

Wimbledon uses IBM cloud, analytics and AI to deliver a superior viewer experience

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Anil Rao

It is no secret that IBM is investing heavily in cloud solutions, analytics and artificial intelligence (AI), which represent some of the company's main strategic areas and underpin the foundations of its ongoing digital transformation. In addition to making significant R&D investment and acquisitions in these areas, IBM is using its extensive client base to bring some of these technologies to bear. This article provides commentary on, and analysis of, how IBM is applying its latest technological innovations to sporting events. We focus here on IBM's partnership with the organisers of Wimbledon in the UK and explore the high-level implications that these developments have for communications service providers (CSPs).

Wimbledon provides a prestigious stage for IBM's latest innovations

IBM has a 28-year technology partnership with the All England Lawn Tennis & Croquet Club Limited, the organiser of Wimbledon (the highly prestigious tennis championship held annually in the UK). Analysys Mason attended a briefing and demonstration at this year's championships, where IBM applied cutting-edge technology from its cloud, analytics and AI portfolio to provide a superior viewing experience (including the instantaneous identification and broadcasting of the best shots or displaying the most-interesting historical match data during the match to thousands of tennis fans at the venue). Beyond the venue itself, more than a billion TV viewers worldwide and tens of millions of Internet users accessed the Wimbledon web portal and mobile app, with the entire infrastructure hosted by IBM in a hybrid cloud configuration based on its Bluemix platform.

IBM operates a command centre at the Wimbledon Broadcast Centre, employing a cross-skilled team of engineers, security experts, project managers and a specialist team of tennis players trained to use proprietary IBM technology. This core team is further supported by an extended team of engineers at remote locations. The command centre is a bustling hub of activity: several dashboards and computer monitors with data and statistics are constantly updated. For example, the security experts monitoring the network for cyber-attacks explained to those attending the briefing how they were using IBM QRadar in conjunction with Watson to identify security threats in real time.

The tennis experts, on the other hand, watched the TV screens closely, scrutinising every bit of the match action and recording the minutest of detail. For example, for every shot played, they explained where the ball landed on the court; what the recorded speed of the shot was; whether it was a forced or unforced error; a forehand or a backhand winner; a net point; a break point – and much more. The experts also made certain key decisions, including when and what types of statistics should be displayed live on television during the match, based on what the commentators were discussing at that point in time.

IBM's SPSS and Watson technologies generate detailed insights about the event

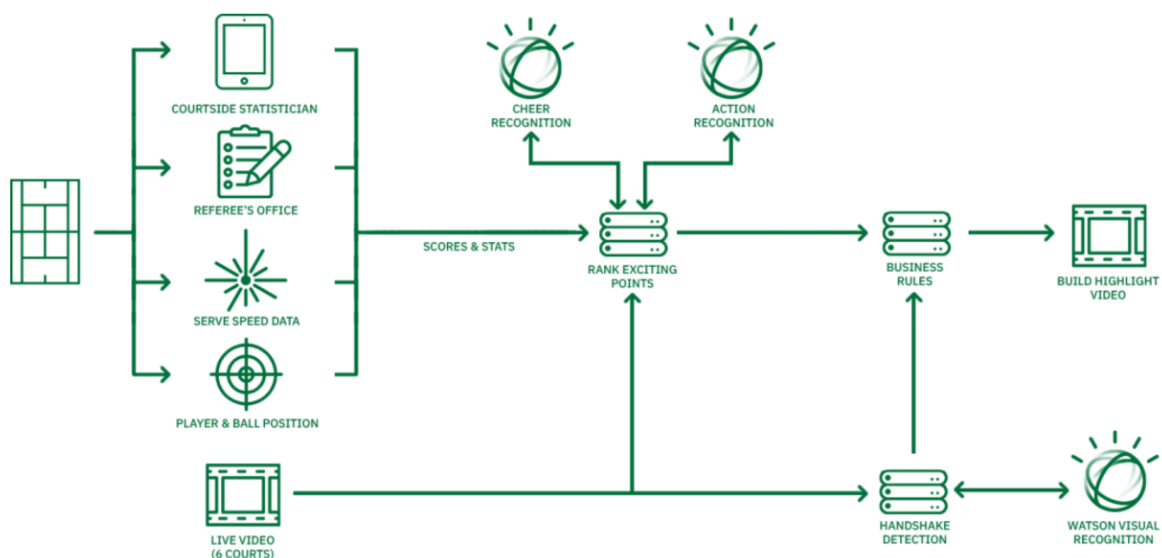
All the match data is recorded and processed through the IBM SPSS technology and the insights that are generated by this process are used for various purposes including post-match analysis by the experts, or by players and coaches to conduct deeper analysis of opponents and to better inform their match strategies.

IBM is also using Watson to answer an important question for the sport: "what makes a great tennis player?" To answer this question, Watson is studying historical, unstructured sports coverage data that dates back 44 years and includes millions of tennis data points, millions of words of commentary and interviews, Wimbledon archives and newspaper articles. This data has informed one of Watson's conclusion that great tennis players require "the ability to assess opponents' strengths, and to focus and drive to improve themselves, even when they're right at the top". Watson is also being applied to perform social sentiment analysis (using Watson Personality Insights) on social networks such as Twitter and other digital communication platforms to sense the mood of the people in these forums, the emerging trends and agreements/disagreements.

IBM's 'Cognitive Highlights' video analytics solution can automatically produce a highlights package

This is all fascinating, but the highlight of my visit to the Wimbledon Broadcast Centre was witnessing IBM's Watson-powered video analytics technology. The company's 'Cognitive Highlights' solution can ingest hours of match footage and produce a 2-minute highlights package for instant dissemination across digital platforms. The raw video footage is enriched with additional data points such as match statistics and serve speed data, as well as audio indicators that include courtside noise levels (for instance, cheering) and video indicators such as player behaviour (such as fist pumps) are applied to extract slices of the footage that show the key moments in the match (see Figure 1).

Figure 1: Flowchart detailing the automatic production of IBM's match highlights package



Source: IBM

Implications for CSPs: video analytics solutions can help CSPs with monetisation activities, including advertising

CSPs are embracing cloud solutions, analytics and AI technologies across their businesses and have achieved varying levels of operational maturity. For instance, the adoption of cloud and virtualisation technologies are at a more-advanced stage in the IT side of these businesses, compared with networks, where technologies such as network function virtualisation (NFV) and software-defined networking (SDN) are making only slow progress. However, analytics is being widely adopted by CSPs for a diverse set of operational use cases, though it is still nascent when applied to monetisation use cases. CSPs should consider applying advanced video analytics solutions – such as the technology used in IBM’s ‘Cognitive Highlights’ solution – for monetisation, such as advertising. Machine learning and AI are still at an early stage of adoption, but the industry is excitedly discussing these topics and trialling early proofs of concept.

Analysys Mason has published extensive research on cloud/NFV/SDN¹ and analytics.² In addition, Analysys Mason is assessing the impact and suitability of AI³ to the telecommunications industry and will continue to conduct research and closely track market developments.

¹ For more information, please see Analysys Mason’s *Software-Controlled Networking* programme page. Available at: <http://www.analysysmason.com/services/Research/Telecoms-software/Software-Controlled-Networking/>.

² For more information, please see Analysys Mason’s *Analytics* programme page. Available at: <http://www.analysysmason.com/services/Research/Telecoms-software/Analytics/>.

³ For more information, see Analysys Mason’s *TM Forum Live 2017: artificial intelligence adds to the network analytics buzz for service fulfilment*. Available at: <http://www.analysysmason.com/Research/Content/Comments/TMforum-service-fulfilment-RMA02/>. In addition, see Analysys Mason’s *Artificial intelligence in analytics: the next development in network optimisation*. Available at: <http://www.analysysmason.com/Research/Content/Short-reports/AI-analytics-optimisation-RMA02/>.