What do you need to consider when choosing a Fixed Income Attribution Solution?

A Case Study and Discussion

Dr Ian Thompson

HEAD OF PERFORMANCE PRODUCT MANAGEMENT

BNY MELLON DATA AND PLATFORM SOLUTIONS

November, 2022

BNY MELLON

Which factors should you factor in when choosing a (FI) factor based attribution solution?

A Case Study and Discussion

Dr Ian Thompson

HEAD OF PERFORMANCE PRODUCT MANAGEMENT
BNY MELLON DATA AND PLATFORM SOLUTIONS

November, 2022

BNY MELLON

From GAM-land to the Sunlit Uplands – a Journey

A Graphic Fantasy Cautionary tale

JRR Thompson

November, 2022

BNY MELLON

Once Upon a Time

In GAM-land
a firm - GINVCO

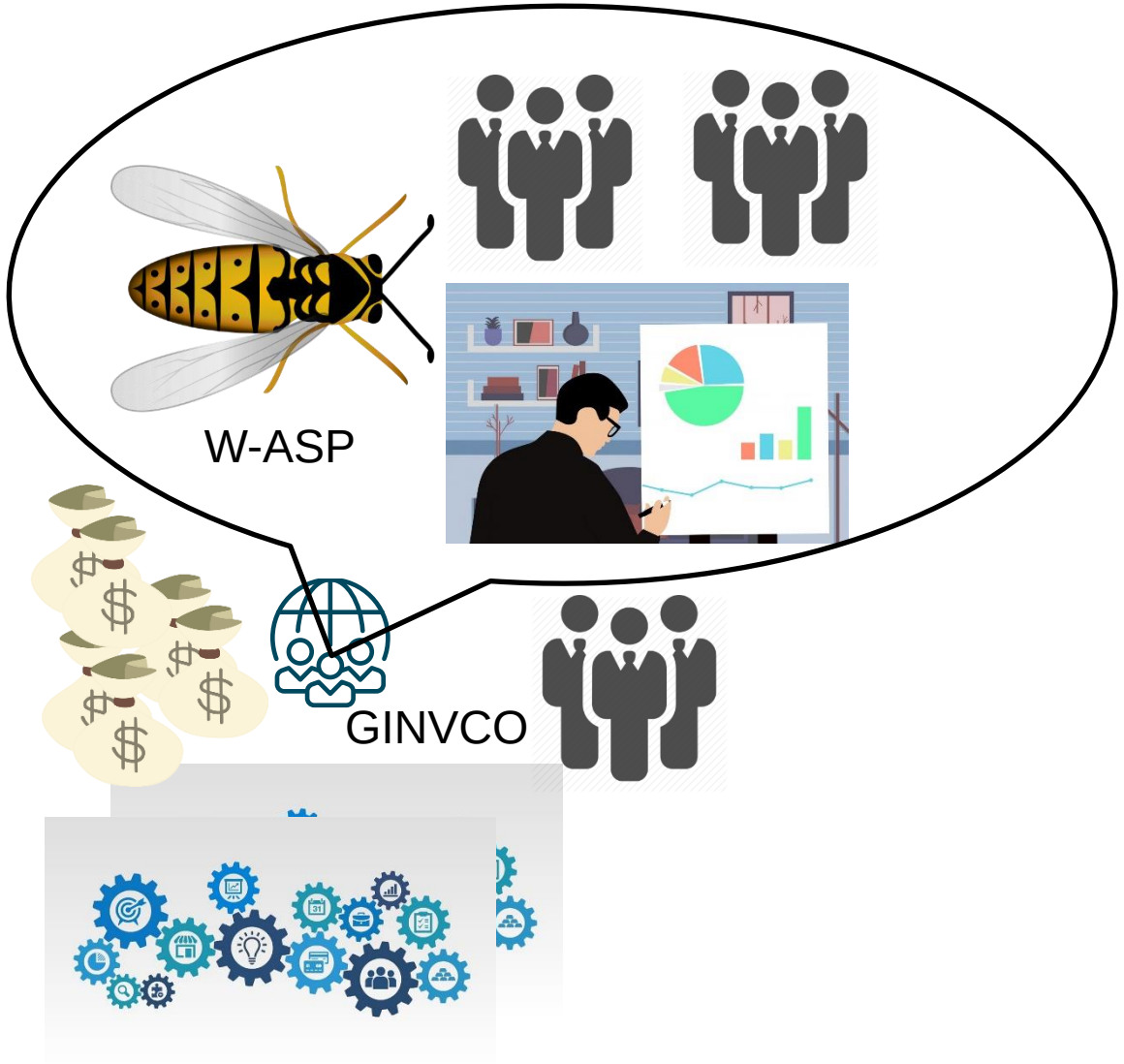
Strategies

Once Upon a Time

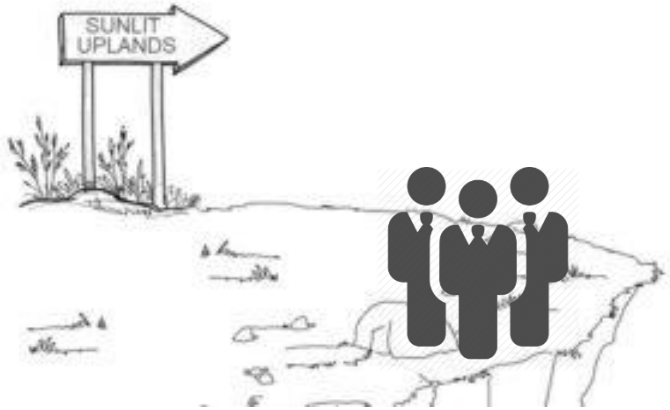
GINVCO

Strategies

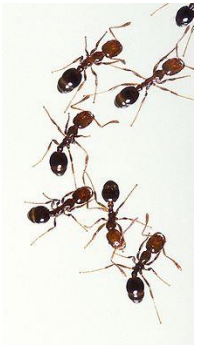
A dream

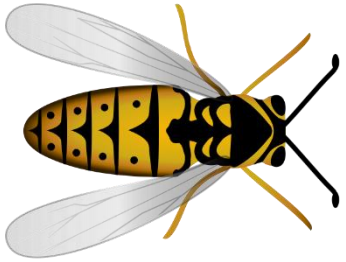


Living the dream?



So how to go about this?





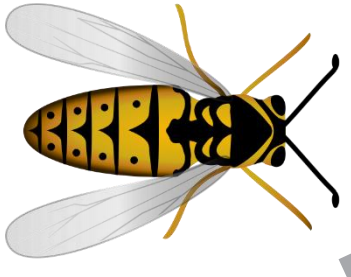
W-ASP

GINVCO

So how to go about this?

consultANTS

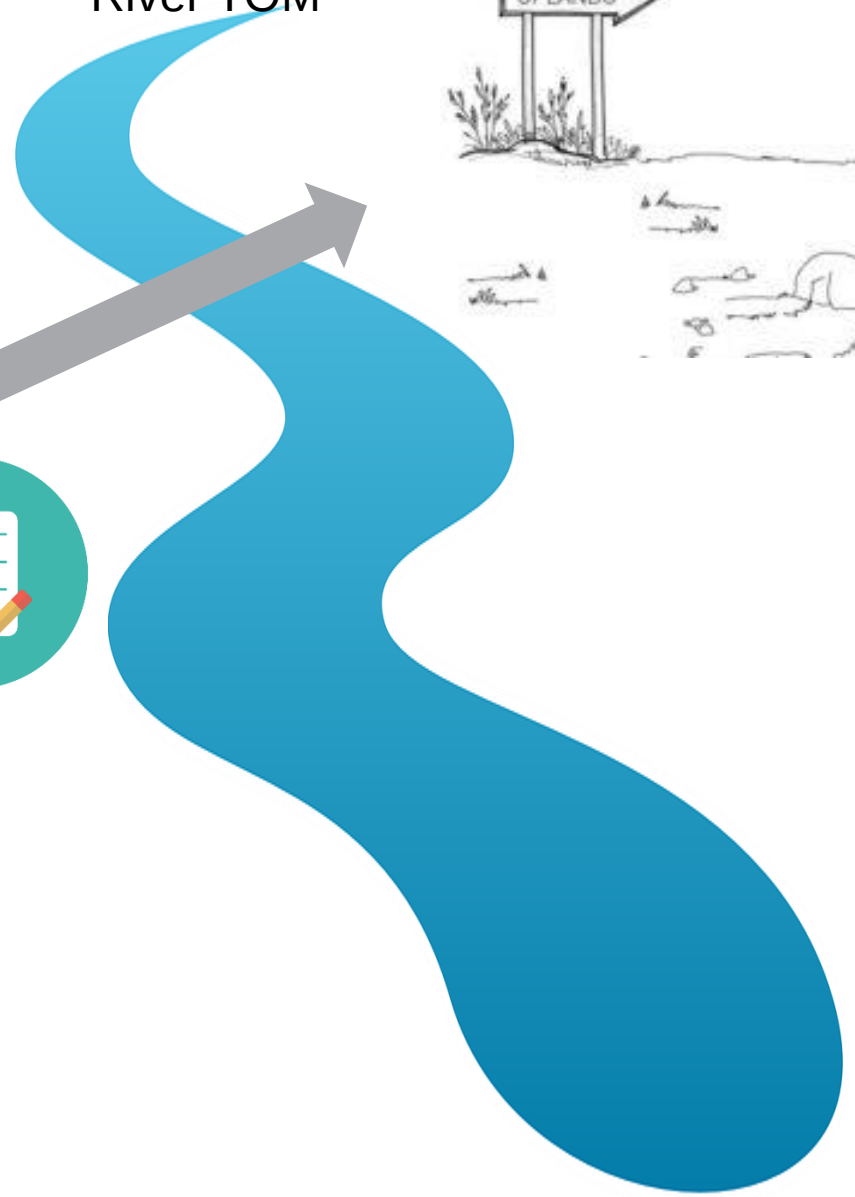
GINVCO



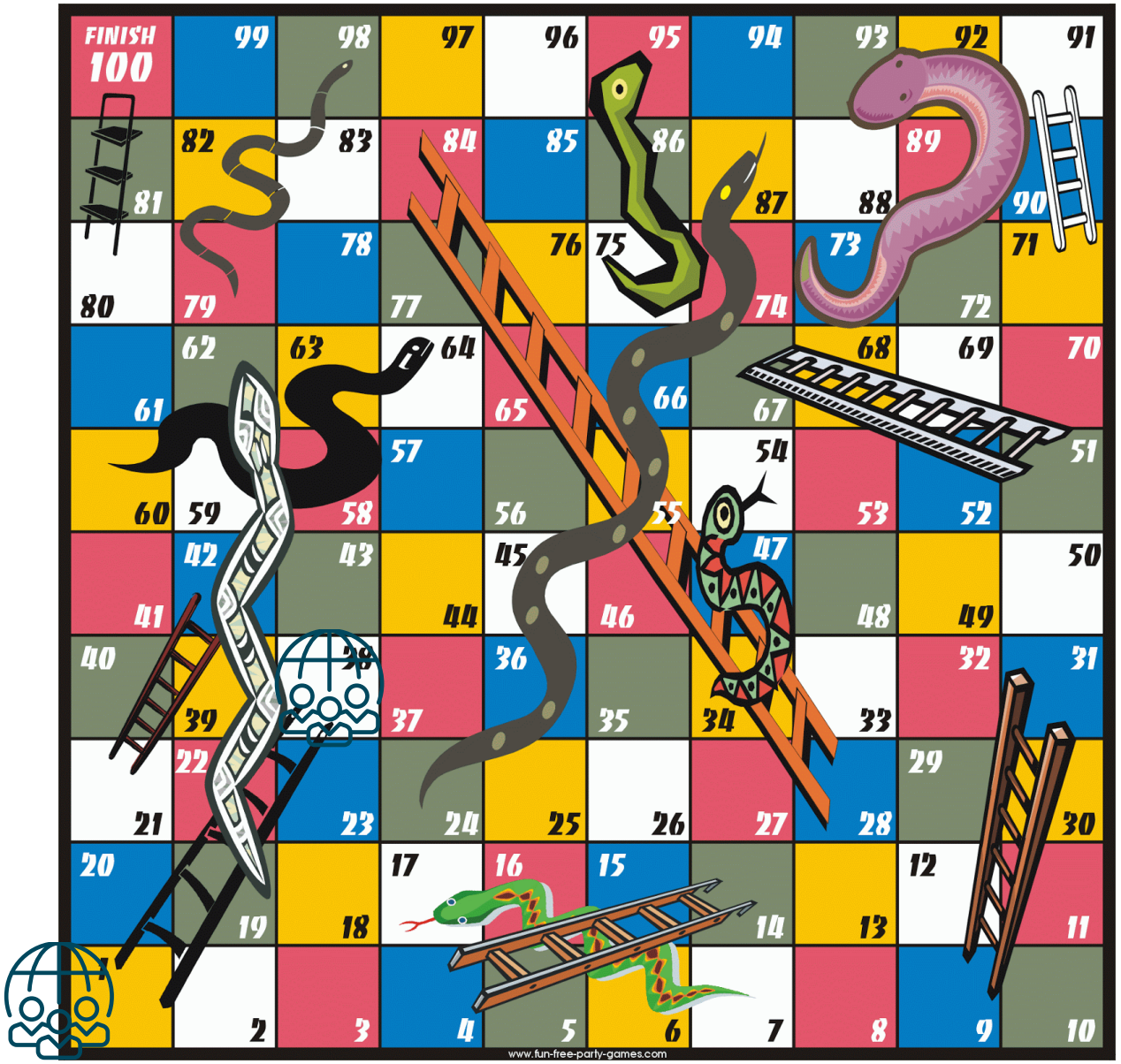
W-ASP

Dr Greybeard

River TOM



Then what? - The path across the River TOM…



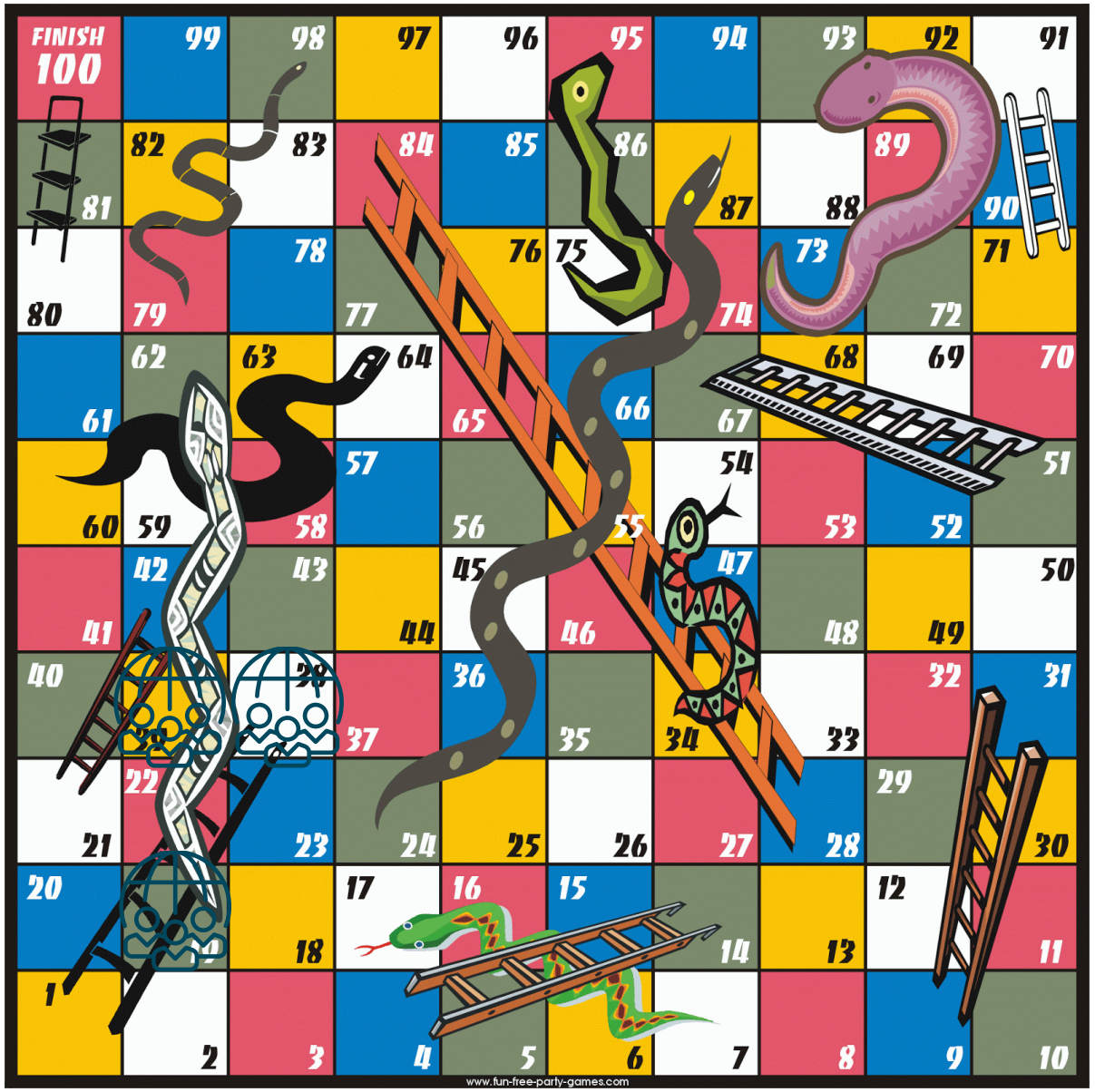
Step 1 – move to 38: ASP confirms that they can provide an FIA solution

What was the initial process?

- Review of current solutions

- Review Out-source provider’s recommended solution, including review of following aspects:
  - Functional material
  - Demo to project team including SMEs
  - User experience, UI, transparency and flexibility
  - Workflow and data management aspects
  - Technology and systems architecture

Then what? - The path across the River TOM…



Step 1 – move to 38: WASP confirms that they can provide an FIA solution

Step 2 – GINVCO team ask WASP to provide a demo, move 1 place to 39

Step 3 – FIA solution doesn't tick all the boxes slide down to 19

What is DTS and why use it?

Duration Times Spread = credit spread of a FI security x its spread duration

- When spreads are high (for example in the 2008 credit crisis), credit markets are more volatile and vice versa, i.e. volatility highly correlates with spread
- Bonds with a higher credit risk generate higher spreads as volatility increases and this will result in much more significant underperformance than anticipated solely by spread duration
- Volatility of a corporate bond is generally proportional to the product of its spread duration and spread i.e. DTS
- DTS is suitable for most types of credit portfolios including Investment Grade, High Yield and Emerging Markets

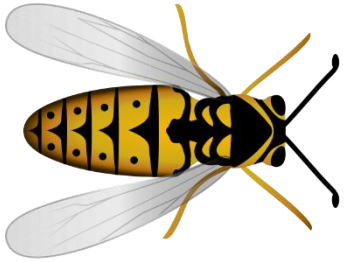
What was the initial process?

- Review of current solutions

- Review Out-source provider’s recommended solution, including review of following aspects:
  - Functional material
  - Demo to project team including SMEs
  - User experience, UI, transparency and flexibility
  - Workflow and data management aspects
  - Technology and systems architecture

- Out-source provider’s recommended solution was rejected
  - Limited track record with DTS model
  - Hybrid model in development
  - Not all effects calculated & some used re-allocation approach
  - Lack of flexibility in UI

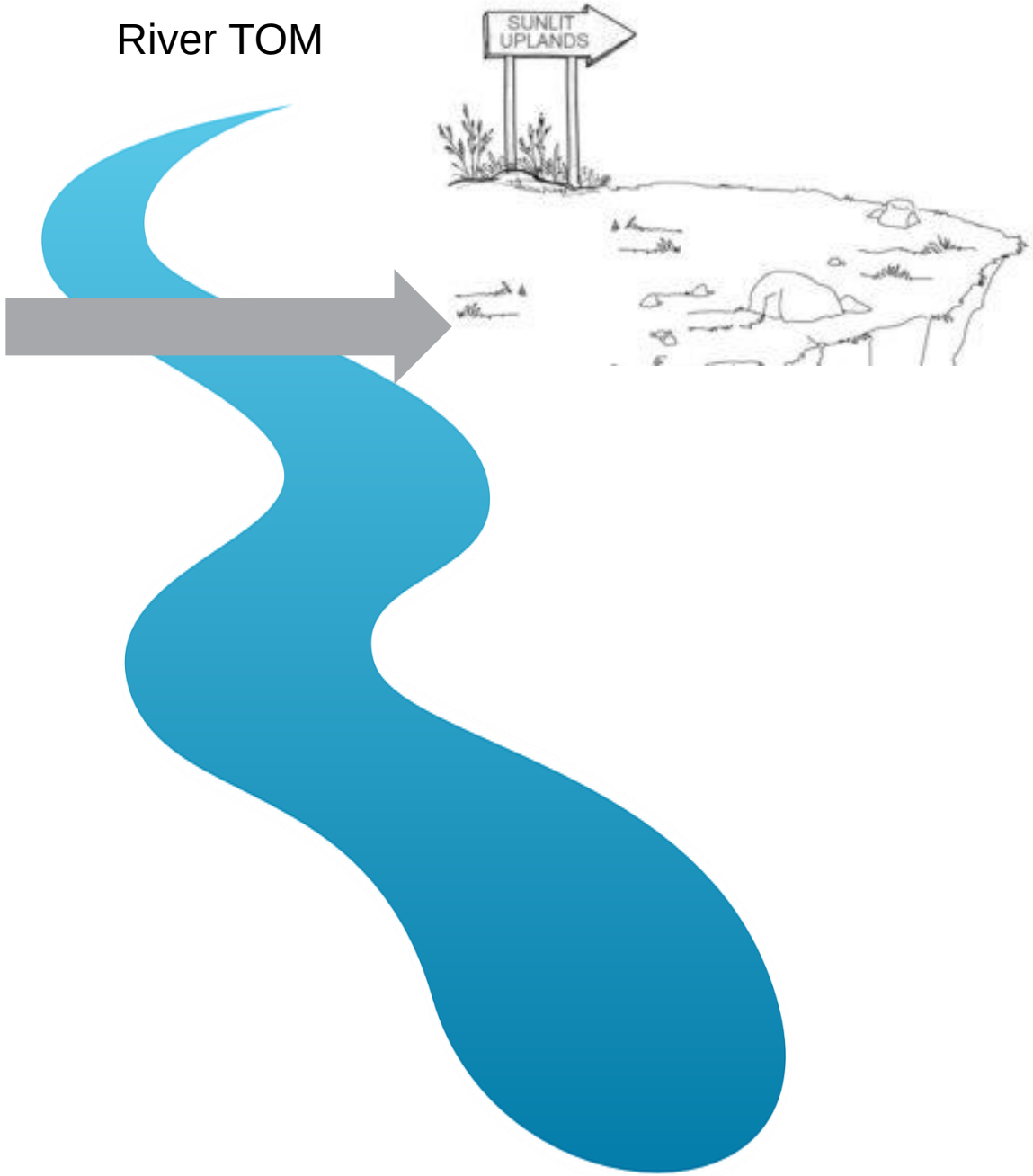
What next?
New relationships…



W-ASP

SVendor

River TOM



GINVCO

How to negotiate the TOM for FIA - what was really required?

- Suitable FI Attribution models relevant to the investment strategies and processes
  - Top down and bottom-up processes in place
  - Minimal loss of functionality from current solutions
  - Strategy tagging support

- Based on a single source of IBOR performance

- Adequate asset coverage across asset types

- Calculated not re-allocated effects

- Catering for all relevant portfolios (balanced, aggregate etc.) not just pure FI

- Fund in fund calculation

- Classifications consistent with Front-Office structures

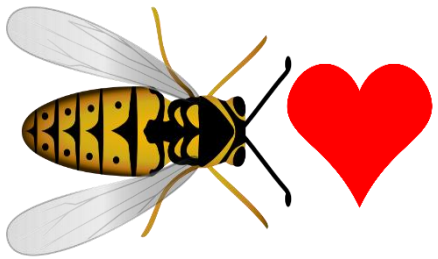
- A proven solution (GINVCO did not want to be an early adopter)

Which FIA models and required features?

- Key Rate Duration (KRD) based for some portfolios (mainly treasuries) across the sea
- Duration-based model (single or average duration) using PV weights for some other markets
- Duration Times Spread (DTS) for some Credit portfolios at GINVCO
- Top down and bottom-up (Hybrid model), including KRDs for YC effects
- Attribution vs
  - Benchmark
  - Model
  - Untraded Portfolio
  - Other Portfolios
- Calculation of all required FI attribution effects, including trading, valuation, currency, carry, convexity, inflation, volatility, paydown, interaction and residual elements and further more detailed breakdown
- How will derivatives be treated in the analysis?

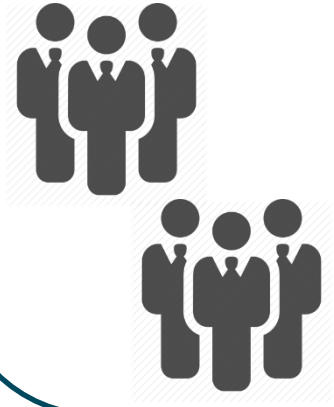
Could WASP and Svendor really do this - and take the teams with them?

GINVCO

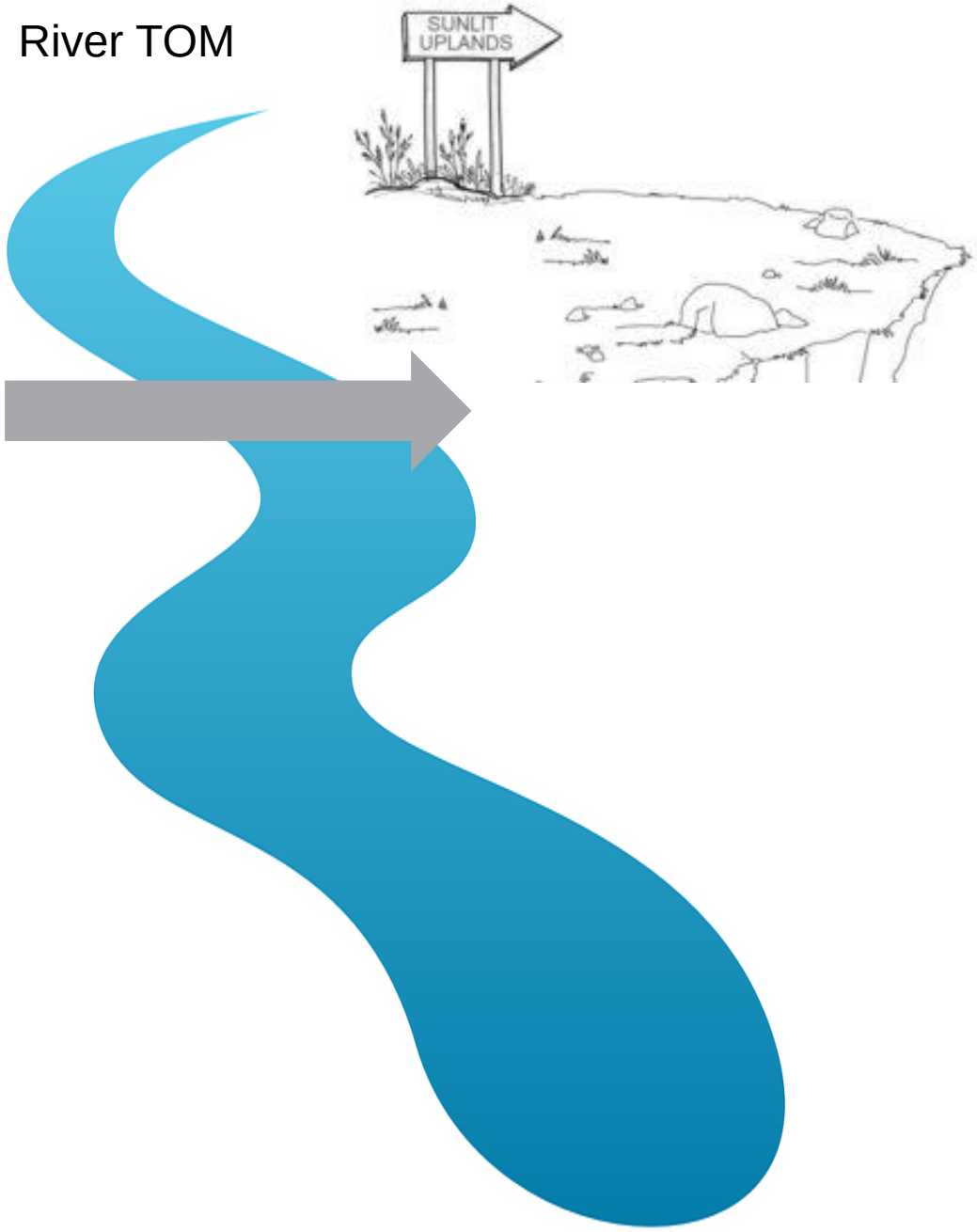


W-ASP

SVendor



River TOM



Which FI Attribution effects?

Full Attribution Effects breakdown		
Trading		
Valuation/ Pricing		
Currency	Cost of FX hedging	
	Forward Currency	
	Spot	
Carry	Government Carry	
	Spread/ Credit Carry	
	Roll-Down	
Yield Curve	Shift	Can be further decomposed by KRD tenors
	Re-Shape	Can be further decomposed by KRD tenors
Convexity		
Inflation		
Volatility		
Paydown		
Spread	Either DTS Weights	Allocation
		Selection
		Leverage/ Interaction
		DTS Floor
		DTS Beta
	Or PV Weights	Allocation
		Selection
		Leverage/ Interaction
	Hierarchical	
	Top-down	
Interest Rate derivative basis		
Interaction	Rates and Spread	
	Trading and Valuation	
Residual		

Some data points…

- Does the solution include/ provide data?
  - Benchmarks?
  - Risk data?
  - Yield curves?
  - Can other sources be loaded?

- Risk numbers:
  - Use the same source of risk numbers for attribution and front-office teams
  - Use benchmark risk numbers for on-benchmark securities
  - Preferred sources of risk numbers different for GINVCO's GAM and Overseas teams (different risk providers)
  - Can a hierarchy of risk numbers be used if the preferred source is unavailable?
  - Will the curves be consistent with the risk numbers used in the analysis?

- Wide Asset coverage
  - Treasury, corporate emerging market debt, Linkers, TIPS, Equities, ETFs, Cash, Spot FX, Forward FX, FRNs, Private Credit, Futures, Options, IRS, TRS, CDS, CDO, CDX, Repos, Reverse Repos, MBS, ABS, Private Credit, term deposits, certificates of deposit, commercial paper, repos and reverse repos, private placement MTNs, Treasury Bills, Listed Bonds and Mortgage /Asset backed securities

What next?

- Detailed review of SVendor's FIA methodologies

- Detailed comparison of SVendor's vs 'Existing vendors' methodologies
  - SVendor's methodologies on a par or superior to existing vendor
  - SVendor's methodologies would support most FI investment processes

- Standard demos by SVendor to project team
  - Good User experience, transparency and flexibility

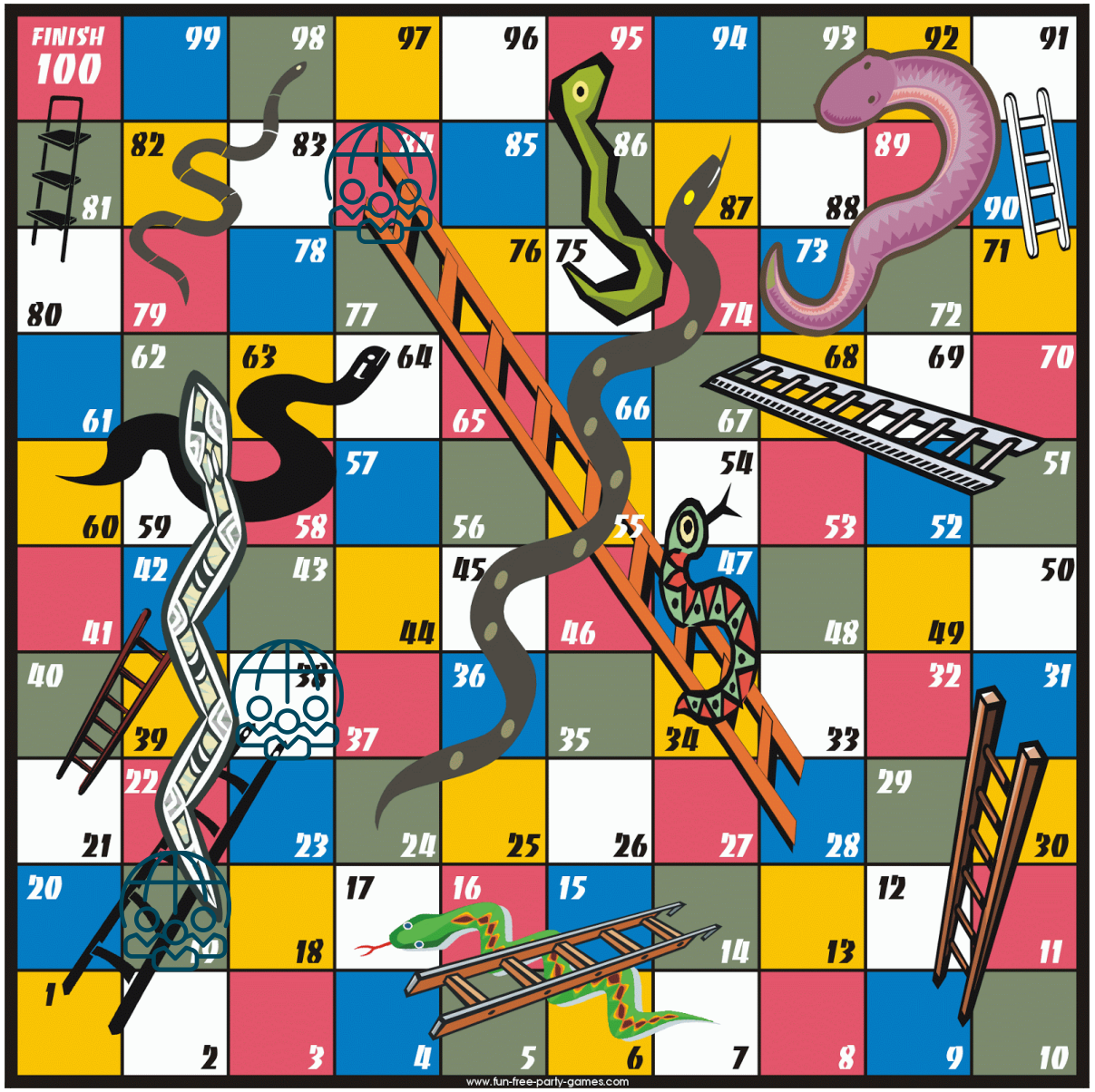
- Demos with derivatives focus by SVendor to project team

- POC stage
  - POCs with GINVCO data by SVendor to project team and Out-Source provider (W-ASP)
  - POCs with GINVCO data by SVendor to project team, Investment Managers and assistants

- SVendor chosen as preferred option

- Discussions on TOM commence between Svendor, GINVCO project team and Out-Source provider (W-ASP)

How are we negotiating the River TOM…



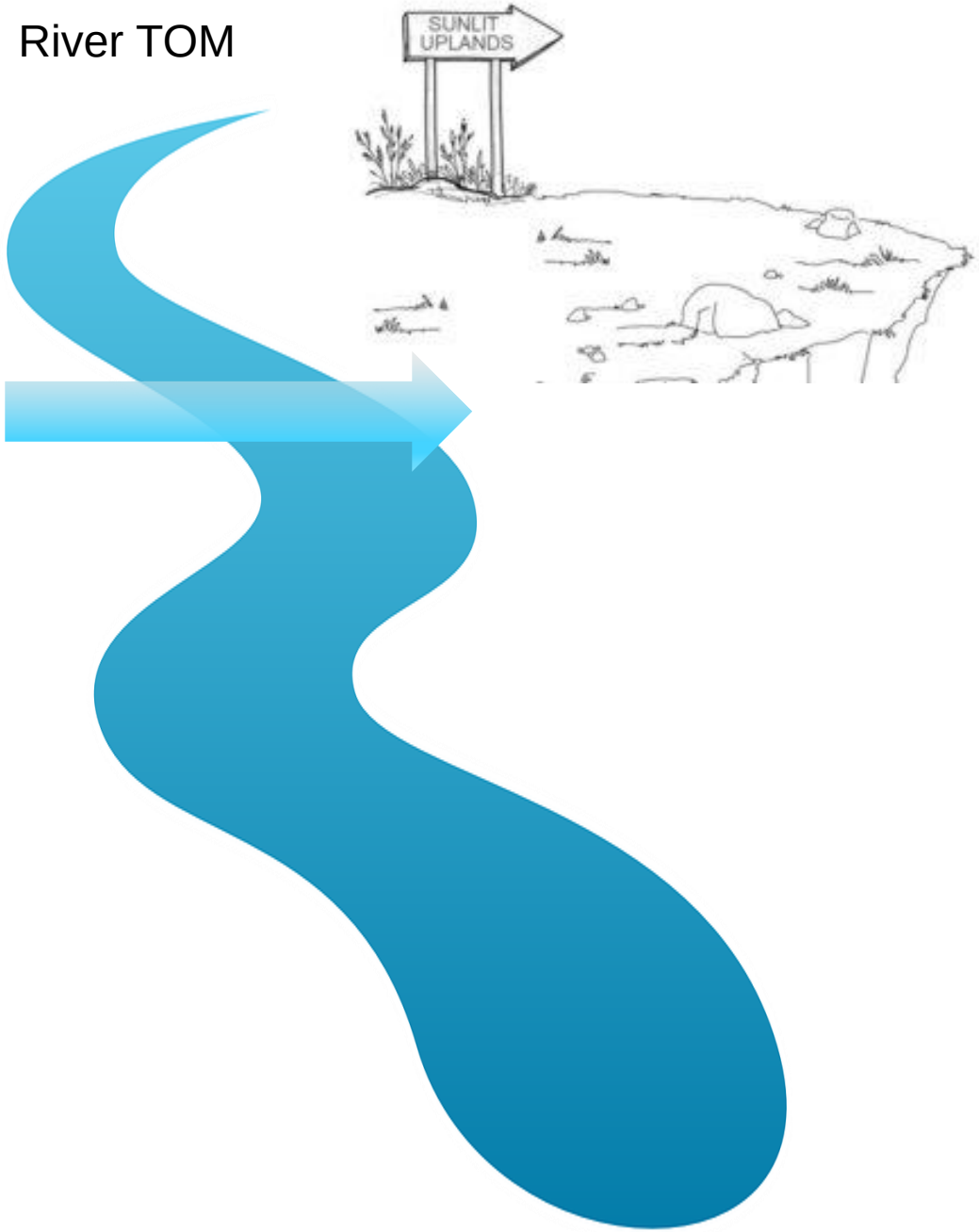
Step 4 – move up to 38 again: SVendor confirms that they can provide an FIA solution at least equivalent to the existing platforms, move on a step

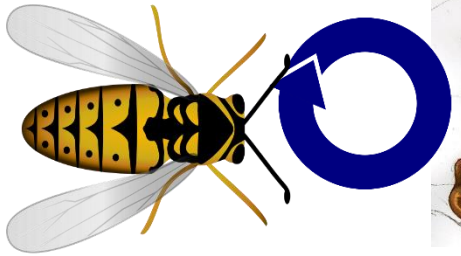
Step 5 – move up to 42 again: SVendor confirms that they can also provide risk numbers

Step 6 – after many small steps, demos, POCs and evaluation of other strategies SVendor and W-ASP look very promising – move up to 84!

Questioning the relationship…

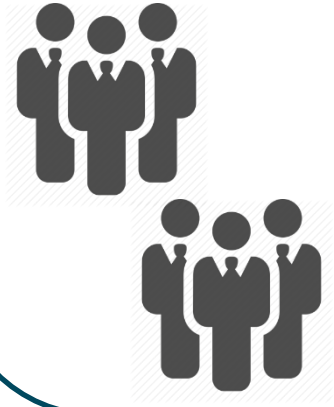
River TOM





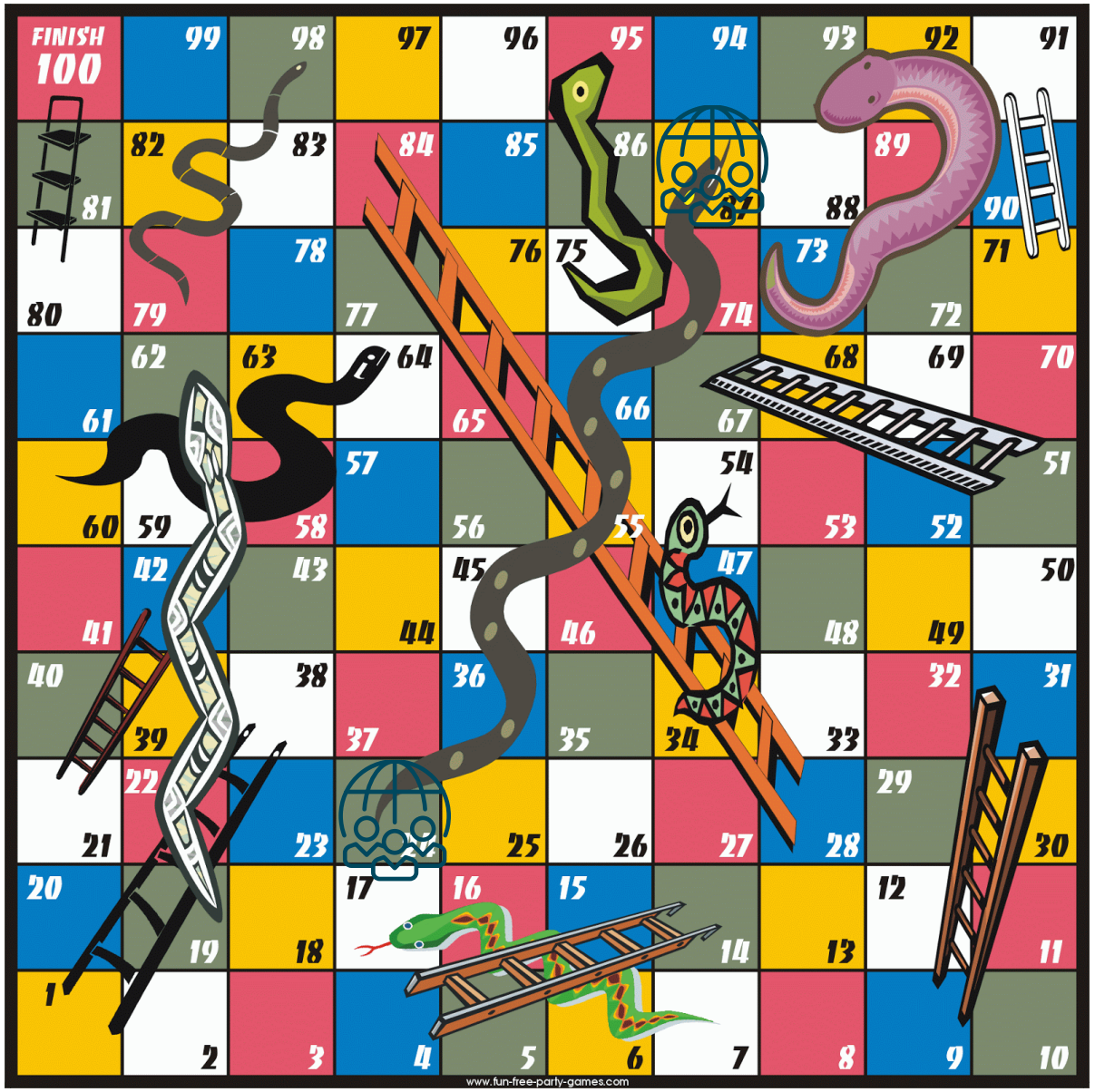
W-ASP

SVendor



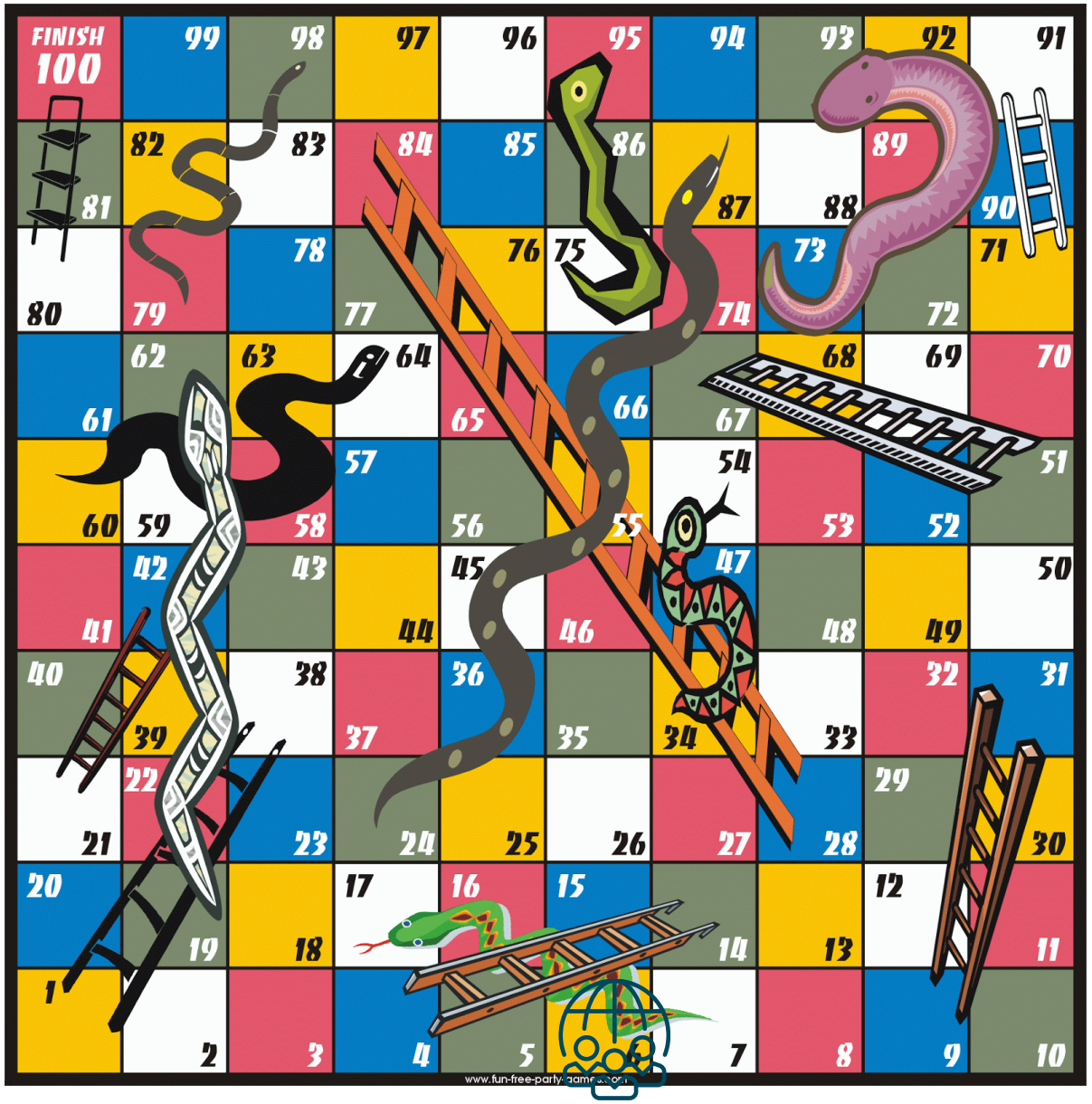
GINVCO

The path across the River TOM



Step 8– move on to 87 – Oh dear!: SVendor reveals that in order to provide the full FIA solution they also need to re-calculate performance all over again! Slide back down to 24….

The path across the River TOM



Step 9–Oh no!: This really was a slippery slope - SVendor reveals they really can't support Strategy Tags, a key part of the strategy – it was really a work-around. Slide back down to 6….

Dr Greybeard seems to be disappointed and has departed!

What were the issues?

Later in the process, in detailed review of TOM it emerged

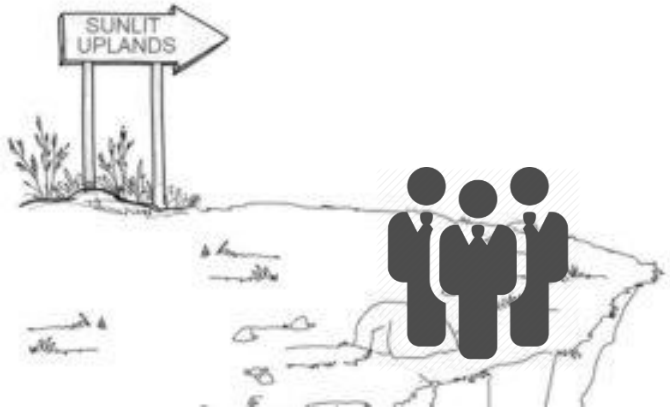
- Full range of effects could only be calculated if SVendor re-calculated performance (in addition to attribution)
  - Preferred TOM model could therefore not be supported
  - Return reconciliation processes required
  - Potential for unclear division of responsibilities / delays
  - FI attribution responsibilities remained in-house

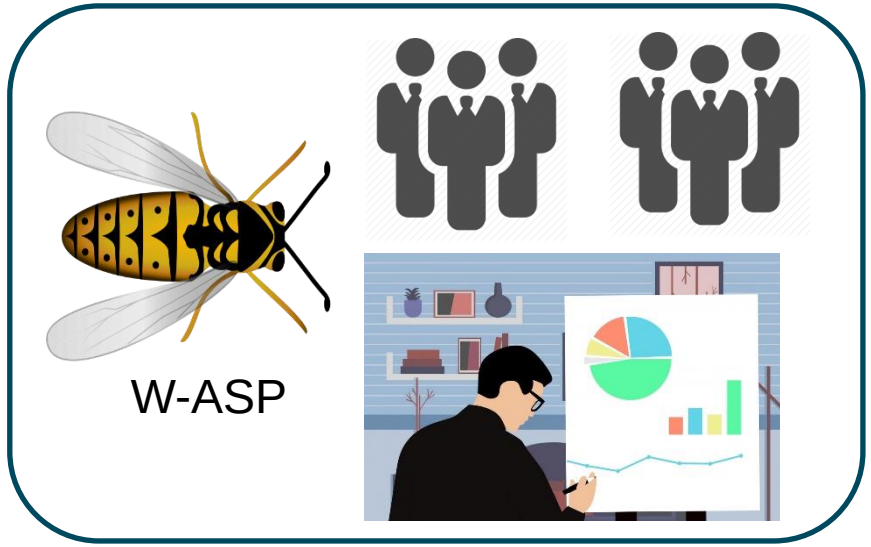
- Strategy tagging not supported

  (although not that critical overall as workaround possible for the few portfolios impacted)

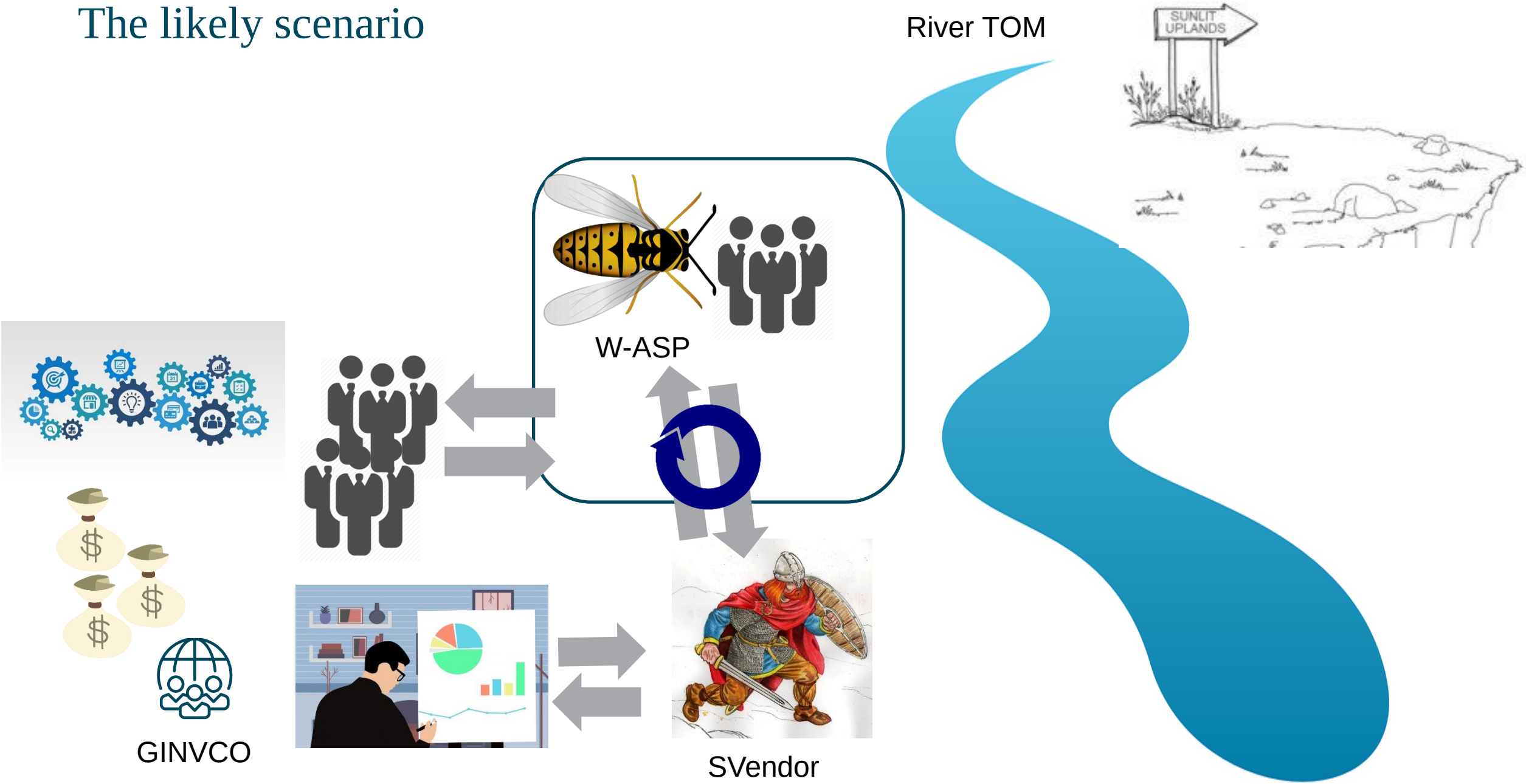
- Other yield curves could not be loaded/used
  - Potential divergence from provided risk numbers

What was dreamt…





The likely scenario



Conclusions and Lessons learnt

- You should consider ALL the relevant factors when choosing an appropriate FIA solution
- Make sure all asset types are covered
- Ensure you can work ‘in partnership’
- Ensure all parties buy-in to the process
- Only calculate performance in one place…
- Ensure consistency across front-office and attribution - Use consistent sets of risk numbers and curves
- Ultimately it’s about data – make sure that the end to end platform supports consistent data

Questions

- Who has been through a FIA solution selection process?
- What factors did you consider?
- What are your preferred models?
- Where is the data sourced from?
- Who will operate the solution?

Consider Everything

BNY MELLON