

# Cyber Security in a Web 2.0 Collaborative World

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# Reliance on Technology



- For instructional activities
- For administrative functions
- For business operations
- For assessment and accountability
- For internal and external communication
- For data and recordkeeping!



# Understanding the Issues



## Four Reasons to Pay Attention to K-12 Network Security

1. Protect data
2. Prevent misuse of resources
3. Prevent interruption of operations

*(Protecting the Core Mission: Learning)*

4. Keep kids safe



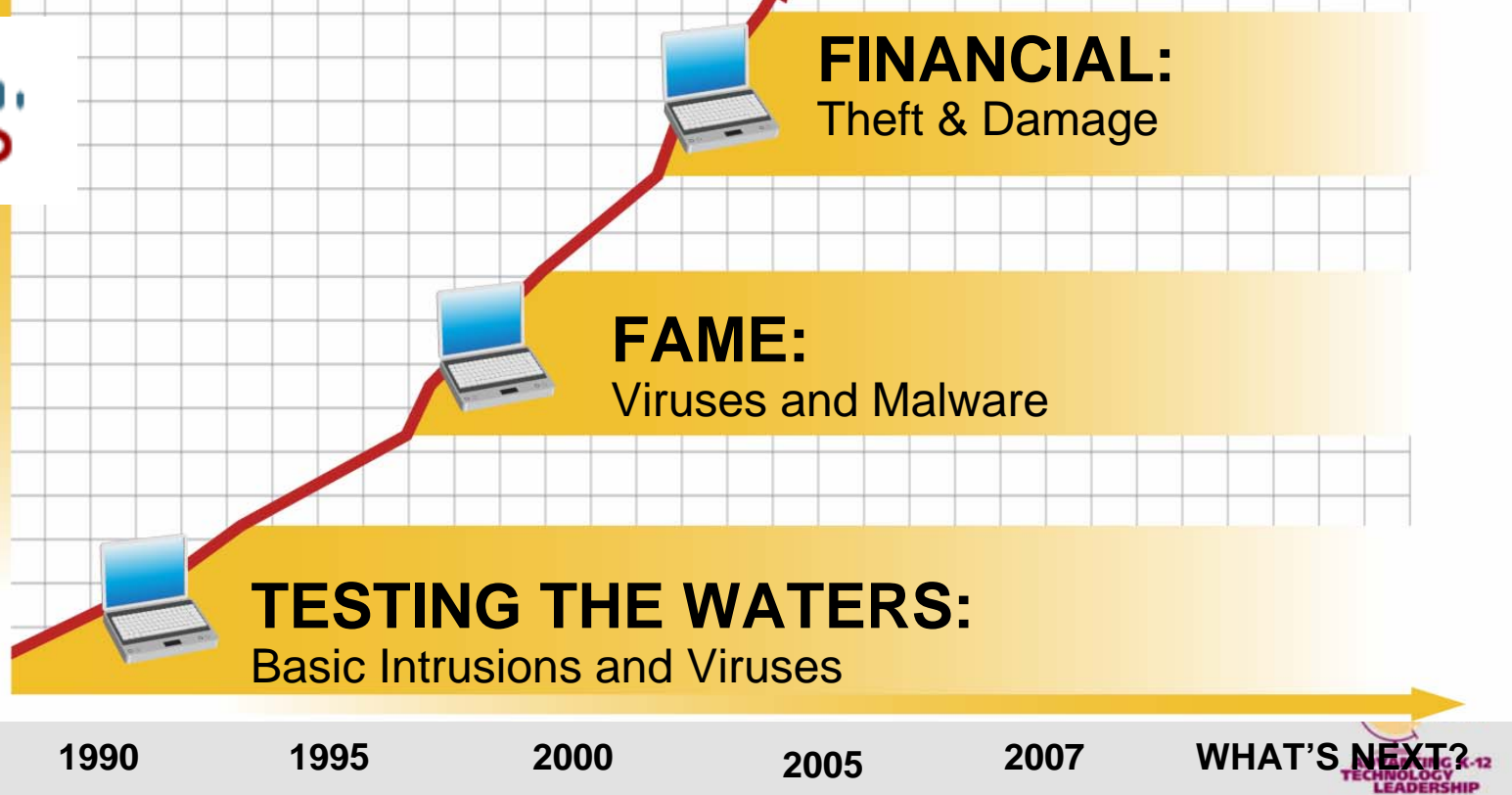
# The Evolution of Intent From Hobbyists to Professionals



THREAT SEVERITY



Threats becoming increasingly difficult to detect and mitigate



# Financial Impact



- 2004 – Cyber Attack impact in business was \$226 billion
- 2008 – One of top 4 US priority security issues.
- Cyber Crime has overtaken drugs for financial impact.



# Schools are *Particularly* Vulnerable



- *During the past 12 months, 55% of districts reported an IT Breach, including unauthorized user access, hacking, or a virus.*

*CDW-G School Safety Index, June 2009*



# What's at Risk?



- Student/Staff Safety and Privacy
- Schools' Ability to Function
- Public Support
- Legal Liability



# Five Guiding Questions



- What needs to be protected?



# Five Guiding Questions



- What needs to be protected?
- What are our weaknesses?



# Five Guiding Questions



- What needs to be protected?
- What are our weaknesses?
- What are we protecting against?



# Five Guiding Questions



- What needs to be protected?
- What are our weaknesses?
- What are we protecting against?
- What happens if protection fails?



# Five Guiding Questions



- What needs to be protected?
- What are our weaknesses?
- What are we protecting against?
- What happens if protection fails?
- What can we do to eliminate vulnerabilities and threats and reduce impacts?



# Safety vs. Security



- **Safety:** *Individual behavior*
- **Security:** *An organizational responsibility*



# Three Strategic Areas



- People
- Policy
- Technology



# Three Action Themes



- **Prevention**
- **Monitoring**
- **Maintenance**





- Issues/Concerns
- Policies/Procedures
- Education
- Educational Value



# Issues/Concerns



**THEN:** Keeping children from accessing inappropriate content was the primary concern.

**NOW:** We are dealing with children who are sophisticated users of technology, producers of content and exposing themselves to a variety of risks.



# Issues/Concerns



- Lack of knowledge
- Lack of research
- Security
- Filtering
- Perception
- Validation
- Kids know more



# Issues/Concerns



- 70% post personal information on the Internet – Name, address, birthday –even social security numbers
- 83% download files from others they do not know
- 51% of parents do not limit who can see child's profile



2008 National Cyberethics, Cybersafety, Cybersecurity Baseline Study, <http://www.staysafeonline.org>



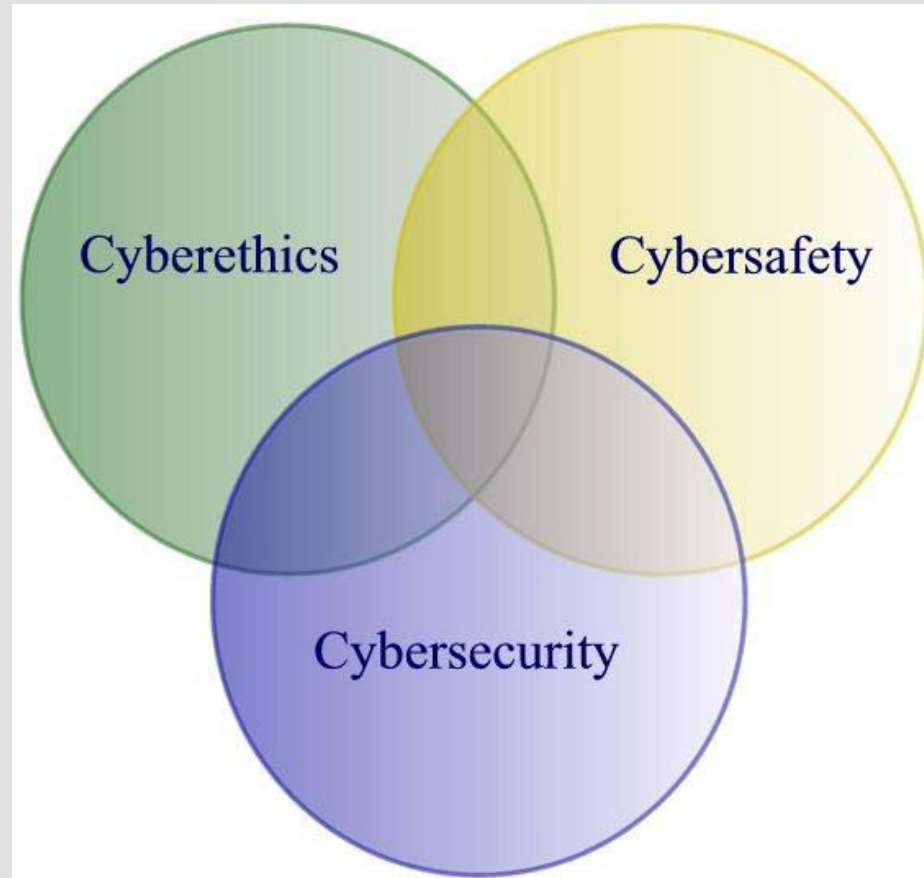
# Policies/Procedures



- Create/adopt policies
- Coordinated planning and accountability
- Provide professional development
- Involve parents
- Educational Purpose



# Policies/Procedures



# Education



- Students need to:
  - Recognize online risks
  - Take action to protect themselves
  - Make informed decisions
  - Exhibit safe behavior



# Education



- Educators/Students need to:
  - Understand and follow AUPs
  - Advocate for ethical and legal use
  - Practice citing sources and avoiding plagiarism
  - Exhibit good “Netiquette”
  - Recognize signs and effects of cyberbullying



# Education



- Parents need to:
  - Stimulate conversations
  - Establish guidelines for home
  - Provide advice and guidance to children
  - Prevent, detect and intervene if their child is victim



# Educator Issues



- More than 60% don't feel comfortable discussing how to detect and minimize computer viruses.
- More than half (52%) don't understand how to ensure a website is secure.



2008 National Cyberethics, Cybersafety, Cybersecurity Baseline Study, <http://www.staysafeonline.org>



# Educator Issues



- 75% don't feel comfortable discussing cyber-bullying
- Less than 32% are comfortable giving guidance on how to be safe in an online environment, including social networking and cyber predators



2008 National Cyberethics, Cybersafety, Cybersecurity Baseline Study, <http://www.staysafeonline.org>



# Educator Issues



- 22% are comfortable teaching about cyber bullying, identity theft and other types of cyber crime
- 23% percent feel prepared to teach students how to protect their personal information online



2008 National Cyberethics, Cybersafety, Cybersecurity Baseline Study, <http://www.staysafeonline.org>



# Educational value



- Global awareness
- Community citizenry
- Decreased political apathy-feeling they have a voice
- Collaborative problem-solving
- Promotes collective thought, feedback loop



# Educational Value



There is emerging evidence suggesting that exposure to new technologies may push the Net Generation brain past conventional “capacity limitations” to become a smarter generation.

Donald Tapscott “Growing Up Digital”



# Safety vs. Security



- **Safety:** *Individual behavior*
- **Security:** *An organizational responsibility*



# Three Strategic Areas



- People
- Policy
- Technology



# KISD Cyber Security Technology



- Beyond Virus Protection
  - Automated
  - Scalable
  - Monitored
  - Assessed
    - CDW-G School Safety Index
    - Risks must be articulated
  - Continually Reviewed
  - Considered with every new initiative
    - What impact will “this” have.



# KISD Cyber Security Technology



- Password Security
  - Accountability
    - Sticky Notes
    - Strength / Weakness
    - Sharing



# KISD Cyber Security Technology



- Password Security
  - Control
    - Required Password Changes
      - Every 90 Days
      - Reminders
    - Account Lockdown
      - Invalid Attempts



# KISD Cyber Security Technology



- Password Security
  - System Administration
    - Frequent Changes
    - Annual Review
      - Service Accounts
      - Domain Admin
    - Unique ID's
    - Logging
    - Approval



# KISD Cyber Security Technology



- External Storage Devices
  - Thumb Drives
    - Key Logger
    - Malware
    - Viruses
    - Unauthorized Software



# KISD Cyber Security Technology



- External Storage Devices
  - Disabled Auto-Play
    - All removable media
  - Disabled Execute Permissions
    - All removable media for students
  - Scanning
    - All external devices
  - Monitoring/Reporting



# KISD Cyber Security Technology



- Access / Rights
  - Reviewed annually
- Employee Provisioning
- Employee Role Changes
- Limit Concurrent Logins
  - Big issue for staff



# KISD Cyber Security Technology



- Remote Access
  - Citrix
    - Approval
    - Monitoring
    - Annual Review
  - VPN
    - Limited
    - Technical Staff
    - Monitored



# KISD Cyber Security Technology



- Laptop - Data Security
  - Windows 7 Rollout
    - Encryption
      - Laptop Users
        - Population TBD



# KISD Cyber Security Technology



- Wireless Infrastructure
  - Wireless Encryption
  - Access Control
    - iPhones, iPods, PDA's, Laptops, Netbooks
  - Extranet
    - Public Network



# KISD Cyber Security Technology



- Tools
  - GFI Languard
    - Track and Trace
  - Websense
    - Proactive
  - Trend
    - Reactive
  - Wireless
    - WPA with TKIP Encryption



# KISD Cyber Security - People



- Who are the “People”
  - School Board
  - Superintendent
  - Staff
  - Students
  - Parents



# KISD Cyber Security - People



- The “Reality”
  - For 7 hours a day we wrap our students in a very protective cocoon from the cyber world.
  - The remaining 17 hours they operate in the same cyber world as adults.
    - No filtering
    - Limited monitoring
    - Limited knowledge



# KISD Cyber Security - People



- The Challenge
  - Closing the technology gap so students don't "Power" down when they come to school.
    - Mobile Devices
    - Social Networking
      - What you do today stays with you forever.
    - Pod/Video Casting
    - Access
    - Responsible Use Education
      - Cyber-Bullying



# KISD Cyber Security - People



- The Obstacles
  - Understanding
  - Acceptance
  
- From:
  - School Board
  - Superintendant
  - Staff
  - Parents



# KISD Cyber Security - People



- The Action Plan
  - Cyber Security Task Force
    - Members
      - CIO
      - Technology Integration Specialists
    - Goal
      - Ambassadors for the “Cyber” era
      - Heighten Awareness
      - Educate
      - Communicate



# KISD Cyber Security - People



- The Action Plan
  - Cyber Security Task Force
    - Audience
      - School Board
      - Superintendant
      - Staff
      - Parents



# KISD Cyber Security - People



- The Action Plan
  - Cyber Security Task Force
    - HOW?
      - School Board Meetings
      - Campus Meetings
      - Central Administration Meetings
      - Leadership Meetings
      - Campus Walkabouts
        - Sticky Notes
        - Unlocked Desktops
      - Town Hall Meetings (2009)



# KISD Cyber Security - People



- The Action Plan
  - Student Cyber Security Task Force (2009)
    - Members
      - CIO
      - Students
    - Goal
      - Ambassadors for the “Cyber” era
      - Heighten Awareness
      - Educate
      - Communicate



# KISD Cyber Security - People



- The Action Plan
  - Student Cyber Security Task Force (2009)
    - Audience
      - Parents



# KISD Cyber Security - People



- The Action Plan
  - Student Cyber Security Task Force (2009)
    - HOW?
      - Technology Showcase Events
      - Town Hall Meetings



# KISD Cyber Security - People



- The Action Plan
  - Professional Development (2009)
    - Focused on the Integration of Technology into the classroom
      - Technology Integration Specialists
    - District Level Cross Functional Team
    - External Resources
    - Knowledge Transfer
      - Early adopters sharing with peers
      - Virtually



# KISD Cyber Security - People



- The Action Plan
  - Electronic Communication Avenues
    - District Website
    - Campus Websites
    - Teacher Websites
    - Dashboards
    - Parent Information Center



# KISD Cyber Security - People



- The Action Plan
  - How do we measure it?
    - District Improvement Plans
    - Campus Improvement Plans
    - Lesson Plans
    - Parent, Teacher & Student Roundtables
    - Pilot Projects
      - Readiness



# KISD Cyber Security - Policy



- Two Types of Policy Issues
  - Cyber Security Violations
  - Access to Web 2.0 Toolbox



# KISD Cyber Security - Policy



- Cyber Security Violations
  - Violations must have adequate discipline
  - More than a “slap on the wrist”
  - Understood
  - Consistent
  - Reviewed:
    - With every new initiative
    - Annually



# KISD Cyber Security - Policy



- Access to Web 2.0 Toolbox
  - Balancing Act
    - Legal Restrictions vs Educational Responsibility
  - Areas of Concern
    - Social Networking
    - Mobile Devices
    - Pod / Video Casting
  - Increased Risk
    - Acceptance



# KISD Cyber Security - Policy



- Access to Web 2.0 Toolbox
  - AUG
    - Changing the name to Responsible Use Guidelines
  - Discipline Management
  - Student Code of Conduct
  - Local Policy



# KISD Rubber Hits the Road!!



- 2009
  - Social Networking
  - Pod / Video Casting
  - Student Emails
  - Mobile Learning Devices (cell phones)
  - Virtual Environments





[www.securedistrict.org](http://www.securedistrict.org)

**CYBER SECURITY FOR THE DIGITAL DISTRICT**

HOME

ABOUT THE PROJECT

- Overview
- Executive Summary
- Conference Handouts & Slides
- Press Releases & News Articles

FOR SUPERINTENDENTS & POLICY MAKERS

- Understanding the Issues
- First Steps
- Gaining Community Support

FOR TECHNOLOGY LEADERS

- The Planning Process
- Evaluating Your Security Status, Prioritizing Next Steps
- Case Studies
- Additional Resources

SHARE YOUR STORY

FREE NEWSLETTER

SITE MAP

CONTACT US

JOIN CoSN

**CoSN**  
ADVANCING K-12 TECHNOLOGY LEADERSHIP

**We want your Best Practices!**  
CoSN is seeking to compile a series of Best Practices from school districts across the country. Please take a moment to share your success story with us.

**PROJECT OVERVIEW**

The Consortium for School Networking (CoSN), in partnership with Mass Network's Education Partnership (Mass Networks), is developing a program to provide schools and school districts with vital information on education networks in order to ensure the privacy and the security of data within their systems.

Here you can find tools and information for Superintendents, School Board members, and Technology Leaders to assess and improve the security of their technology systems in order to protect the safety of staff and students, contribute to the educational mission of their schools, and maintain community support.

For Superintendents & Policy Makers:

- [First Steps For Policy Makers](#)
- [Eight Questions A Superintendent Should Ask the CTO/IT Director](#)
- [Cyber Security: An Introductory Slide Show](#)

For Technology Leaders:

- [First Steps for Technology Leaders](#)
- [A Self-Assessment Checklist](#)
- [Security Protocol Planning Flowchart](#)
- [District Security Rubric and Planning Grid](#)

Maintaining a school's Cyber Security requires staying informed about the rapidly changing on-line environment and on-going effort. It is a shared responsibility of policymakers, technology leaders, users, and the community. To help this process, this web site contains:

Tools to help school technology leaders analyze their network's current security status in

**KEEP IN TOUCH**

Just fill out the form below, and we'll contact you whenever new information, case studies and best practices are posted to the site!

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