Global Industry Insight: Image Sensors Market Development and Demand Forecast to 2020

Description:

Continuous innovations and improvements in CMOS imaging technology, design and fabrication had overcome many traditional practical implementation issues for the designers. Although a common process of optimizing tradeoffs between limiters is integrating the circuit design, CMOS imaging technology designers are also delivering products with performance that is truly compelling for machine vision applications. Previously, the image quality thresholds required the use of inter-line transfer (ILT) CCD sensors in many applications. But improvements in the design of CMOS image sensors have led to much faster inspection systems with the preferred image quality. CMOS global shutter feature solves the rolling shutter limitation and allows CMOS to be relevant to more users. Recent advances in technology of CMOS have significantly improved signal to noise ratio (SNR) levels in high speed machine vision applications. CMOS exceeds CCD technology in terms of functionality, performance and cost.

The image sensors market is experiencing a steady growth, driven by the rise in trade of camera enabled mobile phones. CMOS image sensors are used widely in camera enabled mobile phones, mainly attributed to their small size, less power consumption and higher speed over CCD image sensors. Social networking enables consumers to instantly share his or her photos. Popularity of social networking has increased the demand for high end camera functions in mobile phones. Tumblr, social networking site, had active user's growth by 120% in the year 2014. Improved sensitivity, low power consumption and dynamic ranges in image sensors have led to better image quality for consumers.

The CMOS image sensors are mostly integrated on the chip of digital camera, eventually leading to a single-chip digital camera with very compact size and low power consumption. These advantages of CMOS image sensors has expanded applications of image sensors beyond traditional digital cameras, into biometrics, personal computer (PC) cameras, mobile phones, personal digital assistance (PDAs), and automobiles. In February 2015, Toshiba Corporation launched T4KA3, an 8-megapixel CMOS image sensor, which has low power circuit design that cuts power consumption to 46% of Toshiba's previous 8MP sensors and has a compact chip size in the class of Toshiba's 8MP sensors.

The limitation of CCD image sensors is the integration of analog components devices that require more electronic circuitry outside the sensor and consumes up to 100 times more power than equivalent CMOS image sensors. The increased power consumption has led to heating issues in camera, which impacts the image quality negatively along with increasing cost of the product. The temperature inside the camera should be kept lower as high temperature increases the interference inside the camera system.

The widespread usage of smartphone cameras is persuading digital still camera sales to fall. Improving quality of smartphone cameras and their ease of usage has led to wide acceptance of smart phones in the consumer electronics market. Sales of compact and point-and-shoot cameras had been falling, opposite to the astronomical rise of smartphone cameras. Even though smartphone cameras do not typically match the quality of output, the technology is constantly improving as the quality of camera image output becomes too high for consumers to reliably differentiate. Further, the sales of single reflex cameras (SLRs) has also began to decline as the product needs innovation, modernization and transition to high end mirror less technology. Continuous falling market of digital still camera devices is further creating hindrances for the image sensors market.


Report Coverage

- Provides comprehensive understanding of the market with the help of informed market outlook, opportunities, challenges, trends, size and growth, competitive analysis, major competitors and Porter analysis
- Identifies the key drivers of growth and challenges of the key industry players. Also, assesses the future impact of the propellants and restraints on the market
- Uncovers potential demands in the market
- Porter analysis identifies competitive forces within the market
- Provides information on the historical and current market size and the future potential of the market
- Provides sizes of key regional markets using yardsticks of segments, applications, and segments of applications
- Highlights the competitive scenario of the market, major competitors, and benchmarking
- Provides profiles of major competitors of the market including details of their operations, product and services, recent developments and key financial metrics. Profiles provide better understanding of competition as well as the demands of the market.

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