

# Experiences from Model Development

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# Hello

# Anonymous Alcoholics

## Stats

- Nils Foyen Kjærside
- I'm not 29 yo
- 17 yrs xp in Risk Management
- Work in Risk Analytics - a part of Group Risk Management
- Special interest in efficient designs for customer centric modelling

Danske Bank



DnB NOR



GE Capital

Ma

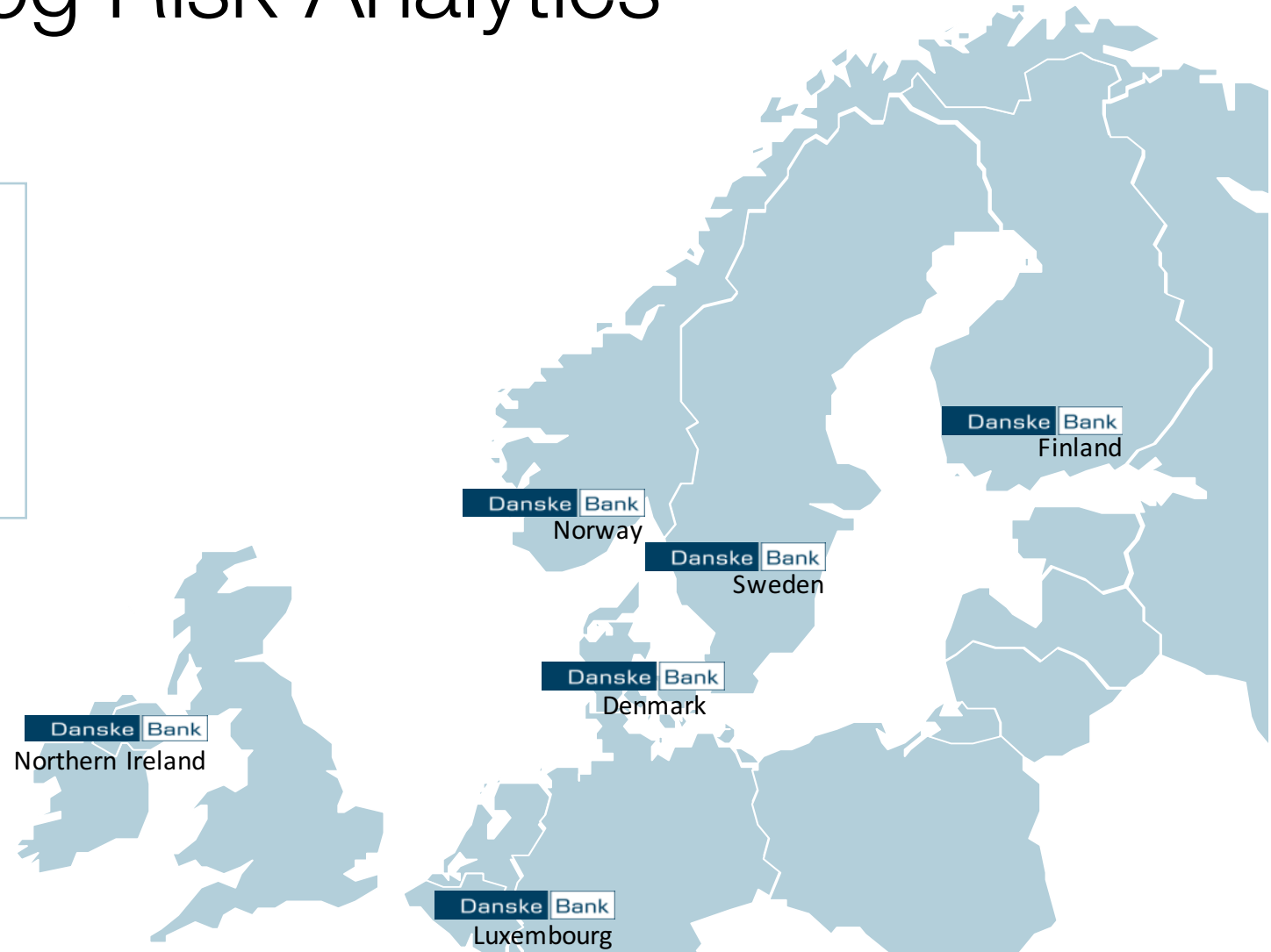


FIH|ERHVERVSBANK

# Danske Bank A/S og Risk Analytics

## Key facts about Risk Analytics

- 100 employees
- Highly skilled and experienced
- Global workforce





**Parental guidance  
advised**



FREE

**PARENTAL  
ADVISORY  
EXPLICIT CONTENT**

ALL CHARACTERS AND  
EVENTS IN THIS SHOW--  
EVEN THOSE BASED ON REAL  
PEOPLE--ARE ENTIRELY FICTIONAL.  
ALL CELEBRITY VOICES ARE  
IMPERSONATED.....POORLY. THE  
FOLLOWING PROGRAM CONTAINS  
COARSE LANGUAGE AND DUE TO  
ITS CONTENT IT SHOULD NOT BE  
VIEWED BY ANYONE

**PG**

Parental  
guidance  
recommended

**X** 18+

**RESTRICTED**

Restricted  
to 18 and over

**R**

**RESTRICTED**

**UNDER 17 REQUIRES ACCOMPANYING  
PARENT OR ADULT GUARDIAN**

**STRONG LANGUAGE, THOUGHTS  
AND IDEAS**

# Model Development

***'Small is the new Big'***



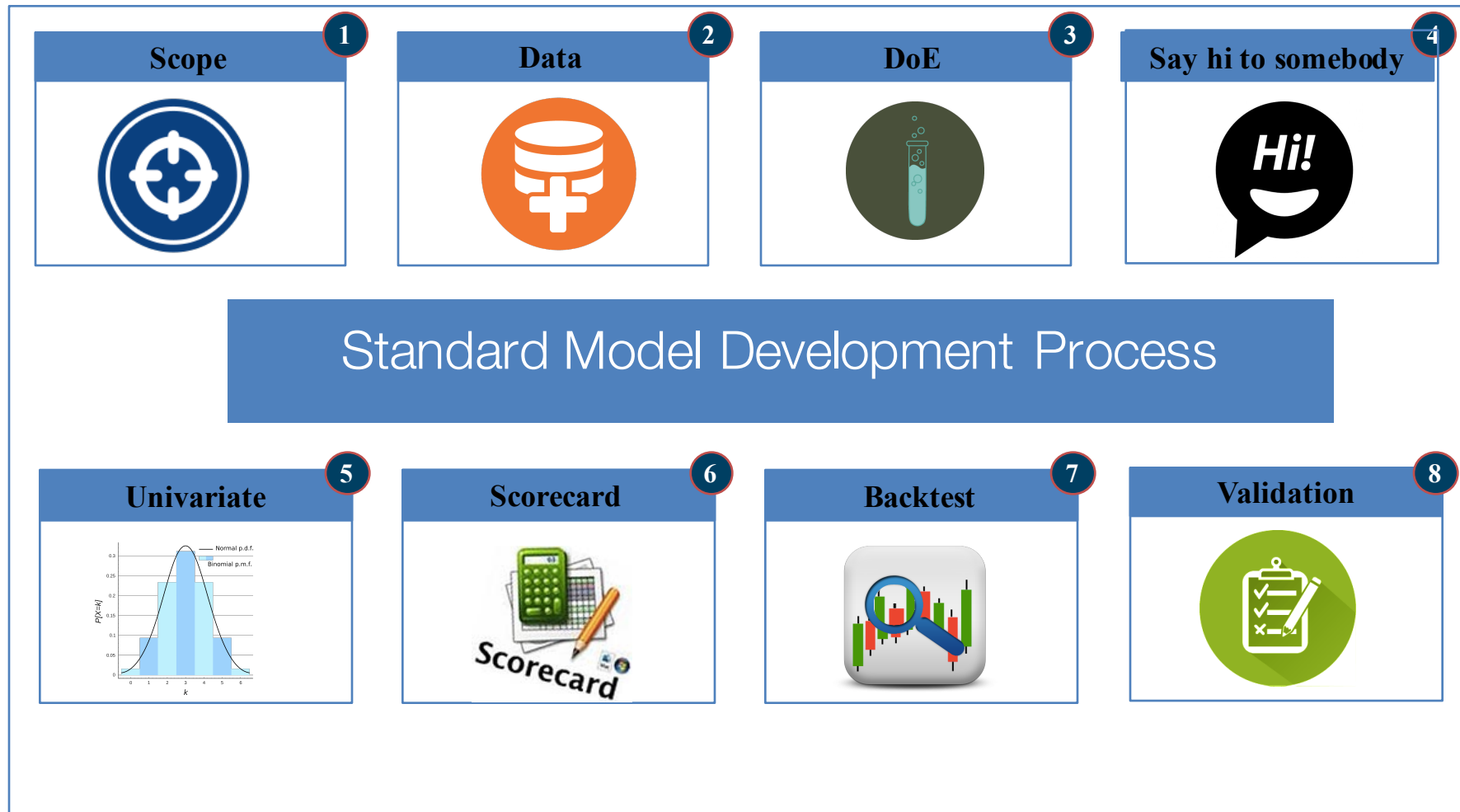


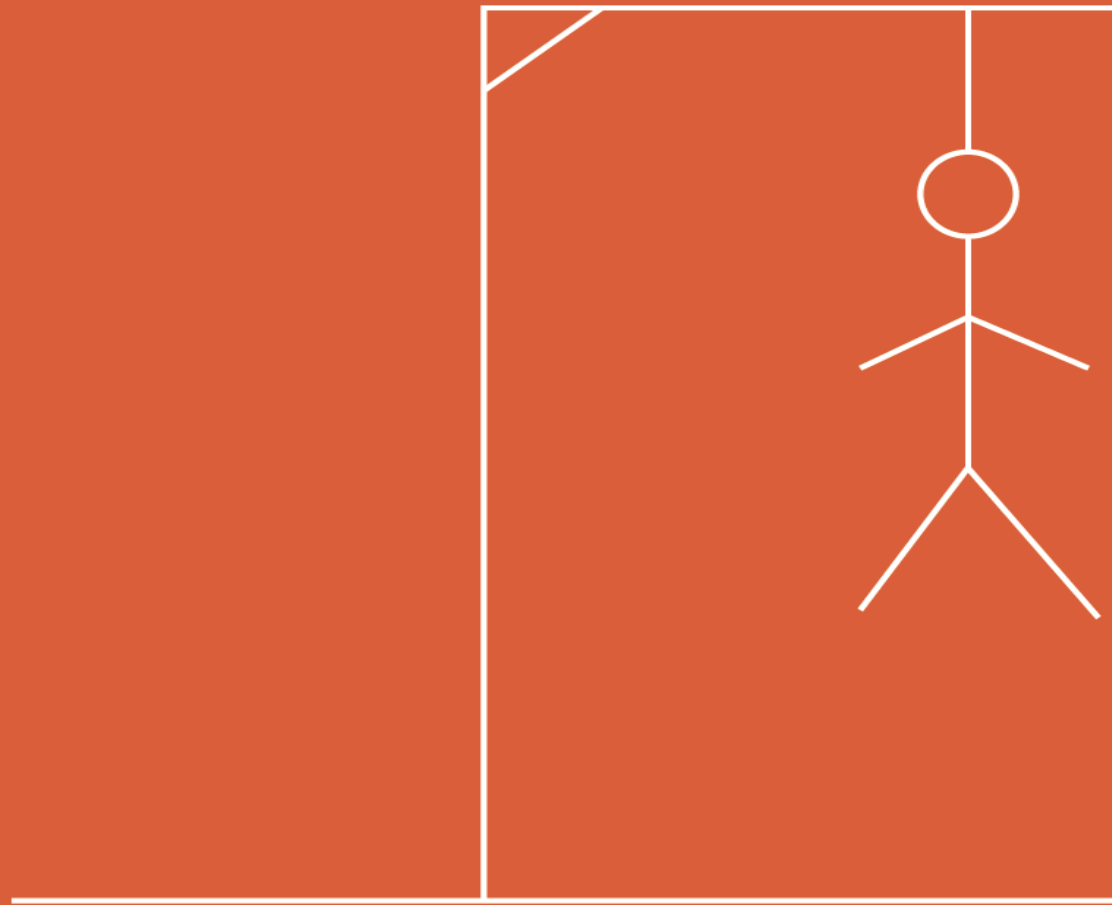
## [Chapter 1]

***'The blinding glimpse of the bleeding obvious'***

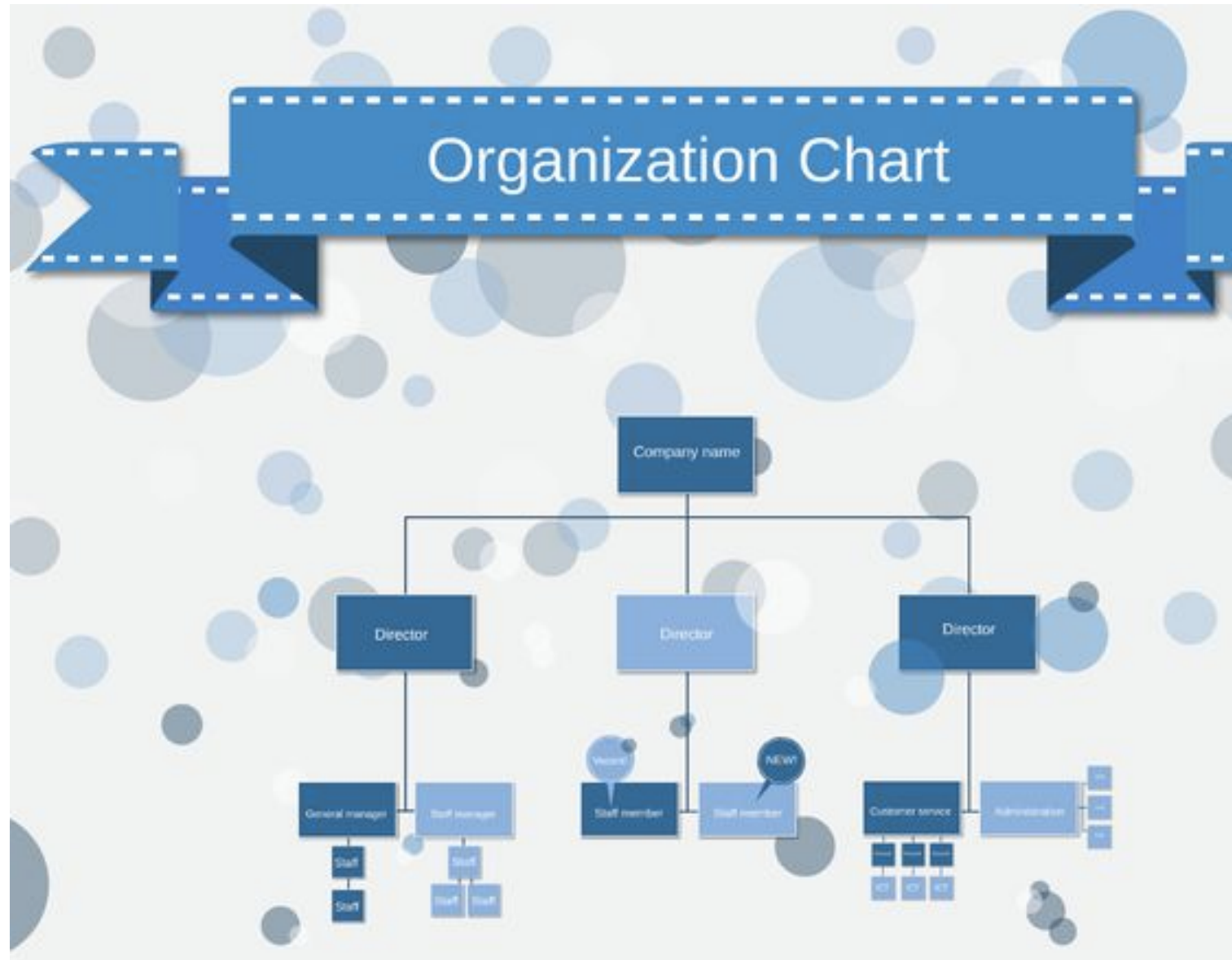


# Well Known Existing Methodology





P O W E R P O I N T



# T-test - statistics driven explanations

```
. regress VO2max age weight heart_rate i.gender
```

Source	SS	df	MS	Number of obs =	100
Model	4196.48274	4	1049.12069	F( 4, 95) =	32.39
Residual	3076.77786	95	32.3871353	Prob > F =	0.0000
Total	7273.2606	99	73.4672787	R-squared =	0.5770
				Adj R-squared =	0.5592
				Root MSE =	5.691

VO2max	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
age	-.1651375	.0627244	-2.63	0.010	-.2896612	-.0406138
weight	-.3845712	.0433226	-8.88	0.000	-.4705773	-.2985651
heart_rate	-.1179705	.0321695	-3.67	0.000	-.181835	-.0541061
gender						
Male	13.20788	1.344397	9.82	0.000	10.53892	15.87685
_cons	87.8303	6.384743	13.76	0.000	75.15498	100.5056

[Chapter 2]

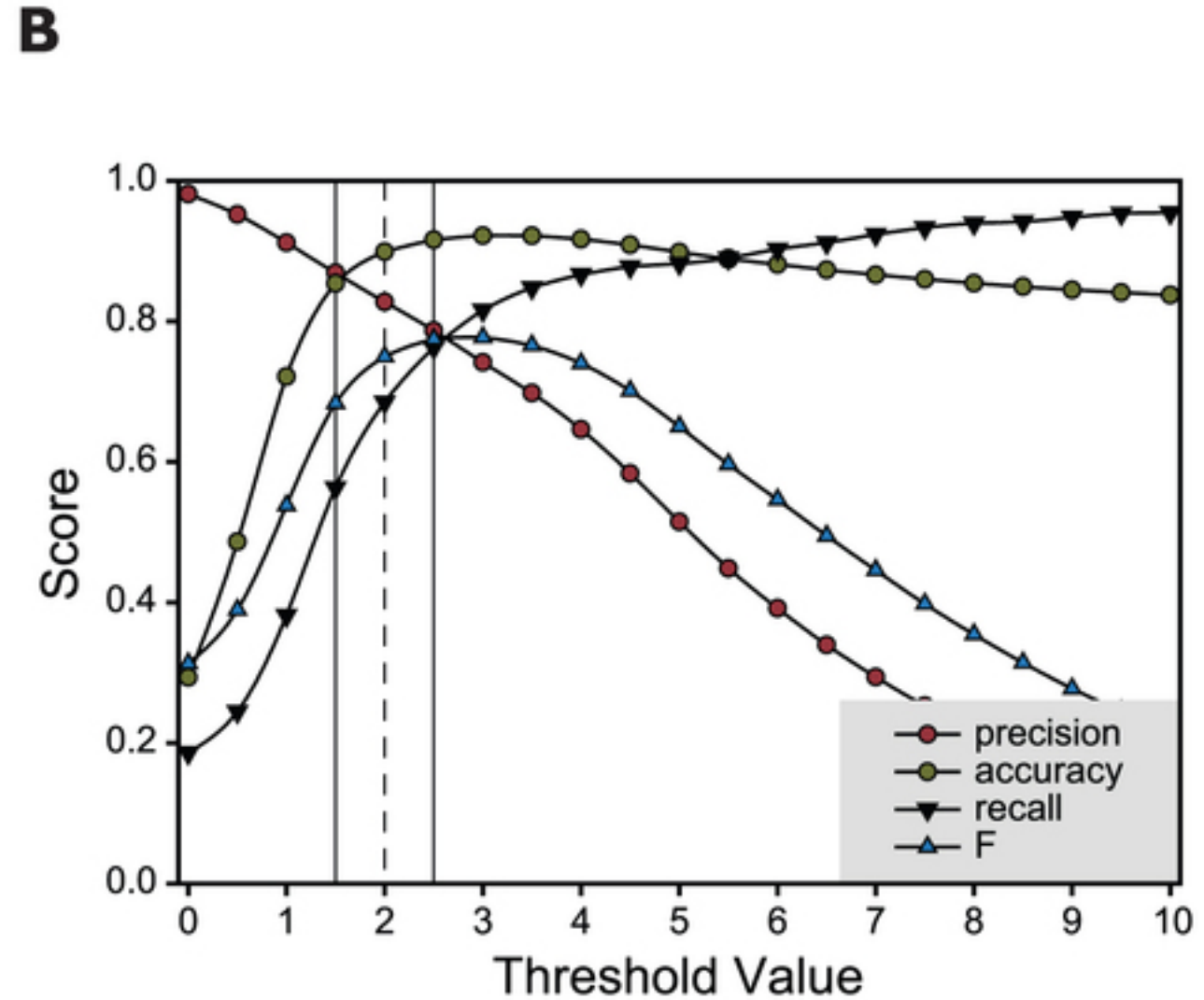
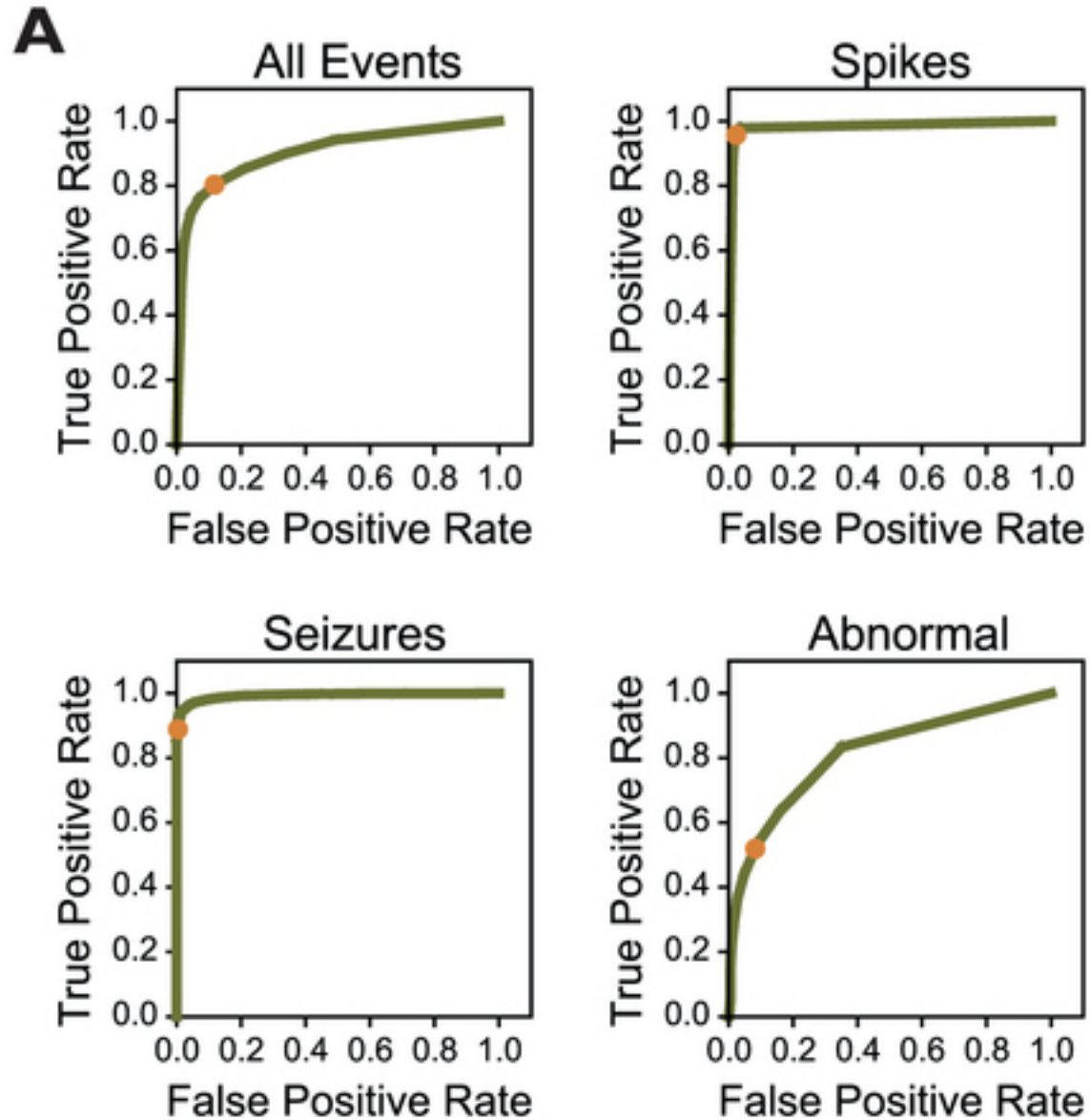
# ***'Run-over Sophie'***



# Discrimination is not a bad thing


- Increase discrimination
- Spread the customers across the rating scale
- Introduction of new measure techniques P&R or F
- GAM Modelling
- Better discrimination yields appropriate risk allocation







# GAM Modelling is very neat

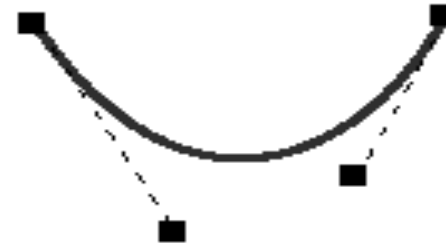
$$g(E(Y)) = s_1(x_1) + s_2(x_2) + \dots + s_p(x_p)$$




Spline



Quadratic Spline



Cubic Spline

[Chapter 3]

# ***'Finding yourself in the margins***





# The Marketing Department performs surveys

Pack Size	6 beer package size	12 beer pack size	24 beer pack size	None of these
Beverage				
Package	Cans	Pints: 330ml	Bottles: 650 ml	
Occasion	After work	On weekends	With dinner	
Choice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# THE GINI GAME™



Characteristics



Attributes

# Easy peasy development process



Talk to people



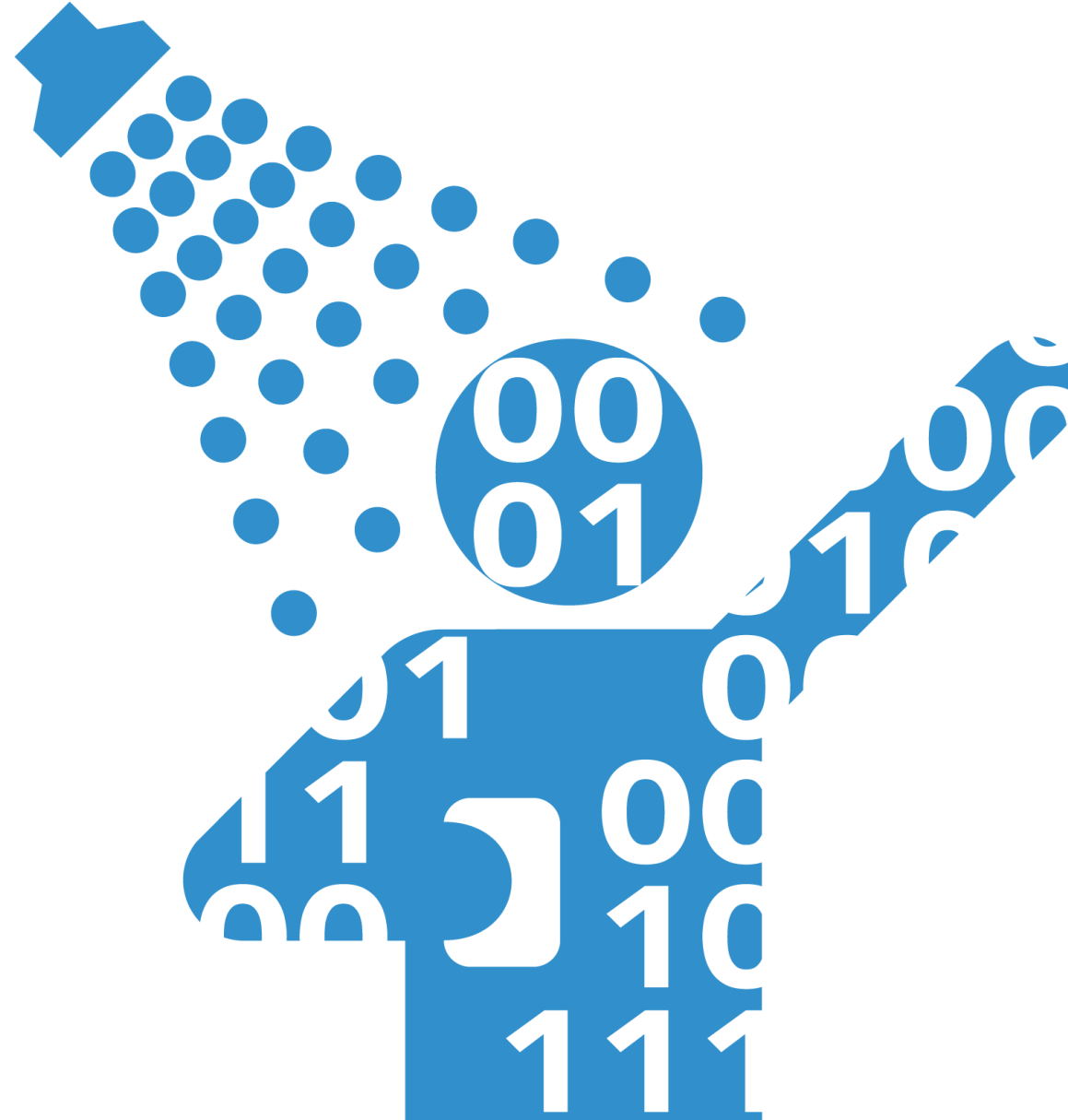
Play ball



Results

# Many roads leads to Rome

Attribute \ Level	1	2	3
Management XP	1,5	0,7	-2,0
Financial management	3,5	0,8	-4,7
Cost Efficiency	1,5	-0,1	-1,27
Asset Quality	1,0	0,33	-1,3
Growth Prospects	1,1	0,1	-1,0
Product Differentiation	1,05	0,66	-2,0





# Questions



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