

# A Review on Technological Tools in Cosmetology Business

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**Abstract:** In the age of technology, people's complex daily work seems to be easily done. Technology has become a tool for people from waking up in the morning, grooming, doing things all day, up to resting time in the evening. Simple things with a touch of technology might just go unnoticed sometimes, just like the technological tools used in the daily grooming of people. This paper discusses the history of cosmetology and the different technological tools used in this field. This study aims to provide literature for individuals who want to pursue a career in the cosmetology business.

**Keywords:** Cosmetology business, Cosmetics, Technological tools, Beauty treatment

## 1. Introduction

As early as 2630 BC, Egyptians were the first to cultivate beauty in an extravagant fashion, using minerals, insects, and berries to create makeup for their eyes, lips, and skin. They have even used henna to stain their hair and nails. The ancient Egyptians are credited with creating kohl makeup to line the eyes, alleviate eye inflammation, and protect the eyes from the glare of the sun. This is originally made from a mixture of ground galena, sulfur, and animal fat. Cosmetics became part of their personal beautification habits, religious ceremonies, and the preparation of the deceased for burial. Essential oils from the leaves, bark, and blossoms of various plants were infused in order to make perfumes and materials for purification. They were also the first civilization to infuse. Great women from this civilization, such as Queen Nefertiti, have used the aforementioned beauty products with distinction from the common ones; Queen Cleopatra even put up a factory just for her beauty regimen [1].

Historical accounts from around 1600 BC also show that aristocrats of the Shang Dynasty in China colored their nails by rubbing them with a tinted mixture of gum arabic, gelatin, beeswax, and egg whites. Later on, at around 1100 BC in the Zhou Dynasty, nail tinting became an indicator of social status. Gold and silver tints became the royal nail colors. Commoners caught wearing royal nail tints were punished to death [2].

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In the Golden Age of Greece, around 500 BC, hairstyling became a highly developed art [2]. For women, hair also talks about the status of a person; only female slaves wore their hair short. Free women had long hair but could only wear it loose until they remained single. In this civilization, natural beauty achieved through unnatural means was the ideal. Pale skin was a sign of prestige and beauty. In cases where one is not born with porcelain skin, they paint their faces with white lead, or sometimes they apply honey or oils to their faces, then they put powdered chalks on them. Women have also colored their lips and cheeks with pastes made of red iron oxide and ochre clays or olive oil with beeswax [3].

The Ancient Romans started using cosmetics for their rituals, but as time passed, they became part of women's everyday lives. They liked fair, white skin. However, most of them weren't naturally fair, so they relied on cosmetics to lighten their complexions. They have also utilized powdered chalks, white marl, and white lead [3]. Furthermore, facials made of milk, bread, or fine wine became popular. The ancient Romans also believed that pink on the cheeks was a sign of good health, so women would have applied several substances to their faces, including poppy and rose petals, red chalk, alkanet, tyrian vermilion, crocodile dung, red ochre, mulberry juice, wine dregs, cinnabar, and red lead. For women, their hair color indicates their class in society. Noble women have red hair tints, middle-class women have blond hairs, and the poor are colored black [1].

Historical evidence from the Middle Ages, such as tapestries, sculptures, and other artifacts, showed that beauty is in the culture [1]. People at this time used towering headdresses, intricate hairstyles, and cosmetics on their skin. Essential oils were also used, developed, and refined through the process of steam distillation.

Paintings and written records from the Renaissance period show that people have good grooming practices. Shaving the eyebrows was one of the unusual practices at this time. They believed that being browless was a sign of greater intelligence. Men and women had great pride in showing off their elegant attire with fragrances and cosmetics [1].

In the Victorian Age, the fashion and personal grooming of Queen Victoria of England influenced many people. In order to preserve healthy and beautiful skin, women used beauty masks and packs made from honey, milk, eggs, vegetables, oatmeal, fruits and many other natural ingredients.

In the 1990s, the invention and spread of motion picture productions made them superstars who were very concerned with their looks. So they always wore nice clothing, complexions, makeup, hairstyles, and nail colors. This has further influenced the people who idolize them or see them in programs. Makeup, lipsticks, eyebrows, hair gels, and other cosmetic products had widespread usage.

With the enhancement of technologies and industrialization in the 20th century, many large companies made this a business, and cosmetics were further expanded and widely used around the globe, making people concerned about their daily looks. This paper discusses the technology trends related to the cosmetology business. It aims to identify the various technological tools that will be helpful for individuals who want to venture into the cosmetology business.

The remainder of this paper is organized as follows: Section 2 presents a short overview of cosmetology; Section 3 outlines the different technology tools used in the field of cosmetology; and Section 4 concludes the study.

## **2. Cosmetology Overview**

Cosmetology refers to the study and application of beauty treatments [4]. It is the art and science of beautifying, improving, and treating the skin, nails, and hair. This also deals with the study of the application of cosmetic tools and products. Cosmetology also refers to both the art and science of beauty

treatment, which deal with beautifying the hair, nails, and skin [4][5]. Professionals that deals with cosmetology include cosmetologists, hair color specialists, barbers, shampoo technicians, estheticians, makeup artists, manicurists, and other beauty experts. Cosmetology includes disciplines such as hairstyling, esthetics, makeup application, nail care, and other beauty treatments.

In hairstyling, these involve washing, shampooing, drying, cutting hairs, shaping, cutting, texturing, styling, straightening or curling hairs, coloring, tinting, lightening hairs, chemically changing hair texture, perms, relaxing hairs, braiding, installing hair extensions or weaves, *etc.* The duties of estheticians focus on skincare, which involves facials, exfoliation, skin conditioning, wrinkle treatment, waxing, tweezing, eyebrow threading, hair removal, and anti-aging treatments. Makeup artists focus on how different cosmetics interact with skin, achieving certain looks using makeup.

Nowadays, cosmetology has become a profession that is based on human interaction. Becoming a professional cosmetologist goes beyond mere technical skill; it involves promoting strong relationships and trust with clients, making them satisfied.

### 3. Technological Tools for the Cosmetology Business

The following is the literature compiled on topics regarding technology in makeup, hair care and design, skin care, nail care, and art.



**Figure 1.** Technology Tools for Cosmetology Business

#### 2.1 Facial Cosmetics/Makeup Application

Cosmetics are also known as make-up. These are substances used to enhance the appearance or odor of the human body [6]. The general classification of makeup includes lipstick, foundation, blush, mascara, eyeshadow, eyeliner, and other complimentary makeup [7]. They are generally mixtures of chemical compounds, whether they are natural or synthetic.

In the application of makeup on the face, the person needs tools such as a brush and sponge for better art design. Choosing the right makeup seems to be a trial-and-error method for those who are not experts in the field. With the wide usage of computers and mobile devices, virtual makeup software is now used as a tool to know if a certain makeup design is right for a person or if it is according to their taste [8][9]. At present, there are already mobile phone applications with facial recognition and facial mapping algorithm features that allow the person to instantly apply virtual makeup colors to their face; however, this is applicable to a picture only. For now, this is just a tool used before applying the actual makeup. This technology can also be a potential tool for online makeup sales. Before deciding to buy makeup,

this kind of app can let the customer see her face with digitally applied makeup to see if it fits her taste. Figure 2 shows a digital makeup app on a mobile phone where a facial part is being applied with digital makeup, and the skin tone is being matched to the color of the lipstick.



**Figure 2.** Digital Makeup App in a Mobile Phone

Students at the University of Applied Arts in Vienna invented an interactive beautification machine. This simple machine will apply eyeliner, lipstick, and a face mask to anyone who dares to stand in front of it [10]. The robots are programmed with what the inventors called a “numerical formula of aesthetics”. Meaning that the technology assumes that all faces look the same. This robot could not effectively put make-up on anybody, and of course, it could not choose the right and desired make-up color.

These two tools, namely the digital makeup application and the beautification machine, can be merged. But further studies are suggested to have an improved and effective makeup-applying machine.

## **2.2 Hair Care and Design**

When it comes to hair cutting, barbers and hair stylists usually use tools such as combs and scissors. Electric razors are also one of the electronic tools in a salon or barbershop; however, this is not advisable for cutting curly hair. Aside from the hair on top, men usually have facial hair, some choose to shave all of it to have a clean face, some just trim it, and some just let it grow. Instead of using shaving cream and a razor blade, new technology offers a personal shaving tool powered by a laser. This provides close and smooth shaves without scratches, cuts, or skin irritation [11].

There are also several hair care technologies that aim to promote healthy and beautiful hair. The shampoos, creams, and hair colored dyes used in salons are all products of technology that help coat the hair and prevent it from damage.

To have a relaxed hair treatment, a big company in the electronics industry in Japan has even invented a hair-washing robot with 24 fingers to massage the user's scalp and washing arms to spray water and shampoo on the user's head [12][13]. This technology tool is shown in Figure 3.

Other electronic tools that are found in typical salons are electric hair irons, hair dryers, electric hair straightener combs, electric hair curlers, and brushes [14].



**Figure 3.** Hair-washing Robot with Scalp Massager [15]

### 2.3 Skin Care

Skin care technology is one of the hottest trends nowadays. There are many beauty products on the market that offer anti-aging properties, which is one of the most in-demand properties that customers want.

Improved technological tools include fractional laser skin resurfacing. Combining the effectiveness of traditional carbon dioxide lasers with a new application technique delivers powerful results without the traditionally harsh side effects [16]. There are also new wrinkle injections. Naris (2003) said that we can now use these fillers to volume skin anywhere on the face, so the patient can really sculpt a lifted, youthful look without surgery [17]. In addition, anti-oxidants, peptides, and vitamins can also help a person have younger-looking skin.

In 2015, a tech company even developed a smart tool for skin care [18]. Research conducted by NASA shows that light therapy increases cellular growth by up to 200% and can speed up the skin healing process. This was actually developed for astronauts' use for treating cuts and wounds while in space. It is a light-based skin care system that works by stimulating blood flow and circulation. Ordinary consumers can now buy this tool on the market. This light-based skin care system product is shown in Figure 4. This helps reduce wrinkles, cure acne, rosacea, and hyperpigmentation, and reduce pore size [19].



**Figure 4.** Light-based Skin Care System Product

## **2.4 Nail Care and Art**

When we talk about nail care and art, we are referring to manicures for the hands and their nails and pedicures for the feet and their toe nails. Usually, manicurists and pedicurists' just use nail cutters, nippers, nail files, nail brushes, and a lot of cuticle products. But nowadays, these tools below are used by some.

The Electric Manicure Pedicure Machine Kit is just one of the trending technologies in nail care and art. Foot pedals are included, and this makes nail polish art easier and more convenient. It can be used for many things, such as nail carving, engraving, routing, grinding, sharpening, sanding, and polishing [20]. This tool is shown in Figure 5.



**Figure 5.** Electric Manicure Pedicure Machine Kit

Another trending technology is the digital nail art printer, shown in Figure 6. Five nails can be printed quickly and easily. The person can choose from a lot of nail art designs in its database, then he just needs to put his fingers inside the printer. With accuracy, it can design one's nails with great design details [21]. It's quick and clean.



**Figure 6.** Digital Nail Art Printer

## 4. Conclusion

Technology tools in cosmetology are of great help for the grooming of people. This also shows how artistic man is. The researcher believes that these technologies are still in their early stages and that sooner or later, better tools will emerge to make you look great. But still, technology is just a tool; the professionals in cosmetology will still be there to use these things. Relying purely on technology might have risks because it only takes a man to understand man, and only the eyes of man, not technology, can judge beauty. In the future, perceiving beauty with technology will be studied.

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