Social Impact of Cameras Products on Prosumers

The camera market has been significantly shaped by the development of smartphones imaging technology, the growing numbers of people who are using smartphone, the switch from DSLR to mirrorless, and the integration of modern camera technology in the past decade. All these factors produced enough social impact on prosumers who still choose to use professional cameras instead of smartphones.

Let’s start by reviewing the smartphone camera technology development in the past 10 years. Apple and Samsung are the two major smartphone brands, together have more than 60% global market share in November 2023 (GlobalStats, 2023). Let’s do a comparison on Samsung product first. In April 2013, Samsung released Galaxy S4; in February 2023, Samsung released Galaxy S23 Ultra. The Galaxy S4 has one single rear camera, with 35mm equivalent focal length of 31mm and 13MP resolution, and 1080P 30fps video capability (GsmArena, 2023). The Galaxy S23 Ultra has much better camera ability. It has 4 cameras, the main camera supports up to 200MP resolution, and it has 35mm equivalent focal length ranging from 13mm to 230mm, supporting both ultra wide and super telephoto photography, and with the capability to RAW photo and 8k 30fps video (GsmArena, 2023). Such a hardware and software specification is able to compete with many professional cameras on paper, and we can clearly figure out the huge improvements in smartphone camera technology and capability for Samsung. Apple has a similar situation as well. iPhone 5s launched in September 2013 has one single rear camera, with 35mm equivalent focal length of 29mm and 8MP resolution, and 1080P 30fps video capability (GsmArena, 2023); while iPhone 15 Pro Max has 3 rear cameras ranging from 13mm to 120mm equivalent, main camera 48MP resolution, and 4k 60fps video capability (GsmArena, 2023). Additionally, iPhone 15 Pro Max has support for Academy Color Encoding System, a crucial feature for professional videographers (Apple, 2023). We can conclude from both Apple and Samsung cases that smartphone camera system has improved a lot in the past decades, and thus it can replace a dedicated camera for most customer level needs. Felix Richter (2020) has shown that the camera sales number has dropped a massive 87% from 2010 to 2019. Further analysis of this data can indicate that the prosumer level interchangeable lenses camera maintained its sales number during this period, but consumer level built-in lens camera, for example Sony Cyber-shot or Canon PowerShot point-to-shot cameras, has almost diminished market share in 2019. As a result, camera has become a product for prosumers, while most consumers stay at smartphone camera level.

The first social impact of camera products is that it has become a social status symbol for prosumers. Since most people are only using smartphones nowadays, those who choose to use a camera will stand out as professional photographers. Personally speaking, there are a lot of times people take me seriously as a paid photographer even if I am only carrying a small Sony A6300 with PZ 16-50mm kit lens. Leica, a well-known high end camera brand with product price starting more then $4000, has increasing revenue and sales number in the past few years (Leica, 2022), despite of COVID-19 pandemic. Generally speaking, higher end inter-changeable lens cameras has dominated most of the camera sales, as professional looking cameras has become a social status symbol.

Another interesting yet worth observing phenomena related to this is the revival and growing popularity of film cameras, as well as modern digital cameras that has retro looking. The sales number for analog cameras, or more commonly known as film cameras, has been steadily increasing in the past few years, and expect to continue this growth by at least 2028 (ScanSafe, 2023). Even digital cameras that look like film cameras are also popular now. Fujifilm, a company that well-known product lineup featured in film cameras, has growing revenue in the past few years (Fujifilm, 2023). Nikon has also released Zf, a Full Frame digital camera with retro looking of 80s and 90s, and it has been well received by the audience as well (Nikon, 2023).

Digital camera technology has been revolutionized in the past decade, together with the transition from DSLR to Mirrorless systems. This is a topic I will go further in Project 4, but making a summary here, the integration and wide availability of many new features, such as In-Body Image Stabilization (IBIS), wide range pixel detection auto-focus (PDAF) with high accuracy and reliability, high resolution and high frame rate videos such as 4k 120fps, high speed continuous shooting more than 10 frames per second allowed by using Stacked CMOS or Global Shutter CMOS, high speed Electronic View Finder (EVF) with at least 120Hz refresh rate, and high resolution CMOS more than 40MP resolution, with the ability to do a multi-shot pixel-shift for even higher resolutions, has greatly changed the way camera is being used.

The second social impact of camera products, as a result of high resolution and high frame rate video, is widely availability of 4k contents. Netflix has about 1500 titles in 4k (Keeley, J., 2023), most of them were created in the last 10 years. Most of major content creators on Youtube upload videos of 4k 60fps nowadays, and even many of them do live stream with 4k as well. This is largely because of affordable cameras now have 4k videos support. A decade ago, most of 4k video/cinema cameras cost more than $10000, the cheapest, Sony PXW-PS5 which was released in 2015 priced at $6000 (Sony, 2015). Nowadays, not mentioning that most smartphones have 4k video support, cameras less than $1000 has 4k video capabilities as well, such as Sony ZV-E10 (Sony, 2021) and Canon EOS R50 (Canon, 2023). Shooting in 4k is possible for almost everyone, and middle end video focused cameras, such as Sony A7S3 & FX3, Canon EOS R5, Sony FX30 & A6700, Fujifilm X-H2S, have the ability to shot video in 4k 120fps, allowing 4 times slow-motion for post production. Thanks to the revolutionary technology advancement, 4k videos are very common today, and we can watch even daily video log with such a high resolution.

The third social impact of camera products is that videography crew size is reducing because of technology improvements, and thus reducing the cost of production as well. In the past, videography requires a large crew with complicated and heavy equipments. Old video cameras does not have in-body image stabilization (IBIS), nor the lenses used together has optical image stabilization (OIS), so they have to use big and heavy mechanical structures called Steadicam to stabilize videos in a moving scenario. Old video cameras also does not have reliable auto-focus (AF) system, and actually most of them does not have any AF systems at all, so videographers have to use a follow-focus to drive the focus motors in lenses manually, and this requires more mechanical structure. And for a well exposed video, it has to maintain a 180 degree shutter angle rule, so the motion blur of the video is acceptable, and to achieve that under the sunlight requires the usage of ND filters. Old video cameras does not have built-in ND filters, so this has to be done manually as well. Due to all these factors, a video/cinema camera in the past needs at least 3 persons to operate, and a moving or a tracking shot is very hard to achieve. As technology involves, we have highly reliable auto-focus system for video today, and built-in ND filter auto-controlled by camera itself in now seen on middle to high end video cameras such as Sony FX6 (Sony, 2021) and Canon EOS C70 (Canon, 2020), together with small and light camera & lens combinations with both IBIS and OIS that can be mounted to hand-held stabilizers. It is common to see a videographer use a stabilizer made by DJI, mount it with a Sony or Canon full frame camera, and do a 2 hour wedding recording in the past 2 years, and for customers have a well recorded wedding is much cheaper than before.

Fourth, as professional inter-changeable lenses cameras are getting more video features, video centric DV camcorders are slowly dying out the market. I expect to find some official reports and statistic on this topic, but it seems DV camcorders have already been forgotten even by camera related medias, so let’s just take a look of camcorders product lineup. Two camera consumer/prosumer camera manufacture company focused on videos, Sony and Panasonic, haven’t update their consumer/prosumer camcorder lineup for years. Sony FDR-AX53, a camcorder costs about $1000, was released in 2016 and it is still in production as a mainstream product (Sony Electronics, 2016). Panasonic HC-VX870K, which was released in 2015, is also available at its original price now, with no evidence of refreshing or updating in the future (Panasonic, 2015). Canon, another major camera manufacturer, has stopped making or selling any consumer/prosumer level camcorder except for professional video creation usage. In fact, it is more and more common to see video creators and YouTube bloggers to switch to mirrorless camera for videos and live streaming instead of using camcorders in the recent years. As technology involves and one type of product is receiving more and more popularity from buyers, in this case, camera, the other type of product will gradually be forgotten, and in the end die out the market, in this case, camcorder.

To make a summary, camera is not only a production tool for photographers and videographers, but also a social status symbol as well. The social impact of camera, by the fast evolution of its technology, is making production process shorter, cheaper and easier, and thus making high quality images more accessible to media consumers. As this product lineup continues to involve, it is a undeniable trend that inter-changeable lenses camera is dominating the prosumer market.

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