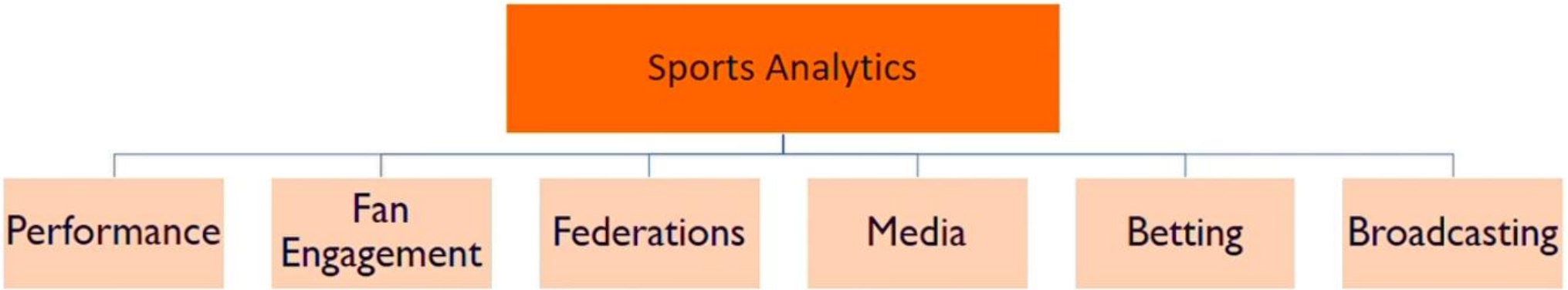
Introduction to
Sports Analytics
MAD ABOUT SPORTS
00:04

WHAT IS SPORTS ANALYTICS?



EVOLUTION OF THE DOMAIN

1859
The birth of the box score

1950
The first analytics consultant

1998
Harnessing the power of computers

2003
Moneyball

2011
Every move counts

2014
The entire Library of Congress in 1 day

Now
When analytics turn human

Understanding
Various Roles in Sports Analytics
MAD ABOUT SPORTS
00:03

CRICKET ANALYTICS

MAD ABOUT SPORTS

- Cricket analytics is growing rapidly in India.
- 80% of World's Cricket analysis is done in Chennai
- Each IPL team has multiple analysts working for them in front end and in the backend
- Scouting and Auction has becoming the focus of franchises since huge sums of money is at stake
- Ranji teams have also started taking interest in Performance analysis

HOW TEAMS USE IT?

- How Jason Behrendoff was selected against England?

Image source : Cricket Australia

League Match
Behrendorff :10-0-44-5
Starc : 8.4-1-43-4

SF Match
Behrendorff :8.1-0-38-0
Starc : 9-0-70-1

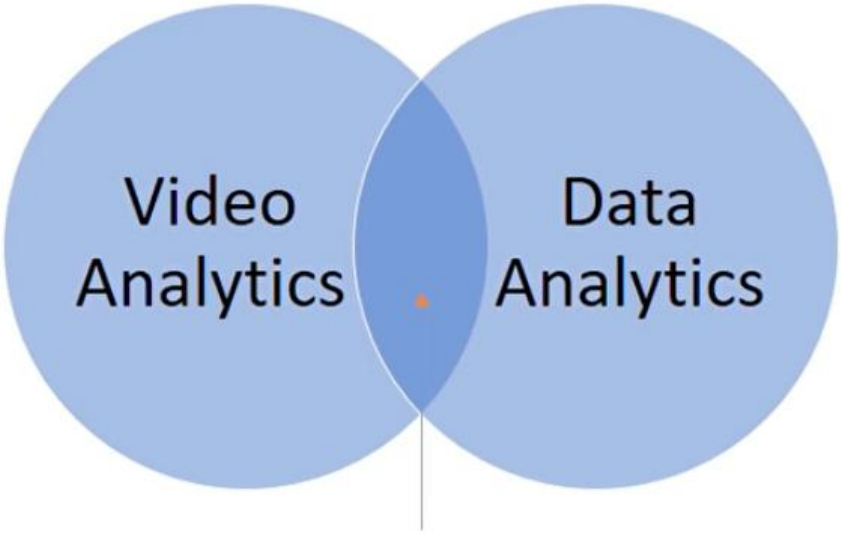
HOW TEAMS USE IT?

- Why did KKR used Sunil Naraine at the top?

Image source : IPL

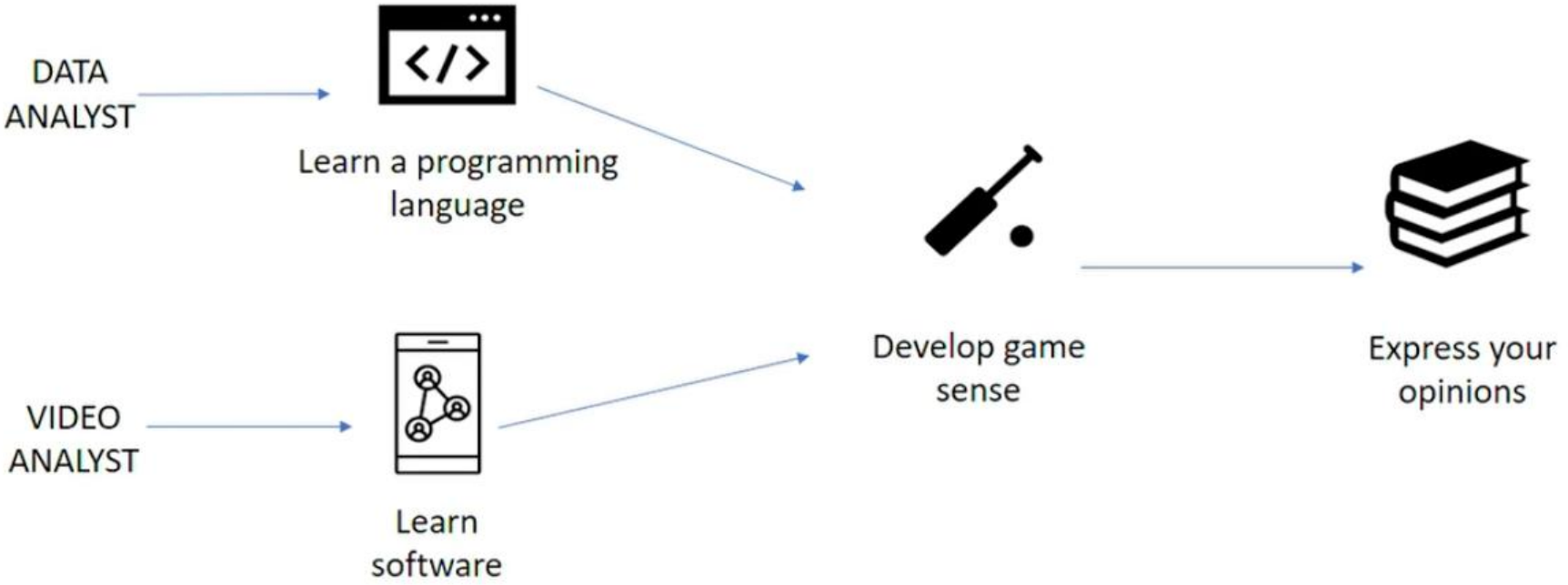
Narine scores after promotion in 2017
37(18), 42(17), 34(17), 54(17) and 18(10)

Types of Sports Analysts



Sweet Spot : The Future

HOW TO START?


DATA ANALYST
Learn a programming language
VIDEO ANALYST
Learn software
Develop game sense
Express your opinions

Turning Data

Into Patterns

MAD ABOUT SPORTS

SPORTS ANALYSIS CYCLE: STEPS INVOLVED

DIFFERENT STAGES OF DATA

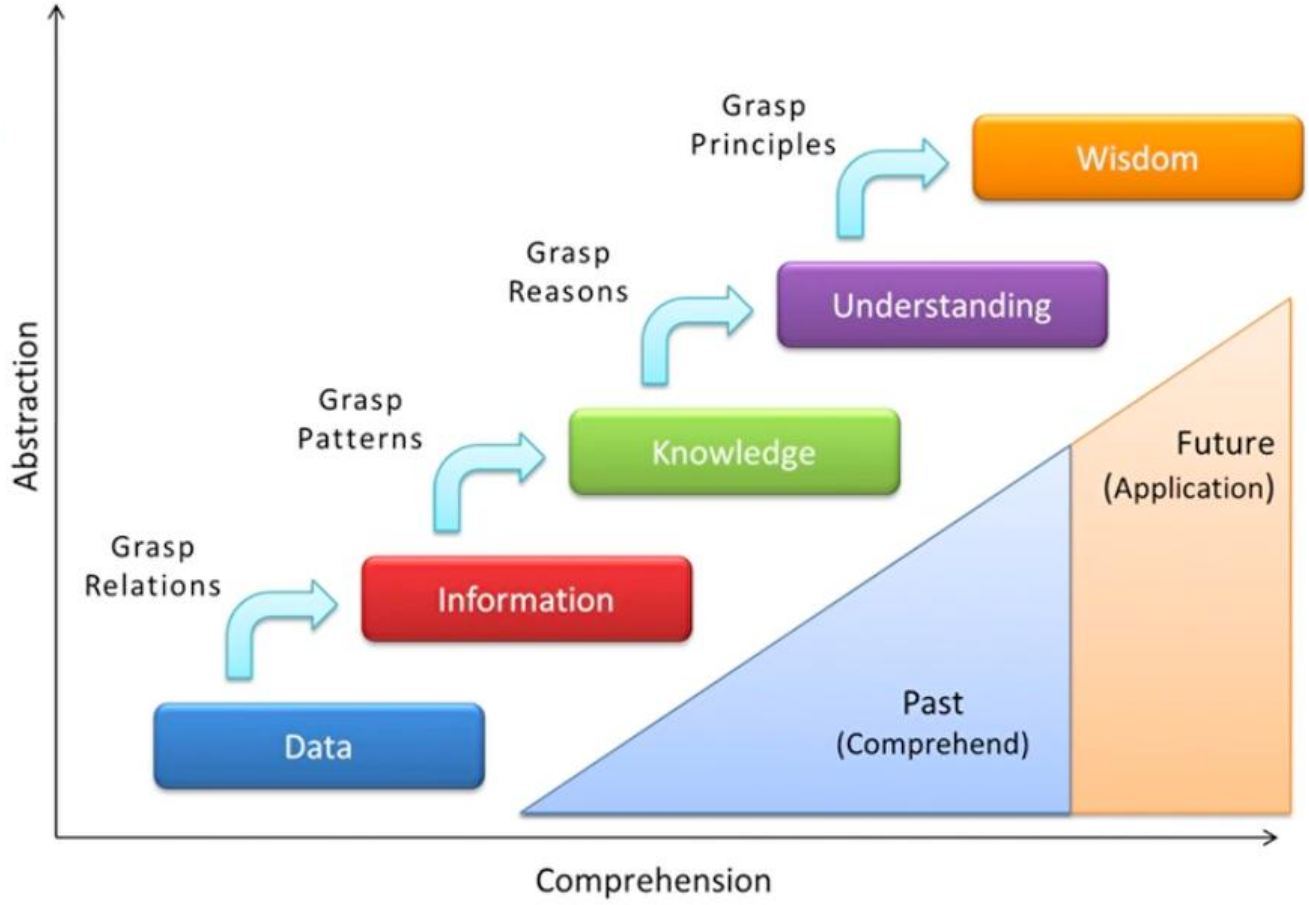
Bowl spinner in P-Play

High SR against PACE

High SR in P-Play

Strike Rate, Average

Runs, Balls, Wickets



HOW TO MAKE A CAREER AS A SPORTS ANALYST?

MAD ABOUT SPORTS

- Building your personal brand should be the first step in order to make a career as a Sports Analyst
- In this workshop, we will equip you with the tools (python, data analysis) you need in order to perform analysis by your own and build your personal brand in the industry
- Once you start getting recognized in the industry, your chances of landing a job as a Sports Analyst will increase tremendously

Evolution of Analytics in Cricket:

Duckworth – Lewis – Stern Method:

Developed by Frank Duckworth, Tony Lewis & later by Prof Steven Stern

What exactly is DLS?

A method to calculate the target score for the team batting 2nd in a limited overs match interrupted by weather.

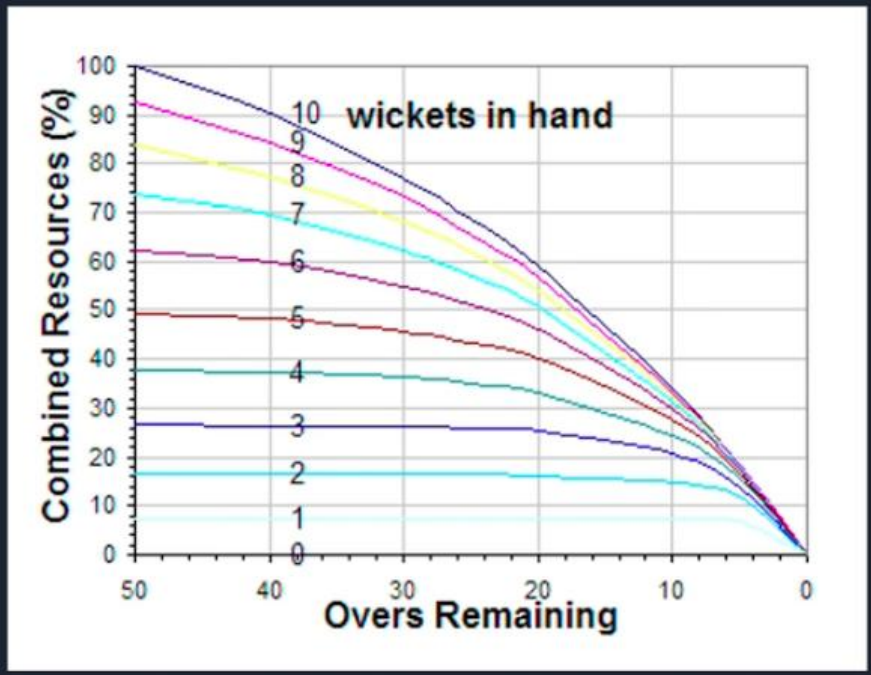
Courtesy: The Business Standard

01:47

Historical timeline of DLS:

Par score calculation:

$$\text{T2's par score} = (\text{T1's score}) * \frac{(\text{T2's resources})}{(\text{T1's resources})}$$



Courtesy: Wiki

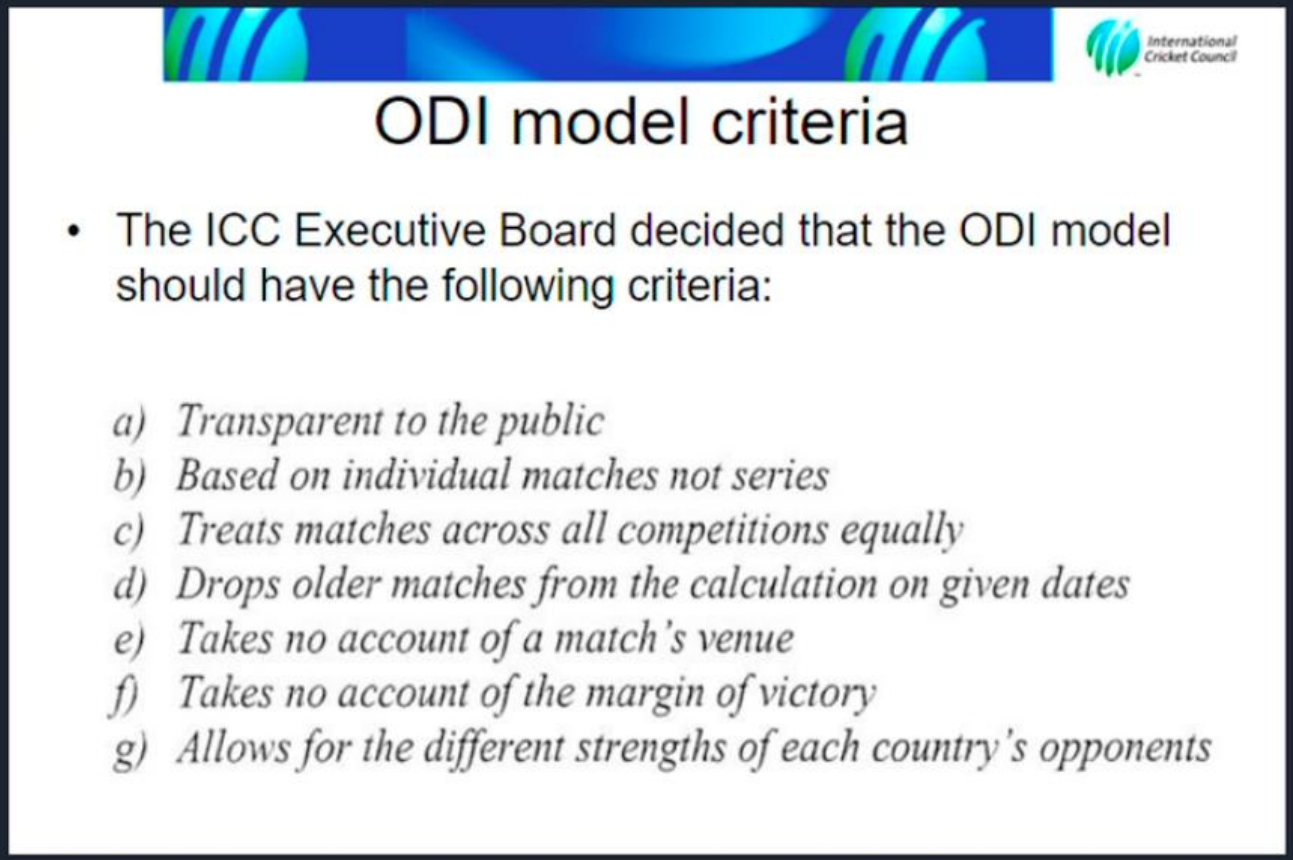
How does the Ball Tracking work?

Courtesy: Fox Cricket

Hotspot:

Snickometer:

ICC Team Rating System by David Kendix:



Courtesy: https://slideplayer.com/slide/1382981/

Arpad Elo:

Inspired from Chess ratings

Courtesy: Wiki

04:26

ICC Player Rankings:

Developed by Gordon Vince, Rob Eastaway

Ranking is meant to be seen as a guide to **current form**.

A 100 in a low scoring victory against a strong team should be **high value** than 100 in high scoring draw.

Sachin's wicket has to be more valuable than Malinga's.

Penalty for missing a match, new player entires.

NRR Calculations:

Pld	Won	Lost	Tied	N/R	Net RR	For	Against	Pts
8	6	2	0	0	+0.547	1,325/150.2	1,320/159.4	**12**
7	5	2	0	0	+1.263	1,285/134.1	1,153/138.4	**10**
7	5	2	0	0	-0.171	1,132/136.3	1,185/140	**10**
7	4	3	0	0	+0.062	1,120/138.3	1,098/136.5	**8**
7	3	4	0	0	-0.190	1,212/138.3	1,207/135	**6**
8	3	5	0	0	-0.368	1,242/157.4	1,212/147	**6**
7	2	5	0	0	-0.494	1,110/136.4	1,166/135.2	**4**
7	1	6	0	0	-0.623	1,073/138.4	1,158/138.3	**2**

Courtesy: IPL

Statsguru | Searchable Cricket St

stats.espncricinfo.com/ci/engine/stats/index.html?class=1;type=batting

ESPN cricinfo Live Scores Series Teams News Features Videos Stats Edition IN

ATISTICS / STATSGURU / TEST MATCHES / BATTING RECORDS

STATSGURU RECORDS SUPERSTATS ASK STEVEN WORLD CUP IPL 2021 MORE

Tests ODIs T20Is All Test/ODI/T20I - other -

Batting | Bowling | Fielding | All-round | Partnership | Team | Umpire and referee | Aggregate/overall

Basic filter | Advanced filter

Team:	all teams
Opposition:	all teams
Home or away:	home venue / away (home of opposition) / neutral venue
Host country:	all countries
Ground:	all grounds
Starting date:	from 15 Mar 1877 to 07 May 2021 or - quick pick -
Season:	all seasons
Match result:	won match / lost match / tied match / drawn match
View format:	Overall figures / Innings by innings list / Match totals / Series averages / Ground averages / By host country / By opposition team / By year of match start / By season

Submit query Add to query Reset query

Statsguru analysis

Enter the name of an international player, team, ground or umpire/referee:

Search or 30 random entries

Readers recommend

Curated Tweets by @ESPNcricinfo

Saif Hasnat
@saifhasnat

A masterpiece on @Mustafiz90 by the great @ajarrodkimber espncricinfo.com/story/ipl-2021…

No fairy tale yet for Mustafizur Rahman, b…
The Fizz had a unique set of skills early in his…
espncricinfo.com

May 3, 2021

Nafiu Kabir
@Nafiu_Shakibian

MAD ABOUT SPORTS

A day as a Cricket Analyst

A typical day at work:

- **Not just limited to meetings or coding through out the day.**
- **Tasks for the day & brainstorming for possible solutions.**
- **Analyzing data:**
  - Gathering data (databases)
  - Cleaning data (major part, understanding the data)
  - Processing data (programming skills)
  - Extracting insights, visualizations & patterns (communication)
  - Collaboration with others & setting up features (working with team)

Open source tools:

- **ESPN Cricinfo** – Articles, Stats
- **Cricmetric** – Player vs Player matchups
- **Howstat** – Player profiles, records
- **Reliance rankings** – All about ranking stats
- **Cricviz** – Data Visualizations, Core data science features
- **Podcasts** – The Pitch Side Experts
- **Youtube** Jarrod Kimber, Piyush Sharma
- **Books** – Cricket 2.0, Numbers don't lie
- **Research papers** – Arxivorg, KDNuggets