



CPD

TECHNICAL UPDATE

**Improving forecasting,
a critical component of the G in ESG**

Wednesday 22 May | 10:00am–11:15am

Casper Kaars Sijpesteijn
Associate Director

David Mountjoy
Director

Gill E Ellyard
Associate Director

Mike GN Williams
Head of Digital Products



Introduction

Casper Kaars Sijpesteijn

Industry experts speaking today



Casper Kaars Sijpesteijn
Finance Function Improvement



David Mountjoy
Modelling



Mike Williams
Head of Digital Products



Gill E Ellyard
Finance Function Improvement

Agenda – what we will discuss today

1 Establishing governance over your forecasting process

2 How to design and build a great forecast model

3 Forecasting applications and analytics



Establishing governance over your forecasting process

Gill Ellyard

What is governance?



Defined process and controls are key



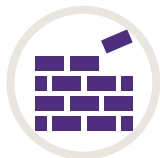
Update business risks
within strategy



Timeline with roles
and responsibilities



Monitoring risks to
achieving forecast



Be clear on your
building blocks



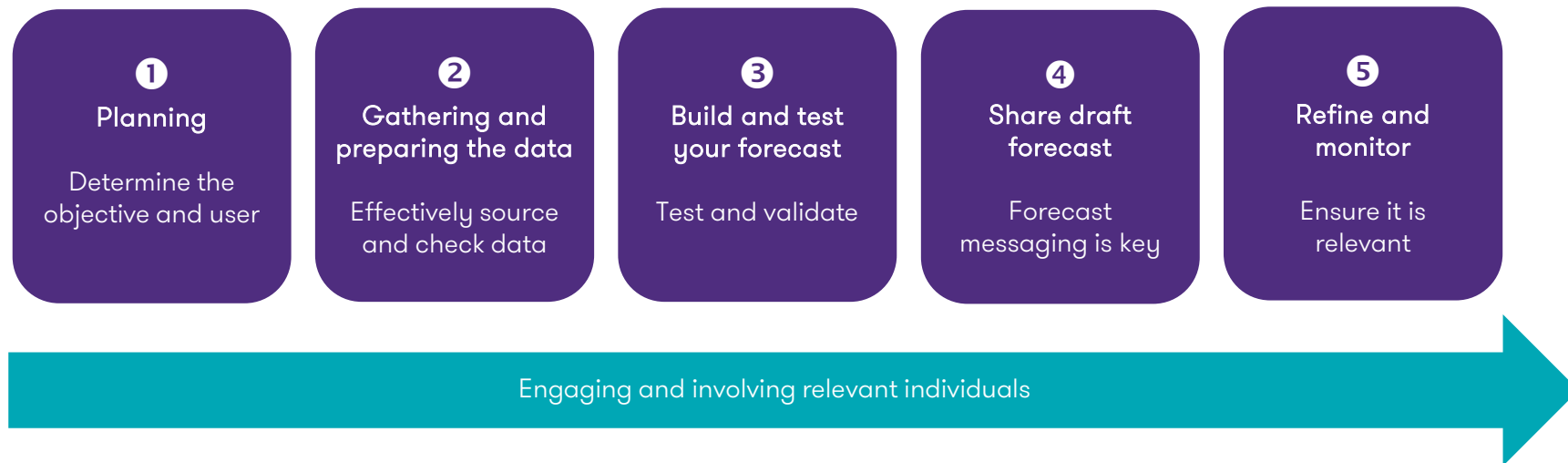
Buy in from senior
stakeholders



Board review and
approval

Establish and document a methodical process

Often individuals start a forecast by gathering data (qualitative or quantitative) rather than taking a step back and asking the important question of what are we trying to forecast and why?



How to design and build a great forecast model

David Mountjoy

Financial model design considerations



Forecast timeline

- Length of forecast
- Periodicity



Model outputs

- Profit and Loss, Cash Flow, Balance Sheet
- Other KPIs

Model
purpose
and users



Divisional structure

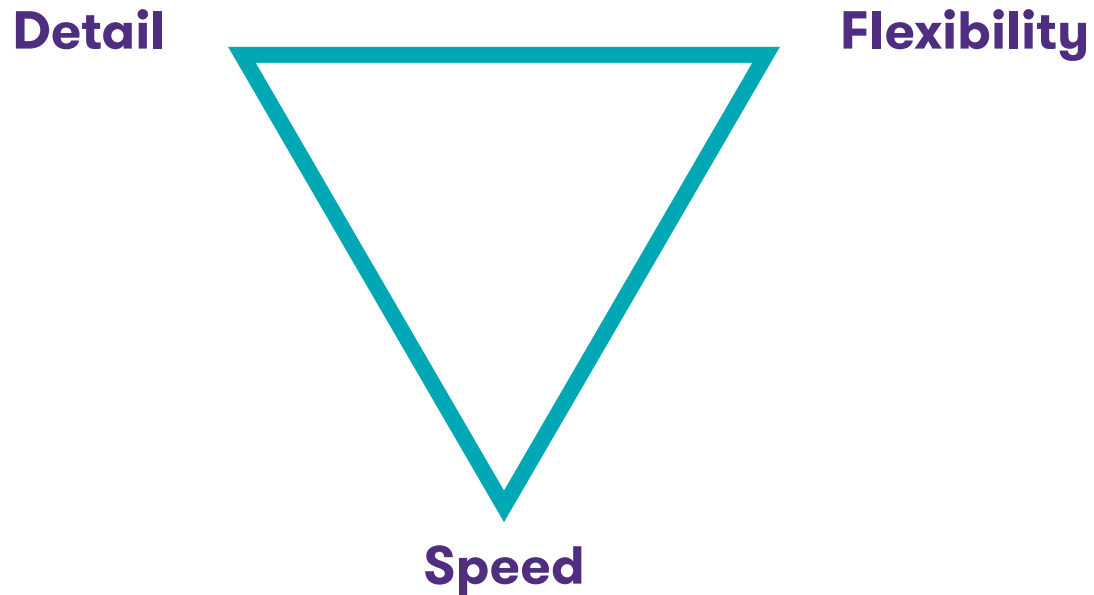
- Group, entity, division, region
- Which outputs at which level?



Forecast drivers

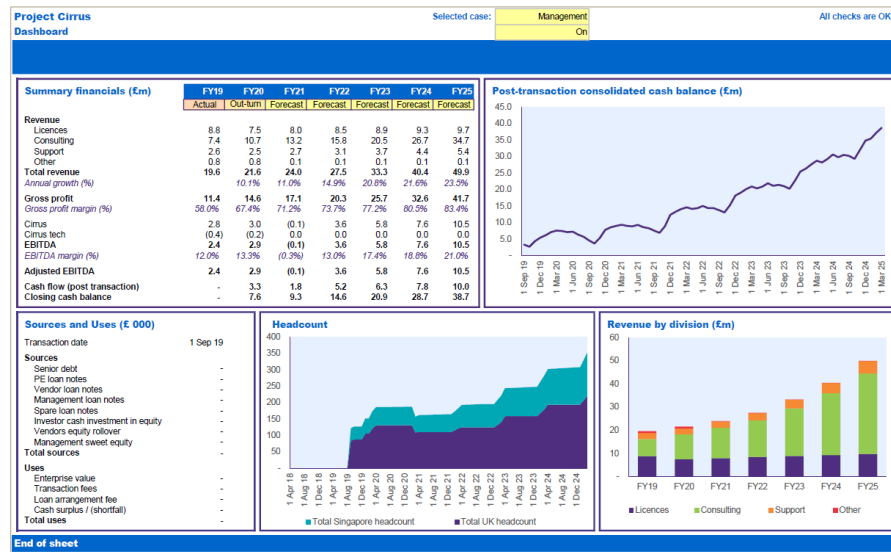
- How will the forecasts be driven?

Model design trade-offs



Long-term planning

- **Timeline:** 3–10 years, monthly or quarterly
- **Outputs:** Integrated P&L, BS, CF
- **Divisions:** key divisions only
- **Drivers:** focus on flexibility



Budgeting

- **Timeline:** usually one year monthly
- **Outputs:** P&L in detail, BS/CF at high level
- **Divisions:** all cost centres
- **Drivers:** focus on detail

Budget model		All checks are OK					
Profit and Loss input template		Headroom limit breached!					
Navigation		Budget	Budget	Budget	Budget	Budget	Budget
(data is imported into this sheet using the macro controls on the 'BaseCase_Inputs' sheet)		39	39	40	41	42	43
Period	Start date	1 Jan 24	1 Feb 24	1 Mar 24	1 Apr 24	1 May 24	1 Jun 24
End date		31 Jan 24	29 Feb 24	31 Mar 24	30 Apr 24	31 May 24	30 Jun 24
2.2 Revenue							
Ref	Site	€	€	€	€	€	€
000	Bath	€	-	-	-	-	-
001	Birmingham	€	-	-	-	-	-
002	Braford	€	100,733	104,308	108,554	100,010	105,324
003	Brighton & Hove	€	70,011	74,836	74,823	74,837	73,416
004	Bristol	€	43,245	46,107	43,834	42,795	45,566
005	Cambridge	€	-	-	-	-	-
006	Canterbury	€	27,473	30,695	29,106	29,057	31,941
007	Carlisle	€	28,299	29,787	29,015	28,379	32,206
008	Chelmsford	€	38,907	42,046	41,018	37,886	41,790
009	Chester	€	74,880	70,475	76,343	66,885	76,756
010	Chichester	€	36,842	37,988	38,770	33,579	37,080
011	Colchester	€	90,741	96,309	98,942	96,312	99,214
012	Covestry	€	42,285	41,424	41,461	39,715	42,490
013	Derby	€	77,880	80,072	84,299	74,837	86,670
014	Doncaster	€	22,971	23,415	26,033	22,117	25,452
015	Durham	€	-	-	-	-	-
016	Ely	€	74,816	77,006	76,654	72,100	75,073
017	Exeter	€	52,786	55,406	55,125	49,785	58,601
018	Glooucester	€	65,614	65,744	74,648	66,324	70,060
019	Hereford	€	40,059	36,905	38,547	35,344	37,360
020	Kingston-upon-Hull	€	34,484	34,121	33,648	31,539	35,020
021	Lancaster	€	37,866	30,787	36,806	33,953	40,775
022	Leeds	€	32,576	38,124	36,591	35,978	38,116
023	Leicester	€	47,175	48,589	47,806	43,584	47,841
024	Lichfield	€	27,156	29,452	28,467	29,291	28,131
025	Lincoln	€	91,804	94,239	103,395	87,473	97,744
026	Liverpool	€	111,025	119,304	128,062	102,870	113,120
027	London	€	87,160	77,084	72,130	68,703	74,812
028	Manchester	€	77,307	86,948	87,664	74,227	80,034
029	Milton Keynes	€	45,936	52,842	51,614	39,039	62,285
030	Newcastle-upon-Tyne	€	102,193	108,383	104,767	102,397	104,562
031	Norwich	€	55,465	58,901	52,096	54,149	51,757
032	Nottingham	€	82,965	94,575	89,878	88,280	94,481
033	Oxford	€	-	-	-	-	-
034	Peterborough	€	57,303	61,291	59,525	56,530	60,926
035	Plymouth	€	143,242	146,800	147,935	129,725	150,160
036	Portsmouth	€	-	-	-	-	-
037	Preston	€	-	-	-	-	-
038	Ripon	€	73,970	86,945	81,178	74,555	86,630
039	Salford	€	81,941	89,498	77,760	78,924	79,432
040	Salisbury	€	129,449	141,337	122,844	121,523	125,486
041	Sheffield	€	-	-	-	-	-
042	Southampton	€	-	-	-	-	-
043	Southend-on-Sea	€	-	-	-	-	-
044	St Albans	€	105,790	107,544	109,123	96,780	108,025
045	Stote on Trent	€	51,247	58,360	59,125	60,088	53,891
046	Sunderland	€	30,070	31,698	30,780	28,564	30,435
047	Truro	€	126,458	133,909	132,801	116,801	133,538
048	Walsfield	€	65,302	71,535	70,534	65,958	74,228
049	Wells	€	67,689	70,308	70,464	64,499	69,460

What do you want from a financial model?



transparency



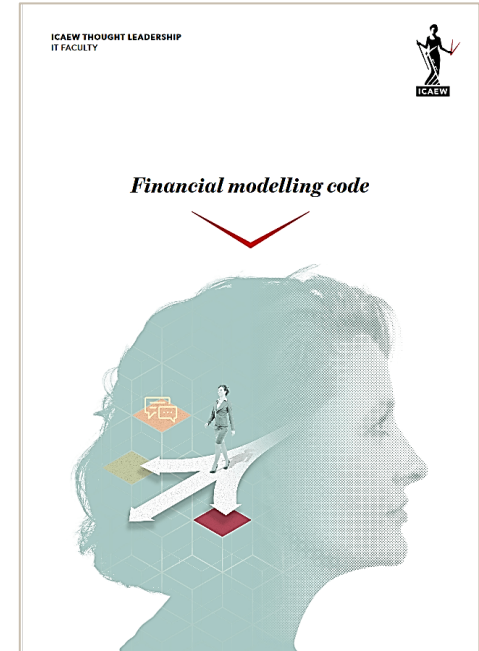
flexibility



efficiency



credibility



Keep things simple

- **Model design:** watch out for unnecessary complexity
- **Writing formulas:**
 - Keep formulas short
 - Use simple functions
 - Break calculations into steps

Client	Projected B/Sheet	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14
		(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
FINANCED BY:									
Share Capital	21,600	3,802	3,802	3,802	3,802	3,802	3,802	3,802	3,802
Share Premium Account	194,400	194	194	194	194	194	194	194	194
Capital Redemption Reserve	4,000	4	4	4	4	4	4	4	4
Profit & Loss A/C Brought Forward	2,218,785	2,731	2,731	2,731	2,731	2,731	2,731	2,731	2,731
Profit/(Loss) YTD	-	(11,607)	(11,464)	(11,301)	(11,018)	(10,938)	(843)	(693)	(188)
Euro Loan Repayments	2,438,785	5,124	5,267	5,221	5,513	5,699	5,888	6,239	6,664
Mortgage Repayments (inc Interest)		2	2	2	2	2	2	2	2
Equity Loan Repayments (inc Interest)		4	4	4	4	4	4	4	4
Bank Overdraft	2,512,112	4,714	4,909	5,889	5,525	5,251	5,051	5,082	5,239
Invoice Finance Availability		7,463	8,216	9,200	9,940	7,000	7,000	7,000	7,000
Surplus/(Deficit)		2,750	3,306	3,311	4,415	1,749	1,949	1,918	1,761
	Balance sheet plug	-	202.72	-	202.72	-	202.72	-	202.72
Projected Profit (by/10)	151,421.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Per Draft B/Sheet	62,227.49								
Difference	89,193.51								
		-	1,988.72	-	1,988.72	-	1,988.72	-	1,988.72
Stock Ratio		28.99	32.37	32.30	32.92	30.73	30.64	29.60	31.07
Debtor Ratio (exc Inter Co)		74.21	77.21	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
Creditor Ratio		81.39	85.37	85.47	91.77	87.68	87.08	82.98	80.57
Total Bank Debt									
Invoice Finance		4,714	4,909	5,889	5,525	5,251	5,051	5,082	5,239
Mortgage		765	765	765	765	760	755	750	745

Project Impacts		All values are 0%																			
Profit and Loss calculations		Sensitive are 0%																			
Management	Period	FY14		FY15		FY16		FY17		FY18		FY19		Actual		Actual		Actual		Actual	
		1 Mar 23	31 Mar 24	1 Mar 24	31 Mar 25	1 Mar 25	31 Mar 26	1 Mar 26	31 Mar 27	1 Mar 27	31 Mar 28	1 Mar 28	31 Mar 29	1 Mar 29	31 Mar 30	1 Mar 30	31 Mar 31	1 Mar 31	31 Mar 32	1 Mar 32	31 Mar 33
1 Sales																					
1.1 Existing products																					
Annual sales before sensitivity																					
Red	€ 000	-	10,900	10,900	10,900	10,900	10,900	10,900													
Yellow	€ 000	-	2,900	2,900	2,914	2,907	2,902														
Green	€ 000	-	3,720	3,990	4,101	4,368	4,522														
Blue	€ 000	-	2,780	2,970	3,287	3,594	3,953														
Annual sales after volume sensitivity																					
Red	€ 000	-	10,900	10,900	10,900	10,900	10,900														
Yellow	€ 000	-	2,900	2,914	2,907	2,902															
Green	€ 000	-	3,720	4,101	4,368	4,522															
Blue	€ 000	-	2,914	3,287	3,594	3,953															
Sales volume sensitivity		%	-	0.0%	0.0%	0.0%	0.0%	0.0%													
Red	€ 000	-	11,772	11,772	11,772	11,772	11,772														
Yellow	€ 000	-	2,900	2,914	2,907	2,902															
Green	€ 000	-	4,010	4,216	4,428	4,651	4,883														
Blue	€ 000	-	2,914	3,287	3,594	3,953															
Year number		#																			
Red	€ 000																				
Yellow	€ 000																				
Green	€ 000																				
Blue	€ 000																				
Seasonality																					
Percentage of sales sold in month:																					
Red	%		7.5%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Yellow	%		8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Green	%		7.5%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Blue	%		7.5%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Percentage of sales sold in month:																					
Red	%		7.5%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Yellow	%		8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Green	%		7.5%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Blue	%		7.5%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%

Separate input assumptions

- Anyone can find and understand assumptions behind forecast
- It's clear which cells can be changed
- Use cell shading
- Don't hard-code anything

Project Impala
Input assumptions

All checks are OK
Sensitivities are ON

	Period	Forecast	Forecast	Forecast	Forecast	Actual	Actual	Forecast
	Start date	FY24	FY25	FY26	FY27	FY28	13	14
	End date	1 Apr 23	1 Apr 24	1 Apr 25	1 Apr 26	1 Apr 27	1 Apr 28	1 Apr 29
		31 Mar 24	31 Mar 25	31 Mar 26	31 Mar 27	31 Mar 28	30 Apr 24	31 May 24
1 Sales								
1.1 Current products								
Annual sales in first forecast year								
Red	€ 000		10,900					
Yellow	€ 000		2,550					
Green	€ 000		3,720					
Blue	€ 000		2,780					
Total current products	€ 000		19,950					
Annual sales growth rate								
Red	% p.a.							
Yellow	% p.a.		2.0%	8.0%	15.0%	15.0%		
Green	% p.a.		5.0%	5.0%	5.0%	5.0%		
Blue	% p.a.		10.0%	10.0%	10.0%	10.0%		
Annual sales								
Red	€ 000	-	10,900	10,900	10,900	10,900	10,900	
Yellow	€ 000	-	2,550	2,550	2,754	3,167	3,642	
Green	€ 000	-	3,720	3,906	4,191	4,306	4,522	
Blue	€ 000	-	2,780	2,970	3,267	3,594	3,953	
Total current products	€ 000	-	19,950	20,326	21,022	21,967	23,017	
Seasonality of sales								
Red	%							
Yellow	%	100% check					April	May
Green	%	OK					7.0%	9.0%
Blue	%	OK					8.3%	9.3%
		OK					7.0%	9.0%
		OK					7.0%	9.0%
1.2 New products								
Annual sales								
Orange	€ 000			70	350	950	2,200	
Purple	€ 000				270	490	3,950	
Total new products	€ 000			340	750	2,800	6,150	

Use formatting to guide the user

- Cell shading
- Font colour
- Clear negative signs
- Colour-code tabs

2 Model key	
2.1 Cell formats	
	100
	100
	100
	100
	-
100	Called up assumption
10.0%	Sensitivity
Notes	Notes and instruction text
RngLabel	Range name label
OK	Error check passed
ERROR	Error check failed
	Input number
	Historic input number
	Locked input (should not be changed)
	Blocked input (should not be used)
	Blocked area or hard-coded zero in calculations
	Formula is inconsistent from adjacent formula in the row or block

Navigation	Dashboard	FinStats	Actuals	Sensitivities	Assumptions	P&L_Calcs	BS_Calcs	Checks	Setup
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Other transparency tips

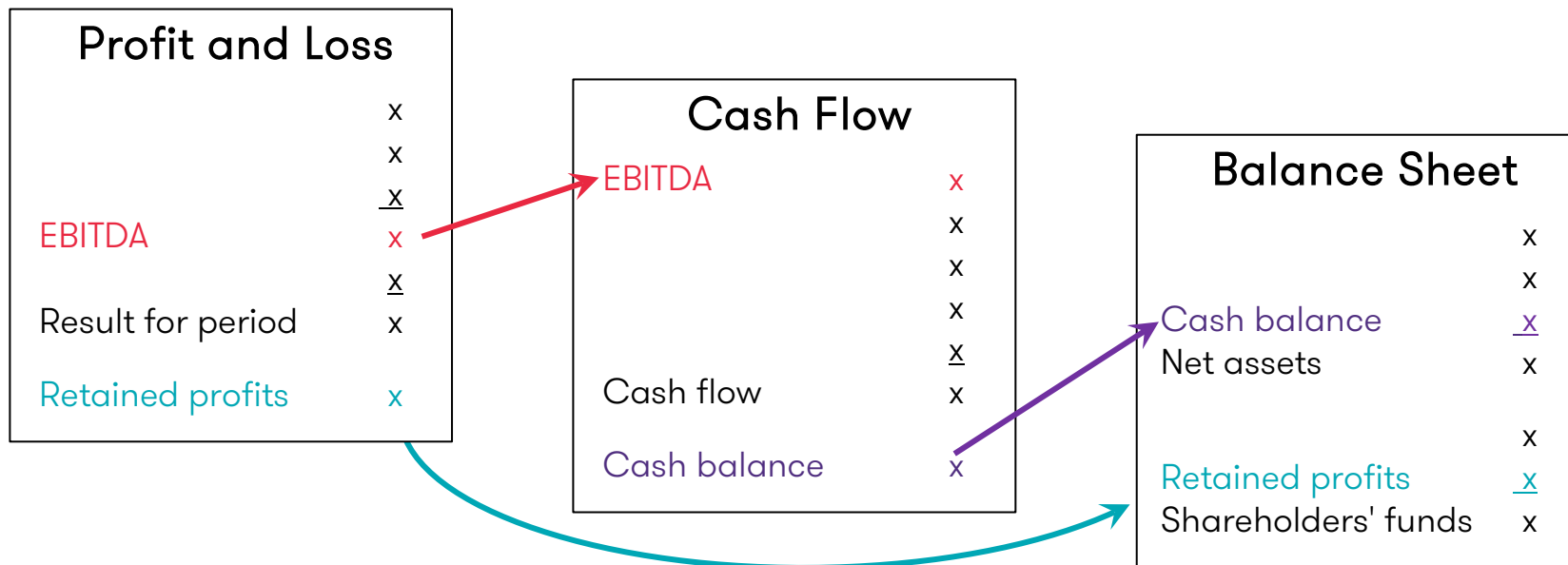
Use clear labelling

- Every row should be labelled
 - What does it show?
 - What units is it in?
- Every sheet should have a title
- Use clear tab names

Don't hide anything

- Don't hide sheets
- Don't hide rows or columns
- Don't use white text on a white background!

Make sure your financial statements are integrated



☑ Balance Sheet balances

Present outputs clearly and compellingly

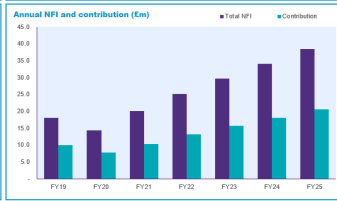
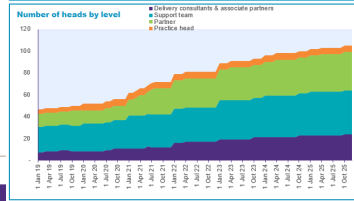
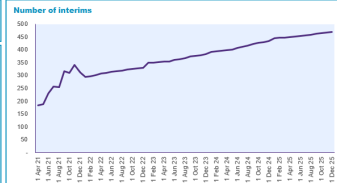
Project Impala		All checks are OK						
Output financial statements		Actual	Out-turn	Forecast	Forecast	Forecast	Forecast	
Sensitivities are ON		FY24	FY25	FY26	FY27	FY28	FY29	
Navigation	Period	Start date	End date	Start date	End date	Start date	End date	
	1 Apr 23	31 Mar 24	1 Apr 24	31 Mar 25	1 Apr 25	31 Mar 26	1 Apr 27	31 Mar 28
	1 Apr 23	31 Mar 24	1 Apr 24	31 Mar 25	1 Apr 25	31 Mar 26	1 Apr 27	31 Mar 28

1 Profit and Loss account							
Sales:							
Red	£ 000	9,869	11,223	11,301	11,301	11,301	11,301
Yellow	£ 000	1,311	2,640	2,844	2,855	3,284	3,776
Green	£ 000	3,572	3,761	4,050	4,252	4,465	4,688
Blue	£ 000	2,962	2,716	3,079	3,337	3,708	4,090
Orange	£ 000	-	-	73	363	985	2,281
Purple	£ 000	-	-	230	415	1,918	4,044
Total sales	£ 000	17,414	20,348	21,427	22,674	26,679	30,168
Cost of sales:							
Red	£ 000	(6,031)	(7,287)	(7,416)	(7,416)	(7,416)	(7,416)
Yellow	£ 000	(786)	(1,598)	(1,460)	(1,428)	(1,642)	(1,888)
Green	£ 000	(2,322)	(2,296)	(2,296)	(2,128)	(2,232)	(2,344)
Blue	£ 000	(1,597)	(1,639)	(1,700)	(1,694)	(1,863)	(2,049)
Orange	£ 000	-	-	(29)	(144)	(390)	(993)
Purple	£ 000	-	-	(169)	(251)	(1,159)	(2,443)
Total cost of sales	£ 000	(10,737)	(12,820)	(13,010)	(13,058)	(14,702)	(17,044)
Gross profit:							
Red							
Yellow							
Green							
Blue							
Orange							
Purple							
Total gross profit							
Staff costs							
Bonus							
Sales and marketing costs							
Rent							
Legal and professional costs							
Other overheads							
EBITDA							

Filters (If nothing is selected in a category, all items will be shown by default)

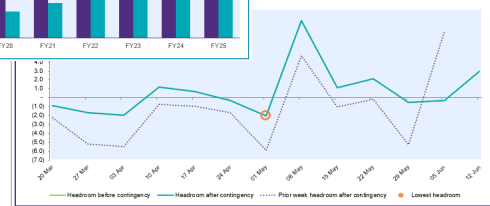
Practice choose Revenue stream choose

Summary financials (€m)	FY20						FY21						FY22						FY23						FY24						FY25					
	Actual	Actual	Out-turn	Forecast	Forecast	Forecast	Actual	Actual	Out-turn	Forecast	Forecast	Forecast	Actual	Actual	Out-turn	Forecast	Forecast	Forecast	Actual	Actual	Out-turn	Forecast	Forecast	Forecast	Actual	Actual	Out-turn	Forecast	Forecast	Forecast						
Sales	63.8	48.6	66.0	67.1	103.0	119.5	135.1																													
Cost of sales	(45.6)	(34.2)	(45.9)	(45.9)	(73.2)	(85.4)	(96.6)																													
Search NFI	6.3	4.9	5.1	5.7	11.5	12.8	14.4																													
Market NFI	11.6	8.5	12.0	12.6	18.5	21.3	24.2																													
Total NFI	18.0	14.4	20.1	25.1	29.8	34.1	38.6																													
Annual growth (%)		(27.2%)	40.0%	24.6%	18.4%	14.7%	12.6%																													
Start costs (excl. management bonuses)	(8.0)	(8.6)	(9.7)	(11.9)	(14.1)	(16.0)	(17.0)																													
Contribution	68.0	7.8	10.4	13.2	15.7	15.1	20.6																													
Percentage of NPf	35.4%	54.2%	51.6%	52.0%	52.6%	53.7%	53.9%																													
Average number of heads (excl. central)	48	53	68	81	91	98	103																													
Average NPf per consultant	0.7	0.5	0.5	0.5	0.5	0.6	0.6																													

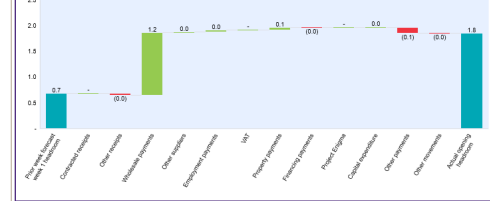


Overdraft limit exceeded

Lowest headroom (€m): (2.8) in week commencing: 1 Mar 23



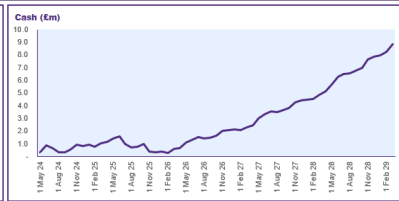
Bridge between prior week forecast and actual opening headroom (€m)



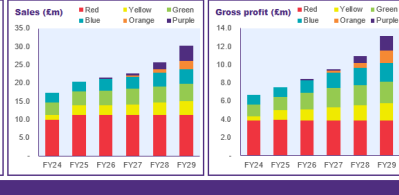
Project Impala Dashboard

Navigation

Summary financials (€m)	FY24						FY25						FY26						FY27						FY28						FY29					
	Actual	Out-turn	Forecast	Forecast	Forecast	Forecast	Actual	Actual	Out-turn	Forecast	Forecast	Forecast	Actual	Actual	Out-turn	Forecast	Forecast	Forecast	Actual	Actual	Out-turn	Forecast	Forecast	Forecast	Actual	Actual	Out-turn	Forecast	Forecast	Forecast						
Revenue	17.4	20.3	21.4	22.6	25.7	30.2																														
Annual growth (%)		16.8%	5.3%	5.4%	13.8%	17.6%																														
Gross profit	6.7	7.5	8.4	9.5	11.0	13.1																														
Gross profit margin (%)	38.3%	37.0%	39.3%	42.2%	42.7%	43.9%																														
EBITDA	2.3	1.4	2.0	2.7	3.9	5.8																														
EBITDA margin (%)	13.4%	7.1%	9.2%	12.1%	15.2%	19.2%																														
Profit after tax	0.1	(1.3)	(0.9)	1.0	2.0	3.8																														
Cash flow (forecast periods only)	-	0.7	(0.4)	1.7	2.6	4.0																														
Forecast cash balance	-	1.0	0.6	2.3	4.9	8.9																														
Forecast D liability	-	(2.2)	(2.4)	(2.5)	(3.0)	(3.9)																														
Forecast net debt	-	(1.2)	(1.8)	(0.2)	1.8	5.8																														



Switches and sensitivities	
Sensitivity switch	On
New product launch switch	On
(more detailed sensitivity controls are on the 'Sensitivities' sheet)	
Sales volume sensitivity	< [slider] > +8%
Sales price sensitivity	< [slider] > -4%
Gross margin sensitivity	< [slider] > +2%
Staff cost sensitivity	< [slider] > -6%
Debtor days sensitivity	< [slider] > +3 days



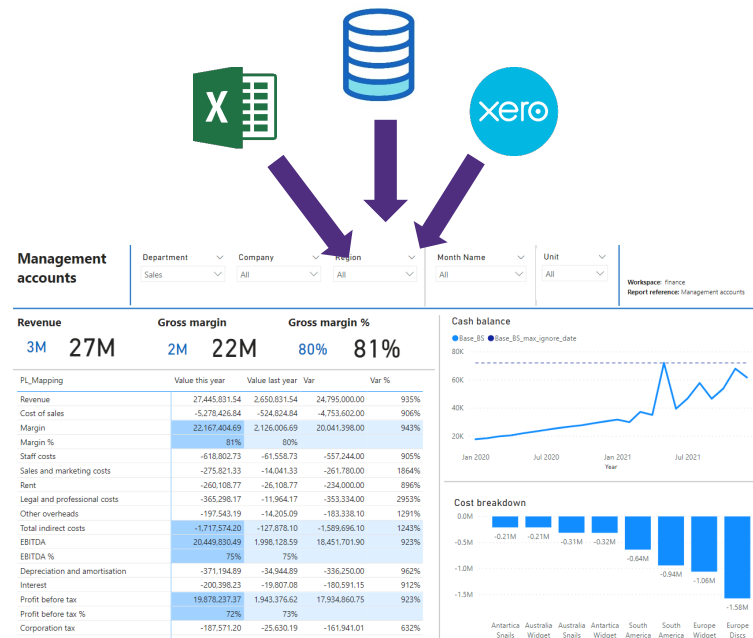
Forecasting applications and analytics

Mike Williams

Why move to a system-based forecasting approach?

Why do we step outside Excel?

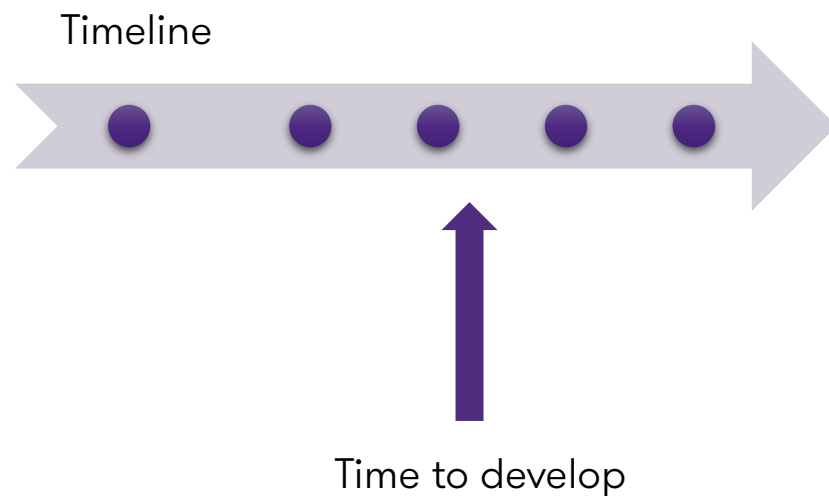
- Recurring forecast
- Shorter term budget cycles
- Live/system generated data
- Multiple data sources
- Granular data
- Managing access and controlling models
- Model size, number!



When is a good time

When is a good time to move to system-based forecasting?

- Large enough team (and budget to develop)
- Appetite for change/culture
- Change in other systems
- Need for auditability of forecast
- More scrutiny
- Data maturity curve



Steps for implementation

How can a business make the transition as easy as possible?

1. Define business problem
2. Sell to the business
3. Design a proper specification for the tool
4. Identify the data sources - consider their quality/accessibility
5. Select the right application for you
6. Engage with stakeholders
7. Phased development approach (MVP)
8. Parallel run for a period of time
9. Feedback and test



Is this right for our business?

What are some of the questions to ask the business before embarking on a system implementation?



Purpose – What is the financial model you plan to develop for?



Users – Who is going to be using the model?



Data – What is the data size for the model input?



Security – What level of security you would like to have?



Change – Are your organisation and users ready for a modelling tool change?



Costs – How much budget you prepare for the upfront and ongoing costs?

Using data analytics in modelling

How can we use data analytics and machine learning to improve our forecasting capability?

- Analytics for model types:
 - Long term: trend forecasting
 - Budgets: sales pipeline, introduce other data
 - Cash flow: churn, LTV, propensity to pay
- Customer analytics
 - Segmentation
 - Profiles
- Visualisation

“

In using business data
– governance/understanding
is extremely important –
Knowing exactly what is what is
paramount to accurate modelling

”

AI in financial forecasting

- Synthetic data – proxy data
- Scenario analysis
- Trend identification
- Write reports
- Building models and writing formulas

Having proper definitions around AI generated information helps control usage in a business

Contact us



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