

Global Imaging Business Report 2016

The end of smartphones -  
**how will we take pictures  
tomorrow?**



## Foreword

Despite the fact that there is hardly another cultural technology that has undergone such a steep development in the past 60 years, such as photography, there is comparably little lobbying activity in the sector: in contrast to other industries, such as electronics, chemistry or medicine, companies operating in the photography business have, even during the most profitable of times, been unable to form an active, common representation of interest. Thus, apart from the German associations Photoindustrie Verband e.V. and Spectaris, there are hardly any representations of interest for the photography business in the rest of Europe - let alone a European Representation of Interest in Brussels. Even the CIPA sees itself not so much as a global organisation, but rather as a representation of Japanese companies.

This shortcoming appears now to be taking its toll. The traditional photography business has virtually no voice more when it comes to consumers and any efforts to create new technologies remain the initiative of individual companies.

It is no wonder then, that the most important innovations of recent years in the field of consumer-photography have been entirely introduced and marketed by companies which do not rank among the traditional photo companies. The most recent examples, apart from the smartphone, are the selfie stick, drones with cameras or action-cams. This could be a reference to a symptomatic weakness, since the last great innovation in terms of consumer-photography prior to the smartphone - the first saleable digital camera - was introduced in 1994/95 by a company from another sector (Casio, with the QV-10) - almost two years before the traditional companies in that area.

Moreover, there are hardly any possibilities to gather centralized information on the current state of the international traditional photography business. While the camera business can, to some extent, be underpinned by numbers, downstream trades, such as accessories, print, online resources and their economic dependencies can either be studied, nor quantified with reliable figures. Traceable developments with real data remain unavailable for the photo business and press - a particular disadvantage, since these two groups are the ones who, in times of decreasing advertising costs, represent the main contact points for consumers.

For this reason, this study aims at giving an overview on the current volume of business and future opportunities.

This study will be updated periodically. If you have any questions or suggestions, please contact us at [contact@mayflower-concepts.com](mailto:contact@mayflower-concepts.com).

Hamburg, October 2016

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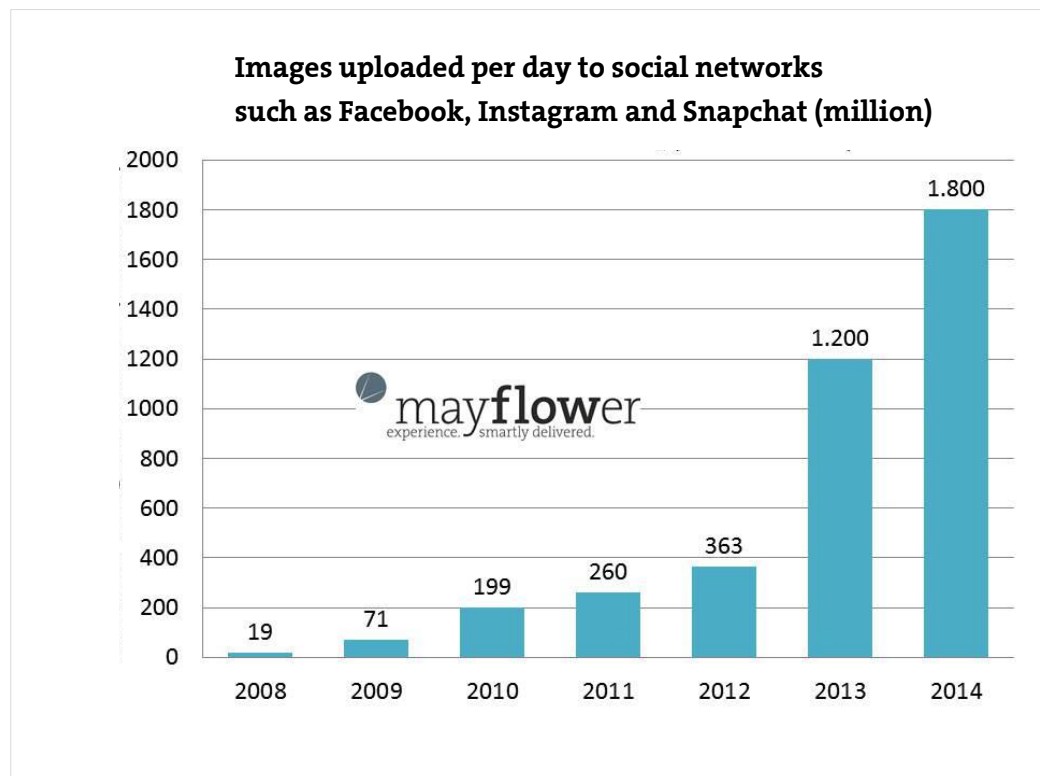
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## 1. Distinction of a traditional and a "new" photography business

When discussing the photography business in current times, it is necessary to distinguish between the "traditional" and the "new" photography business. While the first - the subject of this study - has increasingly been in a cut-throat fight for survival, the other one is booming:

There has never been more photographic activity than today - and the trend is rising.



**Chart 1: New photography - daily upload of photos into social networks<sup>1</sup>**

But related sales and profits are hardly generated by those companies which so far used to be the classic agents in that sector: past players in the market hardly make any profit with Apps and subsequent services.

<sup>1</sup> Source: Kleiner Perkins Caufield & Byers in Wirtschaftswoche 05/14

### Traditional Photography Business

This category covers all companies which primarily profit from camera-based photography. Apart from camera manufacturers, the category also includes

- accessory suppliers (flashes, tripods, memory cards, etc),
- traditional photography businesses, including specialist departments in corresponding electronics stores,

as well as

- service providers, in particular laboratory services.

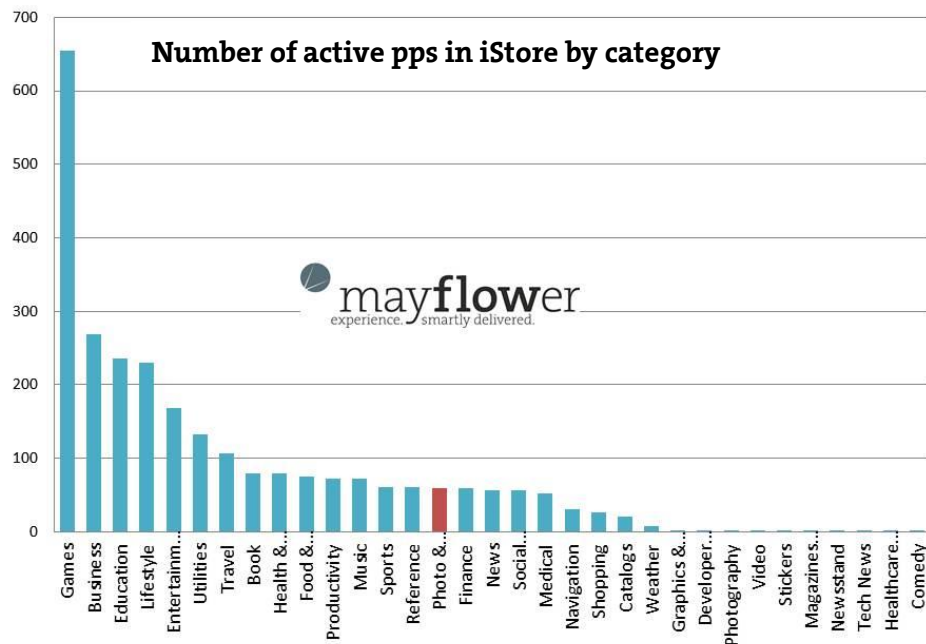
This study deals primarily with these kind of operators.

### New Photography Business:

Any companies primarily offering photography-based online and app solutions are considered to be service providers belonging to the field of a new photography business.

In fact, there are currently no reliable statistics which could make it possible to make a realistic estimate of profits generated by "new" photography solutions.

Thus, according to a study from September 2016, there are about 2,7 million apps on iStore, out of which almost 60.000 deal with photography- or video-related topics:



**Chart 2: Photo apps on iTunes<sup>2</sup>**

Nonetheless, further statistics dealing with downloads and usage no longer specify such apps. This leads to the conclusion that, while there is a relatively wide range of such camera-based apps, most of them tend to play a subordinate role in terms of profit. Many smartphone users seem to use built-in cameras without spending more money on the download of other paid apps.

Other unpredictable sales figures are those who are generated on photography-based pages using user photos from social networks. As a result, a direct turnover correlating with the photographic activities of users (number of photographed images leading to profit) does not seem feasible.

It is thus very difficult to objectively assess whether such apps generate any relevant sales figures. We have therefore refrained studying this component of the photographic market in more depth.

<sup>2</sup> Source: <http://www.pocketgamer.biz/metrics/app-store/app-count/>



**Conclusion**

We call attention to the danger of referring to a growing photographic market, solely on the basis of an increasing production of electronic photos. An assessment only considering (theoretically) available graphical data without drawing on reliable turnover or even profit estimates could easily lead to misleading conclusions when conducting a business planning.

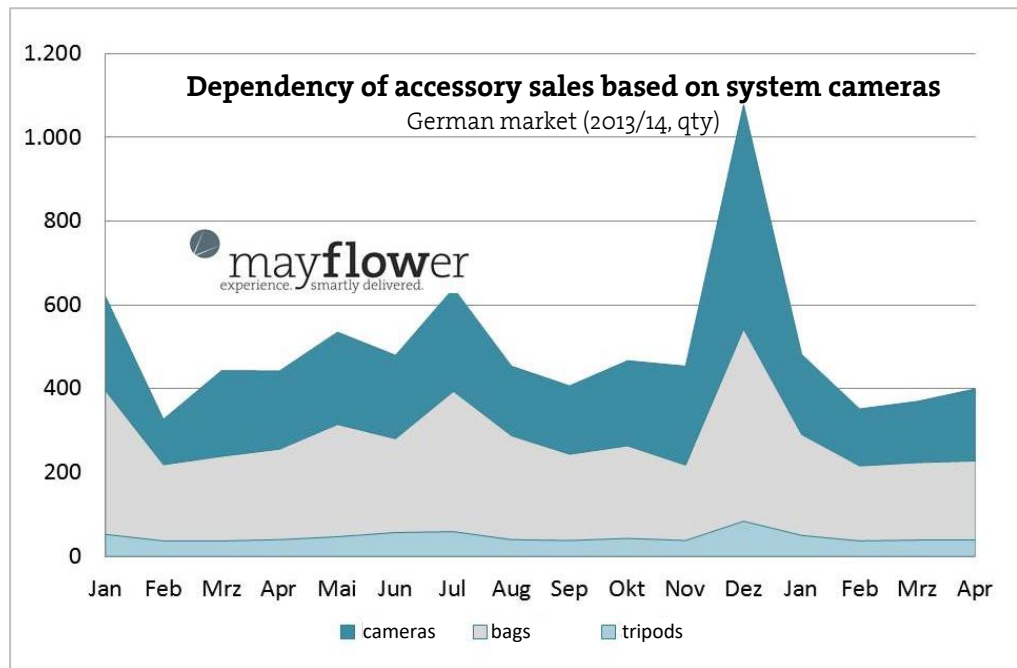
Photo Labs

Photo labs and photo kiosk system operators play a special role in the examination of the market, since they have smartphone users as clients but remain largely dependent on camera-based image data.

For this reason, this study includes photo labs.

## 2. Importance of the camera business in the traditional overall market

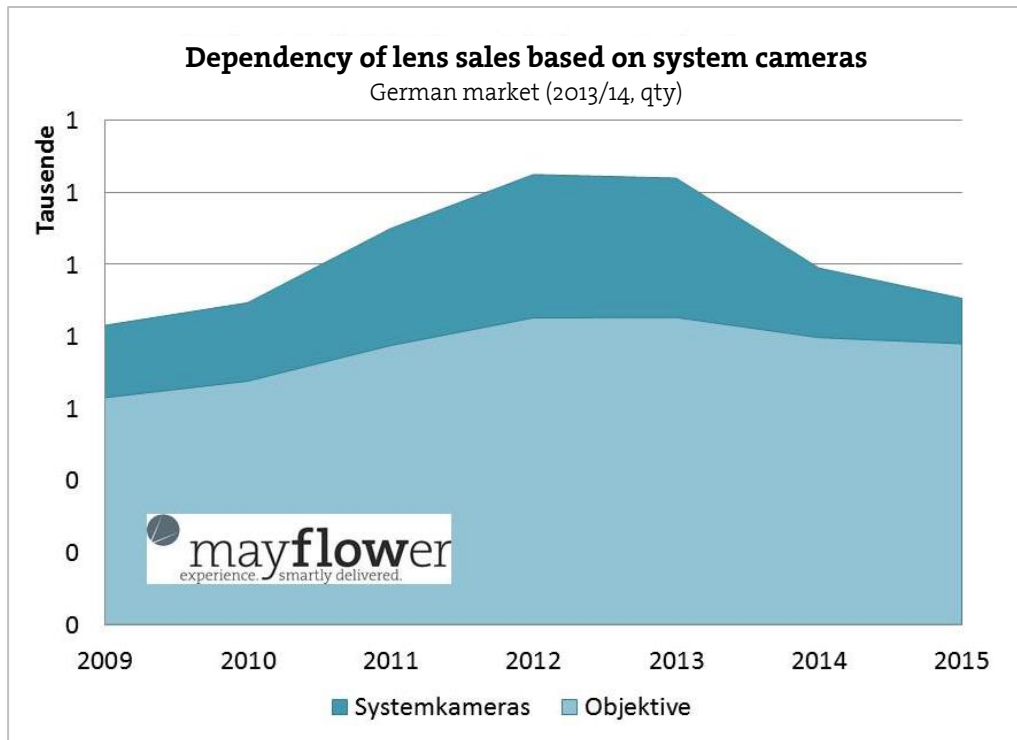
According to a statistic published in 2014 <sup>3</sup>by the GfK, 80% of the hardware business in the German retail sector was constituted by the camera segment. Furthermore, the accessories business revealed direct correlations between sales figures for cameras and photo accessories.



**Chart 3: Sale of system cameras and accessories in the German market<sup>4</sup>**

<sup>3</sup> Society for Consumer Research

<sup>4</sup> Source: GfK



**Chart 4: Sales relationships between system cameras and lenses**

Thus, changes in the market behaviour of consumers, like those which have been experienced by the photo market since 2011, have had a direct impact on all accessory and extension products, causing product-dependent delays.

**Conclusion**

Even in times of a declining demand for cameras (see section 3), the classic camera is still the main driver for all subsequent transactions with pictures and accessories.

### **3. Status quo**

Events such as photo festivals, company promotions or the just recently held Photokina convey a quite positive scenario: Many people from all age groups keep enjoying photography. Such events are nonetheless - and as in any other sector - only snapshots of a very selected group of visitors and assessments of the market development based on them would disregard a key aspect: people who don't (longer) attend such events and who have turned their backs on the sector are not counted, nor taken into consideration.

And if the aim is to discuss the future and new arising opportunities, it is necessary to not only keep track of faithful customers but also and most importantly of the overall potential market.

The following pages thus try to - almost from a helicopter perspective - give a comprehensive description of the situation, based on facts and figures.

## 4. The camera market

There are currently three worldwide data models delivering market descriptions and predictions for the camera market:

- Panel data from the GfK
- Market assessments by market observers, such as *InfoTrends* and *FutureSource*
- Manufacturer data by the Japanese *CIPA*

The **GfK trade panel data** give a detailed description of the market distribution in general.

These data have the valuable particularities of being based on detailed studies and of being easily accessible in a large number of countries. For this reason, GfK data are ideally suited for controlling marketing and sales activities in single countries, as well as for performing a product and feature-analysis in markets.

A disadvantage is that the GfK does not collect data from all countries - for example: the entire American continent is missing, being only covered by a cooperation – whereby statements about the global market are only possible at a fairly high aggregation level.

**Market assessment data** are suitable for making a long-term planning and can be used as a "second opinion". Such studies are usually based on so-called expert interviews, which are complemented by the personal assessments of participating market researchers and are published as market trend models.

Such data should under no circumstances be misunderstood as real market data

## **Manufacturer data provided by CIPA**

Since 2002, the Japanese CIPA (Camera & Imaging Product Association) has been collecting and publishing production and export data from the Imaging Industry. As a successor of JCIA, even since 1933. Members are primarily Japanese companies.

Although these data are complete in the framework of participating members, they have certain ambiguous data structures when referring to other areas, and so special care is necessary when interpreting them:

For example, the "**shipment**" data show the sales volume into Europe, America and Asia. However, the buyers of products covered by these data are usually the local branches and distributors of the brands. The reported quantities have then only reached the warehouses of producers in Europe, America, etc. and the prices shown are, in fact, intra-group prices.

Figures referring to the Japanese market show data for sales into retail - and accordingly, the indicated values refer to selling prices into the photography business.

Another problematic aspect is that these values are indicated in Yen and thus give a limited picture of prices as they are perceived by the market.

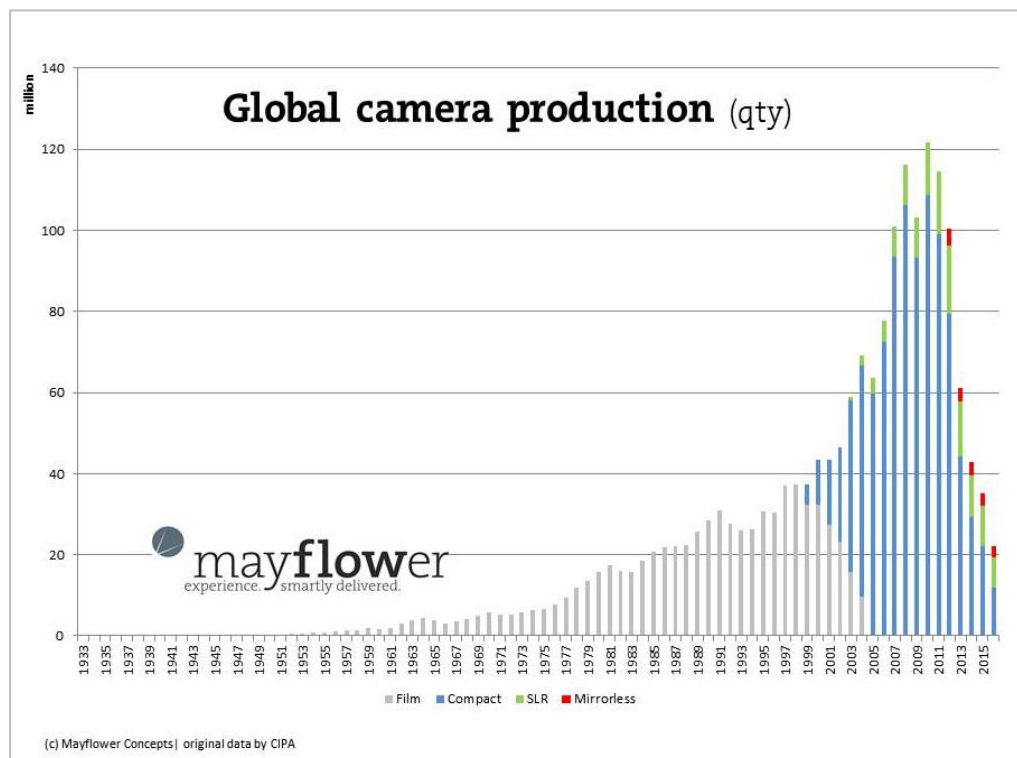
Nonetheless, we use these CIPA data for our periodic analysis, after processing them in a database of ours and drawing our own conclusions. In particular, we convert the data into so-called "rolling years", so that we can for each month show the respective ratio for the previous 12 months. As a result, we can analyse market data in seasonally adjusted terms and recognize trends on a monthly basis.

**If you would like to receive these data regularly from us, contact us at [contact@mayflower-concepts.com](mailto:contact@mayflower-concepts.com).**

## a. Global considerations

The following analyses of the camera market are all based upon the above described processed statistics of the CIPA - however, we edit these data previously. Accordingly, we smooth out data errors, which now and then unfortunately occur, calculate the prices per camera, adapting turnovers calculated in Yen into current exchange rates and sum up collected data into so-called rolling years. Thus, it becomes possible to read off trends on a monthly basis and regardless of the season.

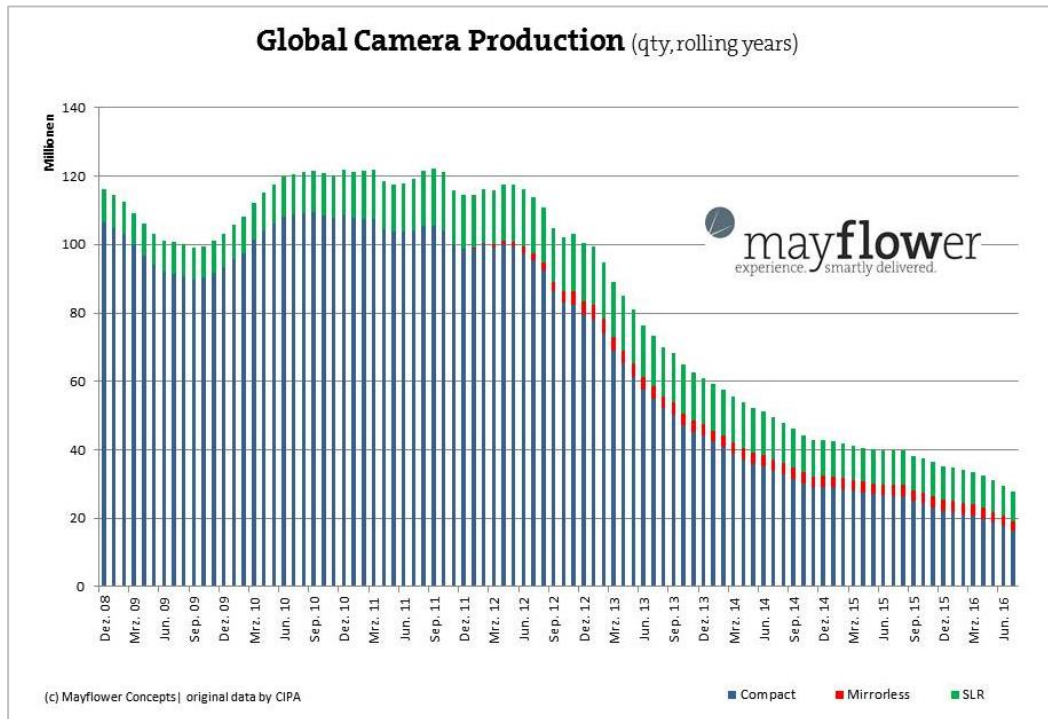
In general terms it can be said that the camera market has collapsed dramatically since 2012. The current number of 27 million products produced per year comprises only 20% of the quantity produced in 2011. For the first time, the figure is even lower than the production rates of analogue cameras in the 1990s.



**Chart 5: CIPA production rates listed by product category since 1933**

When converting data from CIPA into rolling years, it becomes easier to recognize growth/shrinking tendencies. In particular, it becomes evident that

after a period of apparent stability in 2014/2015, production rates have been decreasing again sharply and continuously since 2015.



**Chart 6: CIPA production rates in rolling years**

**Conclusion**

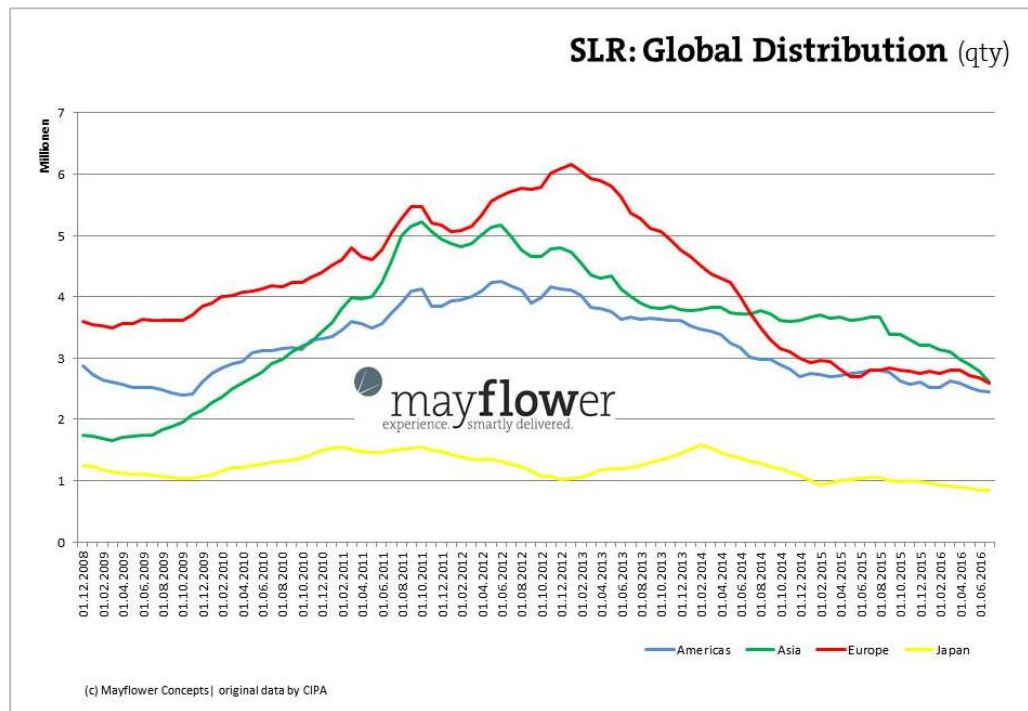
Even four years after the market began to collapse, the bottom of that tendency doesn't seem to come into sight. Operators should prepare themselves for the possibility that a trough may never come.

**Conclusion**

All theories which attempt to explain this market shrinkage with a market saturation must be considered to have been refuted, since a market saturation would still have a stable replacement market. But in terms of numbers, there seems to be no such market.



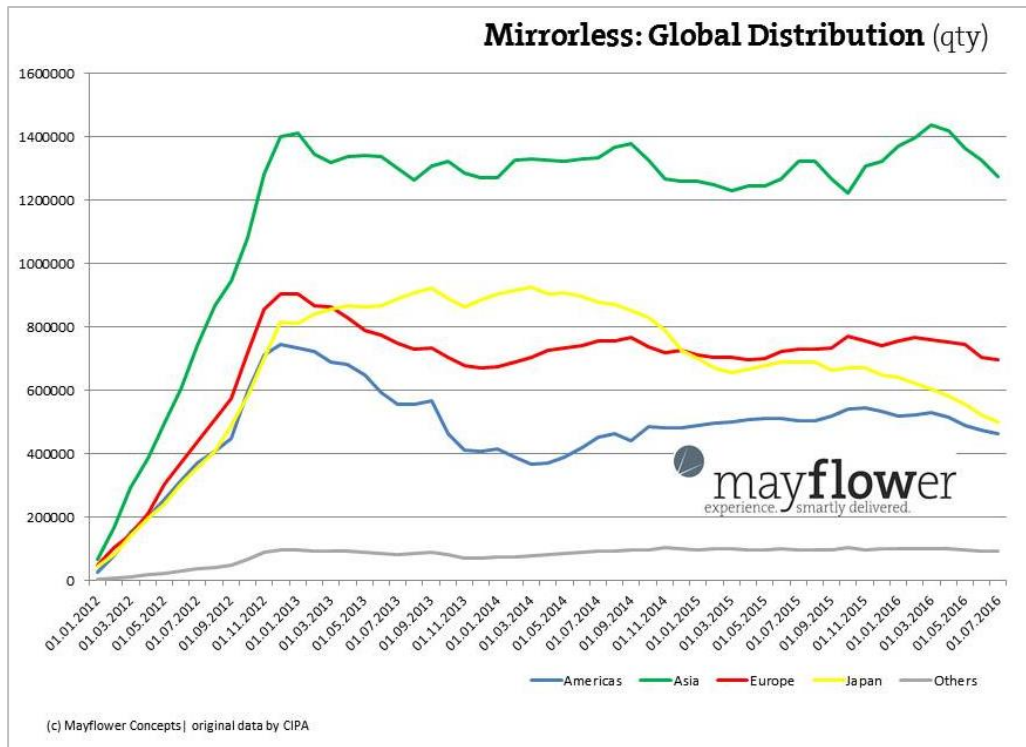
The market shrinkage happens of course mainly at the level of compact cameras. However, markets have also collapsed when it comes to system cameras: particularly dramatic is the decline of SLR-cameras shipped to Europe. Thus, the European market has evidently fallen significantly behind America and Asia. Only the Japanese market for single-lens reflex cameras seems to be currently stable.



**Chart 7: SLR-Shipments into regions**

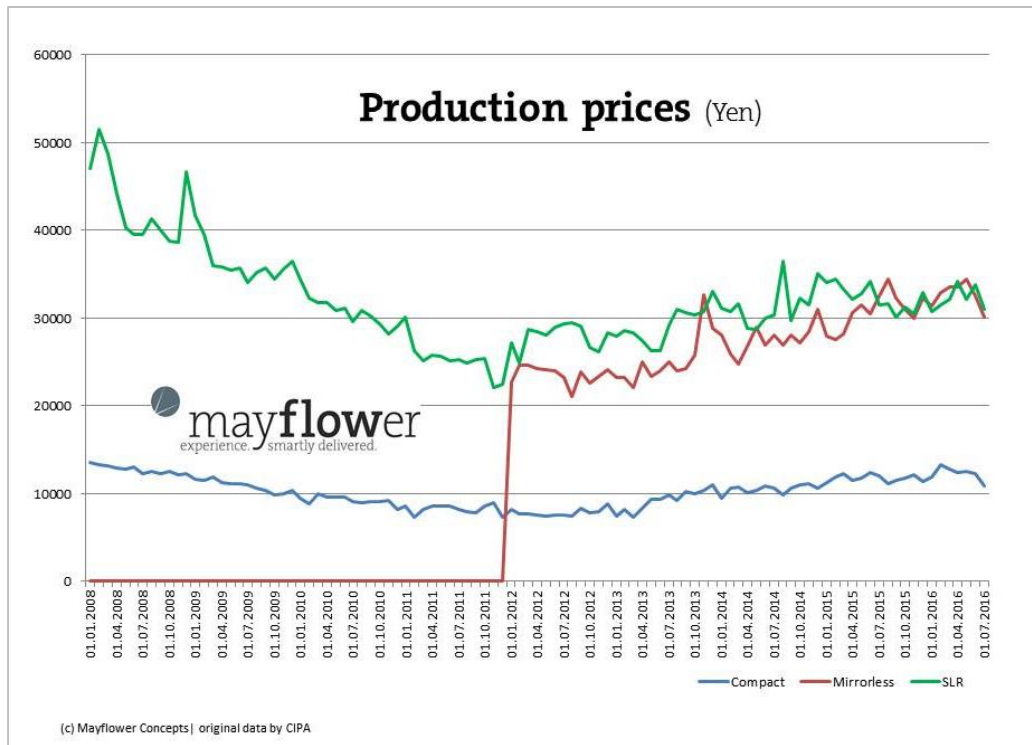
However, the development of mirrorless system cameras reveals a stark contrast: while, for a long time, the shipping figures seemed to remain stable for all export markets, Japanese sales figures have been dropping dramatically since Spring 2014.

Moreover, figures concerning other markets, such as the US, Europe and Asia have also been pointing down since that same Spring.



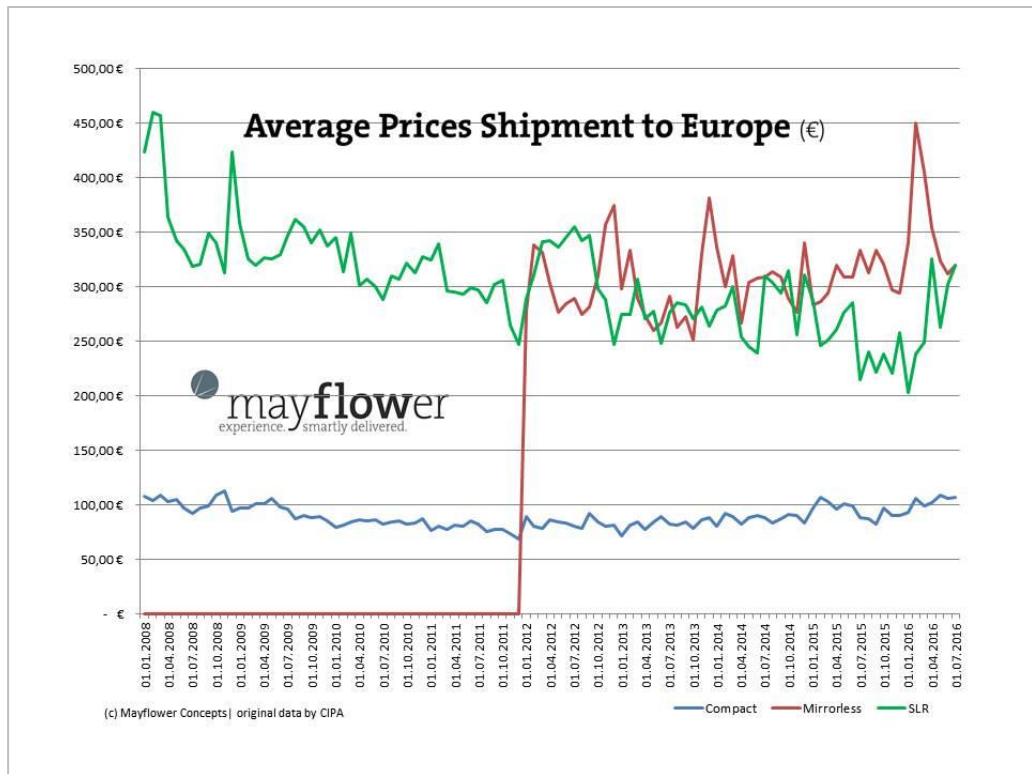
**Chart 8: mirrorless cameras - global distribution**

Reports published by manufacturers and the GfK often state that, although less cameras are sold, those customers who do buy them tend to choose more and more high-quality models. That interpretation is then justified with the increase of average prices. In fact, it is possible to observe an increase in producer prices:

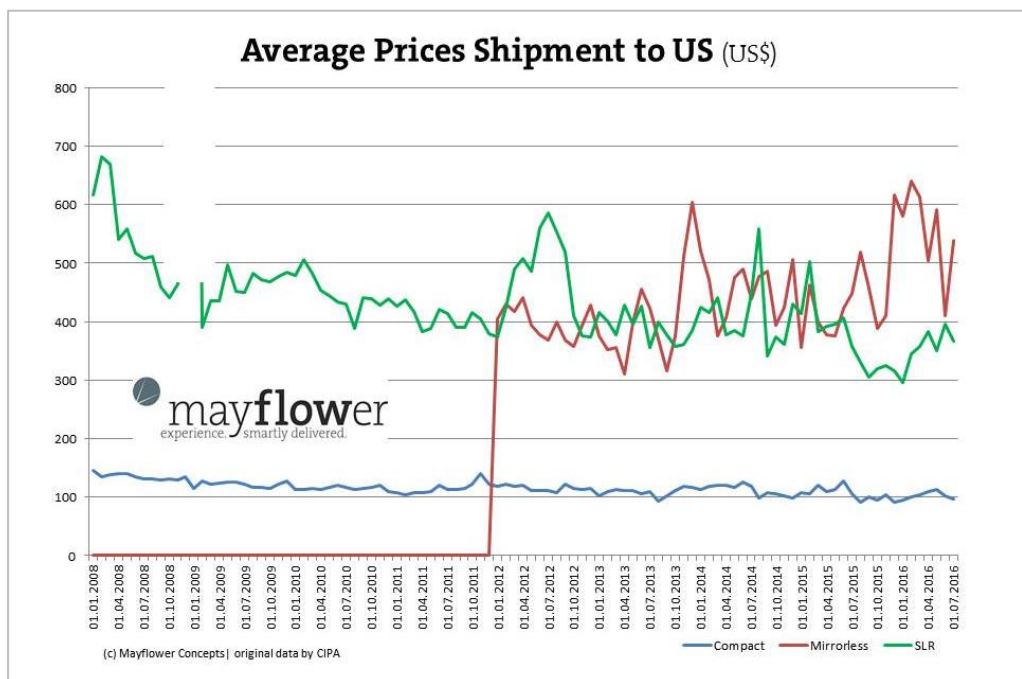


**Chart 9: average prices for the production of cameras in yen**

However, this situation must be assessed in an entirely different way, if you look at the selling prices into the different regions after having adjusted data for the effects of currency fluctuations. It then appears that while the values for compact cameras shipped into Europe in fact tighten a little bit, other values are simply volatile and don't show any clear trend towards higher quality products. In particular, the average price for compact cameras in the US even went down after having been adjusted for exchange rate fluctuations.



**Chart 10: average prices for shipment to Europe (EUR)**



**Chart 11: average prices for shipment to the United States (US dollar)**

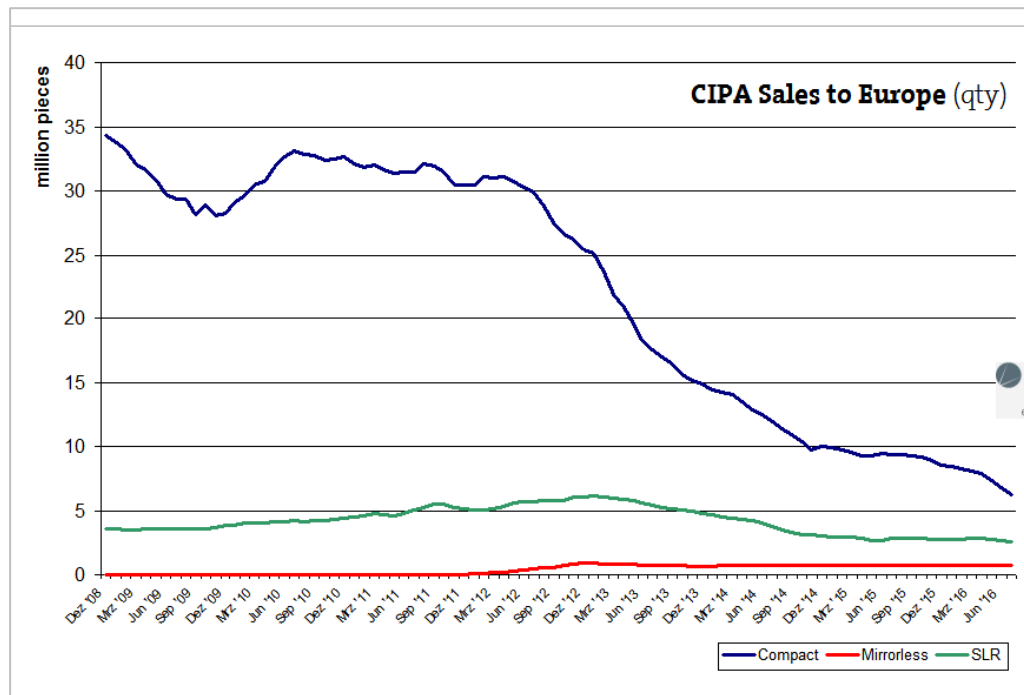
For the sake of clarity, it is however important to recall that the prices into export markets shown here refer to sales prices to the importer - who often belongs to the same corporative network. Whether such price changes really reflect themselves at consumer level, can simply not be deduced by that.

**Conclusion**

A trend towards higher quality cameras cannot be concluded from available data. In fact, such values are more likely linked to the fact that low-cost products are the first to be replaced. Consumers don't choose more often expensive cameras, they simply don't longer buy any low-cost cameras.

## b. The camera market in Europe

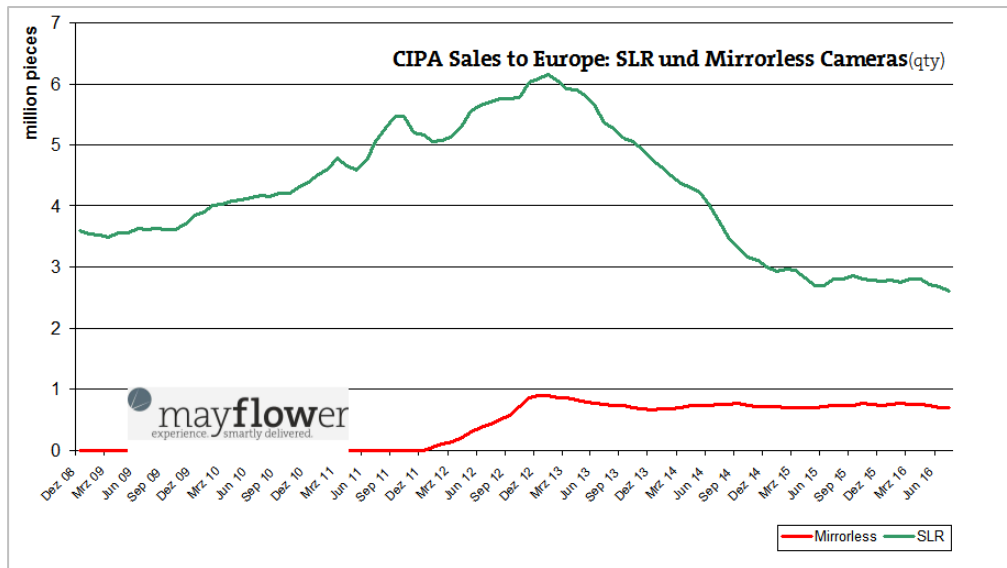
In Europe, the camera market has fallen from almost 40 million to below 10 million items per year. The demand for compact cameras is nowadays even lower than that for system cameras only three years ago.



**Chart 12: Total sales volume of cameras into Europe**

Hopes that mirrorless system cameras, who were introduced into the market in 2009, could revive the business remained fruitless: the distribution level into Europe has remained stable since 2013, while the market for SLR cameras has declined significantly.

According to current figures, the past two months indicate that a new decline in the European market is to be expected.



**Chart 13: sales volume to Europe: system cameras**

### c. US and Asia

The situation does not differ significantly in either the American nor the Asian continent. Still, in Asia, sales from compact cameras have already fallen below those of system cameras.

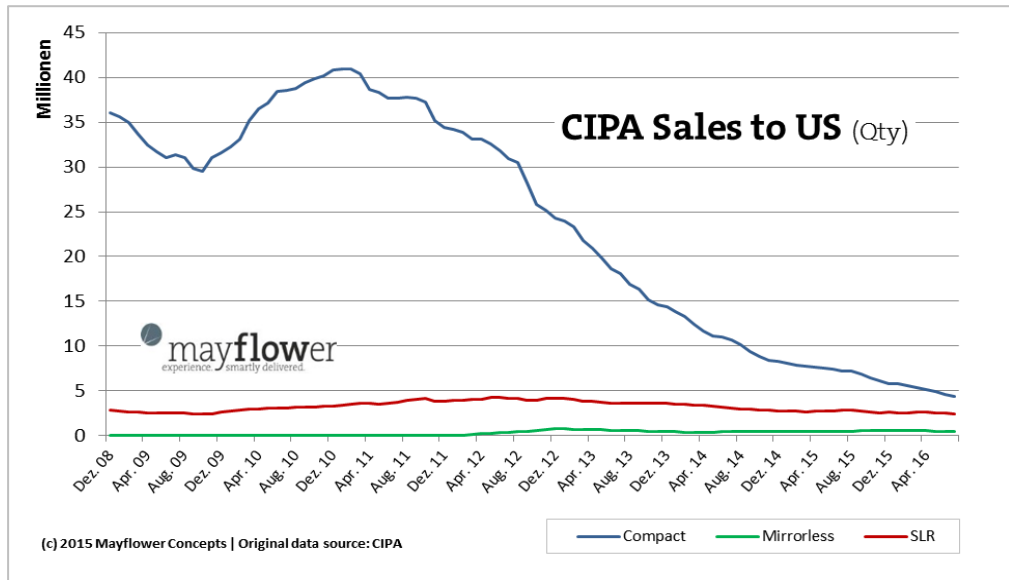


Chart 14: sales volume to the US: total

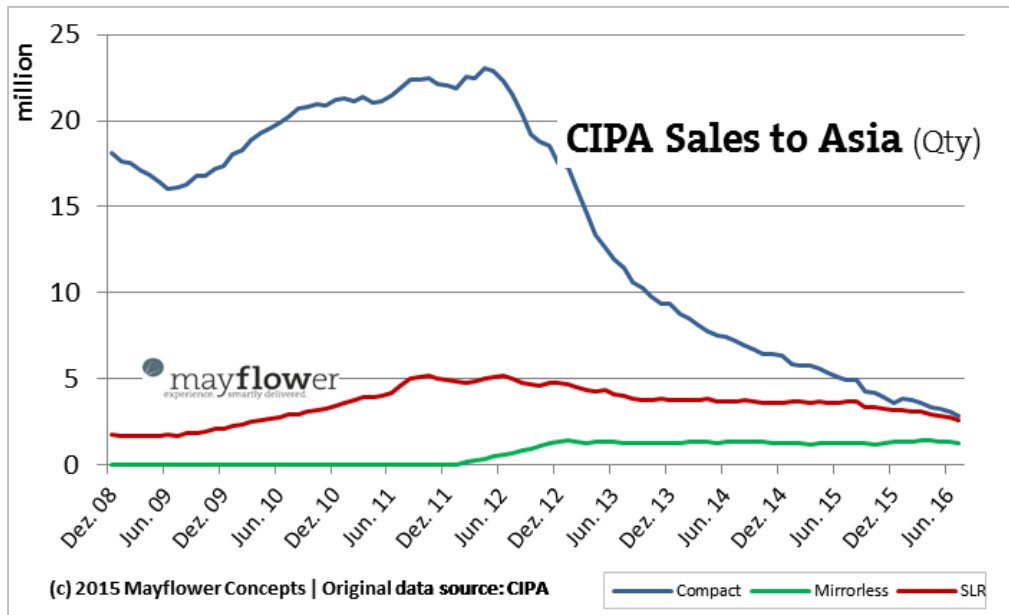


Chart 15: sales volume to Asia: Total



The sales volume for mirrorless system cameras remains practically stable in both regions, while SLR cameras are clearly less demanded.

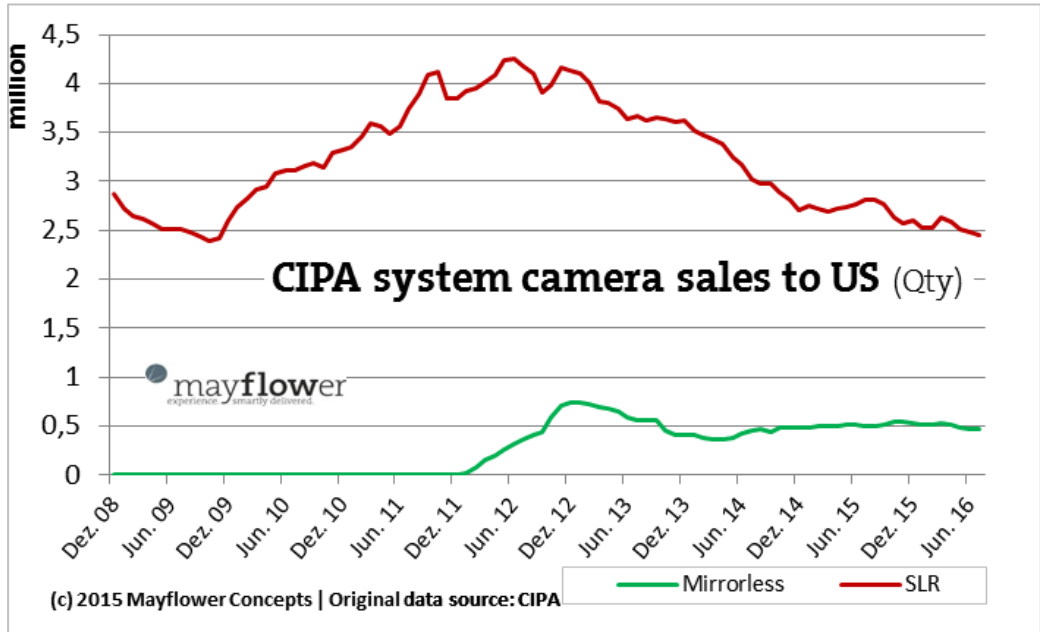


Chart 16: sales volume to the US: system cameras

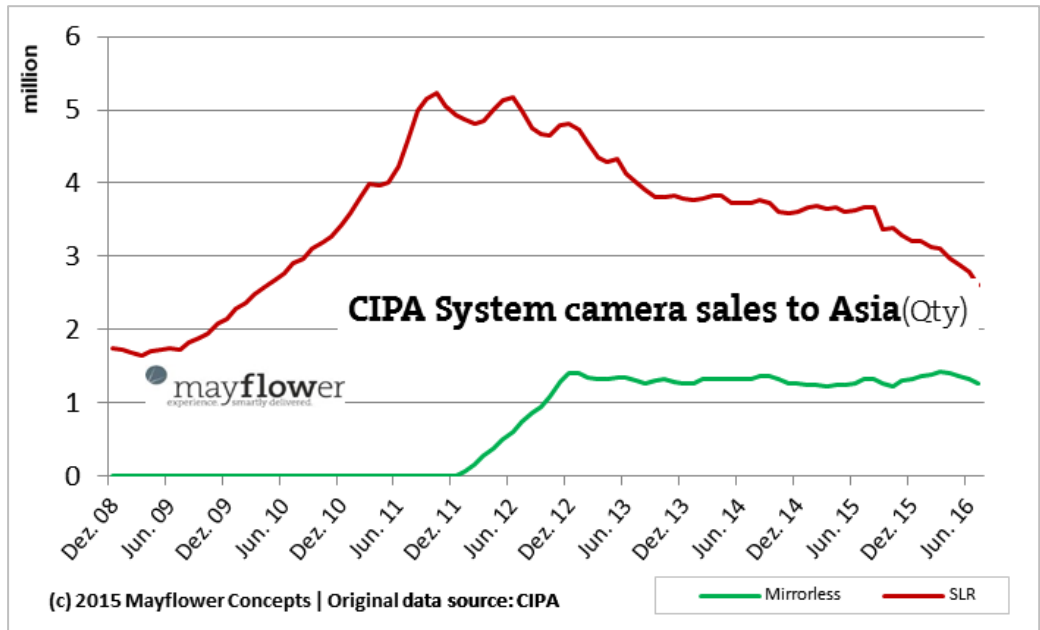


Chart 17: sales volume to Asia: system cameras

## 5. Sustainable business: accessories

As regards the accessories business (lenses, tripods, cases, cards, etc.), the only figures available are rudimentary and currently only reflect the German market<sup>5</sup>. The amount of data is sufficient to make a statistically reliable direct link between the number of sold cameras and downstream accessories. Currently, this ratio improves in favour of accessories – accessory products, nowadays, make up the higher share of the total turnover in terms of photo trade.

However, this should not be considered to be necessarily positive, since this shift is but a consequence of a declining camera business. The purchase of accessories thus lags behind camera purchases, which were made in previous years.

### **Conclusion**

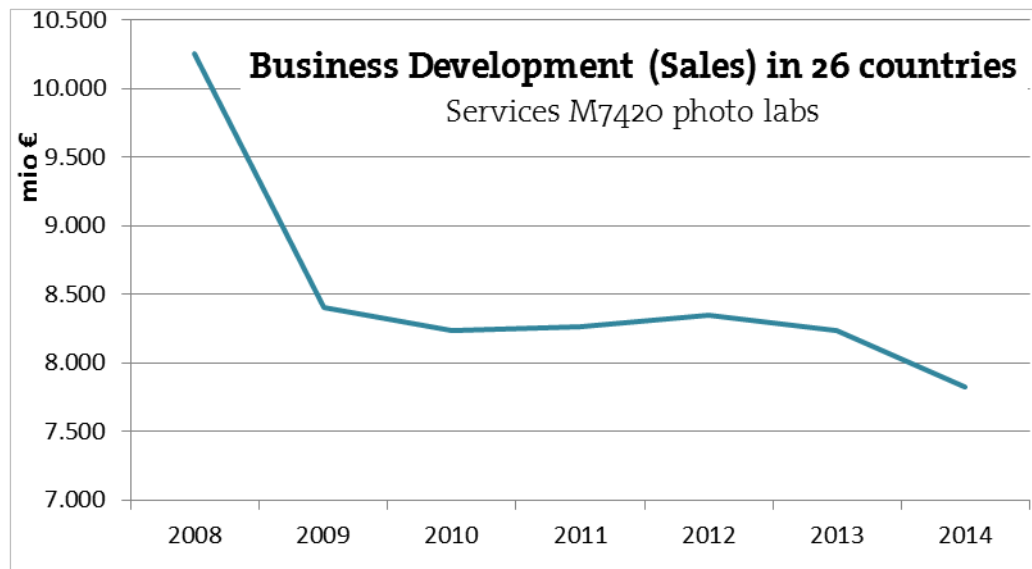
It can be concluded that even accessories of all kinds will face a drastic decrease in sales over the coming months.

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<sup>5</sup> For more more detailed information visit GfK

## a. Laboratories and laboratory services

This is another area lacking reliable numbers or publications. Relevant data to be used are most likely the European turnover statistics provided by Eurostat<sup>6</sup>. However, these are only available since the year of 2014. From the 26 available country data until 2014, there is already a negative balance:

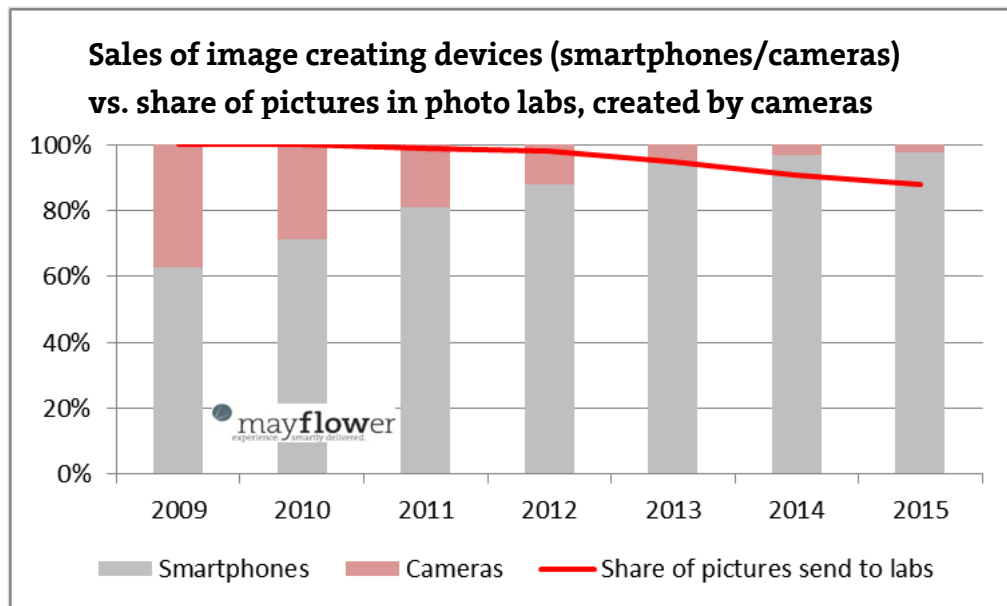


**Chart 18: business development of photo labs in 26 countries, according to Eurostat**

In fact, no sales growth can be observed from the flood of images which has been generated by smartphones. This may differ according to individual companies and countries, but the overall situation reveals a clear trend:

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<sup>6</sup> NACE Rev.2 Group number M7420 Technische Dienstleistungen Fotolabore und Fotografie



**Chart 19: Share of cameras in image creating devices and the photo <sup>7</sup>business**

Although cameras, in the past year, only accounted for 2% of image creating devices sold worldwide (pink bar), a survey carried out by Mayflower reveals that 85% of all images given into photo labs have been produced with cameras - mainly system cameras - (red line). In particular, the number of images from smartphones does not increase enough to compensate for the loss of pictures from compact cameras.

### Conclusion

The photo laboratory business lives currently mainly from the stock of cameras, especially system cameras. It is thus to be expected that this business will, with a delay of some years, suffer a massive collapse.

<sup>7</sup> Sources: production cameras: CIPA, smartphone sales: IDC, percentage of smartphone pictures in the laboratory market: Mayflower

## **b. Photo kiosks:**

A very different situation emerges when the use of photo kiosks is considered separately. Here, the proportion of images from smartphones is significantly higher than the average of all processed lab pictures<sup>8</sup>.

This indicates that smartphone users find it easier to get to the printed image by this medium (the technical connection of smartphones could possibly be easier for the consumer, than the same connection on their own PC) or that it is more likely to give rise to a spontaneous purchase decision (the smartphone is always at hand, while cameras and memory cards need to be brought from home).

### **Summary**

Even though individual products (drones, selfie-sticks, lenses) partially indicate different trends, it can be concluded that the downstream business with accessories and laboratory services will eventually decline as a whole and necessarily collapse after some years.

Therefore, it is important that suppliers and dealers critically examine their offer, even though they currently only notice small effects of a declining market. Otherwise, by the end of the decade, they might face the same radical cuts as those which the camera industry and camera retail business are experiencing now.

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<sup>8</sup> Non-representative Mayflower survey

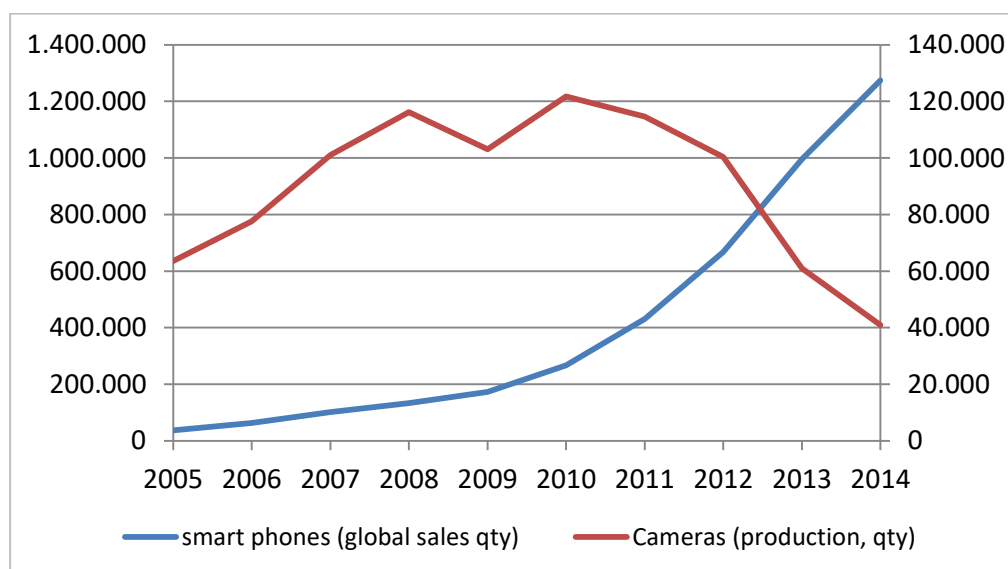
## 6. Cause study

According to a generalized public opinion, the cause for the current situation lies exclusively in the existence of smartphones. This opinion is usually supported by most industry experts.

However, this simplification carries the massive risk of neglecting other underlying causes of the crisis and thus of ignoring available opportunities.

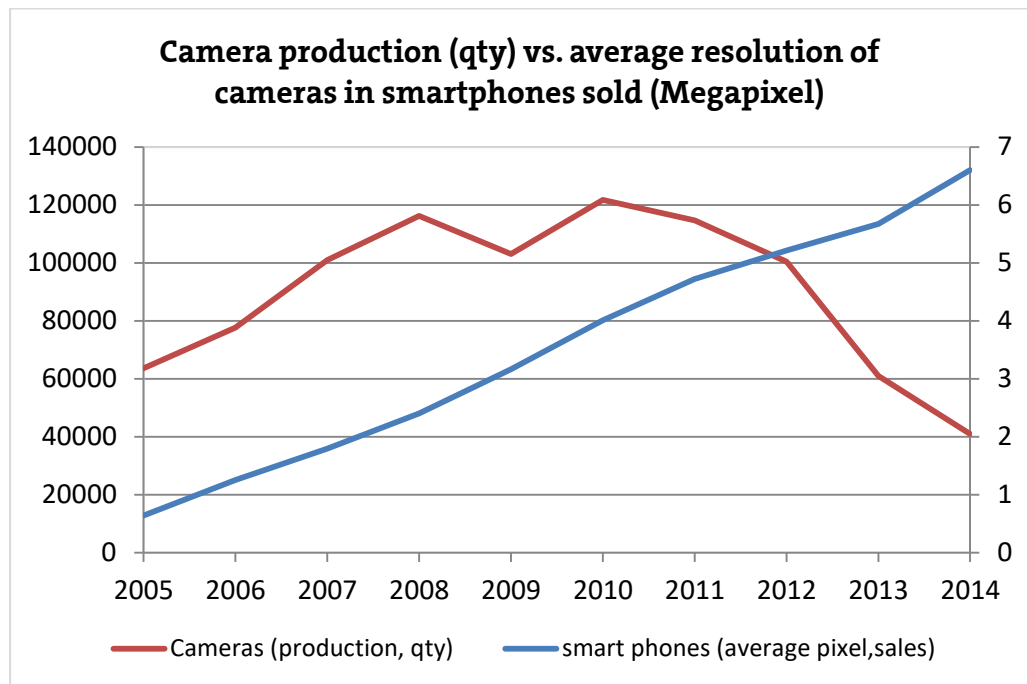
### a. Smartphones

Fact is that there are no reliable figures establishing a clear causal link between the collapse of the camera market and the emergence of smartphones. Quite the opposite seems to be the case: The number of cameras which were produced (and sold worldwide) continued to rise even 4 years after the introduction of the Apple iPhone and of Android Phones, until the market began to decline in 2011.



**Chart 20: global quantity of produced cameras vs. sold smartphones**

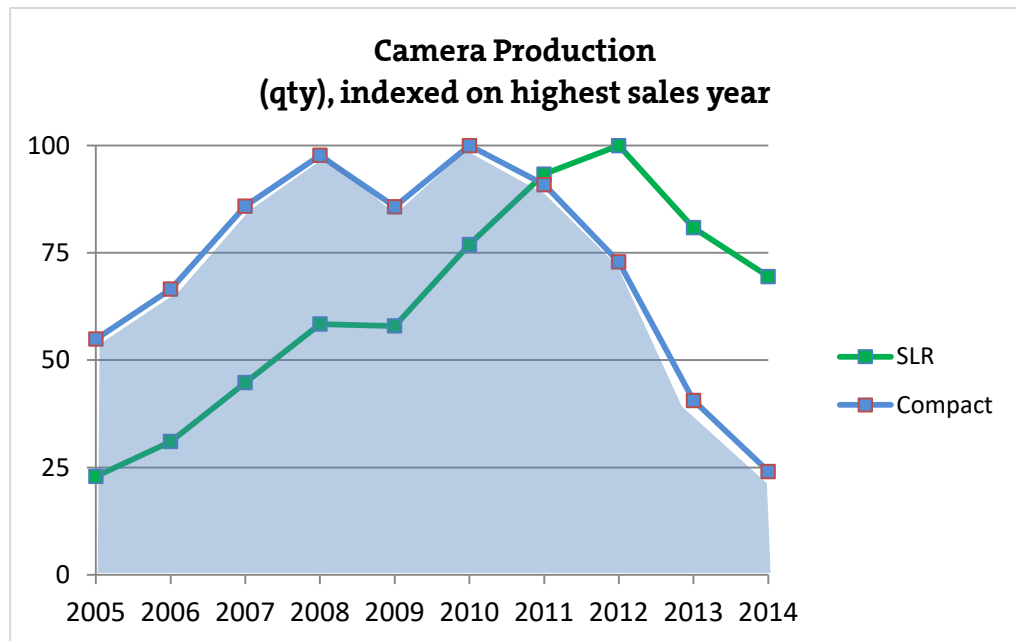
Any connection with the image quality (pixels) of inbuilt camera modules in smartphones is another statistically undetectable factor.



**Chart 21: global camera production vs. average resolution of cameras in <sup>9</sup>smartphones sold**

Another aspect speaking against the idea that smartphones are the only and direct cause of cameras going extinct is the fact that the system camera market also reveals the same shrinkage tendency with a delay of almost two years.

<sup>9</sup> Data: GfK/CIPA



**Chart 22: Relative growth curves SLR and compact cameras. Index highest value = 100%**

Finally, the usual argument stating that consumers who used to shoot their pictures with (compact) cameras now do so with their smartphones stands in direct contradiction to the figures brought forward by photo labs: In no way is the turnover which used to come from pictures shot with compact cameras replaced by smartphone pictures.<sup>10</sup>

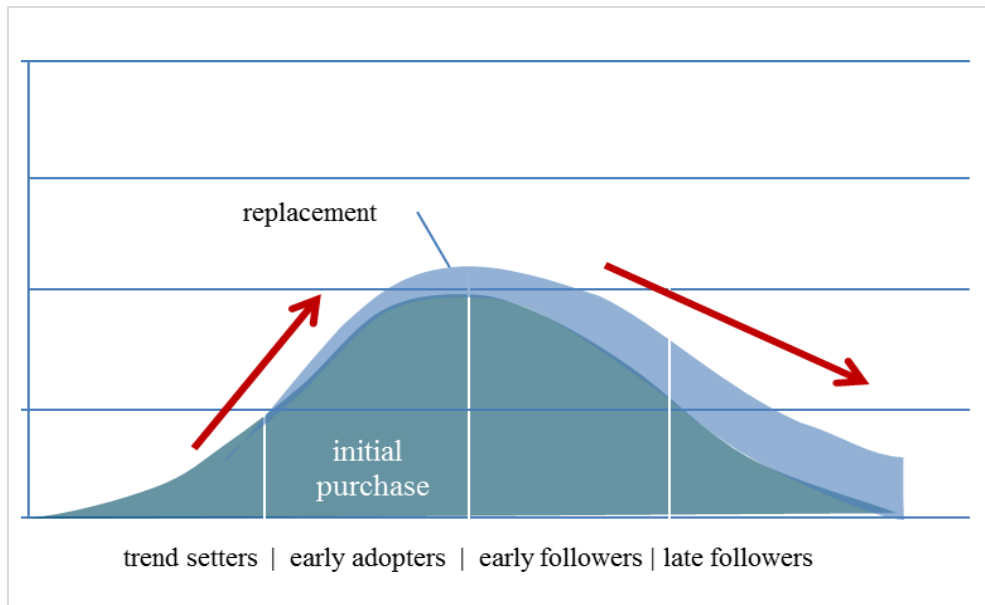
## **b. Market saturation**

Another frequently suspected cause is an alleged market saturation. What is assumed is that consumers don't buy new cameras, because the cameras they bought in recent years have already reached a perfected quality level.

However, this theory also has strong shortcomings. When there is a real market saturation, the demand for the initial product decreases, but the after-sales trade remains stable as a constant "market bottom".

<sup>10</sup> Mayflower survey





**Chart 23: Typical curve of a market saturation**

For compact cameras, this would mean that those purchased in the record year 2010 (approximately 110 million pieces) would need replacement after 5 years (a rather long life cycle for a digital product) - which would roughly mean this year. However, the current estimate<sup>11</sup> for the present year only expects 16 million sold cameras - with a continuously decreasing trend - and this is a number which falls far behind a replenishment of 110 million.

When observing the market for SLR cameras, similar values can be found - with a time lag of two years.

This raises further doubts on the market saturation theory, since it is hard to understand why

- an almost identical market saturation should occur, approx. two years apart, for products as diverse as SLR and compact cameras (which target very distinct costumers)
- the whole camera market should be saturated with something over 100 million items sold worldwide, while smartphones reach sales figures of 1,3 billion per year

<sup>11</sup> Mayflower Concepts estimate based on "rolling-year"- analysis

- a mature camera technology should lead the market to collapse, while consumers buy the latest smartphones from Apple and Samsung in record quantities, despite the fact that they technically hardly differ from their predecessors

### **Conclusion**

Smartphones have undoubtedly had an influence on the market demand for cameras. However, they cannot be the single cause for the radical collapse of the market after 2010 or 2012 respectively (SLR). The similarity of the shrinkage process undergone by compact cameras and SLRs - with a chronological offset of two years - rather suggests that there were factors influencing the purchase decision which struck compact camera buyers earlier than SLR users.

In fact, the focus on smartphones as the single cause for a market weakness has impeded a discussion about other causes from even happening in the first place. And this despite the fact that precisely the market environment for the photography business has undergone massive change at global level in the last 15 years:

## **c. Marketing communication for the product**

### **"Photography"**

By the end of the 1980s, photography had become a mass movement. Film producers had an accordingly high turnover, gross profit and advertising budget but remained incapable of providing the consumer with understandable rational information on their products (films). The consequence was that most film suppliers made an early shift to emotional advertising, which rather promoted the very act of photographing.

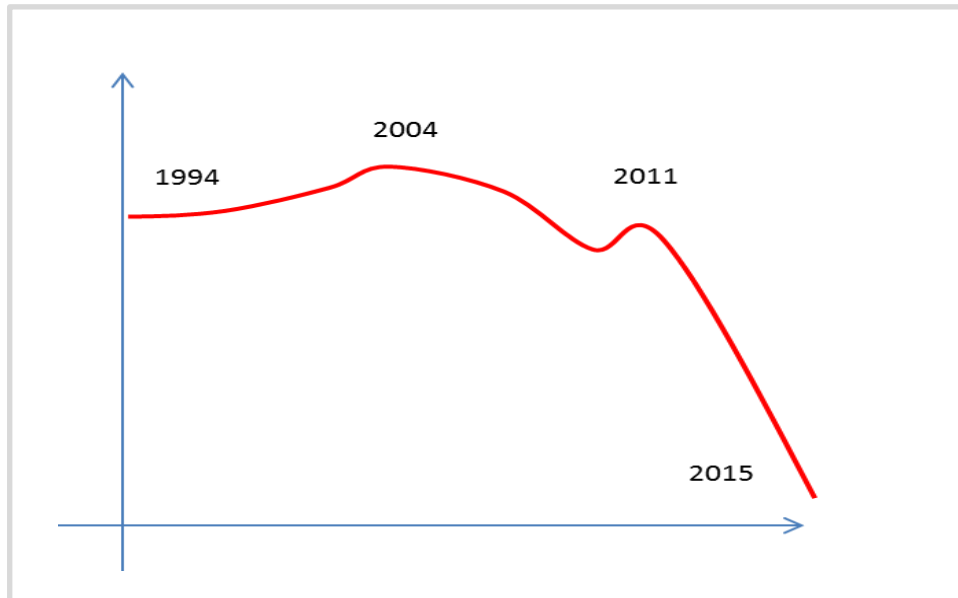


**Figure 23: Film producer ads from the 70s until the 90s**

A similar situation occurred after the shift to digital photography and lasted up until 2005, approximately: at that time, those making a high gross profit and investing significant amounts on marketing were the producers of cameras.

This situation has undergone a clear change in the middle of the first decade of the millennium. The massive entry of Chinese, Taiwanese and Vietnamese manufacturers into the OEM production of compact cameras led to a dramatic price drop for such products.

As a consequence, marketing campaigns for a classic, camera-based photography shrank dramatically and the photography business lost the status as leader of opinion regarding photography it had enjoyed between the '80s and 2005.



**Chart 23: Nielsen data on "photography" advertising budget in Germany**

Nowadays, marketing campaigns for photography with a high impact and budget are usually launched by smartphone producers.

#### **d. Market logic change**

In times of film based photography consumers had, in fact, little choice: those who wanted to make photographs necessarily had to go to a photo retailer (in 1989, Media Markt only had 20 branches), buy a camera and photographic films, bring these back to the store for the pictures to be developed and, a few days later, go back a third time, in order to purchase the developed pictures.

The photographic market was thus rather a supply driven market, where the offer controlled the business - the consumer had to take what he was offered. Accordingly, the photo industry and trade relied on that and made little effort to canvass costumers. Products were scarcely marketed.

This situation has now changed dramatically: nowadays, the consumer has a choice over everything:

- what he wants to photograph with (camera, smartphone, tablet, google glass ....)
- where he wants to buy his equipment (photo shop, electronics market, online, telephone provider or food discount stores)
- how he wants to visualize his pictures (printed in a lab, a kiosk or even with the domestic printer, or on the screen of a PC, tablet, photobook or TV device)

The "photographic market" has therefore turned into **a buyer's market**. And in a buyer´s market, the customer is the one whose behaviour determines which way the wind blows. Accordingly, suppliers need to position themselves in a way enabling them to influence the behaviour of consumers into their interest.

And fact is that this transition from a supply market into a buyer´s market has not yet taken place within producers active in the business of classical photography. The products, product presentation and communication, in many areas, still equal those of analogical times.



**Figure 24: typical showcase of a photo retailer**

### **e. Customer expectations**

When it comes to customer expectations, the introduction of smartphones has brought fundamental change, which not only affected photography but many other markets - and which the photography business has so far pretty much ignored:

When presenting the first iPhones, Apple showed the world that everyone could operate highly technical products in an extremely easy way. The iPhone and later the Android and Windows systems have settled new standards in terms of the ergonomics of technical products, which consumers in the meanwhile have come to consider the standard.

In the past, costumers would be annoyed by products with a difficult or almost impossible operation method (video recorders!) but bought them all the same.

Since the massive proliferation of smartphones, costumers have discovered that there is a much simpler way and thus no longer have the patience for non-intuitive operative systems.

Ticket machines are just another of the many "victims" this phenomenon has created, the others being, for example, cars, normal mobile phones, Smart-TVs and, of course, cameras.

Anything that doesn't work "easily" and needs an instruction manual to go along with it is no longer accepted - unless there is positive change. Nokia has lost its business because of this effect and Smart-TVs, not being smart, were left standing as dead stock in the shelves of shops, bringing wrinkles of concern to the brows of players in the sector - and these are just a few examples among many.

This could be another reason why the camera market is collapsing, considering that cameras, like their predecessors, still have many buttons and operation methods which keep changing from model to model.

## **f. The technical ecosystem**

A massive change in the photography market of the last 15 years has to do with the technical Ecosystem as perceived by the consumer.

Those who, in the 90's photographed with analogue cameras could buy a camera in any photo store on another planet, buy a corresponding photographic film on the other side of the globe and deliver it in yet another continent for it to be developed: the result was - the occurrence of small mistakes apart - always the same. 35mm-films (or 110 films or APS...) of any manufacturer would fit perfectly in each corresponding camera and could flawlessly and colourfast be developed by any laboratory.

The photography market had established a globally standardized ecosystem and the consumer had adapted to it.

The introduction of the digital photography put an end to that:

Memory cards, raw image formats, interfaces, photobook formats, service website logic and many other aspects were reinvented by each company and designed independently - sometimes, even in multiple ways: Sony made its entrance into the world of digital photography with nothing less than 4 memory systems (floppy disks and CDs for the Mavica Cam, memory sticks for Cybershots and CF cards for high end cameras), while Fuji and Olympus

changed their memory systems twice in only 10 years (SmartMedia, XD card, SD card).

So, while the expectations of consumers clearly tended to more and more simplicity (see e.), the photography business kept increasing the complexity of products.

### **Conclusion**

In addition to "smartphones" and "market saturation" as the usual suspects for explaining the collapse of the photo market, there are a number of other influencing factors which have changed customer behaviour over the course of the last 15 years and have remained unaddressed by the photo business.

The weaknesses of the first two theories suggest that other factors - possibly those listed as examples under points c. to f. - are at least partly responsible for the downfall of a camera-based photography.

### **Conclusion**

While not much can be done against a market saturation or an overpowering competitor like the smartphone, the same does not apply for the causes listed under points c. to f.

**If these causes were examined a little closer, adequate countermeasures could be developed, which might still be effective today.**



## 7. An opportunity for the photography business: the end of smartphones

Up until now, this study has shown that the current market situation of the photography business could be much less directly impacted by smartphones than used to be believed.

Nevertheless, it cannot be denied that smartphones stand in the way of monetizing the pictures that are shot with them, as can be seen from the different laboratory quotas:

Although, in the meanwhile, for each sold compact camera a further 100 smartphones are sold (with a rising trend) and despite the fact that the number of pictures shot with smartphones exceeds that of pictures shot with compact cameras by more than 100 times, fact is that a lot less smartphone pictures are developed than those which used to be developed from compact cameras.

### Conclusion

There is something about smartphones that leads consumers to act differently with regards to the further use of photos.

This could have to do with

- new transmission methods into the PC/tablet (cable or wireless connection instead of card swopping),
- a lack of overview and screenability because of the small display or
- simply the volume of different images on the smartphone, which, in contrast to past times, amount to a forgotten and disjointed mess lingering somewhere in the phone memory. Among the masses of pictures, the user simply can't find those worth printing anymore.

It could be worthwhile for the photography business to get to the bottom of this psychological momentum and to draw consequences for future products.

But there is another context in which it might be worthwhile for the photography business to explore smartphones in more depth when planning their products:

Experts on the subject matter already discuss the life-cycle of smartphones and speculate about which might be the next technological innovation or product to replace the smartphone.

One of the most prominent personalities partaking in that debate is the CEO of Sony, Kazuo Hirai, who in a recent interview with the newspaper DIE WELT revealed that Sony (among others) was already looking for successors<sup>12</sup>. Despite not knowing the nature of that successor yet, he defended that the smartphone is clearly reaching the end of its life-cycle.

**Note:**

Insider discussions on the Internet consistently speak of a period of more or less 5 years until the appearance of a successor technology for smartphones. A number explicitly stated by the CEO of Sony.

**These are the reasons why the end of smartphones seems to be in sight:**

The main arguments for this thesis as Mr Hirai brings them forward have to do the fact that no more significant new developments remain to be done in the field of phones. Although, apparently, no ground-breaking innovations are being made in the field of alternative devices, "experience still teaches us that a product category dominating the market today does not stay in the market forever".

Another credible source for this discussion is a study published by the Ericsson Consumer Lab: "10 hot consumer trends 2016"<sup>13</sup>.

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<sup>12</sup> <https://www.welt.de/wirtschaft/webwelt/article152717862/Sony-sucht-den-Nachfolger-des-Smartphones.html>

<sup>13</sup> <https://www.ericsson.com/res/docs/2015/consumerlab/ericsson-consumerlab-10-hot-consumer-trends-2016-report.pdf>



**Figure 25: Ericsson Consumer Lab study**

The following three main arguments can be extracted from that study:

**1. Artificial intelligence and acoustic communication**

The trend with consumers goes from an optical to an acoustic communication. So, rather than moving their fingers on a virtual keyboard, in order to enter a question and get an answer in the form of a text or image (Google Maps) consumers want to talk with their devices and get their answers over a voice command.

This trend appears to be sensible, since acoustic information blocks the senses much less and - provided that intelligent solutions be found - also requires less effort than communication with hands and eyes.

**2. Wearables instead of Portables**

Another trend indicates a shift from "portables" (such as the smartphone) to "wearables", meaning products, which are worn on the body, such as glasses, bracelets, chains, rings, brooches or even belts.

In the course of such a development a further miniaturization of tools would need to take place. Therefore, the functionalities of today's smartphones could be split into several devices or even be eliminated. One function which will very likely be dropped is the big display, since new input/output methods (see 1.) would render it unnecessary.

Finally, consumers are also ready to give up on functions rarely used by them: according to a French study<sup>14</sup>, only 2 out of 3 users make use of the email function and only 50% use the built-in camera in their smartphones. If successor products were to split such functions into multiple devices, costumers could eventually give up on tools which they don't use.

### **Conclusion**

If the end of smartphones seems to be in sight within a period of 5 years and succeeding products might no longer automatically have integrated cameras in them, this could create an empty space:

Consumers, who still wanted to take pictures would then need such "photographic tools" (here, we consciously avoid the use of the word "camera") with the ability of adapting themselves into a then existing digital infrastructure and of corresponding to respective customer expectations

One supplier or another will eventually offer these tools.

If the photography business was to make an early adaptation to this whole scenario, this could be an opportunity to show consumers a revived innovative competence and to regain a good part of the sovereignty over the physical photography.

## **8. A glance into the future: photography after the smartphone**

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<sup>14</sup> <https://pulse.edf.com/en/prediction-the-end-of-the-smartphone-its-obsolete>

This chapter should be read with special caution, since from now on, we leave the section of serious analysis behind. However, the numerous discussions we have had in the last few weeks regarding this topic, have made it very clear that we couldn't conclude this report without providing at least a sneak peak into possible smartphone successors.

For that end, we have extrapolated all trends and information for the next five to ten years.

But let us at this point call very special attention to one important fact: a current situation cannot be simply extrapolated into the future. Never! Over a period of five years or more, there are always unforeseen events or new players - so called Major Impacts - which basically turn developments upside down. Just think back 10 years: The financial crisis, Fukushima or the streams of refugees are just a few examples of such unforeseen impacts.

That which we today envision for the future of photography will surely have this one characteristic: it will be completely different from that which the future really holds. And is important not to let our previsions get in the way of personal imagination.

## **a. The most important technical developments**

The trend to **wearables** will increase a lot over the next few years. The speed of this development depends largely on the further development of a networking technology, since the pairing of three, five or even 10 products into a body-worn "personal network" requires too much energy and a technology that nowadays is not stable enough.

This development is necessarily accompanied by a further miniaturization of all components.

Such a development is, however, very much limited by the factor of **energy consumption**: in order to squeeze an entire smartphone into the size of a bracelet, one would still need almost as much energy for CPU, storage management, display and radio technology as is nowadays required in smartphones. However, the battery is nowadays, right after the display, the second largest component of smartphones. The hope that the dimensions of these energy suppliers might be reduced to the size of a button battery faces physical limits (keyword: energy density), which can only be overcome by entirely new, still unknown techniques.

Accordingly, it is important not to simply think of wearables as smartphones shrunk into the size of a bracelet - like *Apple Watch*.

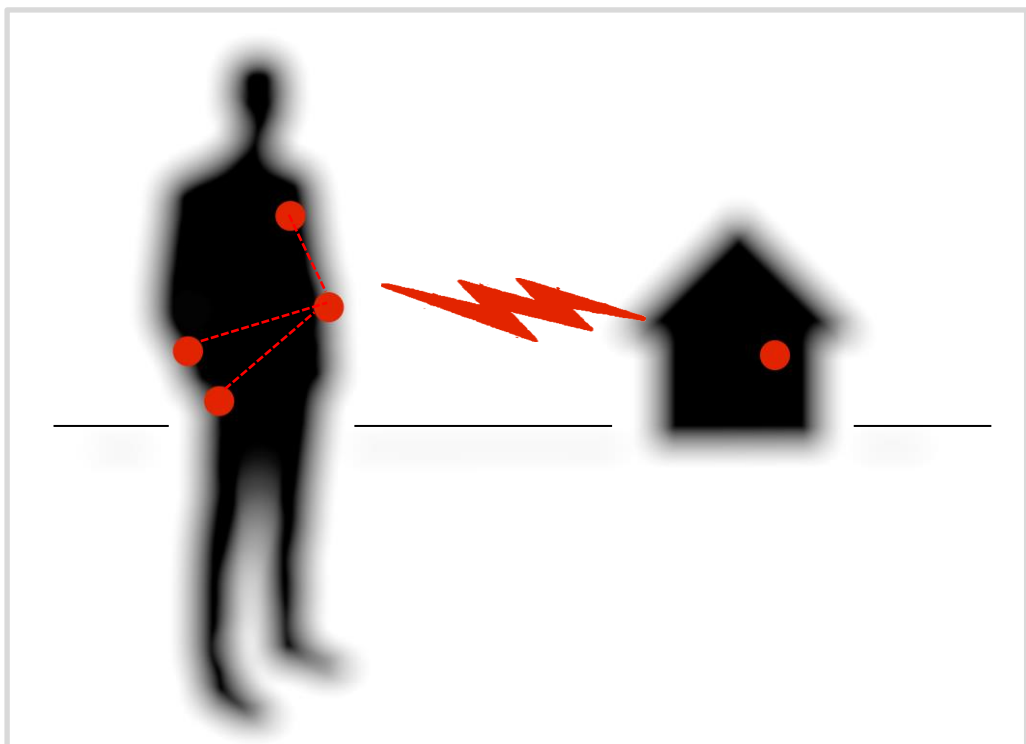
**It is therefore much more likely that wearables will only take over some functions - and that the current smartphone as a universal device will be divided into several single and interconnected components.**

These single components tempt us to think again in terms of entire products and to consider, for instance, a future wearable camera. But even this idea will possibly need to be dropped:

When having a look at the **development of mobile networks** and also extrapolating this tendency for the next five to ten years to come, it is quite conceivable that terms such as dead zone or "bad connection" will definitely turn out to be a thing of the past. In most places of the world, there will be a

permanent high-capacity network which operates at much higher speeds than today.

But such a permanent online connection offers very different forms of efficiency and energy saving: rather than pursuing the current attempt to continuously increase the capacity of smartphones and their respective processors (which always implies a higher energy consumption), in order to allow for better apps, one could transfer the entire processing of data into an external computer which would be connected to the power supply and thus could work independently of any energy consumption restraints.



**Figure 26: successor of smartphones - the personal network?**

Technically, new wearables would thus

- create a kind of personal body-worn network - based on a wireless standard yet to be developed
- only keep an online connection to a central, stationary control computer (CPU module) via a central wireless module

- essentially keep the sensor technology for the input and output of data. The whole processing and switching logic would then take place in the CPU module, which should be thought of as a kind of constantly running private server. This outsourcing technique is, by the way, already used in some company networks (e.g. Citrix) and in the context of mobile language assistants, such as Cortana, Siri and Google Now, as well as Google Maps.
  - The question (**input of the address to be found**) is then introduced via the smartphone keyboard.
  - The analysis of the question (**What was asked?**), the search for the **answer (cross-checking the address with global databases)** and the processing of the result **graphics (a map section with necessary markings)** is carried out by the central computer of Google Maps
  - Only the result is the delivered back to the smartphone.



## **b. Photography 2020: The photo-wearable for consumers**

Even a photo-wearable should no longer be interpreted as a new form of the camera:

If the personal network consists of components which only hand over sensor data or possible language input into a private, stationary server, instead of having the CPU of a smartphone handling all processing work, then the capacity of such a system is freed from any limits imposed by battery capacity or processor speeds.

A photographic/video module will thus consist primarily of optics with the possibility to target objects. For that end, the supplier of such a module will offer the firmware which nowadays can be found in smartphones and cameras as a separate app for the CPU module, in the same way that probably many other additional and complementary apps will exist.

The optical output, as well as, for instance, the transmission into social networks (or its respective successors) would then take place via other modules of the wearable network (e.g., via a language module, as well as a display module - perhaps in the shape and size of a credit card).

Will this photo module also be a part of the wearable network in the shape of recording glasses, a button on the lapel or even as a surgically placed part of the human eye?

At technical level, such a possibility is actually feasible: the button on the lapel could, by the means of a zoom optics and of a gyro-sensor attached to the finger (show target), as well as with the help of an intelligent voice command, capture exactly the very image the user wished to get. Existing technologies in that field have not even closely been exhausted.

Still, it is our belief that such a solution will remain in the field of science fiction and will not come into practice for very pragmatic reasons: even though photographic activity has increased - fact is that most people do it as a secondary activity, which in terms of time belongs to the least used features of a smartphone. Something that you do, while focussing on another main

activity: photographs are "only" the result of primary activities, such as travelling, partying or going out to eat something special. The vast majority of people will not be receptive to put on glasses with a photo function in the mornings or wear (and keep wearing) a fingertip-glove with a gyro-sensor, just because during the course of the day there might occur an opportunity to shoot a nice photo.

But from the moment on, in which we refer to a photo gadget that is not actually worn but has to be taken out of a pocket in order to be used, we no longer speak of a wearable, but of a portable device.

It is therefore much more likely that there will yet again be a portable photo device which is taken out of the pocket when needed. The difference is that such a product will look quite different and be operated in a distinct way when compared to current cameras: there will be no more slots for memory cards, nor will there be a display, control buttons for the menu selection, WLAN, GPS or large processors. All of that will already be available in the personal network in the form of other wearables and the ideal photo solution for consumers will very likely fit like a glove into the existing network.

An interesting aspect will be to know which new not yet defined business models may be drawn by the division of the camera into different modules. A point of special interest could be the possibility of very quickly switching between optical modules which very easily can be integrated into a personal network. The basic principle of the interchangeable lens to be found in current system cameras could become more interesting for a considerably wider section of customers: In addition to a snapshot module for everyday life (small, bright), there could be a travel module (wide angle, better resolution, telescopic zoom function), as well as a waterproof action module.

### **c. Photography 2020: The high-end market**

The question which remains is: What will happen with today's high-end market. Will there just be a smaller amount of high end and system cameras purchases - thus mirroring what happened with the phonograph?

**For consumers, there are some factors which contradict that idea:**

If the personal network - as described above - is to prevail as the successor of the smartphone, then consumers will expect that all their personal electronic products have access to the advantages of that network. In particular, there will be a simplified, voice controlled operation method for all products - including photo modules.

Finally, the split of camera functions - especially that of image editing - will be a further advantage: image raw data will directly be "developed" in a local CPU module at home and can be directly stored there. Since image management algorithms will change dramatically over the coming years too, the demand for a user-friendly and systematic image storing and archiving won't need to be further considered.

If such a scenario comes true, it would be very difficult to explain to costumers why a high end camera as a stand-alone product requires much more work (data transmission, archiving, etc.) than an optical system with connection to a personal network. Another aspect is that cameras in the traditional sense will - due to the numerous and necessary hardware elements - be much more heavy and expensive than equivalent photo modules, which will simply be able to use the capacities of other modules belonging to the personal network.

There will be a demand for that. And according to market rules, there will thus be suppliers who will meet those needs by offering high end modules with a connection to personal networks and correlated benefits.

For this reason, it is likely that high end consumer cameras won't exist much longer as we know them today.

### **How about the tools of professional photographers?**

Here, it is more likely that nothing much changes at first. If a photographer gets no economic advantage from a technology shift, a change of system, regardless of its nature, always implies an initial cost increase.

Still:

The radical, further increase of performance values in mobile networks will technologically leave its marks on any professional business - including photography. Even today, many photographers prefer the RAW-development of their images on the (more powerful) processors of notebooks and thus already carry out the functional division which we predicted for the personal network. It can therefore be assumed that in the course of a natural system renewal, professional photographers will also switch to concepts similar to cameras, which are based on networked systems rather than sticking with stand-alone products.

#### **d. How big will be the market of such photo modules?**

Once the shift from smartphones to their possible successors has taken place, consumers will not only need their communication elements, but also new "photographing" modules.

The current usage rate for smartphone cameras varies according to different statistics and goes from 50% (according to the already mentioned French study - see Chapter 7) and 92% (Bitkom association<sup>15</sup>).

If one was to take current sales values for smartphones as an indicator, then it could be assumed that there would be an annual demand of over 100 million units for photo wearables with corresponding apps for the CPU module. For comparison: In its best times, the camera market amounted to only 110 million items a year.

In addition to that, it can be expected that the idea of alternating photo modules will target a larger group of consumers (compared to current system camera users), who will buy more than one module.

**Thus, the turnover could - according to our estimates - surpass that of the classical camera market between 2005 and 2010 many times over.**

##### **Note**

Finally, we would like to repeat a sentence from the introduction to this chapter:

That which we envisioned here for the future of photography is only one of many possible scenarios and by no means claims to be an absolute truth.

Accordingly, if you have influence on the product and business planning of your company, be careful not to let these last pages get in the way of your own imagination.

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<sup>15</sup> <https://www.bitkom.org/Presse/Presseinformation/Alle-Smartphone-Nutzer-machen-Fotos.html>

## 9. Management - Summary and Evaluation

The camera market as an economic driver and an indicator of the photography business is still in a free fall. We expect that both SLRs and compact cameras will undergo a further sharp drop in sales figures and consider total sales figures of well under 10 million cameras worldwide to be quite realistic, if manufacturers, service providers and retailers don't apply any changes.

The effects will impact all areas of classic photography. Accessory suppliers and service providers, such as labs will for the first time experience drastic effects, even though the trough will only get to them with a few years of delay.

According to our studies, as well as discussions, which we held over the course of the last few weeks with representatives from all relevant market participants, we can conclude that all suppliers of different categories have reacted to the crisis with the same measures:

Camera suppliers, for example, have decided in unison, to largely abandon the distribution of compact cameras and to focus instead on high-end products (drawback strategy) - laboratories also unanimously "rejoice" in the growing numbers of incoming smartphone pictures and don't see any need for alternatives (strategy of hope).

This is a development which we observe with concern, since no supplier seems to bring forward new impulses for a market growth - or attempts to use the crisis in its own favour, in order to elaborate a strategic competitive advantage.

In general, all companies will thus suffer the same consequences and the withdrawal of further famous brands could depend solely on the financial resources of their respective corporations.

The sector simply spent too much time addressing the smartphone as single cause for the crisis and thus neglected a careful analysis of structural market changes.

The reason for this was, in many cases, the temptation to increase profits or bind costumers closer to the company by launching proprietary systems and special standards such as memory cards, data formats, etc.

The prospect of a successor to smartphones could be a new opportunity - but only if the photography business recalls the secret to the success of analogical photography: the creation of joint structures, standards and processes, which make it easy for the consumer to choose a camera-based photography.

However, this also means that today's model of the camera, in particular its operation needs to be called into question: current cameras still have an ergonomics, control logic and general structure which very much resemble the standards put forward by analogue cameras.

This will definitely no longer be accepted by the consumer who asks his bracelet for an address which then is sent to his GPS, in order <sup>16</sup>to lead the partially autonomous e-mobile to it.

**The overall prospect for this next market is more than promising: With annual sales figures of several 100 million camera-smartphone successors, the potential turnover could exceed that of the worldwide photography market - even to its best times - many times over.**

**Concretely we expect this new market to reach at least 350 million photo modules per year**

We invite those who think of this prospect as too unlikely to remember 1994: at that time, the photography business had to face a falling turnover for the second year in a row. New products (APS) simply didn't catch and the market sentiment was accordingly pessimistic. Could anyone have imagined that the

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<sup>16</sup> Such scenarios for the end of the 2020s are indeed discussed among experts

market would grow again and become 4 times as big, thanks to a new technology?

Then came digital photography - **and changed everything.**



## **Mayflower Concepts: About us**

Mayflower Concepts is a consulting company which has specialized on the access to new markets and growth strategies. In doing so, we rely on integral concepts, which not only care for marketing, but also include sales operations in all we do.

Our range of services includes:

- Market environment analysis (“consumers view”)
- Data mining of business data
- Strategy workshops
- Strategy development
- Implementation
- Innovation Management

We know from experience that success in new industries, new markets and new products never relies on a single measure.

Our partners have developed that experience as marketing or sales managers in long-lasting, responsible positions - both nationally and internationally.

**A special affinity for the photography market** has resulted in each of our partners through activities for brands such as Olympus, Sony, Pentax/Ricoh or Casio. We have used that knowledge and understanding of market structures and product concepts in order to put the figures which underlie this study for the first time in an overall context.

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You can use the same address to ask for regularly edited data on camera statistics.



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## Sources and Illustration Index

All data used can be found here, with bibliographical references. We have used abbreviated forms for the two most important customary sources:

**GfK:**

Society for Consumer Research: [www.gfk.com](http://www.gfk.com)

**CIPA:**

Camera & Imaging Products Association, [www.cipa.org](http://www.cipa.org)

**Front page picture: Fotolia**

**Chart 1: New photography - daily upload of photos into social networks**

Source: Kleiner Perkins Caufield & Byers in Wirtschaftswoche 05/14

**Chart 2: Photo apps on iTunes**

Source: <http://www.pocketgamer.biz/metrics/app-store/app-count/>

**Chart 3: Sale of system cameras and accessories in the German market**

Source: GfK

**Chart 4: Sales relationships between cameras and lenses**

Source: GfK

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Source: Mayflower Concepts, raw data: CIPA and JCIA

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Source: Mayflower Concepts, raw data: CIPA

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Source: Mayflower Concepts, raw data: CIPA

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Source: Mayflower Concepts, raw data: CIPA

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Source: Mayflower Concepts, raw data: CIPA

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Source: Mayflower Concepts, raw data: CIPA

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Source: Mayflower Concepts, raw data: CIPA

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Source: Mayflower Concepts, raw data: CIPA

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Source: Mayflower Concepts, raw data: CIPA

**Chart 16: sales volumes into the US: system cameras:**

Source: Mayflower Concepts, raw data: CIPA

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Source: Mayflower Concepts, raw data: CIPA

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Source: Eurostat

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Source: GfK, CIPA, Mayflower Concepts

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Source: GfK, CIPA,

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Source: GfK, CIPA

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Source: Mayflower Concepts, CIPA

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Source: Mayflower Concepts

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Source: Kodak, Fuji, Agfa

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Source: Mayflower Concepts, according to Nielsen data

**Figure 24: typical showcase of a photo retailer**

Source: Mayflower Concepts

**Figure 25: Ericsson Consumer Lab study**

Source: <https://www.ericsson.com/res/docs/2015/consumerlab/ericsson-consumerlab-10-hot-consumer-trends-2016-report.pdf>

**Figure 26: successor of smartphones - the personal network?**

Source: Mayflower Concepts



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