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# Tech Post



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## **'The Technological Development of <Digital Watch> Through History'**

Society's core value of the upper class having authority over the lower social orders has been challenged by the development of portable timekeeping devices. In the pre-industrial era, pocket watches were technological advancements that were reserved for the elite class to represent their status and power. With the elites possessing the power and technology of timekeeping, they governed their workers daily life. When watches became more available and cheaper through mass production in the industrial revolution, the privilege of the timekeeping devices was distributed to the public and in turn they were able to manage their own schedules. However, the development of digital watches in the post-industrial period posed a cultural shift. As the digital watches evolve into the modern world, the public became less conscious about timekeeping and more concerned with owning the newest technological innovation.

Pocket watches, with their complex gear systems and encasement made of precious metal, were the first portable timekeeping devices. These "silver watches signalled enviable affluence" and the revolutionary technology made pocket watches a status symbol of the 18<sup>th</sup> century for the upper class (Styles, 2008, para. 27). Time keeping devices experienced a major aesthetic change that made them more practical. They became wrist watches, which were designed for soldiers in World War I to keep track of time in battle because of its easy access compared to a watch kept in a pocket (Wiki, 2009). The transformation into wrist watches challenged the watch industry to create better mechanisms to make smaller watches. Though watches in this pre-industrial era went through significant technological advancement, they were in constant need of repair which made them expensive and reserved for the elites. As a result, only the upper social orders were proprietors of timekeeping who managed the daily lives of the lower classes.

As wrist watches progressed into the industrial revolution, portable timekeeping devices became more available to the public through innovations in technology. The industrial revolution was the wrist watches' phase of major innovation, which provided the foundational mechanics of a watch to advance from the traditional society to the modern society. During this revolution, the watch industry was in competition to find more precise and accurate mechanics. For example, in 1927, quartz crystals were discovered and used for astronomical observation. Then, after research had been conducted in scientific laboratories, they became the staple material for more accurate timekeeping (Stephens & Dennis, 2000). Consequentially, the industry switched from manufacturing mechanical watches to producing quartz watches. More over, quartz crystals were in demand during World War II to produce quartz oscillators (Stephens & Dennis, 2000). This demand along with the nature of the watch industry to produce more precise timekeeping devices motivated the industry to invest in creating automated manufacturing equipment. In essence, the industrial revolution broke the barriers of the traditional "entrenched patterns of manufacturing" from watches being handcrafted to mass production (Stephens & Dennis, 2000, p. 482). As a result, more accurate and precise watches were being produced at a faster rate and with lower production cost. With more men and women being able to own a watch, they began to "[internalize] new time discipline" (Styles, 2008, para. 12). This brought upon newfound knowledge to the workers' daily lives. Instead of looking toward temporal signs such as daylight for working hours and night as resting time, workers could now organize their day into various slots of activities. For instance, in the 21<sup>st</sup> century, from 6am- 7am is breakfast time, 8am-4pm is work, and 8:30pm-9:30 pm is reserved for a favourite TV show, etcetera. Thus, the industrial revolution resulted in more affordable watches being widely owned and the idea of time discipline affected the public to better organize their daily activities.

As society became more time conscious, the watch industry continued to evolve with the invention of the electronic digital watch in the post-industrial era. The creation of the electronic watch began while the Swiss and Japanese watch industry were going to launch their analog quartz watch. The American Hamilton Company was having technical difficulties producing quartz watches; in order to stay in the competitive watch market, they embarked on making the world's first electronic digital watch (Stephens & Dennis, 2000). With research being conducted for the Cold War and Space Age, the Hamilton Watch company was able to exploit military resource that provided the blueprints for "miniaturizing electronic circuitry" (Stephens & Dennis, 2000, p. 483). The world's first electronic digital watch called the Pulsar was produced in 1972 (Wiki, 2009). Hence, the watch industry, which was one of the first to change their manufacturing patterns, also became the first industry to introduce personal electronics to the world. The digital watch was the beginning of a technological progression into post-modern society. Though digital watches stressed timekeeping to become more absolute to the numerical figures, digital technology and development in miniaturizing electronics allowed watches to advance beyond timekeeping. The digital watches began to expand and incorporate functions such as calculators, GPS receivers and cellular phones. Watches became gadgets. The people became more interested in keeping up with the latest watch trends than owning the most accurate timekeeping watch. In The New York Times article by Michelle Slatalla, she tells her story of her search for the Casio GW-400J watch that her husband desired because of the G-Shock's line that emphasized toughness. Her husband wanted a fully featured gizmo containing a vibrating alarm, countdown timer, thermometer and a moon-phase indicator (2005). Her husband is an example of society's shift in values. In the 21<sup>st</sup> century, the public is concerned about keeping up

with trends to represent their individuality. Contrary to the pre-industrial era in which pocket watches were status symbols, digital watches today has become personal expressions.

Throughout the pre-industrial era, industrial revolution, and post- industrial period, watches have been shaped by social constructivism. The industry and society have been on a quest to find a precise device to keep track of time. These time keeping devices have been prominent technological advances that aided World War I, World War II, Cold War, and the Space Race. Today, the digital watch technology serves as a foundation to the digital revolution.

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