Appendix

9. Power BI – Calculation Blueprint

9.1 Top-N Players

```
Top N =

GENERATESERIES ( 1, 5, 1 )    -- integers 1 … 5 (step 1)
```

Idea & use: A What-If table that materialises the integers 1 – 5.

A slicer bound to Top N[Value] lets the user decide whether the Top-Ranked Players list should display 1, 2, 3, 4, or 5 names. (Choosing a standalone table avoids circular dependencies and keeps the model star-shaped.)

```
Rank by Potential = RANKX (  ALL ( Players[player_id] ),  -- ignore current order

 CALCULATE ( MAX ( Players[Potential] ) ), ,  DESC, -- highest score = rank 1 DENSE -- shared rank when ties  )
```

Idea: Compute a dense rank for every player based on their *Maximum Potential* after all page filters (Gender, Age Band, Position, Country) are applied**.**

The measure lives in the Players table so each row knows its own rank.

```
Show TopN = VAR N =  SELECTEDVALUE ( 'Top N'[Value], 5 )   -- fallback = 5

RETURN  IF ( [Rank by Potential] <= N, 1, 0 )  [ Top-N inclusion flag ]
```

Idea: Convert the numeric rank into a Boolean 1 / 0.

A visual-level filter on the Top-Ranked Players bar chart keeps only rows where Show TopN = 1, so the list auto-shortens when the slicer moves**.**

9.4 Club-level Potential Gap (Value Academies visual)

```
Potential Gap (row) = Players[Potential] - Players[Overall] [ Players Table ]
```

```
Avg_Potential_overallgap  =    AVERAGEX ( RELATEDTABLE ( Players ), [Potential Gap (row)] )[  Teams table ]
```

Idea: Row-level gap first, then AVERAGEX rolls it up per team_id.

Bars are sorted on this measure; a Top N filter (visual level) keeps the 20 clubs with the largest positive gap.

9.5 Canonical Age & Age Band

```
Canonical Age = CALCULATE ( MIN ( Players[Age] ), ALLEXCEPT ( Players, Players[player_id] ) )

Age Band = SWITCH ( TRUE(),
   [Canonical Age] <= 19, "U-19",
   [Canonical Age] <= 21, "U-21",
   [Canonical Age] <= 23, "U-23",
   "24+" )
```

Idea: Players appear more than once (club + national team).

Canonical Age selects the youngest recorded age per Player ID;

Age Band converts the integer into scouting buckets used as slicers and colour segments on the Age-Growth line.

9.6 Gender derivation (important step)

```
// Custom column in Power Query
Gender = if Text.StartsWith([Source.Name], "female") then "Women" else "Men"
```

Idea: Original CSVs lacked a gender field.

Deriving it in Power Query before loading the model avoids maintaining two parallel player tables.

9.7 Position Group bucketing

```
Position Group =

IF ( Players[club_position] IN { "GK" },  "GK",

IF ( Players[club_position] IN { "LB","LCB","CB","RCB","RB", "LWB","RWB" },  "DEF",

IF ( Players[club_position] IN { "CDM","CM","CAM", "LDM","RDM","LM","RM" },  "MID", "FWD" )))
```

Idea: Compress 25+ FIFA positions into the four scouting families.

9.8 Dynamic country-aware titles

```
Country Label = IF ( HASONEVALUE ( Players[nationality_name] ), VALUES      ( Players[nationality_name] ), "Global" [
default label ] )
```

Idea: Whenever the user clicks a bubble on the map or clears the click

HASONEVALUE tells us if the current filter context contains **one** distinct nationality.

If so, VALUES() yields that single country (e.g. “Spain”); otherwise the title falls back to **“Global”**.

```
Age–Growth Title = "Age v/s Growth Curve | " &  [Country Label]
```

Usage

Power BI → In the visual’s **Format** ▸ **Title** ▸ ***fx*** dialog choose

Field value → Age–Growth Title so the text updates live.

10. Tableau – Calculation & Design Blueprint

10.1 Row-level and derived metrics

Name	Formula (Tableau syntax)	Consumed in
Potential Gap (row)	[Potential] – [Overall]	Deriving Avg. Potential Gap of team.
Value per Potential	[Value Eur] / [Potential]	Bubble size in VfM scatter
Avg. Potential Gap (FIXED)	{ FIXED [team_id] : AVG([Potential Gap (row)]) }	Value Academies bar (club level). LOD calculation.

10.2 Top-Ranked Players logic

Object	Definition	Role
Parameter – **Top Ranked Players**	Integer, 1–5	Gives stakeholders direct control over list length.
Rank by Potential	RANK_DENSE(MAX([Potential]) , 'desc')	Table calculation (Compute Using Player Name).
Top N Filter	[Rank by Potential] <= [Top Ranked Players]	Boolean filter (keep "True" rows) → bar chart always shows *N* players.

Context filters (Gender, Age Band, Position, Country action) are added to Context so ranks recompute inside the current slice.

10.3 Dynamic titles & global stamp

Country Label = IF { COUNTD([nationality_name]) }=1

THEN ATTR([nationality_name]) ELSE "Global". END

Sample Dynamic Naming format:

<Nationality Name (Players All.Csv)> | Top <Parameters.Top Ranked Players> Ranked Players [<Age Band1> | <Gender1> | <Position Group>]

10.4 Filters & parameters exposed to the stakeholders

Control	Type	Behaviour
Gender	Quick filter (Context)	Toggles men/women cohort.
Age Band	Quick filter (Context)	U-19 / U-21 / U-23 / 24+.
Position Group	Parameter (All / GK / DEF / MID / FWD) (Context)	Limits every sheet to one role.
Top Ranked Players	Parameter (1–5)	Shrinks/expands the prospects list and VfM scatter cohort.
Map action	Select (Context)	Clicking a country filters three visuals; click again resets to Global.

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