

Beyond Fitbit: Sensors track hang time, vertical leaps

Blast Motion and others bring sensors, apps and video together for training



(/staff/mike-freeman/) By Mike Freeman(/staff/mike-freeman/) | 3:15 p.m. June 17, 2015



Sensors can measure vertical jump and hang time for basketball players — *Blast Motion*

To date, Fitbit and other step-tracking gadgets have been leaders in wearable sports technology market.

But an emerging group of companies has introduced more advanced sensors that move beyond counting steps and calculating calories. These products contain accelerometers and gyroscopes. Coupled with smartphone apps, they provide detailed information on player performance in a variety of sports.

Blast Motion of Carlsbad, San Diego-based Sony Electronics and Zepp Labs are among the firms that have developed sensors that attach to golf clubs, baseball bats

and tennis rackets to measure all sorts of performance metrics – from swing speed to ball rotation.

Blast Motion’s sensors also can be worn by players or attach to GoPro cameras to measure jump height, hang time and acceleration for basketball, fitness training and action sports.



Blast Motion's sensor— *Blast Motion*

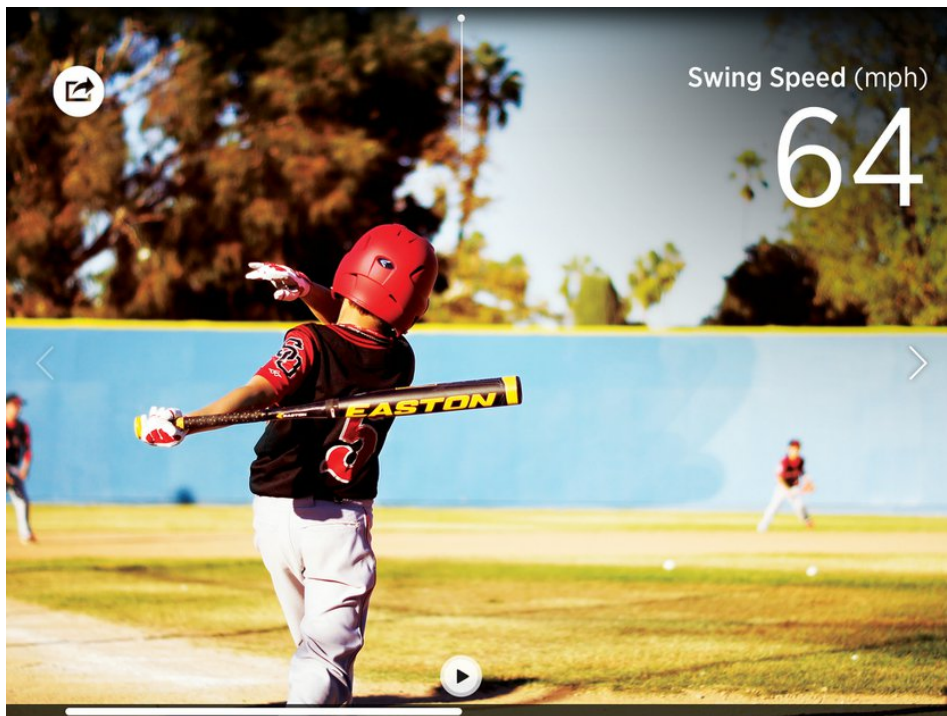
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Linked to smartphone apps via low-energy Bluetooth, the sensors provide feedback in real time. If out of Bluetooth range, they store data for later. Most companies incorporate video into their apps.

Blast Motion’s Smart Video Capture technology, for example, creates highlights automatically out of a video session, which users can share via social media.

So if a basketball player wearing a clip-on Blast Motion sensor attempts a dunk, the company’s app creates a short highlight clip with the player’s vertical jump height and hang time displayed on screen.

“We actually have the intelligence that can tell when you leave the ground on a jump, what you peak at and when you hit the ground again,” said Michael Fitzpatrick, chief executive of Blast Motion. “We edit that part right out of the video, and we create that as a highlight.”



Blast Motion of Carlsbad makes sensors and apps to measure performance in five sports — *Blast Motion*

Blast Motion, which employs about 60 workers, introduced its first product last year. They're distributed in 1,000 retail stores in the U.S. and Canada, including Best Buy. They also are available online through Amazon and other retailers and cost about \$150.

“Stores like Best Buy are moving more into this whole area of performance products,” said Fitzpatrick. “So if it’s a Fitbit or a Blast Motion sensor, they are actually creating areas where they’re putting all these performance products.”

Wearable technology has been growing fast, with 11.4 million gadgets sold in the first quarter, up 200 percent from a year earlier, according to industry research firm IDC.



Bat maker Easton has a partnership with Blast Motion to provide swing metrics for baseball and softball players. — *Blast Motion*

Fitbit clearly is the market leader, with market share of 34 percent. Sensors that attach to sports equipment, however, are still relatively new to the mass market. They are not included in IDC's wearables data.

In May, Sony launched the Smart Tennis Sensor in conjunction with sports equipment maker Wilson. It attaches to the racket handle and measures ball speed, spin and where the ball hit the racket face. The data are displayed through a smartphone app that includes video features.

Zepp Labs of Los Gatos makes sensors and apps for baseball, golf, tennis and softball. Accelerometers and gyroscopes provide data to evaluate swing plane, hand speed, time to impact, hip rotation and so on. It has a partnership with the Major League Baseball Players Association that lets users compare their swings side by side to well-known professionals such as Angels' All-Star Mike Trout.

Blast Motion, which has about 20 patents either granted or pending, filed an infringement lawsuit against Zepp Labs earlier this year over five patents. Zepp said it will

fight the lawsuit and “is disappointed that Blast Motion elected to try to compete in court rather than in the marketplace,” said a company spokesman.

Blast Motion has spent about \$10 million in research and development since it was founded in 2007, said Fitzpatrick, who has put up the bulk of the money himself.

A longtime technology executive, he was chairman and chief executive of optical network technology firm E-Tek Dynamics, which was acquired in 2000 by JDS Uniphase for \$15 billion in stock. He also was the former president of Pacific Telesis, one of the Baby Bells created amid the breakup of AT&T in the 1980s.

Fitzpatrick declined to give Blast Motion’s sales or unit volumes. He became involved with the company after looking for technology to improve at golf – where he had aspirations of playing professionally. He teamed with Michael Bentley, a PGA instructor and former tour player with experience in three dimensional motion capture technology.



Sony developed a sensor for tennis that measures swing speed, spin and other

“The vision is that this is not a toy,” said Fitzpatrick. “It’s a really accurate product. It took us a number of years to be able to develop this accuracy.”

Michael Palma, research manager for semiconductors and enabling technologies for IDC, said advances in sensor technology – and the algorithms to interpret the data – have spawned their use in sports.

“The capability is certainly in the range of what sensors can do,” he said. “They can capture movement, acceleration, direction, the timing of it.”

Blast Motion has been focusing on action sports recently, adding BMX pro Mike “Hucker” Clark to its roster of athletes, which includes skateboarder Greg Lutzka and the Miami Heat’s James Ennis. In baseball and softball, it has a strategic partnership with bat maker Easton to supply the Easton Power Sensor.

Blast Motion’s products work on Apple’s iPhones and iPads to date, with Android versions expected in the fall. The company expects to expand into additional sports over time.

“There really is almost no sport we can’t go into,” said Fitzpatrick. “We have developed a universal platform that allows us to add new sports very quickly.”



(/staff/mike-freeman/)

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