Impact Analysis:

The Evolution of the Photography Camera

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In keeping with the latest technology the camera has gone through many stages. The cameras in just the past several years have become lighter, smaller, more portable and more user friendly. The changes needed for the latest cameras are the needs for more storage, more accessibility, and more interactive with web 3.0 and the social media revolution. “USB 3.0 is set to provide 10x the bandwidth of USB 2.0 at 4.8Gbps or 600MB/s. Real world usage will obviously fall below this just like in USB 2.0 but it still provides a major increase that will greatly benefit certain devices (Kymin, 2015).” Here are some of the major changes.

Here are some of the major changes:

* USB 3.0 compatibility
* Wi-Fi connectivity
* Wi-Fi to smart phone capability
* GPS enable
* Direct share technology to Facebook, Twitter, etc…
* Smaller thinner casing
* Higher resolution
* Higher storage capacity

With these changes the consumer will have a professional grade camera that has many of the compatible smart phone technology built in. This will drive profit margin up and the same time keep the company relevant in the camera industry.

**Risks**

There are risks associated with changing the existing camera technology one of them being the fact that there will be loss of art form. Initially camera technology in form of photography was preserved for special forms and moments but nowadays there are people all over taking pictures everywhere. Recent technology has made people very lazy with little effort put in producing quality pictures. The older form of technology even though outdated had its special quality. The value of pictures was quite high but that has since changed since almost everyone is in possession of some form of camera. There is also the risk of putting companies selling this type of cameras out of business.

**Architecture**

What we know of today as the camera began long ago. As early as 4th century B.C. Aristotle mentioned the phenomenon of light traveling through a constricted location displayed a perfect image. The opening did not have to be perfect in shape for the displayed projection to be perfectly round (Hormann, 2015). The technique was honed by Leonardo da Vinci in the 15th century. He was the first to use a box for this idea, which virtually became what we now know as the pinhole camera (Hormann, 2015). This technique was used for everything from studying the sun to artistic development.

From a small box with a hole in one side came the daguerreotype camera around 1839 (Chowdhury, 2015). This was developed by French artist Louis Daguerre. The purpose of this redesign was to make any image that came through the lens (implemented shortly after da Vinci) would be able to captured permanently and stored by treating it with chemicals (Chowdhury, 2015). With this change came the true invention of photography.

With the camera now mobile and emerging all around the world, evolution brought the Reise-Camera in the year 1900 (Chowdhury, 2015). This was a contraption that added an accordion shaped attachment that allowed for it to be compact and light weight, eliminated the weight of wood panels and increasing attractiveness. The next step was the Leica I in 1925 (Chowdhury, 2015). A truly compact device, the Leica I began the usage of 35mm film and was able to immediately burn the image on a medium that could be later used for development.

Polaroid enters the picture around 1947 with the introduction of the first instant camera (Polaroid, 2014). This development brought on the ability to retrieve an image taken by the camera within minutes using special paper provided by Polaroid. The camera was named Polaroid Model 95. The device was a little more bulky than its predecessor, but the added bulk brought a telescoping lens (still using accordion plastic) and the ability to mount a flash directly to the camera for better exposure (Chowdhury, 2015).

One of the biggest technological leaps of the photo camera was the introduction of digital media in 1975, by Kodak (Chowdhury, 2015). This brought the addition of a digital sensor to capture the light information and a tape recorder to process for storing processed photos. This success led to the first digital camera as we know it now releasing onto the market. In 1986, Fujifilm brought the QuickSnap. Known commonly as the “disposable” camera, the QuickSnap will take 27 shots for an approximate $4 (Chowdhury, 2015). This small, lightweight camera was had a plastic shell, on board flash, on/off switch, and film pre-loaded. To get the pictures processed, the user essentially destroys the camera.

From this point on, the photo camera evolves and develops, getting smaller and smaller.

They began to be placed in more convenient places, such as the cell phone, in 2000. This phone was produced by Samsung and coined the J-Phone (Hill, 2013). It was a mobile telephone that had a 1.5-inch TFT LCD and a digital camera able to take 20 pictures. The pictures were only

0.35 megapixels and required the phone to be connected to a computer to be able to actually retrieve the photos (Hill, 2013).

With the camera able to be made smaller and smaller, yet resolutions higher and higher, technology has evolved to have some smart phones able to take photos better than some actual stand along cameras. The technology has been integrated so well that storage space has become almost limitless, only limited by the size of space available on the device (including external sources). Most mobile devices are even able to connect to an internet cloud and upload photos taken directly, meaning even more space. Currently, the smallest photo camera can fit on the tip of your finger and the largest digital storage space is 512 GB, which holds hundreds of thousands of photos.

**Lifecycle Stages**

Below is a timeline of some significant stages of development of one of the pioneering the portable photo cameras that set the example (Leica, 2015).

* 1925- fixed lens introduces
* 1930- becomes interchangeable
* 1932- comes with a rangefinder
* 1954- combines viewfinder and rangefinder
* 1965- first single lens reflex camera
* 1966- first lens with an aspherical element
* 1971- selective metering through lens presented
* 1996- digital camera with 75 megapixel resolution
* 2006- first digital rangefinder implemented
* 2008- world’s fastest aspherical lens
* 2009- a professional camera comes into play with medium-format photos, setting a new standard
* 2012- formats are now at the maximum, video recording with photo cameras is popular, and image quality has increased substantially

**Introduction and Acceptance**

The evolution of the photo camera came at many times and was presented to different audiences. The most interested tended to be scientists and artist, as one of its main components (the lens) was first used in studying the sun and its rays (Chowdhury, 2015). It wasn’t until the later 1900s that the camera became more of a household item. The camera was being used in laboratories, public displays, and as a heavy tourist attraction in a lot of places during its development. Once it became smaller and cheaper, the camera became a tool of everyday usage for family, schools, and paparazzi.

The changes in the way the photo camera was produced, presented, and distributed affected all shareholders. The developers (such as Kodak, Polaroid, etc.) had to keep up with an ever-changing market. Demand grew as the camera became a device that anyone could just carry around and develop quickly and instantly. Aside for competing for customers, camera developers had to fight for design and patent. For example, in 1990 there was a large legal dispute between Polaroid and Kodak. It was over the implementation of digital photography. The case won Polaroid over $900 million (Rowbotham, 2013). In 2001 Polaroid declared bankruptcy. The disruptive shift from analog to digital photography put this industrial giant out of business (Sandstrom, 2008). Customers had to choose loyalties and manufacturers were forced to selected focuses and specialties due to the changes and development in the market.

The current industry of photography has grown to be a part of everyday life. Manufacturers have to keep in mind not only the current demand, but also the future. There have been continuous developments to keep up with the market. There are regular updates on software and hardware for devices. Customer service is also a must. Most companies not only have digital help on the device, but internet assistance and the ability to speak with a live operator.

 In 1993 the website photo.net was introduced. Photo.net is a robust, collaborative peer-to-peer educational platform for photographers ranging from hobbyists to professionals (About Photo, 2015). Many venues like this have come into existence accompanying the camera’s evolution.

 The future will bring smaller devices with more storage space, more options, and longer battery lives. Cameras developers will have to keep price in check in order to maintain consumer loyalty. Technology will need to be kept up to date, yet in expensive. Using parts in the device such as mirrors and certain types of censors will become a thing of the past (Gampat, 2014). Cameras also have Wi-Fi now, allowing for direct upload to social media and other networks. It may even come to pass that when signing up for a data plan on a new cell phone, a customer may get offered a plan for a camera as well!

**Competition**

There are similar technologies to this in form of phone cameras that are advancing by the day. The greatest threats to camera photography are the cameras found in handsets. Smartphones are coming equipped with their own inbuilt cameras that are of high quality. This typically means that the need for buying cameras specifically for photography will be significantly reduced. The problem comes when cameras that produce high quality photography become expensive. This means that people develop a habit of shunning those cameras and instead opting to use their own phone cameras. It will have to take great change of tact for people to start using or buying the normal photography cameras.

The most likely technology likely to replace this one is the digital camera that is gaining support by the day. The digital camera has very sophisticated features that are used in production of quality photography. There has been an increased shift from the analogue camera to the digital camera. The digital camera encodes digital images digitally and can actually store them for later production. They display images immediately after allowing the user to edit this images and deleting the ones he or she may not be interested in.

What makes the digital camera stand out is the fact it is produces crisp and quality pictures. The clarity of these pictures is superb. Another thing is the fact that it allows the user to edit images later on. This also means that one can store the images for later usage. This is different from the analogue camera where the photographs could not be stored. The portability of digital cameras is also something that makes it stand out. Nowadays digital cameras can be folded severally to allow limited usage of space. Digital cameras have rechargeable batteries that technically mean the habit of replacing batteries is no longer there (Bavister, 2007).

This type of cameras technology will have to stay ahead of competition by incorporating the necessary changes that comes with today’s dynamic technology. This will mean for example incorporating features inform of 3D technology. This type of technology allows for the production of pictures that have a 3-dimension effect. With the level of quality demand in form of pictures, there is no way the analogue production of pictures will see the light day. Companies that produce this type of cameras will also have to invest in personnel and equipment that conform to the latest levels of technology.

Resources

Hormann, Corin (2015). *History of the Pinhole*, lines 15-19. Retrieved on July 16, 2015 on the World Wide Web from [www.corinehormann.nl/History%20of%20the%20Pinhole.html](http://www.corinehormann.nl/History%20of%20the%20Pinhole.html)

 Chowdhury, Rahul (April 22, 2015). *Evolution of the Camera*. Retrieved on July 16, 2015 on the World Wide Web from [www.onextrapixel.com/2015/04/22/evolution-of-the-camera/](http://www.onextrapixel.com/2015/04/22/evolution-of-the-camera/)

 Polaroid (2014). History slide show, image 5. Retrieved on July 16, 2015 on the World Wide Web from [www.polaroid.com/history](http://www.polaroid.com/history)

 Hill, Simon (August 11, 2013). *From J-Phone to Lumia 1020: A Complete History of the Camera Phone*. Retrieved on July 16, 2013 on the World Wide Web from [www.digitaltrends.com/mobile/camera-phone-history](http://www.digitaltrends.com/mobile/camera-phone-history)

 Leica (2015). *Leica Camera AG: Passionate about photography.* Retrieved on July 16, 2015 on the World Wide Web from [http://3.bp.blogspot.com/-jaBMwvoyIhY/UmgbwvO7NoI/AAAAAAAArvs/Ghu\_nM8b3vw/s1600/History+of+Leica+Cameras+(1).png](http://3.bp.blogspot.com/-jaBMwvoyIhY/UmgbwvO7NoI/AAAAAAAArvs/Ghu_nM8b3vw/s1600/History%2Bof%2BLeica%2BCameras%2B%281%29.png)

 Rowbotham, Cassandra (2013). *Polaroid versus Kodak: The battle for Instant Photography*. Retrieved on July 16, 2015 on the World Wide Web from <https://library.ryerson.ca/asc/2013/08/kodak-versus-polaroid-the-battle-for-instant-photography-2/>

 Gampat, Chris (2014). *Where the Photo Industry is Going in Five Years: A Talk With Manufacturers About How They Envision the Future*. Retrieved on July 16, 2015 on the World Wide Web from <http://www.thephoblographer.com/2014/12/14/photo-industry-going-five-years-talk-manufacturers-envision-future/#.VaiKeNAXReT>

Kymin, Mark (2015).*What is USB 3.0*? Retrieved from the World Wide Web on July 18, 2015 from <http://compreviews.about.com/od/general/a/What-Is-USB-3-0.htm>

Wireless mini cameras (2015). Retrieved on the World Wide Web on July 19, 2015 from <http://www.spyville.com/wireless.html>

Sandstrom, C. (2008, 11 02). *Disruptive Innovation And The Bankruptcy Of Polaroid*. Retrieved from the World Wide Web on July 17, 2015 from <http://www.slideshare.net/Christiansandstrom/disruptive-innovation-and-the-bankruptcy-of-polaroid-presentation>

 About Photo (2015). *About Photo.net* .Retrieved from the World Wide Web on July 18, 2015 from <http://photo.net/>

Bavister, S. (2007). *The new photography manual: The complete guide to film and digital cameras and techniques*. San Francisco, CA: Chronicle Books.