

Intelligent Wearable: Early Designers

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Published: 28 September 2020

ABSTRACT

It is an overview of the significant landmark in techno fashion landscape. Although the narrative would be on electronic and digital technology in fashion, writer is keen on specifying it on intelligent wearable and the pioneering designers who made the ground-breaking debuts. Intelligent wearable is one of many prominent constituents in techno fashion diaspora. It has a significant role in shaping the future world of contemporary fashion by converging art and science.

Keywords: *art and science, techno fashion, advanced technology clothing*

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Techno fashion is an ideation that conceptualizes the futuristic envisioning that embodies aspiring intellectuals and artists alike that run around in the same playground of imaginative sophistication. These visionaries envision futuristic utopia.

In the beginning it was a noble concept which was inspired by grand technocrat geeks and cyberpunk renegades. It was a collective effort to reconstruct and remove the orthodox ordain of conventionalism that have dictated the world of fashion for centuries. Before fashion and the world of clothing were merely perceived and understood as another mundane tools of functionality to support fundamental human needs. It was to necessitate the daily facilities for social consumption such as clothes for clothing purposes, some object to serve as a protective shield to cover human bodies. In spite of this fashion went through the age of industrialization, thus became another parcel of the mass reproduction in the age of high consumerism.

In the same era (high renaissance to late industrial age), fashion or the couture culture had a second act. It was served as a tool to envelop the hierarchical system of social status through clothing. The process of stratification was conducted by the type of material used in the clothe making and to whom it was made for. The mode of designing and fabricating the clothes for the bourgeoisie aristocrats and high-class clairvoyants would incorporate distinctively custom-made design and uniquely rare materials of fabrics. Clothes made for higher class of people also includes ornamentation of jewellery and embroidered delicacies. This is to acknowledge that only the rich and the utmost powerful authoritarian clusters could only wear the utmost lavishly expensively profound clothing of astonishment and to stand with proud appearance. In spite of this, clothing had been used to distinguish and marginalized social classes between peasants and bureaucrat tycoons.

At the dawn of 20th century, modern era has made a profound change to every angle of life. Modern era has witnessed the shift from the age of humanism enlightenment to scientific logics. Thus, it gave way to massive inevitabilities especially in socio-cultural threshold. The economical understanding in this modern cultural landscape has allowed itself to be receptively open to the acceptance of new ideas and perspectives. This has allowed, in particular, the world of fashion and clothing to embark on a new trajectory.

At the beginning of 20th century, double world war series have opened the imperatives of technological innovations to mankind, indisputably, through warfare. Albeit the unfortunate events that wrecked mankind to dusts, there was the alternate side to the apocalyptic tragedies of wars. It gave birth to the prowess of technological invention and innovation. After the world wars, the world has witnessed the rise of electronic and technology industry. The advancement of modern technology has inevitably revolutionized the fashion world.

In the first half of the 20th century, the fashion industry had not been widely affected by the new age of modern technology. Fashion designers often incorporate the principles of scientific technologies and facilitates it as visual inspirations and visual ideation. Such ideas were visibly present in the form of modernist patterns that employ eccentricity of technicolor or repetitious cubical shapes and geometric patterns on the clothing fabric. These patterns were the representatives of electronic and technological environment that inspired designers to comply modern age design on their clothes.

From the mid to the late 20th century, we have witnessed the booming age of technological revolution, and everywhere in the world the sophistication of high-tech technology seems to occupy every aspect of human lives.

As mentioned earlier, 20th century has yielded indefinite technological accomplishment throughout the course of modern history. From world wars to space explorations, mankind was introduced and exposed to bombardment of new age of technological possibilities and creations. This has liberated the world of modern fashion from conventional perspectives of clothing to the engagement with new frontier of creative innovations and understanding. Late 20th century has opened rooms for fashion practitioners to participate in the dialogue between technology and fashion. In the immediacy of the high-tech revolution, fashion community was urged to embrace the technological premise to transcend new ideas that represents the new technological society.

Recently, we see the increase of gadgetry reliance in the society as part of the normality condition in today's culture. The excessive use of high-tech gadgets has been adopted by society as part and parcel of everyday lives. The needs of advance technology to help human in taking care of their daily lives chores and activities have unlocked ideas to the fashion designers to incorporate electronic and digital technologies in the design.

Ideas of integrating technology and fashion was derived from inspirational trajectory of technical innovations such as in the areas of military technology and space travel. Soldiers uniforms and armouries and astronaut's spacesuits are profound examples of technology in a suit. Soldiers uniforms were considered to be technical innovations. The uniforms and protective gears were equipped with advance technology such as long-range high distance radio walkie talkie transmitter, thermos technology night vision helmet attached spyglasses and multi terrain lightweight boots. Space suits for astronauts were equipped with high tech wearable utilities and apparatuses such as glass helmet with image tracking screen and communicators, oxygen tanks and jet pack boosters. These are the conveniences of modern technologies that fashion designers looked up to. If military department and NASA could apply advance technology on their suits and uniforms design to facilitate all the basic needs of the wearer, we could also do it to facilitate the needs of modern society. Since there no technological barriers between society now, high tech became house hold consumptions in today's culture.

The need to email, make phone and video call, to play in virtual game, to surf the cyberspace, to google, to navigate, to do almost everything, society today is in the urgency for high tech insistency. This new regimented social system which is capitalized by technocratic industrialism has allowed fashion designers to look inward and outward past the conventional horizons. Many accepted the new techno-society narrative. The indisputable impact of technology has bred a generation of designers cum technologists who use technology to examine new creative regions and fresh innovative directions.

The work of the new class of designers described their works as engineered and constructed functional wearables rather than sewn and tailored clothes. Their work also changed, redefined and updated the accepted fashion vocabulary, changing the traditional concepts of salon couture to product of multiple functionalities. The new visionary designers are now working with teams of cross disciplinary such as physicists, architects, engineers and computer scientists. It was widely known as techno fashion. In regards to the rapid digital technology, it has evolved into something essentially relevant to today's society as intelligent wearables. This is made possible by the vast technical abilities provided by the wireless nanotech industries that allow electronic devices to be fully integrated and embedded into fabrics and fashion accessories. Personal devices such as personal stereos, iPod, smart phones, notepads and digital organizers are now being fully assimilated into clothing items.

One of the prominent designers to first embrace the new paradigm thus adopt the techno-aesthetic idealism was Hussein Chalayan. Chalayan was considered as the maverick of techno fashion domain. He was the first to pioneer the technological functionality of wireless garment powered by remote control. He intersected high tech systems and materials to establish a dialogue between the wearer and his/her immediate surroundings. Sparked by the frontlines of the experimental renegades such as Chalayan and Alexander McQueen, new hybrids of creative revolvers are continuing to unravel new province in intelligent fashion.



Visual 1: Hussein Chalayan

Geek Chic is one of the revolutions, but you would not want to compartmentalize them in categorical cliché of fashion designers. Geek Chic is a new breed of designers who trespass the conventional design aesthetics borderline in fashion industry. They promote the intersection of science and arts, creating heterogeneous creative ideology that produces multi-facets options in intelligent techno fashion. Geek Chic optimism in embracing the convergence of arts and science has witnessed the intelligent wear line of production under their wing. Such intelligent wear that was prominent in the late 20th century was the creation of wearable computer interface. The clothes integrated with software, communication devices, sensors and speech recognition systems into garments to make them think for the wearer. This would allow the wearer to surf the internet, make phone calls, store and retrieve computer files via the clothe.

Before wearable digital gadgets accessory that we see today made their debut, Levi Strauss, the globally renowned fashion giant, which is famous for its denim jeans production, was first to explore the possibility of wearable telecommunication system. This ground-breaking concept was to alter the role of clothe as a medium that could act as a conduit for a body area network. In September 2000 took collaborative initiatives with Philips Electronics. This was an attempt to materialize the radical ideas that they have envisioned, the wearable telecommunication system. Both teams of designers and technologists have come out with early design they called Industrial Clothing Design. This soon to be manufactured to target group consumer prototype was branded as ICD+ label. They were four jackets prototypes that Phillips has developed the technology of the ICD+, and Levis was responsible for the creative fabrication of the clothing items. Phillips interconnected telecommunication and media technology with the jacket design by providing simple body area network such as remote-control network and data ports for mobile phone and iPods.

Another candidate that stretches the intelligent wear boundary was a French designer, Olivier Lapidus. Lapidus has been showing his collection in Paris since 1989. One of his important designs of technologized clothing was solar powered parka lined with Mylar, facilitated and powered by micro lithium batteries and voltaic mono crystalline solar captors. His designs often combine conventional fabrics such as organza and silk with carbon fibre and glass. The amalgamation of conventional and new industrial materials has been his key principle in laying the designing ground for his intelligent wear production.

In the early 90s, we see the rise of interests in research laboratories to explore the concepts of intelligent wearables. MIT Media Lab is one of the prominent players in the arena. Their researches have unlocked eccentric new technological ideas. One of them was Steve Mann, a Media Lab scientist who was responsible for designing the world first wearable computer. He and his fellow team have designed a computer with a half QWERTY keyboard and display operators to be worn on the wrist or on the chest of the wearer. Mann also included a head mounted camera, functioned as the computer screen.



Visual 2: Steve Mann/MIT Media Lab

Charmed Technology was another research laboratory cum high tech fashion company who has long embarked on similar journey as other wearable tech labs. Established in 1999, the only dissimilar qualities and approaches that Charmed has was its focus venture on smaller scale of economical platform. Their foundation was based on producing inexpensive, accessible and applicable wearable technology. Thus, their focus has shifted from clothing to fashion accessories. Focus on fashion accessories would allow them to design inexpensive wireless technology devices that could be worn. The wireless technology that Charmed were creating were lines of fashion accessories such as transmitter earrings, necklaces equipped with sensors and data screen sunglasses. With the success of promoting wireless wearable into mass consumer market, Charmed, conveniently dubbed its radical innovation as Wireless Every Wear.

Starlab is an experimental media design laboratory that focused on new design in fashion technology in the early 21st century. Starlab was responsible for introducing a healthcare idea to be applied and worn directly on the human body. The design included sensors that monitor body functions, administer medication and relaying medical data to a physician via embedded wireless device. Starlab also developed the optical fibres on their clothing. The neo fibres would enable the wearer to notice pressure points in the blood flow so that the wearer could counteract it. The optical fibres functioned as sensors that would pinpoint pressure areas.

Move forward to the millennium, in today's era of high techne` hegemony, the inventions mentioned earlier are considered obsolete technologies compared to the rapid evolution of current digitech industry. But the essay does not function in supplying data through comparative analysis. It is about paying homage to the original mavericks that paved way to the birth of techno fashion. It is a

retrospective survey to reveal to today's masses the pioneering catalysts of wearable technology. Without them, the gadgetries accessories that we know today will ceased to oblivion.

Technology and arts are destined to be evolutionary entities. Neither should be detained from evolving.

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