



Time Marches On: The Worldwide Watch Industry

M. Edgar Barrett

“...the clock, like other machines, is brutal and callously efficient in its task. It takes raw material, in this case time, and processes and refines it into something more useful to human beings. It breaks time down into abstract concepts called hours, minutes and seconds, and then doles them out to us, always at the same maddening pace.”¹

¹ From “Tyrant of Time, Master of Minutes” by Jay Bookman, *Atlanta Journal and Constitution*, Jan. 3, 1995.

It’s hard to imagine functioning in today’s world without a watch. The modern business person may depend on the timepiece in order to catch a train, remember an important meeting, or download information. Watches serve as status symbols and fashion accessories. They keep near-perfect time in wildly erratic climates from Siberia to Sudan, from thousands of miles in the air to hundreds of feet below the surface of the ocean—even on trips to the moon. Prices range from affordable to outrageous, making timepieces available, if not essential, to almost everyone in the world.

Copyright © 1999 Thunderbird, The American Graduate School of International Management. All rights reserved. This case was prepared by M. Edgar Barrett, J. Kenneth and Jeannette Seward Chair in Global Strategy, and Research Assistants Jennifer L. Barrett and T. Hawk Sunshine for the purpose of classroom discussion only, and not to indicate either effective or ineffective management.

But while the watch's main function—telling time—has not changed over the past 500 years, the worldwide watch industry has. The center has shifted among three different continents, and while Switzerland, Japan, Hong Kong, and the United States are the industry leaders today, there is no guarantee that any of them will remain on top tomorrow.

This case describes the evolution of the worldwide watch industry from its inception in the early sixteenth century to the mid-1990s.

THE EARLY EUROPEAN INDUSTRY

The world's oldest known watches were made around 1500 in Germany. They consisted of plated movements mounted in egg-shaped cases. Early watches made in Nuremberg, the German city widely regarded as one of the first centers of watchmaking, contained a single stubby steel arm that spun around a 12-hour dial. Knobs at each hour allowed the watch-wearer to feel the hour in the dark. The watches never ran for more than 15 to 16 hours at a time, and had to be wound twice a day.²

² Jaquet, Eugene, *Technique and History of the Swiss Watch: From its Beginnings to the Present Day*, Otto Walter Ltd. (Olten, Switzerland, 1953), p. 21.

The first watches were spring-powered mechanical models, sharing smaller versions of the same components found in clocks. Though the face was simple, many were enclosed in elaborate casings that were painted and sometimes engraved. When the watch was wound, the motion was transferred through a series of gears. These gears, in turn, moved the hands of the watch. Decorative, and often very expensive, the watch was kept in the pocket and treated like a fine piece of jewelry—even passed down as a family heirloom.

“The watch was far from accurate, but it was pretty, so it was worn more as jewelry than for time-keeping.”

wrote one watch expert, after studying the early timepieces.³

Though the watch was invented in Germany, the craft skills quickly spread into the neighboring countries of France and Switzerland. By the late 1500s, the French were leading the European watchmakers in design and innovation. Over the next century, however, many French and German (Protestant) Huguenots, fleeing religious persecution, moved to England or Switzerland, taking their watchmaking expertise with them.

³ Bruton, Eric, *The History of Clocks and Watches*, Crescent Books (New York, 1979), pp. 109–110.

Geneva proved especially appealing to the religious refugees as the Swiss Protestants had stormed its cathedral and driven out Catholic religious authorities in August of 1535. After the Protestant Revolt, Jean Calvin (founder of the Presbyterian creed) took charge. In 1541, he introduced the Sumptuary Laws, moral legislation designed to put an end to the hedonistic lifestyle then enjoyed by the Swiss living in Geneva. The laws forbade citizens from dancing or wearing jewelry and extravagant clothing. In 1566, Calvin went a step further and prohibited the fabrication of most jewelry.⁴

Many of the foreign watchmakers who had sought refuge in Geneva soon teamed up with Swiss jewelers, whose livelihood faced extinction as a result of the rigid legislation. Working together, they produced highly ornate, yet functional, watches that were among the few acceptable accessories under Calvin's strict edicts.

Swiss watches initially kept time through an oscillating bar, with knobs at each end, called the dumbbell balance. In 1675, the spiral hairspring was invented which tremendously improved the accuracy of the watch when it was applied to the balance.⁵

By this time, there were so many watchmakers in Geneva that they formed their own guild and began adopting statutes setting standards and regulating the activities of local watchmakers. In 1701, new decrees forbade foreigners from working in the trade.

In addition, only Swiss citizens and residents of Geneva could become master watchmakers in that city. Applicants were required to submit an alarm watch (traditional jeweled-lever watches were considered too ornamental) to a jury of guild masters. If the watch was approved, its maker would be awarded the prestigious title. In 1746, there were 550 master-watchmakers in Geneva. By 1760, the number had grown to more than 800 and as many as 6,000 Geneva citizens were involved in some branch of the industry.⁶

Despite efforts by the Geneva government and the local guild to restrict the manufacturing of watches to that city, the industry soon spread into nearby villages and then into other regions all across the country, including the Jura Mountains in northwest Switzerland. The Jura farming families quickly picked up the watchmaking craft from their new neighbors and began mak-

⁴ *Encyclopedia Britannica*, 1983, Volume 4, p. 747.

⁵ Bruton, E., op. cit., p. 118.

⁶ Jacquet, E., op. cit., pp. 37-38.

ing watches to supplement their income from farming.

As they relied increasingly on their new craft, Jura farm families banded together to form community schools aimed at training young apprentices in various aspects of the watchmaking process. Specialized workshops quickly developed in different locales for various stages of the manufacturing process. Often, separate families specialized in particular parts of the process. Many sold individual movements to watchmakers in Geneva, who then assembled the watches. The Jura watchmakers were also quick to take advantage of the new tools and techniques being developed in England, as well as to design their own.⁷

No large factories existed in Geneva in the 18th century in which a complete watch could be produced from start to finish. Most Genevan watchmakers relied on the watchmakers from nearby districts or the family-run workshops in the Jura Mountain villages for the watch components. As a result, by the end of that century more than 30 different categories of workers were employed in the Swiss watchmaking industry. The division of labor resulted in the production of watches that varied in quality as well as design.⁸

⁷ Ibid., p. 87.

⁸ Jacquet, E., op. cit., p. 87.

SWISS DOMINATION

Though Swiss watches sold well,⁹ the English were widely considered the top watchmakers in Europe and led the world in watch production until 1840. Zedler observed in the *Universal Lexicon* of 1746: “The English watches are considered best of all... The Geneva watches are thought little of, because they are to be had so cheaply; they are made in such quantities that one buys them in lots.”¹⁰

Based near industrial areas in London, Liverpool, and Coventry, the watchmaking industry in England developed under a unique system of labor division. Watchmakers assembled parts made by specialists—each responsible for only one watch component. Despite the tedious nature of the production process, English watchmakers continued the method for centuries, giving other countries the chance to catch up and eventually surpass them in watch production.

The Swiss established their first full-fledged, mechanized watch factory in 1839, and the process quickly allowed Swiss watchmakers to overtake their English counterparts. By mid-century, Swiss exports were estimated at

⁹ By the early 1800s, Swiss watch exports numbered about 50,000 units annually. Bruton, E., op.cit., p. 124.

¹⁰ Bruton, E. cp. cit., p. 123.

about half a million watches a year. Meanwhile, English watchmakers were producing about 150,000 watches annually and employing 10,470.¹¹

Ironically, many of the high-precision machine tools the Swiss used to cut and form the tiny parts they designed were actually built in England. The English watchmakers, worried that the new tools would threaten their livelihood, persuaded Parliament to pass a law barring their use in England's watch industry. In addition, they insisted on the inclusion of some particular parts in their manufacturing process that made the English watches slightly more accurate but drove the price up as well, allowing the Swiss and other competitors to undersell them.

A turning point in the Swiss watchmakers' production process—and reputation—came with a little help from a new competitor: the United States. After Swiss watchmaker Edouard Favre-Perret returned home from the 1876 Philadelphia Exhibition, with both a report on the Exhibition and an American watch which he declared performed better than comparable Swiss timepieces, he gave a series of lectures advocating adoption of the American factory method of production. The Swiss were quick to heed his

call, and even began developing their own sophisticated machine tools.¹²

By the 1920s, watchmaking had become one of the most important and lucrative Swiss industries. To maintain their technological advantage, the Swiss watchmakers formed the Swiss Laboratory for Watchmaking Research (LSRH) in 1924. By the Second World War, the Swiss had introduced waterproof watches. They also led the way with such innovations as shock-resistant and automatically winding watches.¹³

In response to worldwide depression, several of the smaller watchmaking firms banded together in 1931 under one holding company, ASUAG. Three years later, the Swiss government became a minority investor and provided enough capital to allow the group to buy most of the shares of Ebauches SA and other leading watch manufacturers. Each member of ASUAG continued to operate independently. The same year, the government introduced a federal statute requiring that Swiss firms obtain permits to manufacture and export whole watches, movements or individual components. The government regulated the transfer of

¹¹ *Ibid.*, pp. 190–191.

¹² Bruton, E., *op. cit.*, pp. 195–196.

¹³ Jacquet, E., *op. cit.*, pp. 267–268.

permits as well. In addition, foreign firms were not allowed to purchase assets or invest in Swiss watchmaking companies.

Meanwhile, the Swiss began stressing quality and promoting the reputation of the “Swiss made” label. The firms sold exclusively through jewelers and certain upscale retail outlets. Though the ad budgets were not big, export sales were.

THE EARLY AMERICAN INDUSTRY

There were more than 100 watch manufacturers in the United States by 1870. Despite this, a variety of watches were imported—with the Swiss being the largest providers. In the late 1920s, three quarters of all American watch imports came from Switzerland, even though American companies were producing more watches by volume than the Swiss.¹⁴

The Swiss, after adopting the American factory methods of production, eventually surpassed the United States in watch production in the mid-1930s. Cheaper labor in Switzerland allowed Swiss watchmakers to cut costs, even as they began manufacturing better quality, jeweled-lever watches. In 1936,

the United States joined the Reciprocal Trade Treaty, one result of which was a 50% tariff cut on Swiss imports.

The tariff reduction resulted in a doubling of watches with imported movements, from an average of 20% of total US watch consumption to an average of 41%.¹⁵

World War II provided another turning point for the worldwide watch industry. Swiss watch exports virtually ceased during the conflict. American watchmakers, meanwhile, turned to lucrative defense contracts and focused their attention on manufacturing timing devices and other war-related equipment.¹⁶

When the war ended, so did most of the contracts. American companies such as U.S. Time and Bulova found themselves struggling to secure a position in the worldwide watch industry—not to mention the domestic market—against foreign, mostly Swiss, competition. In 1937, a little over 44% by value of all watch exports from Switzerland went to the United States. In 1946, the percentage of exports to the US had jumped to nearly 60%.¹⁷

¹⁴ Milham, Willis I., *Time and Timekeepers*, Macmillan Co. (New York, 1923), p. 429.

¹⁵ Bruton, E., op. cit., pp. 197–198.

¹⁶ “Would Ease Rules on Watch Imports: U.S. Tariff Commission Urges Changes to Aid in National Defense,” *New York Times*, February 3, 1947, Business Section, p. 30.

¹⁷ Morison, George, “Swiss End Control of Watch Exports,” *New York Times*, June 23, 1947, Financial Section, p. 27.

Swiss watchmakers were further inclined to focus on the US market as other countries, struggling to recover from damages sustained during World War II and short on hard currency, had classified watches as unessential and had cut down on the number of allowable Swiss imports. Imports of Swiss watches in the United States rose dramatically—from 2,500,000 in 1938 to 8,200,000 a decade later.¹⁸

To curb the influx of foreign-made watches, US watch industry leaders lobbied the government to impose a tariff on imports. Labor costs were so low in Switzerland (about 40% of U.S. wages in 1949) that U.S. watchmakers were unable to offset the disparity, even with the cuts in labor costs which resulted from dramatic technological advances made during the war. Watchmakers also appealed to the nation's sense of security, claiming that their ability to meet possible war emergency demands had been undermined by the tariff reduction of 1936.¹⁹

In late July of 1954, President Dwight D. Eisenhower ordered tariff increases of up to 50% on some imported watches. The increase applied both to the tariff

on nonjeweled watches and to those watches containing not more than 17 jewels.²⁰

The tariff had a dramatic effect. By 1959, Swiss watch exports to the United States fell to two-thirds of pre-war levels, or \$90 million a year. Now it was the Swiss watchmakers' turn to protest, claiming that the tariff was a serious threat to their livelihood. Nonetheless, it would remain in place until President Lyndon B. Johnson removed it in January 1967.

Timex

Among the American companies that would benefit from the tariff, as well as other innovations that came about during World War II, was the Timex Watch Company. Originally called US Time (company officials reportedly changed the name to Timex as it sounded more Swiss), the company was founded in 1941 by two Norwegian refugees who had fled their country after the 1940 German invasion.

The Norwegian businessmen purchased the nearly bankrupt Waterbury Clock Company in Connecticut and put into place a highly mechanized assembly process to expedite the manufacturing of military equipment. Company officials kept the automated process in place after the

¹⁸ Morison, George, "U.S. Watch Tariff Resented by Swiss," *New York Times*, February 28, 1949, Business Section, p. 27.

¹⁹ "Watchmakers Term Tariff Unrealistic," *New York Times*, May 22, 1949, Business Section, p. 11.

²⁰ Egan, Charles, "President Raises Duty on Watches," *New York Times*, July 28, 1954, p. A1.

war, allowing the company to cut the manufacturing costs for its Timex brand watches.

Another advance resulting from wartime efforts was announced in March 1947, when the Elgin National Watch Company introduced a new alloy known as elgiloy, which combined eight chemical elements. The American company's new durapower watch mainspring proved to be far more resistant to rust than other watch materials, as well as more sturdy and longer-lasting. Its introduction allowed pin-lever watches to be built that would more closely compare with jeweled-lever watches in terms of quality and durability.²¹ A company official predicted the alloy would cut watch repairs in half.²²

Timex and other US watchmakers soon replaced jeweled movements with similar more durable, less expensive alloys. In addition, by incorporating some of the technology developed for timing devices and fuses used in World War II, Timex was able to mass-produce simply designed and sturdy watches that gained a reputation as highly reliable time-pieces. A new men's line of

watches was introduced in 1950, with a women's line introduced in the late 1950s.

Timex's management insisted that their new watch designs be based on simplicity and full interchangeability of parts. This made it very easy to use mass-production techniques and employ relatively unskilled labor, all while paying constant attention to production efficiency and quality control. In addition, Timex employed several hundred toolmakers who designed almost all of the firm's production equipment.

Nonetheless, jewelry stores and high-end department stores—mainstays of the Swiss watchmakers—were reluctant to carry what many viewed as a cheap watch brand. Company officials were forced to turn to drug-stores and other nontraditional outlets—including hardware stores, tobacco outlets, even auto accessory stores—to market and distribute the low-priced watches. Some sold for as little as \$6.95.²³

Though unintentional, the non-traditional distribution system turned out to be a boon for Timex. By the 1960s, the company had cornered the US market on low- to mid-priced watches with a distribution network that included 250,000 out-

²¹ Pin-lever watches did not use the jewel-tipped teeth employed in jeweled-lever watches. Rather, they used metal pins. This allowed for greater simplification and lower cost. Until the introduction of the hard alloy metals, however, pin-lever watches were widely viewed as less accurate and less durable than jeweled-lever watches.

²² Eckel, George, "Alloy Mainspring Developed by Elgin," *New York Times*, March 5, 1947, Business Section, p. 37.

²³ Jorgensen, Ed, *Encyclopedia of Consumer Brands: Timex*, Volume 2, p. 541 (St. James Press).

lets and annual sales of more than \$70 million.²⁴

Timex took advantage of a new type of advertising as well—television. The company spread its message in a series of ad campaigns featuring, among others, the well-known and well-respected news correspondent John Cameron Swazey, testing the Timex watch to ensure that it—as the tag line claimed—“takes a lickin’ and keeps on tickin’.”²⁵

Timex also managed to keep its costs low by opening factories overseas. By 1960, it operated plants in Scotland, England, France, and West Germany, in addition to its half-dozen domestic facilities. Timex imported watch movements, but not complete watches, into the United States.²⁶ The world-wide operation proved successful enough that Timex would continue to expand its operations, and its sales, throughout the world. By the early 1970s, it employed 17,000 people around the globe manufacturing watches and was reputed to be the world’s largest watch producer in terms of unit volume.²⁷

²⁴ Sawinski, Diane M. and Wendy H. Mason, eds., *Encyclopedia of Global Industries: SIC 3873*, Gale Research (Detroit, Mich., 1996), p. 494.

²⁵ Kryhul, Angela, “A Timely Turnaround,” *Marketing*, September 6, 1993, p. 3.

²⁶ Malabre, Alfred, “Watch Firms Automate Plants, Push to Boost Tariffs, Get Wage Cuts,” *Wall Street Journal*, June 15, 1959.

²⁷ Martin, Graeme and Martin Dowling, “Managing Change, Human Resource Management and Timex,” *Journal of Strategic Change*, Vol. IV, 1995, pp. 78–79.

Bulova

Meanwhile, another American company was creating a stir with a new electronic watch introduced in 1960. The Bulova Watch Company unveiled the Accutron brand, a combination of the words “accuracy” and “electronic,” on simultaneous closed-circuit television broadcasts to major media outlets in 13 cities across the country.²⁸

The watch, which was powered by vibrations of a miniature, electronic-charged tuning fork, was actually based on a new tuning fork technology developed and patented by a Swiss engineer, Max Hetzel. Unable to find any Swiss companies interested in his idea, the electronics engineer came to America, where the first space program was under way and NASA officials were seeking a small yet highly accurate time switch they could leave on the moon. The Bulova Watch Company had a contract with NASA and used Hetzel’s invention to develop, not only a time switch that would be left on the moon during the first space landing in July 1969, but a wristwatch so accurate that it was guaranteed to lose less than a minute a month.²⁹

²⁸ Williamson, George E., “Battery-Run Watches Bid for Bigger Place in the US Market,” *Wall Street Journal*, October 25, 1960.

²⁹ Bruton, E., op. cit., p. 190.

More than half of all watches sold in the United States in 1959 included foreign-made movements, compared to less than 10% in 1930. This was a particularly significant item for Bulova as it was, at the time, the largest producer of jeweled-lever watches in the country. US watchmakers also hoped to cut down on manufacturing costs with the new electronic movements as they contained fewer parts than conventional mainspring-power watches.³⁰ The Accutron proved extremely profitable for Bulova, which manufactured nearly five million tuning fork watches—priced up to \$395—before ceasing production in 1976.³¹

While Bulova was perhaps best known at the time for its Accutron brand, it also introduced a low-end brand, the Caravelle, during 1962–63. The new brand accounted for 14% of Bulova's sales in 1962, and 45% in 1965.³² In 1966, the company's overall net income of \$3.9 million and sales of \$123 million set a new record. By 1968, Caravelle was the best-selling jeweled-lever line in the United States.

In 1971, the company introduced the first American-made quartz

crystal wristwatch, the Accuquartz, which retailed for almost \$400. It was smaller and lighter than its predecessor and powered by a micro-battery. But it was more expensive than other quartz watches developed and marketed by competitors based in the Far East. Bulova's treasurer told reporters in 1971 that he felt no pressure to switch to quartz technology. "We can afford to wait and watch."³³ At the time, Bulova was said to be the largest producer of watches in the world—in monetary terms.

The next year, Timex introduced a cheaper version of the quartz watch. The price tag was less than \$200, and the watch was accurate to within 16 seconds a month.³⁴

TECHNOLOGY RUNS AMOK

The basic technology behind quartz watches was discovered in the 1880s by Pierre Curie, a famous French scientist. He discovered that quartz, when subjected to pressure or alternating electric current, bends. Quartz watches contain a specially designed battery which activates (bends) the quartz crystal inside, causing it to vibrate approximately 33,000 times a second. These vibrations are then translated into

³⁰ Williamson, G.E., op. cit.

³¹ "American Power Watch Wins European Market," *New York Times*, May 27, 1963, p. 41.

³² Bulova contracted with Japan's Citizen Watch Company to produce the movements for the new watches, which Bulova assembled in the United States. Bulova also granted Citizen the license to market the line in Asia.

³³ "Money Abroad is a Corporate Crisis Here," *New York Times*, May 5, 1971, p. 37.

³⁴ "New Bulova Watch has Quartz Crystal," *New York Times*, December 7, 1971, p. 81.

pulses by a computer chip, which eventually drive the hands of the watch. Quartz watches display time in either digital or analog form. The hands on an analog watch continuously move around the face of the watch, while on a digital watch time is displayed in numeric form.

Two different types of technology were originally used for the displays of digital watches: light-emitting diode (LED) and liquid-crystal display (LCD). Light-emitting diodes are light-emitting circuits that show the time when a button is pushed. Liquid-crystal-display watches are light-reflective and display time constantly. LED watches were large, unattractive, and cumbersome, and were unpopular with the fashion-conscious public. Some people considered digital watches (in general) to be a passing fad; others, something more sinister. In a *New York Times* article, one writer noted:

Some see the digital watch as yet another sad and alienating symbol of the culture, a microelectronic monster printing out 'isolated minutes' that have no meaning without a face, without a tick to mark the passing of a human lifetime.³⁵

³⁵ Dullea, Georgia, "Digital Watches: The Technologically Chic Way to Tell Time," *New York Times*, December 31, 1975, p. 26.

Introduction of the LED

The production of LEDs was made possible as a result of the development of new integrated-circuit (IC) manufacturing techniques. These new techniques allowed integrated circuits to be manufactured less expensively. Integrated-circuit producers, such as Texas Instruments, Litronix Inc., and Hughes Aircraft (who had pioneered LED technology), decided to diversify operations into watches because of the integrated circuit component of this product. In the early 1970s, these companies created watch product divisions almost overnight by hiring, en masse, whole staffs to market watches. Texas Instruments' digital, solid-state LED watches sold at retail for between \$95 and \$175 when first introduced. To distribute its watches, Texas Instruments enlisted the same retailers who sold their calculators.

Timex was the largest American watch producer, with about 50% of the US market at the time LEDs were introduced. In response to the new technology threat, the company produced an \$85 digital watch, much more expensive than the \$20 average price of a Timex watch. The high retail price of LED watches was significant as the \$20 (and below) price range for watches represented about 70% of the world market at the

time.³⁶ By 1974, 650,000 LED watches were being sold annually, and some industry analysts were predicting that 10 million units would be sold in 1976.³⁷

By 1976, however, the average price of LED watches had gone down to \$20, while annual LED watch sales had risen to about 2 million units.³⁸ Despite their rise in popularity, LED watches still had many flaws. One unpopular characteristic of LED watches was that a button had to be pushed to activate the time display. This process consumed a lot of energy and LED watch batteries wore out quickly. Additionally, some people felt that LED watches were a distraction while driving. LCD displays, the main alternative to LED displays, consumed power at a much lower rate but were impossible to read in the dark, and hard to read in bright sunlight.

Skeptical of digital watches and believing them to be a fad, Timex continued to rely on traditional mechanical watches and remained profitable. In 1971, Timex sold 19 million watches in the United States and 11 million overseas. In 1970, sales were \$181 million,

and grew to over \$200 million in 1971.³⁹

In a July 1973 *New York Times* article following the resignation of General Omar Bradley as Chairman of Bulova, the treasurer of the company was quoted as saying that Bulova would stick with the tuning-fork technology and not adopt the new quartz technology for its watches.⁴⁰

In the first nine months of 1975, Bulova lost \$21.7 million, more money than it had made between 1971 and 1974. Part of these losses was attributable to a \$40 million write-off of tuning-fork and mechanical-watch inventory. Digital watches had gained popularity so quickly that the trend caught many watchmakers by surprise.

At Timex, *Fortune* magazine reported that "there was flat panic!"⁴¹ In 1979, Timex suffered losses of \$4.7 million. In 1981, the company announced it would reduce the percentage of mechanical watches it produced from 90% to 30% within a five-year period, and would be increasingly aggressive in the higher-end market by expanding

³⁶ Barmash, Isadore, "Upsurge in Digital Watches," *New York Times*, Business Section, July 20, 1975, p. 1.

³⁷ Rattner, Steven, "Two Digital Watch Makers Price Models at \$19.95," *New York Times*, January 8, 1976, p. 47.

³⁸ Ibid.

³⁹ "The Mainspring of Timex: Lehmkuhl Pins Hope on Quartz Watches," Man In Business Profile, Business Section, *New York Times*, December 5, 1971, p. 7.

⁴⁰ "Money Abroad is a Corporate Crisis Here," *New York Times*, May 5, 1971, p. 37.

⁴¹ Magnet, Myron, "Timex Takes the Torture Test," *Fortune*, June 27, 1983, pp. 112-120.

its distribution network into jewelry stores.⁴²

One Bulova official, referring to his company's dire financial situation, regretted that the company "sat on the sidelines in 1973 and 1974 while the parade to digital watches passed [us] by."⁴³ Bulova was forced to seek new investors to aid the company.⁴⁴ Bulova executives finally admitted that though "skeptical in the beginning about the future of the electronic watch," they now realized it was here to stay.⁴⁵ Bulova's domestic sales network at the time was composed of about 20,000 retailers, mostly jewelry and department stores, which sold its higher-end watches.

In 1978, Bulova stopped manufacturing watches in the US and moved all manufacturing operations to Switzerland. In early 1979, the Loews Corporation, a company with businesses ranging from insurance to tobacco and hotels to movie theaters, brought its total holdings to 30.3% of the company. In late 1979, Loews bought the rest of the company. Bulova ceased production of watch movements, and signed an agreement with

Ebauches S.A. of Switzerland to supply its component needs.

Bigger and Better in Texas

Texas Instruments, meanwhile, had become one of the largest watch manufacturers in the world. Their experience with watches was not a pleasant one, however. In 1976, one shipment of LED watches had a 40% return rate because of an error made in the manufacturing process. LED watches, it turned out, were very vulnerable to battery trouble because of their high power-consumption rate. Many watch retailers correctly predicted the increase in LCD popularity, which further hastened the demise of LED watches.

Intense price wars ensued as LED manufacturers struggled to get rid of their rapidly building inventory. One poll showed that LED watches had so many technical flaws that most purchasers of such watches would never buy another one.

Watchmakers Gruen and Benrus dropped out of the business in 1976 and 1977, along with the maker of Quasor and Armitron watches and semiconductor manufacturers American Microsystems, Litronix, and Intel.⁴⁶ Intel Corporation's watchmaking subsidiary took a \$1.4 mil-

⁴² Birnbaum, Jeffrey H., "Stunned by Falling Profits, Foreign Competition, US Watchmakers Take Different Marketing Tack," *Wall Street Journal*, September 17, 1981, p. 29.

⁴³ Barmash, Isadore, "Bulova Tries to Make Up Lost Time," *New York Times*, Business Section, June 13, 1976, p. 3.

⁴⁴ *Jewelers Circular Keystone*, April, 1982, p. 176.

⁴⁵ Lusinchi, Victor, "Switzerland's Watchmakers Fall Behind Time," *New York Times*, January 25, 1976.

⁴⁶ "Armin Discontinues Manufacture of Light-Emitting Diode Watches," *New York Times*, Corporate Affairs Section, November 27, 1976, p. 31.

lion after-tax charge to liquidate its watchmaking and related operations. In 1981, Texas Instruments exited the watch industry.

THE ASIAN WATCHMAKING INDUSTRY

The Japanese and the Quartz Revolution

In 1967, the first quartz wrist-watch was introduced by the Swiss Horological Electronic Center, a group founded by a number of Swiss firms that had pooled their resources to develop the new oscillating quartz watch. The watch movement revolved around a quartz crystal which could be stimulated to vibrate at a very high frequency by the introduction of electrical current. The oscillations converted into time increments so precise that the accuracy of the new quartz watches was measured in seconds per year.

Leading Japanese watchmakers like Hattori-Seiko, however, eagerly embraced the new technology. Three years before the quartz wristwatch was introduced, the Japanese company had already manufactured a quartz chronometer⁴⁷ to time the 1964 Olympic Games.⁴⁸

⁴⁷ A chronometer is a highly accurate instrument. It is capable of measuring time in increments of 0.5 seconds.

⁴⁸ Sawinski, Diane M. and Wendy H. Mason, op. cit., p. 495.

The Japanese company marketed the first commercially viable quartz-powered wall clock in 1968, and quartz watch a year later, while most Swiss watchmakers continued to produce the more cumbersome and expensive—but less accurate—mechanical watches. Though it included more than 180 separate electronic components and 128 soldered connections, Seiko's Aston quartz-powered watch was less than half-an-inch thick. The new quartz watch was dramatically more accurate than mechanical watches and fueled a line of mid-priced watches that was snapped up by consumers around the world.⁴⁹

Though the Seiko brand became a household name throughout the United States with the Quartz Revolution, the Hattori-Seiko Company had already been manufacturing clocks and other timepieces for more than 100 years. Until well into the mid-20th century, however, Hattori-Seiko focused largely on the Japanese and Asian markets.

Kintaro Hattori founded his first business in 1881 at the age of 21—a watch-importing company called K. Hattori & Co. in Tokyo's Ginza District. In 1913, Hattori opened his first foreign branch, in Shanghai, and began

⁴⁹ "Oscillating Crystals Now Rules the World," *Financial Times*, Survey Section, April 10, 1997, p. 3.

exporting timepieces to the Chinese.

Though an earthquake in 1923 demolished its manufacturing facility, the company persevered and, a year later, introduced the brand name Seiko—Japanese for “precision.”⁵⁰ The same year, the Shokosha Watch Research Laboratory—precursor to the Citizen Watch Company—produced its first pocket watch. Citizen was incorporated in 1930 and emerged as Seiko’s main competitor in both Japan and the broader Asian market by the middle of the 20th century.

Through the first half of the century, Japanese watchmakers felt little need to expand their operations beyond the Asian market. The market supplied cheap labor and millions of potential consumers and was relatively untouched by Western watchmakers. By 1936, Japan’s total watch and clock production had reached 3.54 million units annually—and Seiko was marketing more than half of them.

World War II put a temporary halt to production as the watchmakers’ facilities were converted to producing military equipment. But it didn’t take long after the war ended for K. Hattori to return to its pre-war position of dominance in and

around Japan. By 1953, it had regained a 55% market share in Japan. By now well entrenched in the Asian market, the company turned its attention to America.⁵¹

K. Hattori & Company made a quiet entrance into the U.S. market, selling watches and clocks to department stores and supplying parts to American watchmakers. By 1968, K. Hattori was producing watches for five of the largest American watch companies.⁵² The company also entered the mid-range US watch market directly in 1966, granting 23 distributors exclusive rights to market its Seiko watches in America. The watches were priced from \$30 to \$50.⁵³

To service the retailers, K. Hattori opened Seiko repair centers in New York and Los Angeles where retailers—who received a fee for their efforts—could send the watches. Not only did the Seiko brand have the industry’s lowest repair frequency, but when watches did need repairs, the service centers were often able to fix them in a few days. The prompt service and low repair rate, coupled with the exposure the company got as the 1964 Olympics official time-

⁵¹ Ibid.

⁵² “Seiko Finds Now is Time to Expand,” *New York Times*, February 26, 1968, p. 53.

⁵³ Jorgensen, Ed., *Encyclopedia of Consumer Brands: Seiko*, Vol. 2, pp. 503–504 (St. James Press).

⁵⁰ *Hoover’s Handbook of World Business 1997: Seiko Corporation*, pp. 470–471 (Reference Press).

keeper, gave Seiko a reputation as one of the most reliable watch brands in the world.

In 1960, exports accounted for about one-fifth of Hattori-Seiko's total sales. By 1967, exports made up 45% of total sales and the United States had surpassed the Asian market as the company's major export market.⁵⁴

Citizen entered the US watch market in 1960, although it didn't introduce its own watches there for another 15 years. Throughout the 1960s, the company distributed watches manufactured by Bulova in America, while it continued to market its own models in Japan and China. By 1965, Citizen and Hattori accounted for about 80% of total watch production in Japan.

In 1968, K. Hattori launched the world's first quartz wall clock. That was followed a year later by its introduction of the world's first commercial quartz watch—the Seiko Astron. In 1972, it offered the world's first quartz watch for women. The next year, K. Hattori introduced a digital watch with a liquid crystal display (LCD)—another first.⁵⁵

During the 1970s, K. Hattori expanded globally, establishing

subsidiaries in the United States, Australia, Canada, the United Kingdom, West Germany, Brazil, Panama, Switzerland, Sweden, and Hong Kong. Like the Seiko Group, Citizen introduced its own watches to a receptive American market in the mid-1970s, with a line of quartz analog and digital models. The popular watches helped Citizen post a significant increase in its U.S. market share by the end of the decade.

While the Swiss continued to dominate the upper end of the watch market, the new quartz technology—and the digital watch craze that followed—sparked a surge in low-end watches on which Japanese watchmakers were quick to capitalize. By 1989, the Seiko Corporation accounted for about 15% of the 690 million watches produced worldwide.⁵⁶ But it was not the only company to take advantage of the new trends and technology.

Casio Inc., a Japanese joint venture formed in 1978, went head-to-head with Timex watches, offering its low-priced models in electronic stores, sporting goods stores, and low-end retail outlets throughout the United States. Like the Timex brand, Casio watches were so cheap that con-

⁵⁴ "Seiko Finds Now is Time to Expand," *op. cit.*

⁵⁵ *Hoover's Handbook of World Business 1997*, *op. cit.*

⁵⁶ Sawinski, Diane M. and Wendy H. Mason, *op. cit.*, pp. 493–496.

sumers were encouraged to replace them rather than repair them. Building on the popularity of digital watches, Casio became a close competitor of Timex in the low-end market.

Far East Producers

Japan was not the only Asian country to compete with the West. In the late 1950s, its neighbor Hong Kong began making inexpensive watch components. By the late 1960s, they were assembling both mechanical movements and watches. By the late 1970s to early 1980s, Hong Kong became the number one watch producer (by volume) in the world.

Much of the Hong Kong production was the result of foreign-based producers with factories in the city. Timex, Seiko, and Citizen all shifted some of their production to Hong Kong in order to take advantage of the lower labor cost and higher productivity. The island's manufacturers initially focused on the production of mechanical watches, but several large semiconductor manufacturers in Hong Kong began to produce low-cost digital quartz watches, which could be sold at equally low cost.

Hong Kong and Japan took turns as the top watch exporter in the world into the 1990s. Japan eclipsed Switzerland as the number one watch producer (by

volume) in 1979 and the two jostled for the top position until 1983, when Hong Kong took the lead (though Japan retained a higher sales volume in monetary terms).

Over the next decade, the watch industry became one of the top four industries in Hong Kong. In the mid-1990s, more than 600 watchmakers belonged to the Hong Kong Watch Manufacturer's Association, Ltd.—all registered companies in Hong Kong.⁵⁷ By 1992, the country's watch manufacturers were producing about one-fifth of the watches worldwide.⁵⁸

THE SWISS REBOUND

In the late 1960s, one of every two watches in the world was made in Switzerland—almost all of them mechanical. The country was then exporting about \$418 million in watches annually. Even into the mid-1970s, more than half of the watches produced in Switzerland were mechanical models, powered by a mainspring that had to be wound periodically by the wearer.⁵⁹

⁵⁷ *Net-Trade Hong Kong Watch Profile*, Hong Kong Watch Manufacturer's Association Ltd., 1997, p. 1.

⁵⁸ Sawinski, Diane M. and Wendy H. Mason, op. cit., p. 498.

⁵⁹ "Swiss Watch Sales Climb in Needy Nations," *New York Times*, June 1, 1966, p. 61.

By the end of the 1970s, the Swiss share of the world market had plummeted from 43 to 15%, and the number of exports had been slashed in half.⁶⁰ In the United States—then the world’s largest watch market—Swiss imports had decreased 40% during the 1970s (much of it absorbed by Japanese companies like Seiko). Nonetheless, many Swiss watchmakers opted to stick with more traditional mechanical models rather than incorporate the new quartz technology. They boosted prices to compensate for shrinking sales.

In the 1970s, the rising Swiss franc dramatically increased the cost of a Swiss watch overseas. US brands like Timex, and Japanese companies Citizen and Hattori-Seiko, were offering similar models at considerably lower prices. The Japanese promptly introduced cheaper models in the upper market, and the Swiss saw their global market share further diminish. In 1974, the Swiss produced 88.8 million watches (exporting all but 4.4 million of them). A year later, exports dropped 25% in volume, and 20% in value.⁶¹

In 1970, there were 1,620 Swiss watch companies employing

89,000 people. In 1985, the number of companies had shrunk to just 600, and the work force had been slashed by two-thirds as well, to about 32,500 employees.⁶²

Among those luxury watchmakers that remained, however, sales showed a small yet significant increase. In 1977, for example, Rolex produced only 200,000 watches. Their total sales volume, however, was \$90 million. Only seven watchmakers from around the world took in higher revenues that year—all of them producing at least 3 million watches each. In 1980, Rolex sold \$280 million in watches (from just 1% of Swiss watches by volume), accounting for 19% of the Swiss industry’s exports in value.⁶³

Revenues from high-end watch manufacturers in Switzerland were increasingly important as the volume of Swiss watches dropped, especially in the early 1980s when Swiss watch production hit an all-time low.

Facing extinction, short on cash, and hounded by a coalition of creditors, the two largest Swiss watchmaking companies, ASUAG

⁶⁰ Rosenbaum, Andrew, “Switzerland’s Watch Industry: Changing with the Times,” *Hemispheres*, June 1994, p. 39.

⁶¹ “ASUAG Group and Smaller SSIH Weigh Merger,” *New York Times*, Business Section, February 23, 1981, p. 2.

⁶² Deutsch, Claudia, “Watchmakers are Ringing the Old Back In, as a Varied Industry Revives and Thrives,” *New York Times*, December 5, 1991, p. 1, Special Section.

⁶³ Anderson, Susan Heller, “The Rolex: How the Swiss Sell Status,” *New York Times*, Leisure Section, *New York Times*, October 19, 1980, p. 6.

and SSIH, merged in 1983. They became SMH, the Swiss Corporation for Microelectronics and Watchmaking Industries, which went on to generate revenues of SFr 1.5 billion (or US \$1.1 billion) that year, while it lost SFr 173 million (US \$124 million). By 1992, however, losses would be recouped and revenues would nearly double to more than \$2 billion.⁶⁴

Nicholas Hayek, a Lebanese-born management consultant to the Swiss watch industry, became CEO of the new company after assembling a group of investors. He initially approached Timex to be a partner in the venture, but was rebuffed.

Those who did choose to invest paid about SFr 100 per share. Ten years later, the shares were trading at SFr 1,500 a share.⁶⁵ What precipitated the meteoric rise in SMH stock value? A simple, sporty watch encased in plastic that retailed for less than \$50, the Swatch.

The Swatch Phenomenon

According to Hayek, company officials initially were going to sell the concept to another watchmaker, worried that the lower-end watch might damage the reputation of Swiss watchmakers.

But with Hayek's prompting, SMH decided to launch the Swatch brand in the spring of 1983 with retail prices starting at just \$35. The low price wasn't all that set the Swatch apart from other Swiss models. Its style, shape—even its size—were unique for its price range.

Until 1979, Seiko held the record for the world's thinnest watch. But that year, ASUAG launched the "Delirium" project. By producing a thinner battery and bonding the watch components to the casing (rather than layering them on the back), the company created the Concord Delirium, measuring just .0385 inches. Its one setback? The watch retailed for \$16,000.

The Swatch, like the Delirium, was thinner than most of the traditional analog watches produced in Switzerland. SMH slimmed down the Swatch in part by cutting the watch movement's components to 51 (compared to as many as 150 in other watches on the market). The parts were inserted inside a plastic case which was sealed with ultrasonic welding, instead of screws, which made it shock-resistant and water-resistant (up to 100 feet below the surface). The watches came with a one-year warranty and a three-year replaceable battery.⁶⁶

⁶⁴ Taylor, William, "Message and Muscle: An Interview with Swatch Titan Nicolas Hayek," *Harvard Business Review*, March–April 1993, p. 99.

⁶⁵ *Ibid.*

⁶⁶ Pinson, Christian, "Swatch: Case Study," *INSEAD-CEDEP*, 1989, p. 6.

In 1992, production costs for the Swatch were estimated at just 7 Swiss francs per unit—largely as a result of the automated production process. That, in part, allowed Swatch production to remain in a small mountain town in Switzerland, while other Swiss watchmakers began moving manufacturing plants abroad to cut costs.

The company marketed the trendy synthetic watches to young consumers with the idea that as they grew older they would upgrade their watches to higher-end SMH brands like Omega, Blancpain, or Longines. Customers often bought Swatches in bulk, coordinating different watch styles with their wardrobes. Swatch offered limited editions of its designs, which helped transform some watch lines, like those created by pop art artists Keith Haring and Alfred Hofkunst, into instant collectors' items.⁶⁷

Within a decade, the company's earnings had risen to the equivalent of about \$307 million on sales of \$1.99 billion—of which the Swatch accounted for a significant portion. From 1983 through 1993, SMH sold more than 100 million Swatches (at about \$40 apiece).⁶⁸

⁶⁷ Rosenbaum, Andrew, op. cit., p. 40.

⁶⁸ Helliker, Kevin, "Swiss Movement: Can Wristwatch Switch Swatch Cachet to Automobile?" *Wall Street Journal*, March 4, 1994, p. A1.

In the 1990s, however, sales of Swatch stagnated despite efforts by the company to change its image and appeal to older consumers. Swatch did enjoy some success with new models like a combination chronograph,⁶⁹ a watch that retailed for less than \$100 (100,000 sold in the first few weeks), and a watch for divers that sold for \$50, considerably less than the competition.⁷⁰ Despite the initial success of the 1990s models, however, Swatch—and parent company SMH—suffered as the demand for Swatch continued to slip.

In 1993, the SMH bearer share lost a third of its value following rumors that Swatch sales had stalled. In February 1994, company officials announced flat sales for the previous year, with net income increasing just 7%. In addition, they conceded that the brand's foray into other product lines had met with less than stellar success.⁷¹ Three years later, company officials finally unveiled the much-ballyhooed Swatchmobile—the tiny electric car designed by Swatch and manufactured by Mercedes. Behind schedule and beleaguered by a number of big-name

⁶⁹ The chronograph is an instrument capable of measuring time in intervals as small as 1/5 of a second.

⁷⁰ Barmash, Isadore, "Fighting the Recession by Spotting Some Fads and Inventing Others," *New York Times*, November 17, 1991, p. 1, Special Section.

⁷¹ "Worries Surface as Swatch Sales Mark Time," *Financial Times*, June 6, 1994, p. 24.

competitors, SMH announced the two-seater minicar would only be available in Europe, and then only after March 1998.⁷²

Swatch may have been the best known, but it was not the only brand produced by SMH. In fact, most of the Swiss watchmaker's brands were well-established, upper-end brands like Blancpain, Longines, Tissot, and Rado. Its flagship luxury brand was Omega.

Omega: Last and First

Launched in 1848 by Swiss watchmaker Louis Brandt, the luxury watch was named for the last letter of the Greek alphabet, often associated with accomplishment and perfection. By 1900, about 200,000 pieces were produced annually, employing nearly 1,000 watchmakers.⁷³

By the early 1970s, Omega had evolved into one of Switzerland's most prestigious brands, touted as the "crown jewel" of SSIH. But during the 1970s, the company began flooding the market with double, even triple, the number of Omega timepieces. It also allowed foreign agents to contract with outside manufacturers to produce their own models that could carry the

Omega name. At one point, there were about 2,000 Omega models.⁷⁴

"The company got arrogant. It also got greedy," said Hayek in a 1993 interview.

"It wanted to grow too fast, and it diluted the Omega name by selling too many watches at absurdly low prices."⁷⁵

When the former SSIH company was absorbed into SMH, Omega was heading toward oblivion. Company officials trimmed the product line to 130 models and concentrated on reviving its former image as a luxury timepiece.

SMH used the new and improved brand name to maintain a strong hold in the higher-end market. Omega watches retailed from a few hundred dollars up to \$20,000 and were distributed through a service network spread across 130 countries. The watches were guaranteed internationally against all manufacturing defects and could be repaired at no cost at any of the worldwide locations.⁷⁶

The success of high-end Omega watches was reflective of a growing interest in luxury timepieces as the 20th century drew to a

⁷² Jones, Terril Yue, "Swatchmobile's Time Will Soon be at Hand," *The Arizona Republic*, April 22, 1997, pp. E1-2.

⁷³ Omega, Ltd., On-Line Company Profile, 1997, p. 1.

⁷⁴ Taylor, William, op. cit., p. 101. p. 15.

⁷⁵ Ibid.

⁷⁶ Omega, Ltd., On-Line Company Profile, 1997, pp. 3-18.

close. In 1996, Swiss watchmakers generated about \$3 billion from the sales of high-end mechanical watches—a figure that had held steady for several years.⁷⁷

In the early 1990s, Switzerland accounted for just 6% (42.5 million) of watches produced worldwide. It garnered nearly half of the value at \$4.3 billion, however. “You can buy a four-dollar quartz watch that runs as accurately as the \$11,500 Rolex President,” noted one high-end watch retailer in 1991. “But it just won’t supply the ego gratification.”⁷⁸

In the mid-1990s, Patek Philippe was producing about 15,000 watches a year. Vacheron Constantin, the oldest upper-end company in the business, manufactured about 11,000. Rolex, the best-known and one of the best-selling names in luxury watches, was making between 600,000 and 700,000 watches a year and selling them at retail for \$2,100 to \$150,000 apiece.⁷⁹ Meanwhile, sales of Swiss plastic watches, namely Swatch, continued to fall—by about a quarter in both volume and value in the mid-1990s.⁸⁰

⁷⁷ Whitaker, Barbara, “Wrapping Their Dreams Around Their Wrists,” *New York Times*, March 2, 1997, p. 10.

⁷⁸ Deutsch, Claudia, op. cit.

⁷⁹ Whitaker, Barbara, op. cit., p. 10.

⁸⁰ AFX News, AFP-Extel News Ltd., August 8, 1996.

TIMEX MARCHES ON

In general, analog watches continued to outsell digital watches worldwide in the 1990s. However, the best-selling watch in America—and the world, according to company officials—was the exception. The Ironman Triathlon by Timex—a digital, sports-oriented watch—retailed for \$39.95 and sold about half a million units a year in the United States alone. It included a standard time and date display, an alarm, countdown timer, and stopwatch able to store elapsed times for up to eight laps.

The popularity of the Ironman Triathlon watch and other popular models in the 1980s helped resurrect Timex after a decade-long slide in both the United States and overseas markets. In the 1970s, the company was slow to pick up on the trend toward quartz watches; it continued to produce mechanical models even as cheaper digital models from Asia flooded the US market. Though it remained number one in America, its market share was slipping in the 1980s.

In 1991, the company went through some major changes. It underwent massive corporate restructuring and then began building a base on which to establish a stronger market position both inside and outside the US borders. The same year, the company got a boost when it

acquired the rights to distribute the more fashion-conscious, higher-priced Guess and Monet watches worldwide.

In 1993, Timex had total sales of \$500 million in the US—five times larger than its international sales. But the company's five-year goal was to reverse that statistic. Though it predicted at the time that some growth could occur in Canada (where it already claimed a one-third market share), the company also focused on expanding into lucrative markets in the Far East—its second largest market in 1993.⁸¹

According to industry analysts, Timex was the biggest watch manufacturer in the United States, and third in the world, in the mid-1990s.⁸²

THE WORLD WATCH SCENE IN THE 1990S

Though the Connecticut-based Timex Enterprises, Inc. was the largest watch manufacturer in America and the third largest in the world, its home market, the United States, entered the 1990s with a large trade deficit in watches. Still the biggest single market on the globe, the country

imported \$1.84 billion worth of watches in 1991, while exporting only \$73.4 million.

While Swiss watchmakers started producing more quartz analog than mechanical models in the 1990s, Switzerland continued to produce more mechanical models than any other country in the world. After suffering a steady decline for over a decade, the mechanical models enjoyed a minor resurgence in popularity in the 1990s—particularly among wealthy collectors.⁸³

Overall, however, it was Japan that dominated the world market. In 1992, the country accounted for 44% of all watches produced worldwide; Hong Kong, 20%; Switzerland, 17%; and the United States, a negligible amount. Nonetheless, Japan collected only about one-fifth of the world's total revenues for watches that year, despite being the top producer. Switzerland still garnered the most revenues of any watch exporter in the world.⁸⁴ The average export price of a Swiss watch that year was \$111.58 (based on a 1992 exchange of 1.4062 Swiss franc to the dollar). According to the Federation of the Swiss Watch Industry, that was nearly six

⁸¹ Kryhul, Angela, "A Timely Turnaround," *Marketing*, September 6, 1993, pp. 1–3.

⁸² Sawinski, Diane M. and Wendy H. Mason, op.cit., p. 497.

⁸³ "Watches, Clocks, Clockwork Operated Services & Parts," *Encyclopedia of American Industries*, pp. 1305–1306 (Gale Research, Inc., 1994).

⁸⁴ Sawinski, Diane M. and Wendy H. Mason, op.cit., p. 497.

times the average export price worldwide.

The Federation of the Swiss Watch Industry, worried about both fake Swiss watches from Asia flooding the worldwide market and its own declining watch exports, announced in 1997 that it would launch an investigation into reports of Arabian Gulf imports of fake brand-name watches manufactured in East Asia.⁸⁵ The most often-copied brands were Swiss, including Rolex, Omega, and TAGHeuer.⁸⁶

A 1994 Citizen Watch Company report on the industry predicted that Hong Kong's role as an intermediary center for the worldwide watch industry would

mushroom, eventually making the country responsible for about 70% of all watches. Other Asian countries also showed a continued annual increase in watch production throughout the first half of the 1990s, including new entrants such as China, Thailand, Malaysia, and the Philippines.⁸⁷

Meanwhile, an increasing number of watchmakers turned their attention to emerging markets in Asia and Latin America after worldwide watch sales shrank from double- to single-digit annual growth rates in the 1990s. By the turn of the century, analysts predicted global watch production would reach one billion, largely due to the growing Asian and South American Markets.⁸⁸ 

⁸⁵ *The Reuters European Business Report*, January 12, 1997.

⁸⁶ *Ibid.*

⁸⁷ AFX News Service, January 27, 1995.

⁸⁸ Sawinski, Diane M. and Wendy H. Mason, *op.cit.*, pp. 497-498.

World time and date for cities in all time zones. International time right now. Takes into account all DST clock changes. Share this page / Follow us on: Facebook. Tweet Follow. Twitter. Visit us on: Facebook Twitter. Back My account. The World Clock " Worldwide. Find current time, weather, sun, moon, and much more My Cities (Personal World Clock) edit.