

# Progression of Wristwatch Styles: From Bracelet Watches to Smartwatches

## Part 5: 1980–1999: The Swatch, Fashion Watches, Multifunctions, and the Mechanical Revival

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*Author's note: With the incredible worldwide acceptance of quartz wristwatches during the 1970s, Japan was able to surpass Switzerland as the world's largest watch producer in 1981. But all*

**Figure 1.** Swatch-Flight  
Navigation Theme, circa 1980s.  
AUTHOR'S COLLECTION.





**Figure 2.** Fossil fashion watch featuring a nickel-plated dial, bezel, and bracelet with engraved Native American petroglyphs and tin box with a 1950s racing event scene, circa 1996. AUTHOR'S COLLECTION.

was not lost in Switzerland's wristwatch industry because ETA marketed the quartz-powered Swatch in 1982. A revolutionary boom of fashion watches followed. Watches that deliver more than the time with increasingly complex multifunctions, including computer interfacing, began entering the market. After the quartz revolution devastated the Swiss watch industry and mechanical watch production during the 1970s and into the 1980s, a re-discovered appreciation for the precision mechanical watch took hold beginning in the early 1980s. Mechanical wristwatches made an unprecedented revival throughout the 1990s, and sophisticated combinations of complications became a trend. Quartz technology also advanced with the release of no-battery movements.

## The Swatch

Since the global emergence of quartz technology, the demand for Swiss mechanical wristwatches in the early 1980s continued to decline. In 1982, the Swiss watch industry received a huge boost with the release of the low-cost Swatch (its name was derived

from "Second Watch") that was powered by a quartz movement. Dr. Ernst Thomke,<sup>1</sup> CEO of ETA SA, collaborated with engineers Elmar Mock<sup>2</sup> and Jacques Muller<sup>3</sup> to invent the Swatch watch. What made the Swatch (Figure 1) so unique and fun to wear were its bold and colorful plastic cases, different shapes and sizes, and various energetic themed designs.

The Swatch was economically manufactured by using a new ultrasonic welding process that automatically assembled the watch. The number of components from 90 up to 150 was reduced to only 51 with no loss of timing accuracy. This made the Swatch less expensive to build for a higher profit margin.

The Swatch led the global watch industry into the world of casual watch fashion. By 1987, Swatch watches sold over 50 million worldwide and proved that the Swiss watch industry could design competitively priced quartz watches. In 1992, the 100 millionth Swatch was produced, and in 1996, the 200 millionth Swatch was produced.

## Fashion Watches

The success of the Swatch watch influenced the fashion companies Guess<sup>4</sup> and Fossil<sup>5</sup> into creating fashion brand watches. These two companies used the fashion industry marketing strategy of creating five new collections per year compared to Swatch's two new collections per year.

Guess and Fossil had their fashion watches made in Hong Kong, and unlike Swatch watches, they used no plastic cases and were priced higher than Swatch watches. Guess used aluminum cases with retro styling and rubber or fabric straps. In 1985, Guess's sales were \$18 million, and by 1996 its sales, assisted by fashion watches, reached over \$165 million. Fossil, founded in 1984, used metal cases, stainless steel backs, and soft Nubuck leather on the back of the leather straps. In 1989, Fossil also started an ingenious marketing strategy on packaging, promotions, and advertising by including images of 1950s iconic Americana (Figure 2). In 1994, Fossil's sales, assisted by fashion watches, reached \$162 million. Guess and Fossil fashion watches were so successful in department stores that Swatch eventually pulled its merchandise from the stores and opened its own stores in the United States.

Other established fashion companies, including Hugo Boss, Liz Claiborne, Adidas, Coach, and Perry Ellis, signed license deals with various watch companies. These fashion-oriented watches were more about original designs and aesthetics than about timekeeping accuracy and were marketed and sold as fashion accessories. This 1980s and 1990s watch industry phenomenon is known as "watch wardrobing" as people began buying multiple watches to match attire, occasions, and moods.

Fashion watches were not new to the '80s and '90s because they had been available since the early 1900s and were primarily marketed to women. During that time, fashion industry and higher-end jewelers, such as Cartier, Tiffany, and Bulgari, sub-contracted Swiss watchmakers, including LeCoultre, Movado, and IWC, to make fashionable watches. The difference was that these earlier fashion watches tended to be expensive and were typically not mass produced. Quartz technology, which boomed in the watch-making industry starting in the 1970s, enabled mass production of fashion watches during the '80s and '90s.

As the fashion watch market continued to expand in the 1990s, luxury brands, such as Chanel and Gucci, began producing more exclusive fashion watches in Switzerland. These upscale watches were more expensive than Swatch, Fossil, Guess, and other companies in the affordable market segment for the midrange and luxury market segments.

## Game (Wrist Gaming) Watches

Expanding on the popular 1980s notion that watches should not be just timepieces and the booming video game trend of the time, game watches were developed and marketed. Arcade games, such as *Space Invaders* and *Pac-Man*, became a social phenomenon. Ideas to bring these video games onto a mobile wristwatch device were accomplished by early innovators, including the Japanese company Casio and the American companies General Consumer Electronics (GCE<sup>6</sup>) and Nelsonic Industries.<sup>7</sup>

In 1980, Casio released the GM-10 game watch, which featured a small rectangular play space screen on which the user launched a rocket in an attempt to shoot down a spaceship. In 1982, GCE released three gaming watches with different themes that included multiple games on each watch. Also in 1982, Nelsonic released its most popular gaming watch, the *Pac-Man* watch, which sold more than half a million units. It was released in two versions: one with four direction buttons and the other with a joystick. Nelsonic designed and developed more than 30 game watches before going defunct in 1999.

By the end of the 1990s, most game watches were phased out of production as their popularity drastically declined because of the availability of more advanced and practical handheld video game consoles, portable computing devices, and smartphones. Game watches were typically made of molded plastic and all were powered by quartz movements.

## Multifunction Watches

During the 1980s, Japanese watch manufacturers were leading the world in using electronic technology to develop watches with multiple functions. Examples include the 1982 Seiko TV watch, which linked a portable television receiver for VHF and UHF (channels from 2 to 83) with a 1¼" LCD screen. This watch could also receive FM radio and included an alarm, chronograph, and calendar functions. One of these watches was used in the 1983 James Bond movie



**Figure 3.** Seiko Receptor includes paging and messaging services and an embedded antenna in the wrist band, circa 1990. AUTHOR'S COLLECTION.

*Octopussy*. Because analog TV broadcasts in the United States were discontinued in 2009, the television function no longer works.

Casio released many multifunction watches in the 1980s. These models included the Casio Databank CD-40, released in 1984, which included a calculator with a portable databank that could save and store information (approximately 50 names and phone numbers). In 1986, Casio released the GMW-15 Moon Graph watch, which included alarm and chronograph functions and displayed moonphases and sunrise and sunset times.

In 1990, Seiko released the Seiko Receptor (Figure 3) message watch, which included time, dual-time display, date, and pager messaging service. The paging ability allowed users to call an automated service and send specific messages to these watches, but it was limited to certain geographic areas because it relied on an FM subcarrier signal. Because this service is

no longer available, these watches show only dashes when the message button is depressed.

## Computer Technology

As personal computers were introduced into the mainstream markets during the 1980s, watch developers began to incorporate computer technology into wristwatches (sometimes referred to as “wrist computers”). In 1983, Seiko released the Data-2000 wristwatch, which had an external keyboard synched to the watch with an electromagnetic coupling (wireless docking station) and had time and calendar, alarm, stopwatch, dual-memo display (which has a display capacity of 2,000 characters), calculator, and hourly time signal functions.

In 1984, Seiko released the RC-1000 Wrist Terminal watch, which used an interface cable to connect with the various computers of its time, including the Apple II, TRS-80, and Commodore 64. It included various functions, such as day, date, alarm, memo, scheduled alarms, weekly alarms, and world time.

The first watch that was capable of downloading information from a computer was the Timex Data Link 50 released in 1994. Other early models included the 70, 150, and 150s (smaller size). The model numbers of these watches indicated the approximate number of phone numbers that could be stored in their memory. These Timex Data Link watches were co-developed with the multinational technology company Microsoft and initially demonstrated by the company's cofounder, Bill Gates, as he downloaded information from a computer and showed a live audience data as it scrolled across the watch's LCD screen.

In 1998, Seiko announced the release of the Ruputer Pro, which is considered the world's first true wearable wrist computer. Data were entered through a small eight-direction joystick, and it featured an LED monochromatic<sup>8</sup> display. It can communicate with other devices through a serial port, which is transmitted by a dock on the watch.

## The Mechanical Revival

In the early 1980s, Japanese watch manufacturers, including Seiko and Citizen, were in the process of purchasing struggling Swiss brands. In an effort to decide how to effectively liquidate ASUAG<sup>9</sup> and SSIH<sup>10</sup> (two watch manufacturers in financial distress), a government-appointed group of Swiss banks hired Dr. Nicolas G. Hayek Sr.<sup>11</sup> This led to the merger of ASUAG and SSIH, and a new conglomerate SMH<sup>12</sup> was formed. Hayek acquired a majority of shares in SMH. In 1985, SMH became known as Swatch and Hayek became its CEO in 1986. Hayek's decisive leadership and innovative marketing strategies, such as placing the words "Swiss" or "Swiss Made" at the bottom of the dial to emphasize quality and fine workmanship, ultimately helped revive sales of higher-end mechanical watches.

Also in the early 1980s, a few luxury Swiss brands, including Rolex and Patek Philippe, in their marketing campaigns promoted the value, prestige, handmade workmanship, and tradition of Swiss mechanical watches. Auction prices for vintage mechanical watches started to rise in the early 1980s, and other Swiss luxury manufacturers, including Audemars Piguet, Ulysse Nardin, and IWC, experienced increased sales of their mechanicals. In 1989, Switzerland became the world's largest watch exporter once again as mechanicals, mainly in the upper end

of the market, accounted for 40 percent of the value of their watch exports.

In 1991, the hugely successful Swatch watch, which was made with only quartz movements up until this time, released its first mechanical model. Throughout the 1990s, Swiss watchmakers began releasing a wave of complicated mechanical movements, including wristwatches with tourbillons and with combinations of sophisticated complications, such as minute repeaters, perpetual calendars, and moonphase dials with split-seconds chronographs. This trend is referred to in the industry as "high mech," which is comparatively different from quartz technology, which is referred to as "high tech."

## The Co-Axial Escapement

The co-axial escapement uses radial friction instead of sliding friction, which makes lubricants unnecessary and reduces the amount of contact between parts of the movement. The device is a more complicated mechanism than the traditional lever escapement (which was invented by British clockmaker, Thomas Mudge, in 1755) because it includes an additional escape wheel. It is sometimes referred to as the most important development in horology in over 200 years. It was created by George Daniels,<sup>13</sup> a British horologist, who completed the mechanism's design in 1974. Daniels announced the concept in 1976 and it was patented in 1980. The Omega brand started using the co-axial escapement in automatic mechanical watches (Calibre 2500) in 1999.

## No-Battery Quartz Watches

As mechanical watches were becoming more and more complicated, quartz technology was also advancing. In 1994, Seiko released a line of Kinetic watches, which generate electrical power from the movement of the wearer's arm (similar to a mechanical self-winding movement). ETA followed with the release of a similar self-winding rotor mechanism technology called the Autoquartz. In 1995, Citizen released a different type of no-battery watch called the Eco-Drive, which is powered primarily by light (although it does incorporate a secondary battery to store electrical energy). This solar-powered technology was a huge improvement from its 1970s predecessors because it generates energy more efficiently, maintains energy storage longer, and has solar cells mounted under the dial.

## Notes

1. Dr. Ernst Thomke (born 1939 in Biel/Bienne, Canton of Bern, Switzerland) trained as a mechanic at Ebauches SA in Granges, CH, and studied natural sciences and chemistry at the University of Bern and the University of Lausanne. He also studied medicine at the University of Bern, management at Fontainebleau, France, and marketing at the INSEAD School of Marketing. In 1982, he became the chair of ASUAG. From 1984 to 1991 he was the general manager of SMH. As CEO of the watchmaking company ETA SA, he led a small team of engineers in the development of the Swatch watch.
2. Elmar Mock (born 1954 in La Chaux-de-Fonds, Switzerland) trained as an engineer in microelectronics at the school of Bienne, CH. After joining ETA SA in 1976, he continued training in plastics engineering, which gave him the skills to design and develop cases for the Swatch watch.
3. Jacques Muller (born 1947 in Porrentruy, Switzerland) trained as a microelectronics engineer at Saint-Imier. He worked at Ebauches Tavannes specializing in watch movement designing and development. He joined ETA SA in 1978 and worked on developing movements for the Swatch watch.
4. Guess, Inc. (styled as GUESS or Guess?) is a fashion retailer marketing clothing for men and women and fashion accessories, such as perfumes, jewelry, perfumes, shoes, and watches. The company was founded in 1981 and is headquartered in Los Angeles, CA.
5. Fossil Group, Inc. is a fashion designer, manufacturer, and retailer of products that include watches, wallets, designer jewelry, handbags, designer fragrance, and leather products. It markets brands that include Fossil, Abacus, Michele Watch, Skagen Denmark, Misfit, and Zodiac Watches. The company was founded in 1984 and is headquartered in Richardson, TX. It began by importing moderately priced fashion watches with a retro look. In 1990, it released the Relic line of watches.
6. General Consumer Electronics (GCE) licensed and distributed the Vectrex (a vector display-based home video game console) and manufactured three early innovative game watches (Sports-Time, Game-Time, and Arcade-Time), and two game calculators (Chase-N-Counter and Space-N-Counter). GCE was purchased by the Milton Bradley Company in 1983.
7. Nelsonic Industries, independently in business from 1981 to 1990 in Long Island City, Queens, New York City, was an electronics development and manufacturing company that produced about 30 game-themed quartz wristwatches. In 1990, the watch manufacturer M. Z. Berger purchased the company. Nelsonic became a subsidiary branch that produced new and re-releases of popular game watch models from the 1980s and early 1990s. In 1999, the Nelsonic game watch subsidiary went defunct as M. Z. Berger shifted its business model to target higher-end consumers.
8. A monochromatic color is the tints, tones, and shades of a single hue.
9. Allgemeine Schweizerische Uhrenindustrie AG (ASUAG) was the largest Swiss Watch Industry Group. It was created in 1931 with the assistance of the Swiss government and a group of Swiss banks to address economic hardships created by the Great Depression. In 1983, it was forced by Swiss banks to merge with Société de Microélectronique et d'Horlogerie (SMH), which now has been renamed the Swatch Group.
10. Société Suisse pour l'Industrie Horlogère (SSIH) was created on February 24, 1930, in Geneva by Tissot et Omega and was second most important Swiss Watch Group, holding Omega and Tissot. In 1983, SSIH and ASUAG were forced by their Swiss banks to merge into SMH (a new holding company), which now has been renamed the Swatch Group.
11. Dr. Nicolas G. Hayek Sr. (born 1928 in Beirut, Lebanon, and died in 2010 in Biel/Bienne, Switzerland) was a Lebanese-Swiss entrepreneur, who cofounded the Swatch Group and was its chair of the board and CEO. He restructured operations, repositioned different watch brands, invested in automation, and standardized parts

and tooling. The Swatch watch was a huge boost to the Swiss watch industry because it was able to penetrate and take back a large share of the lower-end global watch market it had lost to Japanese makers during the quartz crisis. Hayek is regarded as one of the most outstanding business and marketing people in Swiss watch industry history.

12. Société de Microélectronique et d'Horlogerie (SMH) was the original name of the holding company created in 1983 from the forced merger of SSIH and ASUAG by Swiss banks. It is now the Swatch Group.
13. George Daniels (1926–2011), a British horologist famous for the development of the coaxial escapement, is considered to be one of the most talented horologists of the twentieth century. He was one of the few modern watchmakers, who completely built watches, including the movement, case, and dial by hand. He made 24 of the most extraordinary and technically advanced mechanical watches in history because they are more accurate than quartz movements.

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## About the Author

Randy Jaye has been the president of Chapter 154 in Daytona Beach, FL, for many years and was the General Chair for the 2016 and 2017 Florida Mid-Winter Regionals. He is a watch and clock collector and occasional restorer. He has contributed several articles to the *Watch & Clock Bulletin* and is planning to complete several more in the near future with a focus on wristwatches and "modern" horology. He recently wrote and published a history book titled *Flagler County, Florida: A Centennial History*.