

# BANGALORE BIZWIZ

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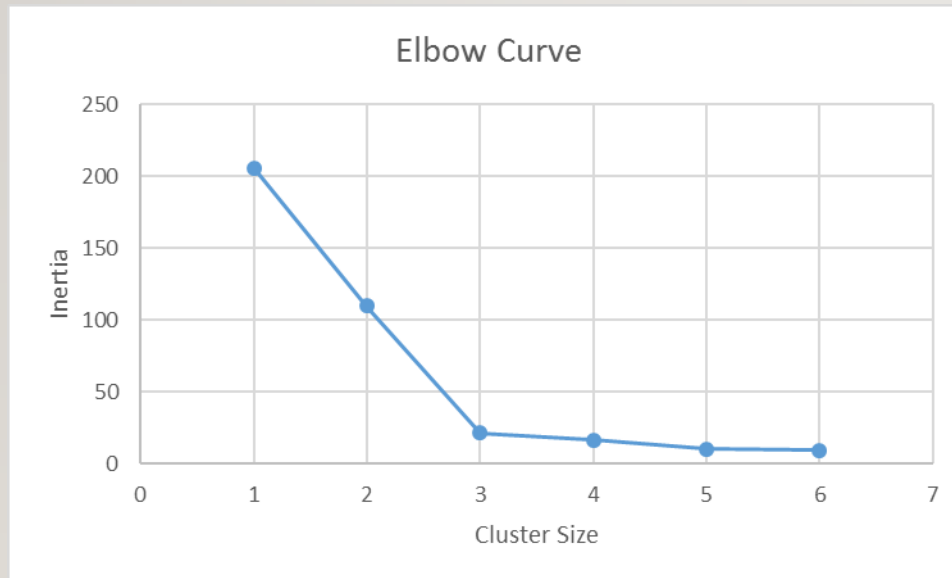
# STEPS

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- Reduced the data based on aggregation technique
  - Entire data is reduced to 237 rows x n columns based on grouping and aggregation
- Clustering based on R&D investment as a ratio over sales
- Decide number of clusters based on elbow curve
- For each cluster identify the industry name with SIC
- Find commonalities between industries to identify pattern

# COMMODITY VS BOUTIQUE MARKET

- The data from patents is clustered using R&D investment, infact ratio of R&D over Sales for all 3 years
- Based on elbow curve, 3 clusters were decided



Cluster ID	R&D Expense Ratio			Cluster_Size
	2003	2004	2005	
1	1.95	0.91	8.03	2
2	0.14	0.03	0.88	36
3	-0.14	-0.11	-0.31	154

- Cluster 1 is high end research segment
  - In-Vitro and In-Vivo Diagnostic substance
  - Commercial Physical and Biological research

# BOUTIQUE MARKET'S DILEMMA

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- R&D expense over sales is high for boutique market compared to commodity market

	Boutique	Commodity
• R&D Expense ratio - 2003	16.9 %	2.35%
• R&D Expense ratio - 2004	14.1%	2.15%
• R&D Expense ratio - 2005	12.6%	1.94%

- Mean Net Income is less compared to commodity market

	Boutique	Commodity
• Mean net income – 2003	-107	-114
• Mean net income – 2004	308	529
• Mean net income – 2005	494	681



# BUT... ENJOYS PREMIUM PRICING

- Net margin is high for boutique products compared to commodity... it also suffers more when market suffers

	Boutique	Commodity
• R&D Expense ratio - 2003	-2.7 %	-1.02%
• R&D Expense ratio - 2004	7.23%	4.34%
• R&D Expense ratio - 2005	10.14%	5.01%

FOOD AND KINDRED PRODUCTS  
MEAT PACKING PLANTS  
DAIRY PRODUCTS  
GRAIN MILL PRODUCTS  
SUGAR & CONFECTIONERY PRODUCTS  
FATS & OILS  
MISCELLANEOUS FOOD PREPARATIONS & KINDRED PROD...  
CIGARETTES  
TEXTILE MILL PRODUCTS  
BROADWOVEN FABRIC MILLS, COTTON  
BROADWOVEN FABRIC MILLS, MAN MADE FIBER & SILK  
MISCELLANEOUS FABRICATED TEXTILE PRODUCTS  
LUMBER & WOOD PRODUCTS (NO FURNITURE)  
HOUSEHOLD FURNITURE  
OFFICE FURNITURE  
OFFICE FURNITURE (NO WOOD)  
PUBLIC BLDG & RELATED FURNITURE  
PARTITIONS, SHELVG, LOCKERS, & OFFICE & STORE ...  
MISCELLANEOUS FURNITURE & FIXTURES  
PAPERS & ALLIED PRODUCTS  
PULP MILLS  
PAPER MILLS

Cluster Size 154  
Total Patents: 20748

MEDICINAL CHEMICALS & BOTANICAL PRODUCTS  
PHARMACEUTICAL PREPARATIONS  
BIOLOGICAL PRODUCTS, (NO DISGNOSTIC SUBSTANCES)  
AGRICULTURAL CHEMICALS  
SPECIAL INDUSTRY MACHINERY, NEC  
PUMPS & PUMPING EQUIPMENT  
ELECTRONIC COMPUTERS  
COMPUTER STORAGE DEVICES  
COMPUTER COMMUNICATIONS EQUIPMENT  
MOTORS & GENERATORS  
TELEPHONE & TELEGRAPH APPARATUS  
RADIO & TV BROADCASTING & COMMUNICATIONS EQUIP...  
COMMUNICATIONS EQUIPMENT, NEC  
SEMICONDUCTORS & RELATED DEVICES  
ELECTRONIC COMPONENTS, NEC  
MISCELLANEOUS ELECTRICAL MACHINERY, EQUIPMENT ...  
AIRCRAFT  
LABORATORY APPARATUS & FURNITURE  
TOTALIZING FLUID METERS & COUNTING DEVICES

Cluster Size 36  
Total Patents: 20127

# BUSINESS INSIGHTS

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- For industries dealing with commodity focus need to be on increasing volume
- For industries dealing with boutique focus need to be on product differentiation

# ABOUT DATA

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- Only 40442/42498 observations were complete
- Total of 237 unique SIC found
- 668 unique ICL Class found
- 1644 unique gvkey found