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The Evolution of the Computer Virus

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Abstract

In the last twenty years our society's dependence on technology has grown exponentially. With the advent of the internet geographical boarders were in effect broken; distance is no longer a factor in human communication and interaction. Unfortunately, with the expansion of technology and all of the positive aspects associated with it comes the opposite; malware or as they are more commonly referred to as: viruses.

Computer viruses have taken much the same path of evolution as the computers they infect. Starting as simple programs in the early days of computer technology, they have adapted and evolved into complex programs. As we see new horizons opening up before us with the ever expanding internet and new technologies, authors of malicious programs see the possibility of new exploits and security flaws, and so the constant battle to protect ourselves from these attacks will go on indefinitely.

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As is true with every aspect of our world, for every up there is a down, for every true there is a false and for every good there is a bad. So it was inevitable that with the advent of new technology that would bring people together there would be new technology with a malicious intent to do harm. That technology would be come to be known by many names, most often it is referred to as a "virus". A virus is in effect only one type of malware, trojans and worms being the other two main agents. It is important to remember that while malware's intent is to do harm or collect information, its main purpose is to replicate itself and spread. For now we will focus on the virus and its history.

The first detected virus, named the Brain virus, was discovered in 1986. Brain was a boot sector virus that only infected 5.25-inch floppy disks, and yet the virus was able to replicate itself and spread around the world without the use of the internet or email. Boot sector viruses such as Brain require that the victim execute an infected file in order for the virus to take effect and replicate. As more and more people came online through the 1990's a new breed of boot sector virus emerged known as the macro-virus. One such macro virus was named Concept. "In 1996, Concept became the most common virus in the world, infecting Word documents on both the PC and the Mac – the first cross-platform virus." (Schultz, 2006, p. 12) Soon after came Melissa, a virus much like Concept except it had evolved to automatically send itself to users in the host computers Outlook address book. Then came viruses aimed at servers and network infrastructure, such as CodeRed, Nimda and Slammer. The authors of these malicious codes began to take ideas and pieces of previous agents and combine them into new and more powerful programs.

Viruses are no longer restricted to computers. Cell phones, PDAs and Bluetooth technology are all vulnerable in today's networked environment. With the rapid expansion of

today's technologies, the trend has been to network everything in one's life together. Phones, computers, personal planners, banks, bills, email and countless other aspects of everyday life have all been networked together to make our busy lives easier to manage. "Today, an estimated 1.21 billion people (Computer Industry Almanac) are connected to the internet with millions of computer hosts connected chatting, exchange files, emails and communicating in general. Can you imagine how easy it is to spread a virus or malware?" (On the Origin and Evolution of Computer Viruses)

Computer viruses, worms, trojans and all other various forms of malware continue to evolve, adapt and infiltrate more and more aspects of our digital lives every day. There is undoubtedly a new virus being developed and written right now somewhere in the world that has the potential to affect our lives in the future. The one glimmer of hope in the world of malware is the knowledge that somewhere there is a group of software engineers developing new tools and concepts to help protect us from the future evolutions and variations of computer viruses.

References

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