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### **A. Use of P2P File-Sharing Technology**

3. Who uses P2P file-sharing technology or programs? What proportion of users are children, teenagers or college students? Are these proportions likely to change with the development of future uses of P2P file-sharing technology?

**ANSWER:** While it seems obvious that the majority of P2P users are under 25, it is important to recognize that as the uses of P2P change, so will the types of users and their ages. While protecting minors from unsavory material is always a priority, it will not benefit future technologies to base rules or legislation on one set of criteria.

4. What must consumers do to uninstall P2P file-sharing software programs? Are there P2P file-sharing programs that are more difficult to uninstall than others?

**ANSWER:** This question is not unique to P2P, but to software in general. There are hundreds of ill-behaved software programs that are difficult to uninstall. Even many better known companies who specialize in enterprise software will not completely uninstall, leaving behind folders, dll files and registry entries on a computer for the computer to manually chip away at.

### **B. The Role of P2P File-Sharing Technology in the Economy**

1. What are the current commercial, scientific, and/or industrial uses for P2P file-sharing technology?

**ANSWER:** See examples and references below for commercial P2P uses:

#### **SAMPLE 1:**

31 Aug 2004 -- NICT to Test Highly Reliable P2P Medical Data Sharing System, Japan

<http://www.medicalnewstoday.com/medicalnews.php?newsid=12666>

The National Institute of Information and Communications Technology (NICT) will launch September 1 a field experiment to test highly reliable P2P-based online medical data sharing system in Hokkaido.

#### **SAMPLE 2:**

Download For Democracy: Two Ways to Use the Internet to Access Government Documents

<http://www.outragedmoderates.org/DownloadForDemocracy.html>

“The Download For Democracy campaign offers two ways for citizens to access government documents: by downloading the individual PDF's directly from links provided on the Government Document Library page, or by downloading the PDF's through Peer-to-Peer file sharing networks, such as [BitTorrent](#), [Gnutella](#), [Kazaa](#), and [Soulseek](#).”

**SAMPLE 3:**

March 4, 2004 [Lindows Grabs BitTorrent By The Bit](#) By [Jim Wagner](#)

<http://internetnews.com/dev-news/article.php/3321911>

“Figuring they can save money using peer-to-peer technology (P2P), alternative operating system developers Lindows is giving customers 50 percent discounts if they download using BitTorrent.”

**SAMPLE 4:**

Article dated October 17, 2001 [Intel and Stanford Using P2P To Fight Alzheimer's](#)

"Thanks to the power of peer-to-peer technology, scientific research and the PC have become powerful allies to help fight some of the world's most damaging diseases," says Intel CTO Patrick Gelsinger.”

2. Can current P2P file-sharing technology enhance business and industrial efficiency? If so, how? How are the benefits different from those available under a central server model?

**ANSWER: YES. See samples above**

3. What are the future commercial, scientific, and/or industrial uses for P2P file-sharing technology?

**ANSWER: See samples above**

4. How will these future uses of P2P file-sharing technology enhance business and industrial efficiency? How are these benefits different from those that would be available under a central server model?

**ANSWER:** While it is possible to write a whole paper on this one question alone, the point needs to be clear that there are many uses that have yet to be discovered. From the days of Napster, P2P is a breakthrough technology, and must be treated as such. Currently software companies are slowly dipping their toes in the water, trying to find ways to deliver program updates while maintaining control of the integrity of software that has their name on it. If companies can find ways to use P2P technology to deliver their products to consumers in a distributed fashion, the cost savings and efficiency alone are worth noting.

5. If P2P file-sharing technology will enhance business and industrial efficiency, what effect

will that have on the nature and extent of competition in the economy?

**ANSWER:** P2P is still in its infancy, and thus unless P2P development is your business, one can only estimate, best guess, and imagine the uses based on what we know today. Let's take images and JPEG files for example. In the mid 90's working with images was specialized just for paper editors - those in the industry of publishing newspapers and magazines. Some large corporations would use digitized images in business proposals. Less than 10 years later we live in a world where every computer comes with some type of image editing or video editing software. Digital cameras are on everyone's gift list, and one can walk up to a computerized kiosk that will not only print photos, but allow the consumer to resize, recolor, morph and produce images that could barely be imagined by the average consumer just a few years ago.

## **B. Identification of P2P File-Sharing Software Program Risks**

1. What are the risks to consumers caused by the downloading and use of P2P file-sharing software?

**ANSWER:**

P2P software risks are no different than any other program that can be downloaded from the internet. Since many, many unscrupulous software companies use the same practice, it does not seem appropriate to focus only P2P in regards to unauthorized or misleading software installs that piggy-back on the primary application being installed.

2. Does the use of P2P file-sharing software pose a security risk to the personal information of consumers? If so, what is the nature and extent of this risk? Can consumers avoid this risk? Is this risk different from the risk that a central server model or other models pose? If so, how?

3. Does the use of P2P file-sharing software inadvertently expose consumers, particularly children, to pornographic or other inappropriate materials? If so, what is the nature and extent of this risk? Can consumers avoid this risk? Is this risk different from the risk that a central server model or other models pose? If so, how?

4. Does the distribution and use of P2P file-sharing software pose a risk to consumers for 5. If P2P file-sharing technology will enhance business and industrial efficiency, what effect will that have on the nature and extent of competition in the economy?

**ANSWER:**

The main theme for questions 2, 3, and 4 seems to be 'Can consumers avoid this risk'. The answer of course is yes. Proper training, consumer information, better management of software vulnerabilities. The possibility of making software companies always inform customers of what they are about to do - without penalizing the consumer by preventing the actual install if they select 'I disagree' to the plethora of End User License Agreements (EULA) and other notices that may pop up. Again this not just a P2P issue, but these same consumer risks can be found in literally hundreds of business and entertainment software applications.

As for 'central versus other models', the answer is 'NO', it does not matter which method is used. Ignorant and unscrupulous software vendors that are insistent upon adding unexpected elements to their electronic goods will do so either way. If anything, a consumer can be easily led to 'Always Trust' a central server site more than something coming from a distributed source. The reason would be that many others have already uncovered the junk and are there to warn the next user in line.

### **C. Identification of P2P File-Sharing Software Program Risks**

1. What are the risks to consumers caused by the downloading and use of P2P file-sharing software?

**ANSWER:**

When software is about to share a folder on a consumer's computer hard drive, that others can access via the internet, the consumer should be made aware. Unfortunately, we live in a time that even if they were made aware, today's average user would probably click-through anyway, because they simply don't understand what it means. Meaningful, unbiased information and educational materials targeting the average home user on they many pitfalls of living in the online world would be beneficial.

Having the police or FBI show up at an unsuspecting consumers door is certainly a great risk.

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**ANSWER:**

P2P software risks are no different than any other program that can be downloaded from the internet. Consumers are ever more frequently asked to turn over personal information to companies that expect them to 'trust' that they will not divulge the information to any third parties. Assuming of course that the consumer was even aware there was a check-box asking for permission to do so somewhere on the companies site. Again, meaningful, unbiased information and educational materials targeting the average home user on they many pitfalls of living in the online world would be beneficial.

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**ANSWER:**

YES

4. Does the distribution and use of P2P file-sharing software pose a risk to consumers for installing spyware? If so, what is the nature and extent of the risk? Can consumers avoid this risk? Is this risk different from the risk that a central server model or other models pose? If so,

how?

5. Does the distribution and use of P2P file-sharing software cause consumers to install adware? Does adware pose a risk to consumers? If so, what is the nature and extent of the risk? Can consumers avoid this risk? Is this risk different from the risk that a central server model or other models pose? If so, how?

6. Does the use of P2P file-sharing software expose consumers to viruses or other malicious code? If so, what is the nature and extent of this risk? Can consumers avoid this risk? Is this risk different from the risk that a central server model or other models pose? If so, how?

7. Does the installation and use of P2P file-sharing software impair computer functionality, such as processing speed? If so, what is the nature and extent of this risk? Can consumers avoid this risk? Is this risk different from the risk that a central server model or other models pose? If so, how?

**ANSWER:**

Questions 4,5, 6 and 7 are all answered YES. P2P (along with many other applications) frequently download spyware, adware and can slow down a system. Malicious code does not come from the application itself, but from the many types of items that can be obtained from it. It is truly a 'buyer beware' environment.

**F. P2P File-Sharing and Music Distribution**

5. Are record labels willing to distribute music through P2P file-sharing? Why or why not?

**ANSWER:**

Record labels have only recently gotten on board with music downloading. Virgin Records (virgindigital.com) is the latest foray into distributing music online. While the labels have chosen to spend most of their time either in court or pushing legislation, it seems some of their time and money may have been better invested on solid research and development. There is a delicate balance to be made to prevent the unauthorized dissemination of copyrighted material, and allowing a new technology to mature.

6. Is there empirical support for P2P file-sharing technology increasing music sales through sampling or greater awareness of artists? What do the data show?

**ANSWER:**

Any simple Google search will produce dozens of articles, points-of-view and other dissertations on whether downloading or sampling of music hurts or helps sales. Many independent artists believe that it helps, many artists that sell only through labels feel it hurts. These are two very different business models themselves, and thus expected to have different outcomes.

7. Are music files on P2P file-sharing networks being intentionally “polluted” or “corrupted”? What effect does the intentional pollution or corruption of files have on P2P file-sharing software as an evolving technology?

**ANSWER:**

Since the dawn of downloading music files have been polluted. In the beginning it was mostly from home users hacking at their own CDs, using low quality audio tools, and uploading static songs online regardless of where they came from. In the past years there have been many reports of record labels submitting corrupted files intentionally to discourage users from downloading. Artist Madonna incident is classic, intentionally placing an audio clip with “what the #### do you think you're doing” in place of one her songs.

5. Will technological changes allow content providers to protect their copyrighted materials from infringement by P2P file-sharing software program users? If so, what effects would these changes have on competition and consumers?

**ANSWER:**

YES. But concerned content providers have got to be willing to invest in the necessary research and development to get there. To have an attitude that software must be perfect and not upset anyone before it can be used is not a viable solution. Just ask any company that deals with enterprise software. Corrections and better software programs are developed by consumer or company needs and demands. In this case it is not the consumer who is demanding that P2P prevents copyrighted material from being accessed, it is the content holders. Thus it is their demand and their need, so they need to fuel the advancement of better and more secure P2P applications.

6. Would consumers and competition benefit from or be harmed by industry-wide standards for the protection of copyrighted materials, e.g., encryption or other digital rights management? What, if any, information should consumers be given about the effect of these standards on their use of copyrighted materials?

**ANSWER:**

In theory it seems that everyone would benefit if there were some way to protect copyrighted materials. The problem is when that solution steps on the Fair Use rights of the consumers.

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