

FUTURE GEAR



REVOLUTION AT THE FINISH LINE

A new generation of technology is fast changing the way race results are captured and distributed

A graduate computer engineering student at MIT, Doug DeAngelis was an avid runner who occasionally officiated track meets. In the fall of 1990, running in an event organized by a friend, he was asked to take the photo finish for the race following his event, which was recorded with an Accutrack camera—the traditional photo-finish camera for track and field. DeAngelis figured out how to operate the camera and was excited when he photographed the finish of a fast 5K race. “There were 14 guys that went under 14 minutes, and they were all looking for a qualifying time,” DeAngelis said. “But I only got the top five guys on film, and being a distance runner, I thought that was really sad.”

The problem was inherent in the way Accutrack took the picture. “With a photo finish, you don’t take one image but a continuous picture that also indicates time,” explained DeAngelis. “The problem is that the piece of film that captures the image is three-by-five inches, and the width of the film impacts how long you can take the picture.”

In considering the drawbacks of the film camera, DeAngelis realized that the job could be done better with a digital camera. “I was doing graduate work at MIT, and I spoke to some other students and we developed the system as a class project. At the end of the class we wrote a business plan. Our professor encouraged us to take it further,” said DeAngelis.

The result was the founding of Woburn, Massachusetts-based Lynx Systems Developers, Inc., and the FinishLynx system, the centerpiece of which is a digital camera that functions by viewing an infinitely thin plane across the finish line, scanning a runner’s image digitally and matching up a time with that image. The camera, complemented by a timing unit, computer and computer software to link the units, takes thousands of thin individual lines of images per second and displays them on the computer screen side by side, and can therefore capture runners crossing the finish line over an unlimited period of time.

Reading the times from a FinishLynx image merely requires using the computer mouse to move a marker to a po-



sition on the screen (usually a competitor’s chest) and clicking the mouse button, which will then identify the time that corresponds with this slice of image.

Results-Oriented Technology

“In the old days of track and field,” said DeAngelis, now the President of Lynx, “after an event the competitors would go hare a beer because they knew the results wouldn’t be around for a half hour. You’d get a hard copy, a piece of film. Someone would analyze the film and write down the time and positions. You might give a copy to the scoreboard operator, who would then type in the information; other copies would go to the press and to the announcer, among others. All this took time and was prone to errors. Once you have the picture and database in the same machine, you eliminate the speed problems and errors associated with that conventional process,” said DeAngelis.

“Now as soon as you have the image on the screen of the computer that’s linked to the digital camera, you can point your mouse and the information is on the scoreboard, out on the Associated Press wire, out on the Internet. No one has typed anything. We had a sense early on that we were generating a methodology for originating data in real time.”

In 1993 at the Millrose Games, a premier track-and-field event, FinishLynx timed and recorded the event. What DeAngelis and his associates realized at the games was that the technology allowed for unprecedented speed in generating results, especially at an event that’s televised live. “We then

did the NCAA Championships in Boise in 1994, and it was the first time anyone had sent results in real time to the scoreboard. Athletes would finish the race and they'd look up at the board and see their place and time," said DeAngelis.

Three years later, more than 1,000 FinishLynx systems have been sold and are being used to time track and field, cycling, speed skating, horse racing, dog racing, rowing, canoeing, and events in the ESPN X Games. But if FinishLynx has taken sports timing to a new level, it may not have fully replaced the previous generation of technology, and questions remain about whether the system is appropriate for all.

Accutrack Still Has Its Partisans

One of FinishLynx's users is the Simplot Games, which are staged in the Holt Arena on the campus of Idaho State University in Pocatello. Sponsored by the J.R. Simplot Company, the annual event has been attracting the premier high school track-and-field athletes in the U.S. and Canada every February for 19 years, and lately has been attracting international competitors among its 2,000 participants.

Although generally pleased with the results of FinishLynx, Kevin Robbins, the Simplot Company business analyst responsible for the technology that goes into the games, said, "Certainly going to the next generation of technology solved a lot of problems, but it hasn't totally eliminated the previous generation of technology. The computer captures the image and assigns a time stamp. But field judges and hand timers are still needed to keep track of who is lapped."

From Robbins' perspective, the FinishLynx system's advantages are in three areas. The first is the speed with which results can be tabulated. The second is the ability to send a video image and the unofficial running time to the scoreboard at the stadium, and the third is that the Accutrack was expensive to maintain and calibrate.

Robbins said of the last, "If you talk to coaches at colleges, you'll find that the movement to the digital camera is to get away from the hassles of the Accutrack system." But Robbins asked, "What happens with the digital camera system if someone accidentally pulls out the plug, or someone knocks over the photo eye? Software failure? Hardware failure?"

The biggest problem, according to Robbins, is the complexity of the equipment. "Complexity is a problem. It takes an information services department to run it. With Accutrack you needed one person you could count on and you were set. Now it's several people, especially with an event like the Simplot Games, where we run two tracks at the same time (a straight and an oval) and the database is enormous."

Basic Needs Mean Basic Skills

Responding to Robbins' concerns about the complexity of the FinishLynx system, Giles Norton, Lynx's Director of Corporate Communication, said, "The people at the Simplot Games are among the most sophisticated users—they were using it to post real-time results to the Internet. They are not using the FinishLynx system the way someone timing a high school dual meet would use it. My son, who is 11, is quite happy taking pictures with the system. We sell many units based on coaches seeing the system in operation and realizing they can handle it."

Norton also pointed out that the company's newest system, the EtherLynx 2000 (available for the Windows 95 and Windows NT operating systems) is much simplified. And, for organizations concerned with taking the system on the road, DeAngelis noted that he can take everything he needs for many events as carry-on luggage on an airplane.

For more information, circle 63 on the Rapid Response Card.

Mizuno RunCourt TF MD

Mizuno USA's popular RunCourt™ line of court/track/indoor shoe is now designed in a mid-cut version.

The compression midfoot/heel RunCourt TF shoe provides increased cushioning and also makes the shoe extremely light weight. The upper is constructed of synthetic leather and mesh. The midsole is a combination

of Super-Tex and gel cushioning. The RunCourt TF Mid and Low models will be available this fall for men in sizes 6-10, and for women in sizes 6-11.

Suggested retail prices for the RunCourt TF are \$89.95 for Mid and \$84.95 for Low.

For further information, circle 62 on the Rapid Response Card.



Spalding WS Gloves

Meeting the needs of women's softball teams, Spalding's new Women's Series Gloves were designed specifically for a woman's hand.

Equipped with Spalding's inner glove fit for women's hands, the glove can be used to receive the ball or to field the player's team. The WS Series also incorporates redesigned fingers and palm padding for greater

flexibility in catching the ball. The WS Series is available in a variety of colors.

and glove models designed and constructed in a full range of glove lengths (12" to 13.5") to accommodate players at

every position. With new lighter premium leathers, including Hubert Green, Hubert Golden, Regal, Oil Tan leather and light-weight Competition Tan, the WS Series high performance gloves are priced at \$89-\$79. The WS Series will include variety of models with both open and closed webbing with closed heels.

For more information, circle 61 on the Rapid Response Card.



Daktronics Scoreboard

Daktronics Stadium and the NBC's Carolina Panthers are among the latest to power up their stadium scoreboard and display

with Daktronics, Inc. One of the two new scoreboards that Daktronics created for the Charlotte, North Carolina, stadium (shown below), measures 22 feet high by 170 feet wide, and includes a 16-foot wide display that presents a variety of information, including game in progress and eye-catching graphics and animation. The scoreboard also contains a 16-foot wide

play measuring 14 feet high by 22 feet wide. The custom installation for Daktronics Stadium also includes two ribbon

displays on each side of the stadium. Each ribbon display contains a game in progress scoreboard, game time clock, and a 16-foot wide numeric eye center, which displays colorized reinforcement of lower scores. Daktronics will also custom program its eye stadium scoreboard to their systems. For further information, circle 62 on the Rapid

Response Card.

