

Prediction – Delisted Companies

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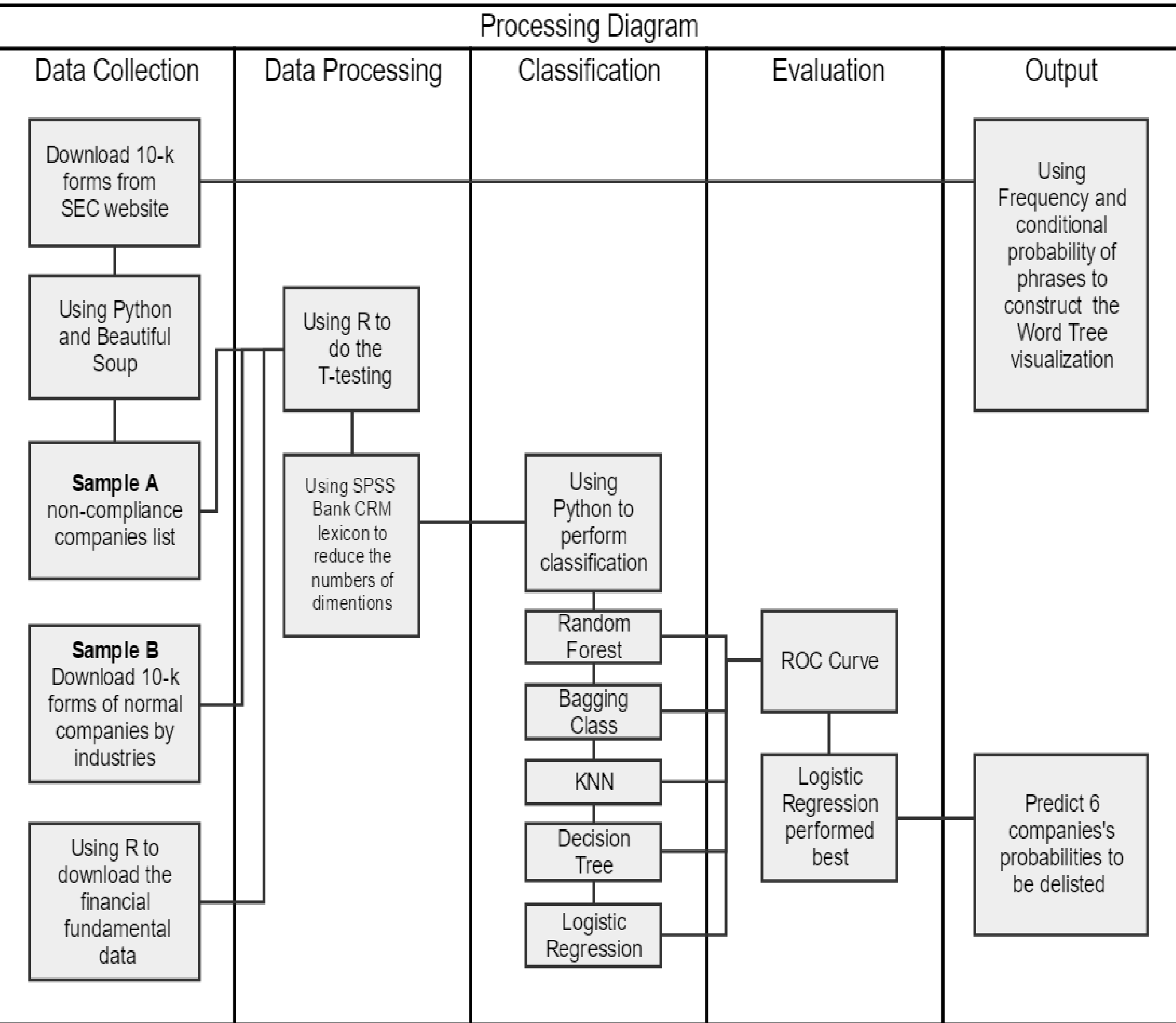
ABSTRACT

- Our team, uses classification models to determine whether companies' delisting would be relevant to the textual contend in annual 10K financial report essentially.
- Our models were developed by investigating in correlation of textual content in 10K in financial statement and risk of delisting as well as analyzing of high frequent word phases.

BUSINESS GOAL

- Investors tend to analyze financial numbers to find the associated risks about those companies. The fact is, very rarely, investors would relate themselves to text analytics in term of strategical decision making. Thus we decide to apply text analytics based on annual 10K reports on SEC.
- We generate a final model which can predict company delisting risk based upon documents required by SEC. And we conclude a Blacklist and a Whitelist of words and compare the difference in topics. We hope that this prediction models could help investors make decision as well as help them prevent the risk to invest in highly probable delisting stocks.

METHODOLOGY



SYSTEM IMPLEMENTATION

- Two tail T-test for companies fundamental financial data
- Ensure two sample are similar and comparable

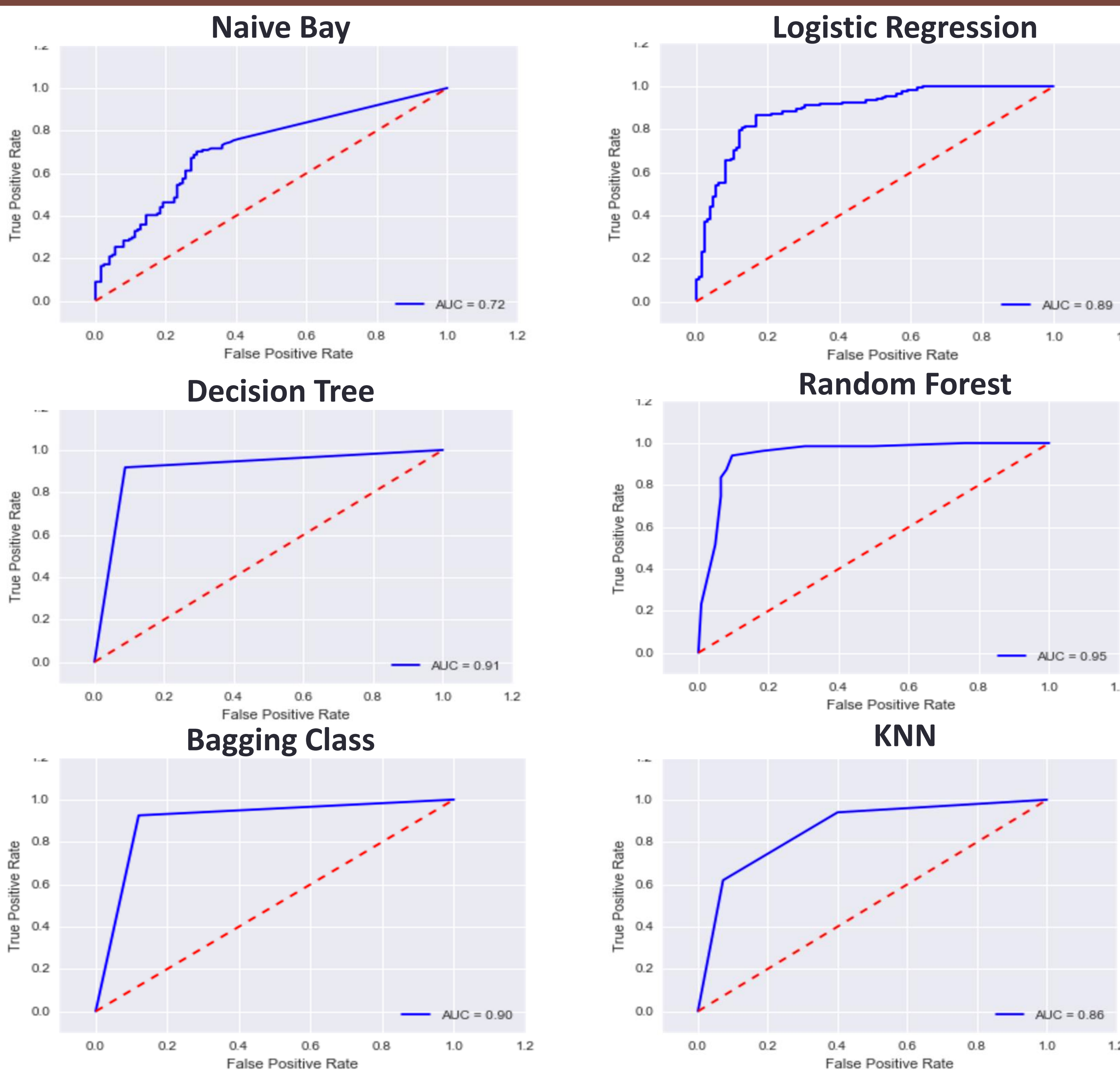
company	symbol	PEG.Ratio	Earnings.Share	P.E.Ratio	Price.Sales	EBITDA	Price.Book	EPS Estim	Volume
AACHoldings	AAC	1.02	0.48	41.9	2.33	2.8E+07	3.19	0.96	92220
AbbVie	ABBV	0.79	3.13	19.61	4.26	9.7E+09	24.69	4.97	5702353
AbeonaTherapeutics	ABEO	0	-1.18		83.14	-1.2E+07	1.2	-0.52	26940
ABIOMED	ABMD	4.56	2.82	36.21	14.22	6.3E+07	12.48	0.8	386643
AcadiaHealthcareCompany	ACHC	0.91	1.64	37.14	2.93	3.8E+08	2.54	2.84	417116
ACADIAPharmaceuticals	ACAD	-0.31	-1.63		55334.21	-1.6E+08	16.89	-1.45	2268169

	PEG.Ratio	Price.Sales	EBITDA	Price.Book	EPS Estimate	Volume
T test	0.868967	0.328336	5E-05	0.0683988	0.03279581	0.01112
Useful	TRUE	TRUE	FALSE	TRUE	FALSE	FALSE

- Dimension Reducing using SPSS

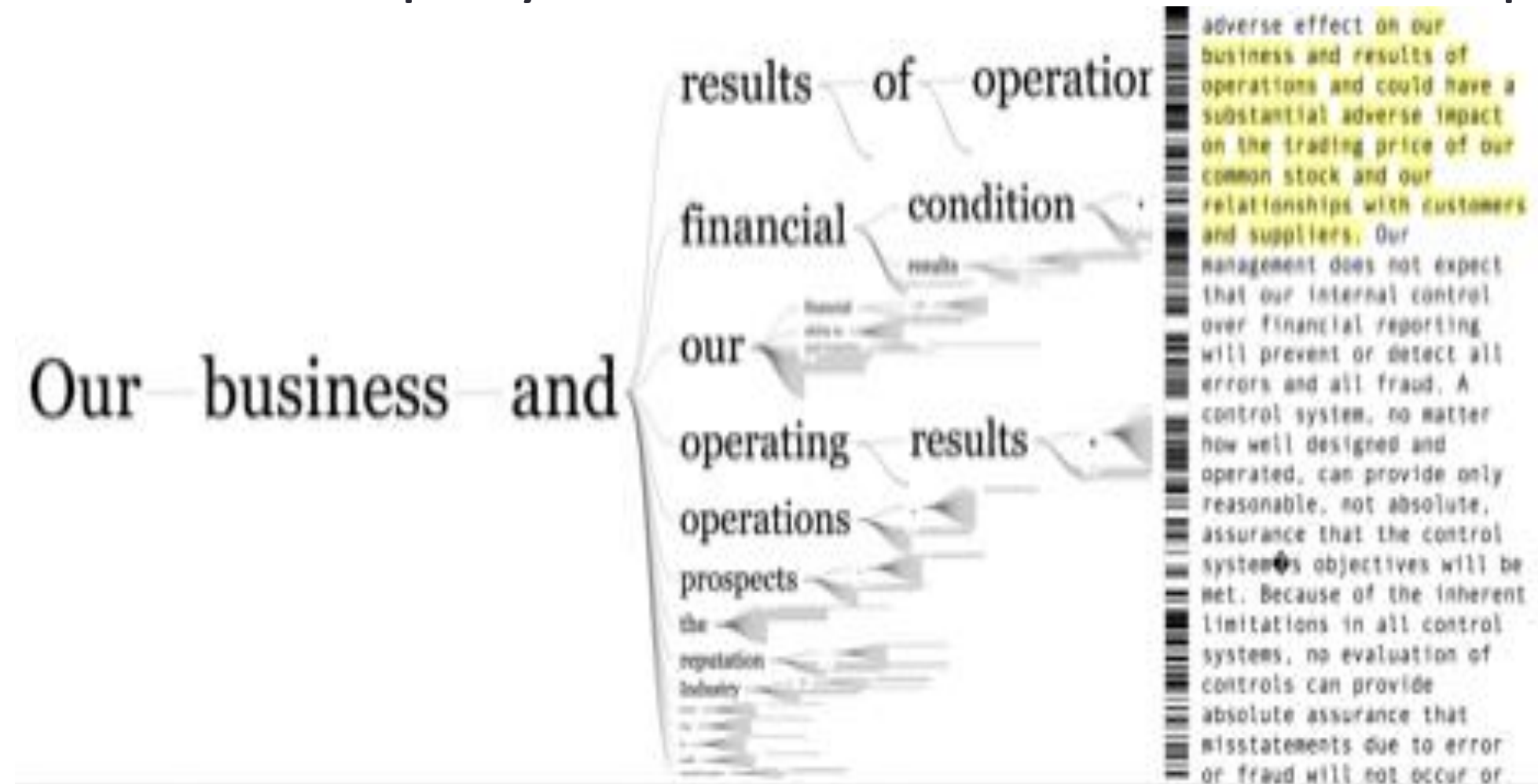
company	symbol	suspend	Concept_technology	Concept_corrected	Concept_risks	Concept_change
OXIGENE	OXGN	1	11	2	12	12
PendrellCorporation	PCO	1	20	4	16	40
PhotoMedex	PHMD	1	52	12	43	81
PrimaBioMedLtd	PBMD	1	15	3	27	23
PrismTechnologiesGrou	PRZM	1	21	3	9	14
ProfessionalDiversityNi	IPDN	1	26	6	16	28
QKLStores	QKLS	1	4	6	19	19
QualstarCorporation	QBAK	1	21	0	20	27
QuestResourceHolding	QRHC	1	16	3	20	30
RadaElectronicsIndustr	RADA	1	13	3	12	13

CLASSIFICATION-ROC

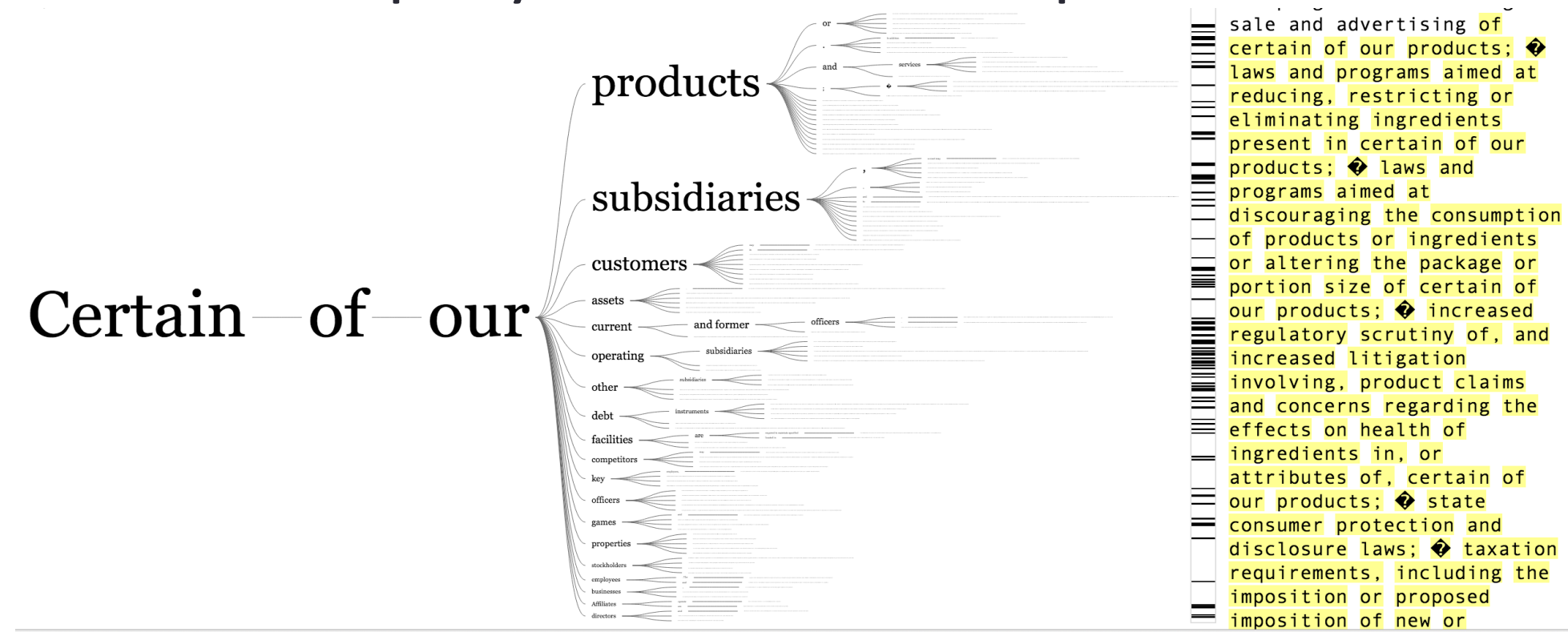


WORD TREE ANALYSIS

- Delisted Company: Focus more on financial and operational risk



- Normal Company: Focus more on product and sales risk



BLACK AND WHITE WORD LIST

Black list	Correlation	White List	Correlation
Concept_corrected	-0.070583	Concept_regulations	0.069037
Concept_risks	-0.119008	Concept_ended	0.025197
Concept_change	-0.105555	Concept_reduced	0.080701
Concept_customer	-0.012523	Concept_patents	0.01516
Concept_impact	-0.148808	Concept_available	0.223369
Concept_value	-0.060543	Concept_shares	0.053582
Concept_partner	-0.014234	Concept_assets	0.073647
Concept_contract	-0.049411	Concept_market	0.050465
Concept_director	-0.205439	Concept_efficient	0.138824
Concept_funds	-0.211883	Concept_estimate	0.175695
Concept_price	-0.020127	Concept_products	0.016173
Concept_cash	-0.058949	Concept_ability	0.157123
Concept_delay	-0.057688	Concept_agreement	0.024778
Concept_increased	-0.038571	Concept_offer	0.095667
Concept_costs	-0.056414	Concept_liabilities	0.089667
Concept_sell	-0.178961	Concept_commonsto	0.130953
Concept_fda	-0.059979	Concept_operations	0.025816
Concept_research	-0.080558		
Concept_cashflow	-0.110599		
Concept_notes	-0.037301		

PREDICTION

- Columns 1(delisted) is the prediction of delisted risk

- Results of model with 6 variables and 19 variables

6 variables model			19 variables model		
Company	0	1 (delisted)	Company	0	1 (delisted)
Yahoo	0.76351	0.23649	Yahoo	0.841908995	0.158091005
Alphabet	0.62503	0.37497	Alphabet	0.985932498	0.014067502
Facebook	0.45614	0.54386	Facebook	0.004068099	0.995931901
Ford	0.56206	0.43794	Ford	0.980681459	0.019318541
OVASCIENCE	0.34061	0.6594	OVASCIENCE	0.019373732	0.980626268
Twitter	0.76453	0.23547	Twitter	0.667893402	0.332106598