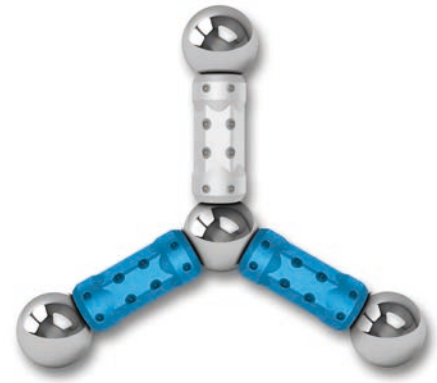# Deloitte.

Photo sharing: trillions and rising

Deloitte Global predicts that in 2016, 2.5 trillion photos will be shared or stored online, a 15 percent increase on the prior year. About three-quarters of this total will likely be shares, and the remainder online back ups[357].

We estimate that over 90 percent of these photos will have been taken over a smartphone; digital SLRs, compact cameras, tablets and laptops will collectively contribute the remainder. This estimate does not include the trillions of photos that remain on devices' memory.

The expected network impact of all this sharing will be about 3.5 exabytes[358], a 20 percent increase over the previous year. We expect the network impact of photographs to continue rising for the foreseeable future, driven by steady increases in the volume of photos taken, shared and backed up, as well as rising average file size.

Photo sharing has been and will likely be enabled and encouraged by improvements in smartphone capabilities, as well as faster fixed and mobile connectivity.

Photography's appeal is partly about capturing and sharing a moment: smartphones enable both to occur almost simultaneously. They remove the lengthy time lag with standard photographic film between taking and sharing a photo.

Smartphones can reduce the processes of taking, adjusting and sending a high definition photo to less than a second.

The dominance of the smartphone to photo sharing is due to its ubiquity and the rate at which owners upgrade their devices. We expect 1.6 billion smartphones to be sold in total this year, equivalent to about 23 times peak sales of film cameras (70 million units, 1999), 13 times the peak for digital cameras (120 million SLR and compact digital cameras, 2010) and 40 times 2014 digital camera sales (40 million units)[359]. We forecast about three-quarters of smartphones sold to be upgrades, with most having better cameras, processors, connectivity and storage than their predecessors.

We estimate the number of photos shared online to be about 31 times the volume taken (let alone shared) in the 1990s, when about 80 billion were taken every year[360].

In 2016, we expect the average size of photos taken to increase, thanks to the rising resolution of smartphone cameras. Average resolution, as measured in megapixels (MP), of smartphones on sale increased from 2.4 MP in 2007 to 9 MP last year[361]. We forecast average resolution for smartphones on sale to surpass 10 MP this year (see Figure 22).

357. Deloitte Global has generated this estimate based on data points provided by a range of major social networks, messaging companies, and photograph back-up services.

358. This is the equivalent of 3.5 billion Gigabytes.

359. For more information on cameras sold, see The explosion of imaging, Benedict Evans, 3 July 2014: http://ben-evans.com/benedictevans/2014/6/24/imaging; This Chart Shows How the Camera Market Has Changed Over the Past Decades, PetaPixel, 15 December 2014: http://petapixel.com/2014/12/15/chart-shows-badly-digital-camera-sales-getting-hammered-smartphones/

360. The explosion of imaging, Benedict Evans, 3 July 2014: http://ben-evans.com/benedictevans/2014/6/24/imaging

361. The average MP count for smartphones has been extracted from GSM Arena, as accessed on 15 December 2015: http://www.gsmarena.com/

362. Infographic: How to Get More Likes on Facebook, Kissmetrics, as accessed on 15 December 2015: https://blog.kissmetrics.com/more-likes-on-facebook/

363. For examples of hot dog legs, see #hotdoglegs, Instagram, as accessed on 12 August 2015: https://instagram.com/explore/tags/hotdoglegs/

364. For an analysis of selfies, see Introduction page, Selfiecity, as accessed on 12 August 2015: http://selfiecity.net/#intro

365. The first photo booth was installed in New York in 1925, and charged 25 cents for eight photos (equivalent to about $5, or about £3, in today's money), and took ten minutes to deliver. See Photo Booth, Wikipedia, as accessed on 12 August 2015: https://en.wikipedia.org/wiki/Photo_booth

366. Ibid.

367. For example, see Ex-Googlers Take On Google Photos With Machine Smarts, re/code, 9 December 2015: http://recode.net/2015/12/09/ex-googlers-take-on-google-photos-with-machine-smarts/

368. Tumblr is one of the first apps to support the iPhone 6S's Live Photos, The Verge, 10 December 2015: http://www.theverge.com/2015/12/10/9886668/tumblr-ios-live-photo-support-added

Figure 22: Smartphone cameras average resolution (megapixels), 2007-2015
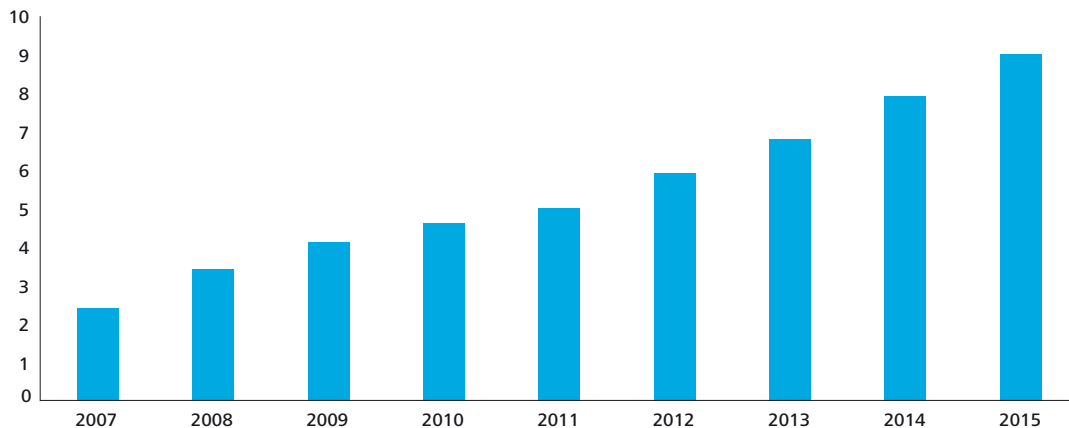
Source: GSM Arena. For more information on the source, see endnote

A core reason for the rise in photos shared online is the widening array of tools that enable and encourage sharing. As of end-2015, there were over 2,000 photo-sharing apps available.

Some tools encourage keeping images for posterity; others emphasize transience, for those who prefer it. Photos can be shared with the whole world, or with selected individuals. Rising network speeds make it easier to send bursts of images, quickly.

Posts with photos get 53 percent more 'likes', 104 percent more comments, and 84 percent more click-throughs than text-only posts[362]. The more fervent reaction to social network posts with photos is likely to encourage yet more posts with images.

The growing ease of creating and sharing images is arguably shaping the way people communicate. The speed and quality with which we can take photos encourages the photos and videos to be substituted for spoken or written words. The message "having a wonderful time on holiday" via a postcard or a phone call is being usurped by photos captured and sent from a phone. The 2013 fashion of posting a photo of a tanned pair of legs – colloquially known as 'hot dog legs' – was a popular way of conveying that you were on vacation and that the sunshine had been abundant[363]. The ability to communicate in this way is driving usage of mobile data while abroad, and accentuating a differentiator for operators that offer low – or zero-cost roaming.

'Hot dog legs' are one type of photographic self-portrait, collectively known as selfies[364]. These may appear a contemporary activity, but demand has existed for almost a century, with the automated photo-booth originally addressing people's needs[365]. The first booth, installed in New York in 1925, had 280,000 customers in its first six months[366].

Increasing volumes of photos are being backed up because of the growing range of tools which enable this, at low or zero cost to the user. A user with multiple back-up services may end up creating a cloud-based copy of the same file multiple times.

The profusion of both sharing and back-up services could lead to one photo being shared and backed-up hundreds of times.

For example parents may share the same photo of their newborn with their individual social networks, as well as send to different groups via a set of instant message services. Some recipients of the image may forward it on to their own networks. If the receiving phone's settings are configured to save each photo viewed, this device would create an online back-up.

The more fervent reaction to social network posts with photos may encourage yet more posts with images.

Bottom line

The desire for photos drives innovation, encourages smartphone upgrades and increases network usage.

Smartphone vendors have long differentiated their models on photographic capability. They should make sure to focus on innovations that are perceptible and appreciated by users, and not be lured into a specification race that only pleases the device's creators. A few years back, some vendors competed on megapixel count. With most photos viewed on small screens by both creators and recipients, incremental resolution soon became imperceptible to all but the best-trained eye. Engineers' ingenuity was thus arguably squandered.

Customers are likely to respond to technology that flatters their ability. Smartphones benefit from exponentially-improving processor and connectivity speed, a progression known as Moore's Law. There is no equivalent law for talent, but technology can (and should) be deployed to lessen user error when taking photos. Software that automatically compensates for photographic mistakes (such as shooting into direct sunlight) can make the owner feel more talented.

Vendors should also consider how to tap into make over technology to enhance the subject. A phone's software can deliver an instant, digital make over by automatically smoothing wrinkles, lessening bags under the eyes, deleting spots and adding a sun-kissed glow. The smartphone is an upgrade to the Evil Queen's magic mirror, as it need not speak the truth.

Software can also differentiate by automation of cataloguing. When one has amassed tens of thousands of photos on a phone, finding a specific portrait becomes tedious. Facial recognition can be deployed to identify individuals automatically, without having to create metadata for each image[367].

Network operators can harness our desire for portraiture and other images to drive network traffic, and to encourage upgrades to larger data packages. Photos (and increasingly video) will likely increase the demand for uplink capacity, and ISPs and mobile operators could differentiate their offerings as optimized for photo/video sharing.

Photo apps and back-up sites should evolve their offerings in line with changing habits. One recent innovation is moving photos, which are a composite of a standard photo accompanied by a few frames of low resolution images that capture the second before and after the main photo was taken[368].

Retailers should consider how best to tap into the growth in communication via images. Catalogues, which have traditionally been shot months before distribution, can be deconstructed into smartphone screen-sized photos accompanied by a 'buy' button. A photo of a celebrity wearing a brand's outfit can be relayed immediately to fans – there is no need to wait for this to appear in a newspaper, magazine or on a website.