would be through gateways that employ officially sanctioned filtering software.

Regardless, RSACi has an advantage in the international market because systems that use straightforward content description rather than age appropriate evaluations will have greater applicability and adaptability across multiple cultures. While there is some cultural bias within the RSAC system, efforts to extend the system while keeping it content-based would allow it to have international scope. Some countries may associate different icons or names with the ratings, but the numeric value of a descriptive rating would stay the same. Potentially, this would extend usage of the RSACi system beyond the United States, and it would become accepted as an international content labeling standard.

TELEVISION RATINGS AND THE V-CHIP

Running parallel to the development of a self-regulatory system for both computer games and the Internet has been another highly politically charged debate over rating content on television. Rep. Markey (D-Mass.) and Sen. Conrad (D-S.Dak.) successfully steered the V-chip amendment through Congress as part of the Telecommunications Act of 1996. The amendment contained a mandate to the TV industry to develop a content rating system for television within a year or have one legislated by Congress. It also mandated that television set manufacturers would be required to include the V-chip in all new TV sets built starting in 1998. Thus, the wheels were set in motion to implement a technology-based solution for television similar to the content labeling and blocking mechanism being developed for the Internet. The TV V-chip would block television material based upon labeling information carried in the TV signal, much the same way that an Internet browser can block the access to Internet content based upon the labeling information carried in the file headers.

Throughout 1996 a television industry steering committee headed by Jack Valenti deliberated on what such a TV rating system should look like. Groups such as RSAC, the National PTA organization, Children Now, medical organizations, and academic institutions that have done research on the effects of violence on children participated in the discussions. Recommendations from those groups suggested that a TV rating system should be content descriptive, not age-based, and overseen by an independent body with representatives outside of the TV industry to include child experts, psychologists, and children advocates.

However, the Valenti-led group took a very different stand. Their new ratings system, unveiled in January 1997, will be completely controlled by the industry with no outside involvement. In spite of a unanimous call from virtually all interested parties for a content-based, descriptive rating system to be tied in with the V-chip, the industry group chose an age-based system that mirrors the one used by the movie industry. The proposed system contains very broad categories: TV-Y (suitable for all children), TV-Y7 (recommended for children seven years and older), TV-G (recommended for general audiences), TV-PG (parental guidance urged), TV-14 (not recommended for children under fourteen), and TV-M (mature audiences only). Since the categories contain no content descriptors to

enable parents to make informed decisions, they have been universally condemned as self-serving to the industry and essentially uninformative to the television consumer.

Several groups monitoring the experimental use of the new system have noted that 75% of all television shows are getting a rating of TV-PG, suggesting that the system is not an effective discriminator of television content. As a result of what has been construed as a lack of good faith on the part of television industry to be socially responsible, Congress is once again threatening to legislate a rating system for television. Industry leaders have now backed down from the original position taken by the Valenti-led group that any attempt to do content labeling of television would be immediately challenged in court as censorship of free speech. The TV rating system now proposed will be a combination of content- and age-based advisories.

Many child advocate groups as well as major newspapers around the country have commented upon the opportunity this debate provides for the whole issue of both television and movie content ratings to be examined critically to put pressure on both industries to develop informative, content-based ratings systems that will address the concerns related to child protection and disparate family values as well as to protect free speech and artistic expression. In the meantime, the 1998 deadline for implementation of the V-chip in television sets continues to loom over the television industry, and the technical specifications for that chip remain in limbo until a rating system is adopted.

CONCLUSIONS

A common saying among those that study the Internet is that, "three months are one Web year." There are a number of observations one can make about content labeling today. One observation is that this market is extraordinarily dynamic. Many of the entities discussed in this chapter are only one to three years old. Some of the companies will likely go out of business or be purchased or bought by larger content or infrastructure organizations— as has happened with SurfWatch. The dynamic nature of the Internet leads one to realize the importance of cooperation between the entities discussed. It is imperative that with the chaotic development and flow of information on the Internet, standards such as PICS be adopted at each level of information delivery to bring some sense of order and control to concerned users. It is in this spirit of cooperation that disparate organizations such as RSAC and Microsoft have worked together to use the PICS encoding system to develop a content labeling and blocking mechanism and to make the system available as widely as possible. The ultimate goal of content advisory systems is to provide a technical alternative to government regulation and censorship of the Internet and to empower members of the public to make informed decisions based upon their own value systems about the appropriateness of content accessible on the Internet.

Based upon the activity that has occurred in the three related industries discussed in this paper—computer games, the Internet, and television—it appears that it is rare for a group of companies within an industry, who are usually fierce competitors with each other, to voluntarily set up a rigorous self-policing system that will cost its members time and money to administer, promote, and develop. In fact, "this would run counter to the mission of most trade associations *unless* there was a very real and potent threat of similar

if not worse legislation coming from government. Only then can an industry association legitimately spend its member dues on rallying behind a self-regulatory regime" (Balkam, 1997, p. 9).

On the other hand, it is the role of government to reflect the legitimate concerns of the public and to bring these issues to a wider audience through hearings, press conferences, and possibly draft legislation. Thus, it is often that government uses its power to "embarrass, criticize, or even humiliate an industry into recognizing its shortcomings" (Balkam, 1997, p. 9), in short, to browbeat them into compliance with socially responsible goals. With the right oversight and controls, self-regulation is far more attractive than government regulation, but it takes time, money, and resources to make it work. It also requires a healthy partnership between industry, government, and the general public for it to succeed.

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