Case Study: The ATP Unlocks Decades Of Tennis Data To Transform The Fan Experience

Data Commercialization Drives Value For Teams And Fans

by Somak Roy and Jennifer Belissent

August 1, 2017

Why Read This Report

The Association of Tennis Professionals (ATP), the governing body of men's pro tennis, oversees 15,000 tennis matches a year and was sitting on a huge store of data with the potential to improve fan engagement. For the ATP, which is also involved in sports broadcasting, increased website traffic and a high-quality TV experience had direct implications for its sponsor business. This case study shows CIOs how they can learn from the ATP's approach to building a commercial data offering in terms of product design and the choice of sourcing tech and analytics talent and software.

Key Takeaways

The ATP Used Design Thinking To Craft A Commercial Data Proposition

ATP brought together a team of former players, broadcasters, data scientists, and big data developers to iteratively identify the insights and metrics that would be most relevant to potential data consumers like tennis bloggers, analysts, and fans. To design the data offering, the ATP combined quantitative data like social media analysis of fan posts with qualitative information from focus groups with tennis experts.

The ATP Leveraged A Commercial Enterprise Insights Platform

The volume and complexity of structured and unstructured data that the ATP accumulated over 25 years warranted a solution equipped to handle big data. It used an enterprise insights platform that combined big data management, advanced analytics, and insights execution, obviating the need to assemble such components itself. Increasingly, enterprises are hiring an insights service provider to avoid staffing their own data science team and to shorten the time-to-value.

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Data Commercialization Is Worth Exploring — But Not On Your Own

Interest in exploiting the value hidden in vast stores of data has exploded: About one-third of firms report commercializing their data assets.[1] The process of designing a commercial offering goes from the outside in; CIOs must determine who the potential audience is, how the audience would use the data, what their firm should deliver, and how their team should go about developing it.[2] In this process, CIOs and their peers:

- **Identify potential users and use cases.** This is not an easy task. To find answers, tech and business leaders look to existing customers and brainstorm which additional audiences might have an interest. Input into those decisions include quantitative analysis of social media posts and more anecdotal data from interviews and focus groups.[3]
- **Define the most appropriate offering.** As CIOs and their business peers explore the opportunity, they evaluate potential offerings to determine what type of product or service best meets the needs of the identified audience. Delivering data through downloads or API feeds requires a sophisticated, data-savvy audience. Often, the answer is not to deliver the data itself, but to offer higher-value insights services that shorten the time-to-value.[4]
- **Evaluate required technologies and potential partners.** When the commercial offering bases insights on big data and when older paradigms like data warehousing prove unsuited to the task, CIOs look to an emerging class of software: the enterprise insights platform. This combines elements like data stream ingestion, data preparation, data science tools and libraries, predictive analytics, and API access.[5] However, internal teams unfamiliar with these innovative technologies might require outside help to develop their offerings.[6]

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Situation: The ATP Was Sitting On A Treasure Trove Of Untapped Data

The ATP, based in Ponte Vedra, Florida, is the representative body for men's professional tennis. Each year, the ATP conducts more than 60 tournaments around the world, overseeing 15,000 tennis matches a year. The ATP found that it had:

- **A wealth of available data . . .** The ATP's repositories contained 25 years of data on items captured by chair umpires officiating the matches and the ATP's in-house record-keepers, including the score of every point, game, and match; the sequence of serves, returns, and volleys; and the use of forehand or backhand. Since 2005, the ATP has also collected player and ball tracking data. The ATP's player and ball tracking installations in tennis courts and stadiums capture information such as ball speed, trajectory, landing spot, spin, rotation speed, and height above which it cleared the net.
- **. . . that it was not putting to effective use.** This treasure trove of data, containing many potentially valuable insights for fans, players, coaches, and journalists, lay untapped. The ATP in-house tech team's lack of bandwidth and unfamiliarity with dealing with data on a massive scale was partly why it remained underutilized. This began to change when the ATP, aiming to expand and deepen fan engagement in terms of website traffic and a high-quality TV experience (which is a work in progress), launched a pilot for the 2015 edition of its flagship ATP Finals event. Increased website traffic also meant more business with sponsors and sparked an interest in a more sustainable approach to delivering value from its data.

Approach: The ATP Built Its Data Offering On An Insights Platform

The ATP began the process of building a commercial data offering from its chair umpire and ball tracking data; it intended to offer both standalone data and compelling stories.

The New Offering Improved Following, Fan Engagement, And Reportage

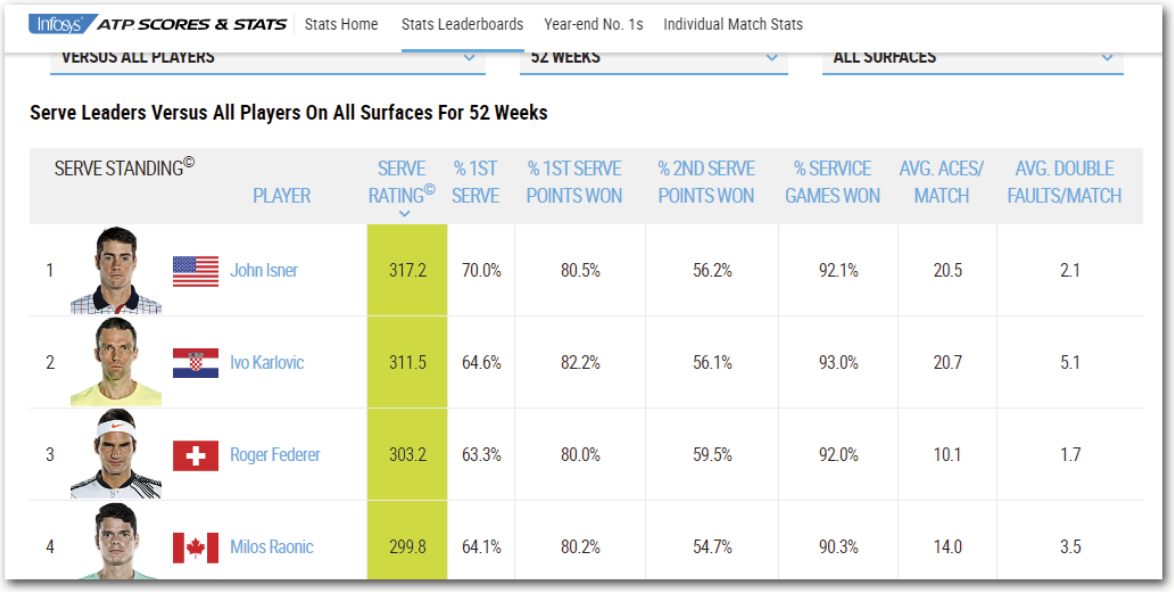
In the words of Murray Swartzberg, ATP's senior VP of information technology and digital media, "We were content- and data-rich; the challenge was to start explaining the game statistically and humanize the data." To pursue that goal, the ATP worked with insights service provider and platform vendor Infosys to create:

- **ATP Stats Leaderboards for web viewers.** For web viewers, the ATP built a leaderboard of players, ranking the top 75 players in categories such as best server, best returner, and best player under pressure (see Figure 1). The web viewership comprised tennis fans, who visited the site both for match updates and for deep research on the top players. Fan debates about who the best tennis player of all time is or who has the best serve drove web engagement.

› **Self-service descriptive statistics and correlations for players and coaches.** The combination of ball tracking and chair umpire data allows players and coaches to correlate, for example, service winners with service speed and the unforced error rate with the speed with which the ball is hit during a rally. How spin, speed, service return placement, and length of a rally correlate with winning a point all serve as important information that players and coaches can use to fine-tune game strategy.

› **Descriptive stats and causal relationships for journalists and commentators.** The ATP provides a portal for its editorial team to query the data. Some of it is interesting trivia; for instance, one Swiss superstar rallies from a 0-40 deficit to win the game 37% of the time, whereas the average for players around the same ranking is 14%. For commentators, the system surfaces the most statistically interesting highlights to talk about. The core design goal here was to find the one or two insights that would be most relevant to that specific point in the match. The ATP also leveraged decision trees for predictive analytics to answer the question "What will the player do now?"

FIGURE 1 The ATP Stats Leaderboards



SERVE STANDING©	PLAYER	SERVE RATING©	% 1ST SERVE	% 1ST SERVE POINTS WON	% 2ND SERVE POINTS WON	% SERVICE GAMES WON	AVG. ACES/ MATCH	AVG. DOUBLE FAULTS/MATCH
1	John Isner	317.2	70.0%	80.5%	56.2%	92.1%	20.5	2.1
2	Ivo Karlovic	311.5	64.6%	82.2%	56.1%	93.0%	20.7	5.1
3	Roger Federer	303.2	63.3%	80.0%	59.5%	92.0%	10.1	1.7
4	Milos Raonic	299.8	64.1%	80.2%	54.7%	90.3%	14.0	3.5

Source: Infosys

The ATP Used An Insights Platform And In-Depth User Research For Its New Offering

To craft the data and insights offering, the ATP conducted a design thinking exercise with executives in charge of the video broadcast business, commentators, a blogger, a tennis analyst, in-house tech personnel, the CIO, and architects from the vendor partner. The implementation project — a fixed-fee engagement with Infosys — spanned 12 months and involved a crew of eight to 12 full-time equivalents. The ATP attributes the success of the project to the use of:

- **The right mix of quantitative and qualitative data.** The ATP learned the importance of using hard data to inform solution design early on.[7] It launched top-players leaderboards when analysis of social media data indicated that tennis fans like to compare top players' statistics. Social media analysis also revealed that fans have strong opinions about the top-ranked players' strengths and weaknesses, and validating or challenging those assumptions improves fan engagement. To find the right way to visualize data, the project team also interviewed journalists. One commentator said, "Our minds are working on too many things. Simplify everything and give me something I can consume in 15 to 20 seconds. If you give me 10 insights, I can't process them — so distill everything down to a sentence."[8]
- **An experienced partner from the very beginning.** The ATP found a date to the data dance.[9] As it did not have the bandwidth to develop software itself, the ATP relied upon a single consulting and development partner, Infosys, to build a commercially viable offering while staying focused on its core strengths of deep tennis expertise and strong connections with every user group. The ATP worked with Infosys on aspects including conducting a data inventory, discovering use cases, designing products, and implementing technology.
- **A enterprise insights platform.** Early in the evaluation cycle, the CIO's team realized that the existing data warehouse-based approach would not work, especially after it incorporated high-velocity, high-volume data from the player and ball tracking system.[10] The ATP chose an enterprise insights platform (Infosys Nia Data) on which to build the offering and assembled the components on its own. The insights platform brought together HDFS, Spark, Kafka, Sqoop, Solr, resource management (YARN), machine learning algorithms, and data ingestion elements.[11] The team reckons that the insights platform approach reduced total project effort by one-quarter to one-third.

Results: The ATP Improved Customer Experience For All User Groups

Interviews with users showed that the ATP's data commercialization project improved the tennis viewing experience for the web and television audiences. It also aided players, coaches, journalists, and commentators with statistics derived from player and ball tracking data and chair umpire data. The data and insights offering contributed to:

- **Increased traffic.** After publishing the leaderboards, the ATP's website traffic increased by 27%. The association also notes that the quality of its web UX has gone up, as has the time the average user spends on the portal.

- **Data-based strategies for players and coaches.** Players and coaches access data points that challenge their assumptions, potentially improving the quality of their game. One top-ranked player asked, "When I'm down 0-30, I think I often bounce back — can you validate this?"
- **Reframing the sport by promoting factual analysis over intuition.** Superseding subjective opinion with data and surfacing nonobvious insights backed by incontrovertible data should be the primary design considerations of every CIO embarking on the data commercialization journey.[12] The ATP combined chair umpire and ball tracking data to construct a causal narrative of how a point is won — how and when amid the serves, returns, and volleys that constitute a point, the momentum shifts from one player to his opponent. As Murray Swartzberg put it: "By offering counterintuitive data on what wins a point, the data could change the game completely."

Supplemental Material

Companies Interviewed For This Report

The Association of Tennis Professionals
Infosys

Endnotes

[1] Thirty-two percent of global data and analytics decision-makers indicated that they are currently commercializing data. Source: Forrester Data Global Business Technographics® Data And Analytics Survey, 2016. See the Forrester report "Data Commercialization: A CIO's Guide To Taking Data To Market."

[2] Building a commercial data offering is essentially a product development process. It must identify the potential users, use cases, and the value the target user group would derive from the data. See the Forrester report "Data Commercialization: A CIO's Guide To Taking Data To Market."

[3] To acquire in-depth customer understanding, CX pros should use a combination of soft data (through user interviews) and analytics. See the Forrester report "Data And Instinct: Design Methods At Work."

[4] The range of product and services options extends from delivering raw data downloads to API feeds of real-time data to embedding data in business processes and delivering insights directly into business decision making processes. See the Forrester report "Data Commercialization: A CIO's Guide To Taking Data To Market."

[5] Insight platforms bring together data management, analytics, and insight execution technology to reduce implementation complexity and time-to-market. See the Forrester report "Insight Platforms Accelerate Digital Transformation."

[6] Data commercialization initiatives present a serious challenge for enterprises with little or no experience at software product development. The entire scope of work — from use case and data set identification to business case development through to the technical task of crafting the product — often warrants a specialist. See the Forrester report "Find A Date To The Data Dance."

[7] CX pros must combine quantitative research, which answers the "what," and qualitative research, which answers the "why." See the Forrester report "Data And Instinct: Design Methods At Work."

[8] CX pros must combine quantitative research, which answers the "what," and qualitative research, which answers the "why." See the Forrester report "Data And Instinct: Design Methods At Work."

[9] Data commercialization is rising in adoption. But the process of designing the product, formulating a strategy, and executing on the complex technical task is a tall order. Enterprises would therefore do well to find a date to the data dance. See the Forrester report "Find A Date To The Data Dance."

[10] Hawk-eye is a system of capturing ball trajectory in sports through triangulating data from multiple high- performance cameras.

[11] Infosys Nia Data is an example of an insights platform. The typical insights platform combines data management (data stream ingestion operations, data preparation, ETL, database/data warehouse, and data lake), analytics (basic business intelligence, visual analytics, data science support tools and libraries, decision management, and data mining and predictive analytics), and insight execution (API access, preconfigured integrations with specific other products or services, visual alerts, and event triggers). See the Forrester report "Vendor Landscape: Insights Platforms, Q3 2016."

[12] Data commercialization exemplars are all about unobvious insights backed by data, and replacing intuition-based management with fact-based decision making. Examples abound: Agricultural products companies such as Monsanto deliver insights on when and what farmers should plant, and when to harvest; AT&T data on network traffic concentration points inform decision on retail location. See the Forrester report "Data Commercialization: A CIO's Guide To Taking Data To Market."

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