**7-1 Journal: Digital Millennium Copyright Act (DMCA)**

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**Purpose and Intent of DMCA**

In 1998, the DMCA was passed to address issues involving the relationship between copyright and the internet. The primary purpose is to protect copyright holders with provisions that establish procedures of access controls and technical protection measures and protect service providers who meet certain conditions from monetary damages for the infringing activities of their users and other third parties on the net. (DMCA, n.d.). With DMCA enforced, it intended to balance protecting creators and fostering the growth of the internet.

Legality: Banned and Restricted under DMCA

Under the DMCA, circumvention of copyright protection systems, encryption research, and security testing have provisions that can be considered banned and restricted. With the circumvention of copyright protection systems, individuals cannot break encryption or access controls to copyrighted works. An example would be a person attempting to break encryption on a DVD or other digital files to copy them. With encryption, suppose a person research how to develop tools to crack copyright protections; if the user is not making a “good faith effort,” it can lead to legal repercussions but delay the progress of cybersecurity or the overall weakness of online security. Security testing involves using tools and other systems to identify vulnerabilities that attackers can hack. Similar to encryption research, security testing falls under the same grey scale without authorization from the owner.

Anti-Reverse Engineering

The DMCA is considered an anti-reverse engineering law because of its ability to circumvent copyright protection systems that cause tension between reverse engineering efforts. Reverse engineering refers to understanding the functionality of something by either working backward or deconstructing the system. Under the DMCA, many provisions restrict measures that control access to copyrighted work. For reverse engineers to progress further in their work, developers must have valid reasons to proceed in analyzing code.

Exceptions to Reverse Engineering Under DMCA

Although there are restrictions against reverse engineering, some aspects are exempt, such as interoperability, educational purposes, and security research. Interoperability is when applications connect and communicate for data access, transmission, and cross-organizational collaboration. Under DMCA, interoperability is an exception because engineers understand how programs can communicate and exchange data. For educational purposes, many environments have a controlled setting for other programmers to learn and understand how logic and algorithms are used. Similar to interoperability, with the intent of identifying vulnerabilities in good faith, reverse engineers have exceptions under DMCA. Security Research is meant to identify vulnerabilities to prevent malicious activities from occurring. As long as the engineer avoids issues against copyright infringement or works in good faith, there will not be any issues with DMCA.

Impact: Thoughts on DMCA

There is a lot of complexity regarding DMCA, reverse engineering, and the computer science field.  Finding balance is always tricky, mainly because of constant technological advancement. Without proper clarification of DMCA’s exemptions, engineers can face longer delays in improving technology and stifling innovation.

**References**

*DMCA*. (n.d.). Electronic Frontier Foundation. <https://www.eff.org/issues/dmca>