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The GoPro Camera

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## Introduction

The GoPro camera was invented in 2002 by an American named Nicolas Woodman. It is a high-definition camera used to capture the most unforgettable moments. According to an interview on *Malakye.com* of its creator, Nicolas - Nick- Woodman, the idea of creating such a camera first came when Woodman went on a trip to Australia with some friends. Having difficulty to immortalize their surfing exploits from the shore, he started thinking about a super resistant camera that would directly hang to a belt around the surfers' waist, making the pictures look even more intense, clear and real. Although it took time to become recognized, GoPro is today the most used camera in the extreme sports' world, according to an article published in *Bloomberg Businessweek magazine*. In fact, the author of the article explains that "GoPro makes a small, durable, lightweight (just 3.3 ounces) camcorder and special mounts to attach the device to surfboards, helmets, ski poles, car hoods, or pretty much anything else." He goes on citing an analyst in IDC, named Christopher Chute, who even said that it "may well be the world's fastest-growing camera company," as Woodman became a billionaire in the latest years by selling hundred of thousands of cameras. The purpose of this paper is to explain how the GoPro camera works, and its impact on society.

## Background

At the time of its invention, GoPro constituted a real revolution in the cameras world. Indeed, according to Woodman in his interview in *Malakye.com*, the only way he and his friends had to try to capture their surf sessions when they were in Australia were the waterproof cameras. However, it was not good enough, since they had to keep the camera around their necks, and a lot of time it happened that they lose it or completely miss the picture. Today, even if it has some competitors, like JVC or Sony (*PetaPixel*), "GoPro remains the best "action" camera on the market, with HD capabilities, a 170-degree wide

angle lens, and it only weighs 5 ounces." (*Malakye.com*).

According to an article published in *PetaPixel*, there is another action camera that was invented at the time of GoPro, and it is the Contour Camera. For many years, it was one of the main competitors of the GoPro camera. However, the Contour Company had to close its doors on August 2013, while its better-known competitor remains "the king" (*PetaPixel*) of the cameras market.

### **How does it work?**

According to an article published in *Sport Fishing*, "the GoPro Hero is sold with a bevy of mounting accessories, as well as a waterproof housing that keeps the camera safe and bone dry." According to another article published in *Popular mechanics*, when the idea of such a camera first came to Woodman's mind, he was mainly thinking about creating "a wrist strap with a mechanism that pivots the camera out of the way while he was surfing, pop it up for the money shot, and then fold it down again." He wanted it to follow every single movement he made, and without worrying about carrying it or protecting it since it is shock resistant. According to the same article, "GoPros are small, light, and waterproof -- and their signature wide, nearly fish-eye lenses seem to magically make subjects look, well, more heroic than they might otherwise be. That wide lens shoots your knees and skis, or your hands on the handlebars of a bike. The result is a big, immersive, ego-enhancing image. GoPro cameras are structurally designed to flip the traditional relationship of cameraman to subject, aligning it more closely with the way people shoot video in the YouTube era. The cameraman is the protagonist of his own video, and the lens stretches wide enough to fit in both him and the world he is conquering." Surely, this is the reason why the GoPro camera is known as the best "action" camera: because it takes photos at the heart of the action, making them look completely real and alive. In fact, there is an article published in *Information Technology*

*Newsweekly* explaining that a GoPro comes with "various straps, pivot arms, and adhesive mounts to enable the digital camera to capture images while performing activities such as biking, skiing, skating and kayaking." However, there are different generations of GoPro, going from the HD HERO to the HERO 3+, and depending on the generation it belongs to, a GoPro camera may have different characteristics. Indeed, according to the same article published in *Information Technology Newsweekly*, the HD Hero2 camera for example "includes only a single image capture system, which captures images using an optical axis directed outward from the 'front' of the camera. This can cause excessive wind resistance and presents a high profile that is more susceptible to damage and image artifacts from vibrations in some situations." *Sport Fishing* also published an article about the HD Hero 2 saying that it is "twice as powerful as the original." The author of the article goes on specifying: "The Hero2 shoots 1080p HD video and 11-megapixel stills. The camera's new processor delivers the additional power, and the redesigned wide-angle lens takes full advantage, providing ultra sharp imaging. The HERO2 captures up to 10 11-megapixel photos per second and comes with an LCD interface." According to the GoPro website, there is another difference between the old GoPro cameras and the new one and it is that the first ones' battery life was much longer than now.

The camera comes with an USB cable, and so it is easy to transfer the photos to a computer. Also, in order to improve the sound quality, we can change the backdoor of the camera - if we are not going to put it underwater- for another backdoor that has holes in it. There is also a floating backdoor that we can use when we go under water, and that keeps the camera on the surface of water in case we lose it. According to an article published in *Bloomberg BusinessWeek Magazine*, the HD Hero3 camera even comes with a Wi-Fi remote, to which we can connect it and it allows us to control the camera from distance using an iPhone or Android app.

### **Potential Benefits**

The GoPro camera constituted a real revolution in the world of photography at the time of its invention. That is mainly because of the fact that for the first time, someone could enjoy an activity without worrying about holding a camera in his hand to take photos.

According to an article published in *Bloomberg BusinessWeek* magazine, "GoPro widens the view of its consumers base" by "allowing action-sports enthusiasts to take professional-quality videos." Indeed, the author of the article points out the fact that many of the cameras sold by the company are purchased by "consumers who don't have thrill seeking on their minds," and this is mainly because of the very affordable prices of this unique camera.

### **Legal, Social & Ethical Issues**

Ethically, the creation of the GoPro camera encouraged people to start using it in many inventive ways, according to an article published in *PetaPixel*. Sometimes, this may be dangerous, since some of them may take risks just to record an unforgettable video and then post it on YouTube. Some others also start putting their GoPro on their pets, their dogs for instance. This could be questioned, as it may bother the pet to carry an electronic device all day long. It also may affect its health. The fact that the GoPro camera can be put everywhere makes it become easily invisible. This may be criticized given that it becomes a sort of hidden camera that can constitute an infringement of privacy by taking unconsented pictures. Some people even use it as a security camera.

Socially, the GoPro camera may have a bad effect too because as all electronic devices, it detaches people from reality. For instance, some people would be so willing to record intense videos or incredible photos that they would worry more about the virtual side of things instead of living in the moment and enjoying the activity they are doing.

Legally, there is no privacy. Government can access people's photos and videos as it may access their personal data on the Internet. By connecting the camera to Internet -with the Wi-Fi- the problem even increases and it is getting harder and harder to protect personal information.

### **Security Concerns**

Hacking people is also becoming more and more common, especially now that with the late GoPro model, the camera can be connected to the laptop, or to the phone. Information is becoming very difficult to protect, and the increase of the virtual is affecting people's life by threatening their privacy and so their security.

### **Further Required Research**

According to an article published in *BusinessWeek magazine*, one of the next challenges is to "create a software to enable real-time streaming via the smartphone app, so, for example, new dads can share their child's first moments live." On the other hand, with the Wi-Fi remote and the fact that we can now connect the GoPro to a smartphone, there are many different and new ways to use the camera.

### **Conclusion**

To conclude, the GoPro camera is considered as the best action camera nowadays. Even if there are many other companies which are considered as potential competitors, the GoPro remains the king of the market, and the Woodman Labs are considered as experts when it comes to sport cameras. GoPro has improved a lot since the first time it was invented, and it is becoming easier to take action pictures, but also to have a GoPro camera, knowing that it is not very expensive. On the other hand, it is also easy to use and to carry, as it may be put everywhere, in addition to the fact that it is waterproof and shockproof. Even though it is

an electronic device that may affect people's social life, threatens their privacy and their security, it has a lot of benefits. In fact, thanks to GoPro, people from all walks of life have now the opportunity to record action moments, which was something only doable for professionals or rich people. The GoPro Company has been designing since 2010 a new series of GoPro cameras, called HERO. Although the concept remains basically the same, the camera is continuously improving from an edition to another, by becoming lighter and smaller for instance. Lately, it also comes with a Wi-Fi remote that connects it to a smartphone, making it remotely controllable. Finally, it appears that the GoPro Company remains open to all new technologies, and adapts its products to them. This may be one of the reasons explaining the great success of the GoPro camera.

### References

Burrows, P. (2011, 06). GoPro's Incredible Small, Durable Camcorder. *Bloomberg Businessweek Magazine*. Visited on 2/15/14. Retrieved from <http://www.businessweek.com/magazine/gopros-incredible-small-durable-camcorder-07012011.html>

This article was written in 2011 and published in Bloomberg BusinessWeek magazine. It tells the story of the GoPro camera, and how it has evolved from the moment where its inventor had the idea of creating it, to the latest years when it became one of the most famous cameras in the world. This was a reliable source because of the magazine where it is published, and the fact that it is recent. Moreover, Peter Burrows, the author of the article, has written many articles about GoPro, and he seems to have a good knowledge on the subject.

Burrows, P. (2012, Oct 22). GoPro widens the view of its customer base. *Business Week*, 1. Visited on 2/20/14. Retrieved from <http://search.proquest.com/docview/1115155458?accountid=14541>

This article is about how the GoPro camera has changed customers' life by widening their view. The author also talks about the last model of GoPro camera and its advantages compared to the old ones. Same author than above.

Cale, D. L. (2012, 06). JVC and Sony going after GoPro market with new and upcoming action cams. *PetaPixel*. Visited on 2/16/14. Retrieved from <http://petapixel.com/2012/06/30/jvc-and-sony-going-after-gopro-market-with-new-and-upcoming-action-cams/>

In this article, the author talks about the JVC and Sony cameras which are currently the main competitors of the GoPro Cameras. Even if the author says that those companies are growing,



he points out the fact that GoPro holds the top position, at least for now. This article is from PetaPixel too.

Company Q&A (2010, 05). GoPro, be a HERO, with founder/inventor Nick Woodman.

*Malakye.com*. Visited on 2/15/14. Retrieved from

[http://www.malakye.com/asp/front/CMSPage.asp?TYP\\_ID=2&ID=2831](http://www.malakye.com/asp/front/CMSPage.asp?TYP_ID=2&ID=2831)

Interview led by Company G&Q with the founder of the GoPro camera, Nick Woodman, on May 2010 on Malakye.com. This was a great source for my project, since it allowed me to have the GoPro inventor's reliable opinion and point of view.

GoPro, Be a HERO. GoPro official website. Visited on 2/20/14. Retrieved from

<http://www.gopro.com/?smtNoRedir=1>

This is the official website of the GoPro company.

Griffith, A. (2013, 11). The other action camera. *PetaPixel*. Visited on 2/16/14. Retrieved from <http://petapixel.com/2013/11/14/gopro/>

An article about the Contour Camera, one of the main competitors of GoPro, and which was invented around the same time. This article shows some of the similarities between the two cameras, and explains why the Contour Company had to close down lately, while GoPro remains a successful business. Its reliability is based on the fact that PetaPixel is a blog devoted to photography, and the information is relevant because it is very recent (November 2013).

Mazur, M. (2012, 04). FREEZE FRAME. *Sport Fishing*, 27, 36-40. Visited on 2/14/14.

Retrieved from <http://search.proquest.com/docview/1240343233?accountid=14541>

In this article, the author talks about the new underwater cameras, and how they are evolving all along time. He particularly talks about GoPro, which has become the most used fishing camera. This is a website devoted to Sports, and the information are recent.

Moritz, R. (2012, 06). Guts, glory and megapixels. *Popular Mechanics*, 189, 74. Visited on 2/14/14. Retrieved from

<http://search.proquest.com/docview/1023900443?accountid=14541>

Here, the author tells the story of the GoPro Camera and how, from nothing, it became the most famous action camera in the world. He also describes its components. Popular mechanics is a classic magazine of popular technology, and the information is recent.

Patents; patent application titled "digital camera system having remote control" published online. (2013). *Telecommunications Weekly*, , 785. Visited on 2/21/14. Retrieved from <http://search.proquest.com/docview/1436877888?accountid=14541>

This article is about digital cameras with remote control. The author briefly talks about GoPro cameras giving an example of the ability that some cameras have to be put everywhere: on a bike, on a car, etc. Telecommunications Weekly is a magazine that provides the latest technological news, and the information is accurate.

N.d. ( 2013, 11). How to use POV cameras. GoPro HERO 3+ (Plus) Tutorial: How To Get Started. YouTube. Visited on 2/20/14. Retrieved from <http://www.youtube.com/watch?v=BPZo-ep184U>

This is a recent tutorial on how to use a GoPro camera ( the last model), published on

YouTube by someone who has written a book about GoPro cameras, and so who perfectly knows how to use them.

Steadman, A. ( 2013, 06). 5 unique ways to use your gopro. *PetaPixel*. Visited on 2/21/14.

Retrieved from <http://petapixel.com/2013/06/04/5-unique-ways-to-use-your-gopro/>

In this article the author is giving different tips on how to use a GoPro in the most creative ways. He uses videos to show examples of what he means. The article is published in PetaPixel, the blog devoted to photography and where there are a lot of articles about the GoPro cameras.

Woodward, C. (2012, 02). NEW PRODUCTS. *Sport Fishing*, 27, 68-70. Visited on 2/21/14.

Retrieved from <http://search.proquest.com/docview/1239522529?accountid=14541>

This article is a set of new products. The author introduces each one of them, by explaining what are its advantages and inconvenient. He also gives the prices and phone numbers of each product's company. Sport Fishing is a magazine that I have already used above.