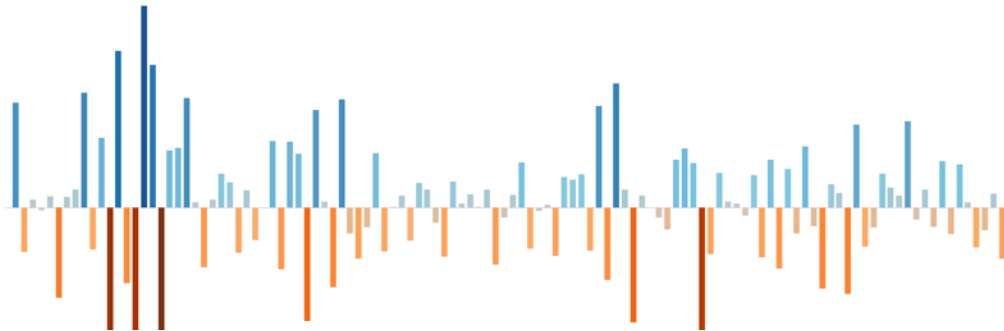


Alteryx & Tableau in Sport

How business intelligence tools can drive excellence in the sports industry

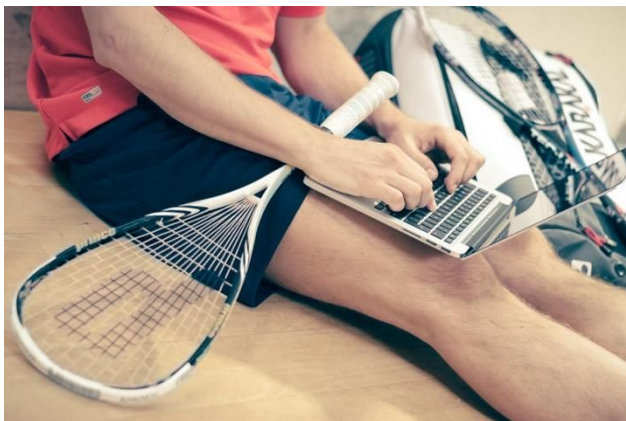


The sports industry is booming.

From higher levels of sponsorship, more sport being televised than ever before, to athletes who continue to break records - there has not been a better time to invest in a clear data strategy in the sports industry.

Sport is data rich.

Sport sits in a more unique space where analytics can be applied to almost every level of the organisational structure.



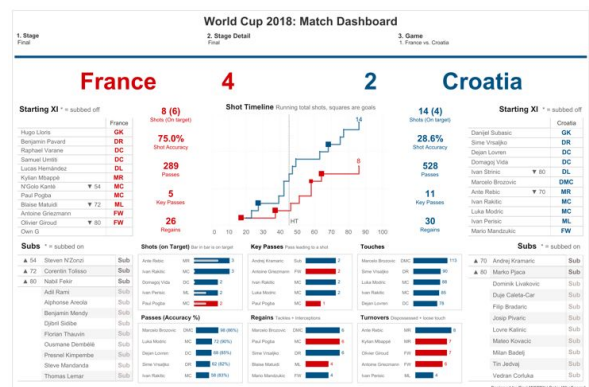
Data collection & analysis is growing exponentially.

The most obvious area of application would be analysing sports performance, adding another quiver to the bow of video and performance analysis. Data never really replaces the traditional 'eye test' or the more 'qualitative' understanding - but it does help support and inform decision

making.

Data exists beyond just match/seasonal on-pitch data - collection of information has expanded to the wider life of an athlete. Wellness, sleep, nutrition, training performance... these can be logged and analysed by specialists in each field. This enables the evolution and expansion of insight into how players perform.

Analytics can also be applied to the more traditional levels of business intelligence - Finance, Marketing and HR - all the way through to emerging areas such as social media impact.



Beyond a box score: visualising key metrics at a glance.

There could be large amounts of untapped data at all parts of a sports organisations, ready to be utilised to provide deeper

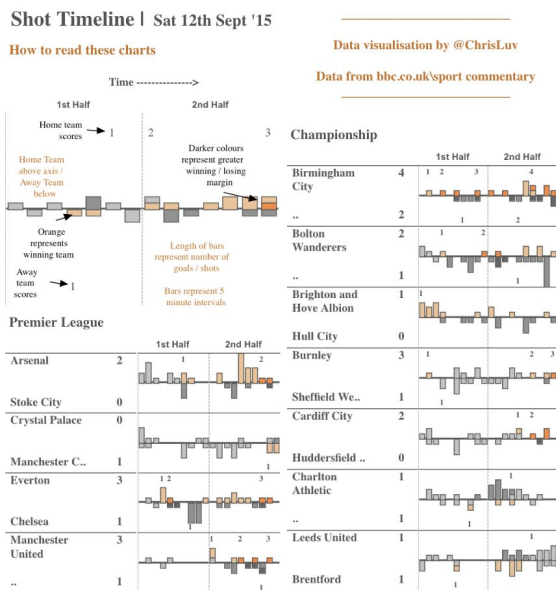
insights, drive more informed decision-making and save man hours through automated reporting.

Bleeding Edge

The scale of an organisation does not factor into the gains which investing in an analytics platform could bring. Any organisation can build out a data-driven faction, given that such information exists at all levels of the industry.

This could be a National League football side building processes and dashboards to be a cut above the opposition, or an NBA team looking to optimise their salary cap.

Tapping into this wealth of resource can enable an organisation to find edges they previously did not know existed.



Visualising shot timelines in a football match using bar charts.

Why Alteryx and Tableau?

Alteryx is an analytics platform which is able to prep, blend and analyse data as part of an ETL (Extract, Transform, Load) process. Tableau is a visualisation and reporting tool which empowers the analyst to turn data into actionable insights.

As a duet, Alteryx and Tableau combine to

be for a powerful pairing in many businesses due to the low barrier to entry and relatively lower learning curve to alternatives, such as complex code or bespoke applications.

Within a sports scenario, the return on investment in these platforms enables the creation of sustainable solutions which last beyond an analyst's time with the organisation.

A potential end-to-end solution could be producing Alteryx data workflows which run on a schedule which in turn power Tableau workbooks. These workbooks can be set to be 'live' and can be sent via e-mail as subscriptions. This level of automation can drive interest and encourage a data-driven environment which operates at the forefront of technology.

Whilst code-based ETL and visualisations are flexible and can be (and have been) deployed in sport, the benefits of Alteryx and Tableau is the auditability of the process. Anyone with knowledge of the tools can pick up a workflow or dashboard and be able to understand how it is built much faster than working through lines of code.

Case Study 1: Player Recruitment & Performance in Soccer

A key action performed by analysts working in soccer is identifying talents to add, supplement or replace a member of their roster. Whilst traditional scouting and analysis has lots of qualitative value, the benefits data and analytics brings in time savings to create shortlists can be pivotal.

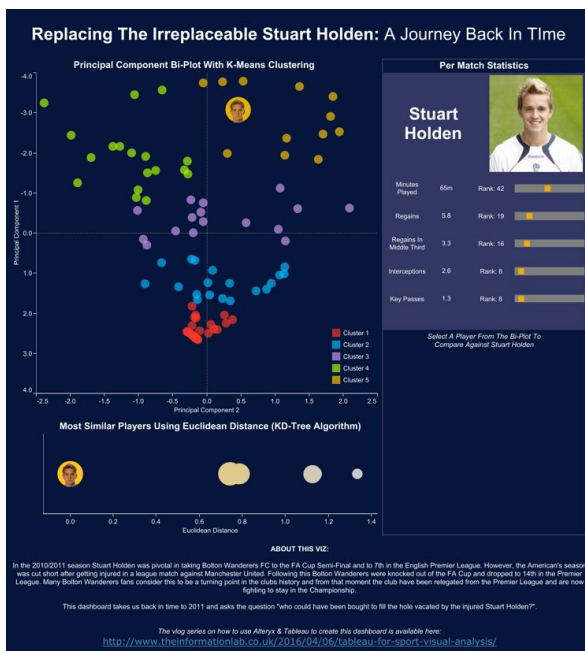
Event level data in soccer can come from data companies such as Opta, STATS or Strata – and Alteryx allows users to inject this data through flat files, from databases and even through API calls. The data can then can be outputted to either a flat file or

to a database, ready for analysis in Tableau.

An example of this sort of process was shared by Brian Prestidge – formerly of Bolton Wanderers. In order to replace Stuart Holden, Brian was able to build out an Alteryx workflow which ingested Opta XML files and joined player lookup files into the workflow, before utilising the R-based tools in Alteryx.

Empowered with this data at his fingertips, Brian was able to identify players similar to Stuart Holden by utilising Principle Components Analysis and K-Means Clustering directly in Alteryx.

This enabled Brian to create a data table which compared a set of players to identify players similar to Stuart Holden, ready to be visualised in Tableau.



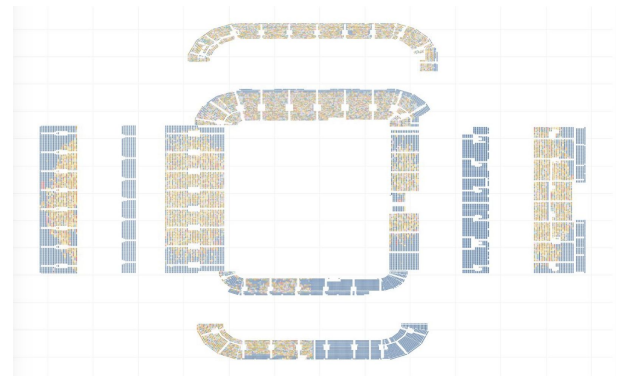
Next steps: Further developments of this piece of work could be to tweak the Alteryx workflow into an Analytic App.

This would allow the user to select any player and create a dataset to drive a similar dashboard. Automating this process can allow analysts to quickly identify players and create profiles quickly and easily.

Case Study 2: Analysing Ticket Sales in Venue

Given sports organisations by and large have venues with tickets to sell, an operational task would be to make sure that the venue is meeting benchmarks for match-ups or events. This is a mapping task can be done using a combination of Alteryx and Tableau to create a visualisation to show attendance.

The visualisation of a venue can be achieved using SVG file types. [This blog](#) by Niccolo Cirone details the process. In summary, an SVG file is read in as XML to create a polygon to map in Tableau with X and Y coordinates.



Seating plan for soccer stadium

Next steps: Once this polygon is created, it can be blended or joined with ticket sales data.

This layered data approach can showcase trends and be used to build a deeper understanding of the factors impacting the number of people attending a sporting event, ultimately deepening operational understanding and promoting action.

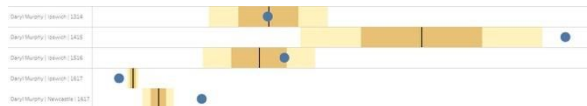
Case Study 3: Building Bespoke In-House Metrics

The evolution of data analytics in sport, following the Oakland A's success in Moneyball, the rise of analytics used in Ice Hockey and the detail of analytics used in

the NBA has created a market for bespoke, in-house metrics to measure or predict performance, to better inform decisions with a holistic few and use statistical methods to build on traditional in-house methodologies.

An example of this is 'Expected Goals', which in simple terms looks at a number of dimensions (for instance, assist type, assist X-Y, shot X-Y, body part used and league) to measure the probability of a chance being taken (where the outcome is a goal or not).

The model itself can be built off a sample of 'training' data, which then is compared to new data to measure luck vs. skill.



Expected Goals for Daryl Murphy – Line is Expected Goals for the season, circle is 'actual'

An expected goals model can be built using Alteryx and the R-based predictive tools to compare different models and determine the best predictor for goals.

Once a key predictor is appended to the goals dataset, Tableau can visualise under/overperformance of a team or player's shot performance over a period of time.

Conclusions

Through smarter analysis comes better decision making. The sports industry is rife with data, and utilising tools built for enterprise business intelligence can support a more holistic view of analysis.

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Want to find out more?

Come join us for an evening of *Analytics for Sports Industry Professionals* on the 25th of November in London.

You'll find it along with many other data-related events at <http://til.bi/talkdata>

About The Information Lab

The Information Lab is a team of highly skilled Tableau and Alteryx consultants and trainers helping customers make sense of their data.

Providing a full offering of license sales, training and consulting services for both Tableau and Alteryx, the team at The Information Lab are ensuring customer success for over 1200 customers in 10 different countries.

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