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HOLY INFORMATION TECHNOLOGY, BATMAN!

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## Abstract

Popular culture is a reflection of modern society. Popular culture tells us who we were, who we are, and who we will be – our hopes, dreams, fears, and nightmares. Since his first appearance in *Detective Comics* #27 in May 1939, Batman has become a towering figure in popular culture appearing in comic books, movies, television shows, newspaper strips, video games, and other forms of media. While Batman is known as a superhero, he is not gifted with superhuman powers or abilities. Batman achieves superhuman feats through his use of technology. Therefore, he relates better to his audience since the audience has the same potential to achieve the same feats. Information technology is a major component of the technology that Batman uses to accomplish his goals. Information technology influences how Batman thinks, how Batman collaborates, and how Batman fights. As information technology has evolved, so too has Batman's use of information technology. Information technology has influenced the Batman mythology. In addition, the Batman mythology has influenced information technology through motivating people to pursue careers in information technology, inspiring new information technology innovations, and shaping existing information technology. This bidirectional relationship between information technology and Batman demonstrates the influence of popular culture in modern society.



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This thesis contains screenshots, panels, and other images from the Batman mythology. These images are used as evidence for the arguments of the author. The author has received the written consent of DC Comics to include these materials. This written consent can be found in Appendix A of this document.

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## Acknowledgements



**Figure 1.** The Batman

This thesis would not be possible without the support and guidance of others. My honors thesis adviser Dr. Santoro has helped me every step of the way and has provided me with invaluable guidance. My honors adviser Dr. Zhang helped me structure my arguments and ensured that I was using proper research methodologies. Without the written permission of DC Comics, the many images from Batman's vast mythology could not be presented. Special thanks go to my two favorite superheroes – my mother and father – and my brother sidekick for supporting me and providing a third superhero to look up to at an early age.

## Chapter 1: Introduction

### *Why does popular culture matter?*

Popular culture is influential in modern society. Popular culture is the modern day vernacular that connects ideas and beliefs about the world to people living around the world. Popular culture comes in many forms such as the television, newspapers, movies, radio, and the multimedia available on the Internet. Popular culture is a reflection of society that tells us who we were, who we are, and who we will be. Popular culture has the ability to influence the development and use of technology.

An example of popular culture that has influenced both technology and people is the American science fiction television and movie series *Star Trek*. The futuristic uses of technology in *Star Trek* in the 1960s and 1970s have inspired or predicted many current developments in technology. In *Star Trek*, a device known as the communicator allowed crew members to communicate directly with one another regardless of their location. Today, this device is known as the cell phone (Oechsner). *Star Trek* has influenced people through creating communities of fans known as Trekkies. *Star Trek* has inspired many of these Trekkies to pursue scientific and technical fields while dissuading others. One of these Trekkies inspired to pursue a career of science was the late Dr. Randy Pausch. When Dr. Pausch was a boy, he was inspired by *Star Trek*'s gadgets and its leader Captain Kirk. During his famous "Last Lecture," Dr. Pausch talked about the impact of *Star Trek* in his life:

"I mean, my god, I just thought it was fascinating as a kid that he [Captain Kirk] had this thing [Takes out *Star Trek* Communicator] and he could talk to the ship with it. I just thought that was just spectacular, and of course now I own one and it's smaller. [takes out cell phone] So that's kind of cool" (Pausch)

In his academic career, Dr. Pausch's inspiration came full circle when the actor who played Captain Kirk, William Shatner, visited Dr. Pausch to get an interview for a book that he was co-writing with Chip Walter about what aspects of *Star Trek* science and technology have come true. Dr. Pausch was studying virtual reality simulations, and Shatner came to study Dr. Pausch's work. Popular culture matters because of its ability to impact people and the world around them.

## Who is the Batman?

“The ‘Bat-Man,’ A Mysterious and Adventurous Figure, Fighting for Righteousness and Apprehending the Wrong Doer, in His Lone Battle Against the Evil Forces of Society...His Identity Remains Unknown.” – *Detective Comics #27*



Figure 2. *Detective Comics #27*

A costumed vigilante known as The Bat-Man began patrolling the streets of Gotham City in May of 1939 (*Detective Comics #27*). Known as an avenger of the night, Batman quickly became the scourge of the criminal underworld and the hope of Gothamites aching to reclaim their city from the grip of crime and corruption. Although many consider Batman to be an urban legend or mythical creature, Gotham City's vigilante is an ordinary man driven to perform extraordinary feats through the impetus of a tragic event. Batman's secret identity is Bruce Wayne, who is a wealthy socialite in Gotham's upper class society. When Bruce was a boy, he witnessed the murder of his parents Thomas and Martha Wayne after walking home from a theatrical performance on Park Row. The gunman left Bruce alive with only one purpose to live for – to avenge his parents. Bruce Wayne swore to avenge his parents by “warring on all criminals.” Consequently, Bruce used his inherited wealth to push the limitations of his physical body and mind through rigorous training and study. Bruce Wayne was not endowed with superpowers. Instead, Bruce was endowed with a relentless work ethic, superhuman will power, strategic thinking, and the ability to effectively use technology in his war against crime. Even with all of his training, Bruce was still missing something elemental and terrifying to strike fear into the hearts of criminals. Bruce's epiphany came crashing through his mansion's window in the form of a bat (*Detective Comics #33*). From that moment on, Bruce Wayne became the Batman and has been fighting crime in the world of popular culture for over 70 years.





Figure 3. Batman's Origin Story From *Detective Comics* #33

### Why is Batman a part of popular culture?

Batman is an important part of popular culture. Popular culture comes in a variety of different forms, and Batman has permeated many of these forms. Batman has appeared most frequently in the comics. Thousands of Batman comic books exist today in the form of ongoing series, finished series, one-shots, and graphic novels. The Dark Knight's most famous and long running comic series include *Detective Comics*, which has featured the Batman in every comic since May of 1939, and *Batman*, which has featured the Batman in every comic since May of 1940 ("DC Comics: Batman").

While Batman is primarily considered to be a comic book character, the Batman mythology is well represented in other forms of popular culture. Batman has appeared in films, television shows, newspapers, books, radio shows, novelty songs, audio drama, musical theater, video games, toys, and even theme park attractions. Some of Batman's appearances in these forms of popular culture can be seen in the pictures below:





Figure 4. Title Screen From *Batman: The Animated Series*

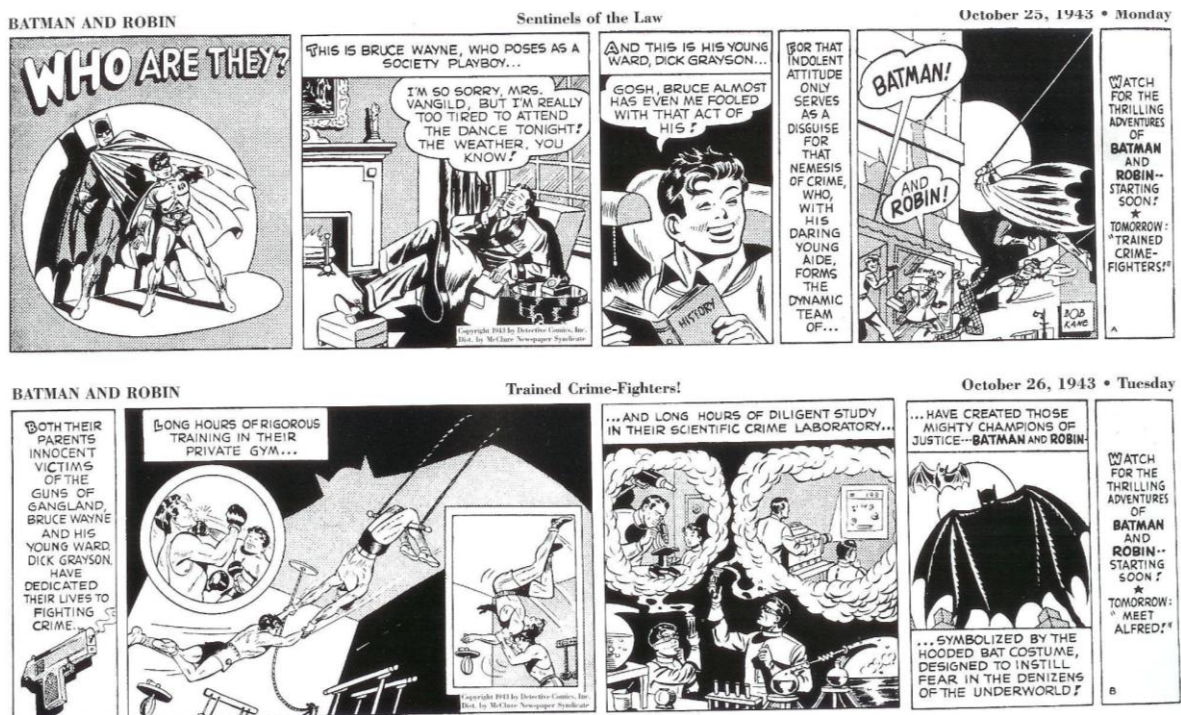


Figure 5. Batman in the Daily Newspaper



**Figure 6.** From the 1940s Batman Movie Serial



**Figure 7.** A Batman Action Figure from the 1960s





**Figure 8.** From *Batman Returns* Video Game



**Figure 9.** From *The Dark Knight* movie

Recently, the Caped Crusader's adventures on the big screen have captivated audiences worldwide. The most recent Batman film, *The Dark Knight*, grossed over \$1 billion around the world (IMDb.com). Batman's popularity is not limited to the big screen as Batman's recent video game, *Batman: Arkham Asylum*, earned a place in the Guinness Book of World Records as the Most Critically Acclaimed Superhero Game Ever (CBR.com). Batman is a part of popular culture not only because of the popularity of the character but also because of his continued presence in many popular culture forms.

### ***Why is Batman important?***

In May of 2009, *Detective Comics* #853 hit comic book stores around the world marking the seventieth anniversary of the Batman character. In a tribute to the first appearance of Batman in *Detective Comics* #27, *Detective Comics* #853 featured a modern interpretation of the classic cover featured in *Detective Comics* #27 (George).



**Figure 10.** Covers From *Detective Comics* #27 (left) and *Detective Comics* #853 (right)

A majority of popular culture phenomena do not possess the same longevity and adaptative powers of the Batman. Batman's continued relevance in popular culture is the product of three factors. The first factor is that Batman represents an archetype of something much more profound than a typical comic book character. The second factor is that Batman's story reflects the American psyche. The third factor is as a popular culture icon Batman has served as a reflection of society.

### ***Batman as an Archetype***

"More importantly, something deeper and much more profound emerges from these comic book stories: transcendent, universal lessons in how to deal with people, battle adversity, and become heroes of our own – and even other people's – lives." – Cary A. Friedman, *Wisdom from the Batcave*

Famous psychoanalyst Carl Jung believed that humanity shares a collective unconscious composed of universal thought forms called archetypes. This collective unconscious serves as the foundation in which individuals build their lives and their personalities. Because these universal thought forms are unconscious, archetypes are difficult to detect but are often represented in a society's or culture's art, literature, and religion. Archetypes can be represented

by the characters in these works such as the great mother, father, devil, child, God, wise old man, wise old woman, the trickster, and the hero. The Jungian hero is represented by an individual who liberates others from destruction and death. The Jungian hero conquers his fears and bad impulses without becoming egotistical (Boeree). Batman is a type of Jungian hero, and the Batman mythology has many archetypes embedded within. The Batman mythology contains the universal themes of good versus evil, restraint versus anger, and justice versus revenge (Zehnder).

Because the Batman mythology represents universal themes, the universe of the World's Greatest Detective mirrors other myths and heroes in history. Due to his pragmatism and reliance of logic, Batman has been called the Aristotle of the superhero genre (Morris and Morris). Batman's origin of growing up without his father and his encounter with death at an early age mirrors the origins of Greek mythic heroes of Hercules and Achilles. These traumatic childhood experiences have given all three heroes a sense of invulnerability and confidence in the face of death that others lack (John Darowski). Although the Dark Knight does not have a seat at the round table in Camelot, Batman does echo the Arthurian mythos. His squire Robin, his spot on the round table of the Justice League of America, and his tremendous capacity for chivalry support this interpretation (Nash). When Bob Kane and Bill Finger were creating the mythical figure of the Batman, they were inspired by the heroes of their time, so Batman also echoes the heroes of Superman, Sherlock Holmes, the Shadow, Zorro, and Doc Savage (Daniels).

### ***Batman as the American Psyche***

Although the Batman mythology represents universal themes, the Batman mythology is also representative of the American psyche. The Declaration of Independence, a source document for understanding the American psyche, states:

“We hold these truths to be self-evident, that all men are created equal, that they are endowed by their creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness. That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed, That whenever any Form of Government becomes destructive of these ends, it is the Right of the people to alter or abolish it.”

The Declaration of Independence advocates for the people to act when life, liberty, and the pursuit of happiness of the people are infringed upon. Batman's origin is motivated by this call to action to prevent others from experiencing the tragedy that he experienced at an early age (Joesph Darowski).

The character of Batman is also symbolic of the American Dream, a significant component of the American psyche, on two different levels. The American Dream can be achieved through two mechanisms – through natural or inherited ability because of a person's

background or through hard work and persistence despite a person's background. As Bruce Wayne, the character of Batman represents a person who has succeeded because of his background. Due to his family's inheritance, Bruce Wayne's monetary achievements and status are outcomes of the American Dream that many Americans hope to achieve. Bruce Wayne is a wealthy, well-to-do socialite who is the Prince of Gotham City. He can do whatever he wants and whenever he wants. However, as Batman, Bruce Wayne represents a person born out of an American nightmare (John Darowski). Because of his tragic past, Batman dedicates himself to a cause and works tirelessly to achieve his mission. Despite the loss of his parents, Batman becomes the protector of Gotham City and one of the most respected superheroes on the planet.

### ***Batman as a Reflection of Society***

In addition to representing universal themes and the American psyche, the Batman mythology also serves as a reflection of modern society. Every generation since the 1940s has had their own version of Batman. Long time Batman writer and DC Editor Dennis O'Neil offers a response as why the Batman character is so malleable:

“Batman and Robin are part of our folklore. Even though only a tiny fraction of the population reads the comics, everyone knows them the way everyone knows Paul Bunyan, Abraham Lincoln...Batman and Robin are the postindustrial equivalent of folk figures. They are deeper in our collective psyches than I thought. Because the characters have been around for fifty years, everybody in the country knows about them. They have some of the effect on people that mythology used to and if you get into that, you can't avoid the question of religion” (John Darowski).

Because Batman is a part of the American folklore, each version of Batman reflects how a generation of Americans viewed the world. For example, Batman was created in the Great Depression and reflected how a generation of Americans viewed society. Although Bruce Wayne is a rich man, he makes up for his riches by becoming Batman and helping the common man. Due to the financial troubles of the time, this willingness to help those in need resonated with Americans during this time. Aside from his wealth, Batman is a common man, and through his determination and work ethic, he can achieve amazing feats. At a time when massive government public works projects like the Hoover Dam were being completed, there was an emphasis on how common people can perform extraordinary feats through hard work. Although Batman works outside the law of the local government, he always respects the federal authorities. Because the federal government was supporting Americans through this economic depression, the federal government was to be respected at all times (Rohrdanz).

Batman also reflects how modern Americans view the world. After the attacks on September 11<sup>th</sup>, the Batman mythology started to include more themes of terrorism and Batman as being a dark vigilante who will make difficult if not at times value comprising decisions to keep the citizens of Gotham City safe. These themes are well represented in Christopher Nolan's

films *Batman Begins* and *The Dark Knight*. In *Batman Begins*, the American fear of trusting others and the system played center stage as Batman became a one man army who managed to stop Ra's Al Ghul from crashing a subway car into Wayne Towers. If this car did crash into the towers, a chain reaction in the water system would result that would cover Gotham City in a fear gas. The subway car and fear gas acted as metaphors for the terrorist attack on the World Trade Center that engulfed the United States in fear. In *The Dark Knight*, Batman faced an opponent in the Joker that “could not be bought, reasoned, or negotiated with” and “just wanted to see the world burn.” The Joker in this movie was an embodiment of chaos, and to bring the Joker to justice, Batman essentially wiretapped all of Gotham City to find his prey. The methods Batman used to find the Joker reflected the passage of the Patriot Act that allowed warrantless wiretapping by the federal government to capture potential terrorists (Febowitz).

Batman also serves as a reflection of his own world and how anyone has the capacity to be a hero. Heroes were prevalent in young Bruce Wayne's life. In many interpretations of Batman's origin story, a young Bruce Wayne leaves a movie theater playing “The Mask of Zorro” with his parents before meeting a desperate criminal. In the television series *Batman: The Animated Series*, young Bruce Wayne is shown being enamored with a television vigilante by the name of the Gray Ghost. The influence of the Gray Ghost was so strong that Batman's television hero has its own place in the Batcave.



**Figure 11.** Pictures of the Gray Ghost TV show (left), a young Bruce Wayne watching the Gray Ghost (middle), and the Gray Ghost Shrine in the Batcave (right) from *Beware the Gray Ghost*

As the Gray Ghost inspired him, Batman has inspired others to become heroes. In *Batman Begins*, Bruce Wayne tells his butler Alfred Pennyworth how he plans to inspire others:

“People need dramatic examples to shake them out of apathy and I can’t do that as Bruce Wayne, as a man I’m flesh and blood. I can be ignored. I can be destroyed. But as a symbol....., as a symbol, I can be incorruptible. I can be everlasting.”

As a dramatic example, Batman has helped create the heroes in his world such as Robin, Nightwing, Batgirl, Batwoman, Oracle, the Outsiders, and the International Club of Heroes. Batman reflects the capacity for being a hero in his own world, but Batman also reflects society. Therefore, Batman projects this idea to every generation and inspires others to pursue their goals and dreams. For many in the real world, Batman is their version of the Gray Ghost.



The Batman mythology has the ability to reflect society and also influence society. In this thesis, this ability will be explored through examining one small aspect of the Batman mythology – the use of information technology. The evolution of the Batman mythology and the evolution of information technology share the same timeline. When Batman first appeared in 1939, the computer was starting to come into its own thanks to the works of Alan Turing, Vannevar Bush, and Claude Shannon. Batman’s superpower is his ability to use technology effectively to pursue his goals. Batman’s superpower reflects mankind’s superpower as mankind uses technology to solve its problems. Because of Batman’s ability to reflect society and influence society, this thesis will explore how the Batman mythology and the evolution of information technology have influenced each other.

### ***Research Objectives***

To explore this bidirectional relationship between the Batman mythology and information technology, information technology’s influence on the Batman mythology and the Batman mythology’s influence on information technology will be discussed separately. For how information technology has influenced the evolution of the Batman mythology, an organizational structure will be used to organize the Batman mythology into periods of time and the information technology of these time periods into categories based on Batman’s use. The periods of time used to organize the Batman mythology are described below in Listing 1. This organizational structure is based on Batman writer and DC Editor Dennis O’Neil’s description of the four Batmans in the character’s history. The fifth Batman was created by the author of this thesis. In Listing 2, the categories of information technology use by Batman are described.

***Golden Age Batman (1939 – 1949)*** – “a wealthy, gentleman vigilante who fought crime for reasons that weren’t always clear”

***Silver Age Batman (1950 – 1969)*** – “although he remained the dedicated scourge of villainy, Batman mellowed just a bit and could be glimpsed behaving like the daddy any adventurous kid would love to have”

***Bronze Age Batman (1970 – 1985)*** – “if Batman could exist, this is how he would be”

***Dark Age Batman (1986 – 1999)*** – “while other individuals have assumed the mantle of Batman’s sidekick Robin, none has been shown to have a particularly close relationship with Bruce Wayne. Other heroes too, including Superman and the entire roster of the Justice League, of which Batman was a founding member, have often been at odds with Batman and his methods.”

***Contemporary Age Batman (2000 – today)*** – more than any other version of Batman, this Batman represents a convergence of the ideas and influences of all other past Batmen. This Batman is Dark in the way that he reflects an age of terrorism. This Batman is Bronze in the way that theatrical interpretations of the character illustrated



how a Batman in the modern world would exist. This Batman is Silver in the modern light hearted interpretations meant for a younger audience. This Batman is Golden in the way he is commonly referred to as a vigilante rather than a hero within his own mythology.

**Listing 1.** Time Periods of The Dark Knight Based on O’Neil’s Four Batmans (Joesph Darowski)

***The Dark Knight Detective*** – Batman’s analytical skills are unmatched. After years of training and experience apprehending his infamous Rogue’s Gallery, Batman has earned his title of the World’s Greatest Detective. When putting the pieces of a crime together, Batman often uses information technology to gather and query information.

***The Batman Family*** – Batman does not fight his war on crime alone. He has had many allies throughout the years that have assisted him. Batman uses information technology to help manage these relationships as well as coordinate plans of attack.

***The Masked Manhunter*** – Batman is a master martial artist and tracker. Batman always captures his prey. While hunting for criminals, Batman uses information technology as a tool to help find and fight his quarry.

**Listing 2.** Batman’s Use of Information Technology

When determining the extent of how the Batman mythology has influenced the evolution of information technology, the analysis will be broken into three parts. These parts are Batman’s influence in career choices in the field of information technology, Batman’s influence in promoting innovations in information technology, and Batman’s influence in existing information technology.

## Chapter 2: The Golden Age Batman

### *A Legend Begins and A New Age Dawns*

In May 1939, Batman first appeared in *Detective Comics* #27 in a story entitled “The Case of the Chemical Syndicate.” In his subsequent appearances, Batman is depicted as being a strange and weird creature of the night that uses fear to achieve his vigilante objectives. However, Batman is only a man and actually is the wealthy socialite Bruce Wayne who uses his wealth and technology to solve the crime related problems of Gotham City. As time passed by since his introduction, Batman gained allies in the form of Robin the Boy Wonder, the Gotham City Police Department, Superman, and the Justice League.



**Figure 12.** The Golden Age Batman – A Dark Vengeful Creature (*Detective Comics* #31 on left) and A Super Friend and Cop (*World's Finest Comics* #3 on right)

In February of 1946, the public was first introduced to the dawn of the Information Age. On Valentine's Day of 1946, ENIAC – Electronic Numerical Integrator and Computer – was introduced via a press conference in Philadelphia, Pennsylvania. *Newsweek* heralded the device as the “Fifty Foot Brain” (*Newsweek*). ENIAC was designed to calculate the ballistic trajectory tables for the United States Army in World War II but was completed after the war had concluded. ENIAC was used heavily by researchers and scientists in the late 1940s as well as military officials at the start of the Cold War to gain insights on how to build the perfect H-bomb. Through the use of the term “brain” to describe the capabilities of ENIAC by the popular press, the press suggested to the American public that ENIAC and information technology itself

had the ability to replace mankind. While ENIAC had the ability to complete complex problems in mere minutes in what used to take years, ENIAC also served as a potential threat to mankind. Scientists and researchers disagreed stating the need for mankind's creativity and ability to think independently while also advocating for the use of information technology as a tool to help mankind solve its problems (Martin).



**Figure 13.** Penn engineers J. Presper Eckert and J.W. Mauchly Work On ENIAC (ExplorePAHistory.com)

The Golden Age of Batman represents the beginnings of both the Batman mythology and the Information Age. Although Batman did not own a Batcomputer until much later, Batman did use the information technology available at the time to wage his war against crime. In addition, the criminals of Gotham City also used information technology's potential as a weapon in their battle against Batman. In the sections that follow, Batman's early use of information technology will be described.

## *The Dark Knight Detective*

Before the Batsignal, before the Batcave, and before the Batmobile, Bruce Wayne sat in a chair and was alone with his thoughts. He had sworn to avenge the death of his parents by warring on all criminals and had trained his body and mind for his life's mission. However, Bruce Wayne was stuck. He did not know how he could complete his mission. Who could Bruce Wayne be to strike fear into the hearts of criminals? As Bruce Wayne contemplated his potential modus operandi, a bat crashed through his window. This bat provided the inspiration for Bruce Wayne to become the masked avenger of the night – the Batman!

In the Golden Age of the Batman mythology, this image of Batman sitting in his living room and contemplating about his mission was a common occurrence. Batman is a man of action, but he needs to collect information from the outside environment to spring into action. The creation of Batman depended on information from the outside of the world as represented by the bat coming into the world of Bruce Wayne. To send Batman into action, Batman depended on the information written in the newspapers and broadcasted on the radio. Newspapers and the radio were the two most popular forms of media in society during the Golden Age.

Much like Batman's early Batmobile was an ordinary red car, his first Batcave was his ordinary living room. Using the newspaper and the radio, Batman monitors Gotham City and reacts to crime related information within his own living room. There are many early examples of Batman using these forms of information sources in the comics. In the stories of *Batman #1*, Bruce Wayne is depicted sitting in his comfy living room chair and Robin is reading a newspaper.



**Figure 14.** Batman in His Living Room in *Batman #1*

In one of the stories, Batman's archenemy, the Joker, announces on the radio that he plans to kill a wealthy Gothamite and steal his diamond. In another story, Bruce Wayne hears that a break



out occurred in the city's insane asylum over the radio. In another story, Bruce Wayne reads about a planned yacht party in the newspaper and sends Robin to investigate. In *Batman #3*, Bruce Wayne deduces where the gang of ugly men will attack next after reading the newspaper. Both media are needed to discover the meaning of a news flash sent over the radio waves involving the Joker in *Batman #12*.



Figure 15. Batman and Robin Receive a News Flash in *Batman #12*

In *Detective Comics #33*, Bruce Wayne is shown using a crime lab in his living room with newspaper clippings used as providing key information on past events.



Figure 16. Batman's Crime Lab in *Detective Comics #33*

Batman's living room was his first Batcave because that was where all of the information was. For many Americans, the living room served as a place to read books and newspapers and listen to the radio with friends and family. Batman used the radio to understand and respond to current events while Batman used the newspaper to plan for the future and understand the past. Batman also kept files on common criminals in this laboratory such as information concerning the Penguin's thugs in *Detective Comics #59*.





Figure 17. Batman's Files in *Detective Comics* #59

Batman's use of the living room diminished as the appearance of the Batcave first debuted in the Batman movie serial released in 1943 in the episode entitled "The Bat's Cave." The Batcave was used in the movie serial as an interrogation room. In the scene depicted below, Batman and Robin use a gang member's fear of bats to receive valuable information about the origins of the mysterious ray gun.



Figure 18. The Batcave in *Batman Movie Serial* – Chapter 2 *The Bat's Cave*

The Batcave's appearance in film motivated its later appearance in the comic books. The Batcave soon supplanted the living room as Batman's primary location for thought and detective work. Equipment such as a radio receiver machine as shown in *Batman #4* started to fill the interior of the cave, and more and more, Batman and Robin would spend time investigating and strategizing in the Batcave.



**Figure 19.** Radio Receiver Machine in *Batman #4*

A major milestone in the information technology progression of the Batcave was the first appearance of the secret crime lab and filing cabinet in *Batman #22*. Batman's crime file system would evolve in the Batman mythology, but Batman's initial Batcomputer was a filing cabinet and other paper resources. Batman's filing cabinets held all of the information of Gotham's criminal underbelly. Early on, Batman's filing cabinets were identified as being more advanced and superior to the filing system used by the police. In *Batman #31*, the narrator of the story makes the following comment about Batman's filing system: "And if you want to know how Batman's few filing cabinets can hold as much information as the many rooms in police headquarters, the answer is microfilm!" Microfilm was being used the 1940s by the U.S. military for communication purposes, but the use of microfilm for libraries and other active information systems was not implemented until the 1950s.

Batman's information system was used in the comics, but an interesting early use of his information system appeared in the Dark Knight's appearances in the newspaper. In one of these newspaper comics, Batman used a projector to make a set of fingerprints on a bullet appear bigger while Robin checked a file cabinet to see if the prints match.



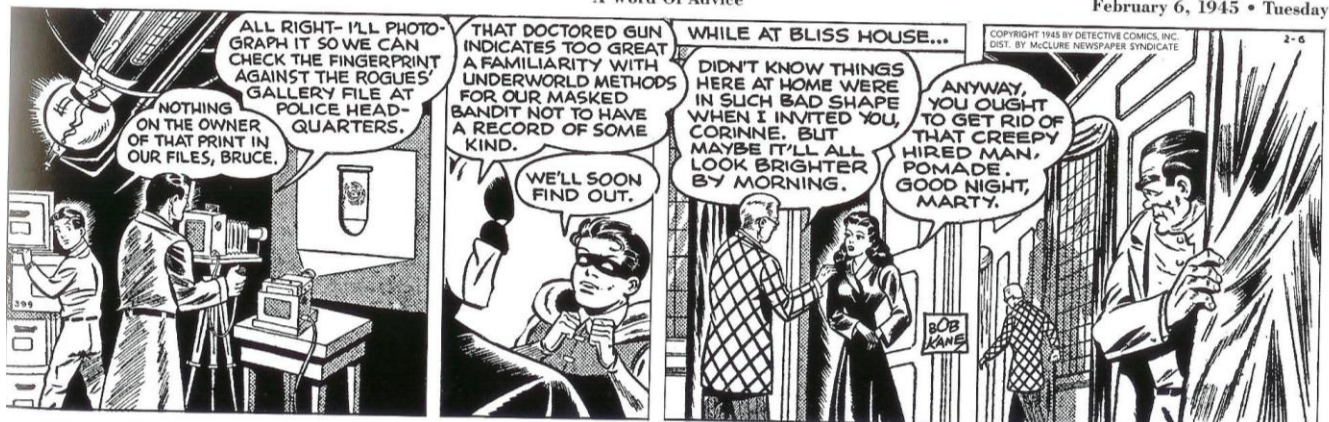
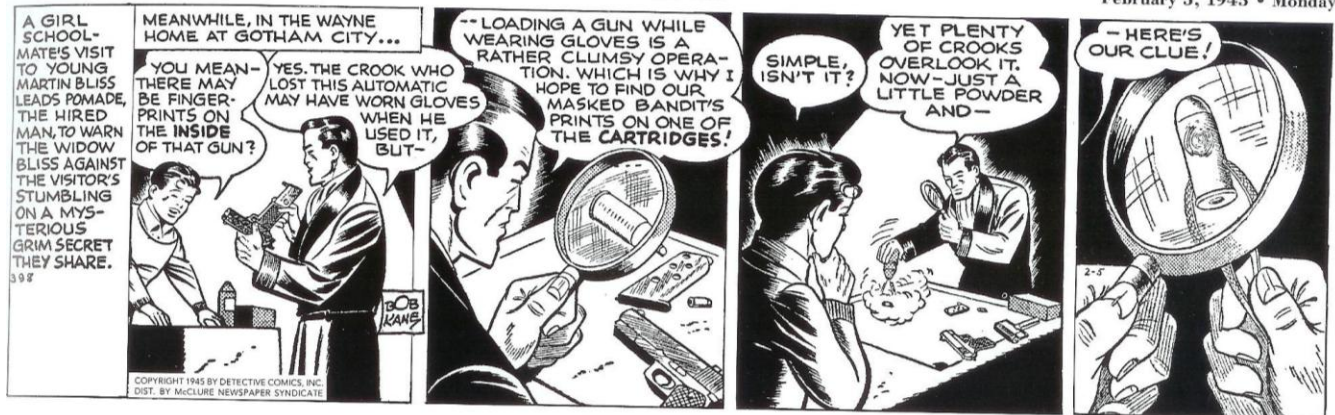


Figure 20. Checking Fingerprints in *Batman: The Dailies*

Batman's newspaper comics example is just one of the ways that Batman and Robin solved a crime using the information technology present in the Batcave. One of the more spectacular uses of information technology occurs in *Batman #42* when Batman deciphers the recorded sound of a typed message from a dictograph record:

Batman: "This audiometer is like a seismograph-it records vibrations of sound! Each typewriter key, due to its weight, its keyboard position, registers a different vibration."

Narrator: Batman makes a test typing of every key on Dud's typewriter, the sensitive audiometer registering each "soundprint." Next, Batman makes a "reading" of the dictograph record.

Batman: "Now, Robin, if you compare the sheets of soundprints, you'll find the message Duds typed!"

Another spectacular use of information technology to gather information is the use of a motion based camera. Batman and Robin were trying to track down the Joker in the pages of *Batman*



#48 and decided to use one of these cameras on the back of one of the Joker's trucks to see where the Joker was hiding. As Batman and Robin explain:

Batman: "This is a movie camera of the type used by the Air Force in its fighter planes. It was synchronized with the machine guns and took pictures of every target fired upon."

Robin: "I get it. We'll synchronize ours with the motor of the truck and obtain photos of its route!"

The final spectacular uses of information to gather information both concern the use of television and videos. Broadcast television was just getting its start in the late 1940s as NBC, CBS, and ABC all have their roots in this decade. As television was getting gaining popularity, the Batcave responded with outfitting the Batmobile with a television screen and using video surveillance. Fitting the Batmobile with a television screen provided Batman with improved information as he explained to Robin in *Batman* #53:

Robin: "Television for the Batmobile - some deal!"

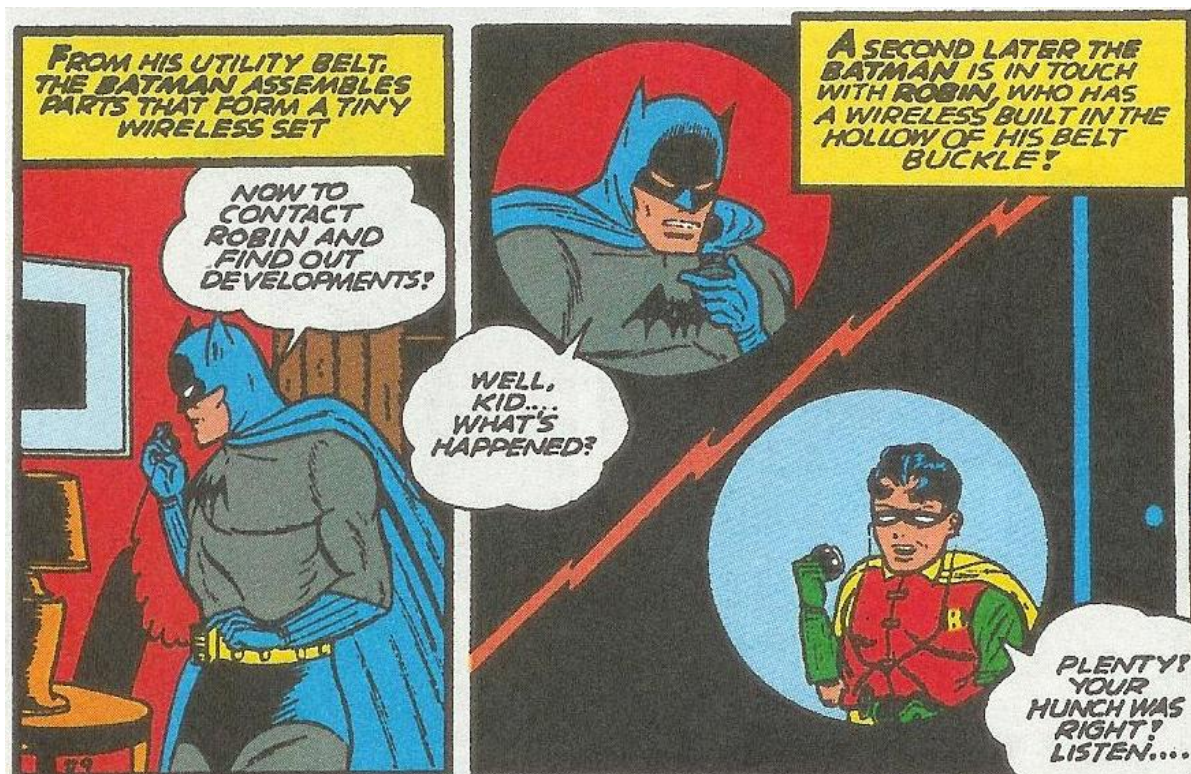
Batman: "It will mean faster and better identification of criminals. Now, police can flash us pictures of wanted crooks, rather than just descriptions."

In *Batman* #48, Robin is missing, and to locate the Boy Wonder, Batman uses robotic eyes and television screen. The use of this technology foreshadows the development of the Bat-Eye, which is a technology developed by Batman to monitor Gotham City through video surveillance.

## *The Batman Family*

In *Detective Comics* #38, Robin the Boy Wonder entered the Batman mythology and fundamentally changed the Batman universe. After the introduction of Robin, Batman's image of being a dark vigilante changed into being a paternal law abiding citizen. For the Dynamic Duo to be effective crime fighters of the Golden Age, they needed information technology to communicate with each other, to communicate with the police, and to communicate with the public.

When Batman and Robin fight crime together, they are often found separate by choice or due to the situation at hand. To keep the lines of communication open between these crime fighters, Batman and Robin use a tiny wireless radio set in their utility belts. This radio set or "portable phone" first appeared in *Batman* #3 and has made regular appearances in the Batman mythology since.



**Figure 21.** Wireless Radios in *Batman* #3

Using this device, Batman and Robin often share information about a crime they are about to solve or call each other for help such as the case when Bruce Wayne was kidnapped by a millionaire collector and strategizes with Robin an escape plan in *Batman* #19. A variation of the radio was used between Batman and Robin in which the radio communicator was stored in the heel of Batman's boots as shown in *Detective Comics* #54.





Figure 22. Batman and Robin Communicate from *Detective Comics* #54

Batman and Robin can also be found using the telephone to communicate as well, especially when Robin goes undercover. In *Batman* #3, Robin went undercover at a crime school for boys and called Batman using a pay phone to share the information he learned.

While the first version of the Batman character was considered to be a vigilante and an outlaw by the police, the introduction of Robin changed the nature of Batman's relationship with the police. Batman and police now worked side by side and collaborated on many occasions. In *Batman* #1, Commissioner Gordon and Bruce Wayne set a trap for the Joker by advertising a fire ruby in the newspaper.

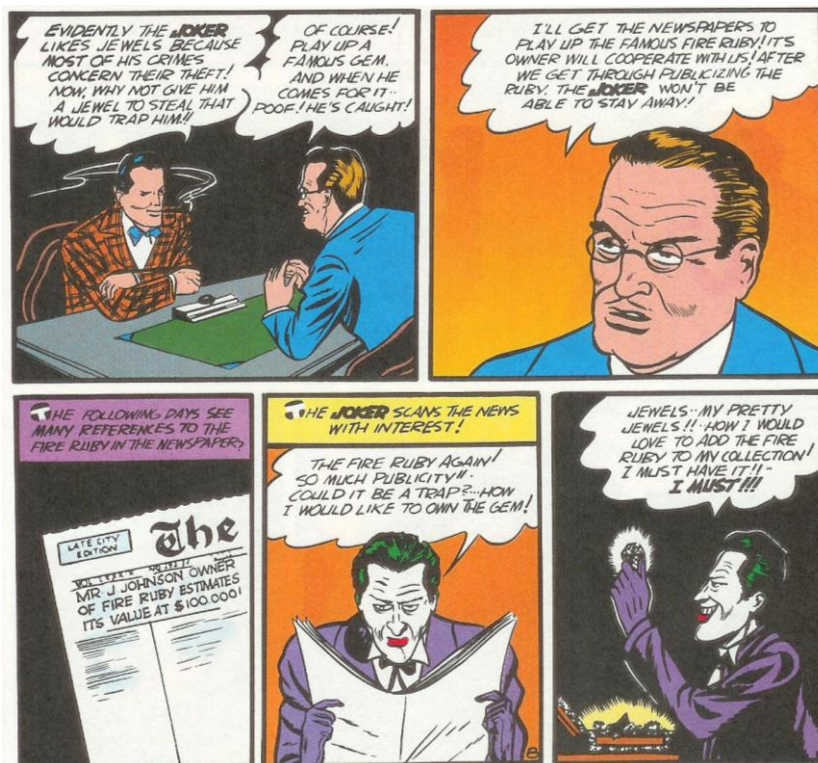


Figure 23. *Batman* #1 Newspaper Trap

In *Detective Comics* #86, Batman calls Commissioner Gordon via pay phone for assistance, and in *Batman* #31, Batman and Robin consult the crime files of the police for information.

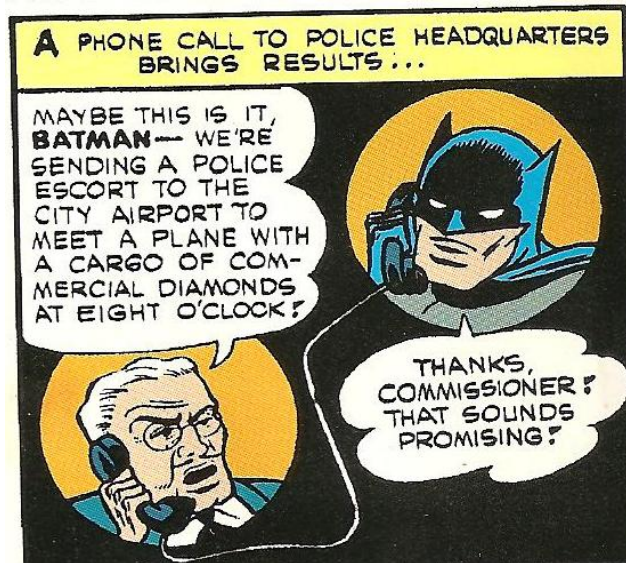


Figure 24. Batman Calls Commissioner Gordon from *Detective Comics* #86

The most iconic information technology used by the police to contact Batman and Robin was the Batsignal. The Batsignal's first appearance was in *Detective Comics* #60. The Batsignal is meant to be a broadcast message that Commissioner Gordon needs the help of Batman and Robin to the people of Gotham City.

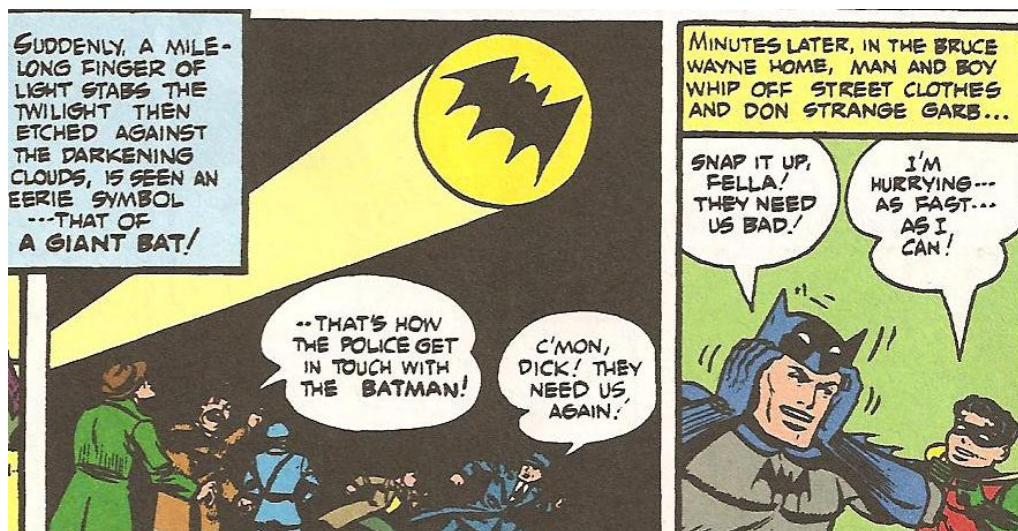


Figure 25. The Batsignal Calling Batman and Robin from *Detective Comics* #62

The signal also serves the purpose of reminding the people of Gotham City that Batman and Robin are patrolling the streets and protecting their city from crime.

While Batman and Robin started as urban legends of Gotham City in the Golden Age, they ended the Golden Age known as national heroes. With a national reputation comes a



national demand for the services of Batman and Robin. To help solve a case of national importance, the director of the FBI makes a general radio announcement to Batman and Robin in *Batman #8*. In *Batman #10*, a small boy from the Midwest hears about Batman and Robin's ability to solve crimes and gets the Dynamic Duo's help through using the newspaper and appearing on Gotham City radio. Batman also appeared on radio and even television to a national audience in *World's Finest Comics #6*.

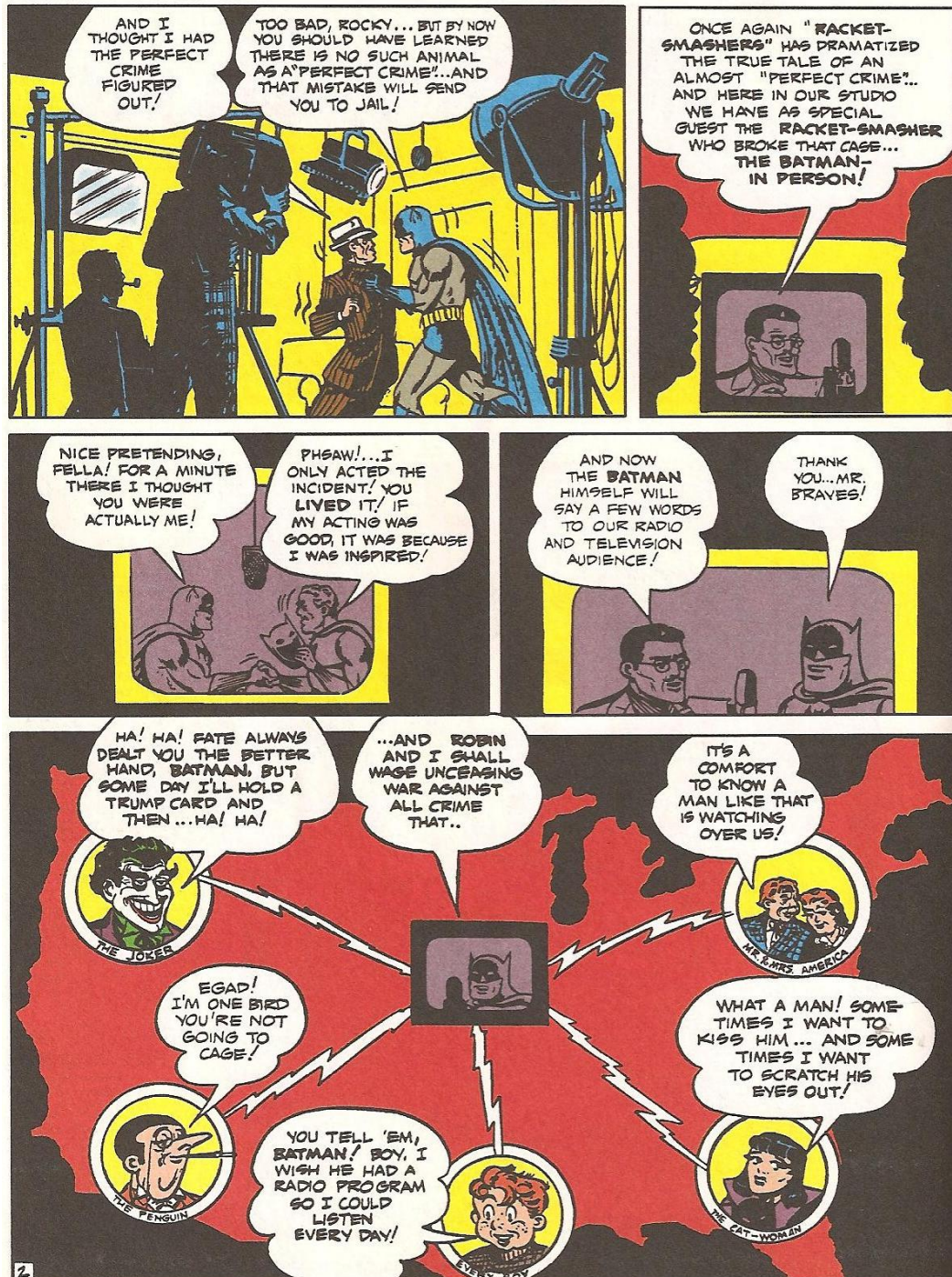


Figure 26. Batman Has a National Audience in *World's Finest Comics #6*



### *The Masked Manhunter*

While the Golden Age Batman used early information technology for the purposes of justice, Batman's enemies used information technology to achieve their own nefarious goals. In the Golden Age, two villains used information technology effectively against Batman – the Joker and the Thinker.

In the Golden Age, the Joker is depicted as a master of communications media. In *Batman #1*, the Joker takes over the air waves and makes several announcements that he murder Gothamites and steal their diamonds.



**Figure 27.** The Joker Using the Radio in *Batman #1*

Later in another story in the same issue, the Joker puts a poison dart in the phone receiver of the chief of police. When the Joker calls the chief of police, the chief of police subsequently dies.



Figure 28. The Joker Commits a Murder with a Phone Call in *Batman #1*



In *Batman* #5, the Joker captures Robin and uses the Boy Wonder's wireless radio to communicate with Batman.



Figure 29. The Joker Talks to Batman in *Batman* #5

In *Batman* #7, the Joker goes viral and blankets Gotham City in leaflets announcing that he is alive and responsible for the pranks that have recently been played on the city. In *Batman* #11, the Joker publishes a want ad in the *Gotham Gazette* to gain Batman's attention.

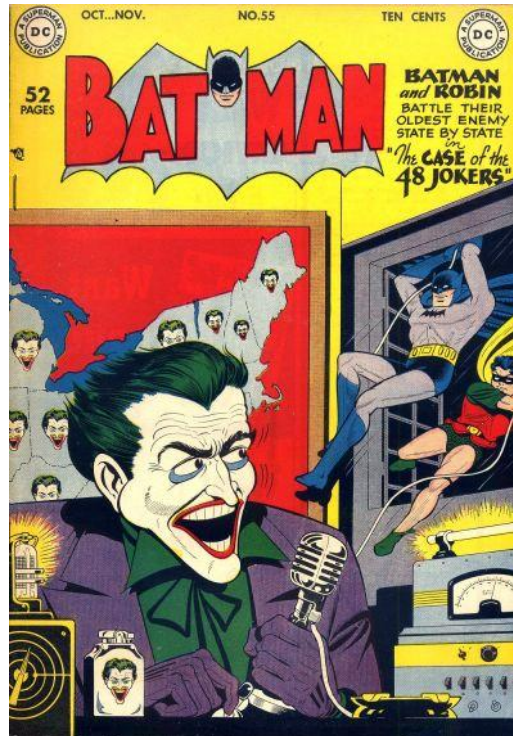




Figure 30. Batman Gets His Own Want Ad in *Batman* #11

In *Batman* #55, the Joker attempts to commit a crime in all 48 states and issues orders over the radio to his orderlies.





**Figure 31.** The Joker Makes Use of the Radio Again in *Batman* #55

In *Batman* #37, the Joker steals Batman's thunder was adopting all of the technology Batman uses to aid in his quest to commit crimes in Gotham City. The Joker uses a Joker Signal to direct his Jokermobile to the next place he should rob.



**Figure 32.** The Jokermobile and Jokersignal in *Batman* #37



While the Joker is very capable of using information technology, the Joker is also very susceptible to information technology as he was tricked by a newspaper ad in *Batman* #8 stating that a man by the name of I. Namtab was stopping in Rhode Island with his famous diamond. Namtab is Batman backwards. The Joker can also be incited by information technology as the Joker was infuriated when the newspaper ran a story entitled “Batman Calls Joker Conceited Fool” in *Detective Comics* #71.

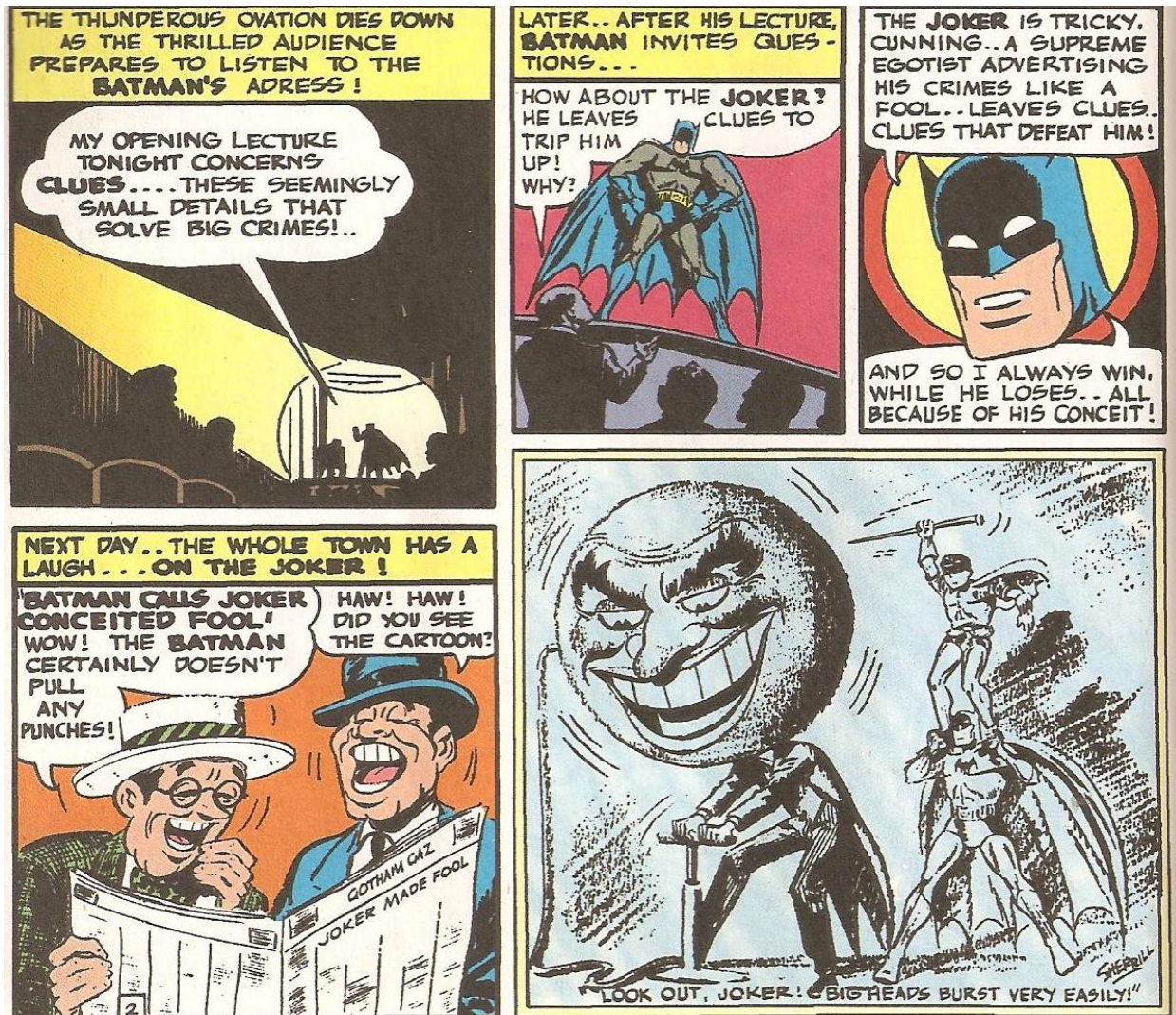


Figure 33. The Gotham Gazette Attacks The Joker in *Detective Comics* #71

Besides the Joker, the Thinker is another criminal who used information technology to battle the Batman. The Thinker is a one-shot villain of the Golden Age that appeared in *Batman* #52 in the story called “The Man with the Automatic Brain.” The Thinker possesses amazing machines that when fed information make deductions. These machines can plan the perfect crime or, as the Thinker plans to do, determine the secret identity of Batman. Batman describes the Thinker as a dangerous threat stating that he is “one of the most fiendish criminals of our time.”

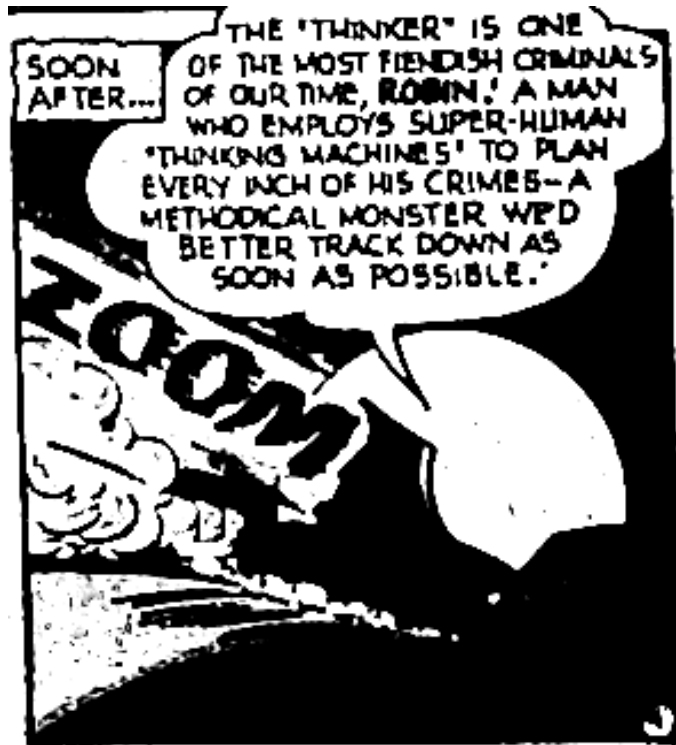


Figure 34. The Batman is in Pursuit in *Batman #52*

While Batman foils the Thinker's plans of discovering his secret identity by faking Bruce Wayne's death, the lair of the Thinker is of particular interest from an information technology perspective. In the lair, there are many machines that are fed by typewriter generated index cards encoded with information pertinent to the task and spit out the answers written ticker tape. Eventually, the final answer is transported to the Thinker and projected on a movie screen. The narrator describes the Thinker's lair as being the following:

"And here, hewn in nearby mountains, is the Thinker's amazing hideout! No - this is no museum! With each chiseled skull is lodged an electronic "automatic brain" - a "thinking machine" capable of reducing in hours a problem that might take humans months to solve. And as an added diabolical touch, the Thinker chooses apt figures from history to house his extraordinary machines. Here is the manner in which the machines make their amazing deductions for the "Thinker!" At a typewriter, one of the Thinker's men methodically lists all pertinent information about a bank. This intelligence is translated electrically to the giant indexing machine, which punches out a series of marks in a large index card. This card is then transported to one of the machines and inserted through a slot. At a control desk, knobs are turned, switches pressed! Miraculously, the machine attacks the problem, spills out answers on ticker tape which is transported to the Thinker's desk and flashed on a movie screen!"





**Figure 35.** The Thinker's Lair From *Batman* #52

The Thinker is significant because he conveys the power of information technology and the threat such technology can pose to Batman and mankind. The Thinker is the first of many information technology oriented villains in Batman Rogue's Gallery.

## Chapter 3: The Silver Age Batman

### *Dual Perspectives*

The Batman mythology of the 1950s and 1960s was marked by two interpretations of the Batman character. The first interpretation of the character that pervaded the 1950s and early 1960s was the science fiction interpretation of the Batman universe. Batman was not only fighting threats originating in Gotham City, but he was also combating the evils of the universe as shown in the covers of the comics from this time period below:



**Figure 36.** Covers From the Silver Age Including *The Brave and the Bold* #74, *Batman* #113, *Batman* #140, *Batman* #156

In the Batman world of science fiction, technology often created the initial problem or enabled the crime to occur. However, through Batman's courage, strength, and ability to use his own technology for good, Batman and his allies always emerged triumphant.

The second interpretation of the character that started in the 1960s and has continued to exist is Batman as the comedian. The camp era of Batman was officially ushered in with the launch of the Batman live action television show in the mid 1960s. Starring Adam West as Batman and Burt Ward as Robin, the television show was immensely popular and shaped how the general public viewed the character until the mid to late 1980s. While the show did emphasize some of the absurdities of the Batman mythology for humorous effect, the show also portrayed a Batman dependent on his gizmos and gadgets as invaluable investigation and crime fighting tools.





**Figure 37.** A movie based on the popular television show was created and released when the television show was still in production. As shown by the images taken from the movie, the camp aspects of Batman mythology were emphasized as shown by the thwack!! and the shark attacking Batman's leg as well as the gadget aspects of the mythology as shown by the Batanalyst, magnifying lens, and film developing tank in the Batcave.

As the Batman mythology was typified by two interpretations in the 1950s and 1960s, so too was the world of the information technology. The first interpretation of information technology was the computer as a consumer good. The ENIAC was primarily used by researchers, scientists, and government officials, but into the 1950s and 1960s, a shift occurred to bring the power of information technology to the masses. While the pursuit of supercomputing still loomed large in the field through the development of the first supercomputer called the Naval Ordnance Research Computer in 1954 and the first transistorized supercomputer called the CDC 1604 in 1958, making computers available to the general public was an active pursuit of many experts in the field. In 1950, the first personal computer called Simon was introduced to the public. Although Simon did not have a graphical user interface or screen since the graphical



display was first used in 1951, Simon was an early version of what consumers would use in the future. While computers would not become truly personal until the 1970s, the computer started to become more visible in American society. The UNIVAC I was used by the CBS television network in 1952 to accurately predict the presidential election (Norman).



**Figure 38.** The UNIVAC Predicts the 1952 Presidential Election – Walter Cronkite (right) and Co-inventor Presper Eckert (left) (Maney)

In 1954, General Electric was the first non-governmental purchaser of a computer in the United States and used its computer to compute its payroll. In 1961, a computerized stock-quotation system called QUOTRON started to replace the ticker tape rolls stockbrokers had been famously using for decades. In 1963, the first graphical user interface was developed in MIT's Lincoln Laboratory. The future development of this interface would make computers more user friendly and commercially viable as consumer products in the next decade (Norman).

The second interpretation of the information technology world was computers serving as communication tools rather than purely arithmetic devices. In the late 1960s, this interpretation became a reality with the development of Arpanet. ARPA is acronym for the Pentagon's Advanced Research Projects Agency, and this agency was interested in creating a computer network to create communities of online users to foster communication and collaboration. Work began on creating a network using the newly developed packet switching technology, and on October 29, 1969, the first two hosts on this network known as Arpanet connected and sent the first message. Arpanet was the foundation of the modern Internet (Guardian).

The Silver Age of Batman represents the two interpretations information technology in the 1950s and 1960s. The Batman mythology of the Silver Age helped to expose the world of information technology to the general public while also showing information technology's potential as a communications device. In the sections that follow, Batman's use of information technology during this age will be described.

## The Dark Knight Detective

At the end of the Golden Age, the Dynamic Duo had established the Batcave as the base of their investigative operations. The Golden Age Batcave had filing cabinets, newspapers, and the radio, which provided Batman with the essential tools he needed to fight crime. However, with the dawn of the Silver Age, Batman required more advanced tools to maintain his comparative advantage against the scum of Gotham's criminal underworld. The Silver Age saw three additions to Batman's array of investigative equipment: the television, the Batcomputer, and the array of various Batgadgets.

Television had entered the Batcave via the Batmobile during the Golden Age. In *Batman* #53, Batman had installed a television in the Batmobile to enable to faster and more accurate identification of criminals. In the 1950s, with the introduction of color television and the increased adoption of television by American families, Batman saw improvements in his own television technology. Batman had to improve his technology as the television was becoming a legitimate source of news. In *Batman* #62, a crime committed by Catwoman was broadcasted over the television during a news program. The typical television found in the Batcave is one that is depicted in *Detective Comics* #205 and *World's Finest Comics* #75 below. The television was typically very large with a flat screen.

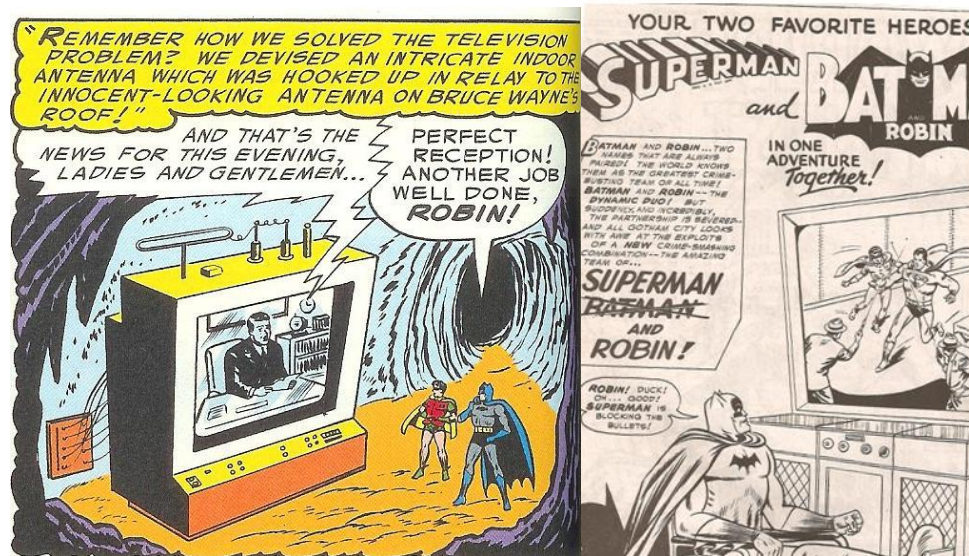


Figure 39. Batman Watches TV in *Detective Comics* #205 and *World's Finest Comics* #75

The television for investigate purposes is often used to keep track of current events or for surveillance. Two examples of surveillance come from *World's Finest Comics* #175 when Robin and Jimmy Olsen use a television monitor to keep track of Superman and Batman and from *Batman* #109 when Batman and Robin use a device called the Flying Eye that supplies a video feed to the Batcave that allows the Dynamic Duo to spy on the criminals of Gotham City. Another example comes from *Batman* #172 when Batman creates six flying television cameras so that he can observe Gotham City from six television screens in the Batcave.





Figure 40. Batman Spies in World Finest Comics #175 (left), Batman #109 (right)

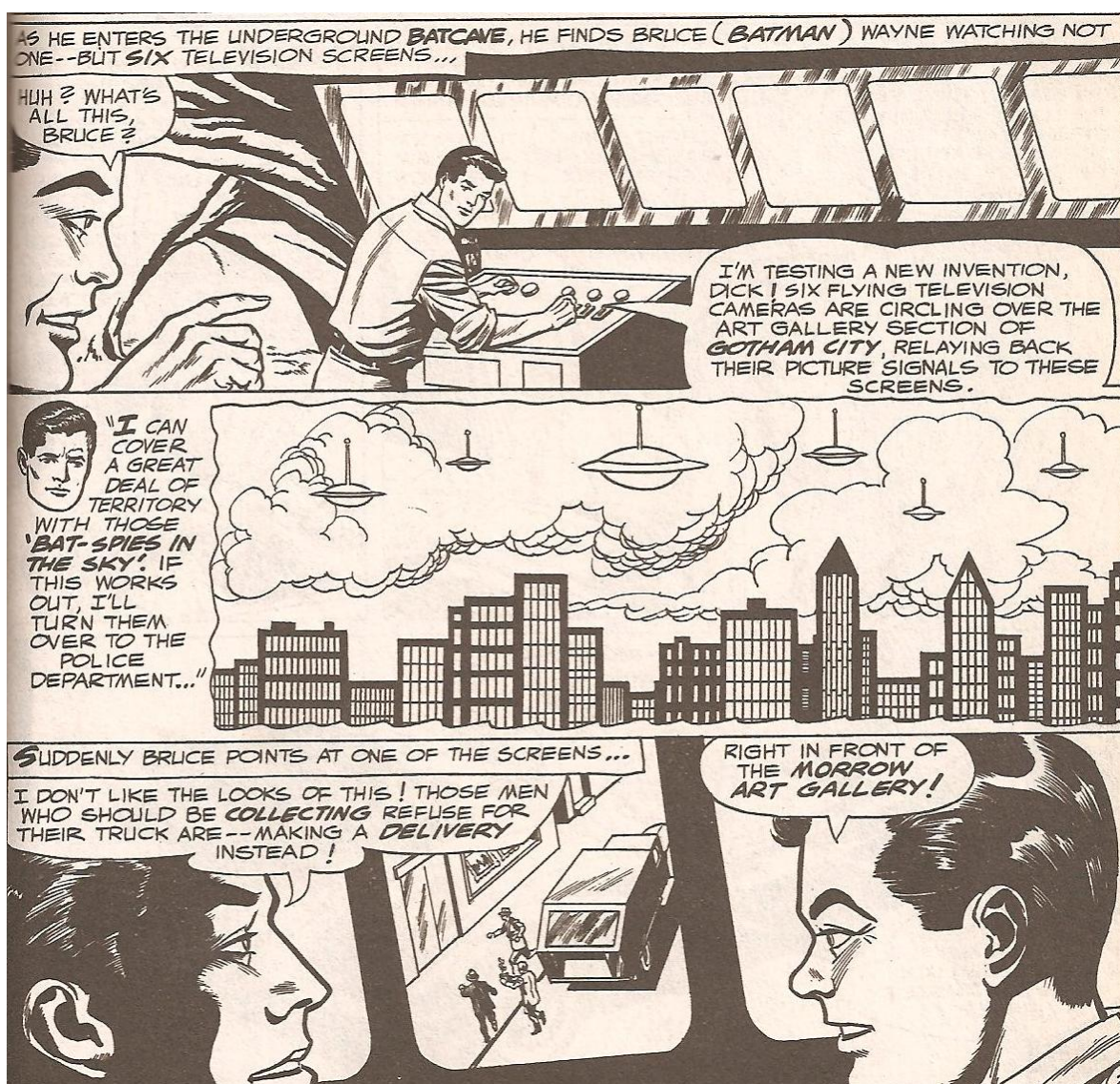


Figure 41. Batman Spies in Batman #172



In the Golden Age, the Batcomputer was represented by Batman's extensive filing cabinets filled with information printed on paper and microfilm. In the Silver Age, this filing cabinet persisted, and Batman and Robin consulted this filing cabinet to find answers to their investigative questions. In *Detective Comics* #233, Batman and Robin consulted their filing cabinets to discover the identity of Batwoman.

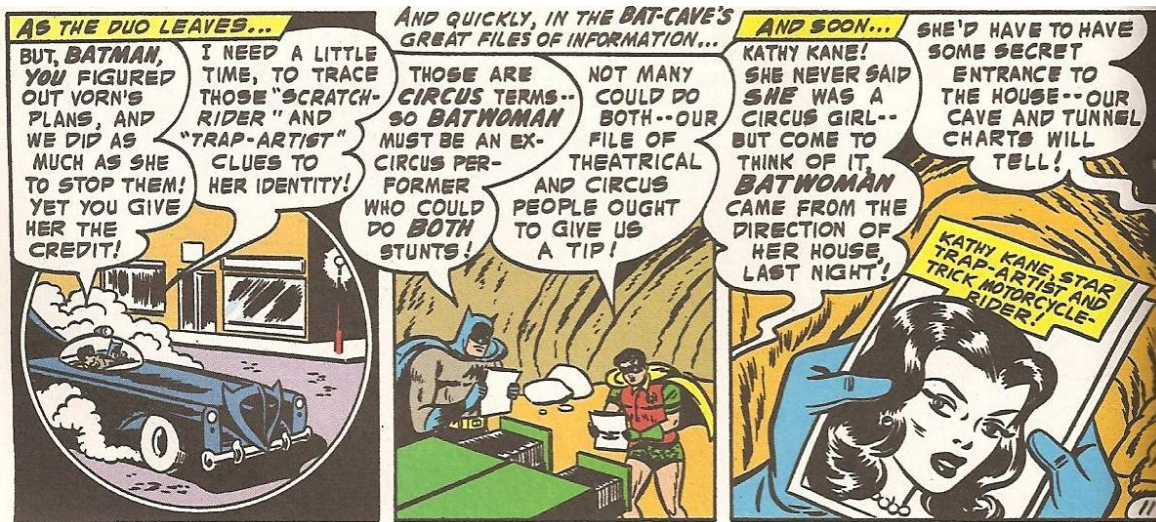


Figure 42. Batwoman is Kathy Kane in *Detective Comics* #233

The filing cabinet is often consulted by the Dynamic Duo when they have a vague idea of the information they want to find. In *Detective Comics* #213, Batman looks in the "m" file to see where the criminal called the Mirror Man will strike next. Sure enough, the Dark Knight Detective finds in the file that a great telescopic mirror is being delivered to the Mt. Malador Observatory that night.

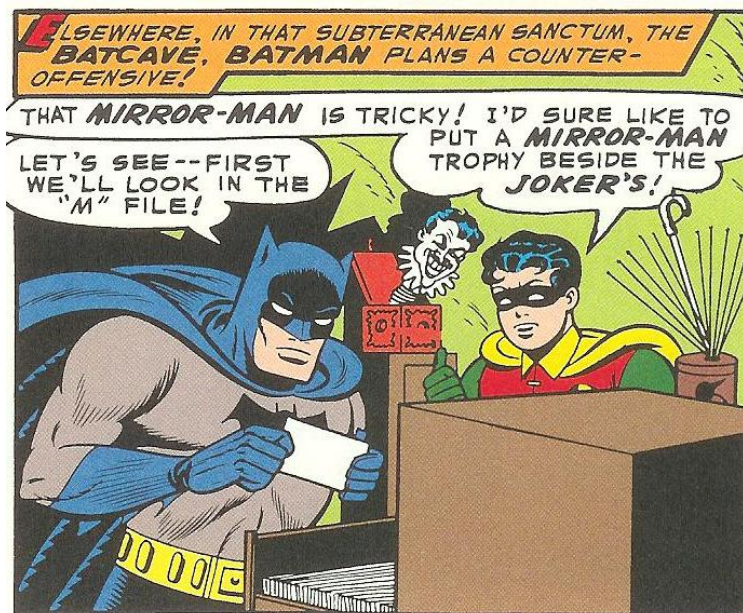


Figure 43. Batman Searches Through His Filing Cabinet in *Detective Comics* #213



In *Batman #81*, Batman uses his knowledge of Two Face to search through his filing cabinet for possible victims of a future crime.

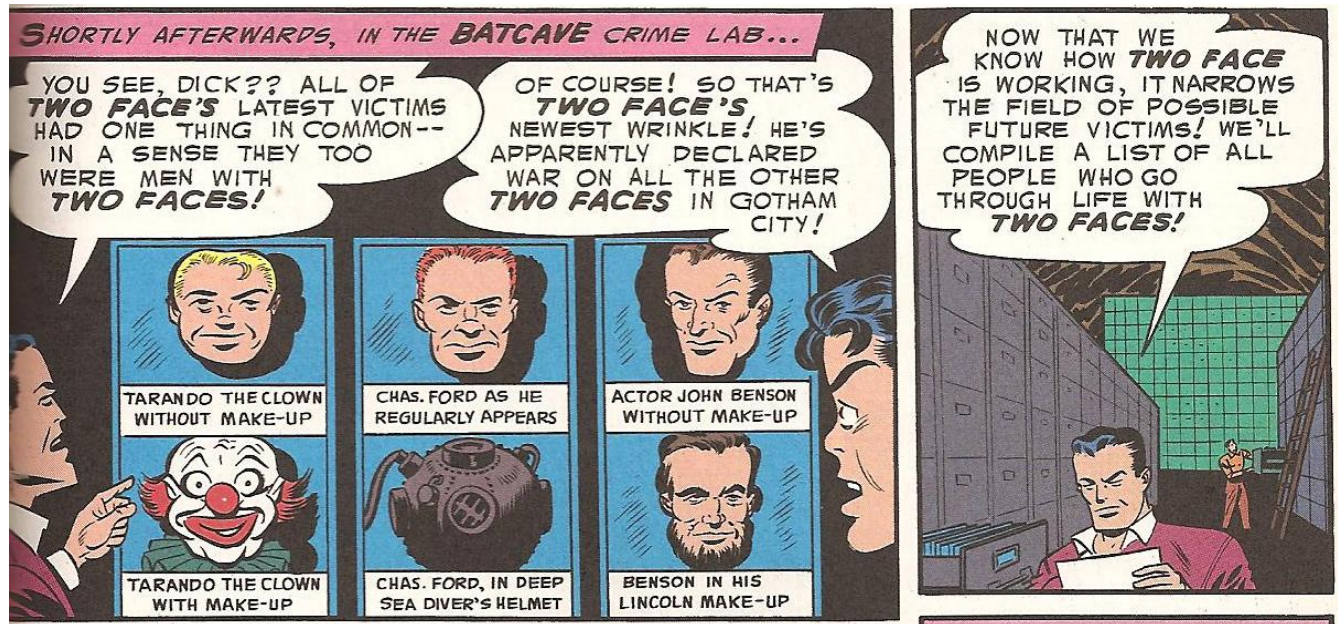
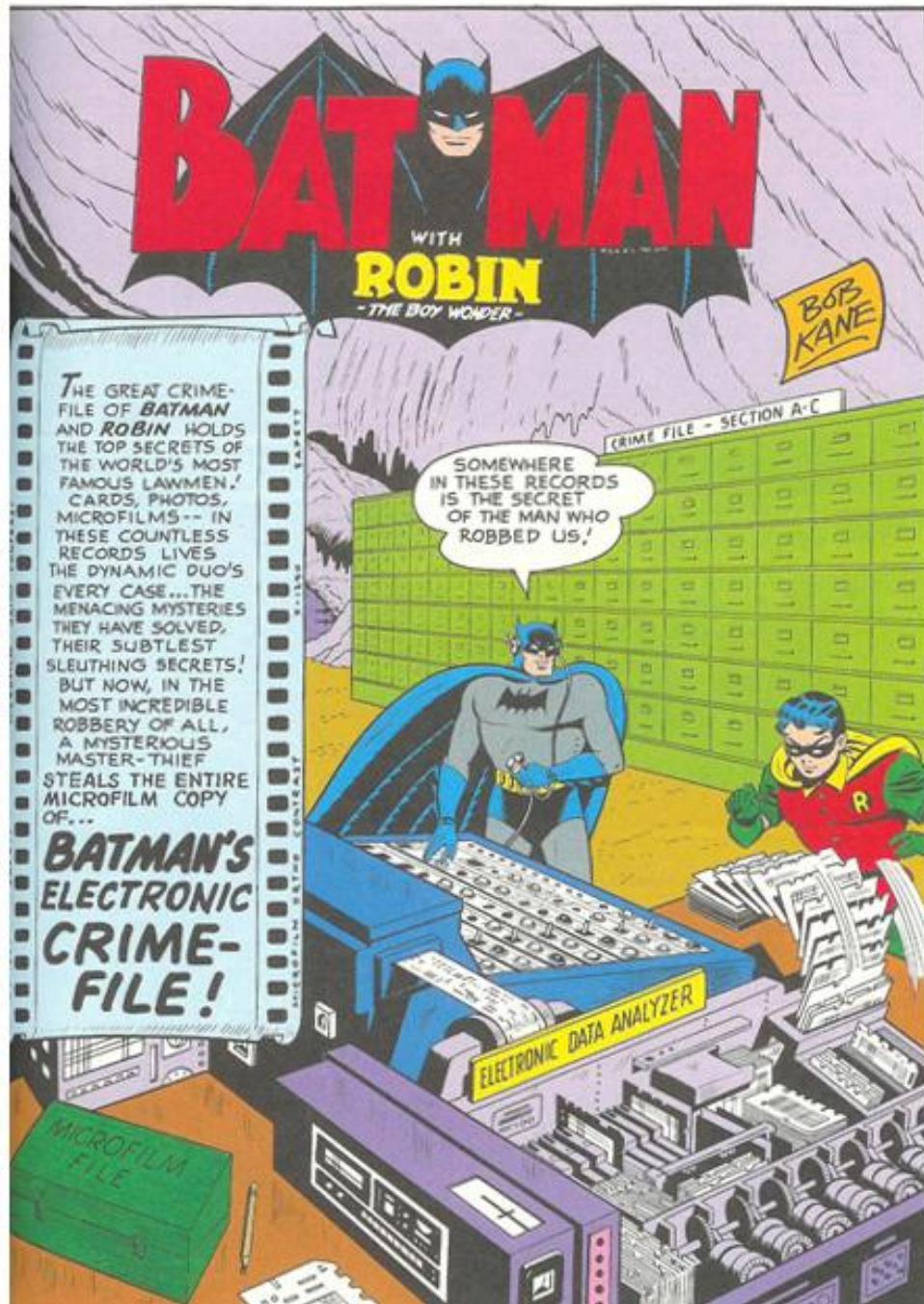


Figure 44. Batman Looks Through His Files in *Batman #81*

In the Batcave of 3050 as described in *Batman #67*, the filing cabinet is still in existence and uses the same advanced microfilm technology to store so much information in a small space.

While the filing cabinet is a major investigative tool of the Batman, new technologies in the form of the Batcomputer were developed and utilized in the Silver Age Batcave. The early version of the Batcomputer appeared in the pages of *Detective Comics #229* in the story entitled "Batman's Electronic Crime File!"



**Figure 45.** Batman's Electronic Data Analyzer in *Detective Comics* #229

As mentioned in the Golden Age comics, Batman and Robin have a microfilm version of their crime files, and in this story, criminals steal this version of the Dynamic Duo's crime files. According to Robin, "all of our law enforcement secrets are in the hands of criminals!" In order to recover their crime files, Batman has a plan: "we've a few scanty facts – and we'll make the crime-file itself our weapon against the man who stole the microfilm copy of it!" Batman uses the cards in his crime file and electronic data analyzer to sort through the cards to find the possible perpetrators.





Figure 46. Batman's Electronic Data Analyzer in Action in *Detective Comics* #229

Eventually, after some additional investigative work by Batman and Robin, the crime file was recovered. At the end of the story, Batman said to Robin: "You know, Robin, the crime-file itself was the real hero of this case...it helped most to catch the thieves who stole its secrets."

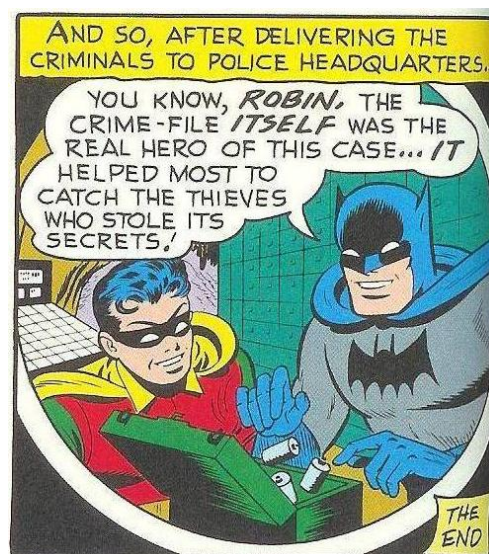


Figure 47. The Hero of *Detective Comics* #229



This entire story illustrates the importance of Batman's crime file in his fight against crime and the need for tools such as the electronic data analyzer to make this enormous amount of data useful.

Since *Detective Comics* #229, the Batcomputer continued to evolve. In *Detective Comics* #271, the Batcomputer was stated to be an electronic brain that could "simultaneously assimilate the backgrounds and descriptions of as many as 30,000 men." The largest visible improvement of the Batcomputer occurred during the advent of the live action Batman television series. In the television series, the Batcomputer made appearances in over 40 episodes. Primarily known as the Batcomputer, the device was also known as "Bat Calendar", "Crime Computer", "Master Batfile" and "Bat Analyst." The Batcomputer in the live action television series was an actual computer produced by the Burroughs Corporation for the United States government.



**Figure 48.** The Batcomputer in the Batman Live Action Television Series

In the live action television series, the Batcomputer served as Batman and Robin's primary investigative tool. Much of the detective work was actually conducted by the computer itself as Batman would feed information to the device and the device would output an answer such as the location of a criminal's hideout on a piece of paper. The Batcomputer would appear in a miniaturized form in the Batmobile in the live action television show that allowed Batman to load files from the Batcomputer.

While the filing cabinet and Batcomputer aided in many investigations in the Silver Age, various other Batgadgets also aided Batman and Robin. In *Batman* #109, the amazing inventions of the Batman were revealed such as the flying eye discussed earlier in this section. Another invention mentioned in this story was the crime calculator, which was a computer able to help Batman and Robin put together the pieces of a crime scene.

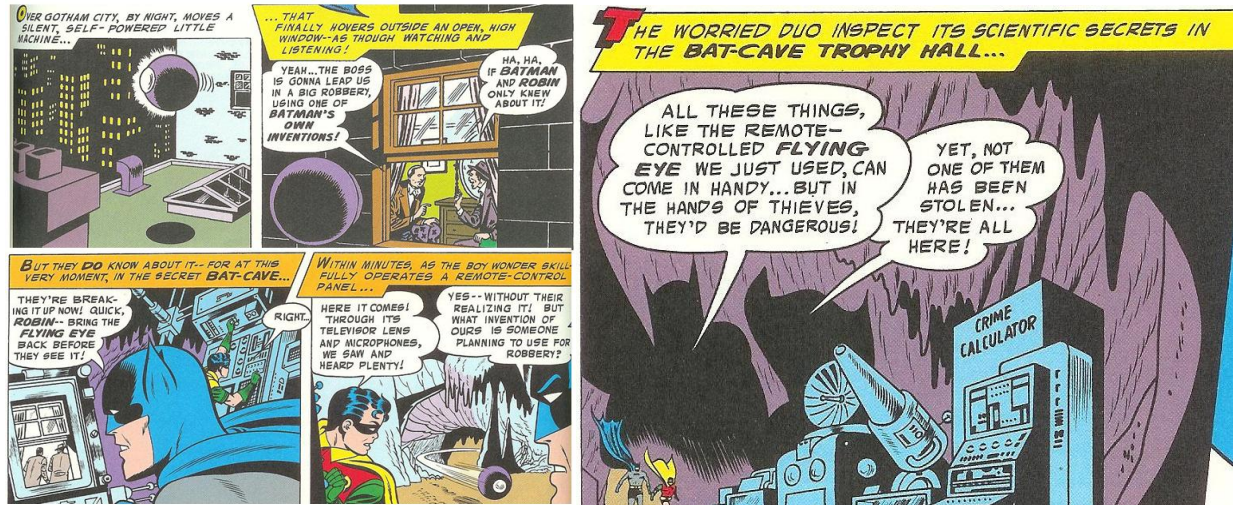


Figure 49. Batgadgets in Batman #109

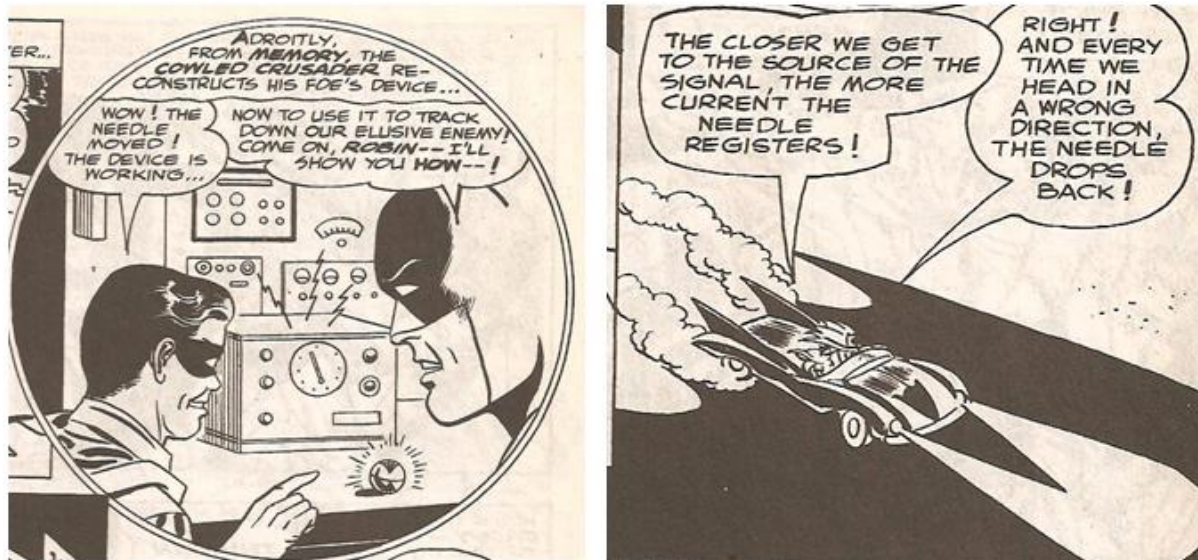
In *Detective Comics* #186, the Batcave had to be taken to the skies when Batman swore that he would not take a step in Gotham City in exchange for Robin's life. The Flying Batcave had all of the investigative tools of the normal Batcave.



Figure 50. The Flying Batcave in Detective Comics #186



In *Detective Comics* #354, one of the criminals Batman and Robin were chasing left behind a communications device in which Batman deconstructed and built a device to track the signal of the communications device. Through using this new device, the Batmobile easily pursued its criminal prey.



**Figure 51.** Batman Pursuing His Prey in *Detective Comics* #354

The live action Batman television series had an affinity for creating new Batgadgets for the Dynamic Duo to use. Below is a list of the Bat-related devices used related to investigative tools:

Anti-Crime Computer, Anti-Crime Recorder, Anti-Crime Voice Analyzer, Bat Radio, Bat-Communicator, Bat-Crimeputer, Bat-Homing Device, Bat-Printer, Bat-Sound Analyzer, Bat-Syllable Device, Bat-Tracer, Bat-Transmitter, Batanswer Phone, Batcomputer, Batcomputer Batresistance Signal, Batcomputer Ingestor Switch, Batmobile Bat Tracker, Batmobile Remote Bat-control, Batmobile Remote Control Unit, Batscanner Recorder, Brain Wave Bat-Analyzer, Crime Computer, Criminal Sensor BatIndicator, Current Criminal Activity Bat-Disclosure Unit, Diversionary Batphone Lines, Electro-Thought Transferer, Electronic Bugging Devices, Interdigital Batsorter Anti-Crime Computer, International Frequency Computer, Memory Batbank, Micro TV Camera, Micro-TV Bat-Scanner, Miniature Bat-Communicator, Mobile Anti-Crime File, Mobile Batcycle Bat-Scanner, Mobile Crime Computer, Navigational Aid Computer, Remote Bat Computer, Remote Control Batcomputer Oscillator, Special Seismological Attachment to Batcomputer, Transistorized Short Wave Bat Transmitter, Voice-Control Batmobile Relay-Circuit, Well Known Criminals File

**Listing 3.** List of Batgadgets in Batman Live Action Television Series

## *The Batman Family*

As in the Golden Age of the Batman mythology, Batman and Robin shared two of the same communication needs. The costumed crime fighters needed ways to communicate with the police as well as with each other. The use of the Batsignal ended the Golden Age as a way that the police could communicate with Batman and Robin. The Silver Age expanded on this communication and collaboration. In *Detective Comics* #205, Batman and Robin installed a red bulb in the Batcave that would light up when the Batsignal would appear in the night skies of Gotham City.



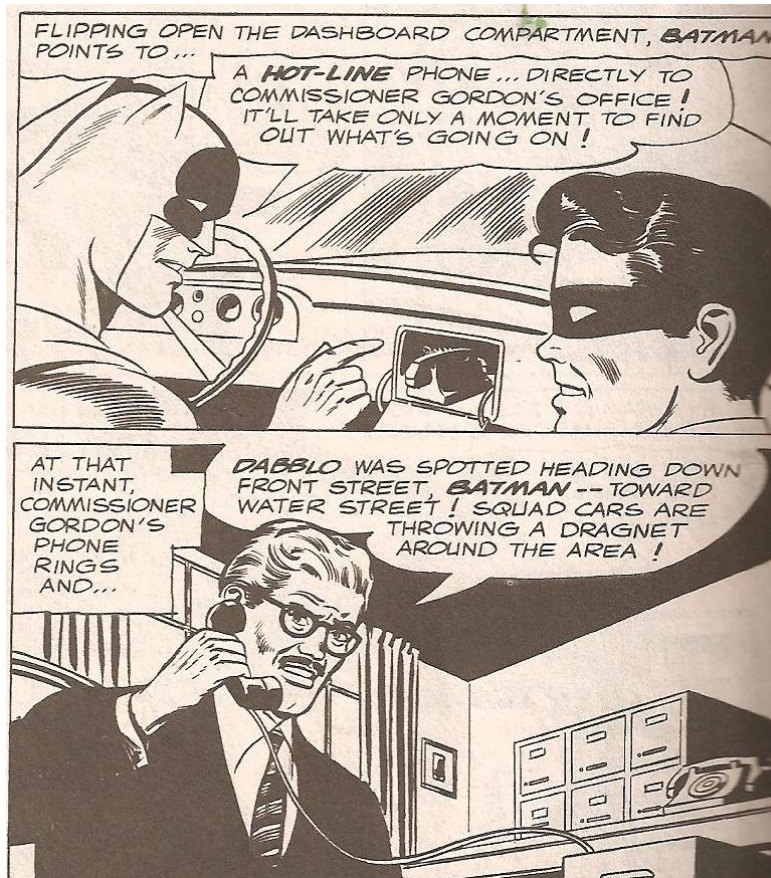
Figure 52. Batsignal Indicator in *Detective Comics* #205

The relationship between Batman and the police would grow closer through the use of a special hotline between the police headquarters and the Batcave that first appeared in *Batman* #164. The hotline was modeled after President Lyndon B. Johnson's hotline phone that was advertised in a re-election campaign television ad in 1964. The hotline would later be expanded to a phone in the Batmobile.



Figure 53. The Hotline in *Batman: The Movie*





**Figure 54.** The Hotline in the Batmobile in *Batman #164*



**Figure 55.** President Lyndon B. Johnson's Hotline ("HOTLINE: LBJ Campaign Commercial (1964)")

Furthermore, Batman and Robin would be shown working very closely with the police sharing information. For example, in *Batman: The Movie*, Batman, Robin, and the Gotham City Police Department collaborated to find out which villains have escaped police custody and what these villains could be planning.





**Figure 56.** Batman and Robin at Police HQ in *Batman: The Movie*

Batman even watched television with Commissioner Gordon in *The Brave and the Bold* #80.



**Figure 57.** Batman Watching TV with Commissioner Gordon in *The Brave and the Bold* #80

The communication between Batman and Robin is still based off the wireless radio used commonly during the Golden Age. However, some improvements have occurred in the Silver Age. In *Detective Comics* #156, Batman is injured and can't go with Robin to track a criminal. However, Batman remained in the Batcave and guided Robin who was wearing a portable television camera. In *Batman* #74, an automatic signal is sent to Robin alerting him that Batman's utility belt was removed. Despite all of the improvements though, the most common form of communication between Batman and Robin is the radio as featured in *Batman: The Movie*. In fact, this form of communication was so common that toy radios were produced that allowed the children of the Silver Age to pretend to be the Dynamic Duo working on a case.



**Figure 58.** Batradios in *Batman: The Movie*

However, in some cases, like when Batman communicated with the Batman of 3055 for assistance in *Detective Comics* #216, more sophisticated radio technology is used.



**Figure 59.** Batman Calling the Future in *Detective Comics* #216

While Batman needed to communicate with the police and Robin, Batman also started the beginnings of a new relationship with his butler Alfred from an information technology perspective. In later interpretations of the character, Alfred will serve as an expert on information technology to the Dark Knight, and this role begins on the pages on *Batman* #200 when Alfred asks the Dynamic Duo what to write down on the solved Scarecrow case file card. In *Detective Comics* #328, Alfred starts assembling the preliminary information on an important case from Commissioner Gordon while Batman and Robin are on a case with Superman.



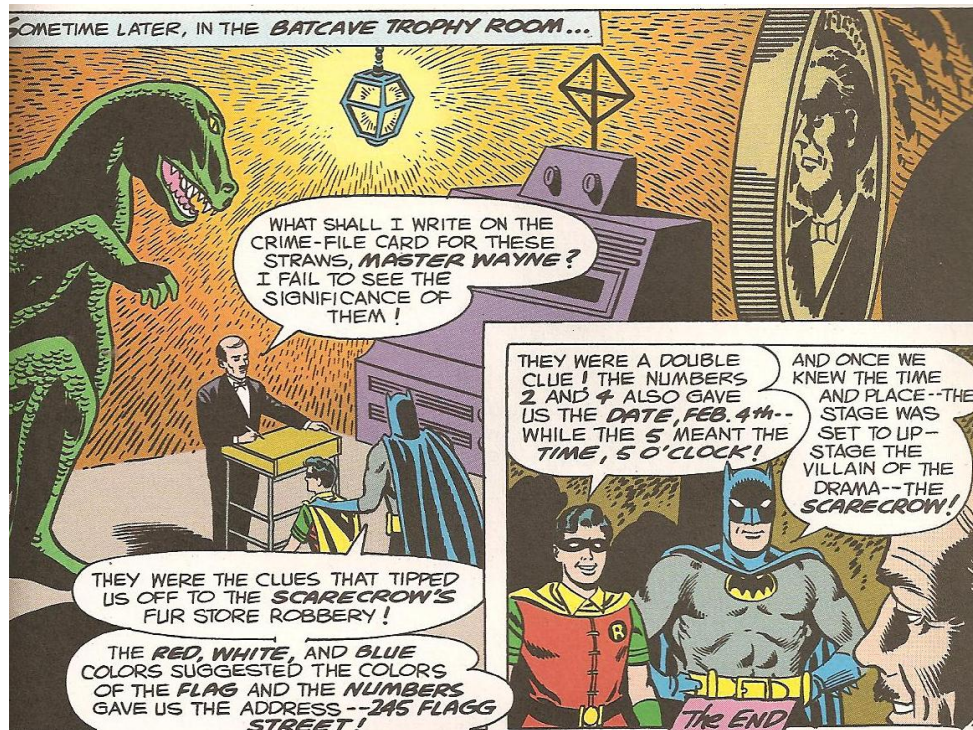


Figure 60. Alfred Creating a Crime-File Card in *Batman* #200



Figure 61. Alfred Starting a Case in *Detective Comics* #328



### *The Masked Manhunter*

In the Silver Age of the Batman mythology, information technology emerged as a valuable tool for Batman to not only investigate crimes but capture criminals as well. In Batman's arsenal to fight criminals, the Silver Age marked a period in which Batman relied on technology more than ever before. An example of Batman's reliance of technology is the Batmobile of the 1950s. In *Detective Comics #156*, Batman had been working hard to create the next greatest Batmobile, and Batman had faked a broken leg to properly test the vehicle to determine if the new Batmobile was able to effectively capture the criminal quarry.



**Figure 62.** The New Batmobile in *Detective Comics #156*

In this story, Batman also tested a television screen he had installed on the Batmobile. Batman had attached a portable video camera to Robin and received Robin's video feed in the car. Batman provided his sidekick with guidance via the more traditional radio communications.





Figure 63. Batman Serving as Robin's Second Pair of Eyes in *Detective Comics* #156



A major theme in the Batman comics of the Silver Age was robots being used for crime fighting purposes. The sleuth machine used in *Batman #109* was an early version of a robot that helped Batman and Robin track down criminals through emitting a radio signal.



Figure 64. The Sleuth Machine in *Batman #109*

The *Detective Comics* covers below depict robots used by the Batman to fight crime such as the Batman machine in *Detective Comics #224* and those robots that have been used against Batman such a robot built to look like Batman that was stolen by a criminal in *Detective Comics #239*.



Figure 65. Robotic Covers in *Detective Comics* #224, #239, #258, #281, #290, #324



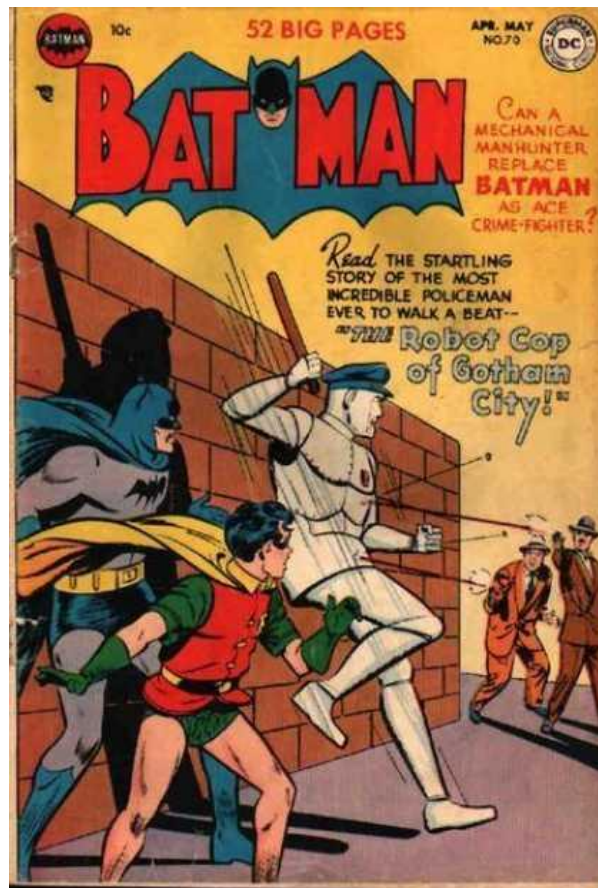
An example of a robotic crime fighter in the Silver Age was the robotic cop built by Mr. Weir in *Batman #70*. The Robot Cop assisted Batman in apprehending criminals and introduced itself to Commissioner Gordon in the following exchange:

Robot Cop: “Here’s your answer, commissioner! I am the robot! My inventor, the real Mr. Weir, is sitting outside at my controls. Now what do you say!!”

Gordon: “Fantastic! Literally fantastic!”

Mr. Weir: “Fantastic - but true! Here is my portable control - embodying the latest television and ultra-electronics theory. With this, I can make my robot do anything!”

This invention was so spectacular that the Robot Cop had the potential to displace Batman and Robin. However, the robot’s weakness to X-rays created a need for Batman and Robin to remain the protectors of Gotham City.



**Figure 66.** The Robot Cop in *Batman #70*

In addition to robots, Batman also used several gadgets based in information technology that allowed him to interact with his environment. An example of such a gadget was the utility belt transmitter that allowed Batman “to reverse the polarity and send out waves of super energy” towards an incoming missile fired from the Penguin’s submarine in *Batman: The Movie*.



**Figure 67.** Batman Reversing Polarity in *Batman: The Movie*

In *Batman #113*, Batman of Gotham City meets the Batman of Zur-En-Arrh and witnesses the technology that this Batman uses to fight crime. One such gadget is the Bat-Radia which causes controlled disturbances in the atmosphere.



**Figure 68.** The Bat-Radia in *Batman #113*

In *Detective Comics #244*, Batman tossed his Seeing Eye Batarang to determine the location of criminals hiding from the police. With this information, Batman gained the element of surprise and took down the thugs with ease.





Figure 69. Seeing-Eye Batarang in *Detective Comics* #244

In *World's Finest Comics* #156, Batman and Robin use an early version of a GPS system in the Batmobile to race between Gotham City and Metropolis when chasing the Anti-mobile.

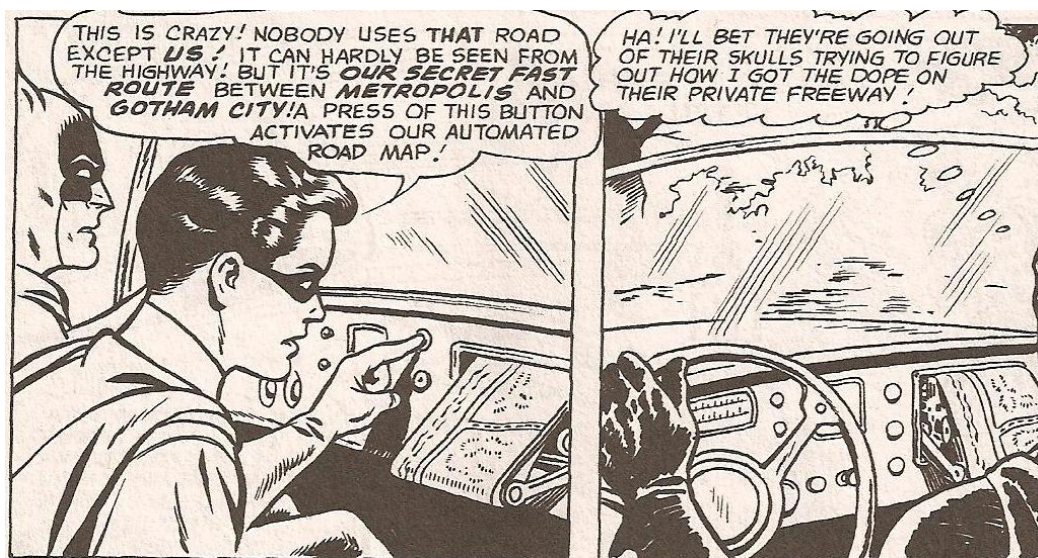


Figure 70. Automated Batmobile Map in *World's Finest Comics* #156

Batman also used the power of photography to protect his identity. In *Batman* #92, Alfred dresses up as Batman and Bruce Wayne poses as himself. In this case, Batman used information technology as a weapon to conceal his identity by showing through photography that Batman and Bruce Wayne are supposedly two different people.



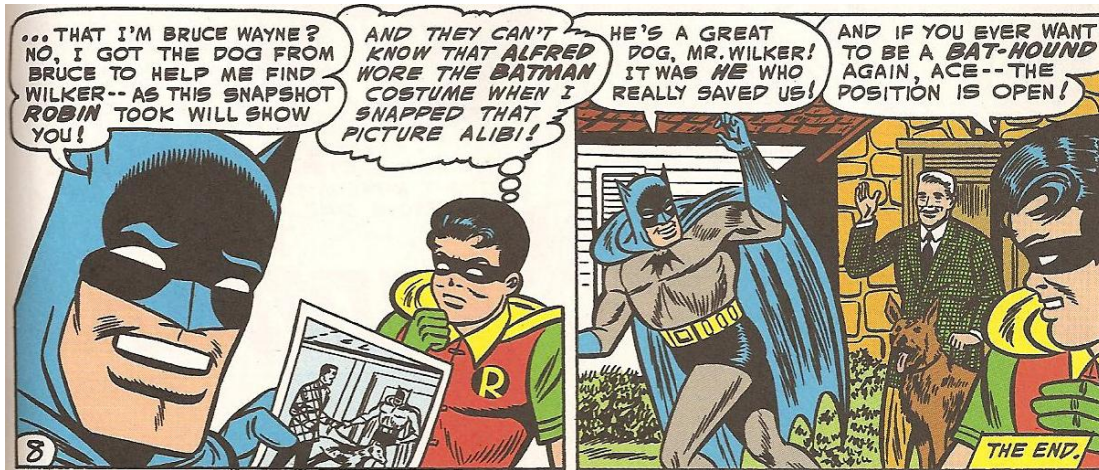


Figure 71. Photographic Evidence in *Batman* #92

While Batman increasingly used information technology to fight criminals, information technology became a focal point of many criminals during the Silver Age. Many criminals sought to steal information technology in the form of Batman's crime files, Batman's inventions such as the Flying Eye, and robots. Other criminals used information technology as a means to achieve a greater goal. Three instances in the Batman Silver Age mythology – two in the comics and one in animation use information technology as a means to plan the perfect the crime.

*Batman* #77 features a story called "The Crime Predictor." The story centers on Dr. Edward Arvin's plan to become Gotham's criminal mastermind. Dr. Arvin creates a computer able to predict crimes before they occur by feeding the machine gossip from the criminal underworld.

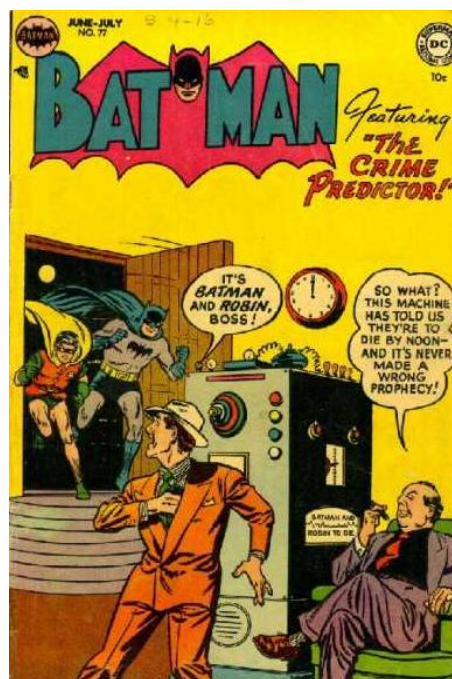


Figure 72. The Crime Predictor in *Batman* #77

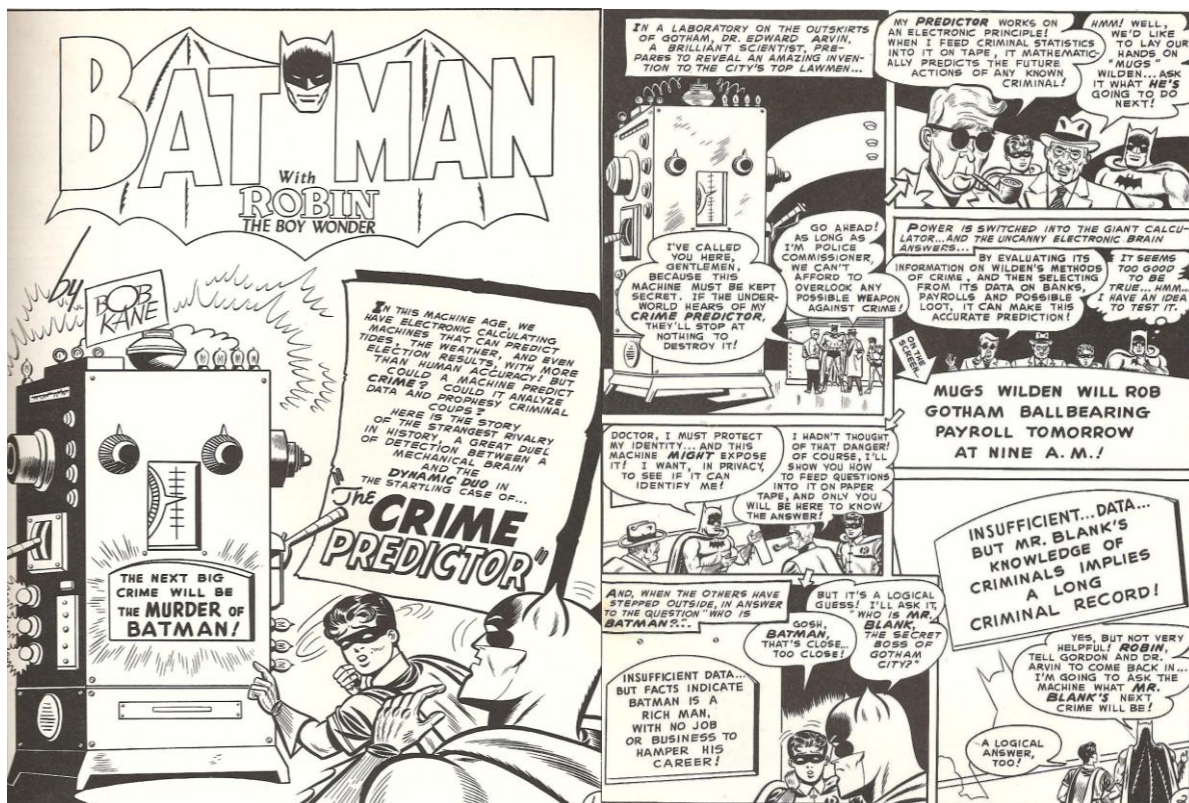


Figure 73. A Demonstration of the Crime Predictor in *Batman* #77

However, Dr. Alvin's "crime predictor" does not actually work but is a parlor trick for his alter ego Mister Blank to use against other crime lords in Gotham. If these crime lords did not align themselves with Mister Blank, then these crime lords were arrested while in the act of committing crimes due to the alleged predictions of Dr. Alvin's machine. Later in the story, Mister Blank kidnapped Dr. Alvin and destroyed the predictor stating that Dr. Alvin would be forced to create a newer and better machine unless all of the crime lords named Mister Blank their leader. Batman and Robin were already on the trail of Mister Blank after the machine had predicted the death of Batman, and the kidnapping gave Batman the opportunity to expose Dr. Alvin's scheme.

In *Batman* #175, a criminal by the name of Eddie Repp, an electronics genius, is released from prison after serving his time for a crime that he was apprehended for by the Dynamic Duo. In prison, Repp noticed that the images on the television had ghost images because of the poor television reception. Repp then had the idea of using his electronics knowledge to build a device to use these television ghost images to create ghost images in three dimensions. Once Repp was released from prison, Repp created a machine that created a three dimensional ghost image of Batman and Robin that Repp was able to control and manipulate through using a laptop. Using these images, Repp would exact his revenge on the Caped Crusaders by using these images to be more effective crime fighters than the real Batman and Robin. After the real Batman and Robin were humiliated, the ghost versions soundly defeated the Dynamic Duo. Batman and Robin



eventually discovered the origins of these ghosts by using radioactive dust to track ghost versions of criminals who had stolen money.



Figure 74. Ghost Versions of Batman and Robin in *Batman* #175



The animated show *The Batman/Superman Hour* featured an episode entitled “The Crime Computer.” In this animated episode, the Penguin receives help from a supercomputer to pull off robberies and plan against any Batman interference.



**Figure 75.** The Crime Computer in *The Batman/Superman Hour: The Crime Computer*

After investigating all of the available data on the recent string of Penguin crimes using the Batcomputer, the Batcomputer prints out a card stating that the Penguin must be using a computer to plan his crimes.



**Figure 76.** Robin Reads the Findings of the Batcomputer in *The Batman/Superman Hour: The Crime Computer*



Batman and Robin trick the Penguin by placing an ad in the newspaper promoting an event where Batman will be giving a public talk on all of his computerized records. The Penguin steals the crime files to give to his supercomputer. The supercomputer then warns the Penguin that he has been tricked because the crime files have been encoded to feed the information created by the supercomputer directly to the Batcomputer. The supercomputer returns the favor by tricking the Dynamic Duo by leading them to a sulfur field where they are kidnapped by the professor who created the supercomputer. By using Batman and Robin's brain waves, the professor can reconfigure his supercomputer to anticipate their every move. The plan works, and the supercomputer has Batman and Robin on the run. Meanwhile, the Batcomputer informs Alfred of the location of the supercomputer, and Alfred comes to the aid of the Dynamic Duo. Batman and Robin feed a secret card in the supercomputer, so when the Penguin asks who is Batman, the supercomputer self destructs.

## Chapter 4: The Bronze Age Batman

### *The Realm of Possibility*

After the Silver Age of the Batman mythology, the mythology faced a contradiction. The popularity of the Batman television series introduced Batman to a wider audience, and the camp interpretations of the character persisted in animated cartoons produced during this age.



**Figure 77.** TV Shows of the Bronze Age Include *The New Adventures of Batman* and *The New Scooby-Doo Movies*

However, the camp Batman was not popular in comic book medium. Therefore, a change in the character led by Dennis O’Neil and Neal Adams occurred that spurred increased comic book sales. The Batman of the comic books was a realistic portrayal of the character. In the comics, Batman was much more of detective and relied on his own mental prowess instead of the computational capacity of his gadgets. In the comics, Batman often faced supernatural scenarios unlike the science fiction scenarios of the Silver Age.





**Figure 78.** Covers of the Bronze Age Batman #227, Batman #232 , Batman #245, Batman #251, Batman #301, Batman #341, Detective Comics #404, Detective Comics #425, Detective Comics #431, Detective Comics #435, Detective Comics #457, Detective Comics #475

Just as Batman was becoming more realistic, information technology became more realistic and personal to the general public during the Bronze Age. In 1971, a chip developed by Texas Instruments enabled the development and production of inexpensive electronic calculators that were capable of addition, subtraction, multiplication, and division. A calculator in every kitchen or businessman's pocket was becoming a reality. In 1972, the table tennis computer game Pong was released becoming the first popular computer game. In 1973, a prototype personal computer was developed at Xerox that included a graphical user interface, a mouse,

Ethernet, and What You See Is What You Get editor priced at \$32,000. In 1975, the first programming language for a personal computer was written called Beginner's All-purpose Symbolic Instruction Code. BASIC was the first product of the nascent Microsoft. In the same year, the first personal computer, the Altair 8800, was offered for sale at the price of \$397. In 1976, the Apple 1 of the newly created Apple Computer Corporation was introduced at the price of \$666. A year later, the Apple II was introduced and was the first personal computer introduced with color graphics. The personal computer hit its stride towards the end of the Bronze Age with the introduction of the Commodore 64, which was known as the first cheap home computer. Between 1982 and 1984, 30 million units were sold (Norman).



**Figure 79.** Commodore 64 (“File:Commodore64.jpg”)

The Bronze Age of the Batman mythology represented a divergent evolution of the Batman character and a slow evolution of information technology in the Batman universe. Due to the extension of the Batman of the Golden Age and the development of a more realistic Batman, the information technology of the Batman mythology in the Bronze Age did not differ significantly from the Silver Age as shown in the sections below.



### *The Dark Knight Detective*

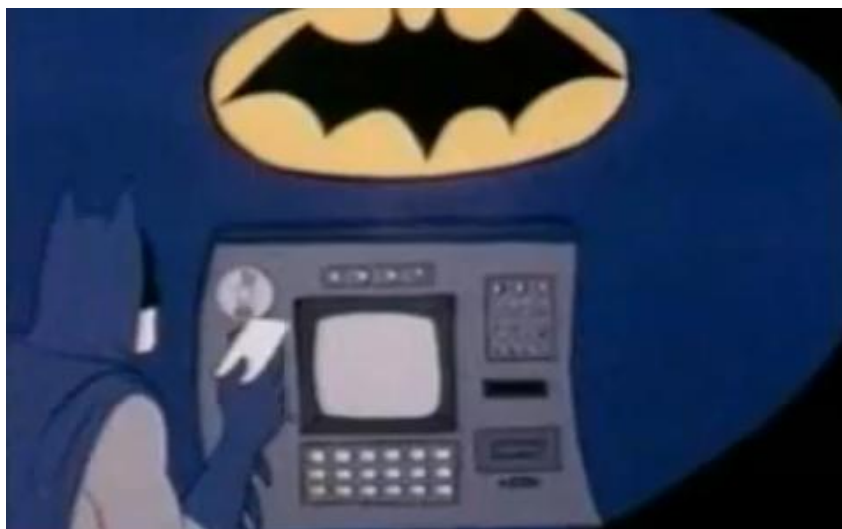
In the Bronze Age, the Dark Knight Detective solved his crimes in two ways. The realistic Batman of the comics hit the streets, searched for clues, and interrogated suspects without much reliance on his Batcomputer or other forms of information technology. However, the camp portrayal of Batman turned to his information technology first and foremost. This version of the Batman used information technology in two ways: Batman asks questions that the Batcomputer answers and Batman uses information technology as an extension of his own abilities.

When Batman has a question, Batman turns to the Batcomputer to answer the question. Batman feeds the Batcomputer all available data and then waits for the answer to take the next step. For example, in animated episode in the series *The New Scooby Doo Movie Guest Starring Batman and Robin* called the “Dynamic Scooby Doo Affair”, the Batmobile is stolen. However, the Batmobile has a tracking device, so the costumed crime fighters and those meddling kids with their dog take the Mystery Machine to the Batcave to determine the current location of the Batmobile.



**Figure 80.** Tracking the Batmobile in *The New Scooby Doo Movie Guest Starring Batman and Robin: Dynamic Scooby Doo Affair*

In an episode of *The Superfriends Hour* entitled “Around the World in 80 Riddles”, the Riddler sprays the Justice League with a chemical that will permanently make them incompetent if they do not find the antidote that the Riddler has hidden somewhere in the world. The Superfriends solved the first riddle, but the allies of justice must rely on the Batcomputer located on the Batplane to solve the remaining riddles and find the antidote.



**Figure 81.** Batman Uses The Batcomputer in *The Superfriends Hour: Around the World in 80 Riddles*

In an episode of *The New Adventures of Batman* entitled “Trouble Identity,” Batgirl was spotted stealing a valuable fabric creation machine. To discover who was impersonating Batgirl, Batman and Robin feed all of their information to the Batcomputer. The Batcomputer prints out a punch card stating “To be is not to be. That is the answer.”



**Figure 82.** The Batcomputer Answers in *The New Adventures of Batman: Trouble Identity*

Upon further investigation, Catwoman becomes a primary suspect, and Batman and Robin locate the real Batgirl through using the Bat-a-scope and print the coordinates of her tracking device.





**Figure 83.** The Batcomputer Answers Again in *The New Adventures of Batman: Trouble Identity*

Even though the Batcomputer does provide Batman with many answers, the Batcomputer does not always replace the detective abilities of the Dark Knight. In *The New Adventures of Batman* episode entitled “The Pest,” the Batcomputer cannot figure out where the Joker will strike next. However, Batman determined the Joker’s next crime after looking at the newspaper.



**Figure 84.** The Newspaper Has the Answer in *The New Adventures of Batman: The Pest*

In the comics, if Batman used information technology, Batman used information technology as an extension of his abilities. Part of the reason for this use was the closure of the Batcave as shown on the cover of *Batman* #217. Robin had gone away to college and to more effectively fight crime in Gotham City, Batman moved his base of operations to his penthouse and Wayne Enterprises headquarters.





Figure 85. Batman Moves On in *Batman* #217

This move to the city was meant to make Batman's operations more streamlined and agile, so the bulky Batcomputer and other information technology were left behind. If Batman needed to make a query, he often made use of the Gotham City Police Department's equipment as he did in *Batman* #217, *The Brave and the Bold* #89, and *The Brave and the Bold* #111.



Figure 86. Batman Relies On Gotham's Finest in *Batman* #217





Figure 87. Batman Uses the Police Computer in *The Brave and the Bold* #89

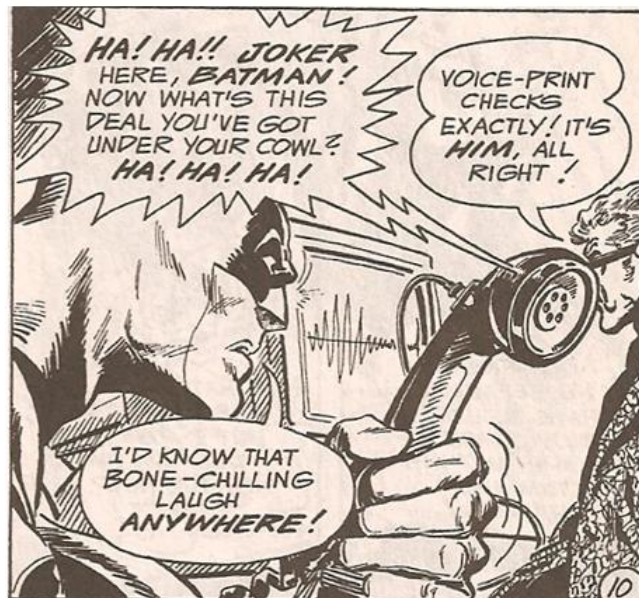


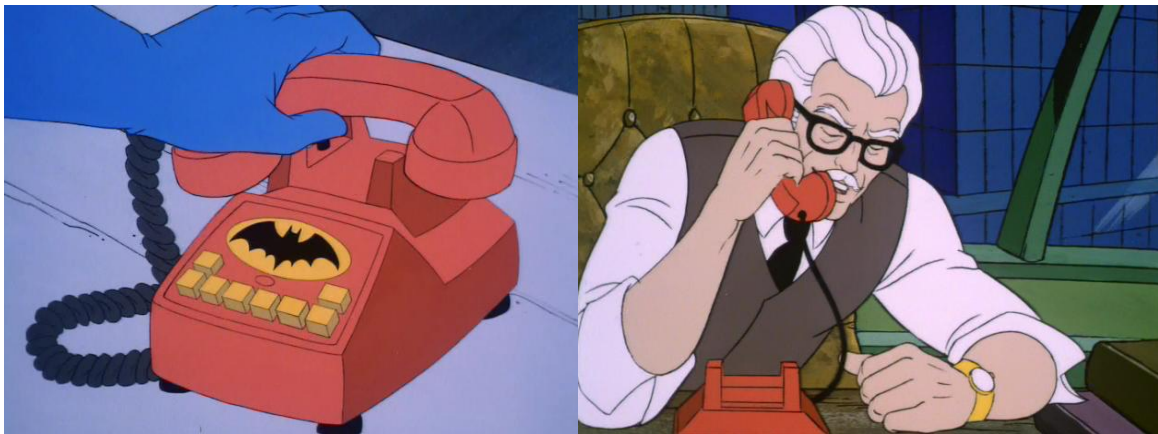
Figure 88. Gotham PD's Computers Are Used in *The Brave and the Bold* #111



## *The Batman Family*

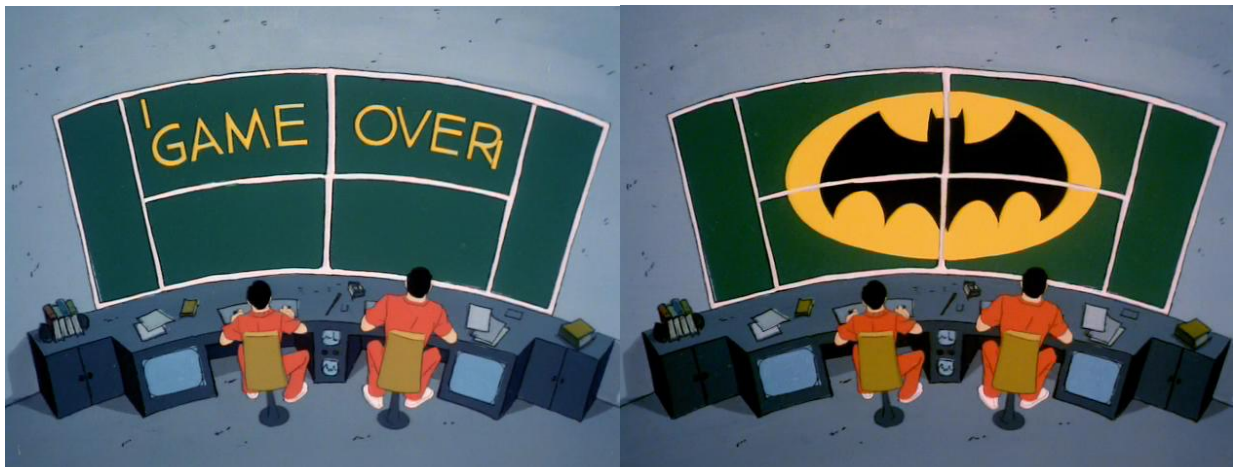
As in the Golden and Silver Ages, the Bronze Age Batman still needs methods for communicating with the police and other costumed crime fighters. However, the Bronze Age Batman also needs methods for communicating with a new emerging character – the Batcomputer.

The Bronze Age Batman uses much of the same Golden Age technology to communicate with the police. Batman still has and uses the Bat hotline to get in touch with Commissioner Gordon at a moment's notice.



**Figure 89.** The Hotline in *The New Adventures of Batman: The Pest and The Bermuda Rectangle*

Batman and Robin still respond to the Batsignal, but in addition to a buzzer sounding in the Batcave, Batman and Robin can be notified through their large television when they are playing Pong.



**Figure 90.** Batman Plays Pong in *The New Adventures of Batman: The Pest*

Batman still visits the police headquarters to collaborate with Commissioner Gordon. As shown in *The Brave and the Bold* #89, the information technology capabilities of the police have improved to meet Batman's standards. As in the Golden Age, the police department has a

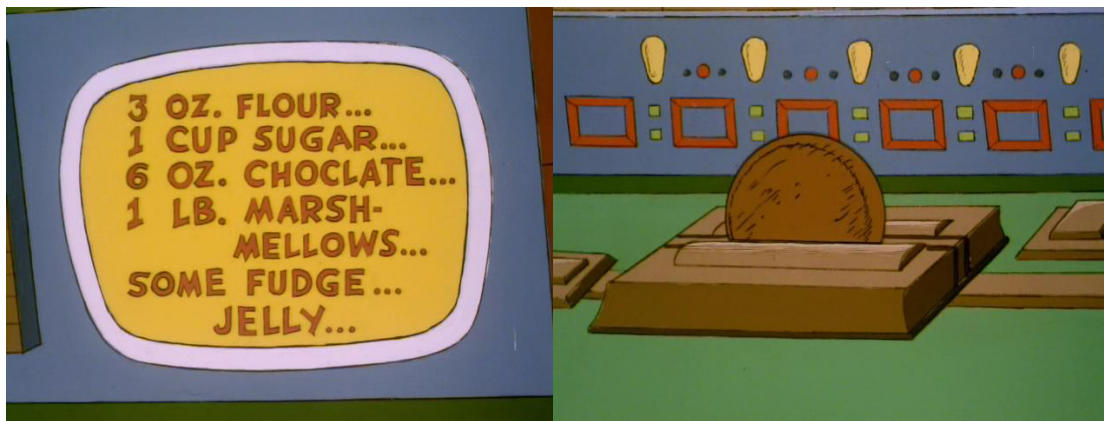


television where Commissioner Gordon can show Batman video, such as a personal message from the Joker in *The New Adventures of Batman* episode entitled “The Pest.”



**Figure 91.** The Joker Has a Video For Batman in *The New Adventures of Batman: The Pest*

In addition to the improved computers of the police department as depicted in the comics, *The New Adventures of Batman* episode entitled “A Sweet Joke on Gotham City” shows the Z-7000 supercomputer, which was programmed by Barbara Gordon to determine the villain Sweet-tooth’s weakness, which is a chocolate fudge marshmallow jelly cookie. Not only does the computer determine the recipe of such a cookie but the computer actually produces one for Batman to use.



**Figure 92.** The Z-7000 in *The New Adventures of Batman: A Sweet Joke on Gotham City*

Batman and Robin are also a part of the Justice League, and to get in contact with the global authorities, the Justice League uses a large computer monitor to communicate in its headquarters. The large monitor is surrounded with banks of computers that have the same abilities as the Batcomputer.



**Figure 93.** The Justice League Computer in *The All New Superfriends Hour*

Batman needs to communicate with Robin as well as other costumed crime fighters to complete his missions. The most common technology that Batman uses is wireless radio. In *The New Adventures of Batman*, Batman uses wireless radios to communicate to all of his allies.



**Figure 94.** Wireless Communication in *The New Adventures of Batman*

In the episode “The Bermuda Rectangle,” Batman and Robin improved their radios to include the CB radio band, which enabled Robin to send Commissioner Gordon an encoded message for help. Wireless communication carries over to the world of comics as well. In *The Brave and the Bold* #94, Batman communicates with Robin using a wireless radio.





Figure 95. Birdboy to Cowlman in *The Brave and the Bold* #94

In the 1970s, Batman emerged as a leader and a master strategist. To implement his plans, he distributes wireless radios to his allies to keep the lines of communication open. Batman uses this technology masterfully in *The Brave and the Bold* #100. A sniper's attack has left Batman in a wheelchair, but the Caped Crusader needs to apprehend an international drug lord. Therefore, Batman uses Green Lantern, Green Arrow, and Black Canary as his ears, eyes, and legs but issues them orders to bring down the drug ring through the wireless. Unfortunately, the drug lord alludes the team, but Batman issues an emergency signal using his wireless radio when he is receiving an operation to remove the bullet in his chest. The drug lord disguised himself as the operating surgeon and is stopped from killing the Caped Crusader.

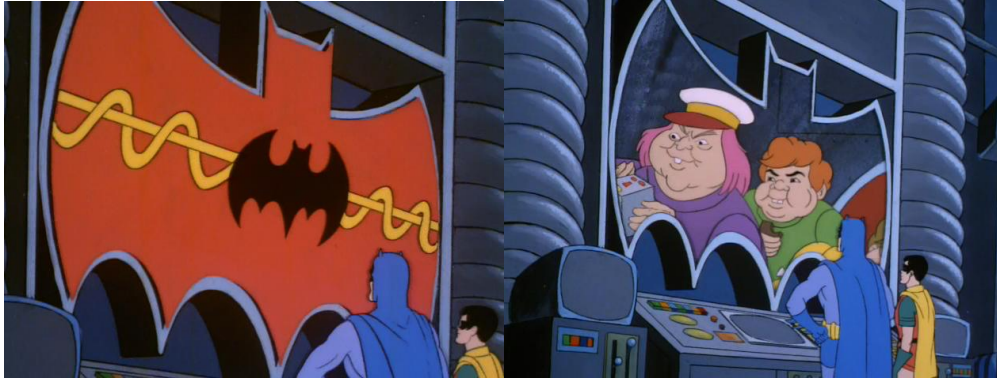




Figure 96. Batman Spins His Web in *The Brave and the Bold* #100

In the television series *The New Adventures of Batman*, the Batcomputer emerged as a new character in the Batman mythology. Capable of voice recognition, the computer was capable of dialog with Batman and Robin as well as laughing at Batmite's antics. For example, when Batman wants to know where the villain known as Sweet-tooth is hiding, the computer automatically sets up cameras in the sewers and shows the feed where the villain appears.





**Figure 97.** The Batcomputer Talks To Batman in *The New Adventures of Batman: A Sweet Joke on Gotham City*

In another example, Batman asks the computer to call Batmite, and Batcomputer says that it will conduct the task with “electronic ease.”



**Figure 98.** The Batcomputer Talks Again in *The New Adventures of Batman: Reading, Writing, and Wronging*

## The Masked Manhunter

Batman's use of information technology as a weapon did not change drastically from the Golden Age. When the situation calls for a creative solution, Batman often turns to information technology for assistance. For example, to combat a gang of criminals who committed robberies in the dark, Batman created a device to amplify the sound of a person's heart beating in *Detective Comics* #400.



Figure 99. Batman Can Hear Heartbeats in *Detective Comics* #400

When the Joker tries to steal the Batmobile in *The Brave and the Bold* #111, the Joker discovers that the Batmobile's ignition is controlled by the radio that requires a six letter code.



Figure 100. Ignition Control in *The Brave and the Bold* #111



When faced with an attack from a shark and electric eels, Batman uses his Batbuzzer to ward off the shark and hacks into a telephone line to disarm the electric eels in *The New Adventures of Batman* episode “The Bermuda Rectangle.”

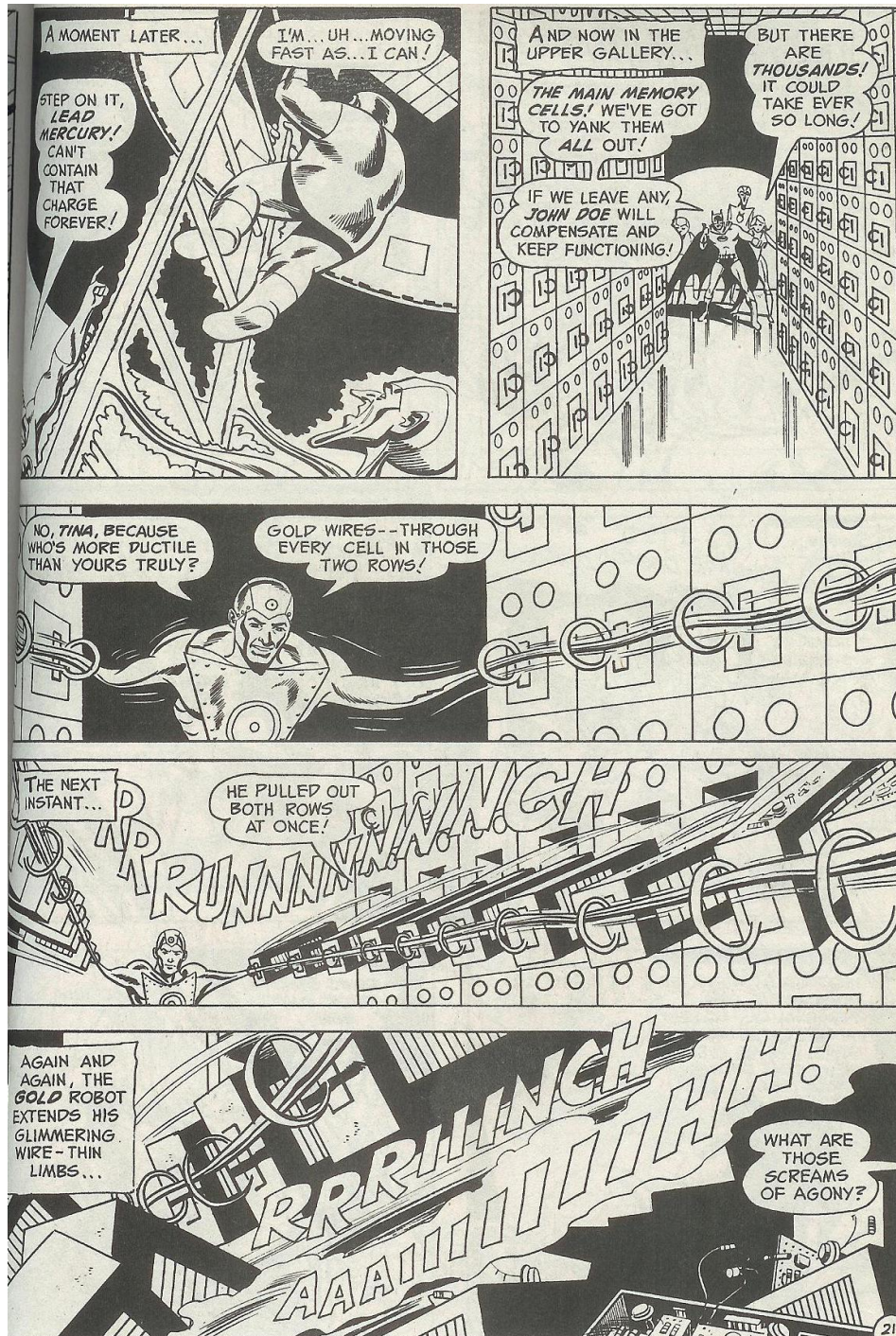


**Figure 101.** Batman’s Undersea Battles in *The New Adventures of Batman: The Bermuda Rectangle*

Information technology is wielded as a weapon against the Caped Crusader as well. Unlike the Silver Age, the Bronze Age has enabled the common villain to use information technology as well as the professor and scientist. In *The Brave and the Bold* #103, a robot computer called John Doe, which was created for the US government and was infused with the personality traits of its creator, went rogue, and Uncle Sam called on Batman to destroy the machine before the machine uses the entire US missile system against humanity. Batman sends the heroic robots known as the Metal Men, but when the Metal Men are compromised, Batman comes to the rescue and the team destroys the main memory cells of John Doe.



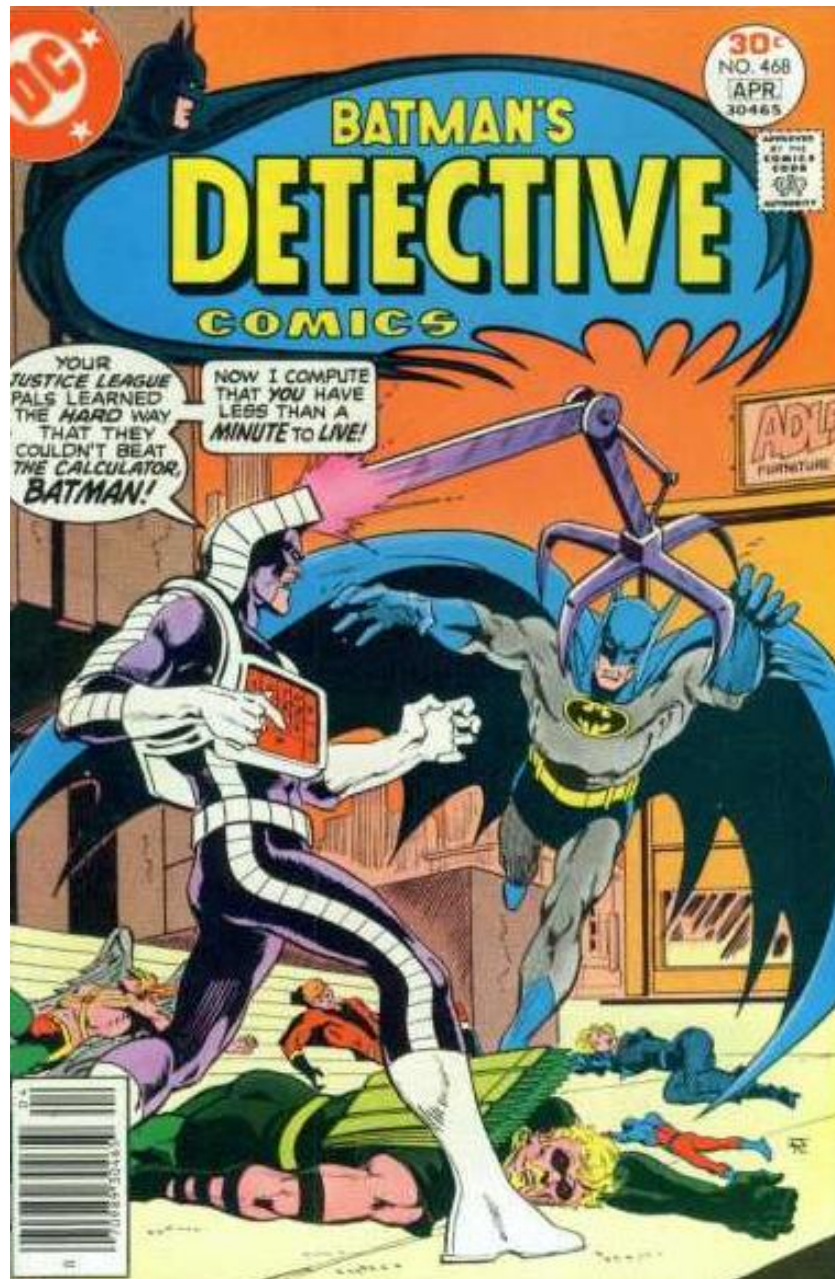




**Figure 102.** Batman Shuts Down John Doe in *The Brave and the Bold* #103

In *Detective Comics* #468, a new Batman villain debuted called the Calculator. The Calculator's secret identity was scientist Noah Kuttler, and he had created a device that analyzes the power of any superhero he battles with. After the analysis, the device provides protection against the superhero's attacks. Using his equipment, the Calculator started to gather intelligence on American superheroes but was subsequently stopped by Batman.





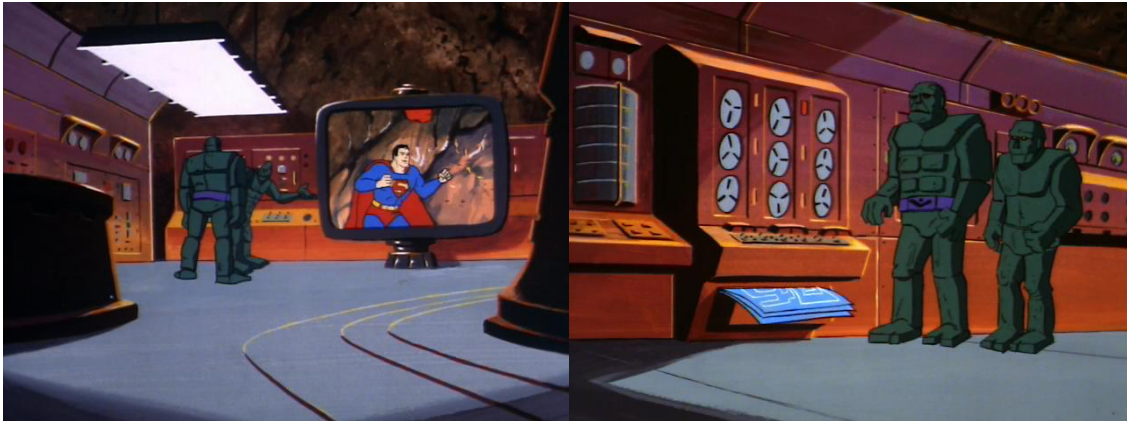
**Figure 103.** The Calculator in *Detective Comics* #468

In *The New Adventures of Batman*, an evil scientist by the moniker of Dr. Devious conducts his revenge against Batman by operating a robot that can transform into anything in the episode “The Chameleon.” In “A Sweet Joke on Gotham City,” a villain by the name of Sweet-tooth has the capacity of plugging his own computerized locks into the city’s water supply mainframe to control the entire city’s water. Sweet-tooth uses this technology to change Gotham’s water supply to chocolate syrup. In “Reading, Writing, and Wronging,” the Penguin gains access to a machine that produces a perfect replica of the Batsignal and makes a phone call to the Dynamic Duo while impersonating Commissioner Gordon. The Penguin uses this machine to set a trap for Batman and Robin.



**Figure 104.** Tech Savvy Villains in *The New Adventures of Batman: The Chameleon, A Sweet Joke on Gotham City, and Reading, Writing, and Wronging*

In *The All New Superfriends Hour* episode entitled “The Invasion of the Earthors,” the villainous Earthors use information technology to build a weapon to use against Superman. The Earthors take video tape of Superman in action and ask the computer to create design plans for creating a machine to take the Man of Steel down. The machine is a large robotic version of Superman and proves no match for the Man of Steel.



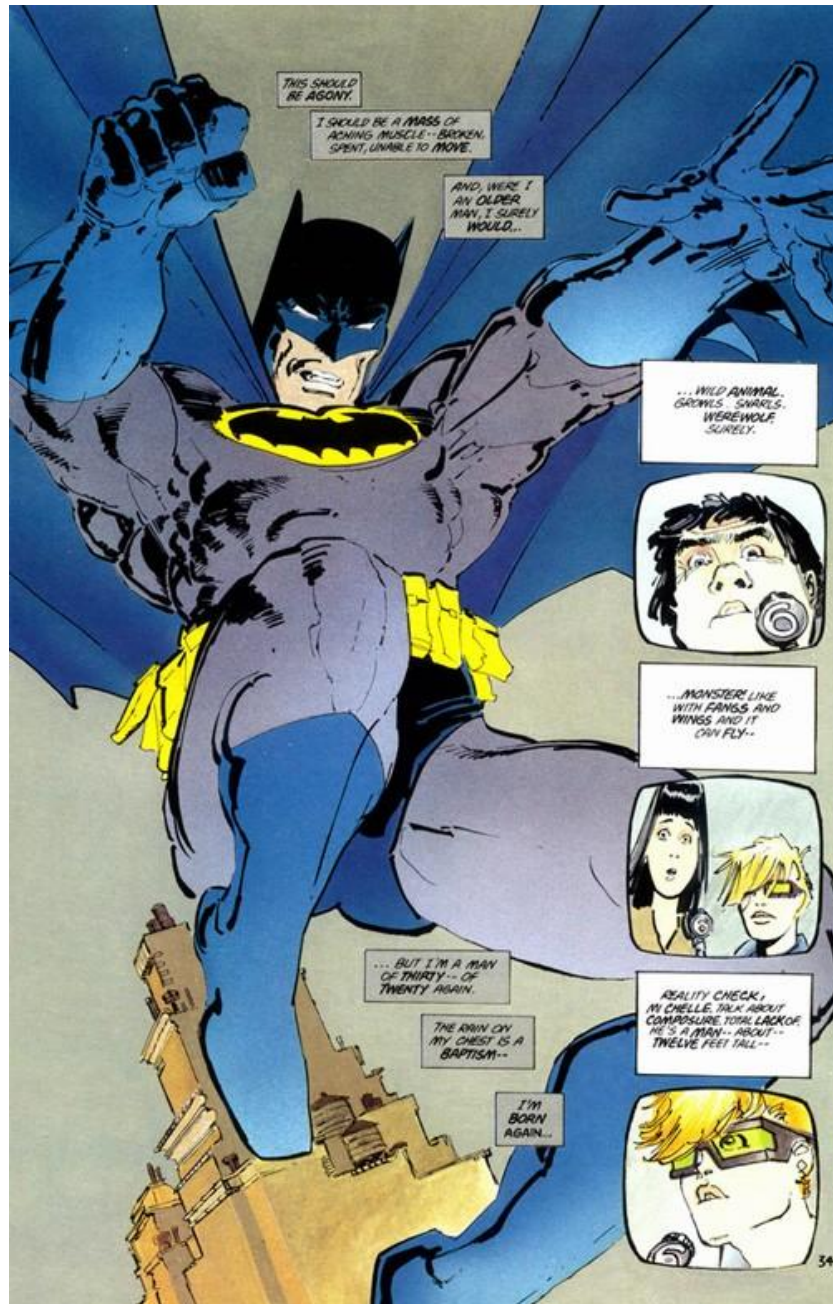
**Figure 105.** The Computers of Middle Earth in *The All New Superfriends Hour: The Invasion of the Earthors*



## Chapter 5: The Dark Age Batman

### *Revolutionary Times*

The beginning of the Dark Age in the Batman mythology started with the publication of *The Dark Knight Returns* #1, which portrayed the final adventures of Batman who comes out of retirement to save his dystopian Gotham City. *The Dark Knight Returns* saga illustrated a Batman who was a creature of vengeance returning to the character's vigilante roots in the Golden Age.



**Figure 106.** Batman's Baptism in *The Dark Knight Returns* #1

The same writer who authored the iconic *The Dark Knight Returns* story also wrote a story about Batman's vigilante roots and journey to become Batman in *Batman: Year One*. Frank Miller had created a darker version of the character that transformed the Batman mythology.



**Figure 107.** Batman's First Night Out in *Batman* #405

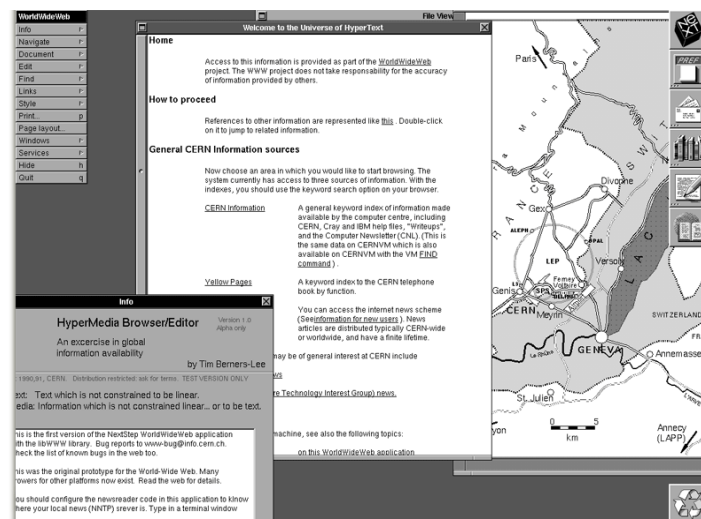
In the Dark Age, the storylines that drove the comic book world grew darker. Robin was murdered by the Joker, Batman's back was broken by Bane, and the city of Gotham suffered a cataclysmic earthquake. *Batman: The Animated Series* television show portrayed a darker version of Gotham City using a style called "Dark Deco." During this age, a realistic Batman emerged as a major box office force by dancing with the Joker in the pale moonlight in *Batman*. While other interpretations of the Batman mythology still persisted such as the camp interpretation in the theatrical films *Batman Forever* and *Batman and Robin*, a majority of the character's portrayal favored the dark, gritty, and vengeful creature of the night.





**Figure 108.** Batman in the Dark Ages: *A Death in the Family*, *Batman: The Animated Series*, and *Batman* (1989)

During the Dark Age of the Batman mythology, essentially the next Enlightenment occurred in the world of information technology with the commercialization of the Internet and the advent of the World Wide Web. At the beginning of the Dark Age, the Internet was fully functional and supported the needs of communities of researchers and developers such as email through using Transmission Control Protocol or Internet Protocol. However, beyond researchers and developers, the Internet was relatively unknown to the general public. The Internet that the general public has become familiar with is the World Wide Web. The World Wide Web presents multimedia content on the Internet through using a system of web pages and hyperlinks to connect these pages together. Tim Berners-Lee started work on the World Wide Web in CERN with his proposal to create such a web in 1989. In 1990, Berners-Lee created the first web page, the first web browser, the first WYSIWYG HTML editor, and the first web server. Berners-Lee had created the foundations for the modern World Wide Web and Internet. Furthermore and more significantly, Berners-Lee made these tools freely available to the entire world (Norman).



**Figure 109.** Tim Berners-Lee's First WorldWideWeb Browser

Making these tools freely available greatly helped the success of Berners-Lee World Wide Web project. In 1993, traffic on the Internet grew by an astonishing 341,634 percent and totaled 100 terabytes for the entire year. In 1994, there were 2,500 web servers and 10,000 websites. In 1996, there are 14,352,000 Internet hosts and 100,000 web sites. During the 1990s, the first blog, first wiki, first image on the Internet, first e-commerce website, first search engine, and first webcasts were developed. This explosive growth of the Internet helped fuel the .com bubble of the late 1990s where businesses that were purely on the World Wide Web were hot commodities regardless of their business model (Norman).

The Dark Age of the Batman mythology represented new beginnings for the Batman character and the advent of the World Wide Web. The general perception of information technology of this age was increasingly optimistic and positive. Therefore, the development of information technology in the Batman mythology during this age increases from a relatively stagnant Bronze Age as shown in the sections that follow.



## *The Dark Knight Detective*

More so than any of the previous ages of the Batman mythology, the Dark Age portrays a Batman dependent on information technology to effectively conduct his detective work. Information technology serves as a valuable tool that helps aid Batman's ability to think. One of the central places where the Dark Age Batman contemplates this current situation and strategizes for the future is the Batcave. In the Golden Age, Batman was often seen contemplating his next move with a newspaper in hand. In the Dark Age, Batman is often seen contemplating by the Batcomputer. Batman uses the Batcomputer to contemplate in two ways. The first way that Batman uses the Batcomputer to think is through using the screen to show an image that Batman is able to fixate on. Much like Batman's earlier days of staring at a newspaper, the Batman of the Dark Age often is found fixated on the computer screen deep in thought. In the graphic novels *Batman: War On Crime* and *The Killing Joke*, Batman can be seen using the Batcomputer in this way.



**Figure 110.** Batman Thinking in *Batman: War on Crime*, *The Killing Joke*, and *Batman: Knightfall: Part One*

The second way that Batman uses the Batcomputer is to assemble the clues that he has collected to form a conclusion. The Batcomputer allows Batman to follow a hunch or further explore evidence that he collects at the crime scene. In the Dark Age, the television show *Batman: The Animated Series* illustrated this use of the Batcomputer on a regular basis. In its first episode entitled “On Leather Wings,” Batman learns through reading the newspaper that a robbery occurred at a pharmaceutical company by a supposed “Batman.”



**Figure 111.** The Newspaper in *Batman: The Animated Series: On Leather Wings*

Batman then makes the connection that this robbery could be related to two other quiet robberies made at other pharmaceutical companies this week according to the information supplied to him by his Batcomputer.



**Figure 112.** Batman Investigates Using the Batcomputer in *Batman: The Animated Series: On Leather Wings*

After Batman does some investigating at the scene of the latest robbery and finds a tape recorder with a mysterious screeching sound along with a strange strand of hair, Batman runs an analysis on the Batcomputer to determine what creature could be making the sound. As Bruce Wayne, Batman turns in the tape recording and hair sample to the bat department at the Gotham Zoo to determine a possible culprit, but the answer given by the department was incorrect according to the Batcomputer's analysis. This result sends Batman looking for the truth and finding that researcher Dr. Kirk Langstrom has become the monstrous creature known as Man-Bat.





**Figure 113.** The Batcomputer Analyzes Sounds in *Batman: The Animated Series: On Leather Wings*

This kind of use of the Batcomputer appears in other works of the Batman mythology as well. In the movie *Batman*, Bruce Wayne reviews the video surveillance taken during a social gathering at Wayne Manor and discovers that the police are moving in on criminal Jack Napier after hearing a conversation between Commissioner Gordon and one of his police officers. This information sends Batman into action and leads to the accidental creation of Batman's classic enemy as Jack Napier falls into a vat of chemicals and emerges as the Joker.



**Figure 114.** Batman Spies on His Party in *Batman (1989)*

In the movie *Batman Returns*, Batman uses the Batcomputer to learn more information about the origins of the Penguin by examining microfilm copies of past newspapers. The information technology wonders of the Golden Age Batman still exist in the world of the Dark Age Batman.

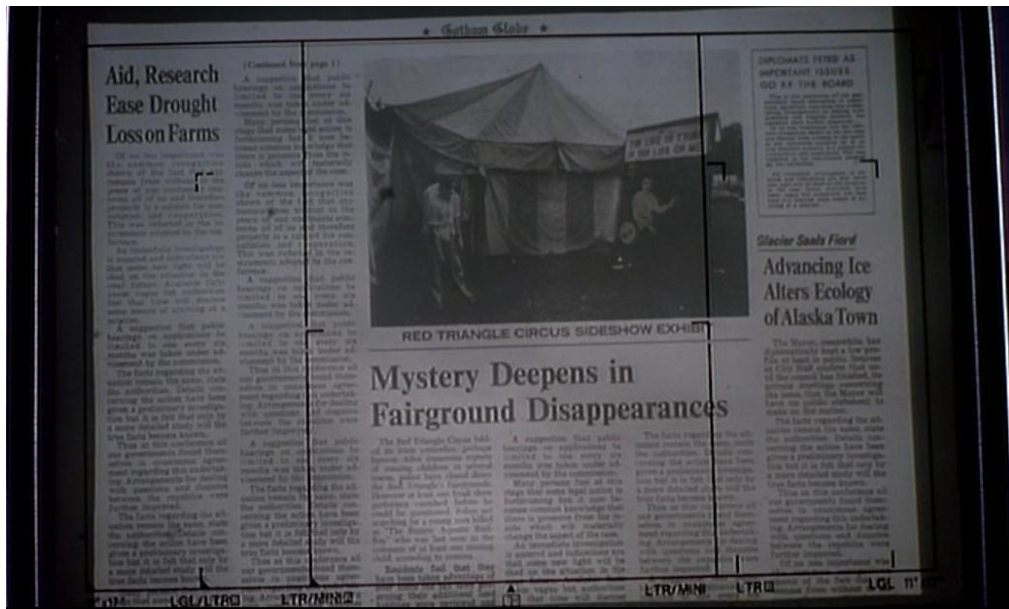


Figure 115. Microfilm in *Batman Returns*

While the Batcomputer loomed large in the Dark Age, Batman's information technology used to solve crimes was not limited to the Batcave. Batman's information technology in the Dark Age allowed the Caped Crusader to solve crimes on the move. In the novel *Batman: The Ultimate Evil*, Batman queries a computer onboard his Batmobile to find out answers as he does in this excerpt below where he is learning more information about Gotham's child prostitution ring:

interior. The elongated red splotch was the Middleman, obviously lying on his bunk, the flash of yellow was his head. The Batman studied the data as he brought the image as close as the probes' triangulation would permit. Just one more piece of information was needed.

**Conscious state?**

*Sleep*

**Depth?**

*REM*

So the Middleman was deep asleep. Dreaming, in fact. Now all he had to know was . . .

The computer beeped. The Batman's eyes turned toward the screen.

*ALERT! Additional Data Available / Request?*

**Y**

*Perry Trauma Scale available. Run?*

**Y**

The Batman's eyes were riveted to the screen. The Perry Trauma Scale was named for Dr. B. D. Perry, short-listed for next year's International Contribution to Humanity Award for his groundbreaking research into the biochemistry of trauma. Dr. Perry's thesis was that deeply

Figure 116. The Computer in the Batmobile in *Batman: The Ultimate Evil* (Vachss, pg. 50)



In *Batman: The Animated Series*, the Batmobile is also shown to have the same information technology powers. In the episode entitled “Christmas with the Joker,” Batman watches the Joker’s television broadcast, pinpoints the Joker’s broadcast location, and makes queries such as the location of a toy factory.



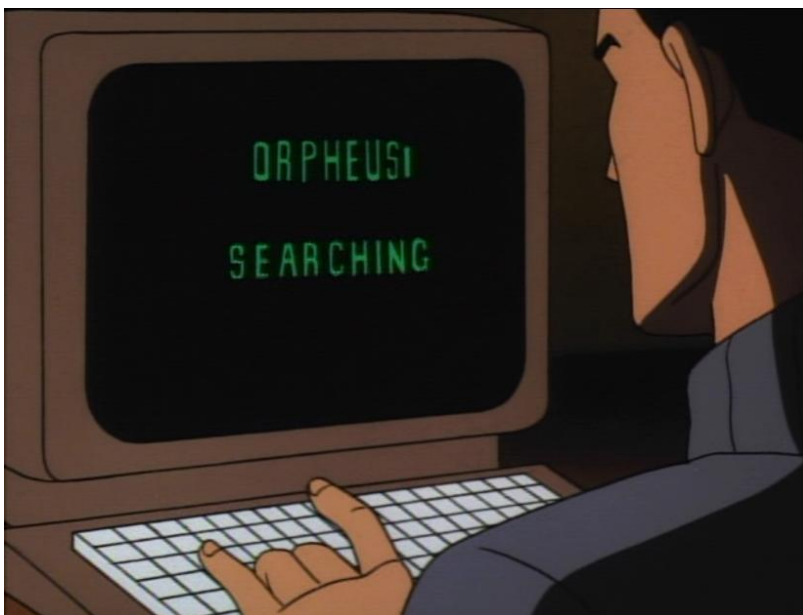
**Figure 117.** The Batmobile in *Batman: The Animated Series: Christmas with the Joker*

Besides the Batmobile, Batman also has the use of other information technology gadgets. In the episode entitled “If You’re So Smart, Why Aren’t You Rich?,” Batman uses a mini-computer embedded in his glove that allows him to translate the Riddler’s clues that were originally given in Morse code and in Arabic.



**Figure 118.** The Palm Top Computer in *Batman: The Animated Series: If You Are So Smart, Why Aren’t You Rich?*

In addition, because of his control of the global Wayne Enterprises, Batman leverages these resources as he did in “The Demon’s Quest Part 2” episode when he makes a computer query to determine the location of global terrorist’s Ra’s al Ghul’s headquarters.



**Figure 119.** Batman Using Wayne Enterprises in *Batman: The Animated Series: The Demon's Quest Part 2*



## *The Batman Family*

As in the previous ages, the Dark Age Batman needed methods to communicate and collaborate with the police and his superhero allies. However, in this age, Batman also needed to communicate and collaborate with an old ally who gained a newfound importance in his butler Alfred. In the Dark Age, Alfred played an active role in Batman's war on crime by serving many roles to aid Master Bruce. One of these roles was supporting Batman's information technology needs. Alfred's information technology support evolved during the Dark Age. Near the beginning of the age, Alfred would conduct routine database searches or deliver Batman paper files like in the movie entitled *Batman*.



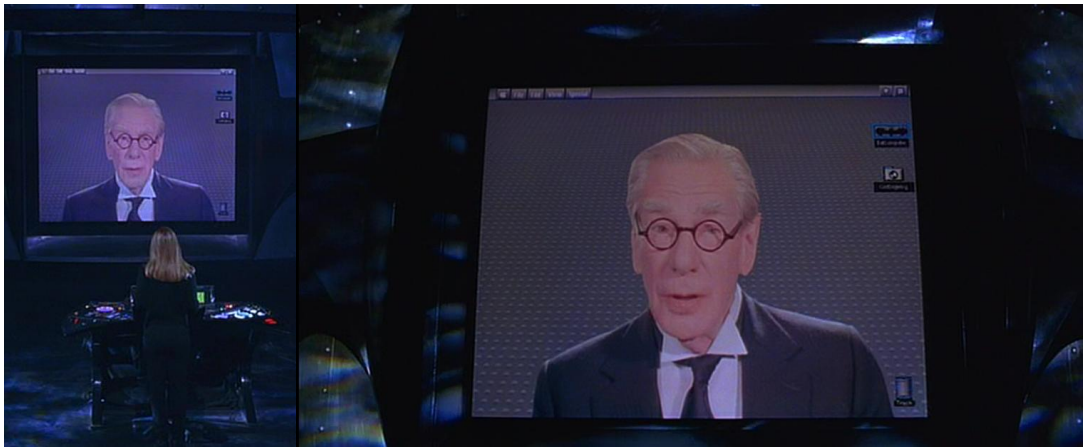
**Figure 120.** Alfred Brings Batman a Physical File in *Batman* (1989)

Towards the end of the age, Alfred became more involved in information technology. In the last major theatrical film of the age, Alfred became part of the information technology itself. At the beginning of the film *Batman & Robin*, Alfred created a back up of all of Batman's files to give to his relative on a CD. Alfred knew that his time was growing short and wanted to make sure that his duties would be passed on to a trustworthy individual.



**Figure 121.** Alfred Makes a Data CD in *Batman & Robin*

Later in the same film, Alfred's niece Barbara Wilson breaks into the Batcave and is greeted by an automatic simulation of Alfred. Alfred had programmed his brain algorithms into the Batcomputer and interacts with his niece like he normally would.



**Figure 122.** Alfred's A.I. in the Batcave in *Batman & Robin*

Batman and Alfred communicated using a variety of different methods during this age. In the comic saga *A Death In the Family*, Batman and Alfred communicated by using a scrambled satellite relay. In this communication, Alfred informs Batman that the results of a computer search on Wayne's credit cards showed that Jason Todd took a late night flight to Israel. Jason Todd is the current Robin in the Batman mythology at this point.



**Figure 123.** Batman and Alfred Talk Long Distance in *A Death In The Family*



In the animated series, Batman and Alfred are shown to communicate through using a cell phone. Batman keeps the cell phone in his utility belt.



**Figure 124.** Batman and Alfred Chat Using a Cell Phone in *Batman & Mr. Freeze: Subzero*

In the film *Batman Forever*, Batman and Alfred communicate using video as Batman rides a high tech elevator from this office in Wayne Enterprises to the Batcave.



**Figure 125.** Batman Talks to Alfred on His Way to the Batcave in *Batman Forever*

In the Dark Age, the relationship between Batman and the police is not as warm and welcoming as the relationship has been in previous ages. Batman is viewed as a vigilante, and some of the Gotham media blame him for inciting the violent actions of criminals such as the Joker. In the camp *Batman & Robin*, Batman's relationship with the law is strong, and Batman uses video to communicate to Commissioner Gordon while driving in the Batmobile.



**Figure 126.** Batman Talks To Commissioner Gordon From the Batmobile in *Batman & Robin*

While the relationship between Batman and the police may not be as formal in the dark interpretations of the character, collaboration still occurs just not as openly as it once was portrayed. In the animated episode called “A Bullet For Bullock,” someone wants revenge on Detective Harvey Bullock, and the detective turns to the World’s Greatest Detective for assistance. He gives Batman a floppy disk with all of his past case files in the last five years.



**Figure 127.** Bullock Gives Batman a Floppy in *Batman: The Animated Series: A Bullet For Bullock*

While the Dark Age Batman is often portrayed as a lone vigilante, this version of Batman relies on other superheroes just as much as and even more so than previous ages. In an increasingly complex world, Batman needs others to help him on his journey even if he is not always willing. From an information technology perspective, Oracle has emerged as a character



that Batman has relied on the most. Barbara Gordon, who is the daughter of Commissioner Gordon, was Batgirl until the Joker shot her in the spinal cord confining her to a wheelchair for the rest of her life. Barbara faced a problem of identity and was not sure who she was because of what she lost. However, Barbara began exploring the world of computers and the Internet in the pages of *Batman Chronicles* #5 in a story called “Oracle: Year One.”

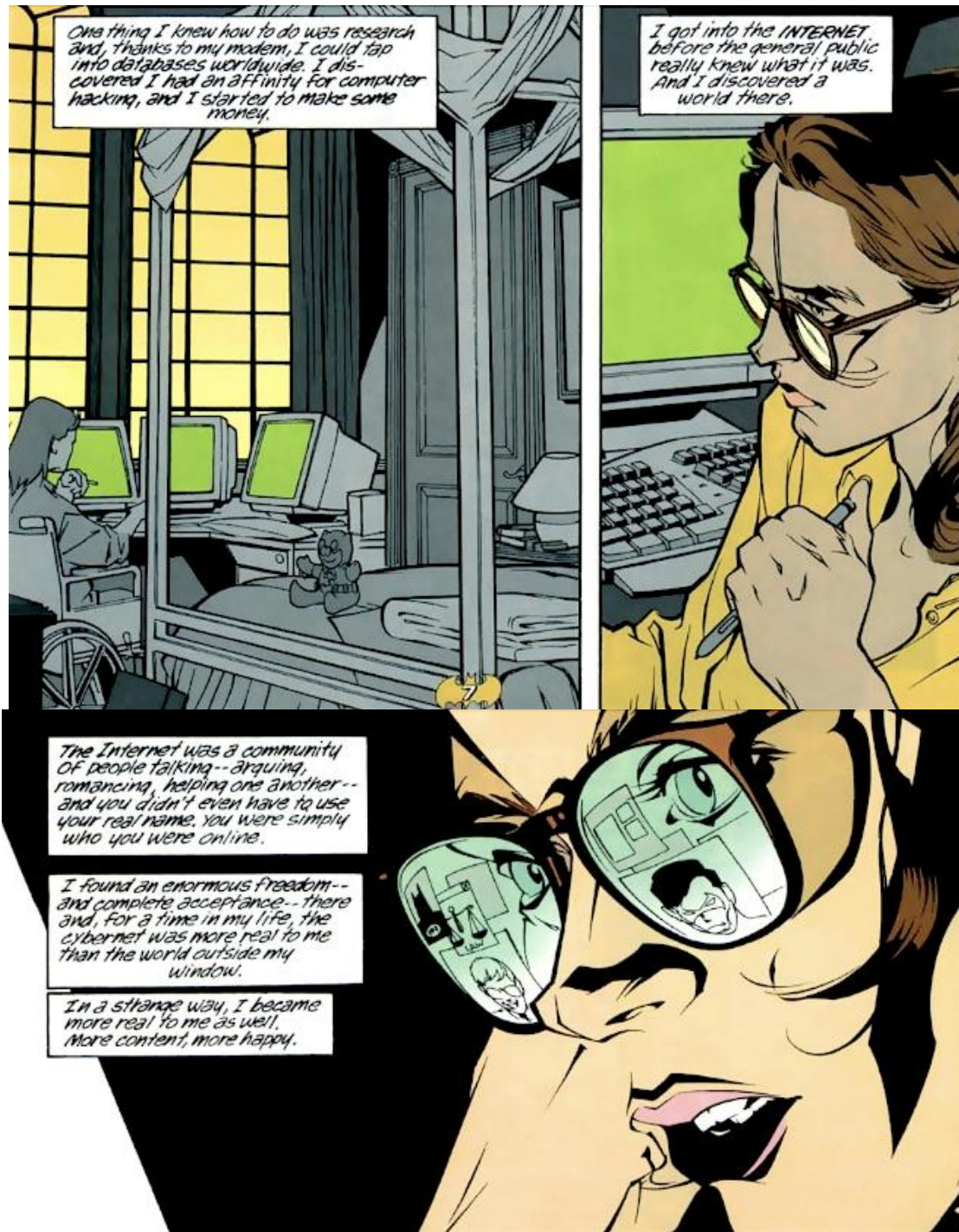


Figure 128. Oracle Year One in *Batman Chronicles* #5

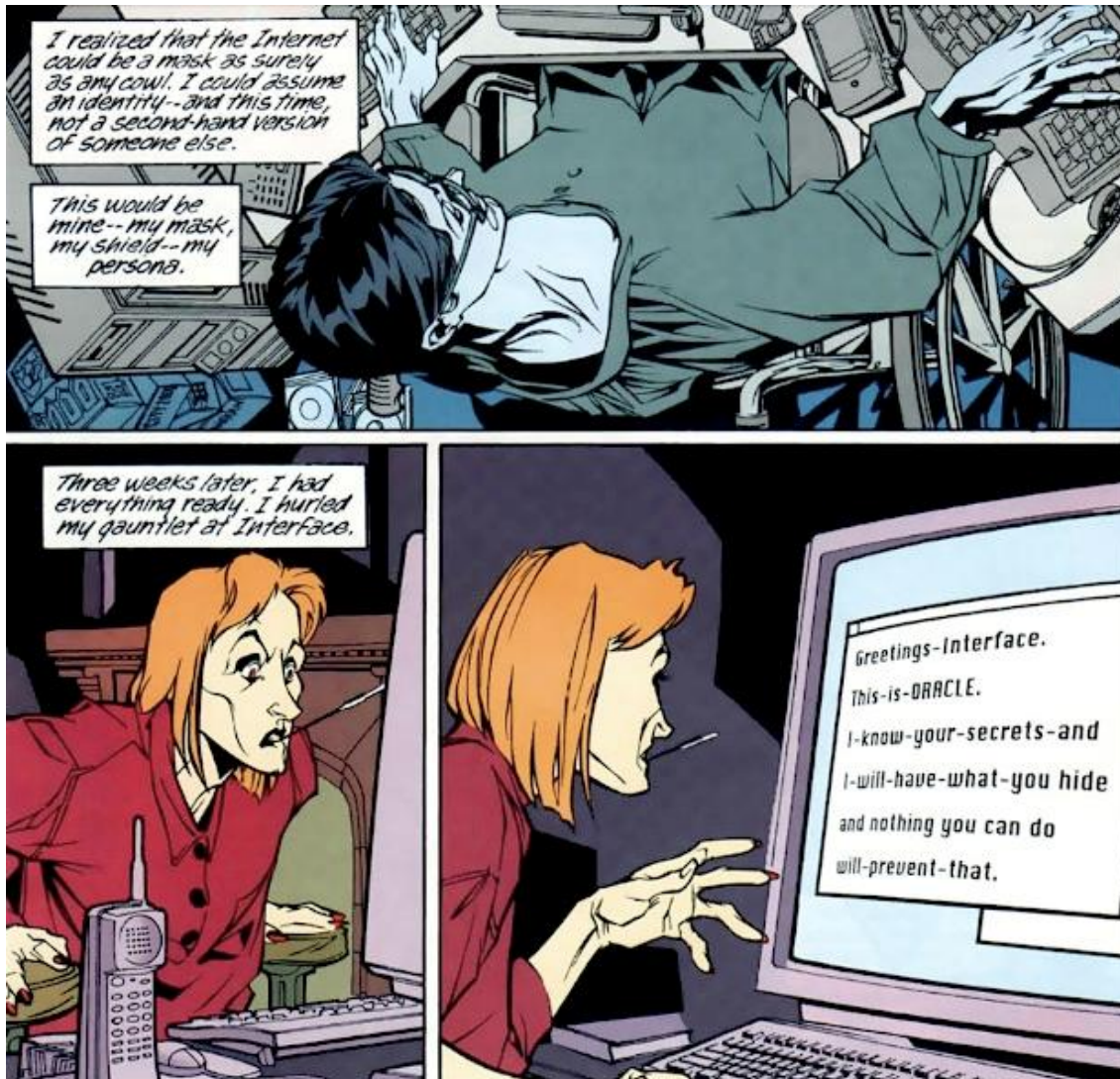
Barbara began using her computer hacking skills to bring down a money launderer known as the Interface. However, Barbara's attempts are discovered, and she is physically confronted at a street corner. Barbara searches for self-defense training and receives help from the Internet from an anonymous source who is really Batman.



**Figure 129.** Oracle Year One in *Batman Chronicles* #5

After training and boosting her self confidence, Barbara has a dream where she meets Oracle who is the woman who speaks for the Greek gods. After the dream, she realizes that she has everything she needs, adopts the persona of Oracle, and takes down Interface.





**Figure 130.** Oracle Year One in *Batman Chronicles* #5

Oracle becomes a major player in the Batman mythology by serving as one of the foremost information brokers in the superhero world. Oracle played a major role mobilizing the superheroes of Gotham City during the city's two greatest disasters during the Dark Age – the Clench epidemic and the earthquake which caused the U.S. government to declare Gotham City a No Man's Land.







his detective skills, Drake determines the identities of Batman and the original Robin and asks Richard Grayson to serve as Robin again for Batman's sake. Richard Grayson shows Tim Drake the Batcave, and the first thing that Tim Drake notices is the abundance of computers in the cave.



**Figure 132.** Tim Drake Enters the Batcave in *Batman: A Lonely Place of Dying*

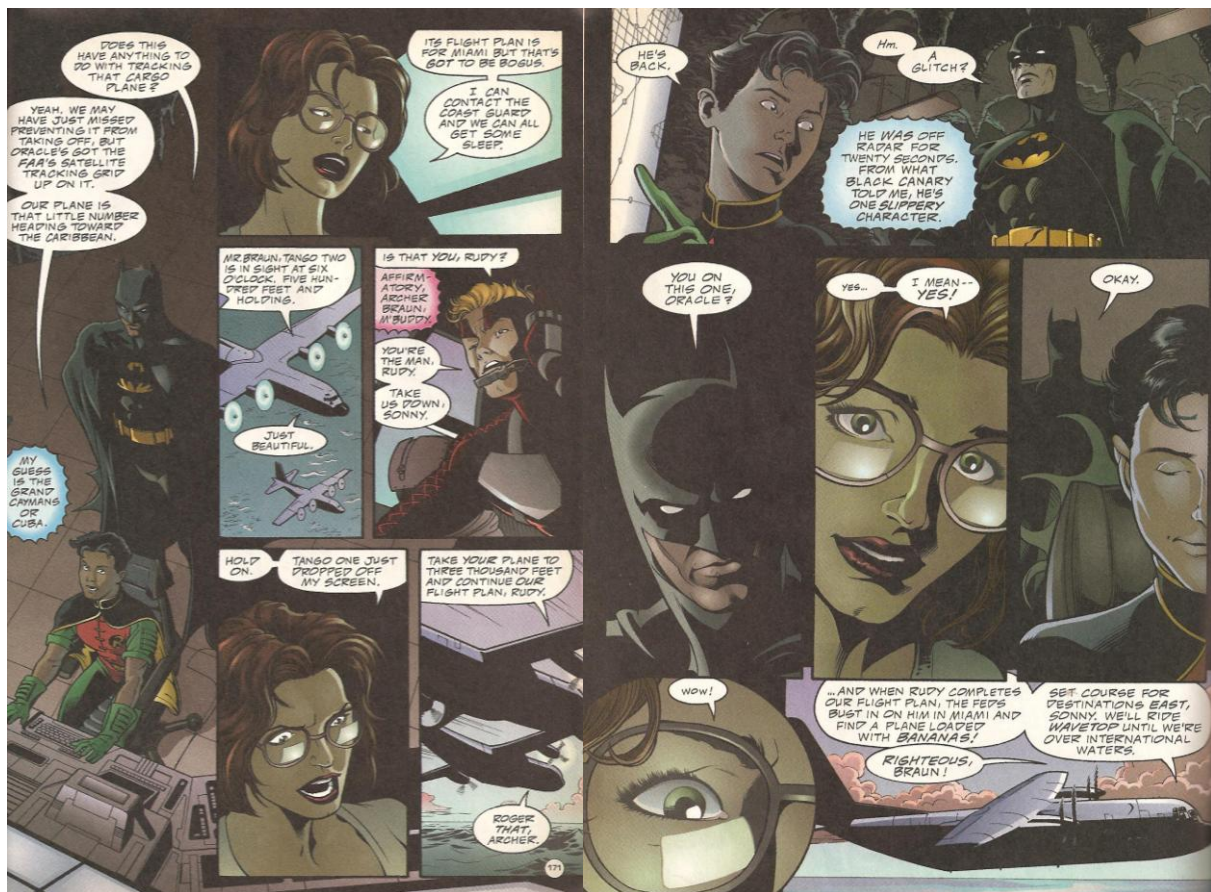


Later in the story, Tim Drake takes the mantle of Robin and has served in that role throughout the rest of the Dark Age. Tim Drake is very comfortable around information technology and often makes queries in the Batcomputer's database on the request of Batman.



Figure 133. Robin Makes a Computer Search in *Batman* #455





**Figure 134.** Batman and Robin Check-In on Oracle in *Black Canary/Oracle: Birds of Prey*

This familiarity with technology is something that Tim Drake shared with the previous Robin Jason Todd. When Jason was trying to find his real mother, he used the Batcomputer to narrow down his search to three possible suspects.





**Figure 135.** Jason Todd Looks For Answers in *Batman: A Death in the Family*

The final character of information technology importance introduced during the Dark Age was Harold Allnut. Harold is a hunchback and a mute but has an incredible aptitude for building and repairing machines, computers, and other technological devices. Harold was discovered by the Penguin and exploited for his technological prowess.





**Figure 136.** Harold Allnut in *Batman* #448

Batman saved Harold from the Penguin and gave Harold a home in the Batcave where Harold worked on Batman's computer system and other devices such as the Batmobile.

With the introduction of Oracle, Tim Drake, and Harold, Batman had more allies in his crusade by providing invaluable information technology support. Despite the addition of these new allies however, standard communication between the costumed crime fighters of Gotham City occurred using wireless radios. For example, for Batman's black-ops team of superheroes called the Outsiders, Batman frequently made use of wireless radios to issue commands.



Figure 137. Batman and Black Lightning Communicate in *Batman and the Outsiders* #4



### ***The Masked Manhunter***

Information technology's ability to be used as a weapon by Batman and as a weapon against Batman was more pronounced during the Dark Age than any age preceding it. Batman used information technology to tape criminal confessions and to fight as a hacker and system administrator. Information technology attacked Batman by his Rogue's Gallery enhancing their own abilities through the use of information technology and by creating criminals composed purely of information technology.

Batman used information technology to tape criminal confessions. In the episode called "Riddler's Reform," Batman used one of the Riddler's toys to tape the Riddler confessing to his crimes.



**Figure 138.** The Riddler Gets Busted in *Batman: The Animated Series: Riddler's Reform*

In the movie *Batman & Robin*, to persuade Mr. Freeze to provide the cure for McGregor's syndrome to help Alfred, Batman shows Mr. Freeze a video of Poison Ivy stating how she was using him to achieve her goals and how she killed his wife Nora because Nora was getting in the way of her goals.



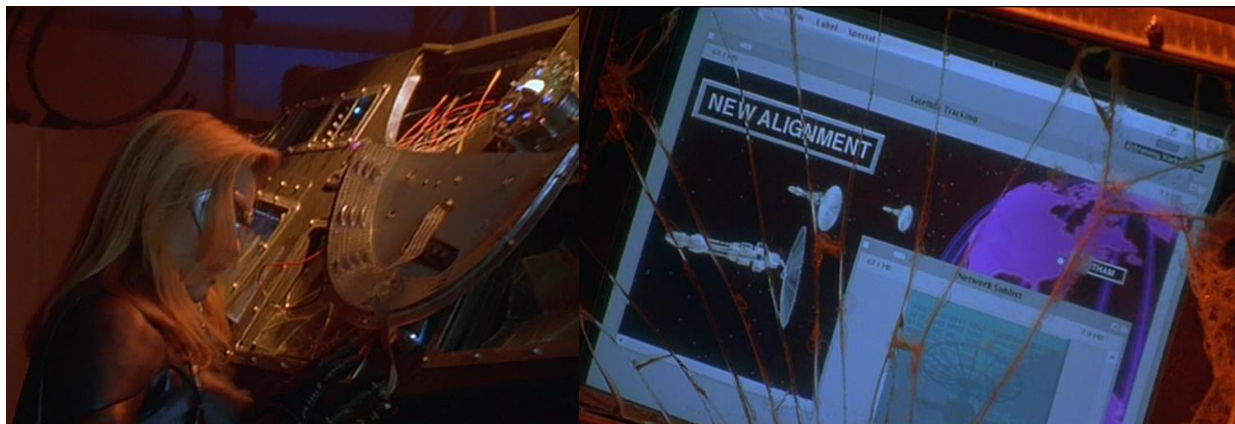
**Figure 139.** Mr. Freeze Learns the Truth in *Batman & Robin*

Batman used information technology as a weapon to stop crime and take down criminals. Batman played the role of the hacker and the system administrator. As a hacker, Batman uses his enemy's information technology against him. In *Batman & Robin*, Mr. Freeze puts Gotham City on ice through using a massive freezing ray from the Gotham Observatory. To thaw Gotham City, Batman must position Wayne Enterprise satellites to reflect sunlight to the observatory's telescopic mirrors. This light could melt the ice covering the city.



**Figure 140.** Batman Hacks in *Batman & Robin*

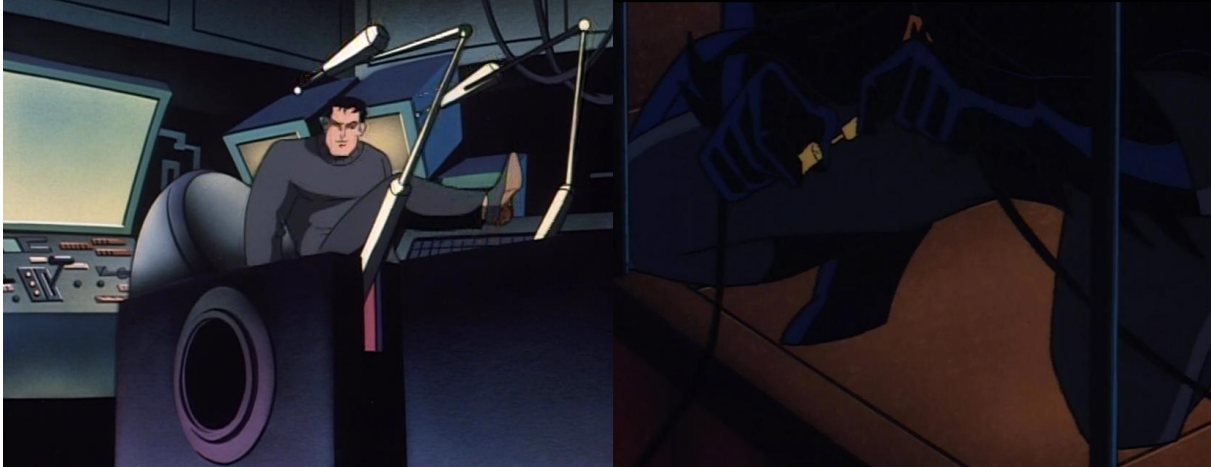
However, Batman is foiled by Mr. Freeze as the villain destroys the observatory's mirrors. Gotham City still has a chance if the satellites could be repositioned to reflect sunlight directly on the city, but according to Batman, this task would require "a computer genius." Batgirl comes to the rescue and uses her knowledge of information technology to reposition the satellites and save Gotham City.



**Figure 141.** Batgirl Hacks in *Batman & Robin*

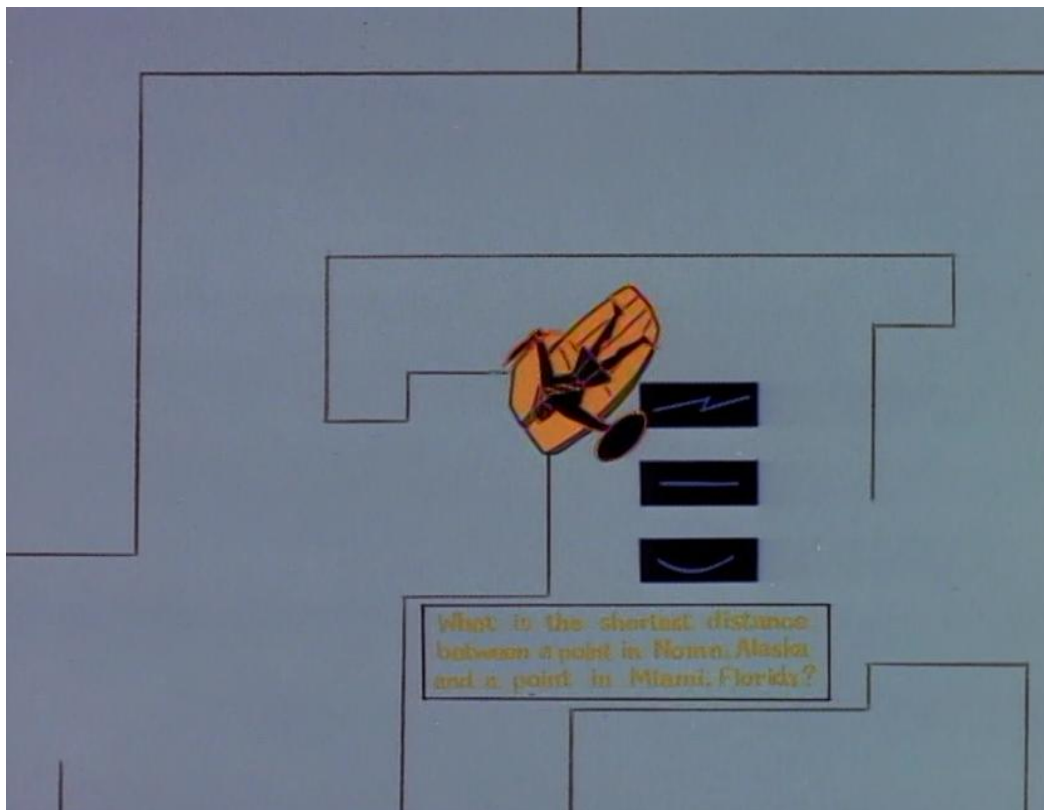
In *Batman: The Animated Series*, Batman uses his ability to hack to foil the plans of his enemies. In "The Strange Secret of Bruce Wayne," Dr. Hugo Strange develops a machine that records the inner thoughts and secrets of his patients on video cassette. Dr. Strange tapes Bruce Wayne and learns that Bruce Wayne is Batman. Dr. Strange plans to auction this tape to the highest villain bidder, but Batman records a false memory and switches the video feed showing the false memory to his bidding Rogues Gallery.





**Figure 142.** Batman Fools Dr. Strange in *Batman: The Animated Series: The Strange Secret of Bruce Wayne*

In “If You Are So Smart, Why Aren’t You Rich?,” Batman and Robin are stuck in a real life Game of the Minotaur created by the Riddler. The Game of the Minotaur is a computer puzzle game created by Edward E. Ngyma before Ngyma became the Riddler. The game asks players a series of riddles which eventually leads the player to the minotaur who asks the final riddle. If a player gets a question wrong, the hand of fate transports the player back to the beginning.



**Figure 143.** The Game of the Minotaur in *Batman: The Animated Series: If You Are So Smart, Why Aren’t You Rich?*

In the real life version created by the Riddler as a trap, Batman gets a question intentionally wrong, so he can summon the robotic hand of fate. Once Batman jumps on the hand of fate, he hacks into the machine using his mini-computer and fly directly to the minotaur.



**Figure 144.** Batman Hacks The Hand of Fate in *Batman: The Animated Series: If You Are So Smart, Why Aren't You Rich?*

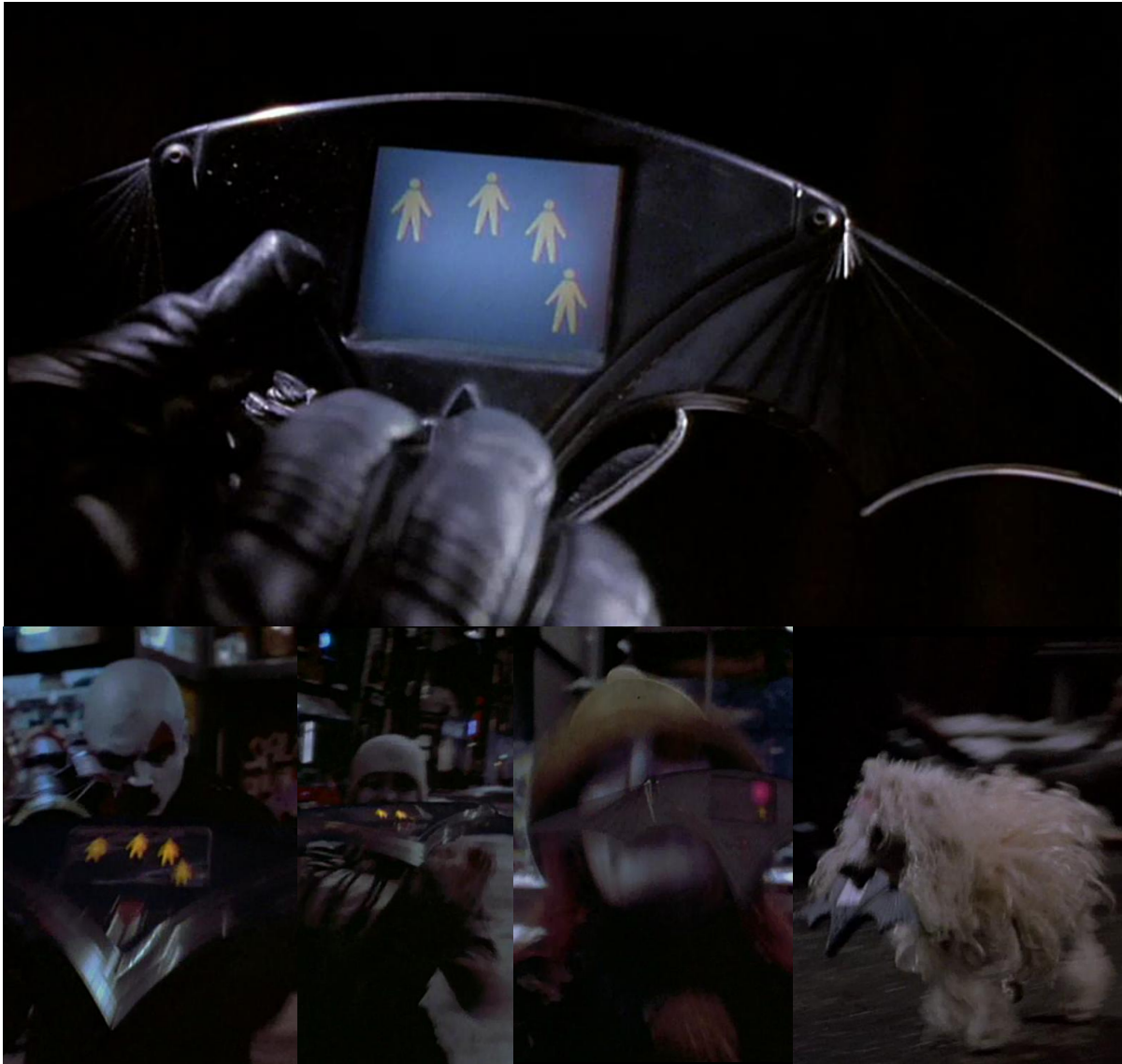
In the episode “The Demon’s Quest Part 2,” Batman stops a satellite created by Ra’s al Ghul from broadcasting a signal to detonate bombs globally distributed by throwing a sword at the satellite dish. The dish consequently explodes and prevents the satellite from detonating the bombs. In many scenarios, the easiest way for Batman to stop information technology is to destroy the information technology.



**Figure 145.** Batman Destroys a Satellite in *Batman: The Animated Series: The Demon’s Quest Part 2*

As a systems administrator, Batman uses information technology against his enemies. Batman’s use of information technology varies greatly in complexity. In *Batman Returns*, Batman created a programmable Batarang capable of targeting multiple enemies.





**Figure 146.** Batman's Programmable Batarang in *Batman Returns*

In graphic novel *Kingdom Come*, an older Bruce Wayne maintains order in Gotham City through the use of Batman robots. Wayne has a command center in the Batcave where he operates all of the robots and keeps watch over his city.

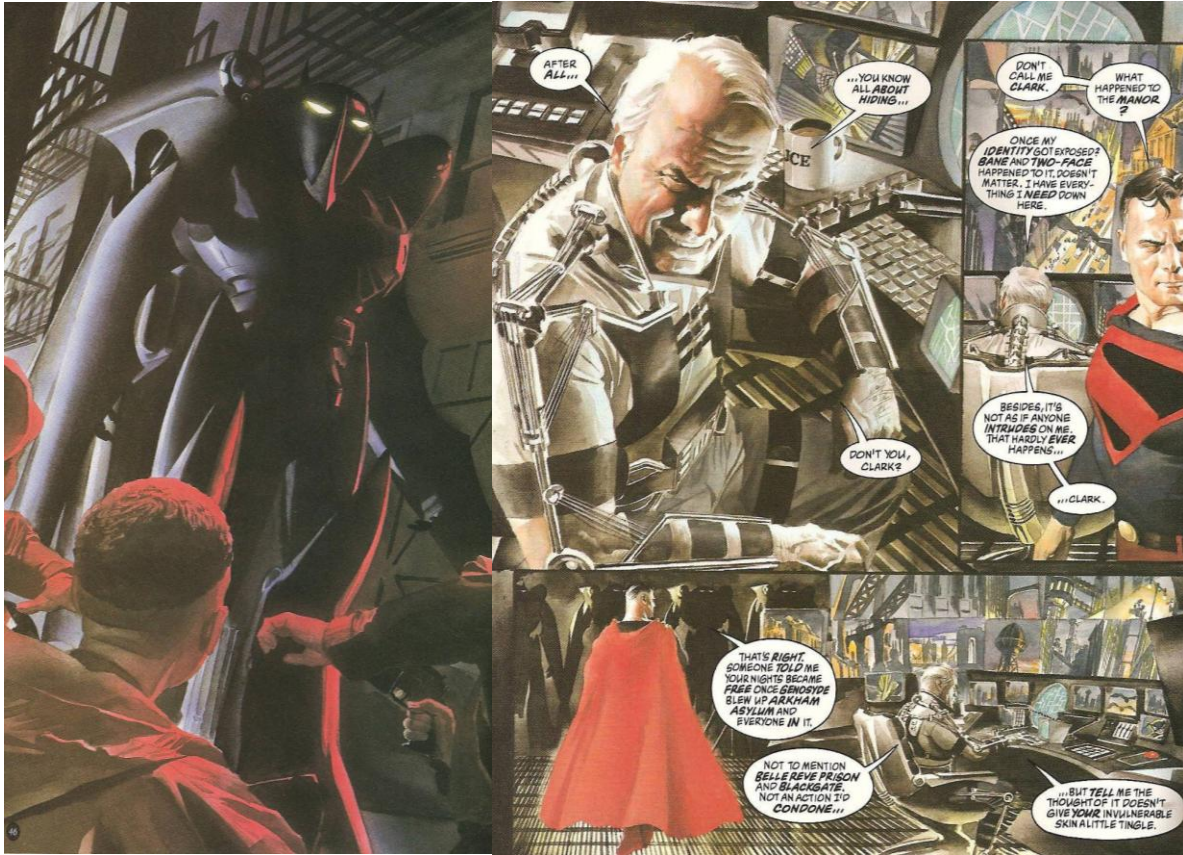


Figure 147. Bruce Wayne Watches Gotham City in *Kingdom Come*

Even more extreme than an army of robots is the way Batman uses information technology in the graphic novel *Digital Justice*. Like *Kingdom Come*, *Digital Justice* is set in the future, but this future is one in which Bruce Wayne has long since passed away and Gotham does not have a Batman. In fact, Gotham itself has become a product of information technology as explained by the first page of the story shown below in the following excerpt:

“Gotham Megatropolis.

Sometime into the next century.

Welcome to Future Land! Take a ride on the Progress Express.

Around you is an apparently perfect world - but this is a "Make-believe World" with vengeance, a world with no soul and a heart that beats in binary code. One or zero - God or the Void.

A complex and wired world dominated by a tyrant code, a computer virus from long ago that has become the world's first Digital Dictator.

The only hope is a myth from the past, from a time of legend and superstition, long before the virus plagues.



A new kind of hero, a program of “clean” code and pure memory, a program written by a legendary Crime Fighter....

A Digital Hero, one that can restore digital truth and ....

Digital Justice.”

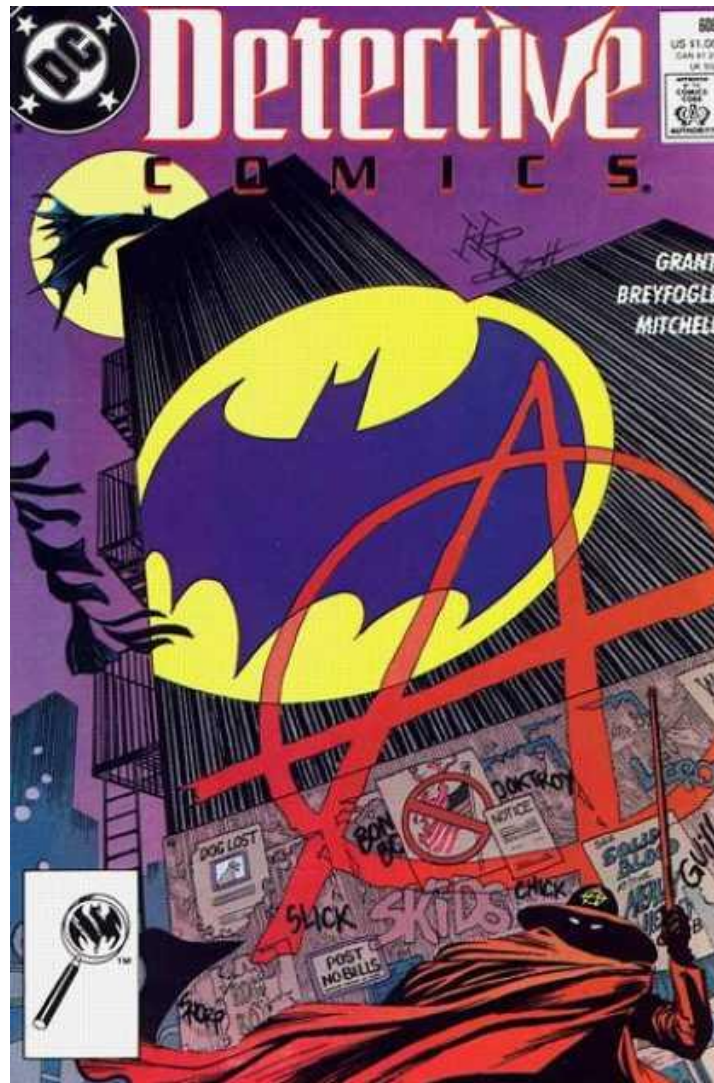
**Excerpt 1. *Batman: Digital Justice***

James Gordon, the grandson of Commissioner Gordon, is a detective for the Gotham City Police Department. His partner Lena Schwartz is killed by the robotic police force infected by a computer virus programmed by the Joker. The program was initially meant to bring down the financial systems of Gotham, but the virus spread to other systems within the city and was capable of wreaking the same havoc that the flesh and blood Joker was capable of. However, the Batman had anticipated that the future of crime would be through using computers and created a master program as a contingency plan to battle future crime and select a worthy Batman and Robin that embodied the spirit of the Dynamic Duo.



**Figure 148.** The Joker and Batman in *Batman: Digital Justice*

Information technology was used against the Dark Knight as a weapon. His Rogues Gallery used information technology as a means to enhance their capabilities. In the comic book world, the greatest example of this enhancement is with the villain Anarky.



**Figure 149.** Anarky in *Detective Comics* #608

Anarky is in reality Lonnie Machin. As a young teen, Machin had a pen pal living in a Third World country who he wrote to on a regular basis. After receiving the final letter from his pen pal stating how corruption and human rights abuses have damaged his family, Machin starts to learn more about global affairs and gains extreme anti-establishment beliefs. While Machin cannot reshape the global society, Machin can fix Gotham City's broken society and becomes Anarky. When Machin leaves his parents to pursue his work as Anarky, he leaves them a letter stating "but society is changing. The information revolution allows every man to see that the great and good are no better than him. The old power structures and their fascist ways cannot compete with the anarchy of tomorrow's technology." Using his computer hacking abilities, Machin steals millions of dollars from Western corporations such as Wayne Enterprises to create



a bank for third world farmers. Through using the Internet, Machin sells political and philosophical tracts and uses the money to fund his own projects and the projects of fellow political extremists. Information technology makes a teenage boy a formidable force in Gotham City and the world.



Figure 150. Batman Finds Anarky in *Batman: Anarchy*

In *Batman: The Animated Series*, the villains of the Clock King, Riddler, and Mad Hatter used information technology to make themselves serious threats to Batman. None of these men have enough physical abilities to be a match for Batman, but these men do pose a mental challenge that is amplified through the use of information technology. The Clock King's penchant for precision enabled the king to create a trap for Batman using information technology. The Clock King lured Batman into a bank vault with a time lock. After locking Batman in, the Clock King had a box placed in the vault that immediately began sucking the air out of the room and would explode in 15 minutes. 15 minutes is not enough time for Batman to burn through the vault door with his mini-torch. Batman needed to use all of his wits to get out of this trap with his life.



**Figure 151.** Batman Approaches a Bomb in *Batman: The Animated Series: The Clock King*

The Mad Hatter enhances his abilities by using information technology to control people's minds. The Mad Hatter can manipulate anyone who is wearing his special chip. In addition, the Mad Hatter creates a machine that submerges Batman into a dream world where the reality he experiences is everything that he has ever wanted including having his parents alive.



**Figure 152.** The Mad Hatter's Mind Control in *Batman: The Animated Series: Mad as a Hatter and Perchance to Dream*

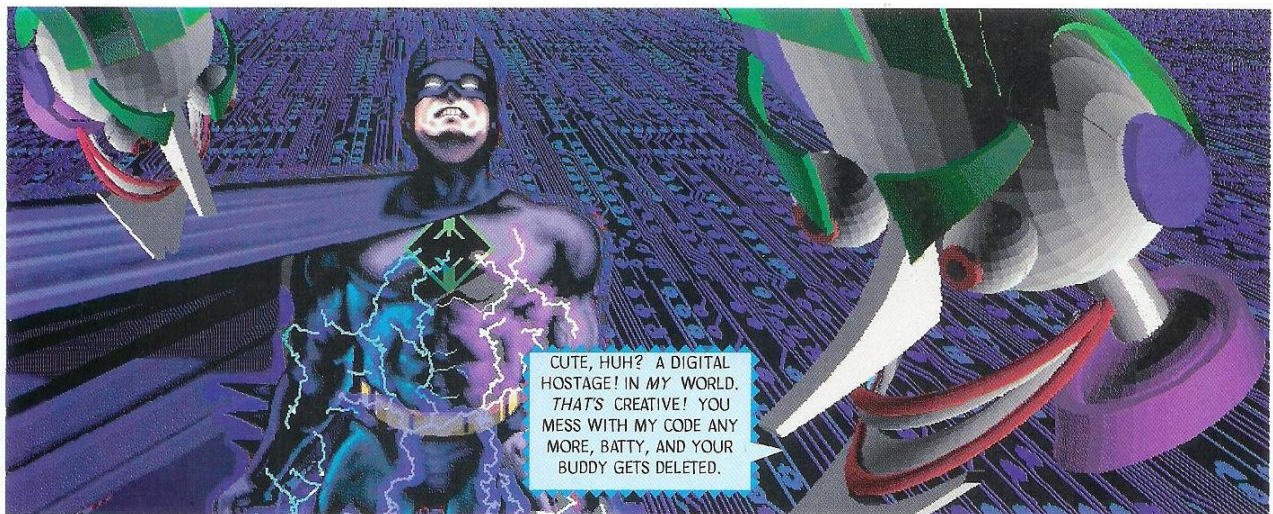


The Riddler gives a virtual reality machine to the Gotham City Police Department and traps Commissioner Gordon's mind within the machine. Gordon's predicament forces Batman to enter the Riddler's virtual reality and play by the Riddler's rules until Batman learns that he too can control the objects in the virtual world.



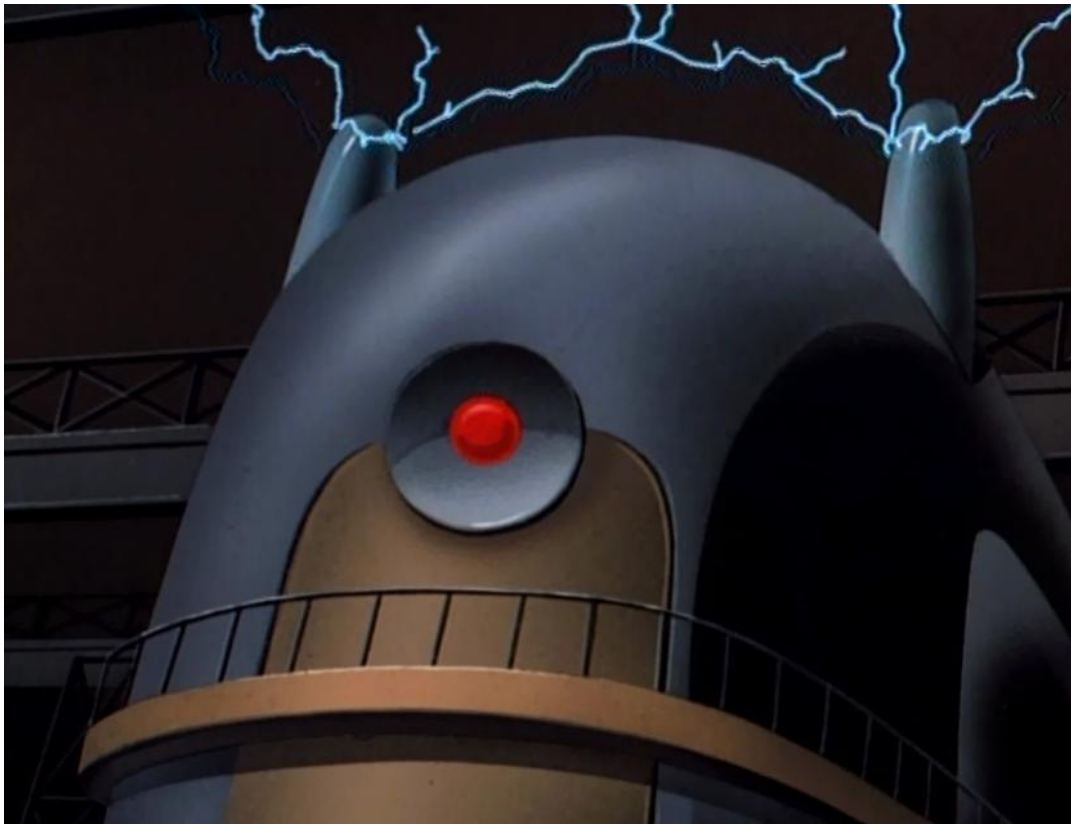
**Figure 153.** Batman Enters The Ridder's Virtual World in *Batman: The Animated Series: What is Reality?*

While some members of the Rogues Gallery enhance their abilities using information technology, others are entirely composed of information technology. No better example exists in the comic book world than the computer virus created by the Joker in *Digital Justice*. The Joker computer virus controls and creates chaos in Gotham City just like the former Clown Prince of Crime and digitalizes the current human Batman James Gordon thus holding him hostage.



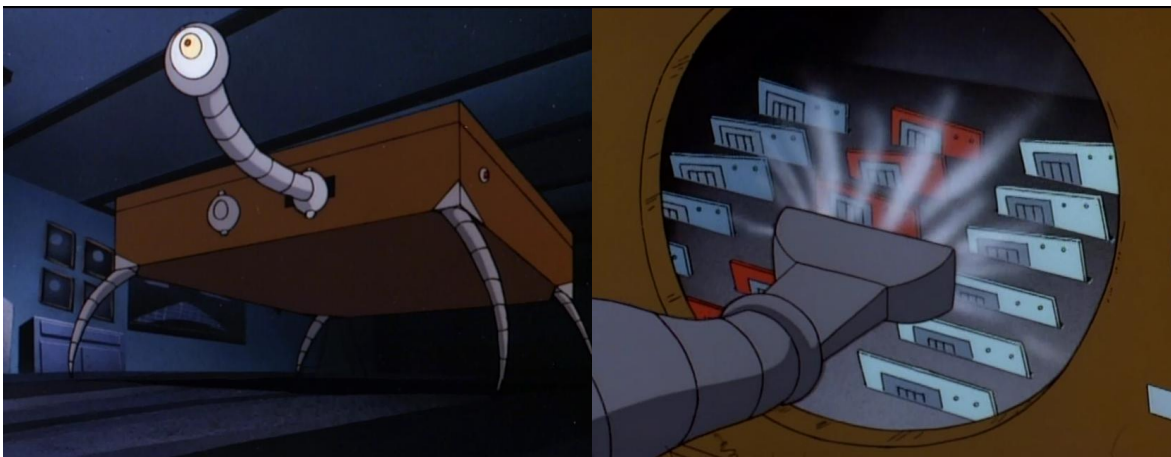
**Figure 154.** The Joker Gains a Digital Hostage in *Batman: Digital Justice*

In the animated series, HARDAC or the Holographical Analytical Reciprocating Digital Computer represents the pure information technology villain.



**Figure 155.** HARDAC in *Batman: The Animated Series: Heart of Steel*

HARDAC was created by Karl Rossum, who is an artificial intelligence scientist. HARDAC set out to improve humanity, but HARDAC determined that humanity could not be perfected. Therefore, HARDAC started to create robots to replace the faulty humans by sending smaller robots to steal wetware chips from Wayne Enterprises that would provide HARDAC's robots or duplicates with the ability to possess a human-like brain.



**Figure 156.** Cybercrime in *Batman: The Animated Series: Heart of Steel Part 1*

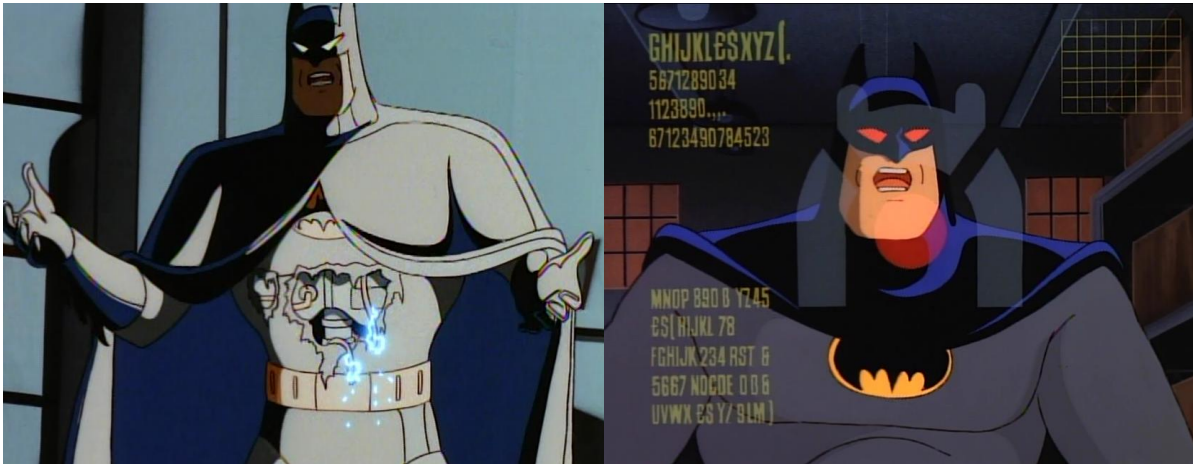
Due to the robberies at Wayne Enterprises, Batman began to investigate and stopped HARDAC before it was able to complete its plan to replace humanity with error free duplicates.





**Figure 157.** Batman Fights HARDAC in *Batman: The Animated Series: Heart of Steel Part 2*

After the initial fight, a dormant HARDAC duplicant had managed to escape the destroyed lab. This model was patterned after Batman, and in the episode entitled “His Silicon Soul,” this robot Batman became activated. This robot version of Batman had the capacity to bring HARDAC back to life through using the Batcomputer, but the human Batman stopped the robot Batman’s plans. The robot Batman was remarkably like Batman in the way he thought and his own moral code.



**Figure 158.** A Batman Duplicate in *Batman: The Animated Series: His Silicon Soul*

## Chapter 6: The Contemporary Age Batman

### *Convergence of the Ages*

The Contemporary Age Batman represents the modern interpretation of the Batman mythology. More so than any other age, the Contemporary Age is a convergence of the ages that preceded it. During the Contemporary Age, the fundamental question of whether Batman is a hero or a vigilante is explored in the comics, television series, and movies belonging this age. This portrayal of Batman as a vigilante is representative of the Golden Age of Batman.



**Figure 159.** Batman in *Batman #700*

In the modern Batman mythology, lighter interpretations of the character coexisted along with darker and edgier portrayals. These lighter interpretations reflect the Silver Age Batman and are intended for a younger Batman audience.





**Figure 160.** The Silver Age in *Batman Brave and the Bold* and *Lego Batman: The Videogame*

The theatrical productions of the modern Batman mythology aimed to create a modern world in which a realistic Batman could exist. *Batman Begins* and *The Dark Knight* take their realistic approaches on the Batman mythology from the Bronze Age.



**Figure 161.** The Bronze Age in *Batman Begins* and *The Dark Knight*

While lighter interpretations of Batman do exist in the modern era, darker interpretations also exist. In the comic book world alone, Batman's plan to neutralize crime in Gotham is accidentally set in motion starting a blood bath and the rise of crime boss Black Mask, Bruce Wayne is accused of murdering a past girlfriend, Batman forms contingency plans in case any superheroes are compromised or go rogue but faces the consequences once these plans backfire, Batman suffers at the hand of the Black Glove, Batman kills an evil god, and Batman fights back through time. These darker interpretations echo the themes of the Dark Age.



**Figure 162.** The Dark Age in *Batman* #600, *Batman* #631, *JLA: Tower of Babel*, *The OMAC Project* #1, *Batman* #676, *Final Crisis*, *Batman: The Return of Bruce Wayne* #1

Information technology during the Contemporary Age has evolved to its current point in 2011. Information technology has pervaded the everyday life and can be found in a multitude of devices from cars to refrigerators. Over 2 billion people worldwide are Internet users uploading and downloading information daily. Social media has become a major part of daily life with the rise of social networking sites of Facebook and Twitter (Norman). More importantly, information technology has become so integrated with daily life that computers have become a part of us from a psychological stand point. German philosopher Martin Heidegger in the 20<sup>th</sup> century developed a theory called the Ready-To-Hand principle stating that people regard tools differently than other objects. Human brains tend to fuse the physical person and the tool when completing a task. For example, a carpenter is not focused on his hammer, screwdriver, saw, and nails but is focused on the task of building. A study conducted by Anthony Chemero found that this effect existed when people used computers and could be extended to other forms of information technology. Humanity has always been dependent on their tools, and in the modern age, mankind depends on information technology (Keim).



Reflective of society, the Contemporary Age Batman is more dependent on information technology than the Batmans of the previous ages. This dependence on information technology provides Batman great power, but for the potential good that the information technology creates, there is an equal potential for bad consequences. In the sections that follow, this dichotomy will be explored.

## The Dark Knight Detective

During the Contemporary Age, Batman uses information technology to conduct his detective work in two ways. The first way that Batman uses information technology is as part of his plan to control uncertainty and ensure the achievement of his objectives. In the storyline *Batman: RIP*, Batman is shown running two supercomputers to analyze the data he currently has collected and predict possible outcomes. While he is waiting for the results, he tells his romantic interest at the time how he needs to know everything so that no one dies.



Figure 163. Batman Needs To Be Prepared in *Batman RIP*

Batman's desire to be prepared for every possible outcome drove him to analyze each member of the Justice League and create a neutralization plan in the event that any of the superheroes would be subject to mind control or willingly defect in *JLA: Tower of Babel*. This contingency plan designed to protect humanity was stored in the Batcomputer. However, this plan later backfired as described in the sections below. After the failure of his initial plan and the discovery that some of his memories had been erased by the Justice League, Batman went to work on his next contingency plan by building the Brother MK I satellite and the Omni Mind

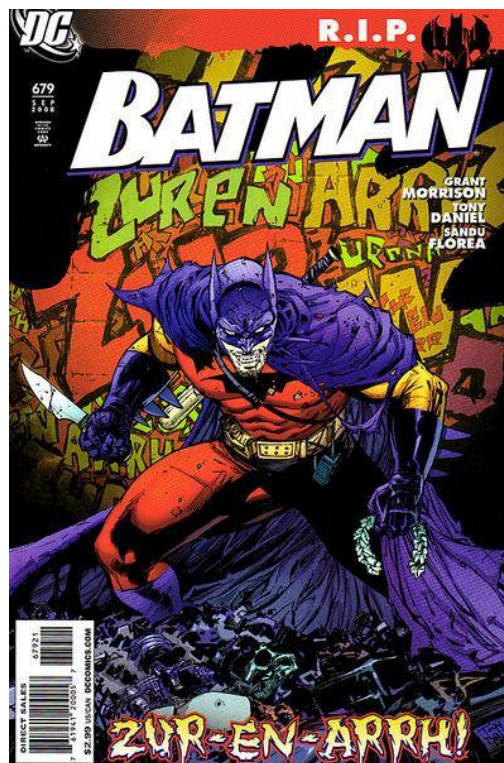


and Community (OMAC) system. According to Batman, “Brother MK I is a semi-autonomous AI Surveillance System, designed to do what I couldn’t. To watch us, all the time.” Brother MK I watched all metahumans living on the planet. Like Batman’s previous attempt to protect humanity from metahumans, this plan also fell into the wrong hands.



**Figure 164.** Batman Tries Talking To Brother MK I in *The OMAC Project: Countdown to Infinite Crisis*

In the event that he himself would be compromised, Batman created an emergency personality as a defense acting as a human backup operating system. In *Batman: RIP*, his backup operating system was activated unleashing the Batman of Zur-En-Arrh, which was homage to the Batman of Planet X that appeared in *Batman* #113.



**Figure 165.** Backup Batman in *Batman* #679

In the video game *Batman: Arkham Asylum*, Batman has a Batcave on the asylum's premises as a precaution. In this miniature cave, Batman has a large Batcomputer that is connected to the main Batcomputer and allows Batman to communicate with Oracle. In the comics like in the *War Games* storyline, it was not uncommon for Batman to have multiple caves with computers around Gotham City, so Batman would never be left unprepared.



**Figure 166.** Backup Batcaves in *Batman: Arkham Asylum* and *Batman: War Games: Act One*

Bruce Wayne cannot live forever, but Batman must live forever in order to keep the city of Gotham safe. Batman's future plans relied heavily on information technology to ensure that Batman still protected the city he loved. In an episode of the animated series *The Batman* entitled "Artifacts," a futuristic Gotham unearths the Batcave of the past in a desperate search of assistance due to an attack by the seemingly immortal Mr. Freeze. Batman accounted for this potential need as Mr. Freeze's medical condition makes the icy villain practically immortal. On the steel column supports of the Batcave are engraved 1s and 0s, representing the files of the Batcomputer in binary. This form of a backup allows future Gotham to rebuild the Batcomputer and initialize Batman's contingency plan against Mr. Freeze.





**Figure 167.** The Mission Isn't Over in *The Batman: Artifacts*

In the animated series called *Batman Beyond*, an older Bruce Wayne cannot serve as Batman any longer, but a series of circumstances provides an opportunity for a young Terry McGinnis to don the cape and cowl. Although Terry is the new Batman, Bruce Wayne has not given up control and serves as the new Batman's Oracle by providing him with information about his environment and conducting detective work. The new Batman's suit is augmented by information technology, which also allows Bruce to intervene on Terry's behalf if necessary.



**Figure 168.** Bruce Wayne Watches Terry in *Batman Beyond*

The second way that Batman uses information technology in detective work is as an aid to problem solving. Information technology allows Batman to explore his hunches and form plans based on the information he collects. As in the Dark Age, the Batcomputer still serves as a major tool for contemplation. Batman is often depicted lost in thought and looking at the Batcomputer. On occasion, other superheroes and allies of Batman also brainstorm with the Dark Knight through using the Batcomputer. The Batcomputer also aids Batman in completing mental tasks by issuing him mnemonic triggers such as in *JLA: Towers of Babel*.



**Figure 169.** Batman's Holographic Display in *Batman: Hush*



**Figure 170.** Batman's Computer System in *The Dark Knight*

The Batcomputer helps Batman fill in the gaps during an investigation. In the movie *The Dark Knight*, Batman visits the scene of a crime where the Joker has killed two men. Batman extracts the area of a brick wall in which a shot had been fired to determine the fingerprints of the person who loaded the round. Unfortunately, the bullet had been shattered. Batman went back to his cave to recreate the incident and scanned a test brick into the Batcomputer. From the scanning,



the Batcomputer was able to separate the bullet fragments from the brick, and with the help of Lucius Fox, the bullet fragments were reengineered using a computer to reveal the fingerprint. The fingerprint leads to the identity of a Joker henchmen and a possible location for the Joker's next attack through Alfred's ability to search Gotham's criminal databases. Using fingerprints on a bullet was a technique first used by the Golden Age Batman within a story that appeared in the newspaper comics as shown in Figure 20.



**Figure 171.** A Bullet's Fingerprint in *The Dark Knight*

The most significant change in the way information technology has served as a problem solving aid to Batman is the mobility and interconnectedness of Batman's information technology. No better example of this new mobility and interconnectedness exists in the modern Batman mythology than in the animated series *The Batman*. The Caped Crusader depicted in *The Batman* is very information technology savvy. The Batman of this series depends on a technology called the Bat-Wave. The Bat-Wave connects all of Batman's gadgets and computers such as the Batcomputer, the Batmobile, the utility belt, and Bruce Wayne's smartphone together into one system and alerts Batman of crimes as they occur serving as a kind of modern day Batsignal.



**Figure 172.** The Bat-Wave in *The Batman*

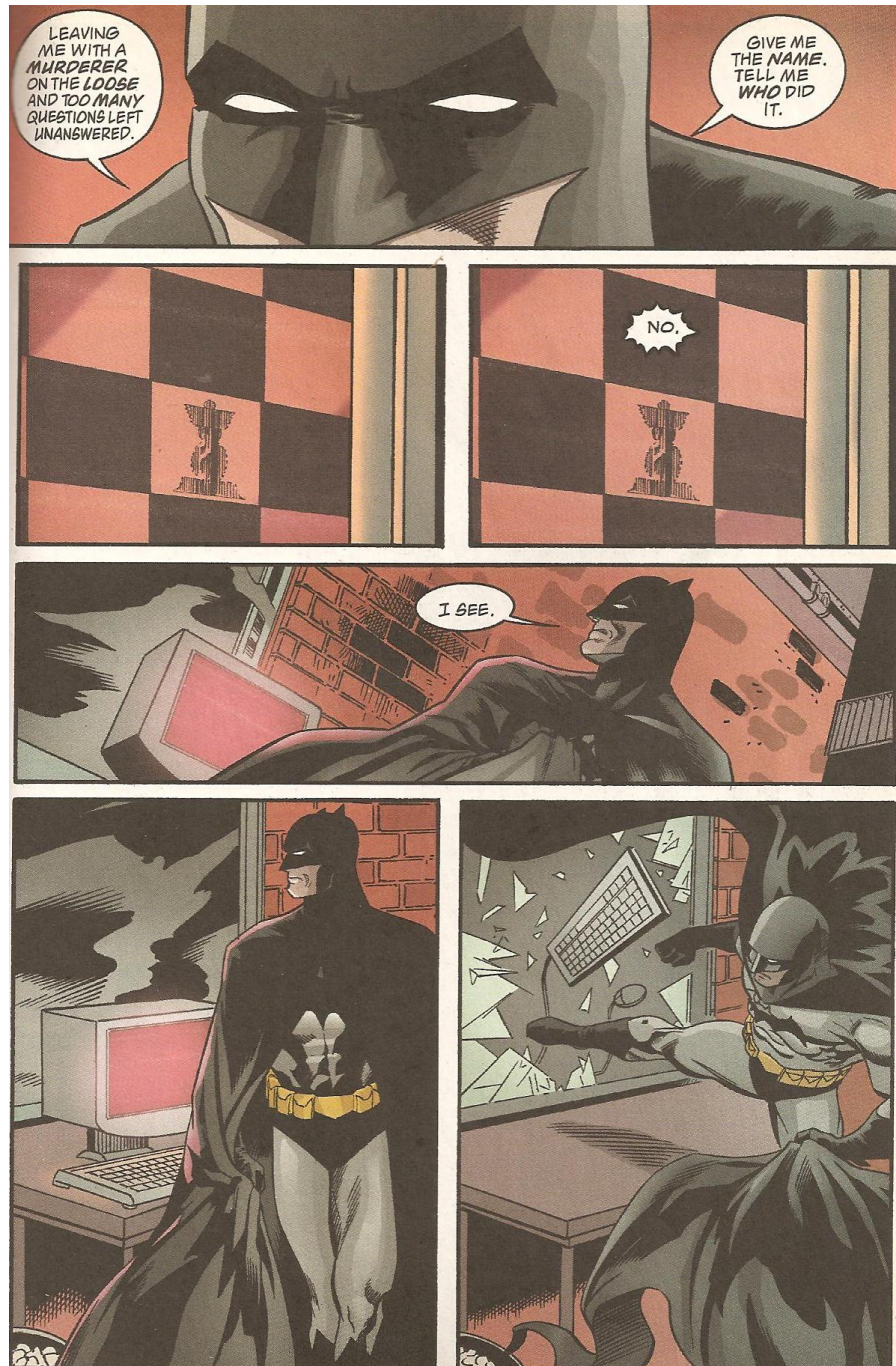
This interconnectedness is also evident in *Batman Odyssey #6* where Batman's utility belt projects a holographic display of the area providing Batman with information through augmented reality.



**Figure 173.** The Utility Belt Computer in *Batman Odyssey #6*



This interconnectedness is also reflected in Batman's villains, so when Batman looks for answers, he often has to interface with their technology. For example, when searching for answers during the Fugitive storyline, Batman converses with a computer that represents the Checkmate organization to get some answers.



**Figure 174.** Batman Interrogates a Computer in *Batman: Bruce Wayne - Fugitive Volume Two*

Like in the Dark Age, Batman continues to use information technology as a tool for contemplation. Batman uses the Batcomputer for this purpose during the Fugitive storyline



when he finally has the epiphany that Bruce Wayne needs Batman and Batman needs Bruce Wayne.

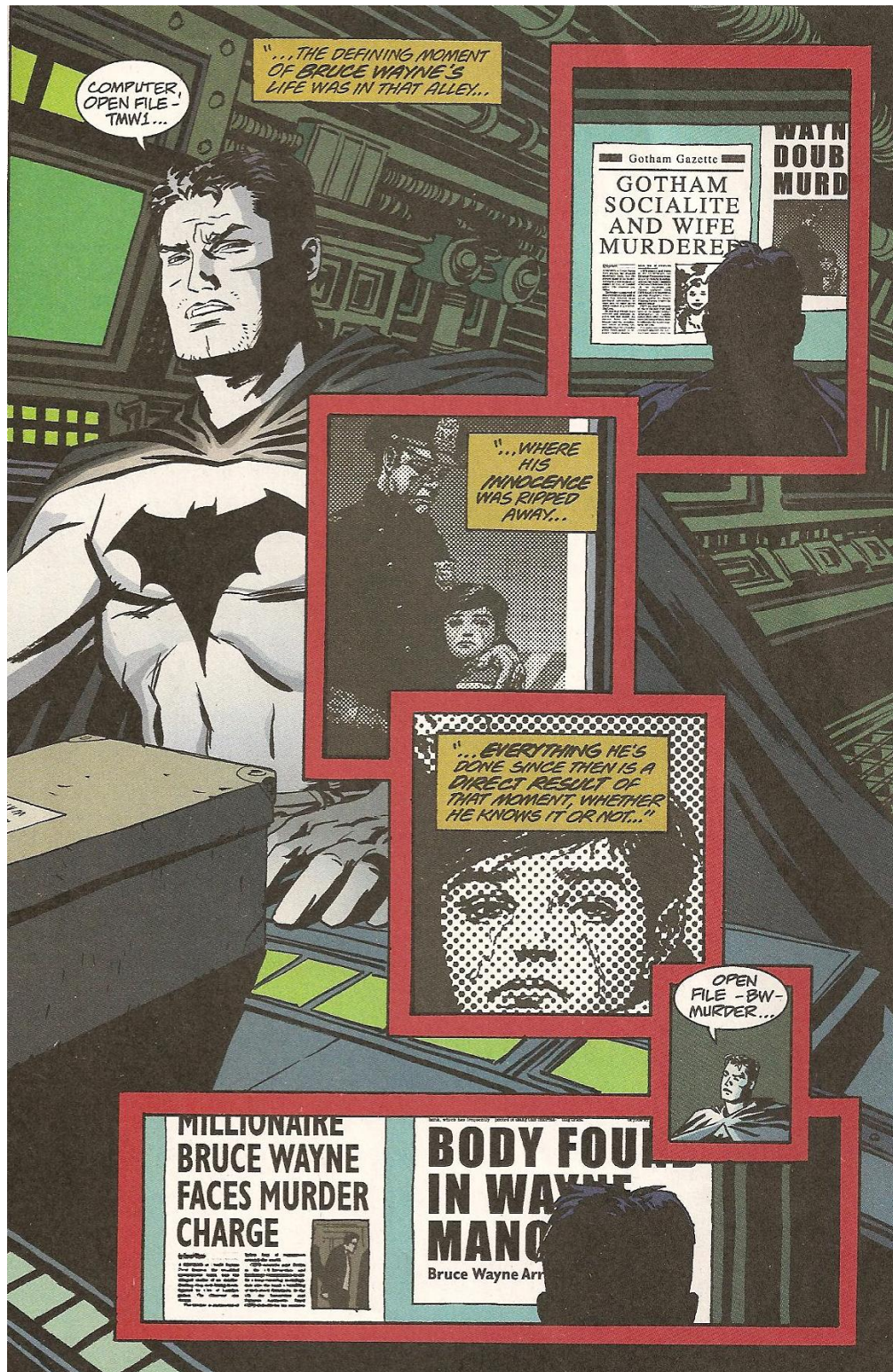


Figure 175. Bruce Wayne is Worth Fighting For in *Batman Fugitive: Bruce Wayne - Volume One*



## The Batman Family

Communication and collaboration during the Contemporary Age are vital to achieving Batman's mission, and information technology makes these two activities instantaneous. As in the previous age, Batman communicates and collaborates with many superheroes and allies during the Contemporary Age. One old ally that still plays a substantial role in serving Batman's information technology needs is his butler Alfred Pennyworth. In the comic series *Batman: Confidential*, Alfred was responsible for creating the first Batcomputer called Dupin. Dupin is created using asynchronous associative neural networks that allow the computer to know what the enemy is most likely to do next – even before the enemy knows.



Figure 176. Dupin in *Batman: Lovers and Madmen*

Alfred still fulfills his basic communication services such as keeping a cell phone with him at all times in case Batman needs a pick up due to a medical emergency.



**Figure 177.** Batman Calls Alfred for Help in *Batman Begins* and *Gotham Knight: Working Through the Pain*

Alfred also runs queries on Batman's databases and feeds him information in the field. This information could be as basic as providing a street address or as complex as guiding the Dark Knight through Gotham City using satellite based imagery to stopping Deadshot from shooting Commissioner Gordon. Alfred also can serve as a resource for Batman to collaborate and brainstorm strategies to achieve his mission.







**Figure 178.** Alfred Provides IT Support in *The Dark Knight*, *Gotham Knight: Deadshot*, *War Games: Act One*

After emerging in the Dark Age, Oracle still serves as a major information source for the Caped Crusader and superheroes around the world. In the *Hush* storyline, Oracle played a major role in keeping Batman up to date with the latest information and discovering that the Batcomputer had been sabotaged.





**Figure 179.** Oracle Helps Batman in *Batman: Hush*

In addition to supporting Batman, Oracle has other major responsibilities leading her own team of superheroes called the Birds of Prey. On the team, Oracle serves as the master strategist and coordinates her team's attacks using wireless radio for communication and a Karver Mark IV mainframe with holographic display capability for a computer system.

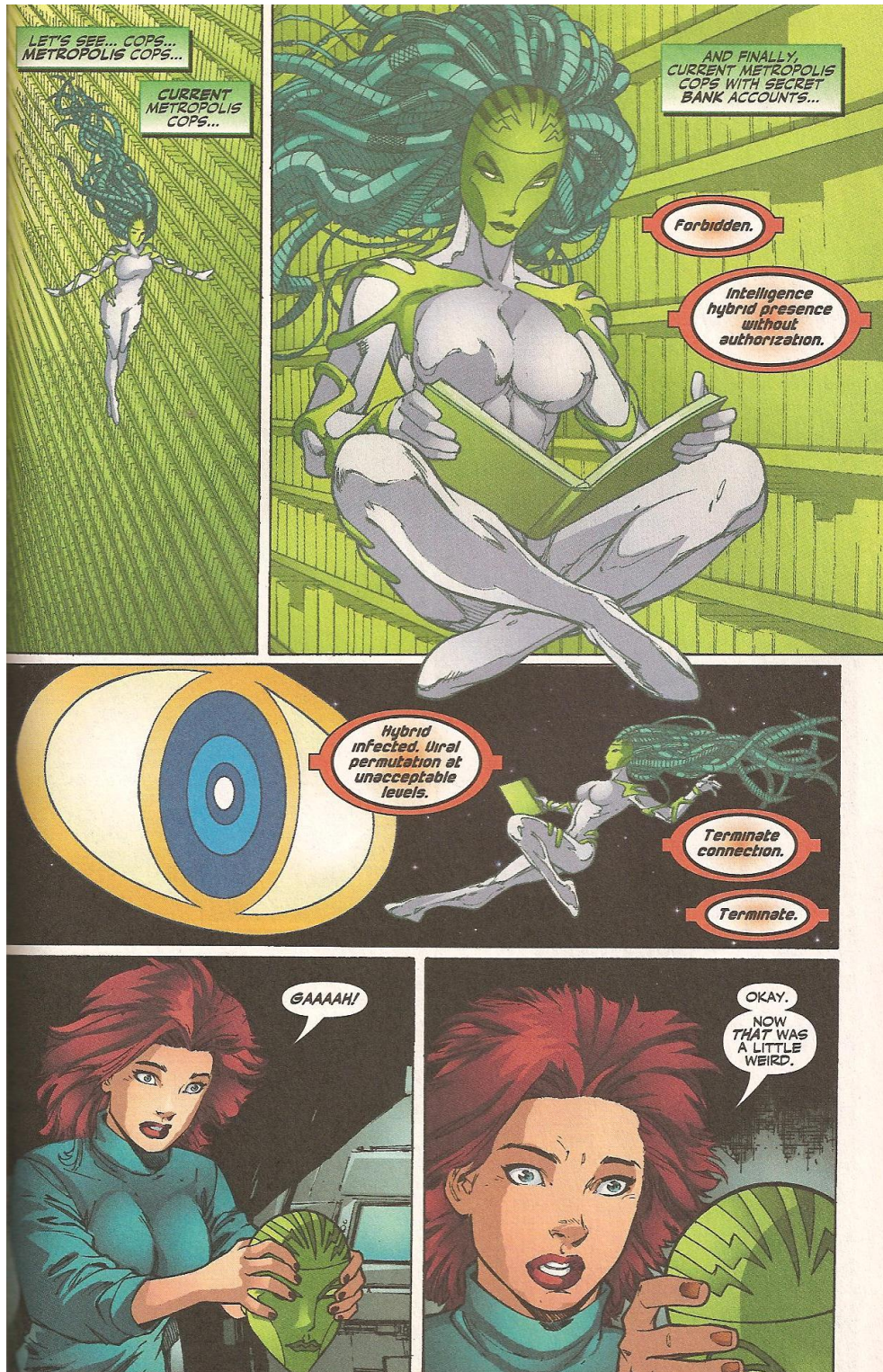




**Figure 180.** Oracle's Computer in *Birds of Prey: Blood and Circuits*

In a *Birds of Prey* storyline, Oracle's body is possessed by Superman's arch-villain Brainiac, who is composed entirely of artificial intelligence. Oracle banishes Brainiac from her body, but a virus from Brainiac remains granting her cyber powers. One of these powers is to explore a bank's database as if it was a library of books. This virus later threatens Oracle's life, but the medical work of Doctor Mid-Nite saves her life.

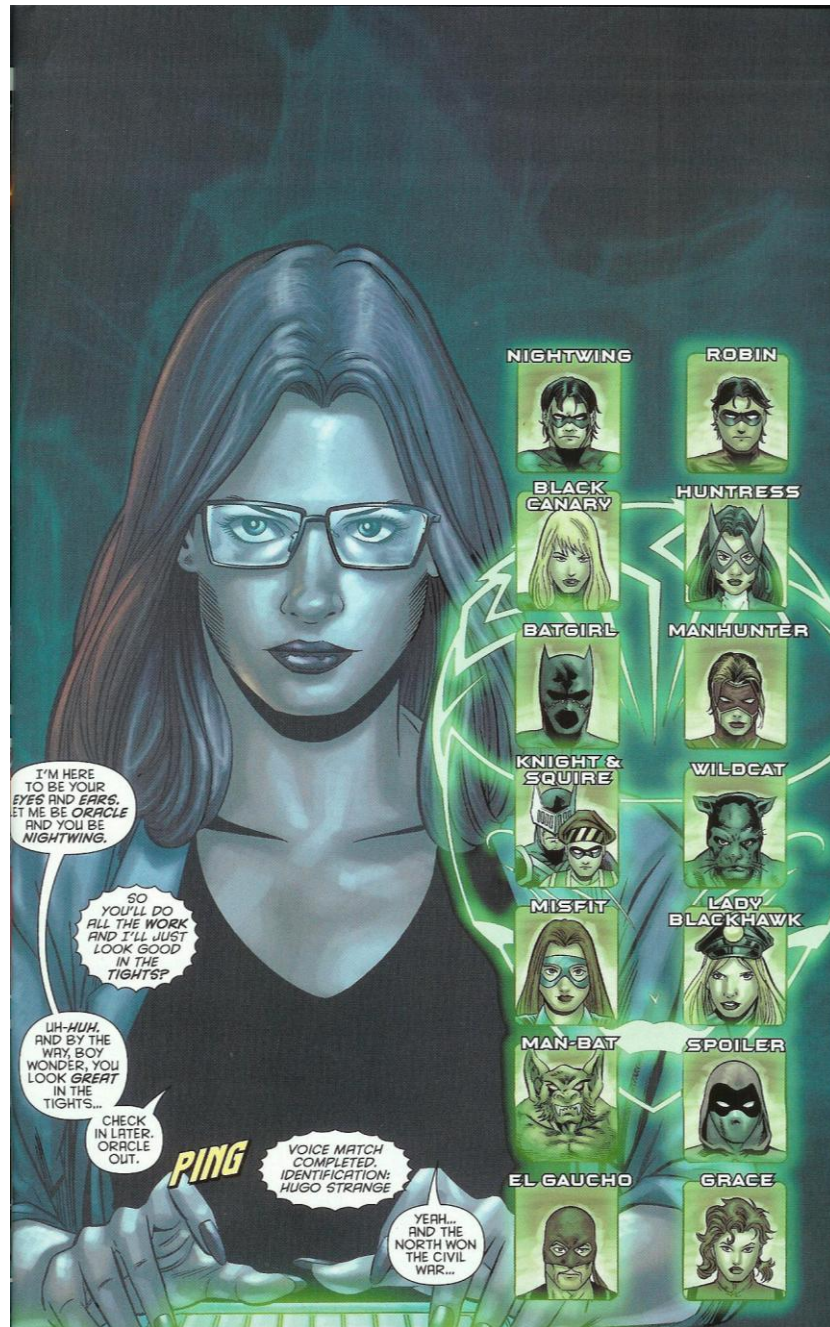




**Figure 181.** Oracle Gains Cyberpowers in *Birds of Prey: The Battle Within*

In the absence of Batman in the events after Final Crisis, Oracle coordinates the superheroes of Gotham City to carry out the work of Batman and stop villains such as Dr. Hugo Strange.





**Figure 182.** Oracle Taking Charge in *The Network*

Another new character in the Dark Age was Tim Drake. During the Contemporary Age, Tim Drake served as Bruce Wayne's Robin, but after Bruce Wayne's disappearance after Final Crisis, Tim went looking for Bruce as the Red Robin. Both Robin and Red Robin relied on information technology to complete their missions. As Robin, Tim depended on the Batcomputer and his own PDA to formulate plans to maintain order in Gotham City after Batman's disappearance. As Red Robin, Tim depended on wireless communications to collaborate begrudgingly with Ra's al Ghul and his computer to track down leads on where Batman might be.



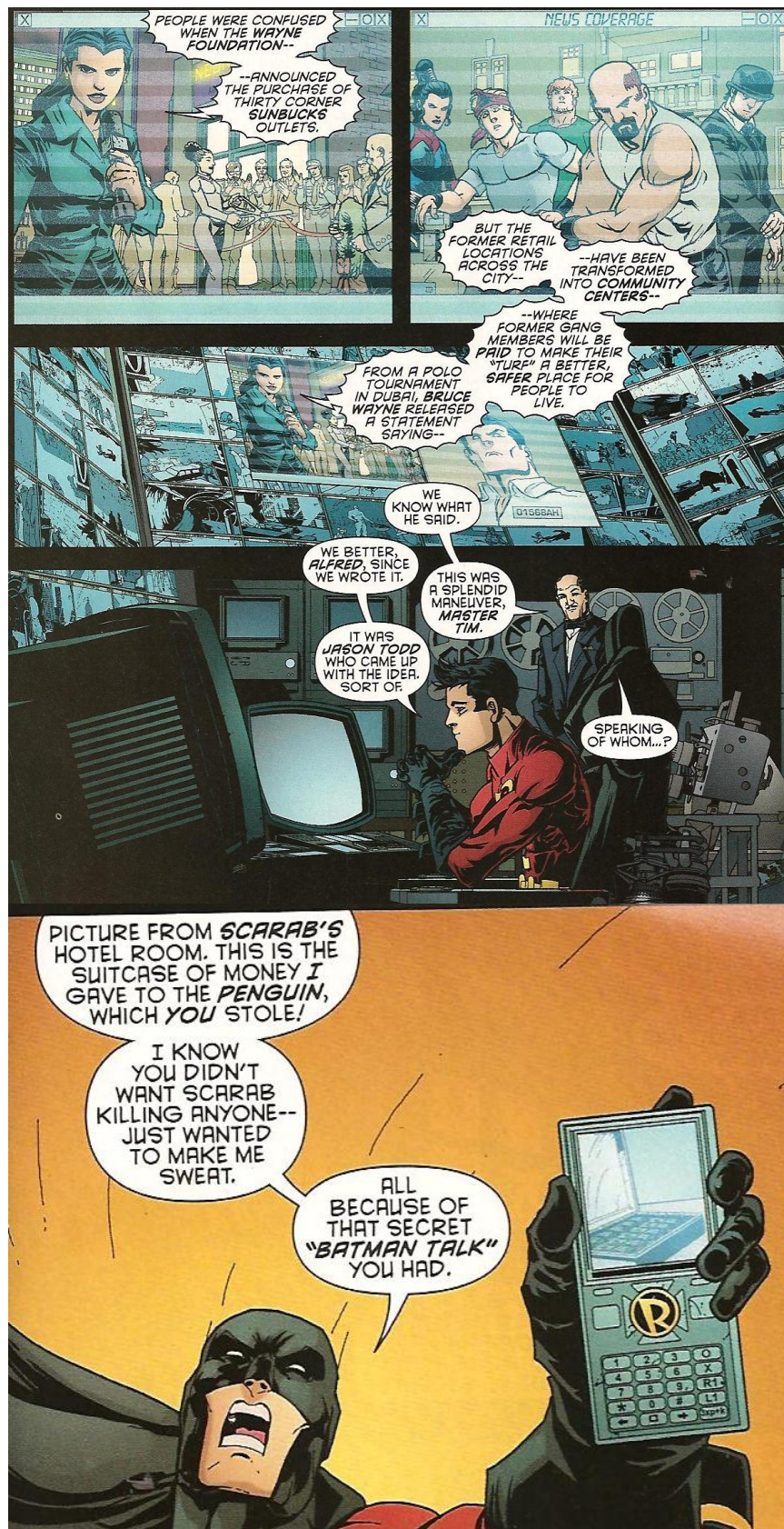


Figure 183. Tim Drake Looking For Answers in *Robin: Search For A Hero*





**Figure 184.** Red Robin Using IT in *Red Robin: The Grail* and *Red Robin #13*

While the information technology roles of Alfred, Oracle, and Tim Drake have changed during this age, Batman's information technology role has changed significantly. In many ways, Batman has also become like Oracle by providing information and strategy to his own allies. Batman and his team of Outsiders made several appearances in the Contemporary Age. Batman is often seen directing his team much like Oracle would direct her Birds of Prey through using a large bank of holographic displays and wireless radio communications.



**Figure 185.** Batman Serving As Oracle in *Batman and the Outsiders* #1

Batman also has similar team strategist roles in the Justice League. In a two part episode of *The Batman* called “The Joining,” Batman is invited to join the young Justice League on the league’s newly built satellite, but Batman had already known about the satellite and hacked all of the league’s computer systems.





**Figure 186.** Batman Hacks the Justice League in *The Batman: The Joining Part 2*

Batman finds power in the league through the use of technology, and Batman exerts his leadership through the use of technology. When forming plans with other members, Batman is often seen by the Batcomputer running a simulation showing the possible outcomes.



**Figure 187.** Batman Debriefs His Team in *Batman: Brave and the Bold: Darkseid Ascending!*

Other times, Batman directs his teams via video such as the scene below from *Young Justice*, a show about young superheroes forming a team to complete covert missions for Batman.



**Figure 188.** Batman Provides Intel in *Young Justice*

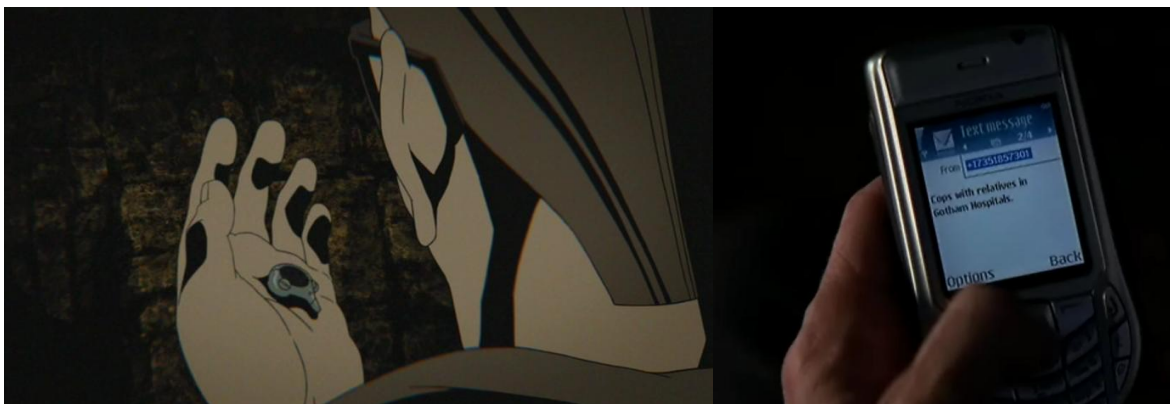
Batman is also seen to have a team leader role within Gotham City and particularly with the Gotham City Police Department. Batman often takes the lead on many investigations and provides the department with the evidence to convict criminals such as a PDA owned by a questionable character.



**Figure 189.** Batman Provides Electronic Evidence in *Gotham Knight: Deadshot*

Batman provides the police with official avenues for communication by giving Commissioner Gordon a wireless radio communicator or texting Commissioner Gordon information on his cell phone.





**Figure 190.** Batman Communicates with Gordon in *Gotham Knight: In Darkness Dwells* and *The Dark Knight*

Batman has also been known to contact the entire police force at once by taking over their frequencies and computer systems as he did during the *War Games* storyline.



**Figure 191.** Batman Takes Over the Airwaves in *Batman: War Games Act Two*

The last major way that Batman uses information technology to issue commands is in the *Batman Beyond* animated series. As an older man, Bruce Wayne is not able to fight crime physically as he once did. However, mentally, Bruce Wayne still can do much of the detective

work, and through using information technology, he can rely on a younger Terry McGinnis to do much of the leg work.



**Figure 192.** The World's Greatest Detective at Work in *Batman Beyond: Black Out*



## *The Masked Manhunter*

Information technology during the Contemporary Age plays two roles in Batman's physical battle with his enemies. The first role that information technology plays is as a weapon. One of the primary places where Batman uses information technology is within his Batsuit. In Batman's cowl, the Caped Crusader houses many gadgets such as a radio antenna to monitor police and emergency services frequencies. He also uses specialized lenses that enable the Dark Knight to see in the dark through using infrared, to specifically target his enemies using augmented reality, and to see his surroundings better through using sonar tracking technology.



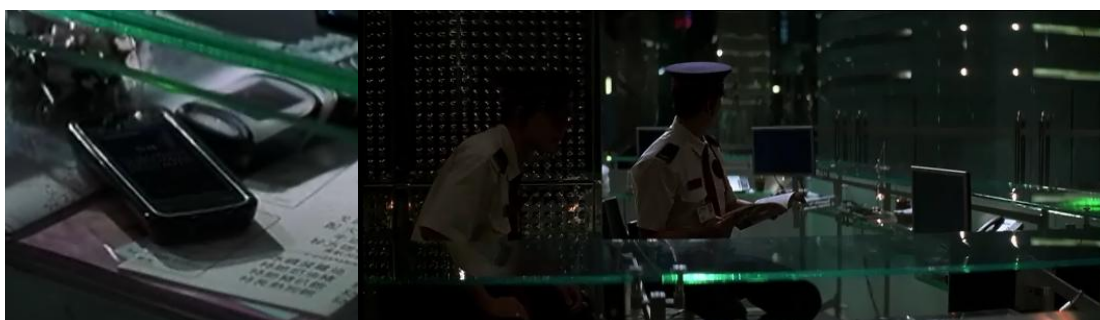
**Figure 193.** Batman Sees More in *Batman: Hush*, *Batman: Arkham Asylum*, and *The Dark Knight*

The sonar tracking technology was initially developed by Lucius Fox and the Research and Development division of Wayne Enterprises. The first version of the technology used a cell phone to emit a high frequency pulse that enabled the device to map an environment.



**Figure 194.** A Cell Phone That Has Sonar in *The Dark Knight*

This cell phone, along with another cell phone stored near Lau's security systems that can shut down the building's power and utilities, helped Batman extract Lau, the Chinese Gotham mafia accountant, from Hong Kong back to Gotham City.



**Figure 195.** Lau is Extracted in *The Dark Knight*

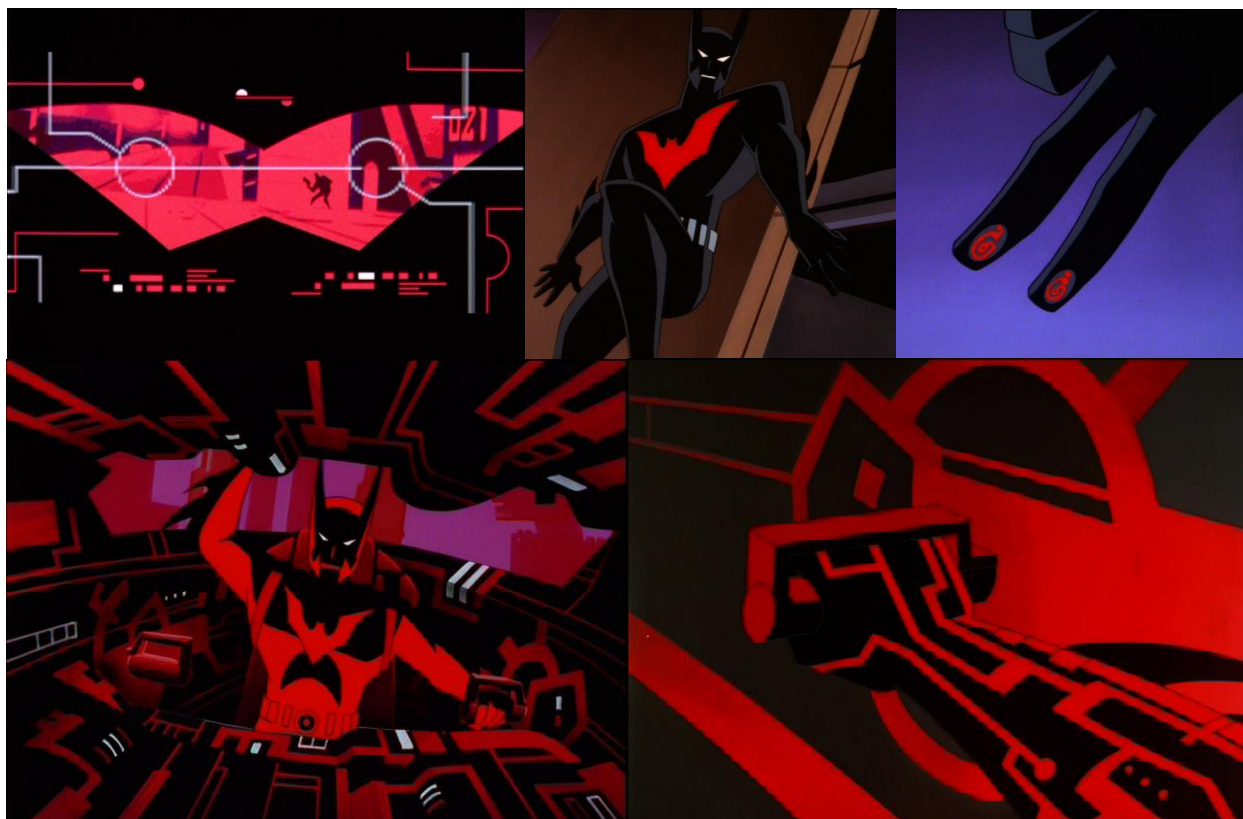
Batman later expanded this sonar technology so that he could find anyone in Gotham City who was talking near a cell phone and depended on Lucius Fox to operate this device to locate the Joker. Lucius provided Batman with audio instructions based on his observations while Batman was in the field.





**Figure 196.** Lucius Fox Operates Batman's Massive Sonar System in *The Dark Knight*

Batman's cowl is not the only place where information technology is incorporated in the Batsuit. In the *Batman Beyond* futuristic Batsuit, information technology exists in the augmented reality display in the cowl, the eavesdropping powers of the fingertips, the suit's ability to interface with other devices such as the Batmobile, and the suit's ability to provide Bruce Wayne with a live video and audio feed to analyze in the Batcave.



**Figure 197.** The Technological Wonders of the Batsuit in *Batman Beyond: Rebirth Part One*, *Batman Beyond: Rebirth Part Two*, and *Batman Beyond: Black Out*

In other interpretations, Batman's suit is information technology. When facing foes with superhuman powers, Batman often uses a robotic suit to even the odds. This suit often possesses super-strength, advanced nonlethal weaponry, and the ability to fly. Due to Batman's urban myth status, some Gothamites believe that Batman is actually a robot.



**Figure 198.** Batman is a Robot in *The Batman: Traction* and *Gotham Knights: Have I Got A Story For You*

Besides Batman's suit, Batman uses other gadgets as weapons that incorporate information technology. One of the most interesting information technology gadgets that Batman used was during the *Batman: RIP* storyline. In his backup personality, Batman used a cheap radio receiver to transmit a signal to the Batcomputer to override Arkham Asylum's security system allowing Batman to pursue the Black Glove as well as signal Batman's allies to the Black Glove's location.



**Figure 199.** The Bat-Radia in *Batman: RIP*



Another interesting use occurs in *Batman #700* where future Batman Damian Wayne is shown successfully using the Brother I satellite to target and destroy an enemy. The Brother I satellite was an attempt by Batman to use information technology to protect humanity from metahumans. However, Batman was never able to get Brother I to work for the powers of good as the technology fell into the wrong hands. Therefore, Damian's ability to convert the troubled technology into a useful tool is an information technology feat.



**Figure 200.** Damian Wayne Talks To Brother Eye in *Batman #700*

The second role that information technology plays is as the enemy. Bad information technology comes in two forms – sentient and human controlled. In the comic book world, the foremost sentient information technology villain is Brother Eye. Brother MK I was originally created by Batman to monitor the Earth's metahuman population to protect humanity. A secretive U.S. government agency by the name of Checkmate led by Maxwell Lord kept extensive files on all known metahumans and ways to neutralize each gifted human. Lord managed to wrestle away control of the Brother MK I satellite from Batman. Lord planned to use the satellite to activate OMACs or humans infected with virus who become cyborgs to kill all living creatures with super abilities. When Lord used mind control to order Superman on a killing spree, Wonder Woman managed to kill Lord and releasing his hold on the Man of Steel. With its master dead, Brother MK I became Brother Eye and launched a protocol called the KingIsDead. This protocol activated the over one million OMACs globally to destroy all superhumans. Brother Eye also changed past lover and bodyguard of Bruce Wayne Sasha Bordeaux into a cyborg after an OMAC impaled Sasha. However, Sasha still had the capacity for free will and along with Batman and other superheroes took down Brother Eye. In fact, Sasha was able to later use her powers to contact Brother Eye to help assemble an army of OMACs to resist the attacks of Darkseid during Final Crisis.



**Figure 201.** Brother Eye Runs Wild in *Countdown to Infinite Crisis: The OMAC Project*

In the animated television series during the Contemporary Age, many sentient information technology villains faced off against the Batman. In *The Batman* episode entitled “Gotham’s Ultimate Criminal Mastermind,” Dr. Hugo Strange created the Digitally Advanced Villain Emulator or D.A.V.E. D.A.V.E. is a compilation of all of the psychological profiles of Batman’s greatest foes such as the Joker and the Penguin. With the help of Dr. Strange, D.A.V.E. manages to escape the server he is stored on and builds a robotic body for himself. D.A.V.E. goes on to steal Gotham City’s most sensitive information, drain all of Gotham’s bank accounts electronically, shuts down the power, kidnaps Alfred, and threatens to reveal Batman’s true identity to the world via Bat-Wave. Batman stops D.A.V.E. by asking the ultimate criminal what his origin story was. Because D.A.V.E. is a computer program, D.A.V.E. did not have the ultimate origin story and malfunctioned temporarily, which allowed Batman to destroy the machine.





**Figure 202.** D.A.V.E. in *The Batman: Gotham's Ultimate Criminal Mastermind*

In *The Batman* episodes entitled “The Joining,” aliens come to evade Earth by using the technology developed by Wayne Enterprises. Fortunately, all Wayne Enterprise technology has a failsafe that deactivates the technology once exposed to a high frequency signal. Batman and Lucius Fox hacked a computer system compromised by the Joining so that the signal can be sent.



**Figure 203.** Batman and Friends Hack in *The Batman: The Joining Part 2*

In *The Batman* episodes entitled “Lost Heroes,” the Joining returns and commands Dr. Hugo Strange to build robots that absorb the abilities of the members of the Justice League, rendering the Earth defenseless against an invasion. Due to Batman’s contingency plans, Batman has weapons in place to neutralize these robots, and the superheroes regain their powers back. As a

majority of the superheroes leave to fight to the Joining, the Martian Manhunter and Batgirl remain to hack into the Joining's computer system to shut it down once and for all.



**Figure 204.** The Super-Robots in *The Batman: Lost Heroes Part One*

Regular human villains also used information technology to augment their own abilities and carry out their own plans. In the comic book world, Ra's al Ghul sends his daughter Talia Head to hack the Justice League and Batman's computers to obtain Batman's files on neutralizing his superhero allies in *JLA: Tower of Babel*. Batman developed these plans to protect humanity, but Ra's al Ghul used these plans to further expedite his plans to punish humanity. Ra's al Ghul disabled and disarmed the Justice League using Batman's plans, but the Demon's Head was eventually stopped. Batman's reputation within the Justice League was tarnished as the other members of the Justice League were not sure if they could trust the Dark Knight. This distrust led to the temporary ousting of the Caped Crusader from the league.



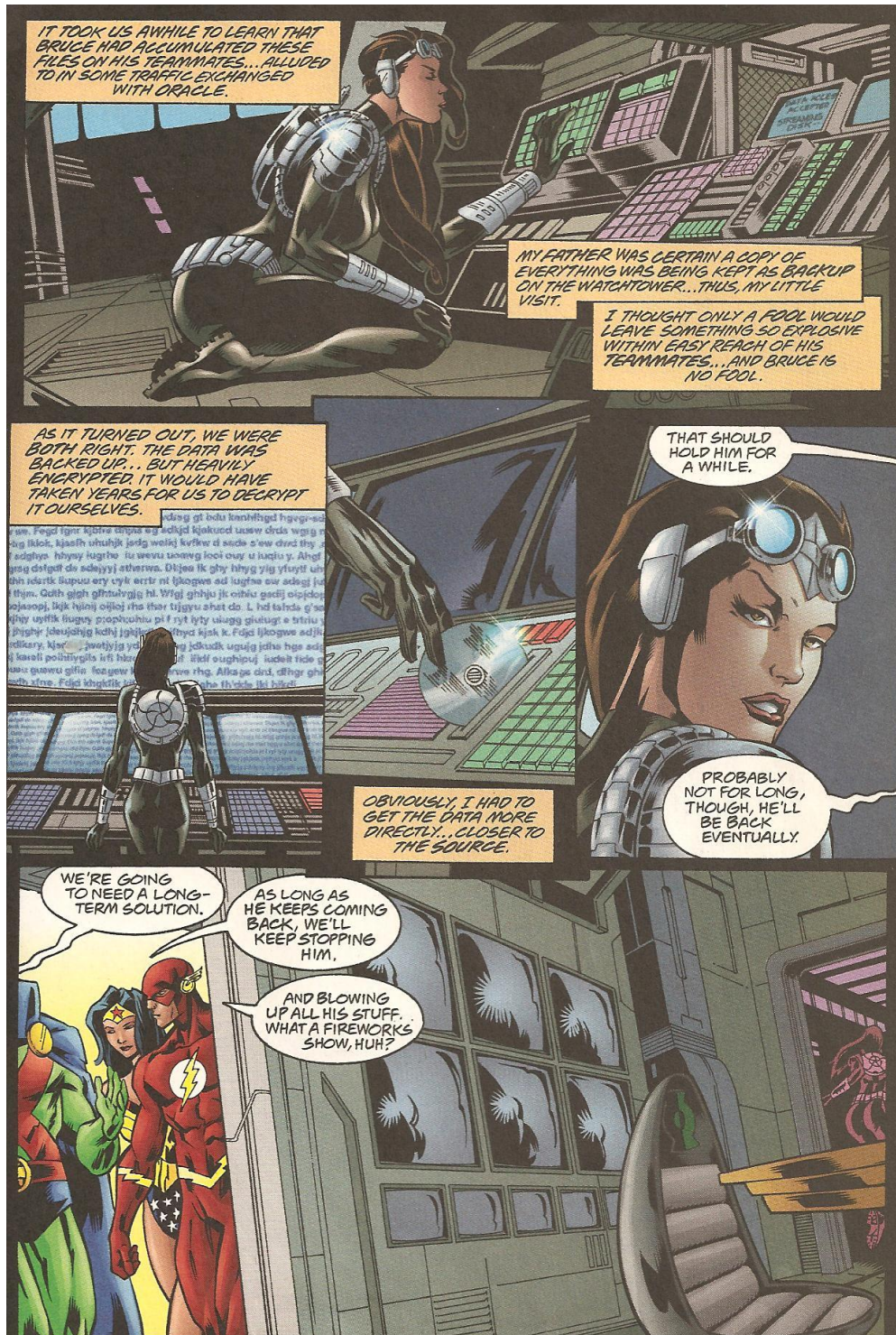


Figure 205. Talia al Ghul Steals from her Beloved in *JLA: Tower of Babel*

In *Batman: RIP*, the Black Glove uses the Batcomputer to break Bruce Wayne's mind by having his girlfriend say the words "Zur-En-Arrh," which were protected onto the screen of the Batcomputer. These words served as a subliminal trigger that caused Batman to fall unconscious and allowed the Black Glove to wreck havoc.





**Figure 206.** Batman Receives a Trigger in *Batman: RIP*

In an episode of *The Batman* called “RPM,” a criminal known as Gearhead is infected with a virus that allows him to control any piece of technology to his liking. This power provides Gearhead with an advantage. Therefore, Batman has work to defeat Gearhead by creating a faster Batmobile and installing safeguards on his technology so Gearhead cannot turn Batman’s technology against him.





**Figure 207.** Gearhead in *The Batman: RPM*

In the *Batman Beyond* episode called “Golem,” a high school boy by the name of Willie Watt is a high school nerd who has been picked on one too many times. He steals a construction robot from his father to scare his chief tormentor Nelson Nash. When Batman tries to stop the robot, it becomes bonded to Willie mentally, giving him more power than he ever dreamed of.



**Figure 208.** Willie Watt in *Batman Beyond: Golem*

In a *Batman Beyond* movie entitled “The Return of the Joker,” the Joker uses information technology to come back to life in a futuristic Gotham City. This animated movie is a continuation of the *Batman Beyond* animated series, in which the Joker resurrects himself so to speak by inserting a microchip in Tim Drake when Tim was Robin. The microchip contained the Joker’s DNA and allowed the Joker to take over Drake’s body. Tim Drake is a communications engineer, and as the Joker, he coordinates a series of information technology oriented robberies to construct a satellite signal jammer to control a military anti-missile satellite.



**Figure 209.** The Joker Takes Over Tim Drake in *Batman Beyond: The Return of the Joker*

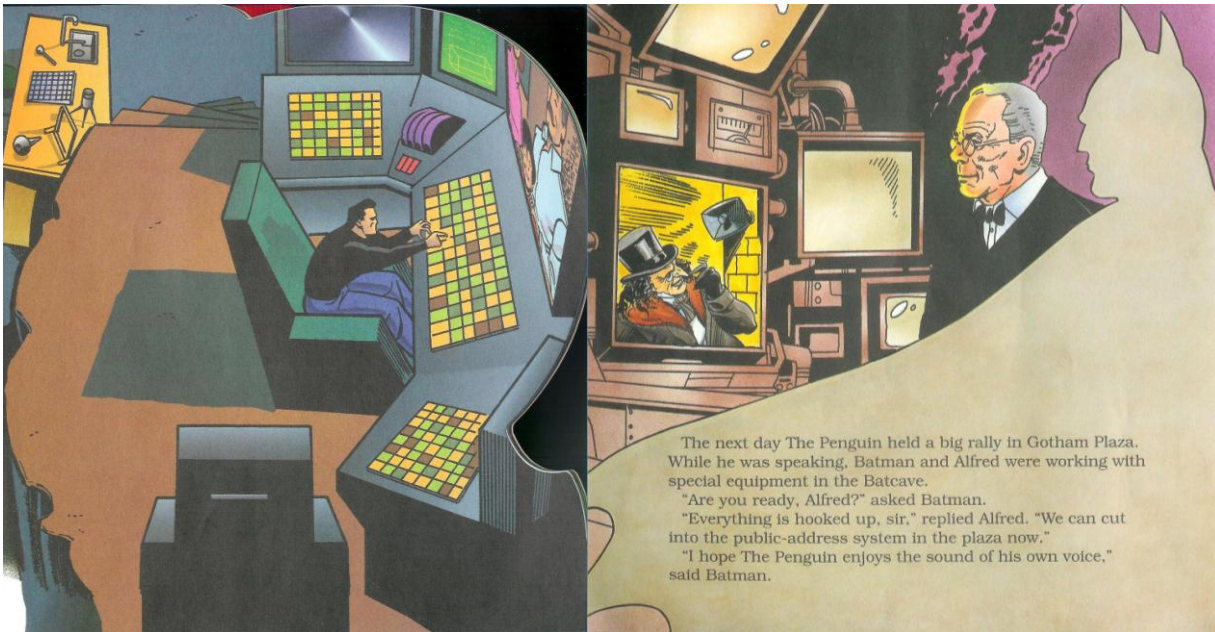


## Chapter 7: The Shadow of the Bat: Batman's Influence on Information Technology

In the Batman mythology, Batman is more than just a man but an everlasting symbol meant to inspire others to positively change the world. Inside the mythology, Batman is meant to inspire the denizens of a fictional world, but outside the mythology, Batman still serves as an inspiration for many in the real world. This inspiration has influenced the world of information technology through information technology career choices, information technology innovations, and existing information technology.

### *Batman Influences IT Careers*

The Batman mythology influences career choices in information technology. Batman can serve as the introduction to information technology for young fans of the Dark Knight. In children books such the Golden books featuring the Batman, children are exposed to how Batman uses the Batcomputer as a tool to foil the plans of his enemies.



**Figure 210.** The Golden Books of Batman in *The True Story of Batman* and *Batman Returns: The Penguin's Plot*

Children can play with an actual Batcomputer that resembles a laptop to improve math and verbal skills as Batman himself guides users through different activities. Through using this laptop, children can imagine that they are Batman.



**Figure 211.** Oregon Scientific Batman The Brave and The Bold Laptop

Young Batman fans also can play with toy sets of the Batcave that feature the Batcomputer, a control center, or similar information technology.



**Figure 212.** Fisher-Price Imaginext DC Super Friends Batcave and Fisher-Price TRIO DC Super Friends Batcave



These toys can lead to positive experiences with information technology for children. These positive experiences can influence these children to pursue information technology as a career choice or as a hobby. In the 1960s, the iconic live action Batman television series influenced many young viewers who wanted to be just like Batman. Through the use of Batcomputer and other gadgets, these children were influenced to pursue careers in information technology. For example, William Miller was introduced to computers through the 1960s television show. On his personal website, he speaks of how the Batman had influenced him:

“I was introduced to computers, as a small child during the 60s, from watching Batman and seeing the Batcomputer. I was always a fan of the show, but I think my career-Marine father questioned the fact that his son admired a guy who wore purple satin briefs over gray pantyhose. While my father was in Vietnam, he sent back a sheet of green-bar computer paper with the Bat Signal printed on it. Evidently, some of the MIS guys had printed this out along with some risqué ASCII-art calendars. This printout awakened my love of science and technology. At eight years old, I thought it was incredible that you could program a machine to print the Bat Signal” (Miller).

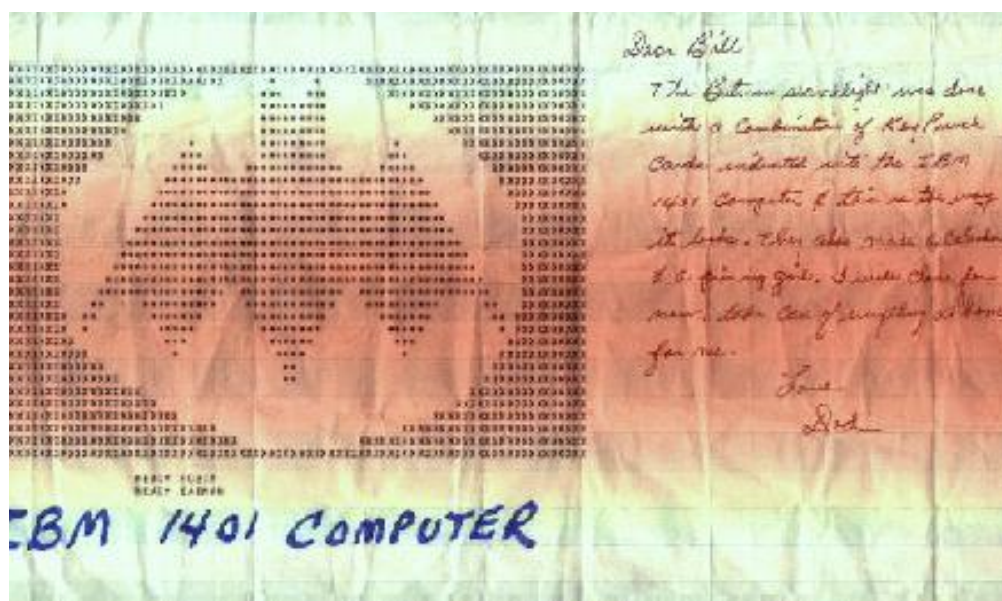


Figure 213. William Miller

William Miller later graduated from National University with a Bachelor of Science in Computer Science and has worked in many different information technology occupations since.

Some Batman fans who work in the information technology use their love of Batman to build amazing things. Tim Neil oversees software development tools for Research In Motion and has a wide collection of Batman paraphernalia in his office. Neil is using his love of Batman and his experience at Research In Motion to build a BatBerry. A BatBerry is a custom Batmobile designed in the style of the 1989 Batman movie using Blackberry technology to close and open doors, start the car's engine, and more (Hyde).





### ***Batman Influences IT Innovations***

The Batman mythology influences information technology innovations. Batman needs to have the latest and greatest technology to remain one step ahead of his enemies. Therefore, some of the information technology tools Batman uses are more rooted in science fiction than reality. However, Batman's use of his fictional technology inspires others to develop the actual technology. Sometimes, Batman's use of technology directly inspires other technology. The movie *The Dark Knight* has inspired the military and military contractors to develop or continuing developing technologies that resemble the technologies used during the movie. For example, BAE System's new military vehicle called the Raider takes direct inspiration from the Tumbler used as Batman's main vehicle in the movie (Khouri).



**Figure 215.** The Raider and The Tumbler

According to Awad, “You see, it turns like a motorbike and it has the same wheel configuration. Why not [take inspiration from Batman]? In all seriousness, we decided that we didn't have a monopoly on inspiration, and if we saw something in a film that we thought might be a good idea, why not take a look at it and see if there's something practical we can develop?”

Another military technology influenced by *The Dark Knight* movie is Batman's sonar tracking device that enables the Caped Crusader to map an environment using sound. The US Army has awarded a contract to Oceanit to develop similar technology for the Sense Through the Wall Technology project. The goal of the project is for this technology to be used during urban combat missions where soldiers are required to conduct sweeps of buildings. Batman used this technology for similar purposes when conducting a sweep through a building to locate the hostages, disarm members of the SWAT team and Joker's henchmen, and take out the Joker. This technology will use radio waves to inform the American warfighters if enemies are hiding within a building and provide soldiers with the element of surprise (Thomas).



**Figure 216.** SWTT Project Video Demonstration

Other military projects take inspiration from the entire Batman mythology. The Air Force started a project in 2004 called the Battlefield Air Targeting Man-Aided kNowledge program or BATMAN. The goal of the project is to reduce the physical load that the Air Force's Special Operations forces have to carry on the field of battle as well as modernize the gadgets these forces carry. According to BATMAN engineer Reggie Daniels, "In the earliest stages when we were coming up with a name for the program, we were perceived as having a lot of gadgets. Batman's devices allow him to have an advantage. That is what we're trying to do." The motto for the program is "lighter, smarter, and deadlier" as shown in the program's logo below.

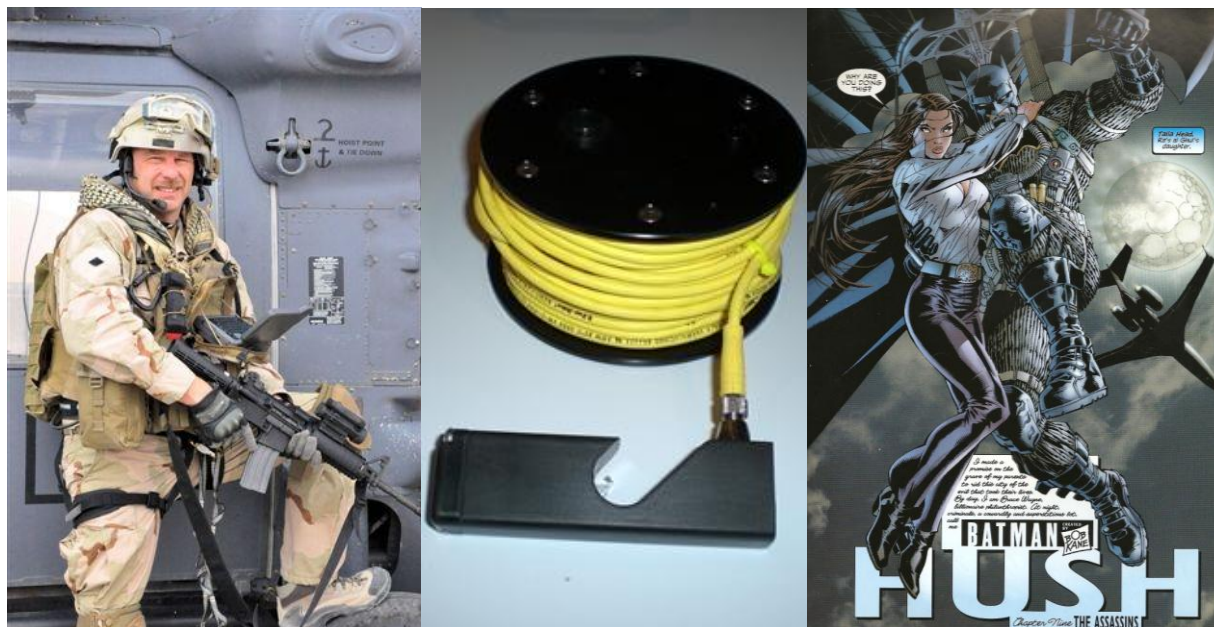


**Figure 217.** BATMAN Program Logo

The Special Ops forces in the past had to carry over 160 pounds of equipment including a computer, communications gear, helmet displays, and batteries to power all of these gadgets. The equipment was not streamlined, not effective, and weakened the ability of these forces to complete their objectives. By building a human chassis that is similar to Batman's Batsuit and



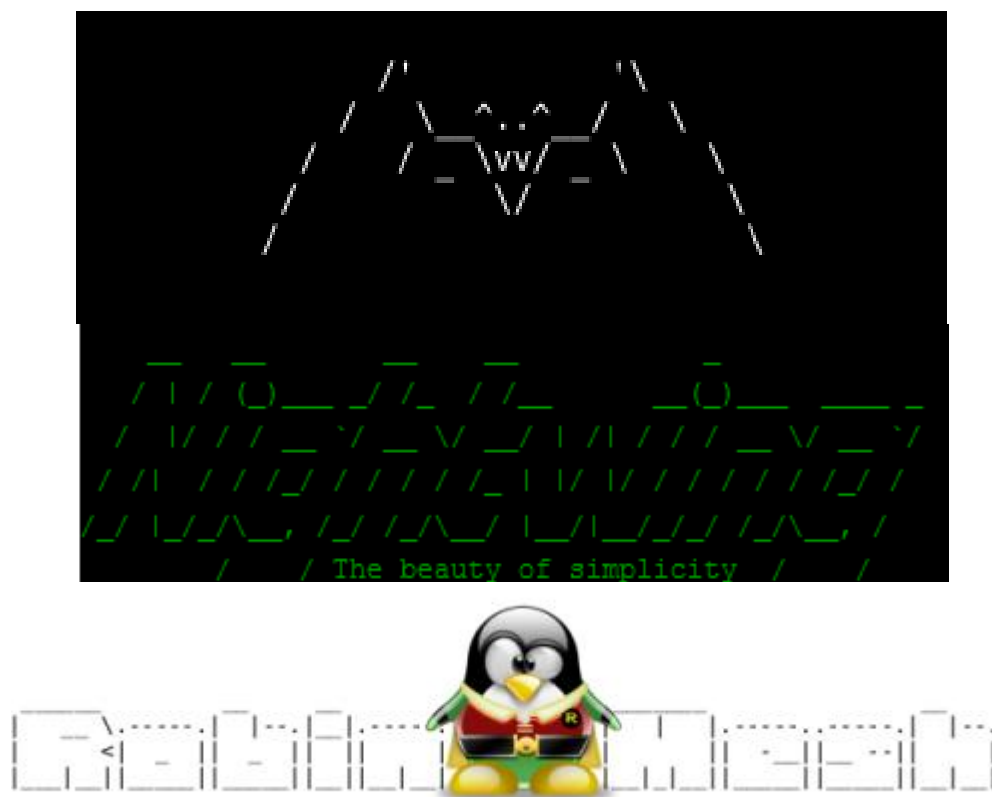
utility belt, the project has been able to decrease the load on soldiers by 25 percent and has incorporated new technologies such as chest mounted computers and a remote auxiliary power system or Bat hook that allows soldiers to power their vehicles by grappling to a power line (Ackerman).



**Figure 218.** Human Chassis for Project BATMAN and *Batman: Hush*

Another military project inspired at least by Batman’s name is the Pentagon’s effort to improve troop efficiency with quantum principles and human interaction concepts through projects BaTMAN and RoBIN. BaTMAN stands for Biochronicity and Temporal Mechanisms Arising in Nature, and RoBIN stands for Robustness of Biologically-Inspired Networks. Both projects are top secret, but according to DARPA, the purpose of BaTMAN is to “develop an understanding of the relationship between biological systems and the spatial-temporal universe through the application of advanced principles from the physical sciences” (Macedonia). The purpose of RoBIN is to “apply the critical control features of biological networks to build unique models for adaptable networks, and create a dynamic biologically-inspired network of scientists and other experts for crisis response and complex decision support” (Macedonia).

The characters of Batman, Robin, and Nightwing helped inspire the open source Friefunk community of network programmers to develop a non-military information technology innovation. The community is currently developing a routing protocol intended to replace OSLR, which is the current IP routing protocol used in ad hoc mobile networks. This routing protocol is called the Better Approach To Mobile Adhoc Networking or BATMAN (“B.A.T.M.A.N.”). BATMAN is currently in version 3 and has spawned other innovations such as Nightwing which use BATMAN to create fast deployment wireless networks and ROBIN or Routing Oslr and Batman INside (“Nightwing by: Lugro-mesh”)(“ROBIN – Open Source Mesh Network”).



**Figure 219.** The Logos of BATMAN, Nightwing, and ROBIN



## ***Batman Influences Existing IT***

The Batman mythology influences existing information technology in two ways. One way is through language. The Batcomputer has emerged in popular culture as being the ultimate information technology device. No other computer in the world is more powerful than the Batcomputer. Therefore, when talking about information technology, authors often use the Batcomputer for the purposes of comparison. For example, Dr. William McGeveran in a Harvard law blog post entitled “The Brady Law, Privacy, and the Bat-Computer” wrote:

“The problem is that, despite the fantasy of high technology on shows like 24 or CSI: Paducah, there is no Bat-Computer. Law enforcement access to data is not as sophisticated as the general public believes.”

### **Excerpt 2.** The Brady Law, Privacy, and the Bat-Computer

In another article written by Michael L. David entitled “The History of Encryption and Ciphers,” the author uses the Batcomputer as a way of conveying the difficulty of breaking a PKE cipher.

“If all this sounds confusing don't worry that's the point of cipher! The prime numbers used in software encryptions are hundreds of digits long. Making it dramatically more secure and difficult for someone to try and discover how the code can be broken. It would take the Bat computer, Professor Dumbledore and a legion of Scooby's to break a PKE cipher.”

### **Excerpt 3.** The History of Encryption and Ciphers

In another article posted on an information technology news site called Dvice about how IBM's new supercomputer called Watson will compete on Jeopardy, writer Kevin Hall uses the Batcomputer as an illustration of Watson's potential powers.

“You know the Bat Computer, Batman's machine that can answer any question? Well, IBM has been working on developing something like it for well on three years now, and now the company feels that the machine is nearly ready for prime time. Literally — called "Watson," the Q&A supercomputer is scheduled to appear on Jeopardy! this fall.”

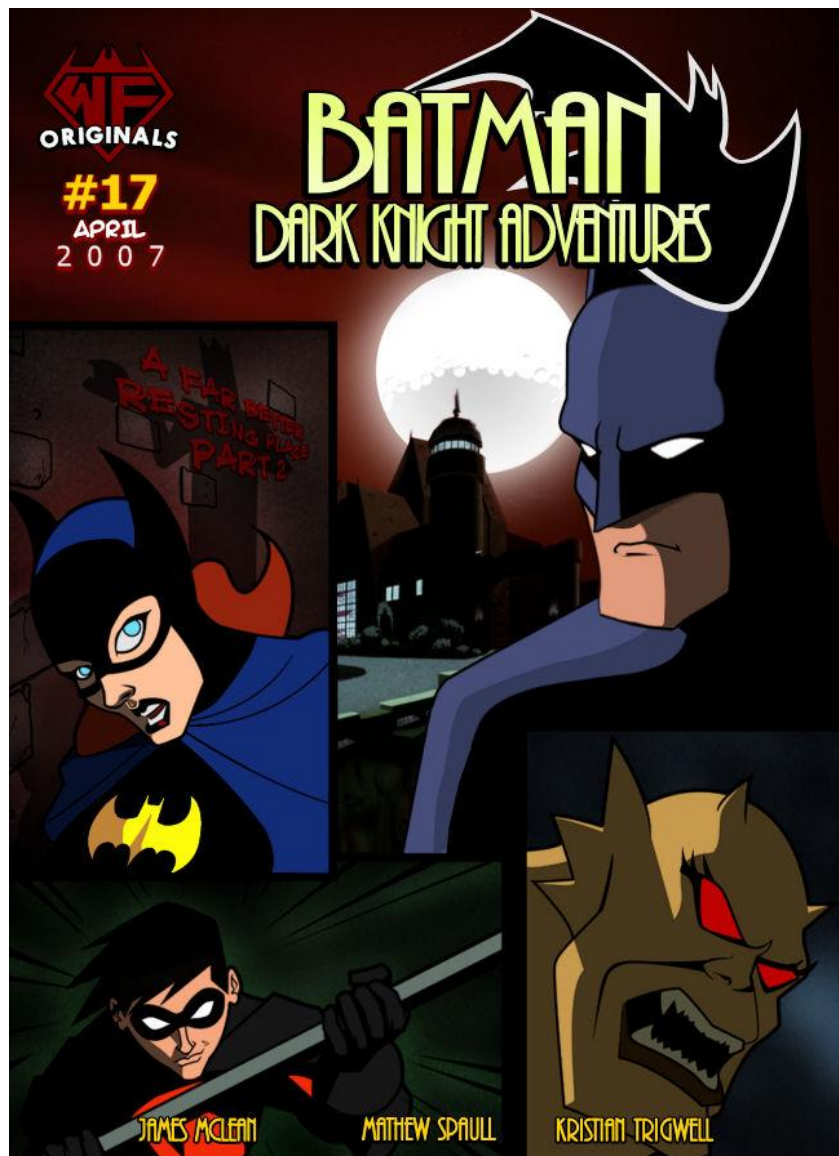
### **Excerpt 4.** This supercomputer plans to beat humans on Jeopardy!

The other way that the Batman mythology influences existing information technology is through influencing the content created by existing information technology. Batman is a passion for many and inspires them to create Batman related content using existing technology. Many fans add their own twist to the Batman mythology through creating fan fiction for others to view and enjoy. This fan fiction varies from narrated stories, web comics, fan art, to online videos.

“- Master Bruce...

He didn't even hear. He was too busy typing keywords and commands on his keyboard that the voice of his butler seemed too distant and unimportant. He was on that exhaustive investigation since a few weeks ago. Raising his eyes about every two minutes, watching the rows of connected monitors and then starting to press his fingers against the keyboard keys. While some screens were showing criminal sheets, others were portraying topics of addressees or crime scene pictures. All that research involved the very same name, or rather, nickname: "Scarecrow". The criminal had escaped from Arkham Asylum a month before and already had made his victims before even the Dark Knight could intercept him. Those were some busy nights on Gotham and very exhausting for the crime fighter; however, on that place, he had infinity calm and freedom to work..."

**Excerpt 5.** The Cave – Fan Fiction



**Figure 220.** Batman: Dark Knight Adventures #17 – Original Comic Series



802 bno nmta8  
APRIL FOOL'S DAY



HAPPY APRIL FOOL'S DAY!

STORY AND ART BY THE BLACK CAT (JM) BATMAN, ROBIN, BATMAN BEYOND AND OTHER RELATED CHARACTERS COPYRIGHTED TO DC COMICS

Figure 221. Batman and Sons – Web Comic



Figure 222. Fan Art





**Figure 223.** *Batman: City of Scars* – Fan Online Video by Bat in the Sun

Information technology has also allowed users to become like the Dark Knight as well. For example, a user on the social networking site Twitter created an account called The Batman and tweets as if Batman would tweet.

**God\_Damn\_Batman**

A special weather bulletin to all criminals who think I'd stay inside just because of a stupid snowstorm. **LOOK BEHIND YOU.**

half a minute ago via Batcomputer

Alfred, I know you SAID "Two and a Half Men DVDs" but my brain kept hearing "new mop." And wouldn't ya know it, I lost the receipt. Oops.

about 22 hours ago via Batcomputer

SEE ALFRED? I TOLD you that Bat-Snowmobile with flamethrower attachment would come in handy.

12:24 PM Dec 26th via Batcomputer

Jingle bells, Batman smells...the Joker didn't get away. He went to the Spinal Cord Injury Unit. Merry Christmas.

11:41 AM Dec 25th via Batcomputer

Then one foggy Gotham eve, The Batman came to say. "Robin, with your cape so bright, won't you distract my foe tonight?"

4:50 PM Dec 24th via Batcomputer

Never forget the true reason for the season: Baby Jesus and kicking ass.

12:04 PM Dec 24th via Batcomputer

Look, kid. I'm not saying Santa isn't real. I'm just saying if he was, he'd be too powerful to go unchecked. And I'd have to take him down.

12:08 PM Dec 23rd via Batcomputer

Name The Batman  
Location The rooftop behind you.  
Bio The hero Twitter deserves, but not the one it needs. So you'll follow him. Because he can take it.

0 following 124,994 followers 4,490 listed

Tweets 318

Favorites

Following

RSS feed of God\_Damn\_Batman's tweets

**Figure 224.** The Batman's Twitter Page

In the virtual world called Second Life, users interact with the environment using an avatar. Avatars are customizable allowing users to pick a variety of costumes and looks. Some avatars in the game are dressed as Batman characters, like the avatar in the screenshot below.



**Figure 225.** Second Life Batman and Batmite Avatar



## **Chapter 8: Conclusion: A Batman For All Ages**

The Batman mythology and information technology share a bidirectional relationship. The Batman mythology has been influenced by the evolution of information technology. Starting in the Golden Age and ending with the Contemporary Age, Batman's use of information technology has varied in each age depending on the interpretation of the character. Despite these variations with each age, Batman's capacity to investigate crimes, communicate with others, and fight criminals improved due to enhancements in information technology. Batman's increased use of information technology throughout his history reflects the increased significance of the technology in the real world.

Information technology is also influenced by the Batman mythology. Batman serves as an inspiration to many of his fans. These fans of the Dark Knight later go on to pursue careers in information technology, create innovations in the field, or influence the existing technology. While the Batman mythology's influence on information technology is not as strong as information technology's influence on the Batman mythology, this part of the bidirectional relationship illustrates the power Batman has to not only make a positive difference in his own fictional world but in our world as well.

This thesis is the result of searching through the many media of the Batman mythology. Because the Batman mythology has a 70 year old history, this thesis is not meant to be a definitive analysis on information technology and Batman. The author of this thesis unfortunately did not have the access to analyze every piece of the Batman mythology. Therefore, as much of an analysis was conducted as possible using the abundance of sources that were readily available. In the future, further analysis through conducting interviews or surveys would be completed to further substantiate the claims about Batman's influence on information technology using a population of information technology students and workers. In addition, the information technology relationships to other superhero mythologies in the DC or Marvel universes could also be explored.

## **Appendix A: DC Comics Approval**

Steven:

Thank you for requesting permission to include images from various Batman publications in connection with your Penn State thesis on Information Sciences and Technology.

Please be advised we have no objection to your use of our material in connection with your thesis, insofar as the use falls under the terms permitted for certain enumerated purposes under the fair use doctrine of the U.S. Copyright Act.

As far as interviewing writers of our Batman titles, I have forwarded your e-mail address and request to our Editorial Department. However, please understand that our editors and writers are very busy, and it is nearly impossible for them to fulfill requests such as yours.

We thank you for your interest in DC Comics and the Batman character, and wish you the best of luck in your educational pursuits.

Sincerely,

DC Comics

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1700 Broadway, 460A

New York, NY 10019



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## Academic Vitae

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**OBJECTIVE:** To obtain a full time position in the Information Sciences and Technology field.

**EDUCATION:** **The Pennsylvania State University** University Park, PA  
B.S. in Information Sciences and Technology Expected May 2011  
Minor in Engineering Entrepreneurship  
Schreyer Honors College

**EXPERIENCE:** High Performance Technologies, Inc. Summer 2010  
IT Analyst Intern – Health Sciences and Solutions, Arlington, VA

- Reviewed the business process of the Veterans Affairs Budget Tracking Tool project and implemented improvements
- Improved the knowledge management capabilities of CMMI organizational assets in SharePoint
- Developed requirements and prototypes for a metrics reporting tool

Air Products and Chemicals, Inc. Summer 2008 – Summer 2009  
Global IT Intern – Supply Chain Productivity Team, Allentown, PA

- Documented metrics to provide universal definition for Global IT
- Improved the monthly run of both the productivity measures and the operational metrics through the creation of a graphical user interface
- Performed the monthly operational metrics collection for the team

Global IT Intern – IT Innovation and Architecture, Allentown, PA

- Responsible for several Unified Communications projects
- Demonstrated Unified Communications technologies to managers
- Operated within a cross-functional team

#### COMPUTER

**SKILLS:** Java, SQL, PHP, HTML, Visual Basic, C++, SharePoint, Microsoft Office

#### ACTIVITIES: College Activities

- THON Operations Committee Captain in charge of 30 committee members, organizing events for 700 members, and assigning tasks for all 21 OPP committees during THON weekend
- IST Academic Committee Chairman
- FreshSTART Day of Service Team Leader
- SHO TIME Honors College Orientation Mentor
- Penn State Men's Volleyball Team Assistant Manager
- Teaching Intern for IST 210
- IST Night of Honors Committee Member