

Data Automation & BI Development

Annie Chen



About Me



Fast-Learner



Self-Motivated

Efficient Communication

My Background

Education



University of Wisconsin-Madison 2023 Aug. -
Master of Science in Business Analytics

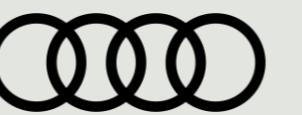


National Taiwan University 2019 - 2023
Bio-industry Communication and Development
• Coursework: Python, Database Management (SQL), Big Data and Business Analytics, Statistics and Research Methods



Hong Kong Baptist University 2018 - 2019
Journalism

Experience



Audi Taiwan
Business Analytics and Dealer Development Intern



Microsoft Taiwan
Marketing and Strategy Intern

- Generate traffic report of MS News Center with Adobe Analytics
- Drive marketing and PR campaign through data



KissME Cosmetics
Digital Marketing Group Leader (Capstone Project)



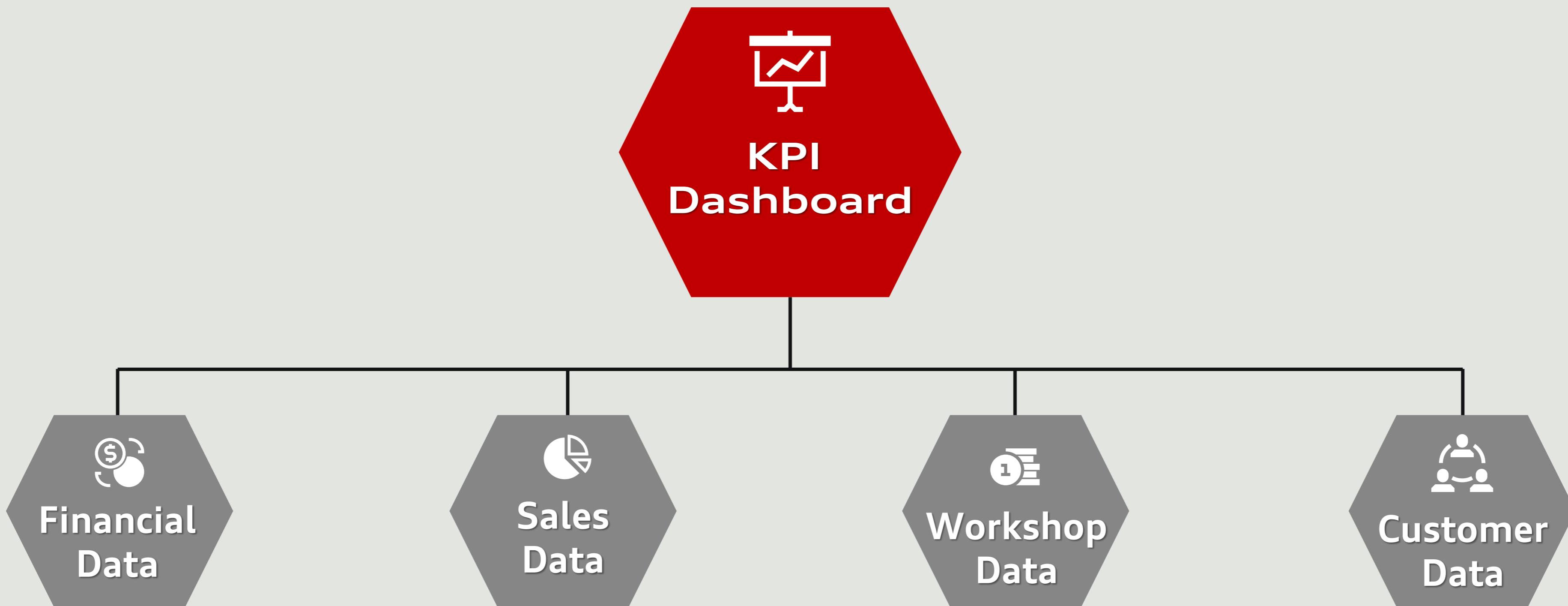
Taiwan Tourism Bureau, Hong Kong
Marketing and Communication Intern



Famous PEOPLE Players, Toronto, Canada
Digital Marketing Intern



KPI Dashboard Project



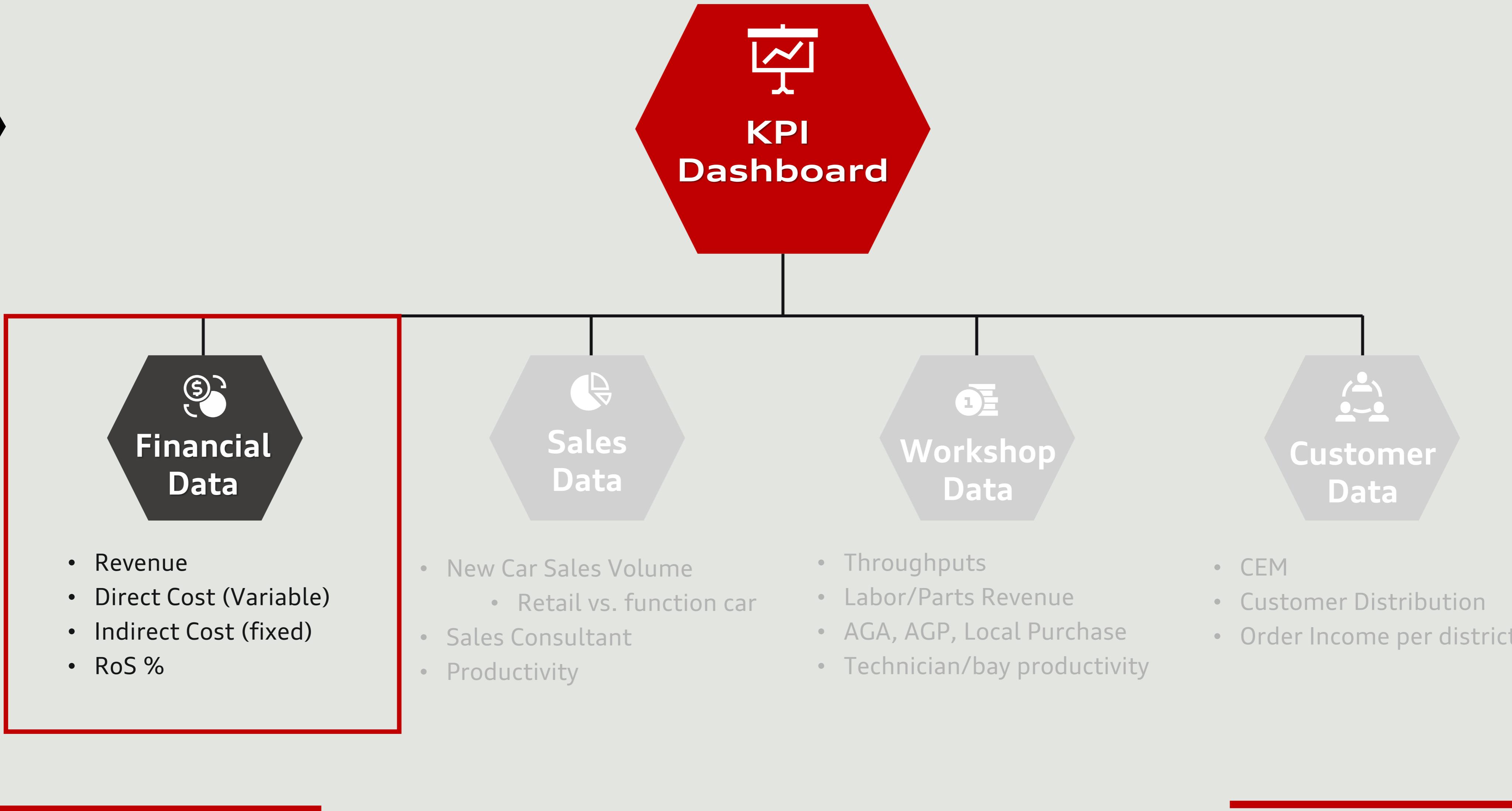
- Revenue
 - Direct Cost (Variable)
 - Indirect Cost (fixed)
 - RoS %

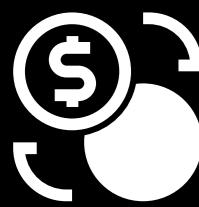
- New Car Sales Volume
 - Retail vs. function car
 - Sales Consultant
 - Productivity

- Throughputs
 - Labor/Parts Revenue
 - AGA, AGP, Local Purchase
 - Technician/bay productivity

- CEM
 - Customer Distribution
 - Order Income per district

BI Development & Data Automation

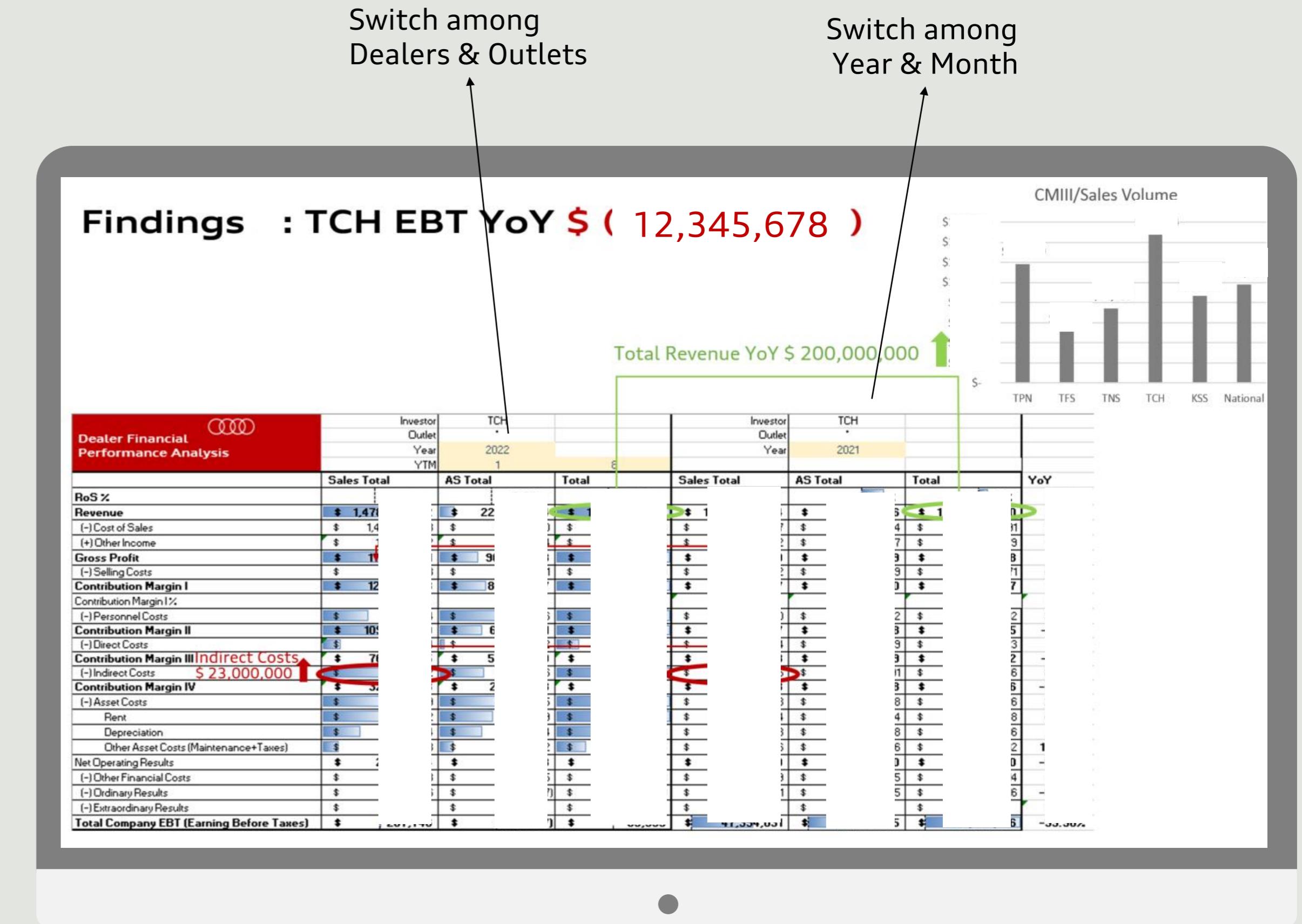


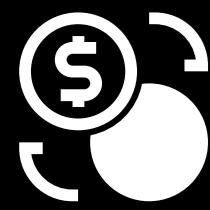


Financial Data

Dealer P&L Report

- ◊ Designed and built up a “Financial RoS report”
- ◊ Supported data analysis → Provided business insights





Financial Data

Dealer P&L Report

- ◊ Designed and built up a “Financial ROS report”
- ◊ Supported data analysis → Provided business insights
- ◊ Prepared Financial Workshop Content → Trained dealer
- ◊ Visit dealers with KPMG → Data Standardization



強化經銷商獲利
Investor Profit

專業 KPI 成效管理
Professional KPI management

財務工作會議
Financial Workshop



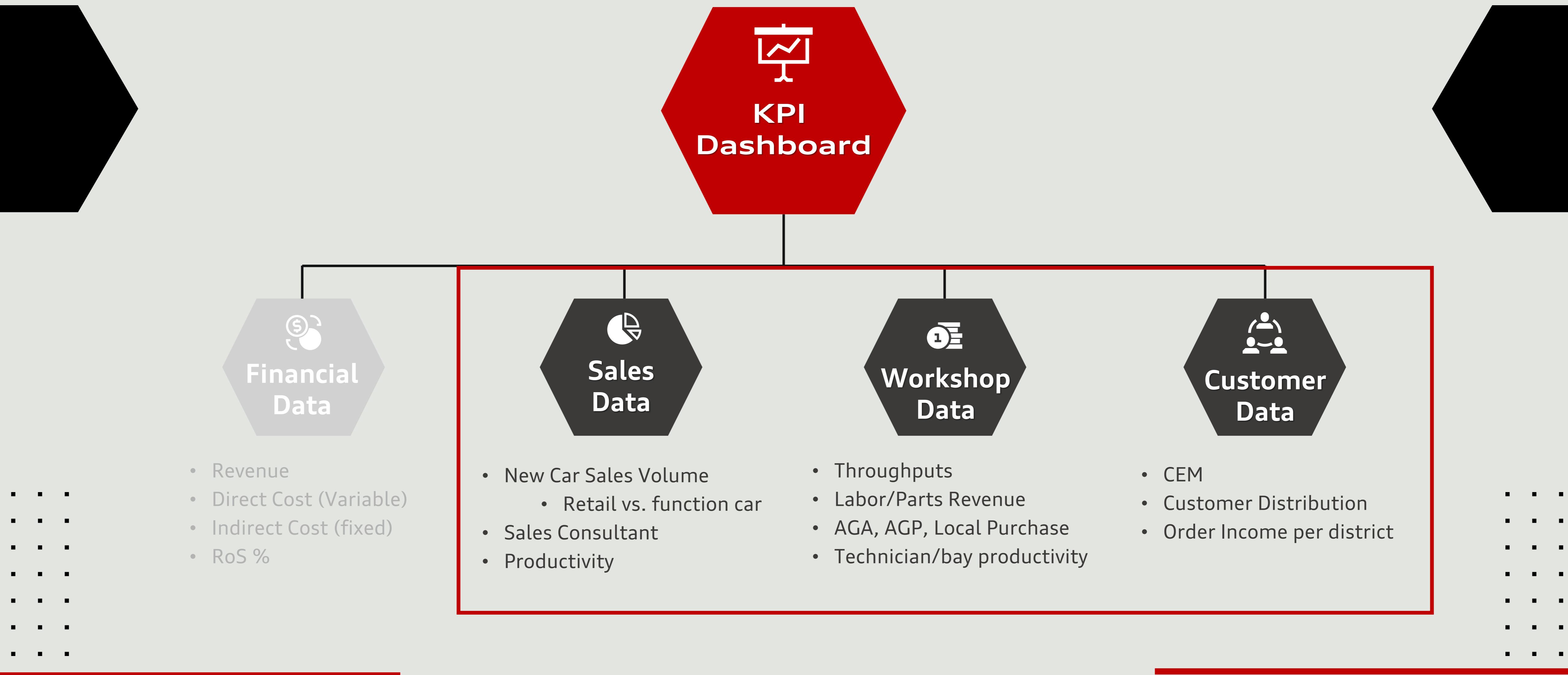
KPMG 資料標準化
Data Standardization by KPMG



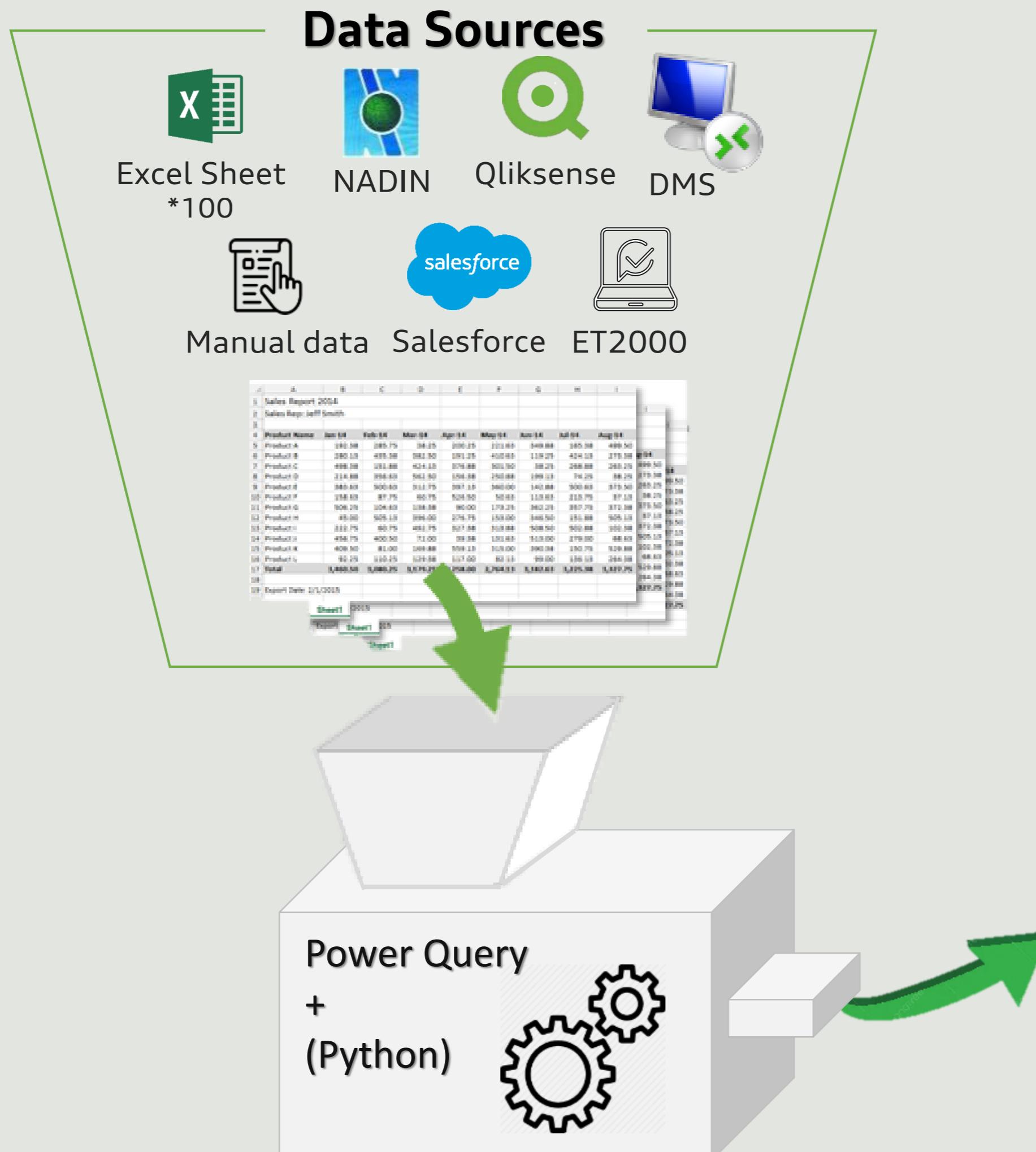
KPI 表現分析與管理
KPI Steering



BI Development & Data Automation



Data Automation with Excel Power Query



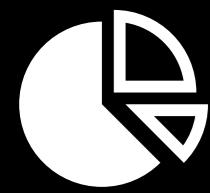
Output to Excel Dataframe

	A	B	C	D	E	F
1	investor	showroom	year	month	channel	value
2	TCH	Taichung	2023	4	Retail Car Sales	
3	TCH	Taichung	2023	1	Retail Car Sales	
4	TCH	Taichung	2023	5	Retail Car Sales	
5	TCH	Changhua	2023	4	Retail Car Sales	
6	KSS	Kaohsiung	2023	1	Retail Car Sales	
7	KSS	Kaohsiung	2023	4	Retail Car Sales	
8	TPN	Neihu	2023	4	Retail Car Sales	
9	TPN	Neihu	2023	3	Retail Car Sales	
10	TPN	Neihu	2023	2	Retail Car Sales	
11	TFS	Beitou	2023	4	Retail Car Sales	
12	TNS	Xinzhuang	2023	1	Retail Car Sales	
13	TNS	Xinzhuang	2023	3	Retail Car Sales	
14	TNS	Taoyuan	2023	5	Retail Car Sales	
15	TNS	Hsinchu	2023	4	Retail Car Sales	
16	TNS	Zhonghe	2023	5	Retail Car Sales	
17	TPN	Neihu	2023	5	Retail Car Sales	
18	TNS	Xinzhuang	2023	5	Retail Car Sales	
19	TNS	Xinzhuang	2023	4	Retail Car Sales	
20	KSS	Fengshan	2023	5	Retail Car Sales	
21	KSS	Kaohsiung	2023	5	Retail Car Sales	

Data Cleaning & Consolidation
With Excel Power Query



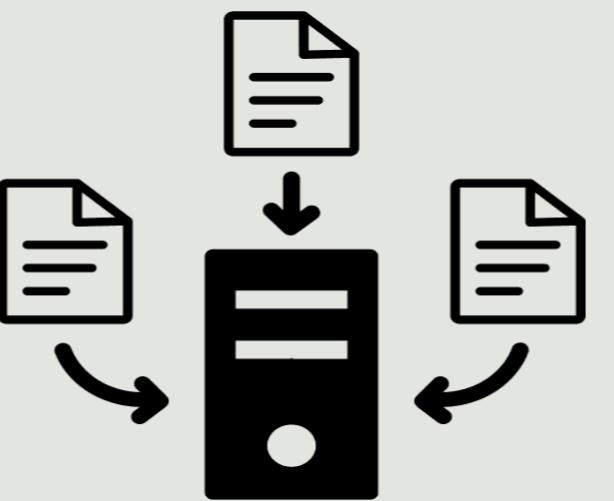
Financial Data



Sales Data

Sales Volume										
2023	1	2	3	4	5					
Dealer	Sales Volume	Ach %								
Neihu	100%		110%		100%		108%		105%	
Nangang	-		-		100%		113%		127%	
TPN	100%		110%		100%		109%		110%	
Beitou	100%		80%		40%		63%		73%	
Daan	100%		50%		67%		88%		53%	
Binjiang	57%		47%		45%		29%		32%	
TFS	81%		57%		50%		55%		50%	
Zhonghe	133%		110%		127%		113%		113%	
Xinzhuang	110%		104%		124%		111%		109%	
Taoyuan	110%		109%		115%		108%		109%	
Hsinchu	100%		117%		81%		111%		112%	
TNS	110%		110%		111%		110%		110%	
Taichung	254%		132%		132%		152%		163%	
Changhua	78%		80%		113%		81%		53%	
N. Taichung	22%		53%		68%		50%		50%	
TCH	100%		100%		110%		110%		110%	
Tainan	100%		100%		100%		112%		100%	
Kaohsiung	100%		105%		111%		110%		100%	
Fengshan	100%		90%		80%		56%		100%	
KSS	100%		100%		100%		100%		100%	
VGT	-		-		1		1		1	
National	467	102%	250	100%	370	100%	402	101%	370	100%

Registration & Bonus



+



Salesforce

Monthly collected from 5 dealers
and manually arranged

Simply Refresh Excel Power Query

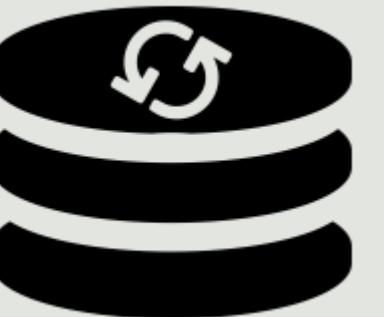
Datasee MOTC Project



15 days



15 secs

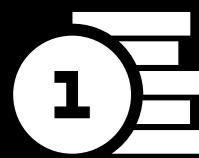




Financial Data

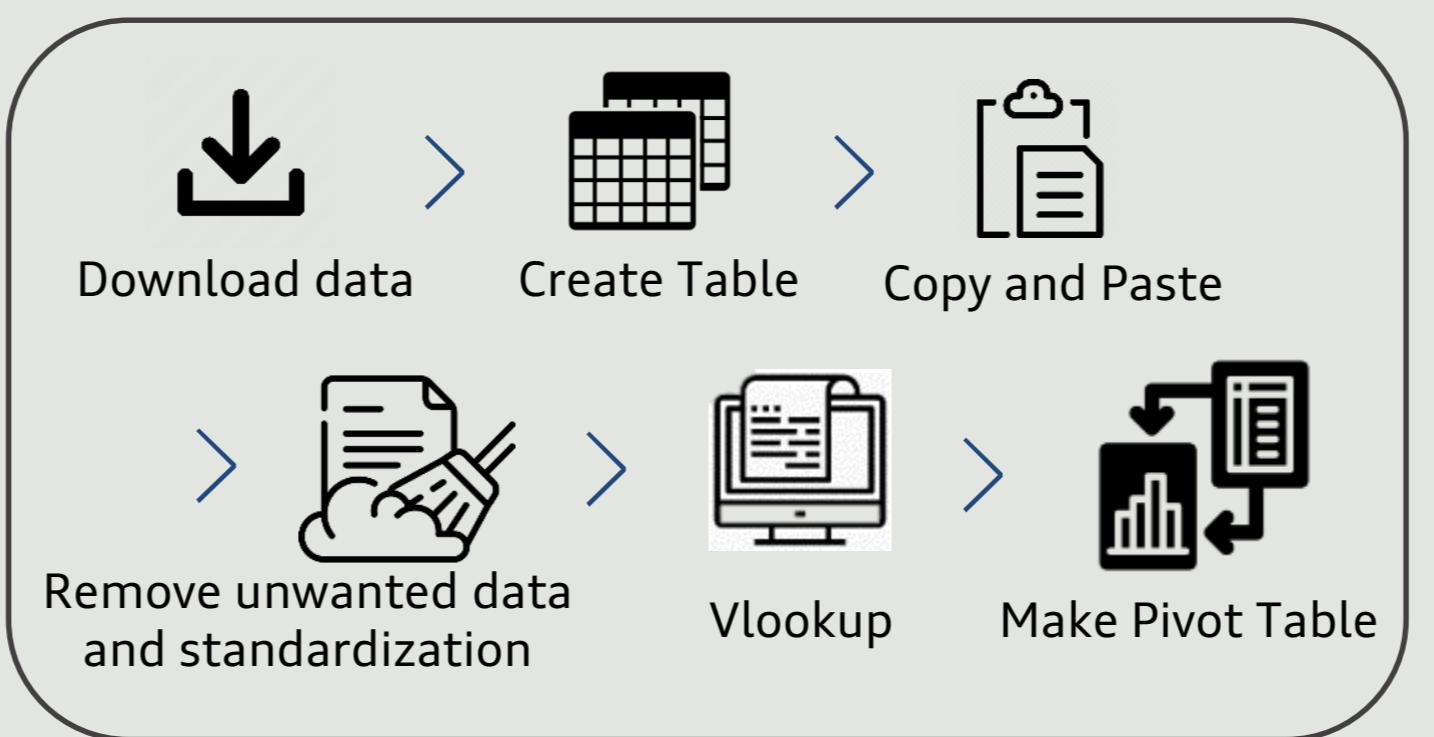


Sales Data

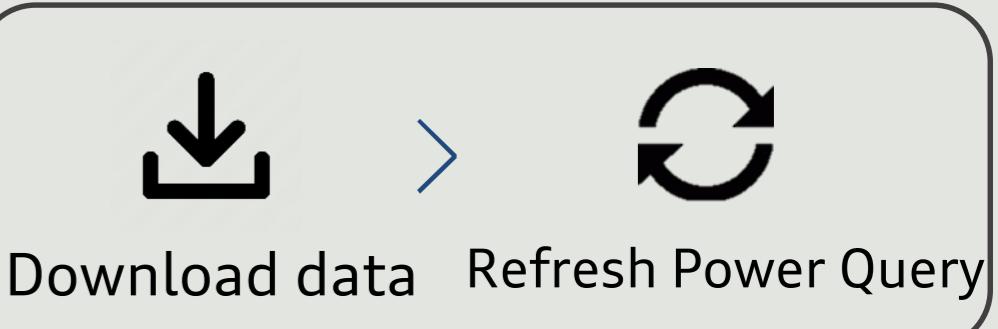


Workshop Data

Aftersales_detail	
總進廠台數 Throughputs	1
SO單 (自費保養/維修/钣烤) Customer *	2
SO單 (钣烤) B&P	3
SO單 (內帳) Internal *	4
SO單 (保固) Warranty *	5
總營收金額 Revenue Total *	11
平均工單金額 Average Turnover	
總工資營收 Labor Revenue Total	4
工資營收 (自費保養/維修) Customer	2
工資營收 (钣烤) B&P	1
工資營收 (內帳) Internal *	
工資營收 (保固) Warranty *	
平均工資 Average Labor Rate	
總售出工時 Sold hours Total	
售出工時 (自費保養/維修) Customer	
售出工時 (钣烤) B&P	
售出工時 (內帳) Internal *	
售出工時 (保固) Warranty *	
總零件營收 (AGP) Revenue	7
零件營收 (自費保養/維修) Customer	3
零件營收 (钣烤) B&P	2
零件營收 (內帳) Internal *	
零件營收 (保固) Warranty *	
總工作天數 Working days total	
總工位數 Work bays total	
工作位Mechanic Bay	
工作位Bodyshop Bay	



Data Automation



1. Save 50%↑ of time
2. Avoid Human Error



DMS



ET 2000

❖ Labor & Parts Revenue

❖ Regular Service & Body and Paints

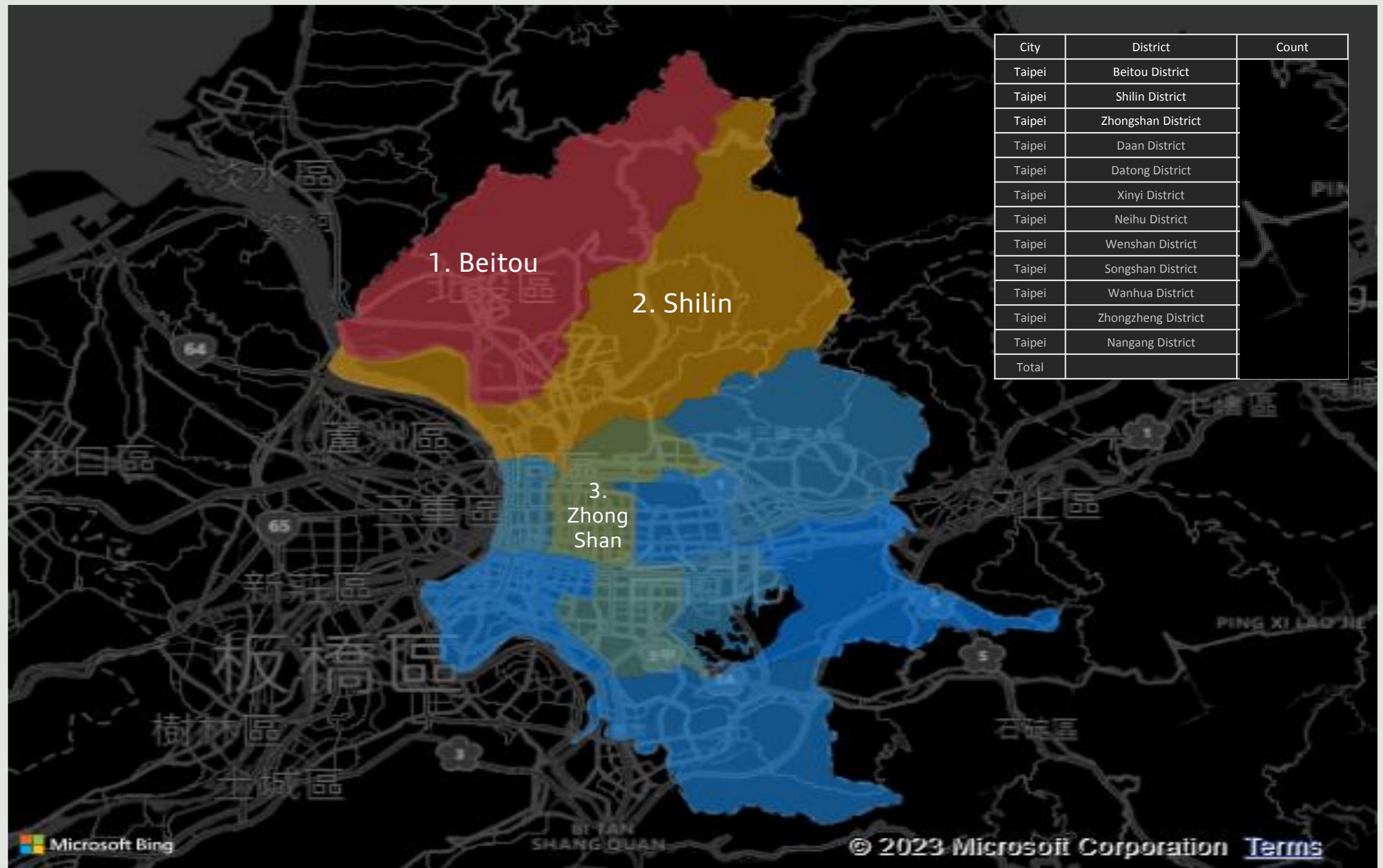
❖ Throughputs

❖ Technician Productivity

❖ AGA, AGP, Local Purchase



TFS Customer Distribution



Financial Data

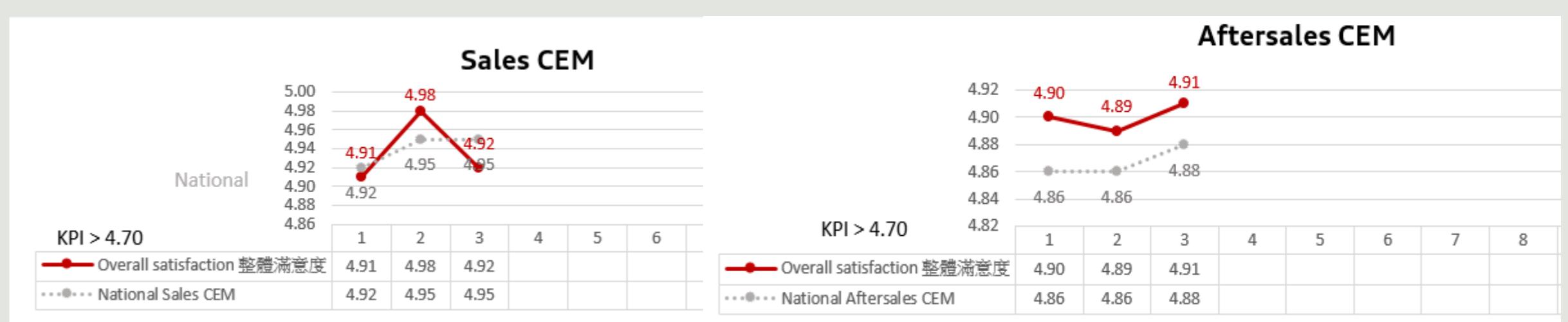
Sales Data

Workshop Data

Customer Data



Power BI



Integration of Operative Data Management



Financial Data



Sales Data

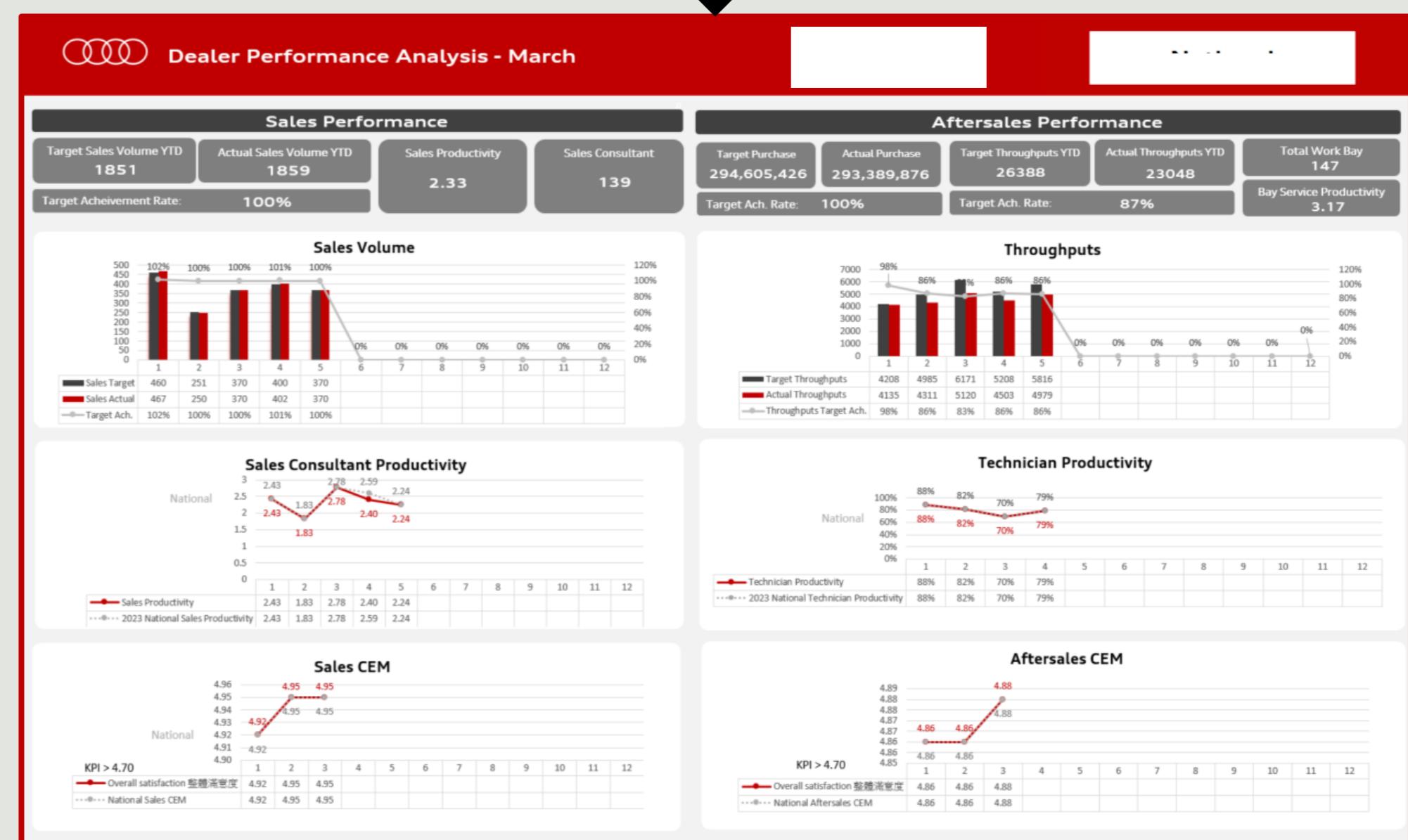


Workshop Data

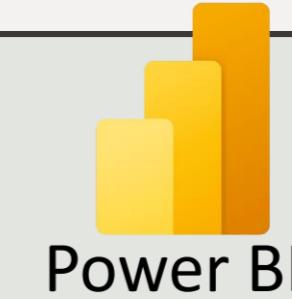
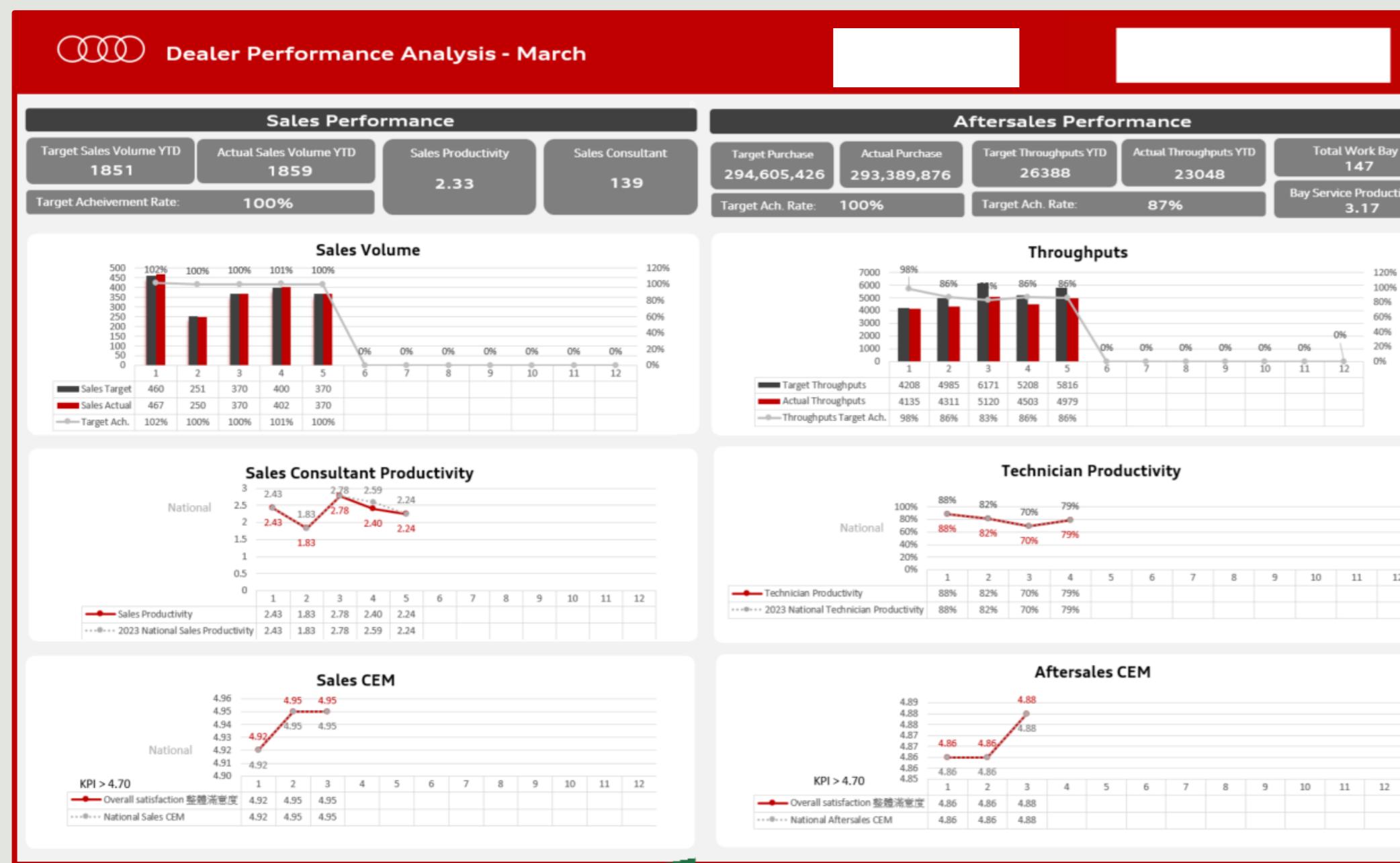


Customer Data

Dealer Financial Dashboard						Investor Outlet Year			YoY
	NC	UC	BP	PA	SR		Sales Total	AS Total	
RoS %	2.69%	-2.35%	18.80%	4.04%	-31.08%	2.02%	-0.87%	1.69%	0.65%
Revenue	\$ 2,192,813,814	\$ 340,004,995	\$ 44,326,977	\$ 219,190,465	\$ 63,730,020	\$ 2,532,818,809	\$ 327,247,462	\$ 2,860,066,271	-5.17%
(-) Cost of Sales	\$ 2,185,468,471	\$ 314,663,516	\$ 19,615,275	\$ 160,164,812	\$ 31,860,892	\$ 2,500,131,988	\$ 211,640,979	\$ 2,711,772,966	-4.23%
(+) Other Income	\$ 252,974,606	\$ 22,561,285	\$ 325,331	\$ 16,331,693	\$ 883,402	\$ 275,535,890	\$ 17,540,426	\$ 293,076,316	11.48%
Target Bonus	\$ 136,037,386	\$ 7,897,570	\$ 314,794	\$ 10,424,644	\$ 669,518	\$ 143,934,956	\$ 11,408,956	\$ 155,343,912	5.92%
Audi TW Sales Support	\$ 112,901,580	\$ 14,455,682	\$ -	\$ 5,746,921	\$ 35,684	\$ 127,357,262	\$ 5,782,605	\$ 133,139,867	19.40%
Other Earnings	\$ 4,035,640	\$ 208,033	\$ 10,537	\$ 160,128	\$ 178,200	\$ 4,243,672	\$ 348,865	\$ 4,592,537	-2.77%
Gross Profit	\$ 260,319,949	\$ 47,902,763	\$ 25,037,033	\$ 75,357,346	\$ 32,752,530	\$ 308,222,712	\$ 133,146,909	\$ 441,369,621	-1.36%
(-) Selling Costs	\$ 65,675,758	\$ 21,588,657	\$ 1,491,249	\$ 8,028,040	\$ 5,549,970	\$ 87,264,414	\$ 15,069,266	\$ 102,333,674	-18.37%
Commission to employees	\$ 39,752,768	\$ 6,491,938	\$ 1,053,263	\$ 5,683,005	\$ 4,207,216	\$ 46,244,706	\$ 10,943,484	\$ 57,188,190	-27.73%
Other Selling Costs	\$ 25,922,990	\$ 15,096,718	\$ 437,986	\$ 2,345,036	\$ 1,342,754	\$ 220,958,297	\$ 41,019,708	\$ 45,145,484	-2.36%
Contribution Margin I	\$ 194,644,191	\$ 26,314,106	\$ 23,545,784	\$ 67,329,305	\$ 27,202,560	\$ 118,077,649	\$ 339,035,947	5.26%	
(-) Personnel Costs	\$ 27,359,900	\$ 5,205,787	\$ 1,643,716	\$ 16,030,784	\$ 13,156,237	\$ 32,565,687	\$ 30,830,737	\$ 63,396,424	2.88%
Contribution Margin II	\$ 167,284,291	\$ 21,108,320	\$ 21,902,068	\$ 51,298,521	\$ 14,046,323	\$ 188,392,611	\$ 87,246,912	\$ 275,639,523	5.82%
(-) Direct Costs	\$ 31,198,377	\$ 14,034,235	\$ 2,533,221	\$ 9,832,489	\$ 8,611,466	\$ 45,232,612	\$ 20,977,177	\$ 66,209,788	7.92%
Cost of Function Cars	\$ 17,234,452	\$ 1,347,210	\$ 1,199,928	\$ 4,008,302	\$ 5,929,088	\$ 18,581,662	\$ 11,137,318	\$ 29,718,980	0.86%
Advertising	\$ 9,764,955	\$ 11,686,241	\$ 405,494	\$ 1,455,167	\$ 1,063,499	\$ 21,451,196	\$ 2,924,160	\$ 24,375,356	23.97%
Other Direct Operating Costs	\$ 4,198,969	\$ 1,000,785	\$ 4,369,020	\$ 1,618,879	\$ 5,199,754	\$ 6,915,699	\$ 12,115,452	\$ 12,115,452	-0.89%
Contribution Margin III	\$ 136,085,914	\$ 7,074,085	\$ 19,368,847	\$ 41,466,032	\$ 5,434,857	\$ 143,159,999	\$ 66,269,736	\$ 209,429,735	5.17%
(-) Indirect Costs	\$ 31,336,865	\$ 7,349,951	\$ 4,998,029	\$ 11,916,119	\$ 11,084,951	\$ 38,686,816	\$ 27,999,100	\$ 66,685,916	-6.33%
Contribution Margin IV	\$ 104,749,049	\$ (275,866)	\$ 14,370,817	\$ 29,549,913	\$ (5,650,094)	\$ 104,473,183	\$ 38,270,636	\$ 142,743,819	11.57%
(-) Asset Costs	\$ 45,479,138	\$ 12,429,739	\$ 6,728,438	\$ 21,128,795	\$ 14,092,906	\$ 57,908,878	\$ 41,950,139	\$ 99,859,017	-9.35%
Rent	\$ 20,293,083	\$ 3,300,043	\$ 4,345,425	\$ 9,972,056	\$ 3,261,989	\$ 23,593,126	\$ 17,579,470	\$ 41,172,596	-33.11%
Depreciation	\$ 21,743,836	\$ 8,509,190	\$ 1,999,766	\$ 9,608,814	\$ 9,942,116	\$ 30,253,026	\$ 21,550,697	\$ 51,803,723	30.40%
Other Asset Costs (Maintenance+Taxes)	\$ 3,442,219	\$ 620,506	\$ 383,246	\$ 1,547,925	\$ 888,801	\$ 4,062,725	\$ 2,819,973	\$ 6,882,698	-22.51%
Net Operating Results	\$ 59,269,911	\$ (12,705,605)	\$ 7,642,380	\$ 8,421,117	\$ (19,743,001)	\$ 46,564,306	\$ 3,679,504	\$ 42,884,802	141.26%
(-) Other Financial Costs	\$ 3,172,538	\$ 723,738	\$ 391,504	\$ 1,021,743	\$ 1,349,082	\$ 3,896,276	\$ 2,762,329	\$ 6,658,605	4.25%
Ordinary Results	\$ 56,097,373	\$ (13,429,343)	\$ 7,250,876	\$ 7,399,375	\$ (21,092,083)	\$ 42,668,029	\$ (6,441,832)	\$ 36,226,197	218.10%
(-) Extraordinary Results	\$ (2,945,980)	\$ (5,449,595)	\$ (859,557)	\$ (1,462,208)	\$ (1,283,918)	\$ (8,395,574)	\$ (3,605,683)	\$ (12,001,257)	39.74%
Total Company EBT (Earning Before Taxes)	\$ 59,043,352	\$ (7,979,749)	\$ 8,110,433	\$ 8,861,583	\$ (19,808,165)	\$ 51,063,603	\$ (2,836,149)	\$ 48,227,454	54.06%



Future Audi BI Implementation



- Current Excel template has reached the bottleneck of Excel processing power
- Development in Excel will ↓
- Power Query is the pre-processing function of Power BI
- Dashboard in Power BI can interact with users to have multi-dimensional analysis

My Key Takeaways



Fast-Learning

- Quickly acquired Excel Power Query skill-sets
- Understood the logic and relationships between KPIs



Self-Motivated

- Taking on challenging projects require analytical skills
- Enrolled online courses despite a non-financial background



Efficient Communication

- Proactively asking questions and seeking for help
- Interacted with different BUs to understand their needs

Culture & Events



MoS



Lunch Meeting with MC
(Rahil / Conrad / Julia)



PDI Visit

Culture & Events

Team Outing



Year End/
Spring Wine
Party

Dealer Meeting



Culture & Events

Q5 Training



Q-Drive off road

Dealer Award



VW Performance Day



Culture & Events

Mayday Concert



New Taipei King

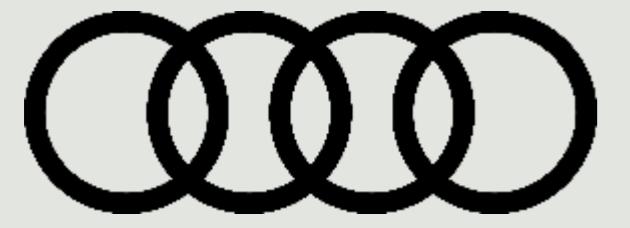


Bouldering



New Years Eve w/
Audi Logo on 101





Thank You!

Annie Chen

