

Hockey analytics firm coming to Waterloo

By Terry Pender

WATERLOO — Big data and analytics are coming to Canada's national obsession in a revolutionary way as the University of Waterloo and HockeyTech Inc. unveil a new system for tracking, recording and analyzing players and pucks during games.

The university and [HockeyTech](#) partnered to build a system that uses hardware, software and algorithms to collect and analyze every aspect of the game. The cutting-edge system will be demonstrated next Thursday at the university.

And HockeyTech, which is currently headquartered in Guelph, will be moving to Waterloo, said Stu Siegel, the company's chief executive officer.

It will occupy 11,000 square feet of space on the third floor of a former BlackBerry building at 180 Columbia St. W., starting June 1.

Ten years ago, Brad Pitt starred in the popular movie "Money Ball" — a true story about how the manager of the Oakland A's used analytics to turnaround a losing baseball franchise in a single season. Since then, analytics have come into vogue in other sports and businesses. Professional hockey had been slower to adopt the advanced ways of data collection and analysis — in part because the game is so fast.

Siegel is a serial entrepreneur in the technology sector. He founded, developed and sold companies such as [freecreditreport.com](#) and [eNeighbourhoods.com](#), and ended up as part owner of the Florida Panthers in 2008. A year later, he was the managing partner and chief executive of the NHL team.

"I was really amazed when I got involved with the team how little technology was being used in the organization," Siegel said Friday in an interview from his Florida home. "We were making multi-million-dollar player decisions based upon just subjective information, other than the basic stats that everyone has access to."

There is very little objective, quantitative information available on professional hockey players at all levels. When Siegel sold his interest in the Panthers in 2012, he wanted to do something about that. So he started buying up small tech companies, including RinkNet, a Guelph company that had developed a hockey player management and scouting system, to create HockeyTech Inc.

Last year was called 'The Summer of Analytics' for the NHL. Following a league conference in Calgary on the subject, teams went out and hired statisticians and software engineers.

"They have bought all the hardware and artillery, but there is still no ammunition there," Siegel said.

While the NHL does a decent job of collecting some player stats, leagues below that provide NHL scouts little more than video.

"Below the NHL from a recruiting and scouting standpoint there is very little information," Siegel said. "So decisions on skill are pretty archaic and subjective."

HockeyTech tested new technology last fall with minor midget teams in Ontario. Sensors were set up on the ice for testing sessions. All of the players on a team can be tested for speed, acceleration, agility and play anticipation. The system collects 70 points of data. The information was collected and stored by HockeyTech. Some Ontario Hockey League teams used the information to select draft picks.

The major limitation with the technology is that sensors must be placed at precise locations on the ice for the testing sessions. HockeyTech, in partnership with the University of Waterloo, has developed a new system where the sensors are embedded in the players' equipment. There is a chip in the puck as well.

"Basically we are tracking the position of every player and the puck at all times on the ice," Siegel said. "We literally have millions of data points, just in a game, that need to be interpreted."

The system collects data on players' locations 20 times a second. It tracks the puck 50 times a second.

The system records the ice time for each player by shift, player combinations, how fast they are skating, how far they have skated in a shift, how the puck moved among players, who has the puck at any given second, who scored, who saved, who was near the puck, and who assisted. It will record precisely where each player was when a goal was scored.

"That information just hasn't been available before," Siegel said. "That's what I think is going to be the really interesting, revolutionary stuff."

More work is needed to accurately record puck possession, but that should not be a huge problem, he said.

"And then beyond that we have all the analytics," Siegel said. "So once we gather a lot of this information then really that ammunition is there for advanced-data stations to kind of dig in."

HockeyTech has developed software and hardware to collect and store vast amounts of detailed information on each player in every game. Teams can buy access to that data, and run analytics to help make draft picks.

When Siegel started thinking about how to bring analytics to professional hockey, he knew the company would need strong Canadian connections because the sport has the status of a religion here.

"If I tried to do this project with a university in the U.S., it wouldn't nearly have the impact and co-operation that we are getting from the University of Waterloo," Siegel said.

HockeyTech has about 40 employees in Canada, and 25 in Boston. It also has a division, International Scouting Services, with about 50 scouts around the world. "We are looking to grow," Siegel said.

HockeyTech is negotiating to install the hardware in some arenas for the next season. "We are probably not going to start at the NHL level," Siegel said. "We are talking with some teams now at other levels to do some piloting in the next season."

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