

# Effective Data Storytelling

Visualizing, communicating and persuading with data



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On 20/06/2023

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- **Google Developers Expert** in Machine Learning
- B.Eng. (Computer), **Chulalongkorn**
- Ph.D. in Operations Research, **MIT**
- ex-Data Scientist, **Facebook**

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# Outline

01

Closing the Communication Gaps

02

Visualizing Data Effectively

03

Presenting Compelling Stories with Data



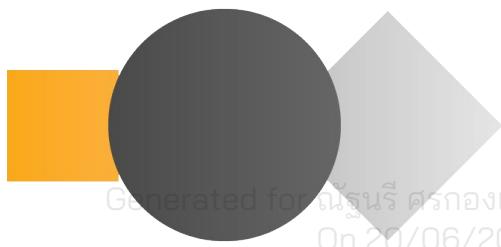
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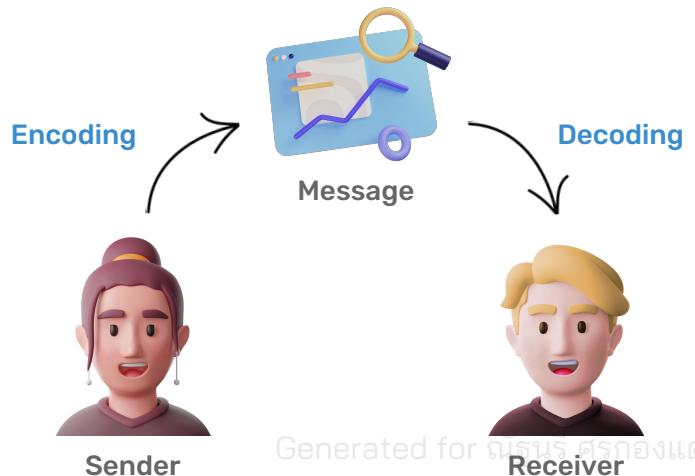
## Closing the Communication Gaps



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# Elements of Communication

It's not what you say.  
It's what people hear.



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## Challenges of communicating with data

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coolbubble.com วันที่: 20/06/2023



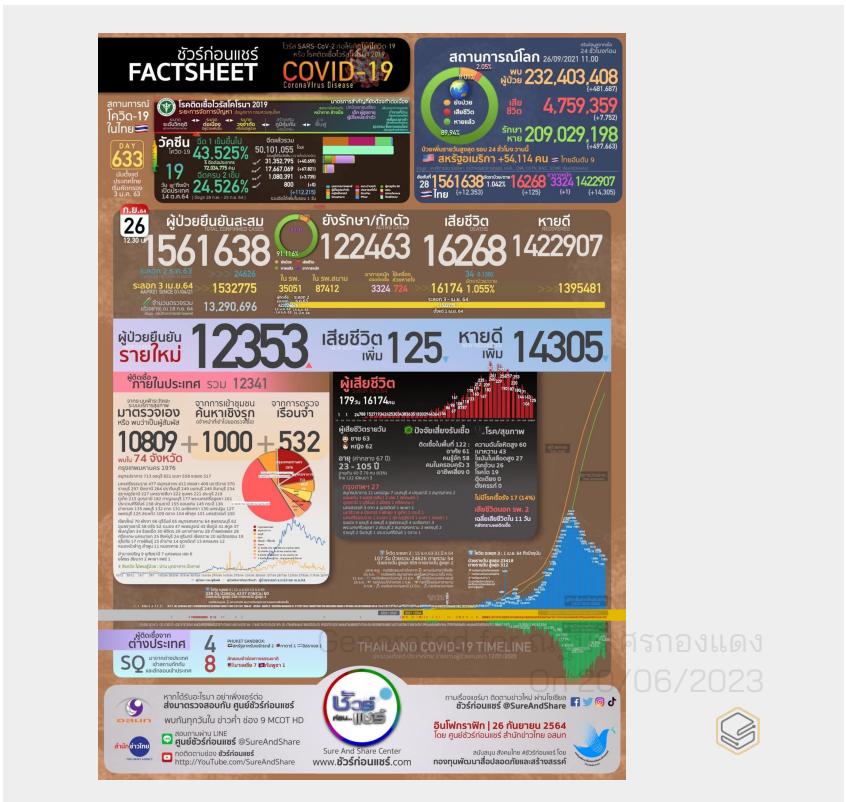
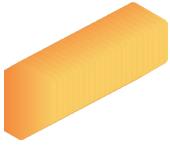
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## The Curse of Knowledge

A cognitive bias that occurs when an individual unknowingly assumes that others know what we know. We cannot unsee things and forget what it's like not to know what we know. Your audience is only looking for common or familiar patterns.





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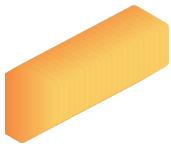
## High Cognitive Load

Extraneous noise may limit the signal of your ideas and get in the way of audience understanding.



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**Receiver**  
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ម៉ោង 8 នៃការពិនិត្យអំណុល  
តើតុលាត?

8 3 5 3 7 1 0 2  
1 2 2 6 3 4 9 5  
3 9 5 8 6 7 1 4  
0 5 8 2 0 4 8 6  
3 9 4 8 5 9 4 9  
**8 1 3 4 2 6 7 3**

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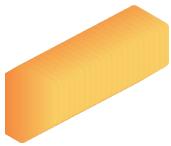


ម៉ោង 8 នៃការពិនិត្យអំណុល  
តើតុលាត?

**8 3 5 3 7 1 0 2**  
1 2 2 6 3 4 9 5  
3 9 5 8 6 7 1 4  
0 5 8 2 0 4 8 6  
3 9 4 8 5 9 4 9  
**8 1 3 4 2 6 7 3**

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ມີຕັວເລກ 8 ຂອງເລກ 0 ໃນ  
ກາພນີ້ນາກກວ່າກັນ?

8 3 5 3 7 1 0 2  
1 2 2 6 3 4 9 5  
3 9 5 8 6 7 1 4  
0 5 8 2 0 4 8 6  
3 9 4 8 5 9 4 9  
8 1 3 4 2 6 7 3

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## Misinterpretation

A message may be decoded differently based on the context, prior experience, and familiarity.

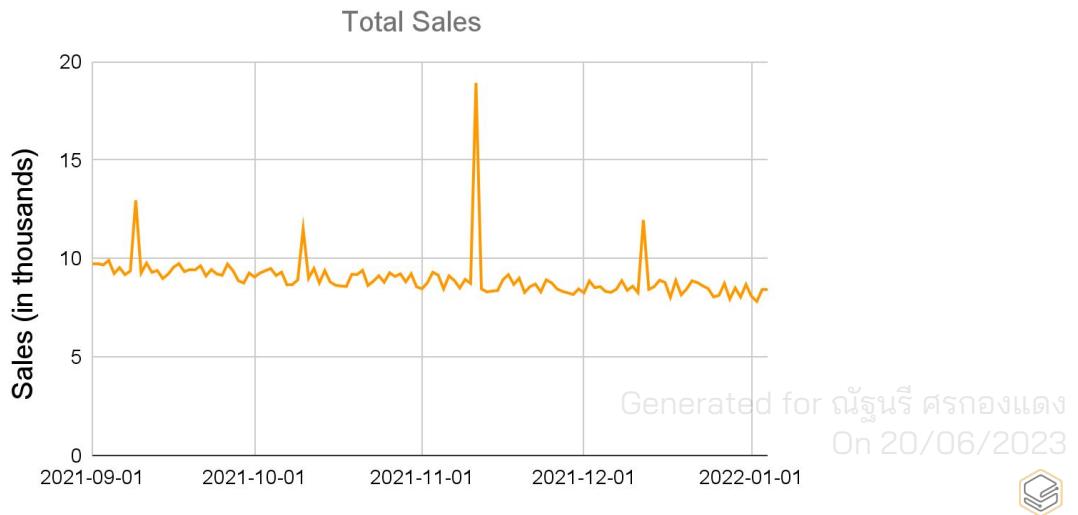


Sender

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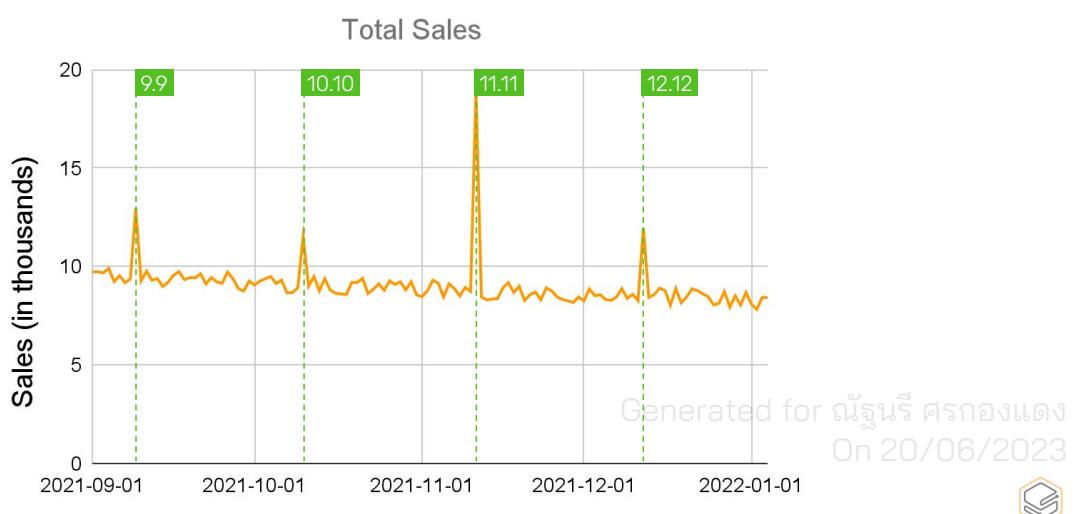


## What do you see?

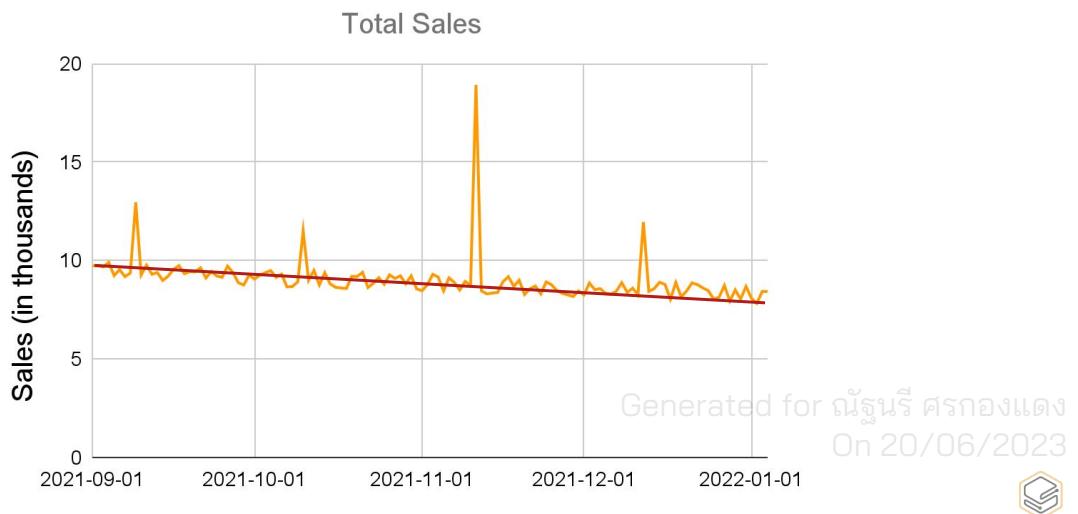


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## Highlight key information



## Now what do you see?



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## Challenges of communicating with data



Knowledge vs. Empathy

The curse of  
knowledge



Too complicated

High cognitive  
load



Missing context

Misinterpretation

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## Key Takeaways

- สิ่งที่ “ชัดเจน” สำหรับเรา อาจจะไม่ “ชัดเจน” สำหรับผู้ฟัง
- มุขย์มี Bias ในการรับรู้ มักจะมองเห็นแต่สิ่งที่ตนเองคุ้นเคยจากประสบการณ์ และอาจไม่เห็นสิ่งที่นำเสนอให้กับผู้อื่น
- กราฟที่ช่วยในการวิเคราะห์ข้อมูล (Explore) อาจจะไม่ใช่กราฟที่ดีในการอธิบายข้อมูล (Explain)
- การเล่าเรื่องที่มีโครงสร้างชัด และการใช้กราฟที่เข้าใจง่าย ระบุรายละเอียดชัดเจน จะช่วยให้การสื่อสารด้วยข้อมูลมีประสิทธิภาพมากยิ่งขึ้น

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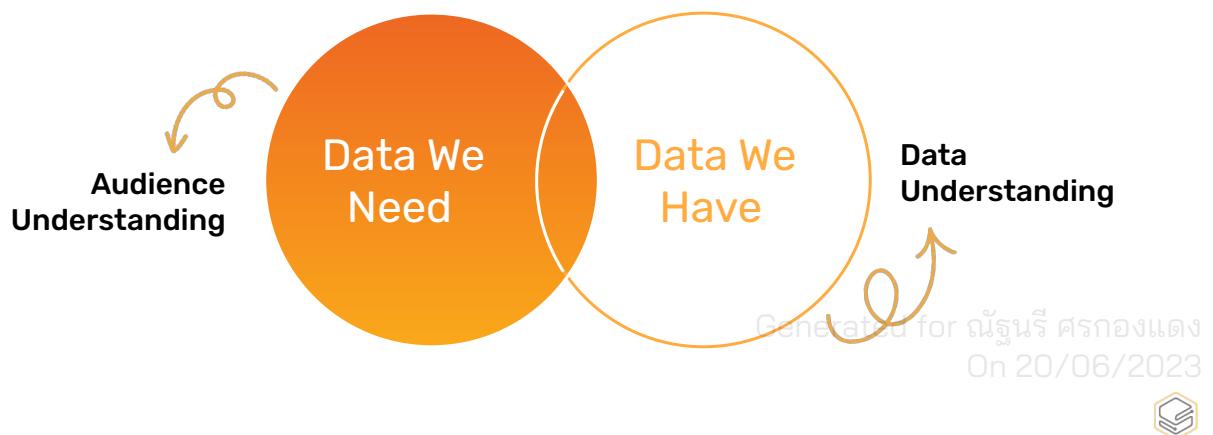
## Know Your Audience

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# Audience First, NOT Data First

Don't start with the data and try to make it into an interesting story



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## Know Your Audience

- One size does not fit all! Different audiences need different stories.
- Different audiences may
  - concern different complications
  - care about different KPIs
  - require different types of information to make decision

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## What's in it for them?

- Connect your story to its **impact on the audience**
- Try asking these questions:
  - What do they care about?
  - How might the story impact their day-to-day work?
  - Which data might affect how they are evaluated and compensated? (e.g. ROI, Customer satisfaction, Profit margin)

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Source: Persuading with Data (Miro Kazakoff)



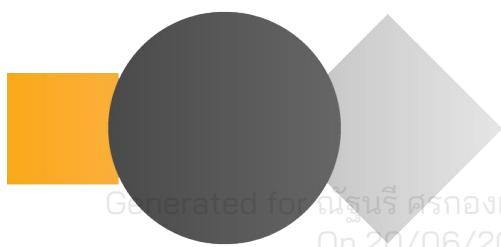
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# Visualizing Data Effectively



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## Why Data Visualization?



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# Anscombe's Quartet

	x1	x2	x3	x4	y1	y2	y3	y4
1	10	10	10	8	8.04	9.14	7.46	6.58
2	8	8	8	8	6.95	8.14	6.77	5.76
3	13	13	13	8	7.58	8.74	12.74	7.71
4	9	9	9	8	8.81	8.77	7.11	8.84
5	11	11	11	8	8.33	9.26	7.81	8.47
6	14	14	14	8	9.96	8.10	8.84	7.04
7	6	6	6	8	7.24	6.13	6.08	5.25
8	4	4	4	19	4.26	3.10	5.39	12.50
9	12	12	12	8	10.84	9.13	8.15	5.56
10	7	7	7	8	4.82	7.26	6.42	7.91
11	5	5	5	8	5.68	4.74	5.73	6.89

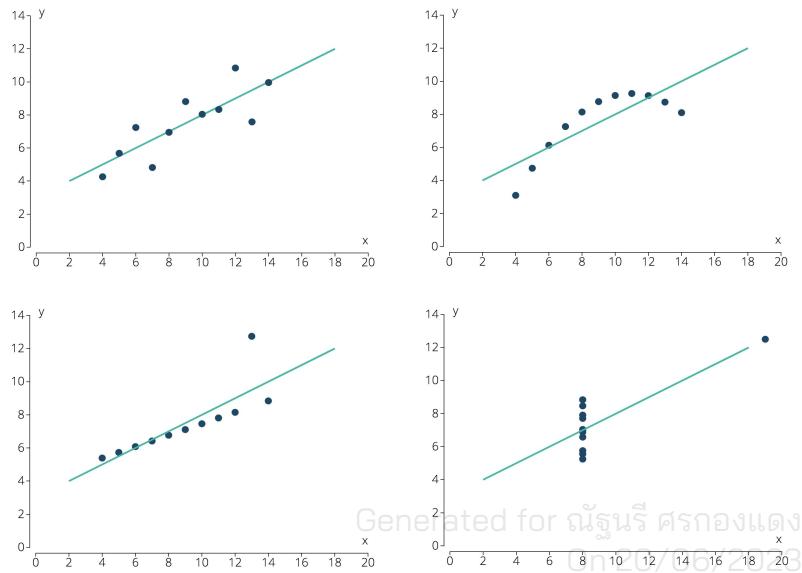
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Source: Anscombe, F. J. (1973). "Graphs in Statistical Analysis". American Statistician 27 (1): 17-21



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# Anscombe's Quartet



Source: Anscombe, F. J. (1973). "Graphs in Statistical Analysis". American Statistician 27 (1): 17-21

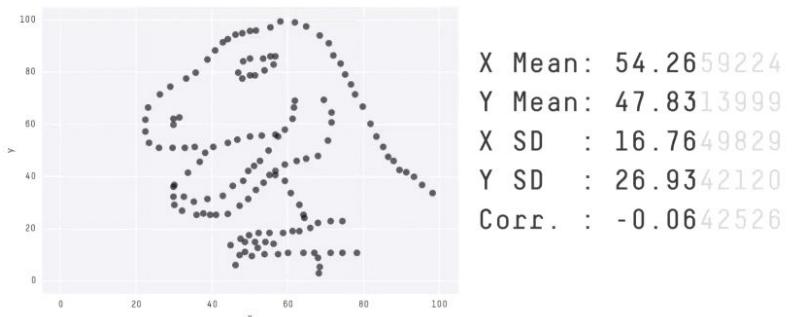


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# Always Visualize Your Data

- Data sets with equal descriptive statistics can look very different!



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Source: <https://www.autodeskresearch.com/publications/samestats>

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The goal of visualization is to aid our understanding of data by leveraging the human visual system's highly tuned **ability to see patterns, spot trends, and identify outliers.**

Well-designed visual representations can replace cognitive calculations with simple perceptual inferences and **improve comprehension, memory, and decision making.**

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Source: J. Heer et al. (2010) A Tour Through the Visualization Zoo.



# Visual Encoding

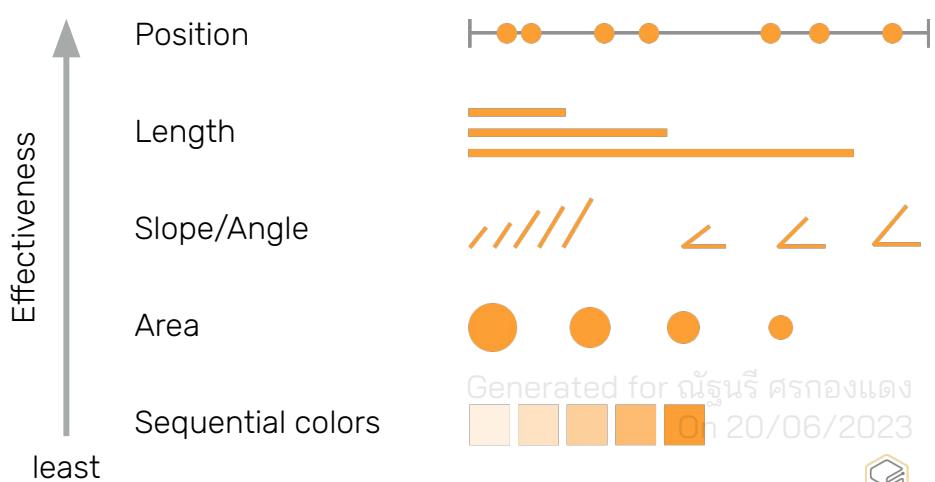


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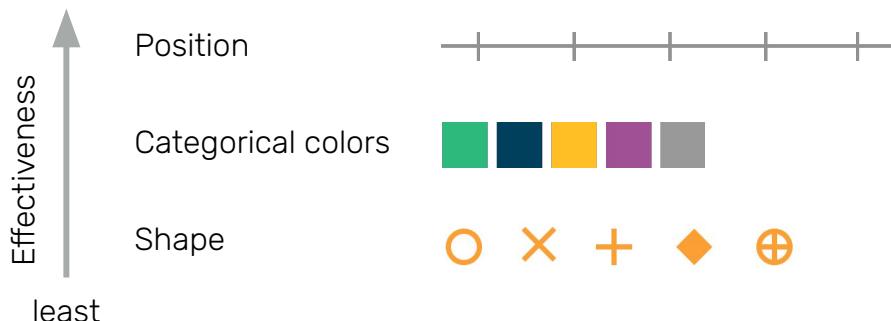
## Visual Encoding



# Visual Encoding

## Qualitative / Categorical data

e.g., dog, cat, rabbit

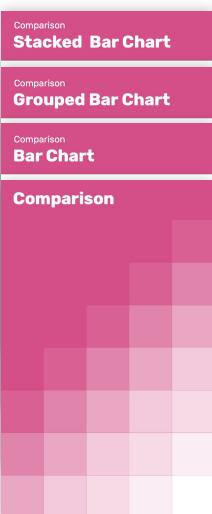
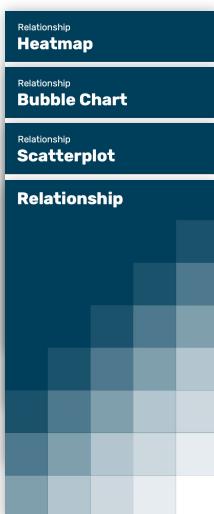


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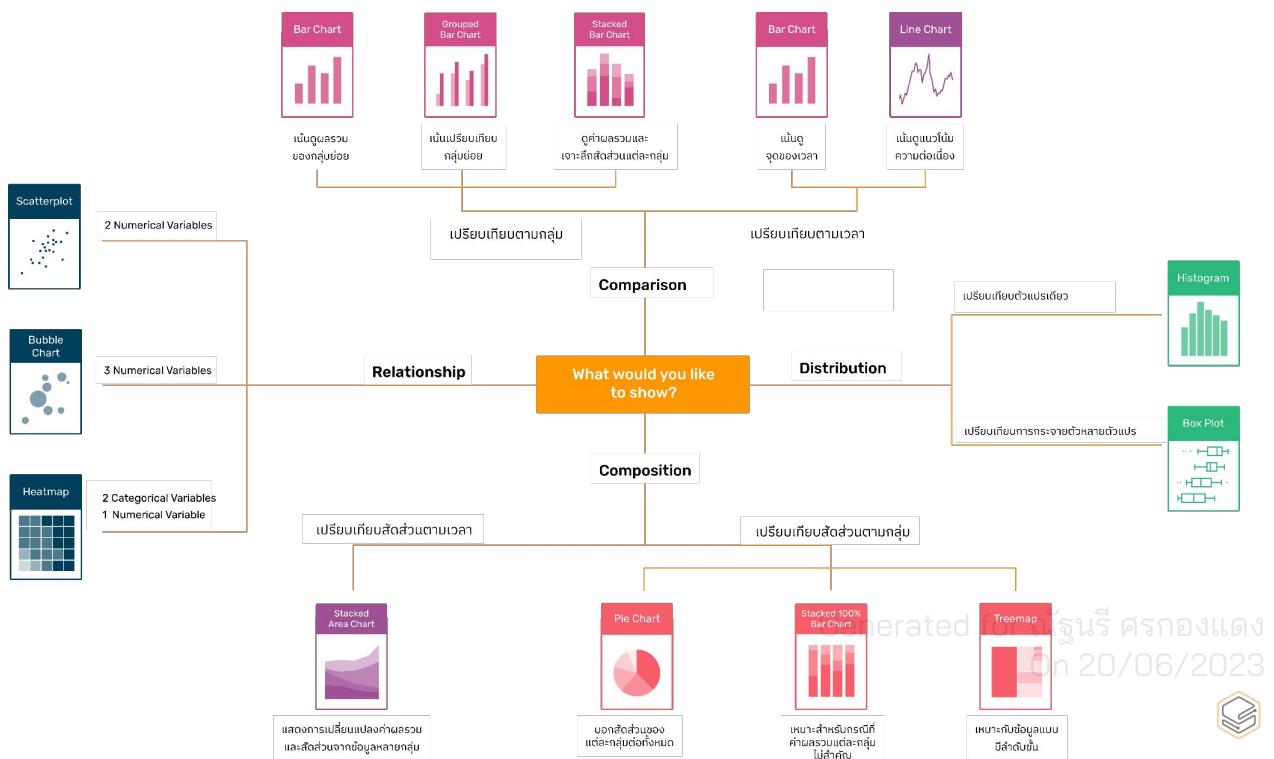
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# Taxonomy of Commonly-Used Charts



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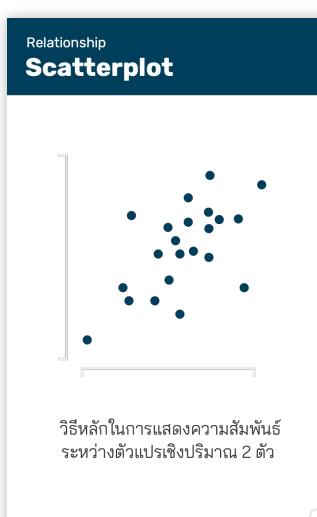




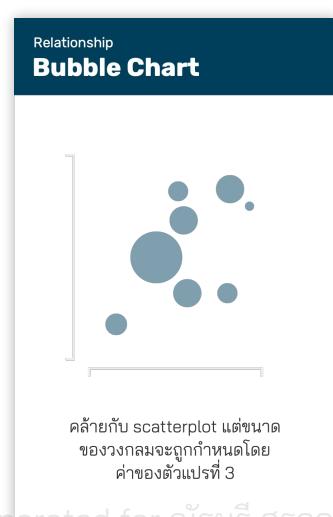
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## Visualizing Relationship



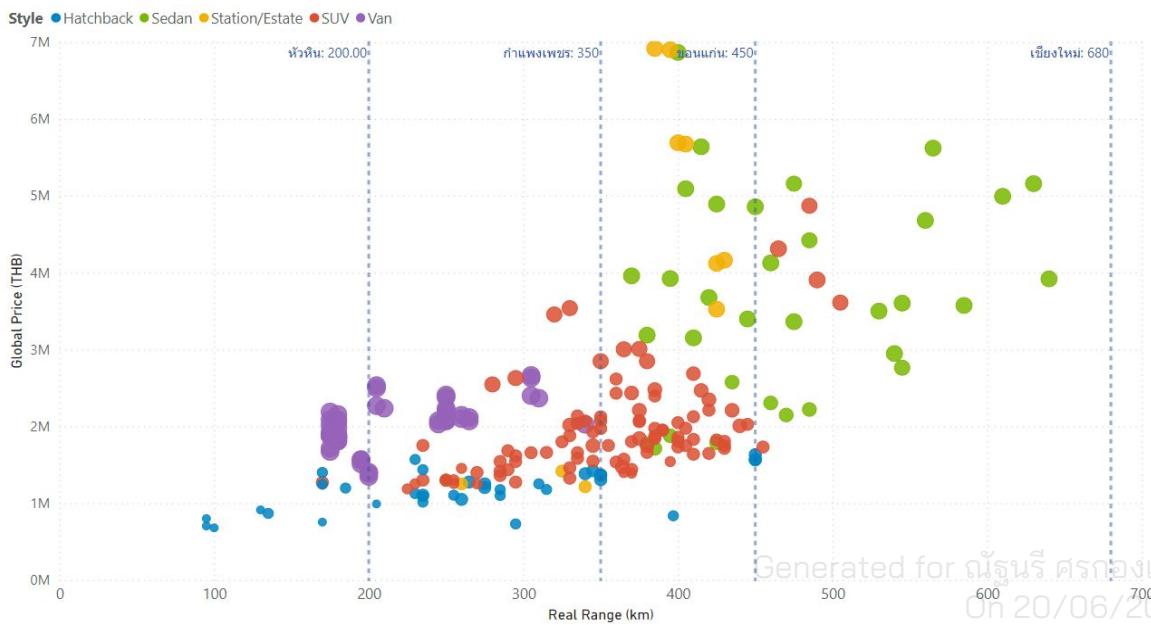
2 Numerical Variables  
(May use colors to encode another variable)



3 Numerical Variables  
(May use colors to encode another variable)

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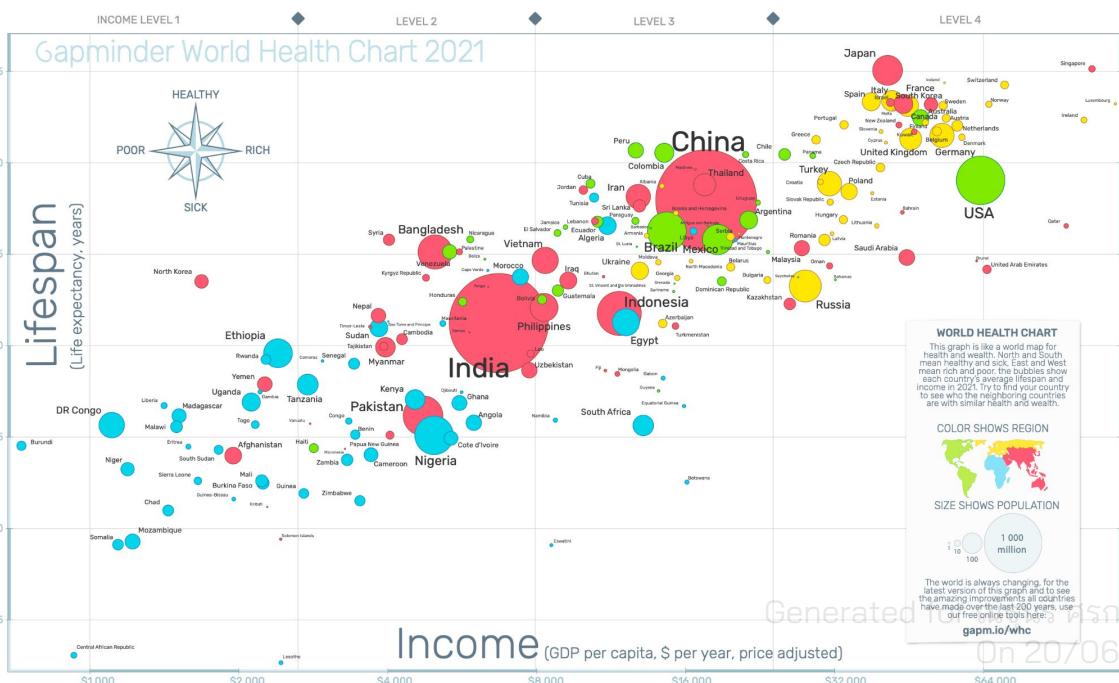




Source: ศูนย์วิจัย อุบลฯ (Data Analytics Bootcamp - Batch 3)



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SOURCES - INCOME: World Bank's GDP per capita, PPP (2017 international \$) extended to 2021 with IMF's projections. X-axis uses log-scale to make a doubling income show the same distance on all levels.

POPULATION AND LIFE EXPECTANCY: Data from UN Population Prospects 2019.

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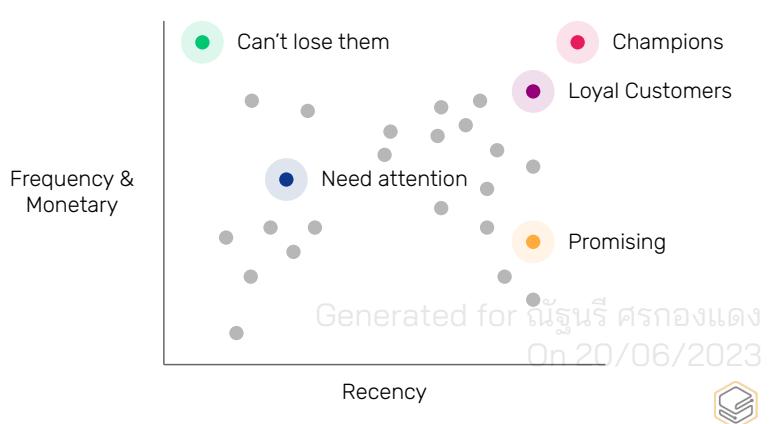
VERSION 2022.1



# RFM Analysis

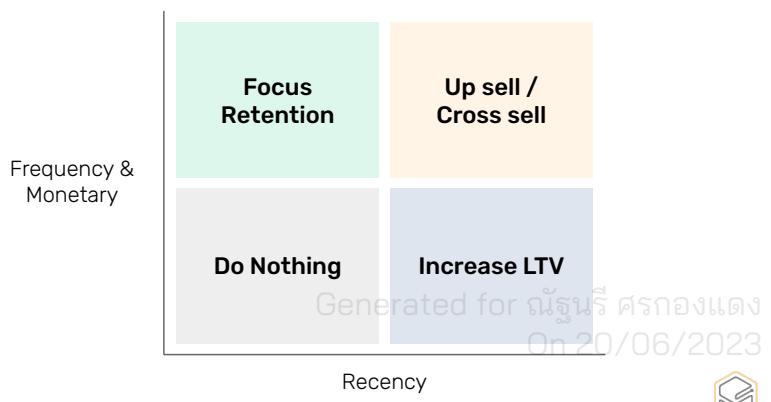
Scatterplots allow the audience to see individual data points and the relationship between the two variables.

- The RFM Analysis (Recency-Frequency-Monetary Value) is a common segmentation approach based on purchase history



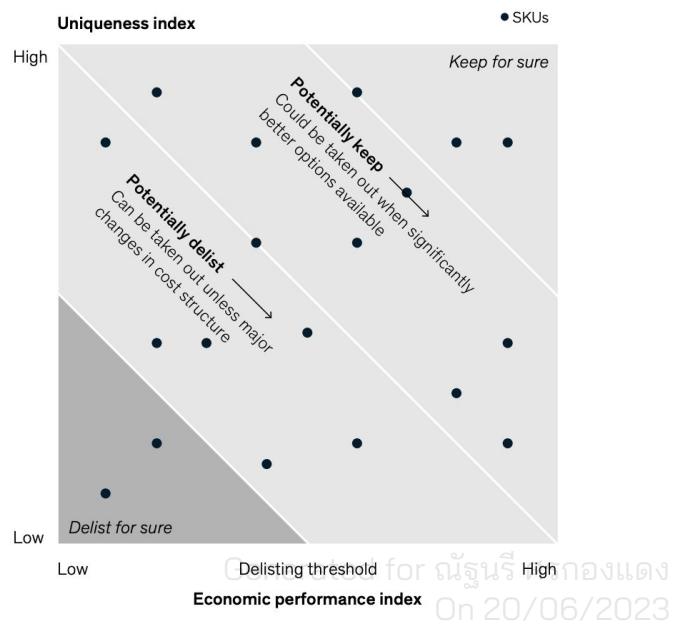
# RFM Analysis

- The RFM Analysis (Recency-Frequency-Monetary Value) is a common segmentation approach based on purchase history



# Analytical Assortment Optimization

Seemingly insignificant products, as measured by sales, for example, can be so important to some customers that these customers would take all of their retail shopping elsewhere if that product became unavailable in a store.



Source: Analytical assortment optimization (McKinsey & Company)



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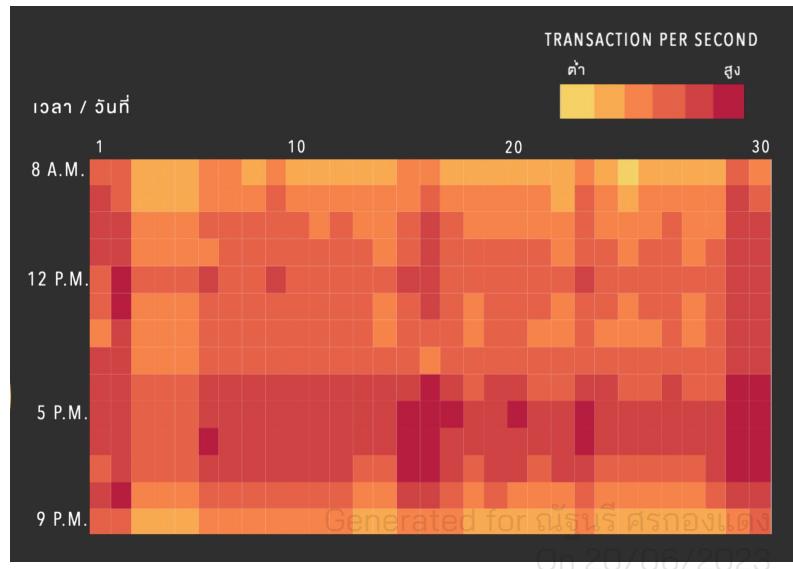
# Visualizing Relationship



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2 Categorical Variables  
1 Numeric Variable



# PromptPay Usage



Source: Payment Insight Vol. 10/2564 (Bank of Thailand)



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# Visualizing Comparison

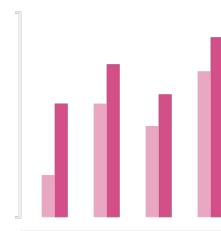


1 Numerical Variable  
1 Categorical Variable



# Visualizing Comparison

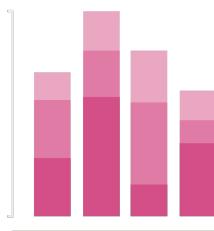
Comparison  
**Grouped Bar Chart**



เหมือน Bar Chart แต่ใช้แสดงผลข้อมูล  
ได้หลายชุดพร้อมกัน อาจจะอ่านและ  
เปรียบเทียบยากกว่าเมื่อมีข้อมูลมากกว่า 2 ชุด

1 Numerical Variable  
2 Categorical Variables

Comparison  
**Stacked Bar Chart**



ใช้เปรียบเทียบค่าผลรวมและสัดส่วน  
จากข้อมูลหลายกลุ่ม อาจจะอ่านสัดส่วน  
ยากเมื่อมีข้อมูลหลายกลุ่ม

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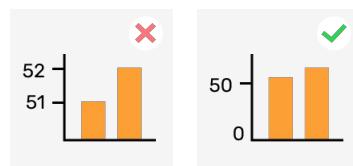
1 Numerical Variable  
2 Categorical Variables



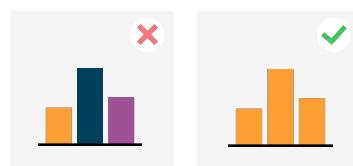
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# Visualizing Comparison

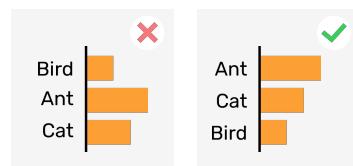
Best practices



Start Y-axis value at 0



Use consistent colors



Order data appropriately

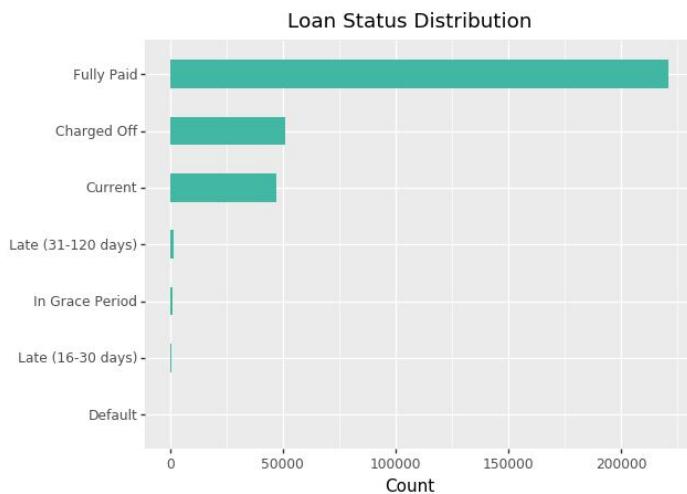
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Source: <https://www.slideshare.net/Visage/data-visualization-101-how-to-design-chartsandgraphs>

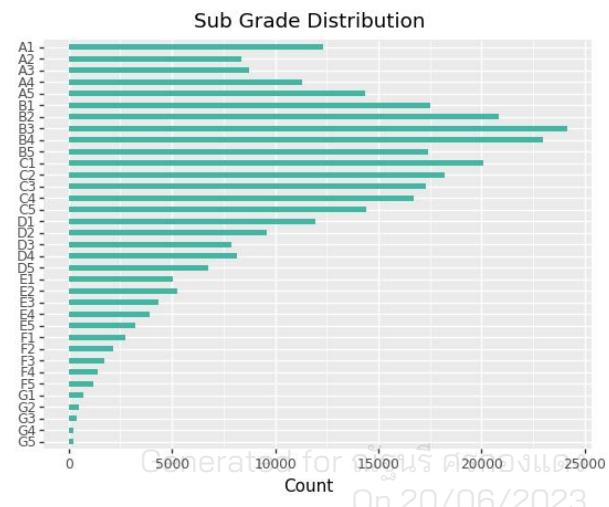


Sort by Frequency

Sort by Ordinal Variable



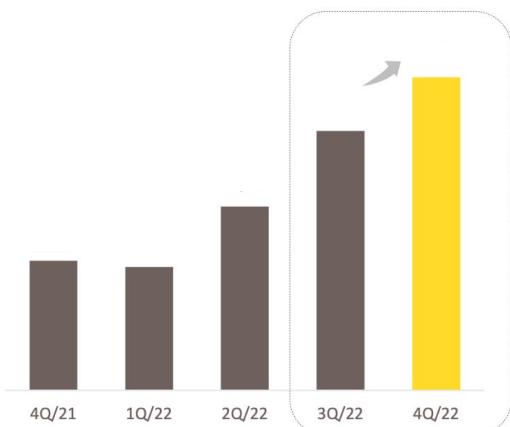
Data: LendingClub



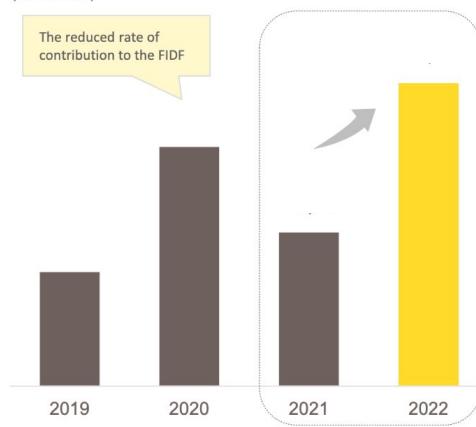
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## Net-Interest Income

(Baht Million)

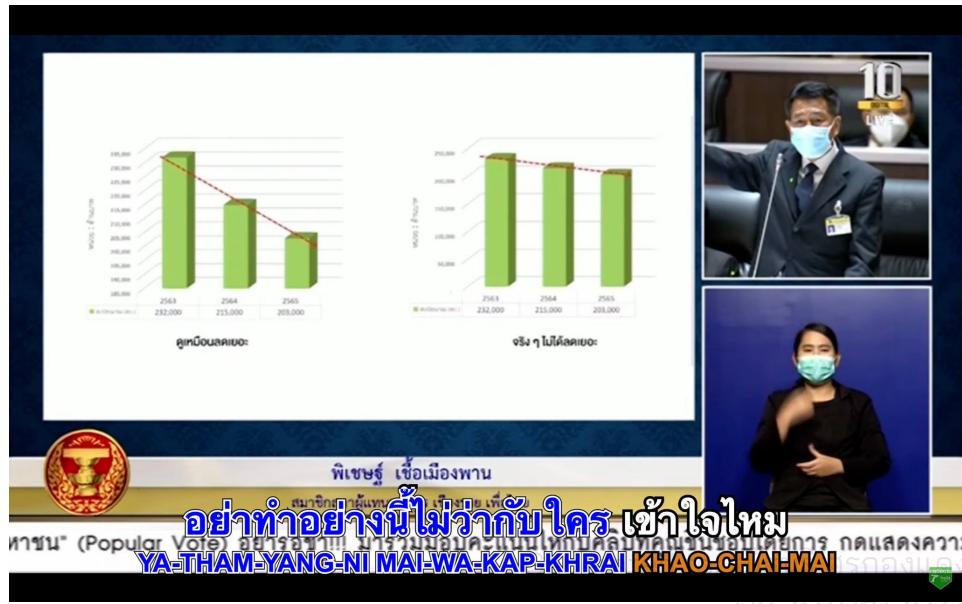
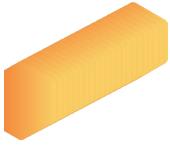


(Baht Million)



- Net interest income increased by [yellow bar] QoQ, driven by an increase in interest income, resulting from increases in key lending rates and market rates during the quarter
- Meanwhile, interest expenses increased from higher deposits balance, deposit rates and market rates

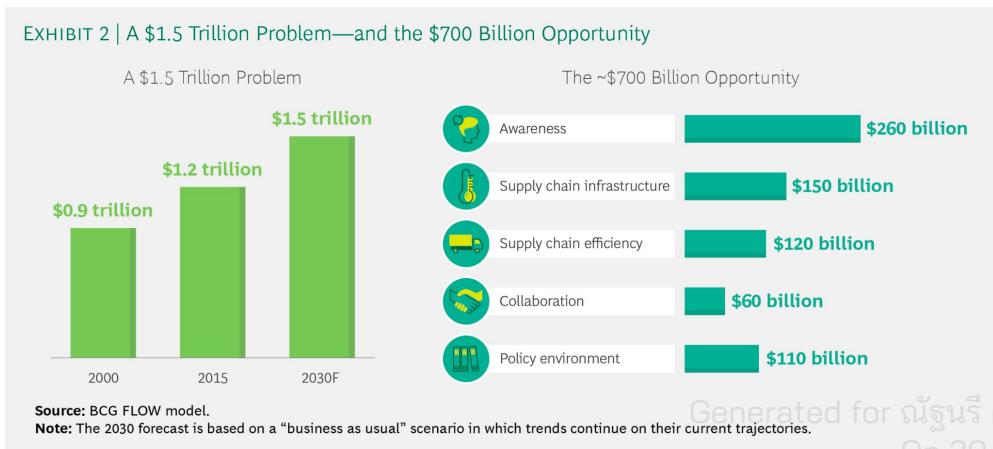
- Net interest income increased by [yellow bar] YoY, driven by an increase in interest income, resulting from loan expansion, especially in high yield segments and interest rate hikes



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## If you really want to ...

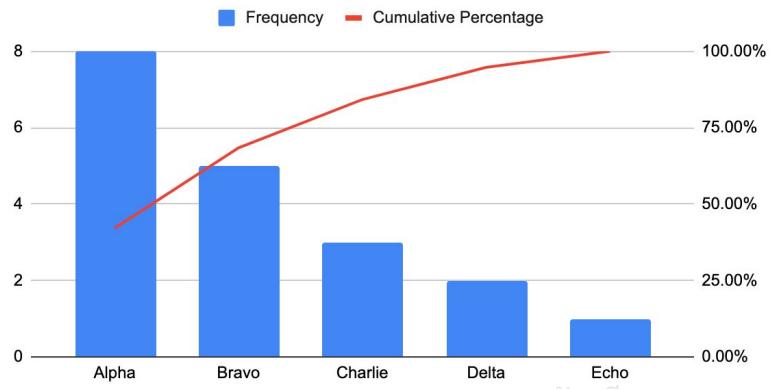


Source: <https://twitter.com/bcg/status/1118471921597857792>

# Pareto Analysis

The purpose of the Pareto chart is to highlight the most important among a (typically large) set of factors.

Frequency and Cumulative Percentage



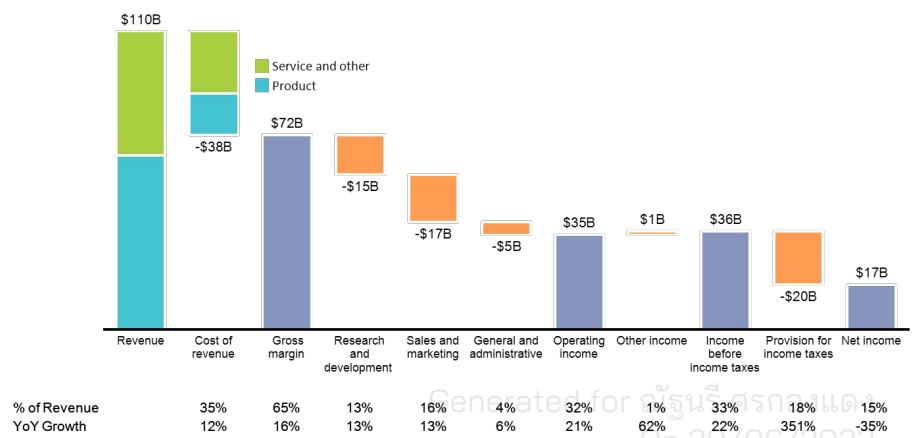
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On 20/06/2023



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# Waterfall Charts

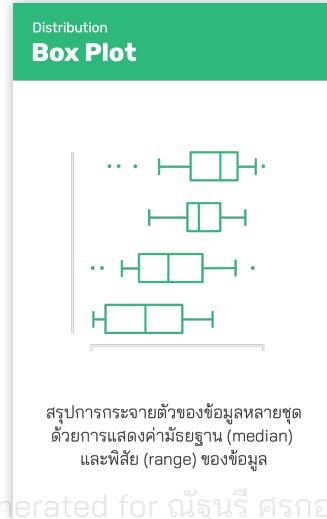
Help in understanding the cumulative effect of sequentially introduced positive or negative values.



Source: <https://www.mekkographics.com/why-would-i-use-a-cascade-waterfall-chart/>



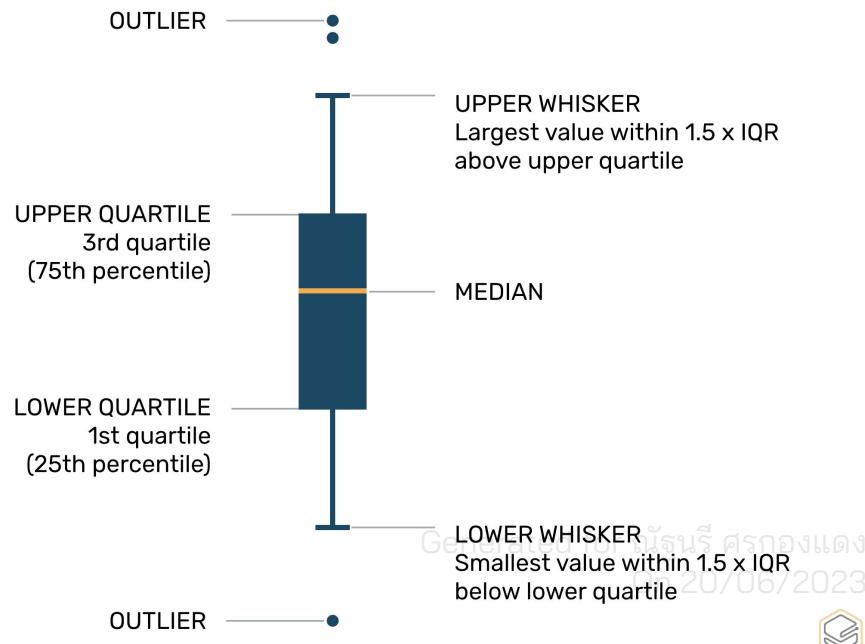
# Visualizing Distribution



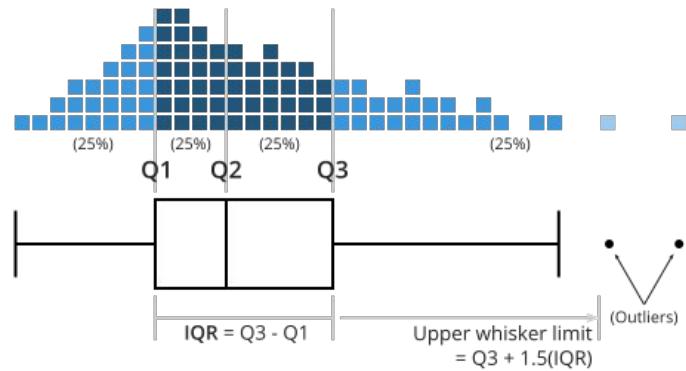
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## Boxplot

While box plots are helpful for understanding the data, they might not be best for presenting to general audiences.



## Boxplot



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Source: <https://chartio.com/learn/charts/box-plot-complete-guide/>

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## Visualizing Ranges

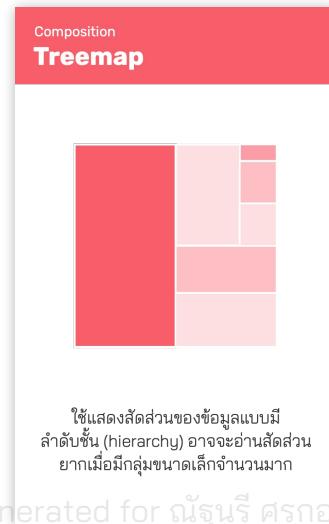


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Source:  
<https://www.troweprice.com/personal-investing/resources/insights/asset-allocation-planning-for-retirement.html>



# Visualizing Composition

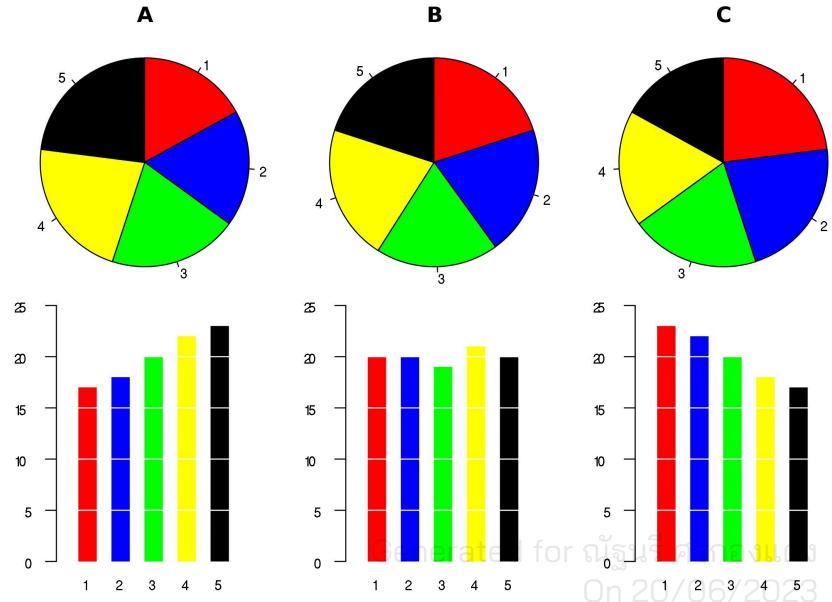


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## Pie Charts vs. Bar Charts



Source: [https://en.wikipedia.org/wiki/Pie\\_chart](https://en.wikipedia.org/wiki/Pie_chart)

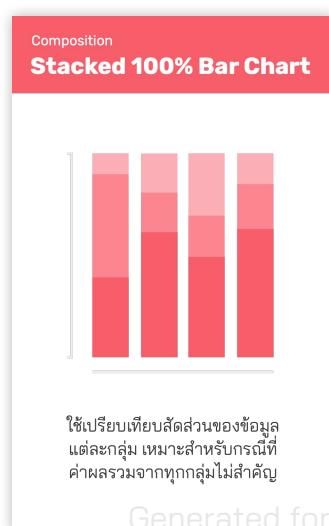


## Most popular apps worldwide 2021, by category (million downloads)



Source: <https://genuineimpact.substack.com/p/infographic-what-did-the-world-google>

# Visualizing Composition



ใช้เปรียบเทียบสัดส่วนของข้อมูล  
แต่ละกลุ่ม หมายความว่ารับกรณ์ที่  
ค่าผลรวมจากทุกกลุ่มไม่ساดัญ

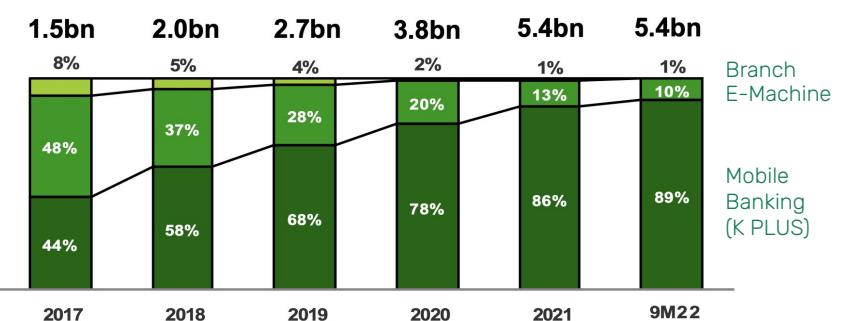
2 Categorical Variables  
1 Numerical Variable  
(in %)

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# KBank's Harmonized Channels

## Number of Transactions



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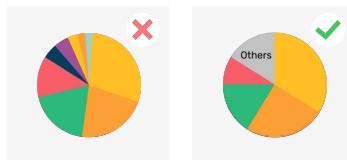


Source: KBank Investor Presentation 2022Q3

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# Pie Charts

Best practices



Visualize no more than 5 categories per chart



Don't use multiple pie charts for comparison

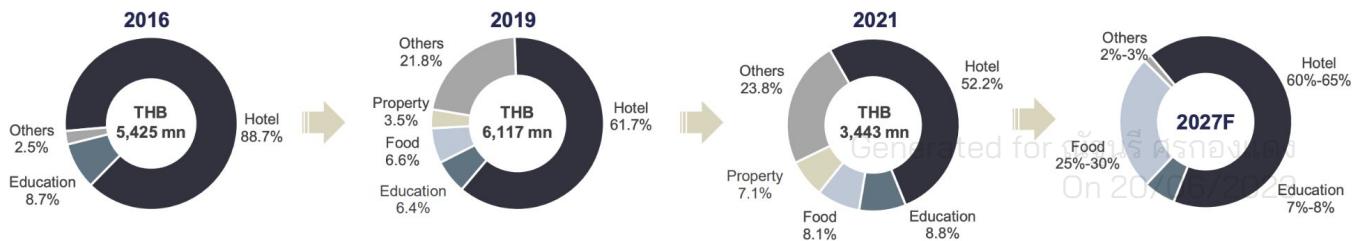
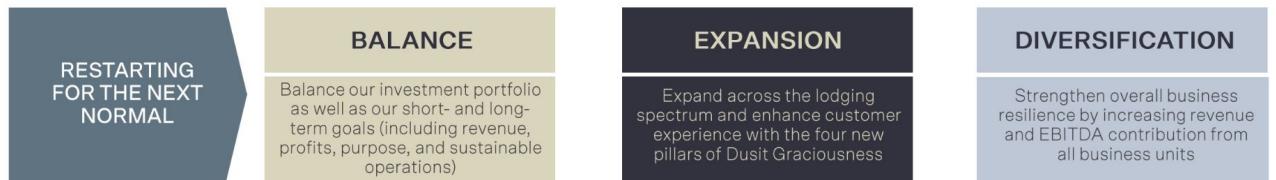
Source: <https://www.slideshare.net/Visage/data-visualization-101-how-to-design-chartsandgraphs>

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## DUSIT's Strategy

Adjusted targets focus on quality over quantity to mitigate revenue volatility and drive long-term sustainable growth

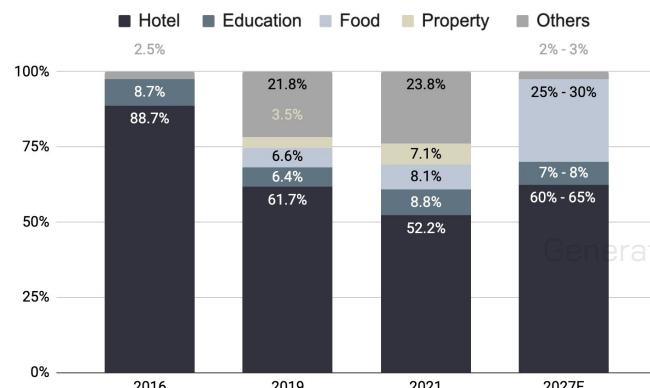


36

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## DUSIT's Strategy

Adjusted targets focus on quality over quantity to mitigate revenue volatility and drive long-term sustainable growth



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# Visualizing Time-series



1 Numerical Variable  
over Time

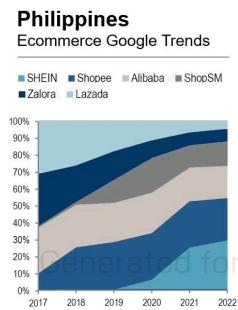
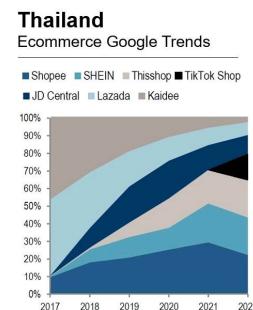
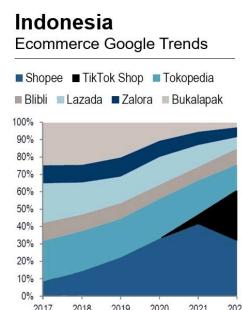
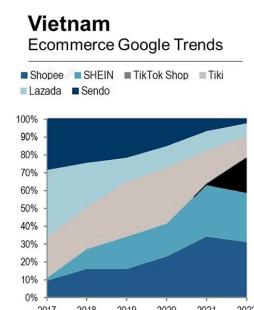
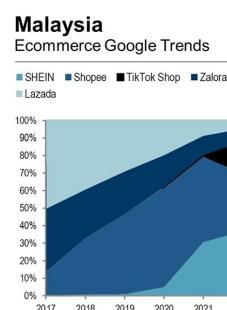
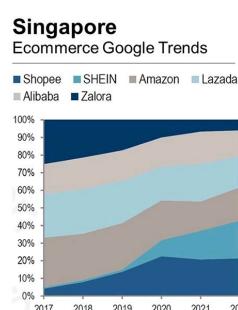


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1 Categorical Variable  
1 Numerical Variable  
over Time



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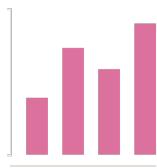


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Source: Google Trends, Credit Suisse  
<https://www.linkedin.com/feed/update/urn:li:activity:7023492119369584640/>



## Visualizing time-series with Bar Chart



- It's possible to visualize time-series data with bar charts
- Use discrete bars if the emphasis is on individual values, not the overall trend
- The key message from the graph should focus on the comparison between specific points in time

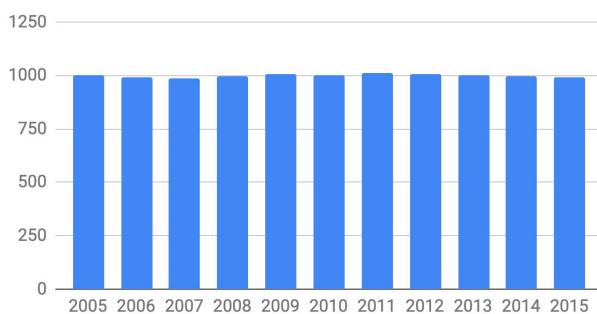
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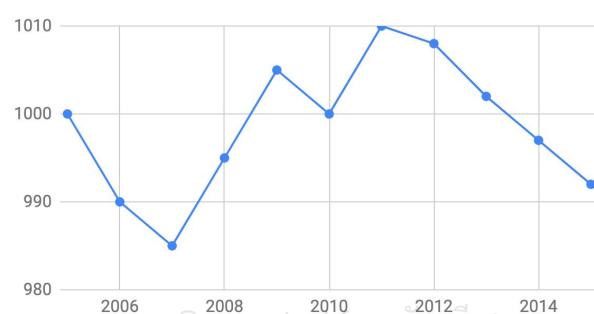
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## Be Careful with Small Changes

iPhone Prices



iPhone Prices

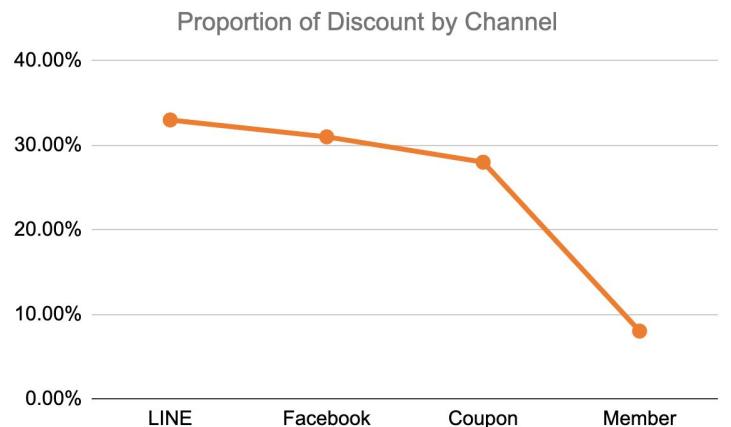


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# No logical reason to connect categories

Use a bar chart to show individual values instead



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# Graphical Integrity



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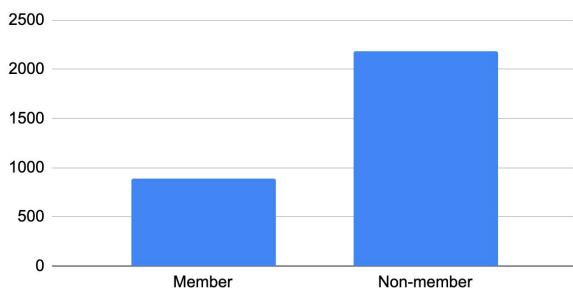


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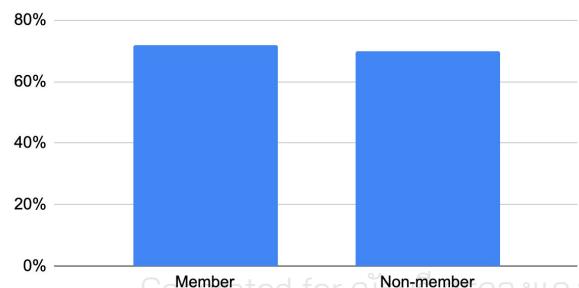


## Which customer group is happier?

# Satisfied Customers



% Satisfied Customers



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# Comparing Statistics

- Being able to compare a metric to other time periods, groups of users, or competitors helps you understand things
- Ratios or rates are inherently comparative
  - Percentage of active users
  - Total new users per day
- Think twice before comparing “totals”
  - Total over what?

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Lean Analytics: Use Data to Build a Better Startup Faster (Alistair Croll and Benjamin Yoskovitz)



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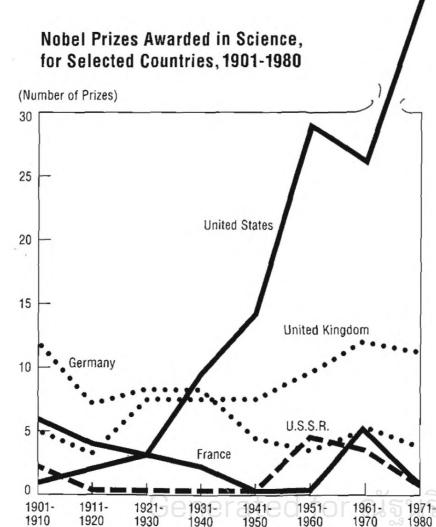
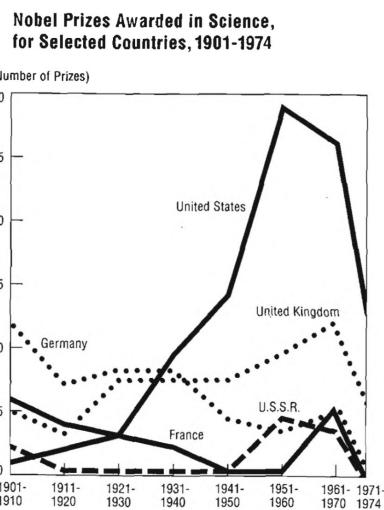
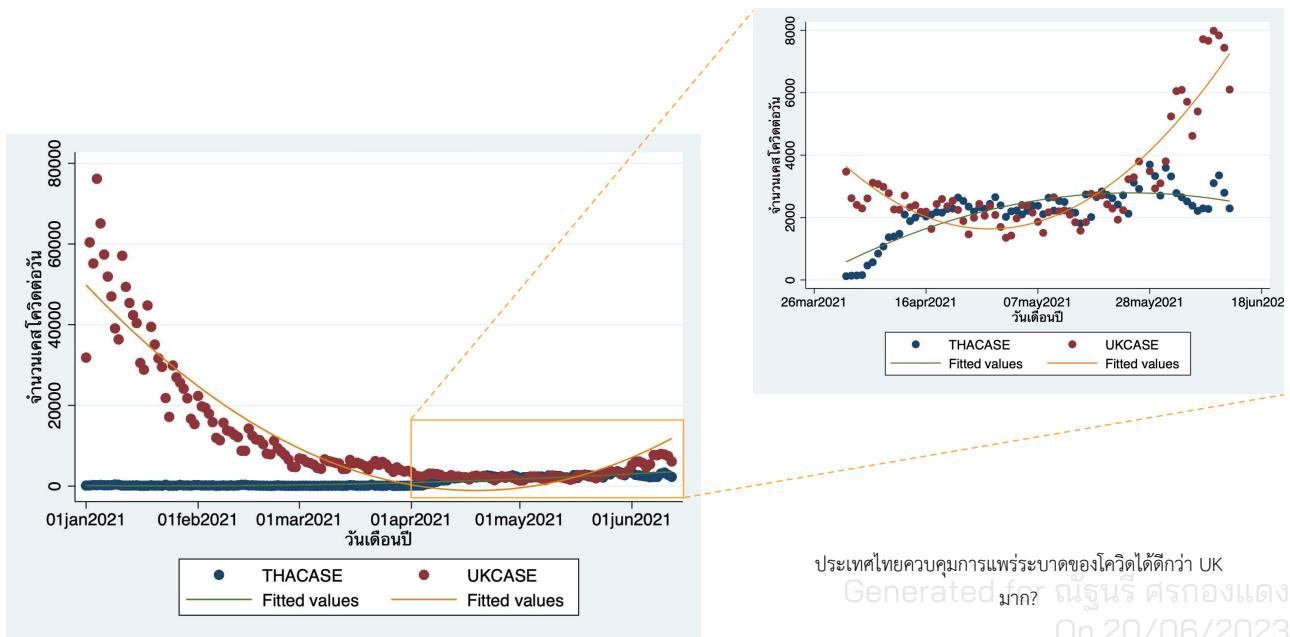


Photo: The Visual Display of Quantitative Information (Edward Tufte)



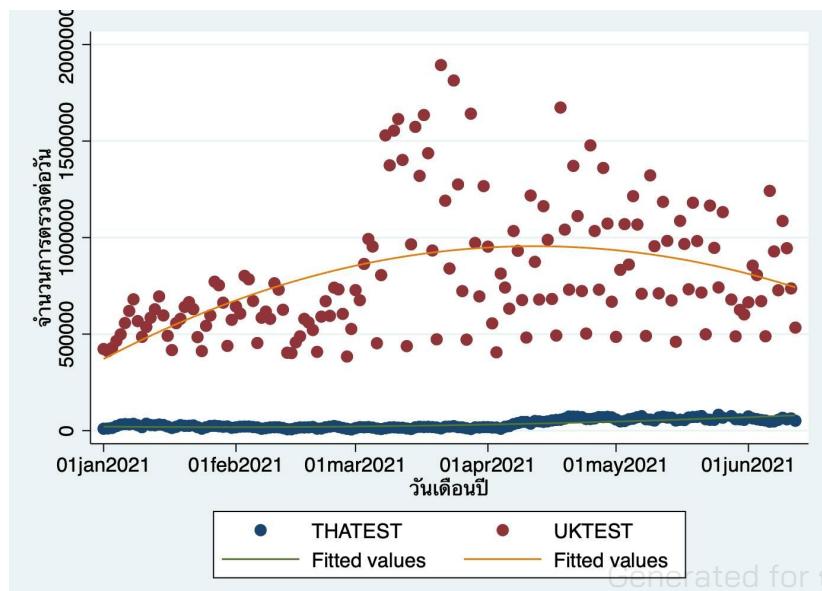


Source: FB Nattavudh Powdthavee

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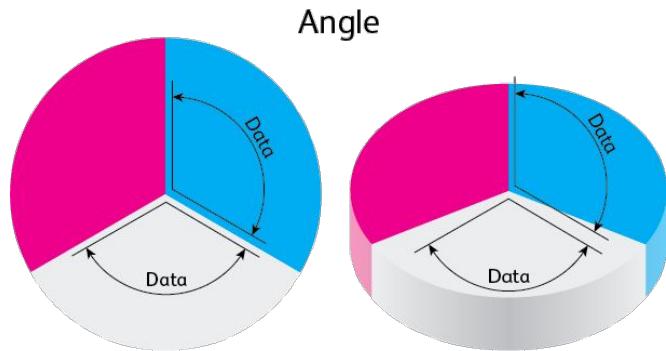


Source: FB Nattavudh Powdthavee

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# DON'T use 3D charts!



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Source: <https://visual.ly/blog/2ds-company-3ds-a-crowd/>

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Source: <https://taepras.medium.com/>



# Maximizing Clarity

Maximizing Data-Ink Ratio  
Small Multiples  
Don't make them think

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MAXIMIZING CLARITY

# Maximizing Data-Ink Ratio

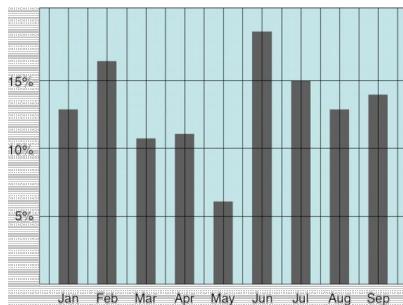
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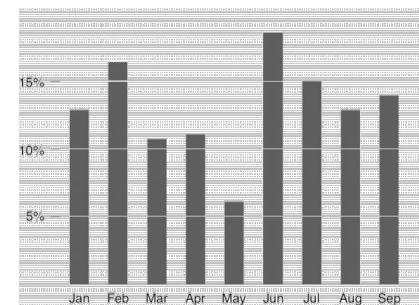
# Maximize Data-Ink Ratio

A concept introduced by  
Edward Tufte

Data-ink is the non-erasable ink  
used for the presentation of data



Low data-ink ratio



High data-ink ratio

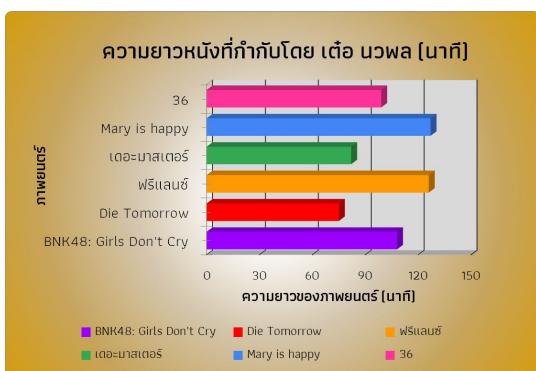
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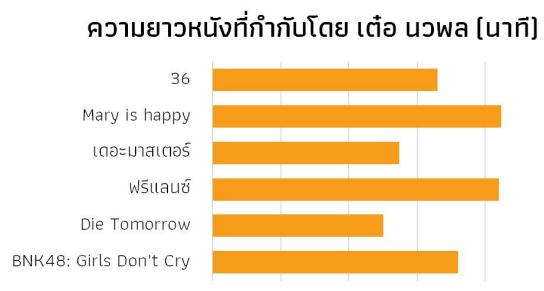
Source: [https://infovis-wiki.net/wiki/Data-Ink\\_Ratio](https://infovis-wiki.net/wiki/Data-Ink_Ratio)

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# Simplify to Amplify



Low data-ink ratio



High data-ink ratio

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MAXIMIZING CLARITY



# Small Multiples

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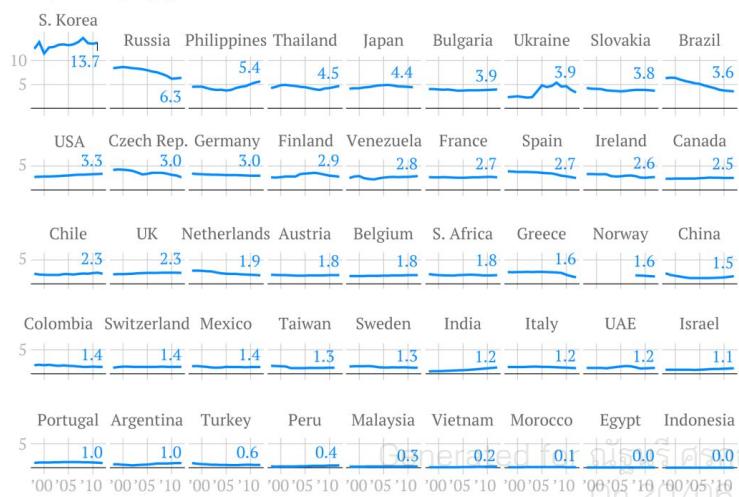


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## Small Multiples

A small multiple (sometimes called trellis chart, lattice chart, grid chart, or panel chart) is a series of similar graphs or charts using the same scale and axes, allowing them to be easily compared. It uses multiple views to show different partitions of a dataset.

The average amount of liquor consumed by a person of drinking age  
Shots per week of any spirit



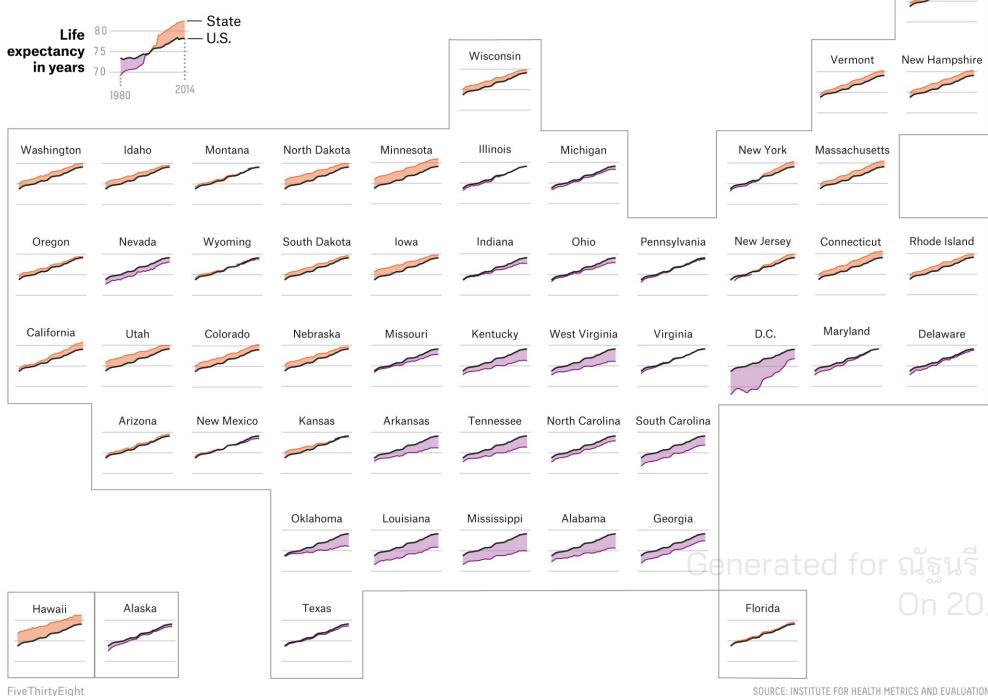
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Data: Euromonitor



Source: Quartz

### Life expectancy in each state vs. U.S. average, 1980-2014



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SOURCE: INSTITUTE FOR HEALTH METRICS AND EVALUATION

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MAXIMIZING CLARITY

## Don't make them think

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And you will read this last

# You will read this first

And then you will read this

Then this one

Generated for

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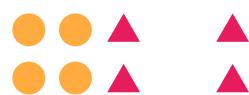
## Gestalt Principles

How do audiences  
decode visuals?

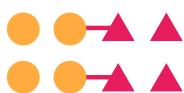
Gestalt principles explain  
how humans create visual  
connections and chunk  
visuals together.



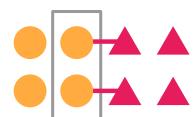
Similarity



Proximity



Connection

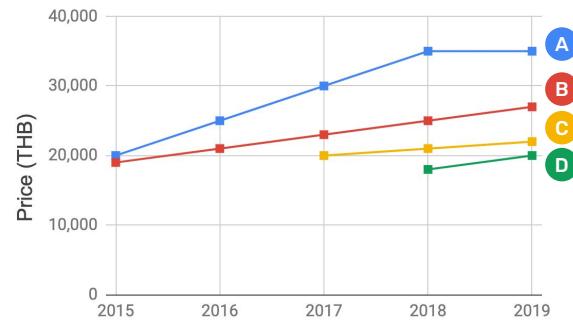
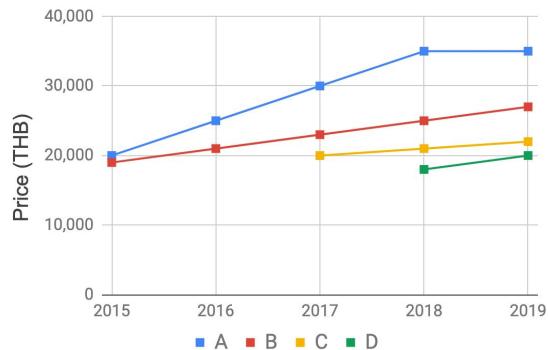


Enclosure

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## Reduce Cognitive Load

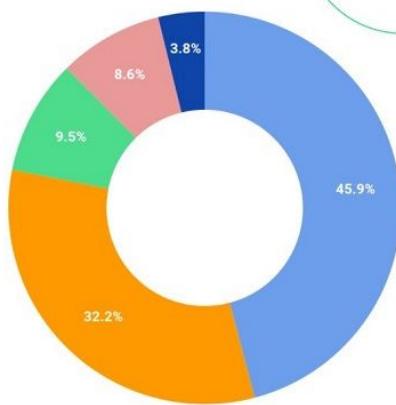
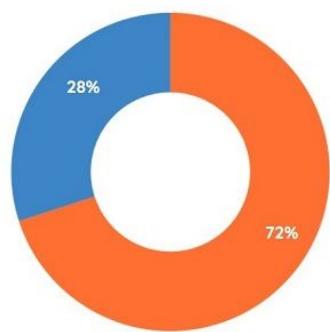


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## เพศและอายุผู้ใช้ Delivery

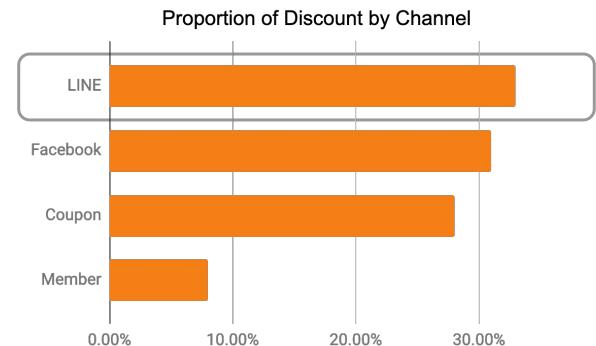
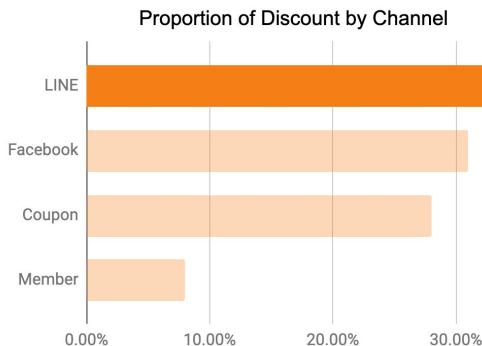


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Source: <https://brandage.com/article/28033>

# Highlight Data

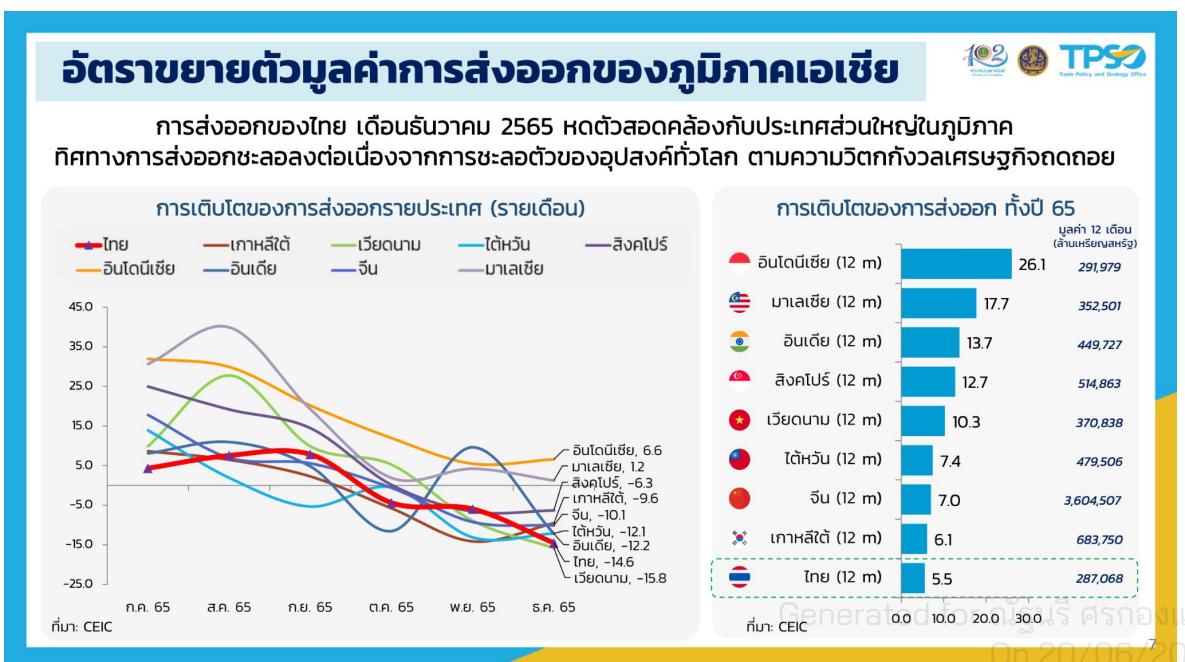


Use Similarity  
Higher Data-Ink Ratio

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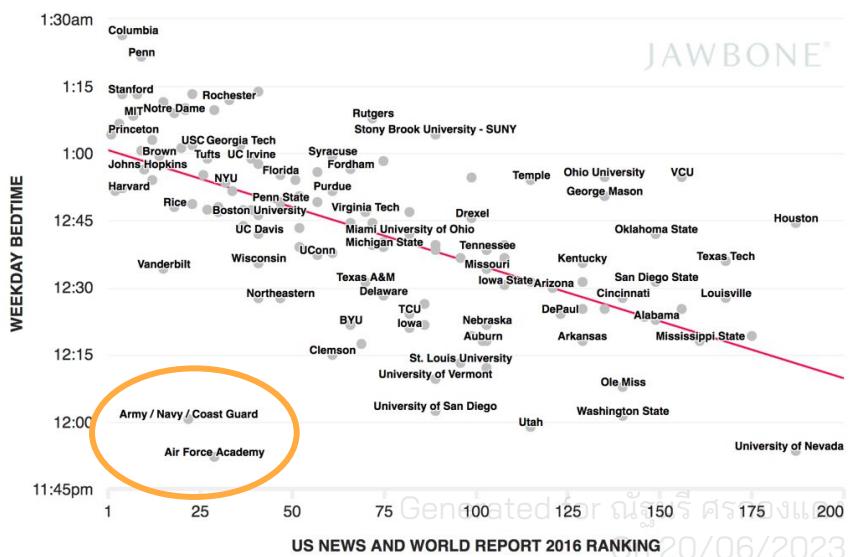


Source: <http://www.tpdo.moc.go.th/th/node/12155>



# Focus your audience

How university students sleep? The data is from 18,498 students at 137 schools who logged 1.44M nights of sleep



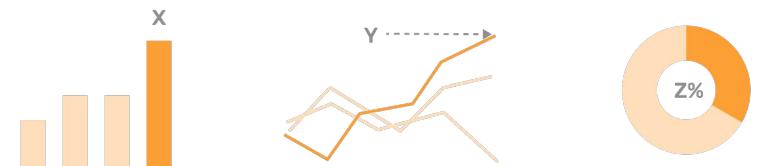
Source: <https://jawbone.com/blog/university-students-sleep/>



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# Label Data

- Strategically amplify the narrative in the chart with labels
- Do not over label



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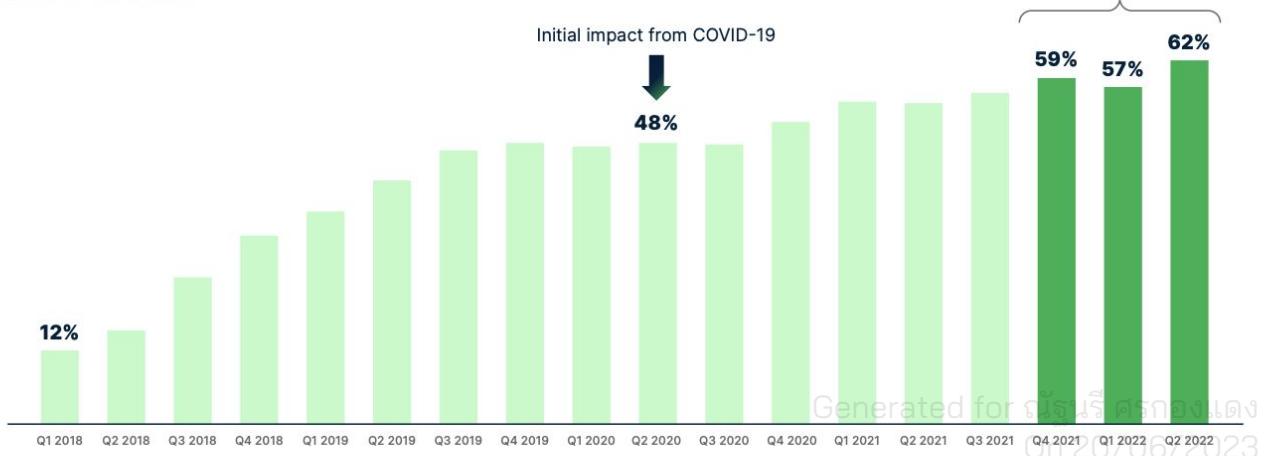
Source: DataStory: Explain Data and Inspire Action Through Story (Nancy Duarte)



# The power of the ecosystem

## MTUs<sup>(1)</sup> using multiple Grab offerings

(% of total Group MTUs<sup>(1)</sup>)



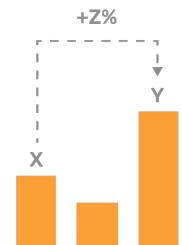
Note: 1. MTUs means monthly transacting users, which is defined as the monthly number of unique users who transact via Grab's products, where transact means to have successfully paid for any of Grab's products. MTUs over a quarterly or annual period are calculated based on the average of the MTUs for each month in the relevant period. Q1 and Q2 2022 MTU data is inclusive of OVO MTUs.

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## Calculate Important Numbers

- Don't let the audience do the math themselves
- Make the narrative of the chart clearer by adding important calculations like
  - Differences
  - Summation
  - % Change



Source: DataStory: Explain Data and Inspire Action Through Story (Nancy Duarte)



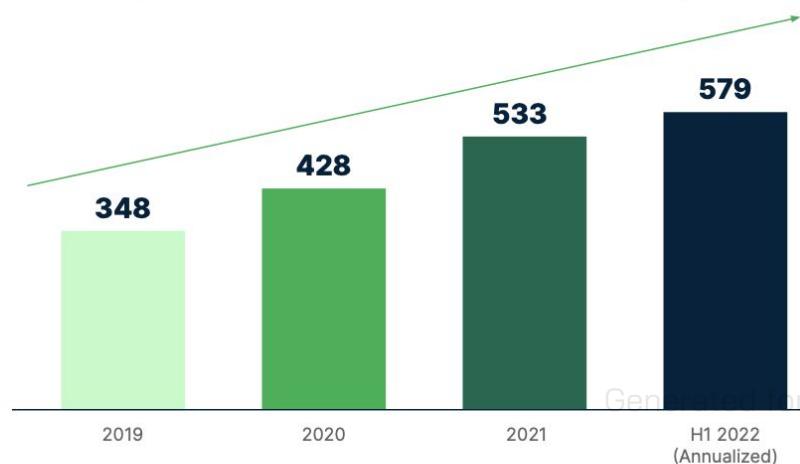
## Increasing spend per user

In US\$ per MTU<sup>(1)</sup> per annum

(GMV per user, net of consumer incentives)

+66%

improvement



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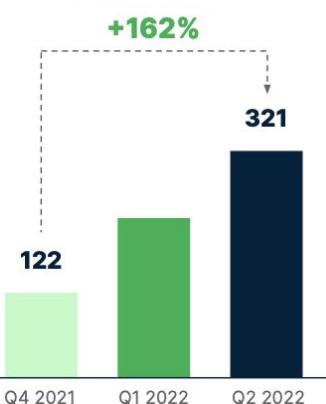
Note: H1 2022 "annualized" assumes same rate of growth in H2 2022 as in H1 2022.  
1. MTUs means monthly transacting users, which is defined as the monthly number of unique users who transact via Grab's products, where transact means to have successfully paid for any of Grab's products. MTUs over a quarterly or annual period are calculated based on the average of the MTUs for each month in the relevant period. Data is inclusive of OVO.

18

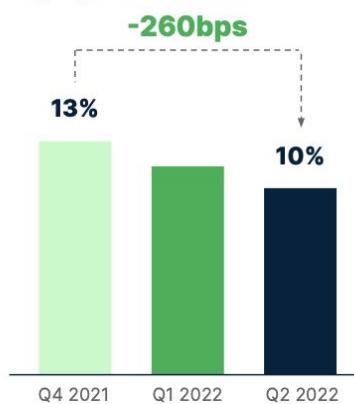
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## A resilient business with a clear path to profitability

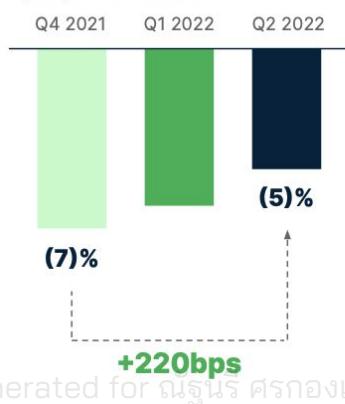
**Total Group Revenue**  
(in US\$ millions)



**Total Incentives<sup>(1)</sup> as a proportion of GMV<sup>(3)</sup>**



**Adjusted EBITDA<sup>(2)</sup> as a proportion of GMV<sup>(3)</sup>**

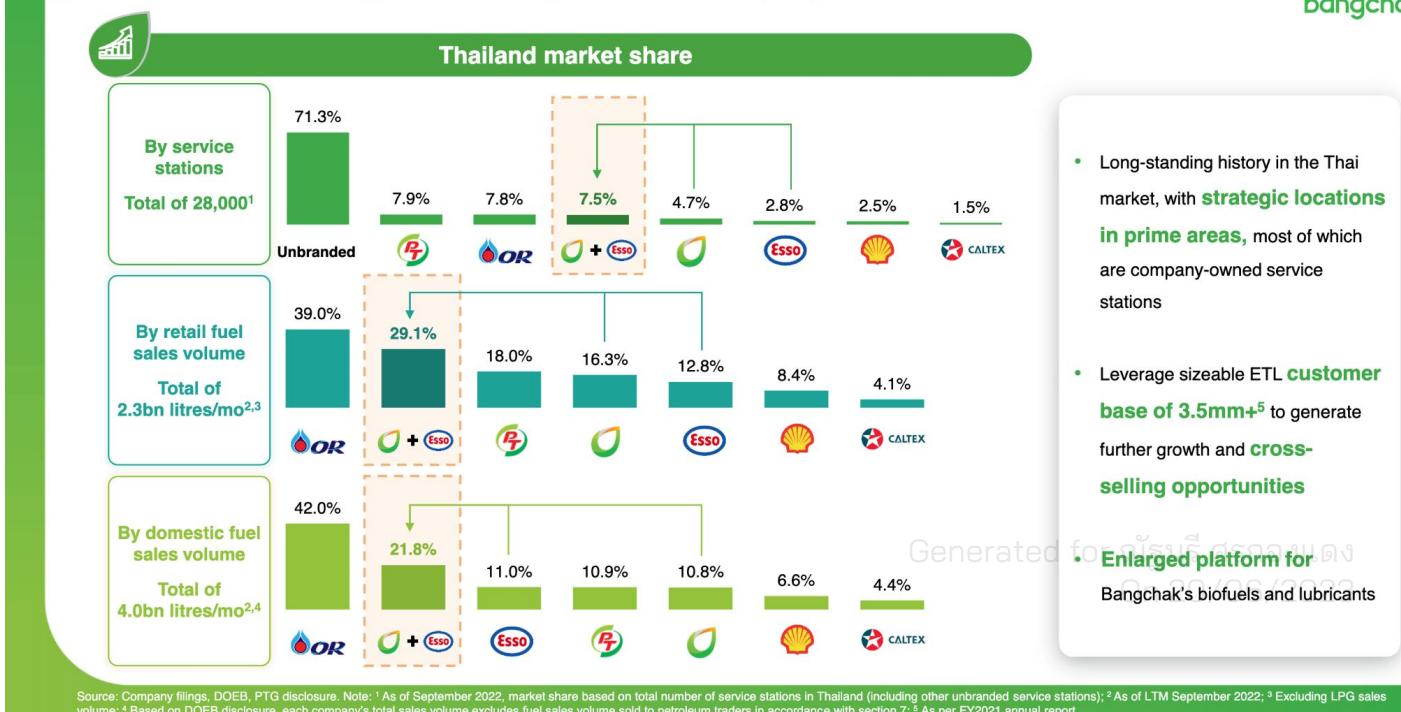


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Note: 1. Total incentives include consumer and partner incentives. Consumer incentives is an operating metric representing the dollar value of discounts and promotions offered to consumers. Partner incentives is an operating metric representing the dollar value of incentives granted to driver-and merchant-partners. The incentives granted to driver-and merchant-partners include base incentives and excess incentives, with base incentives being the amount of incentives paid to driver-and merchant-partners up to the number of commissions and fees earned by Grab from those driver-and merchant-partners, and excess incentives being the amount of payments made to driver-and merchant-partners that exceed the amount of commissions and fees earned by Grab from those driver-and merchant-partners. 2. Adjusted EBITDA is a non-IFRS financial measure calculated as net loss adjusted to exclude: (i) net interest income (expenses), (ii) other income (expenses), (iii) income tax expenses, (iv) depreciation and amortization, (v) stock-based compensation expenses, (vi) costs related to mergers and acquisitions, (vii) unrealized foreign exchange gain (loss), (viii) impairment losses on goodwill and non-financial assets, (ix) fair value changes on investments, (x) restructuring costs, (xi) legal, tax and regulatory settlement provisions and (xii) share listing and associated expenses. For a reconciliation to the most directly comparable IFRS measure, see "Supplemental Information." 3.GMV means gross merchandise value, an operating metric representing the sum of the total dollar value of transactions from Grab's services, including any applicable taxes, tips, tolls and fees, over the period of measurement.

9

### 3 Create the leading Thai integrated R&M player...



13

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## Add reference lines

Compared to what?

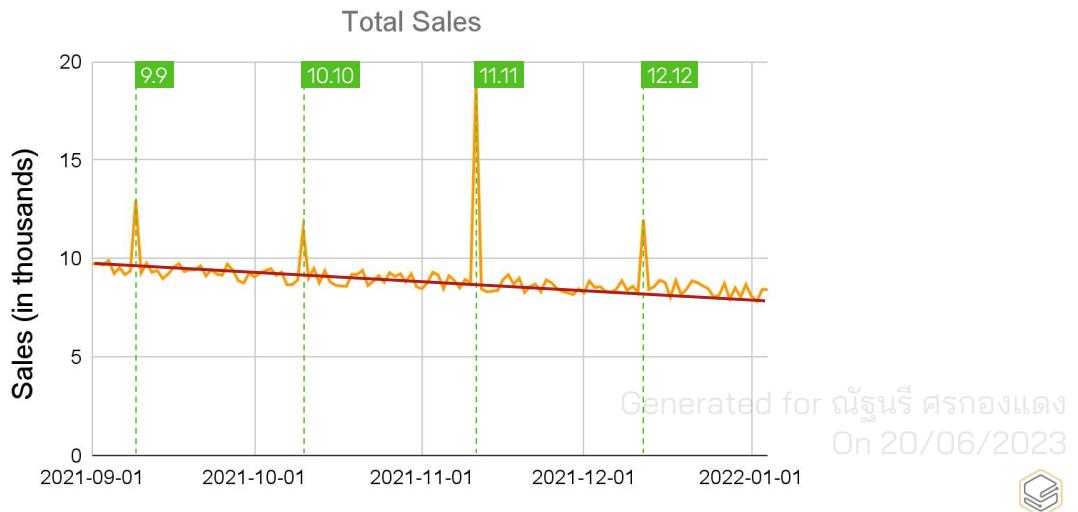
- Summary statistics (e.g., averages, best-fit lines, confidence intervals)
- Goals to be achieved
- Thresholds for triggering actions
- Notable events / periods

Source: Persuading with Data (Miro Kazakoff)

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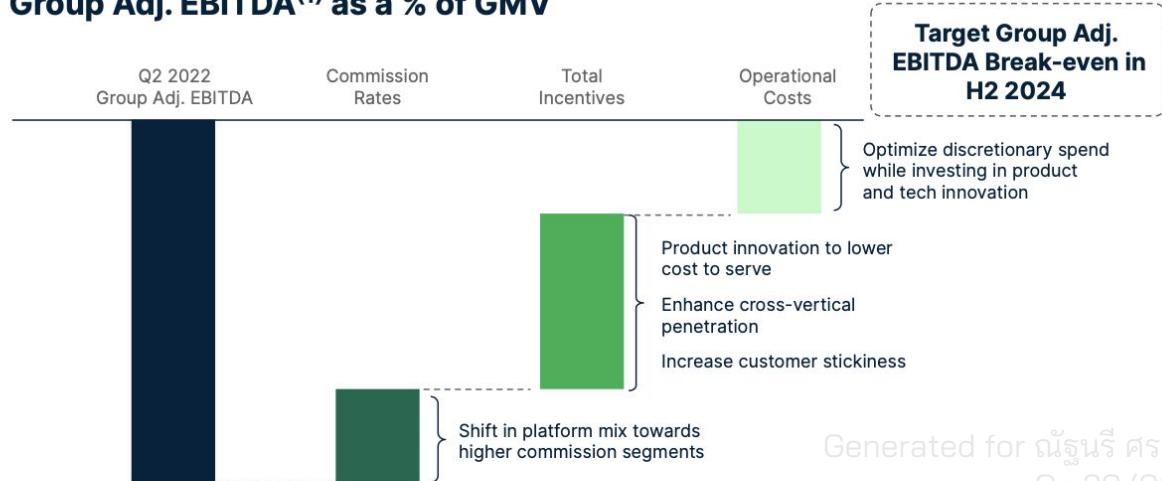
## Add reference lines

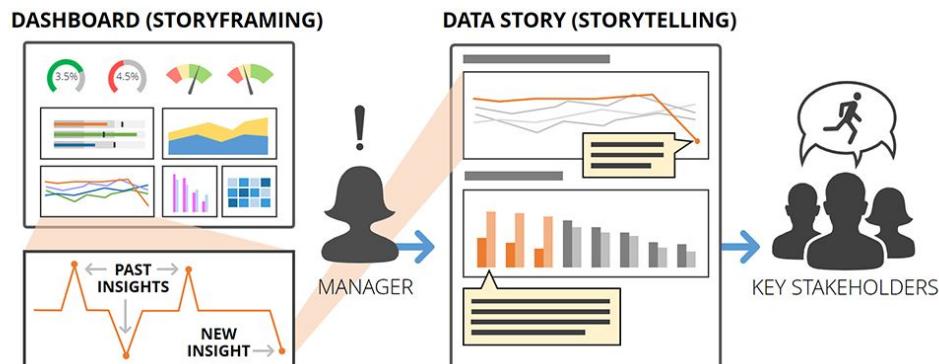


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## Group Adj. EBITDA Breakeven: H2 2024

### Group Adj. EBITDA<sup>(1)</sup> as a % of GMV

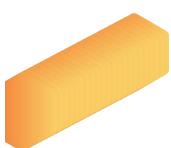




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Source: <https://www.forbes.com/sites/brentdykes/2018/10/30/the-real-reason-most-dashboards-dont-tell-data-stories/>



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	<b>STORYFRAMING</b>	<b>STORYTELLING</b>
<b>Purpose</b>	Exploratory (frames information to generate insights)	Explanatory (explains insights)
<b>Focus</b>	Broader (key metrics & dimensions)	Narrower (related set of findings that support a main insight)
<b>Structure</b>	Hierarchical, non-linear layout	Linear sequence
<b>Preparation</b>	Automated	Curated
<b>Delivery</b>	Dynamic (rolling)	Static (snapshot)
<b>Key features</b>	Drills / filters	Annotation / highlighting
<b>Usage</b>	Multi-use	Single use

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Source: <https://www.forbes.com/sites/brentdykes/2018/10/30/the-real-reason-most-dashboards-dont-tell-data-stories/>

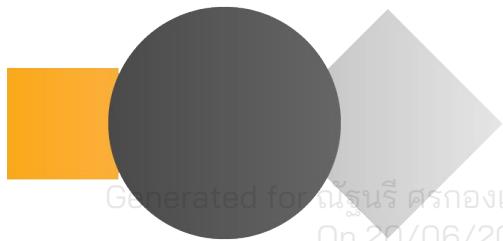


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# Presenting Compelling Stories with Data



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# Set the Stage



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## Every great story has an introduction

កាលក្នុងអេដ្ឋា  
នៃ ... សភាយក់  
មិន ... ពាងលេក

- Establish the same baseline understanding of the **situation** to the audience
- Provide context necessary for the idea discussion
- Identify the **complication** that triggers the audience's **question** addressed in the document / presentation
- This is the foundation of WHY your audience should care about your presentation

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# **Situation Complication Question**

SCQ Framework



## Situation

The context of the subject that the audience agrees to



## Complication

What happened next? The reason why this situation needs attention.



## Question

To which the audience expect your document to give him an answer

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Adapted from The Pyramid Principle: Logic in Writing and Thinking (Barbara Minto)



## Example

SCQ Framework



## Situation

สคูลดิโวกำลังต้องการเติบโตเพิ่มรายได้ผ่านการขายคอร์สสอนออนไลน์



## **Complication**

เราไม่กรีดพยากรณ์จำกัด และต้องเลือกว่าจะลงทุนผลิต  
คอร์สอะไร



## Question

คอร์สสอนไลน์ถัดไปของศคุลดิโวควรเป็นคอร์สอะไร?

Adapted from The Pyramid Principle: Logic in Writing and Thinking (Barbara Minto)

## Example



Source: <https://www.bcg.com/emerging-challengers-and-incumbent-operators-battle-for-asia-pacifics-digital-banking-opportunity>

### At A Glance

The digital banking space continues to attract a diverse range of industry players, from incumbent banking operators to emergent new challengers. There are now 249 digital banking players globally, but of those, just 13 have been successful in generating a positive bottom line. Of those 13 successful players, ten are based in the Asia Pacific (APAC) region.

Digital Challenger Banks continue to gain traction with consumers looking for increased personalization and value-added services. This evolution is being supported by growing liberalization by banking regulators. As the landscape expands in coming years, operators will need to consider not just how to win in this market, but also how to play the game in the way that suits their business.

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## Example



Source: <https://www.bcg.com/emerging-challengers-and-incumbent-operators-battle-for-asia-pacifics-digital-banking-opportunity>

### At A Glance

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## Example



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#### Complication

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## Example



Source: <https://www.bcg.com/emerging-challengers-and-incumbent-operators-battle-for-asia-pacifics-digital-banking-opportunity>

### At A Glance

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#### Question

Digital Challenger Banks continue to gain traction with consumers looking for increased personalization and value-added services. This evolution is being supported by growing liberalization by banking regulators. As the landscape expands in coming years, operators will need to consider not just how to win in this market, but also how to play the game in the way that suits their business.

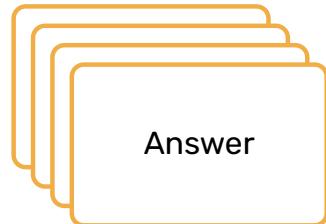


## Introduction



Do not introduce anything new  
or controversial here!

## Main Deck



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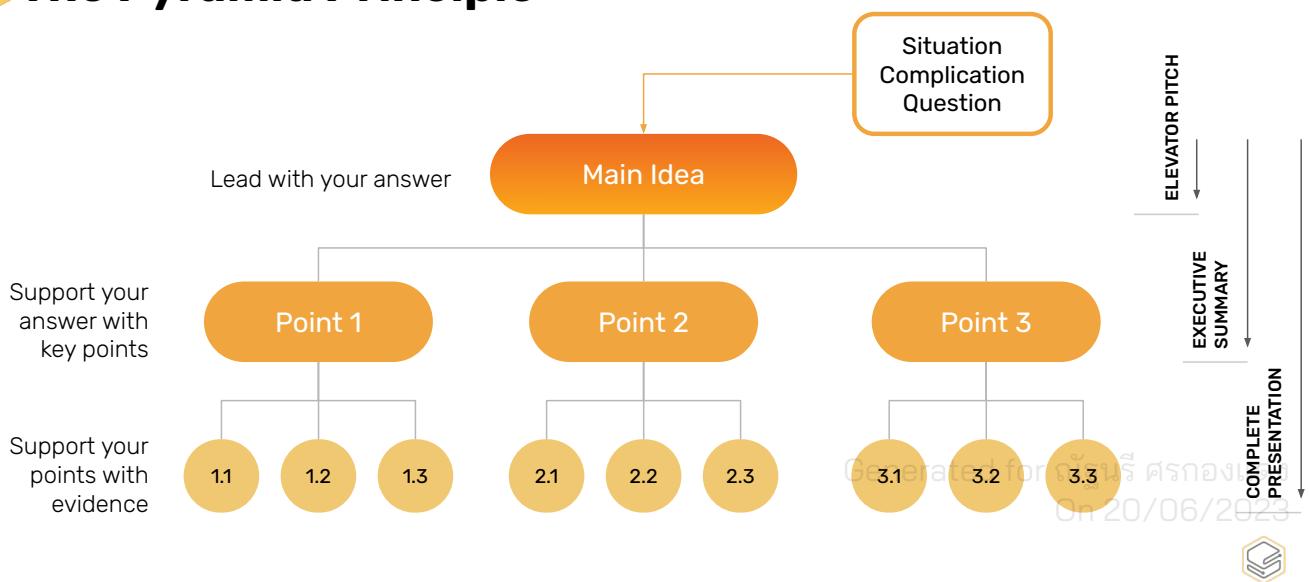
# Structuring Your Presentation



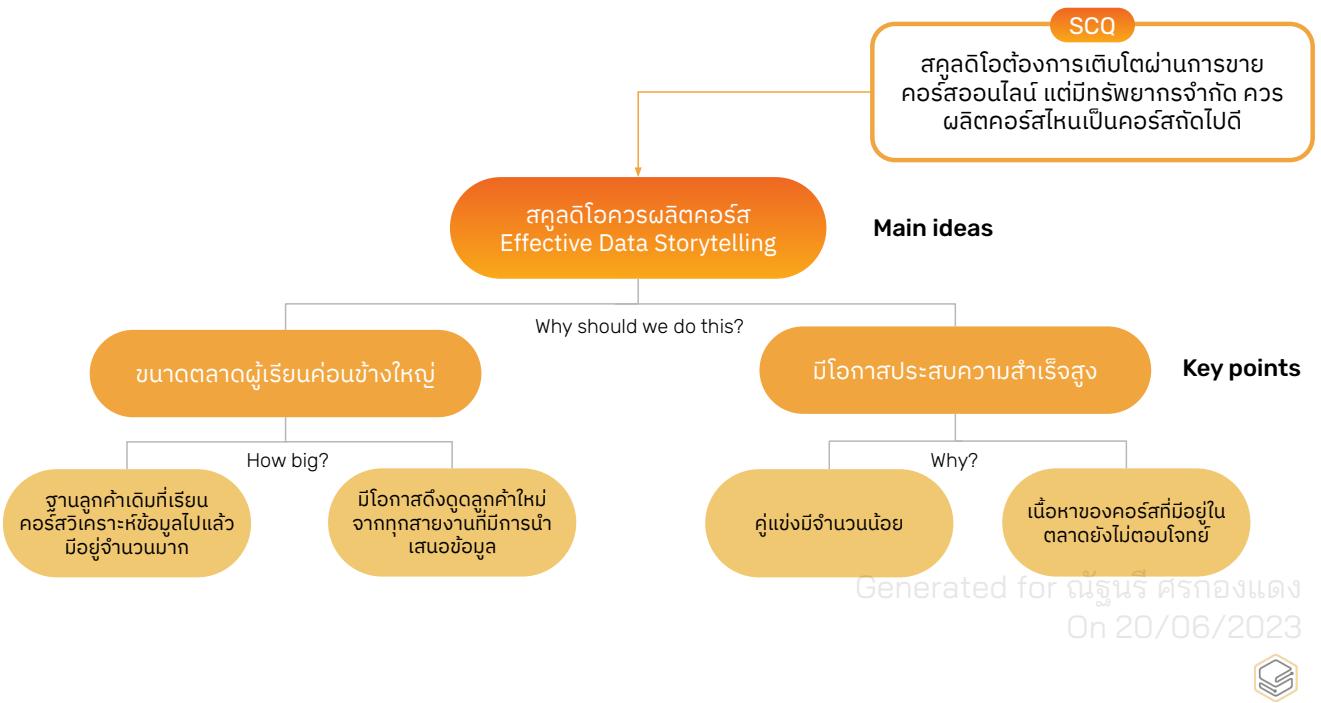
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# The Pyramid Principle



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# Why Pyramid?

The audience always look for a structure connecting the ideas as they come to him. To make sure he finds the one you intended, you must tell him in advance what it is – to make sure he knows what to look for.



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Photo: Unleashed: The Unapologetic Leader's Guide to Empowering Everyone Around You (Frances Frei & Anne Morriss)

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INTRO

## Look back to move your marketing forward

ในระยะเวลา 3 ปีที่ผ่านมา คนไทยเพิ่งกลับกันการเรียนและนักเรียนร่วมกัน เตรียมการตั้งแต่ในเบื้องหลังที่ให้สิ่งของที่สนับสนุนให้เกิดความสำเร็จ ไม่ว่าจะเป็นสิ่งที่ดี หรือสิ่งที่ไม่ดี ทั้งหมดนี้เป็นส่วนหนึ่งของการพัฒนาประเทศ ทำให้เราสามารถเดินทางไปสู่ความสำเร็จได้มากขึ้น

Three photographs are shown side-by-side, each with a large number overlaid. The first photo shows two people eating at a table, labeled 'การค้นหา ตัวตนกีฬาจริง' (Research into real sports identity). The second photo shows two people talking in a kitchen, labeled 'การค้นหา คุณค่า' (Research into value). The third photo shows a person working on a laptop on a balcony, labeled 'การค้นหา ความสุข' (Research into happiness).

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## การค้นหา ตัวตนที่แท้จริง

1.1

ค่านิยม  
ด้านวัฒนธรรม

1.2

ค่านิยม  
ด้านการทำงาน

1.3

ค่านิยม  
ส่วนบุคคล

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1.1

## ค่านิยม ด้านวัฒนธรรม

การสังเกตด้โลก  
พร้อมส่งเสริมความเป็นไทย

เราเชื่อว่าคนไทยต้องการใช้เวลาในการเรียนรู้และ  
พัฒนาตัวเอง ไม่ใช่แค่การเรียนในแบบที่มีอยู่เดิมเท่านั้น  
แต่ต้องมีความตื่นตัวและคิดอย่างกว้างไกล

การคิดด้โลก power  
เพิ่มขึ้น 500% ในประเทศไทย  
โดยพยายามคิดในเชิงกว้าง  
ความคิดและวิธีคิดของ  
คนไทย ที่มีความคิดสร้างสรรค์  
ความคิดสร้างสรรค์ที่มีความคิดสร้างสรรค์  
ความคิดสร้างสรรค์ที่มีความคิดสร้างสรรค์  
ความคิดสร้างสรรค์ที่มีความคิดสร้างสรรค์

ขยันในเกื้อฝ่ากลือ  
ความภูมิใจของคนในชาติ

คนไทยต้องมีความภูมิใจในสิ่งที่ทำได้ดี เช่น  
ความสามารถทางด้านเทคโนโลยี ที่มีความก้าวหน้า  
และเป็นผู้นำในด้านนี้



ขั้นตอนที่ 1 | 2023/06/20  
+240%  
ลดเวลาทำงานให้เหลือเพียง 10% “ลดเวลาทำงาน”  
เพิ่มขึ้น 240% สำหรับบริษัทและห้องอาหารไทยที่ต้องการ  
รักษาความลับของสูตรอาหาร

+230%  
+170%

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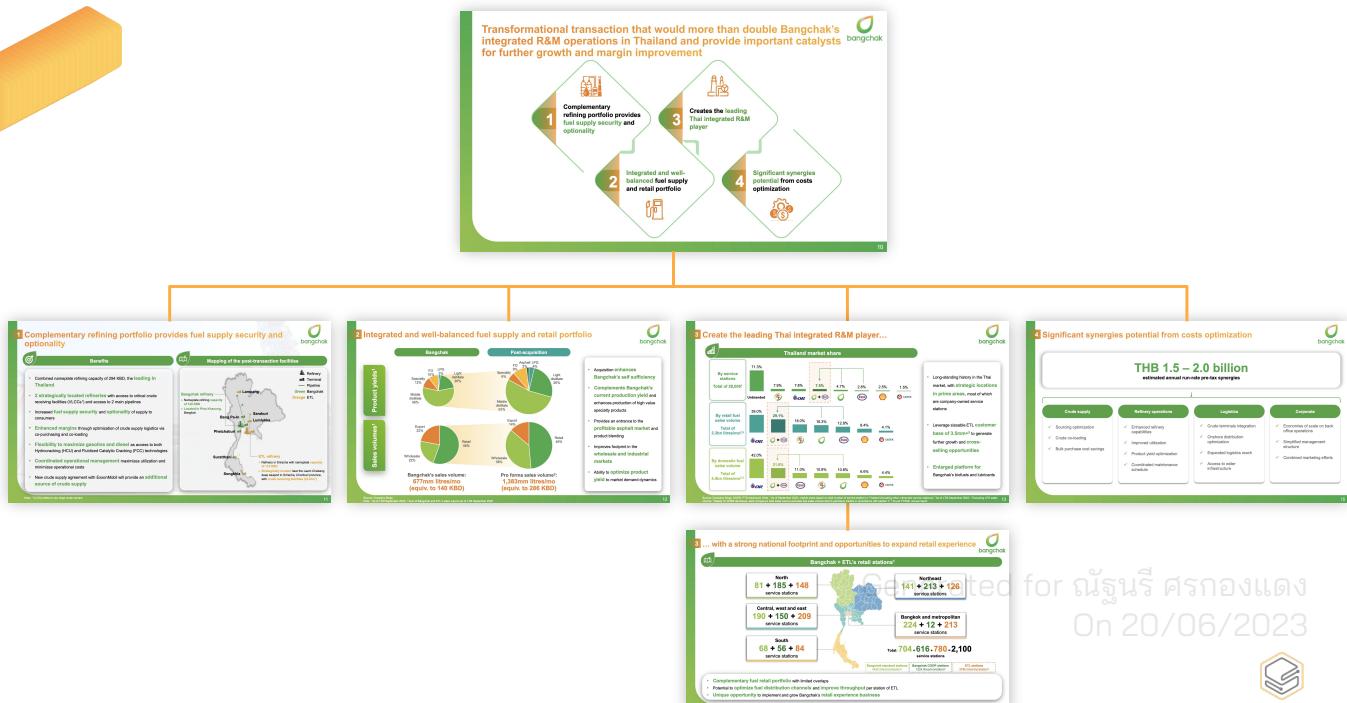
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Source:

<https://investor.bangchak.co.th/th/document/viewer/64179/the-Acquisition-of-shares-in-esso-thailand-public-company-limited>

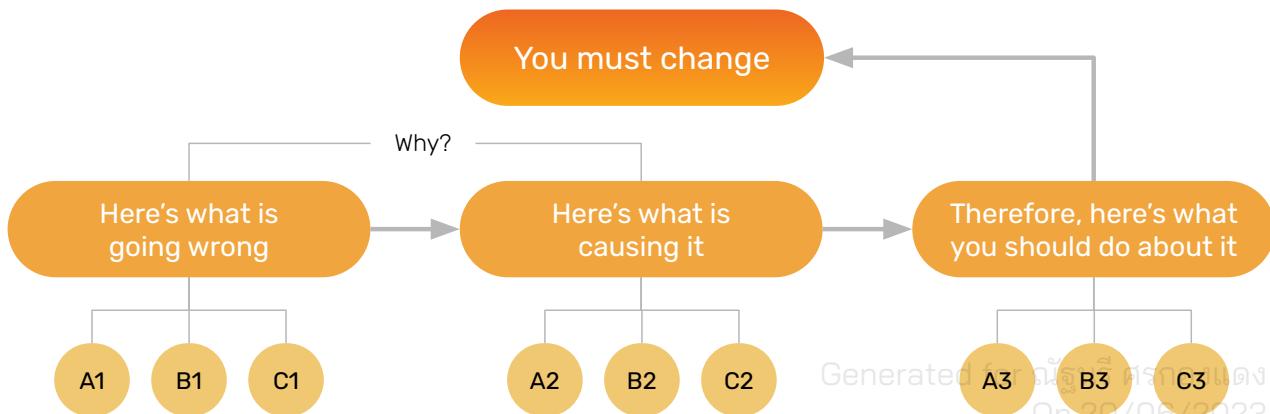
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## Deductive Reasoning

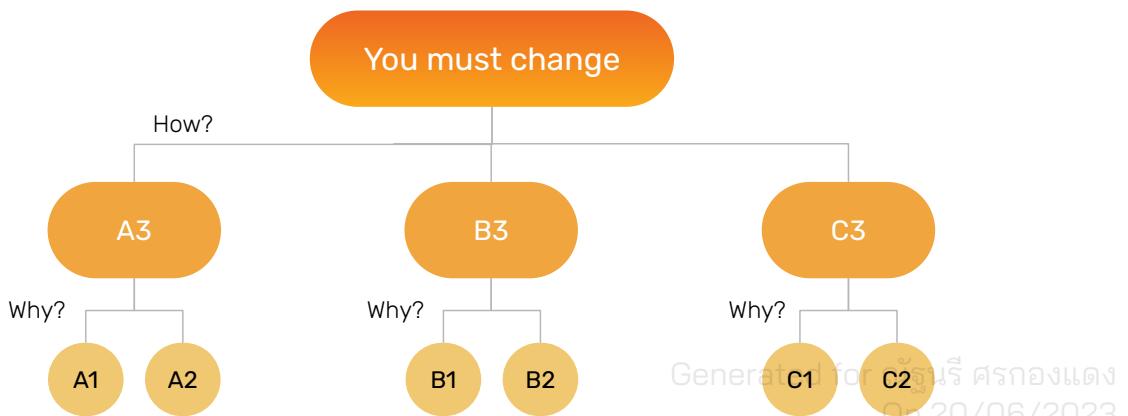


Source: The Pyramid Principle: Logic in Writing and Thinking (Barbara Minto)



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## Inductive Reasoning



Source: The Pyramid Principle: Logic in Writing and Thinking (Barbara Minto)

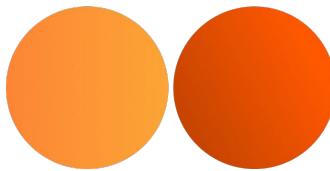


# MECE Principle

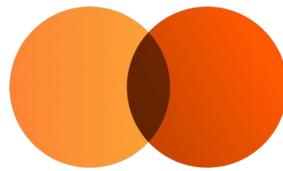
Mutually Exclusive,  
Collectively Exhaustive.

Invented by Barbara Minto, a  
pioneering employee of  
McKinsey in the 1960s

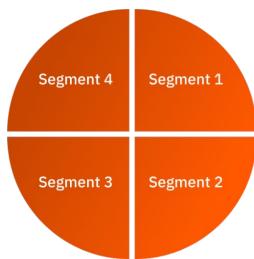
Mutually Exclusive



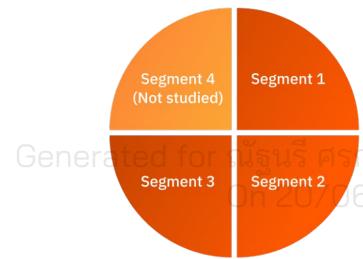
Not Mutually Exclusive



Collectively Exhaustive



Not Collectively Exhaustive



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# Non-MECE Tree

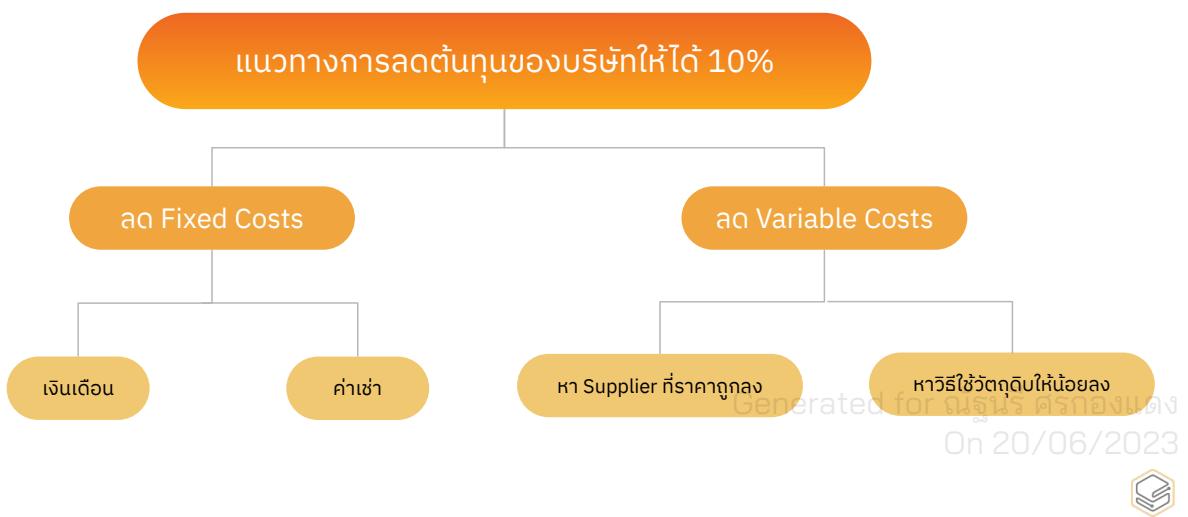
แนวทางการลดต้นทุนของบริษัทให้ได้ 10%



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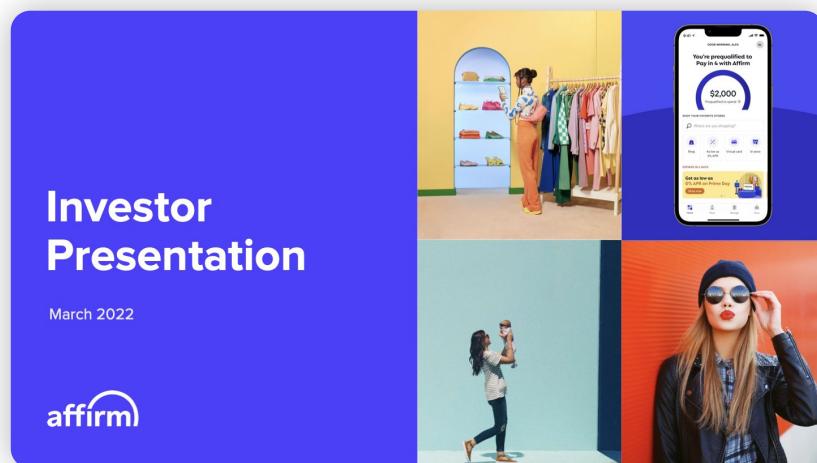


# MECE Tree



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## Case Study



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Source: <https://investors.affirm.com/static-files/10d96e89-56a8-418e-b6e2-66604649ce65>





# Creating Effective Slides



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## Effective Slides

- Each slide has **a single, clear point**
  - Reduce audience's cognitive load
  - Audiences can pay attention to one thing at a time
- Making multiple points in one slide reduces the audience's ability to internalize each chunk and memorize your message
- Identify a point for each slide and **write it as a headline**

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Source: Persuading with Data (Miro Kazakoff)

# Effective Slides

Each slide may have multiple supporting exhibits, but it should contain only one point supported by those exhibits.

- Every slide should look something like this
  - Write the key message as a headline, NOT a title



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## Title vs. Headline

### Title

Revenue

### Headline

รายได้เพิ่มขึ้น 2x จาก 3 ปีที่แล้ว

A headline describes why that data matters to the audience and almost always has a verb in it.

### Sales by Channel

ยอดขายผ่านเว็บไซต์มีมูลค่าสูงกว่า  
ช่องทางอื่นๆ ทุกช่องทางรวมกัน

### User Behavior

ผู้ใช้งานที่ยังไม่รับข่าวสารจากเรา  
มีโอกาสซื้อของกับเรามากขึ้น 76%

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# Good Headlines

- Explain the point of the data shown
  - Be specific. Include a key data point, element of time, or unit of measure that means something to your audience
- Supported by the data shown on the graphs
  - Otherwise, fix your graphs!
  - Focus the visual on the point. Remove excess ink!
- Concise enough to fit the top of the page with a relatively large font

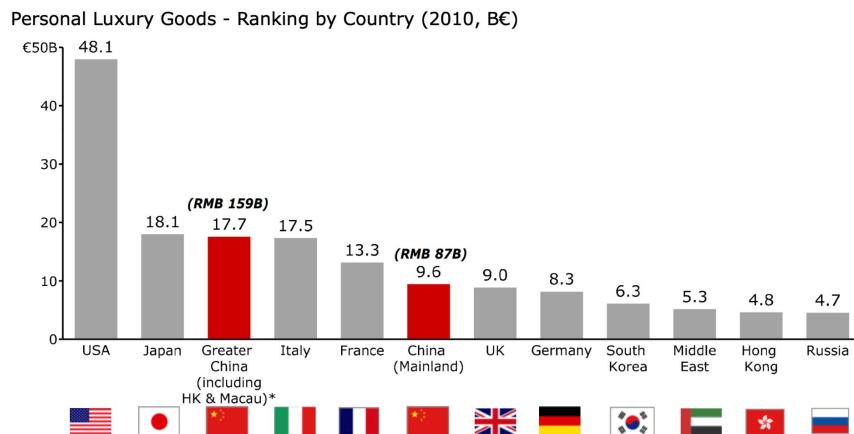
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## Personal Luxury Goods Spending by Country



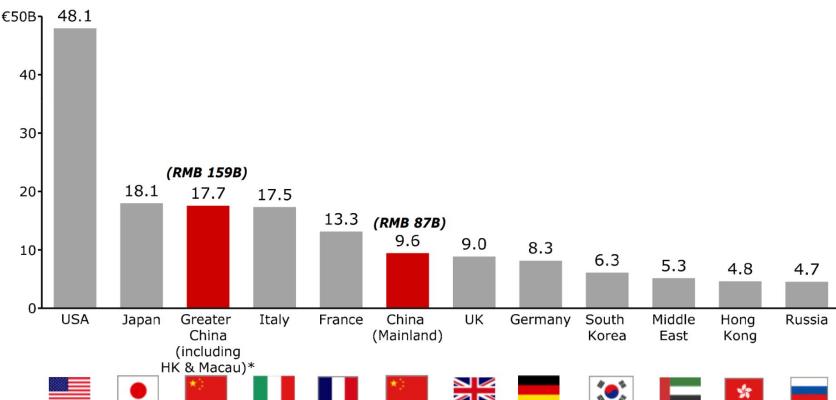
Source: <https://media.bain.com/Images/2011%20Bain%20China%20Luxury%20Market%20Study.pdf>

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Mainland China ranked top 5 globally in 2010, while Greater China (incl. HK & Macau) already among top 3

Personal Luxury Goods - Ranking by Country (2010, B€)



\*Indicates luxury spend in Mainland China, HK & Macau

Note: 2010 Euro/RMB exchange rate =9.0

Source: Bain luxury goods worldwide study 2011; Bain Survey of Luxury Goods Consumers in Mainland China 2011 (n=1,959); Bain analysis

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SHA 2011 Bain China Luxury Market Study\_Media release\_vf\_3

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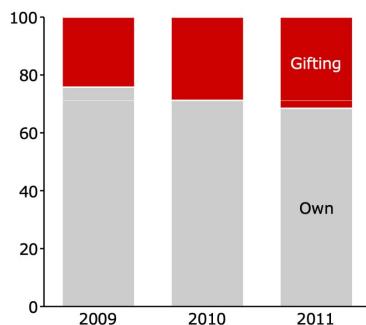
Source: <https://media.bain.com/Images/2011%20Bain%20China%20Luxury%20Market%20Study.pdf>

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## Gifting vs. Own

**"What percent of the luxury goods you've purchased is for gifting vs. own consumption?"**

% of luxury spending



**"Giving luxury goods as business gifts can show my taste and social status, also it makes the recipients feel important and respected."**

Luxury consumer

**"Luxury gifts always pleasantly surprise my clients and they help me get the deal done more easily."**

Luxury consumer

Source: Bain Survey of Luxury Goods Consumers in Mainland China 2011 (n=1,959); Literature search

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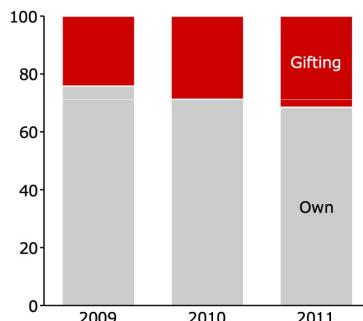


Source: <https://media.bain.com/Images/2011%20Bain%20China%20Luxury%20Market%20Study.pdf>

## Gifting remains a significant part of luxury spending

"What percent of the luxury goods you've purchased is for gifting vs. own consumption?"

% of luxury spending



"Giving luxury goods as business gifts can show my taste and social status, also it makes the recipients feel important and respected."

Luxury consumer

"Luxury gifts always pleasantly surprise my clients and they help me get the deal done more easily."

Luxury consumer

Source: Bain Survey of Luxury Goods Consumers in Mainland China 2011 (n=1,959); Literature search

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SHA

2011 Bain China Luxury Market Study\_Media release\_vf11

①

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Source: <https://media.bain.com/Images/2011%20Bain%20China%20Luxury%20Market%20Study.pdf>



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[The key message of this slide]

Supporting  
Graph/Exhibit

Core  
Message

Category/  
Theme

Category/  
Theme

Category/  
Theme

Evidence

Evidence

Evidence

Evidence

Evidence

Evidence

Evidence

Evidence

Evidence

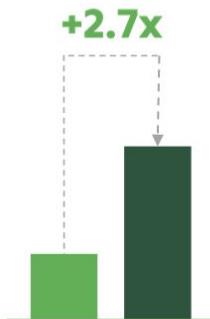
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# Financial Services Enhances Grab's Superapp

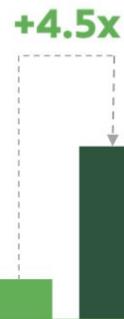
## Increase in engagement

% of users who use a 2nd Grab product<sup>(1)</sup>



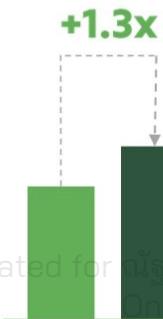
## Increase in spend

TPV per MTU US\$<sup>(1,2)</sup>



## Increase in retention

Retention 10+ months after first usage<sup>(3)</sup>



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Source: Grab 2022 Q1 Earnings Presentation

1. Only number of unique users who transact via Grab's products, where transact means to have successfully paid for any of Grab's products. MTUs over a quarterly or annual period are calculated based on the average of the MTUs for each month in the relevant period. 3. For the Mar 2021 cohort.

15

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## Maximize the clarity and impact

- Is the **headline alone** sufficient for this audience to understand your point?
  - No? You probably have a title rather than a good headline
- Is the **graph alone** sufficient for this audience to infer the headline and believe it?
  - Make sure you visualize the comparison and add reference lines

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On 20/06/2023

Source: Persuading with Data (Miro Kazakoff)



# Maximize the clarity and impact

- Does this graph suggest at a quick glance the point it is trying to make?
  - Don't make them think!
- Is the data shown on the slide necessary and sufficient to support the point?
  - Don't make logical leaps

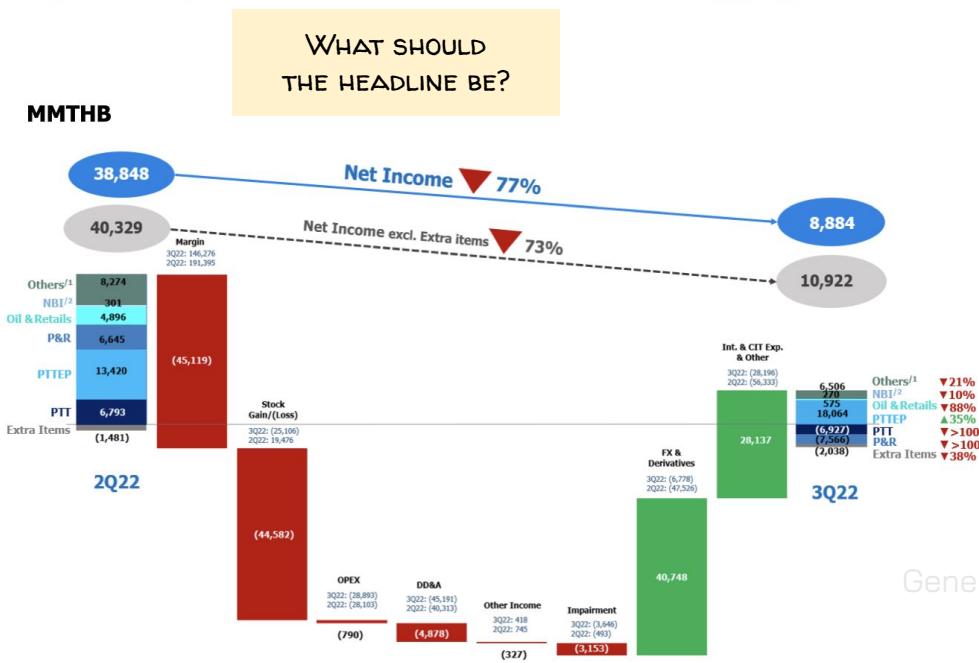
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## 3Q22 vs 2Q22 PTT Consolidated Performance (QoQ):



**Remark:**  
1/ Others business mainly contributed from PTT LNG, PTT NGD, PTTT and PTTGM etc.  
2/ New Business and Infrastructure business mainly contributed from power business

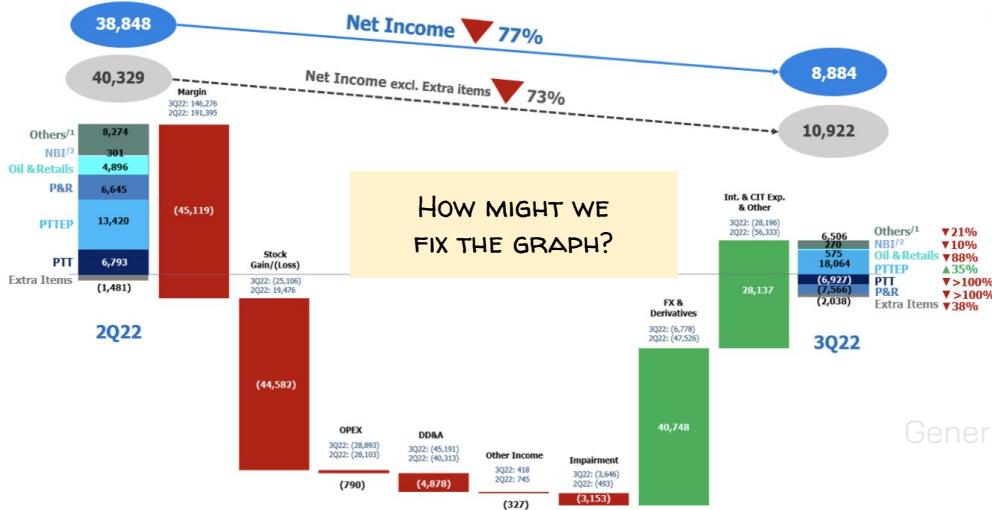
<b>Others</b>
- Coal: Lower avg. selling prices & sales vol and higher cash cost
+ PTTT: Increased from gain on derivatives
<b>NBI (mainly from power)</b>
- Lower profit margin as natural gas and coal costs significantly increased
<b>Oil &amp; Retails</b>
- Squeezed oil margin from higher cost as well as lower sales vol.
- Non-oil: lower sales revenue due to flood situation in many areas
<b>PTTEP</b>
+ Higher avg. sales vol. from MTJDA and G1/61 projects
- Lower avg. selling prices from liquid price decreased
<b>PTT</b>
- Higher FX loss despite lower derivative loss
<b>Gas</b>
- SBM: Higher pool gas cost and lower overall gas sales vol. due to lower gulf gas supply which leads to more LNG imported resulted in higher pool gas cost & power plants' fuel switching from gas to oil
+ GSP: Lower avg. selling prices and higher feed gas cost despite sales volume improved
<b>Trading</b>
+ Higher sales volume from refined products (out-out tradings) as well as LNG & LPG import
- Lower gross margin from higher condensate discount
<b>Petrochemical &amp; Refining</b>
<b>Refinery</b>
- Decreased in Mkt. CRM from lower product spreads following global economic slowdown
- Higher stock loss and lower utilization rate
<b>Petrochemical</b>
- Olefins & Aromatics: Lower product spreads and sales vol. due to soften demand of downstream products
<b>Extra Items*</b>
3Q22 : Net loss -2,038 MB PTTEP: impairment loss on assets held-for-sale ~2,300 MB PTT: Donation to oil fund -1,000 MB and discounted benefit from gas production shortfall ~+900 MB
2Q22 : Net loss -1,481 MB TOP: Tax expense on sales of GPSC shares ~2,100 MB PTTGM: Impairment loss of coal business ~400 MB and PTT: Discounted benefit from gas production shortfall ~+1,000 MB

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## 3Q22 vs 2Q22 PTT Consolidated Performance (QoQ):

NI declined from lower margin and higher stock loss according to the decline of global petroleum & petrochemical prices despite gain on derivatives

MMTHB



Remark:

1/ Others business mainly contributed from PTT LNG, PTT NGD, PTTT and PTTGM etc.

2/ New Business and Infrastructure business mainly contributed from power business

### Others

- **Coal:** Lower avg. selling prices & sales vol and higher cash cost
- + **PTT:** Increased from gain on derivatives

### NBI (mainly from power)

- Lower profit margin as natural gas and coal costs significantly increased

### Oil & Retails

- Squeezed oil margin from higher cost as well as lower sales vol.
- Non-oil: lower sales revenue due to flood situation in many areas

### PTTEP

- + Higher avg. sales vol. from MTJDA and G1/61 projects
- Lower avg. selling prices from liquid price decreased

### PTT

- Higher FX loss despite lower derivative loss

### Gas

- **S&M:** Higher pool gas cost and lower overall gas sales vol. due to lower gulf gas supply which leads to more LNG imported resulted in higher pool gas cost & power plants' fuel switching from gas to oil

- + **GSP:** Lower avg. selling prices and higher feed gas cost despite sales volume improved

### Trading

- + Higher sales volume from refined products (out-out tradings) as well as LNG & LPG import

- Lower gross margin from higher condensate discount

### Petrochemical & Refining

- Decreased in Mkt. GRM from lower product spreads following global economic slowdown

- Higher stock loss and lower utilization rate

### Petrochemical

- Olefins & Aromatics: Lower product spreads and sales vol. due to soften demand of downstream products

### Extra Items\*

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Case Study

## USPS Future Business Model



March 2, 2010

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On 20/06/2023

Source:

<https://about.usps.com/future-postal-service/mckinsey-usps-future-bus-model2.pdf>

McKinsey&Company

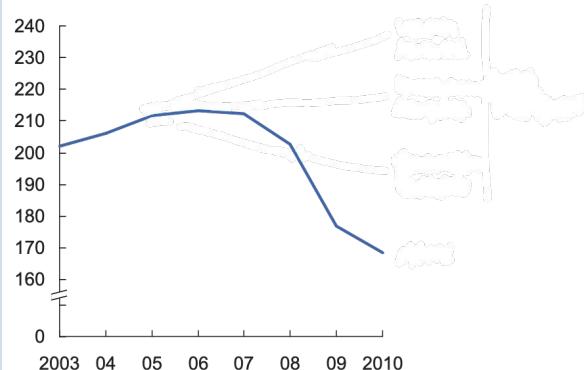
IS THE GRAPH ALONE  
SUFFICIENT TO INFER  
THE HEADLINE?

Recent Context

**Volume declines have been worse than expected when the current legal and regulatory framework was established**

### Volume forecasts and actuals

Billions of pieces



### PAEA implications<sup>1</sup>

- When PAEA was passed, volume projections did not anticipate the current scale of declines
- PAEA introduced some additional product flexibility, but also two crucial restrictions:
  - Price increases capped at CPI by class
  - Significant pre-funding requirements for Retiree Health Benefits (RHB)

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<https://about.usps.com/future-postal-service/mckinsey-usps-future-bus-model2.pdf>

1 Postal Accountability and Enhancement Act, 2006

2 Forecasts from "USPS Strategic Transformation Plan", 2005

SOURCE: USPS

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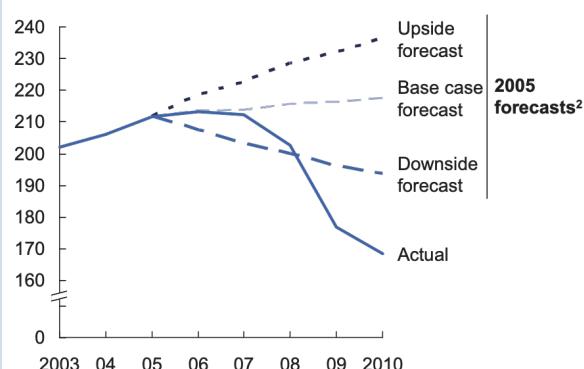


Recent Context

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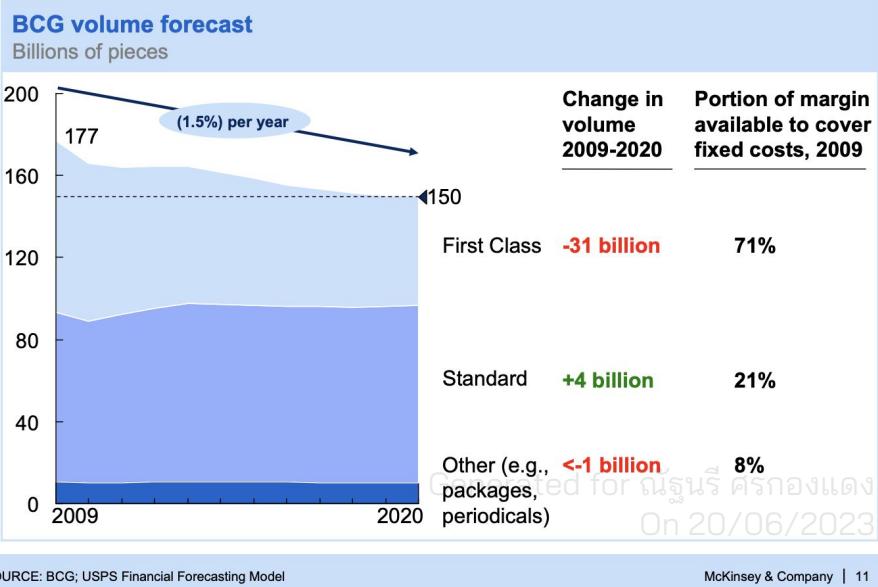
SOURCE: USPS

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CAN THE HEADLINE  
BE MORE SPECIFIC?

Base Case: Volume Declines  
**Volume will decline significantly over the next decade**



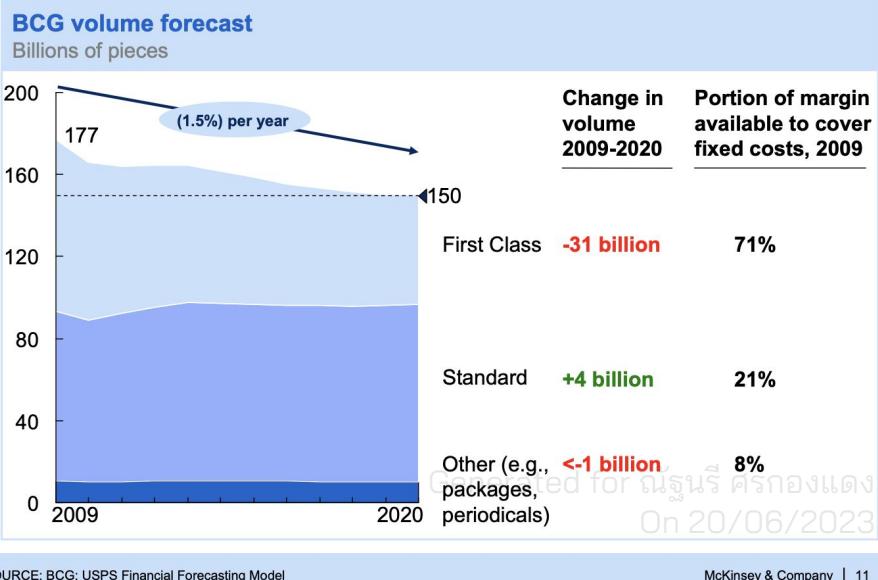
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CAN THE HEADLINE  
BE MORE SPECIFIC?



Base Case: Volume Declines  
**Volume will decline significantly over the next decade driven by a steady decline in First-Class Mail, the most profitable segment**

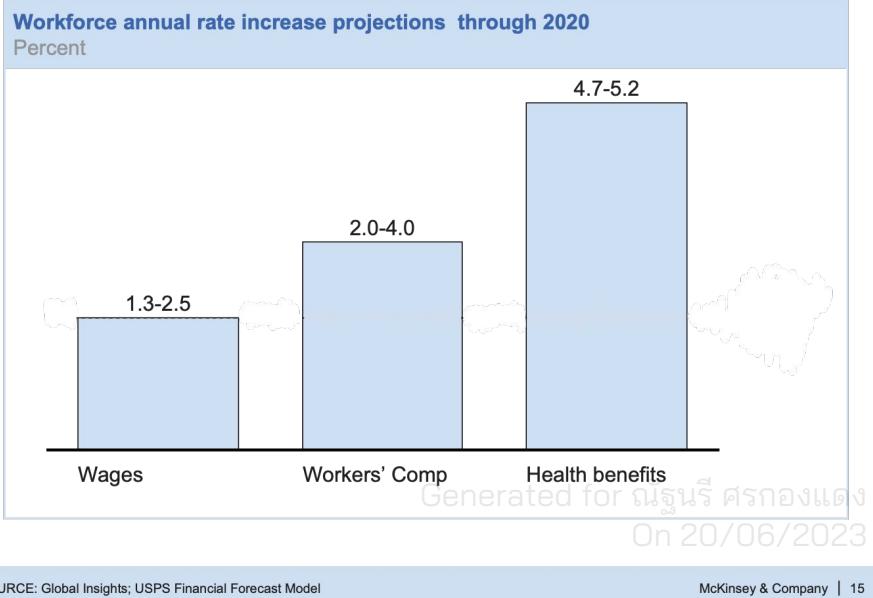


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IS THE GRAPH ALONE  
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THE HEADLINE?

Base Case: Workforce cost projection  
**Workforce costs continue to rise faster than inflation through 2020**



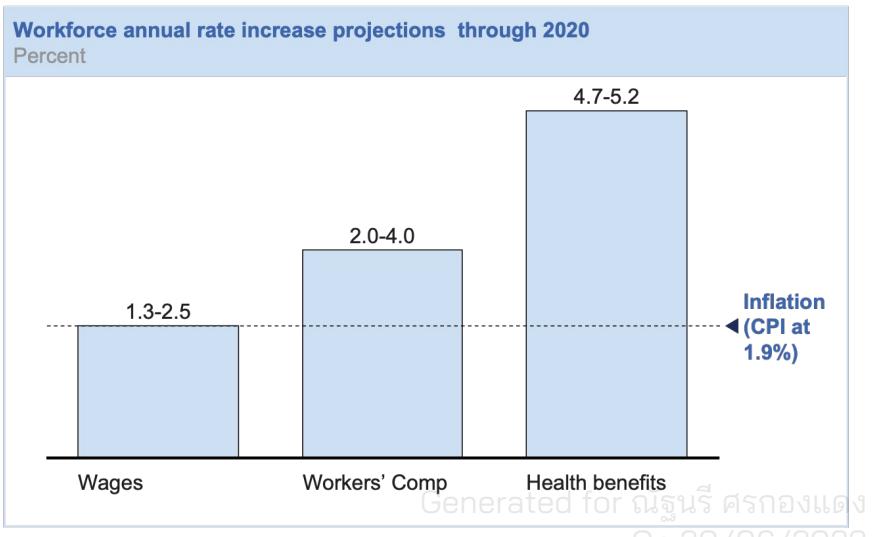
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IS THE GRAPH ALONE  
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THE HEADLINE?



Base Case: Workforce cost projection  
**Workforce costs continue to rise faster than inflation through 2020**



Source:  
<https://about.usps.com/future-postal-service/mckinsey-usps-future-bus-model2.pdf>

## Case Study

**KASIKORNTHAI**

ธนาคารกสิกรไทย  
开泰银行 KASIKORN BANK

# KASIKORNBANK

## Investor Presentation as of 3Q22

November 2022

For further information, please contact the Investor Relations Unit or  
บริการทุกระดับประทับใจ

**1Q22 Financial Results**  
Analyst Meeting Presentation  
21 April 2022

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On 20/06/2023

SCB  
ไทยพาณิชย์

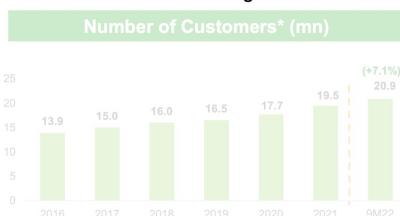
Source:  
KBank Investor Presentation 3Q22  
SCB Analyst Meeting Presentation 1Q22

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## Performance

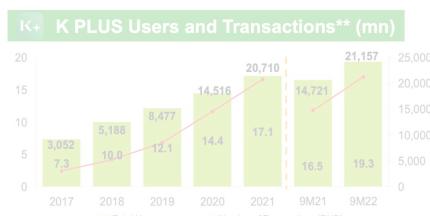
- Success is driven by continuous growth in number of customers and K PLUS users; **highest Net Promoter Score among banks in Thailand**



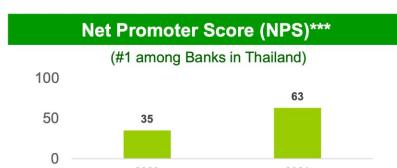
\* Customers in Retail Business account for 92%, SME Business 8%, and Corporate Business less than 1% of customer portfolio



IS THE GRAPH ALONE  
SUFFICIENT TO INFER  
THE HEADLINE?



\*\* Active users defined as minimum of 1 Login per month; 74% active users as of 9M22



\*\*\* NPS Study 2021 surveyed by The Nielsen Company during August to November 2021,  
measuring the willingness of customers to recommend a company's products or services to others

บริการทุกระดับประทับใจ

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## Net Interest Margin

September 2022 (Consolidated)



FROM THE HEADLINE,  
HOW MIGHT WE  
AMPLIFY THE CHARTS?



- NIM was 3.26% in 9M22, increased YoY, due to higher yield on loans as small ticket lending (Retail and SME) increased and higher market rate.

- High portion of CASA (82%) also helped support low cost of fund.

	2018	2019	2020	2021	9M21	9M22	1Q22	2Q22	3Q22
NIM (%)	3.39	3.31	3.27	3.21	3.21	3.26	3.19	3.21	3.33
Yield on Earnings Assets (%)	4.27	4.19	3.83	3.64	3.64	3.70	3.61	3.64	3.78
Yield on Loans (%)	5.29	5.21	4.82	4.71	4.65	4.85	4.76	4.75	4.92
Cost of Fund (%)	1.19	1.23	0.78	0.59	0.59	0.59	0.57	0.59	0.61
Cost of Deposits (%), incl DPA	1.11	1.14	0.71	0.54	0.54	0.52	0.52	0.51	0.52

Note: Cost of deposits including contributions to the Financial Institutions Development Fund (FIDF) and Deposit Protection Agency (DPA).

\* The FIDF fee is temporarily reduced from 0.46% to 0.23% for 3 years, according to the BOT announcement in the Royal Gazette, during January 2020 to December 2022.

\*\* The Bank and its subsidiaries have adopted new accounting standards (IFRS 9: Financial Instruments) since January 1, 2020 onwards, some financial statements and financial ratios are not comparable with previous years' financial figures before Y2020, which were based on the prior accounting standards (non-IFRS).

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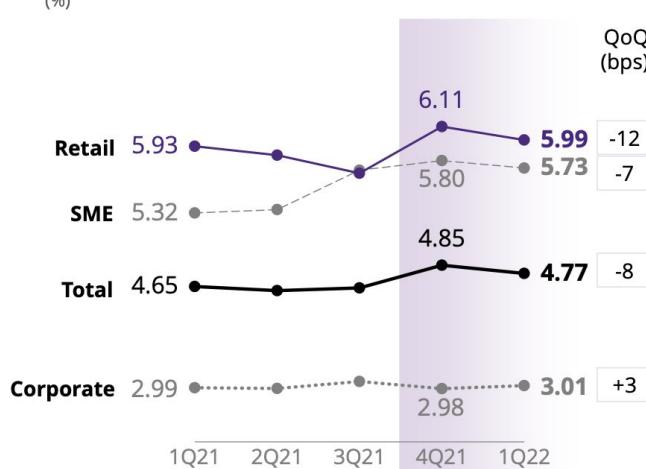
13

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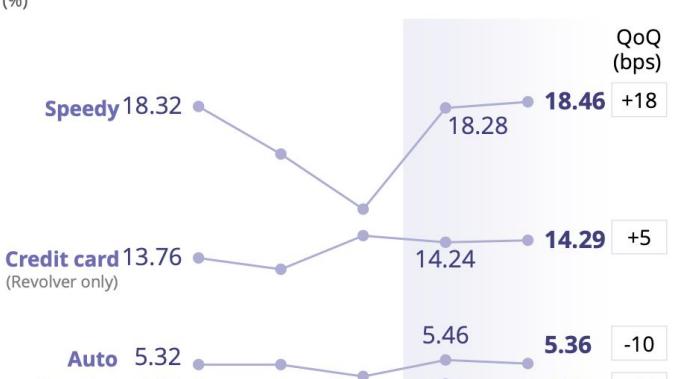
Loan Yield

However, yield on loans declined qoq mainly from new terms under the comprehensive debt restructuring program

### Yield on loans by segment

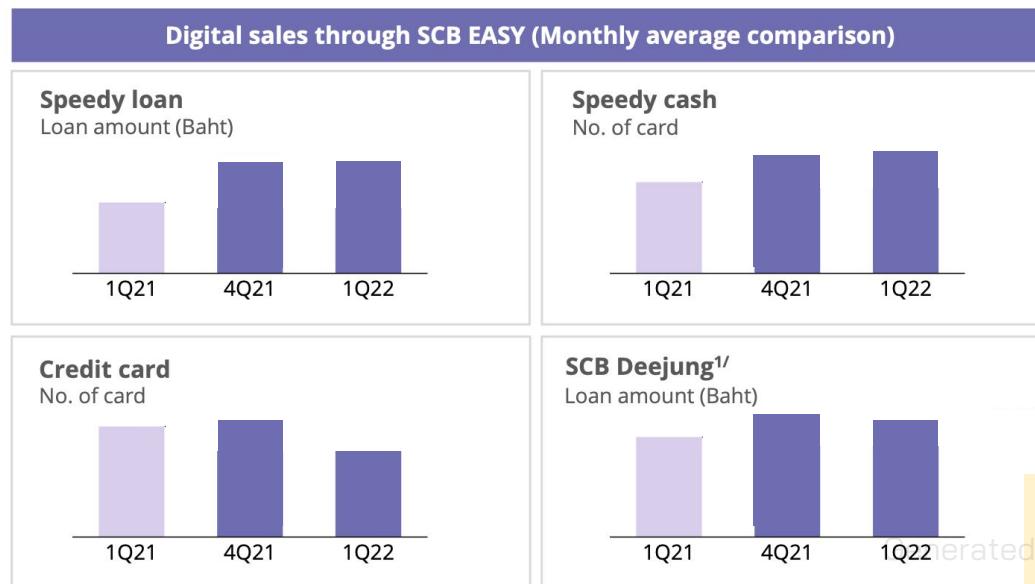


### Yield on loans by Retail products



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## Digital lending: Digital sales through SCB EASY successfully continued despite a slowdown in credit card



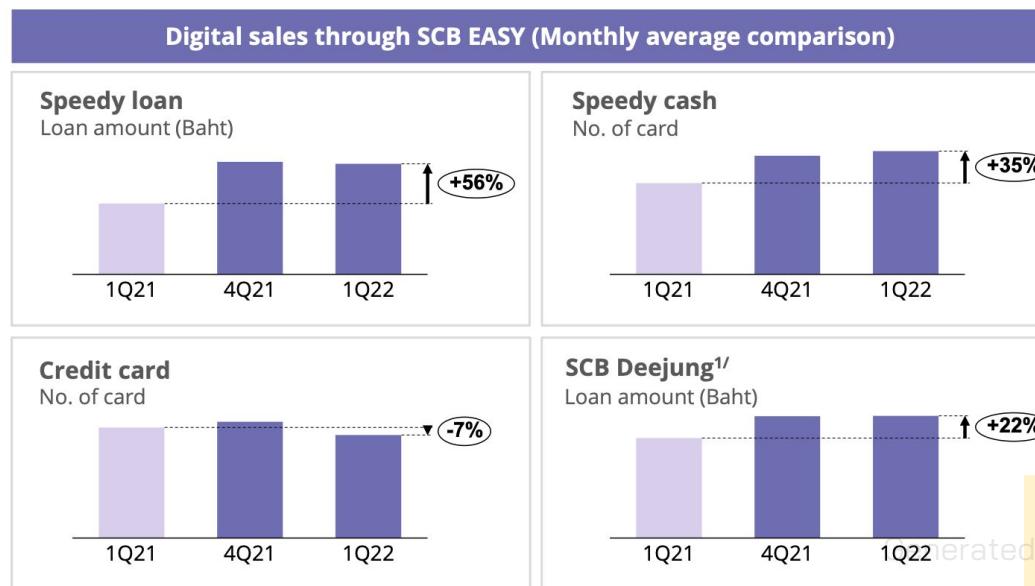
1/ Deejung includes (a) Cash advance services which customers can get a cash advance from SCB credit card/ speedy cash card via SCB Easy and pay by installments (b) Deejung transfer which customer can convert amount left in credit limit into cash which will transfer to customer account and pay by installments. (c) Deejung installment which customer can convert payment amount to monthly installment at a special interest rate



FROM THE HEADLINE,  
HOW MIGHT WE  
AMPLIFY THE CHARTS?

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## Digital lending: Digital sales through SCB EASY successfully continued despite a slowdown in credit card



FROM THE HEADLINE,  
HOW MIGHT WE  
AMPLIFY THE CHARTS?

1/ Deejung includes (a) Cash advance services which customers can get a cash advance from SCB credit card/ speedy cash card via SCB Easy and pay by installments (b) Deejung transfer which customer can convert amount left in credit limit into cash which will transfer to customer account and pay by installments. (c) Deejung installment which customer can convert payment amount to monthly installment at a special interest rate



# Driving Actions!



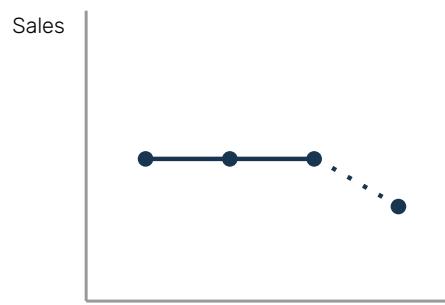
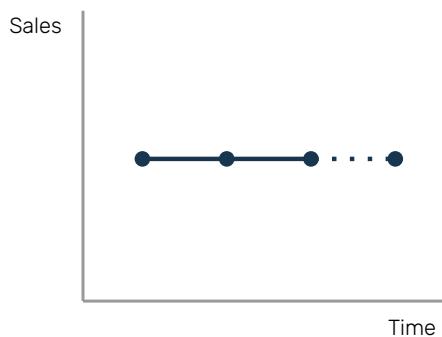
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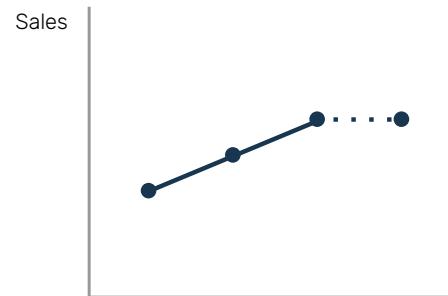
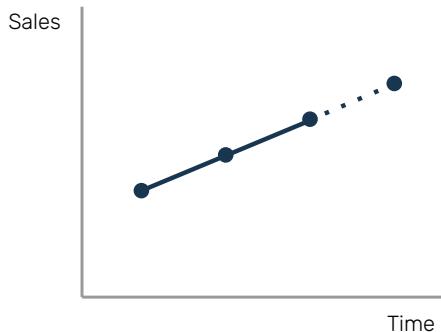
## Meaningful Changes



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# Meaningful Changes



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# The Audience Confusion Matrix

Data Observation



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Adapted from Persuading with Data (Kazakoff, Miro)





# Outline

01

Closing the Communication Gaps

02

Visualizing Data Effectively

03

Presenting Compelling Stories with Data



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# Appendix



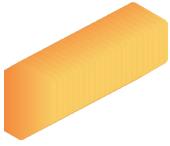
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## Top-Down Thinking



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Data → Graphs → Key Points → Main Idea



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## Audience First, NOT Data First

Don't start with the data and try to make it into an interesting story



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# Hypothesis- driven Approach

1. Form a hypothesis about the problem and determine the data needed to test the hypothesis
2. Gather and analyze the necessary data, comparing the result to the hypothesis
3. Update the model of the problem space and form a new hypothesis

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Source: The Pyramid Principle: Logic in Writing and Thinking (Barbara Minto)



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## Strong Key Points

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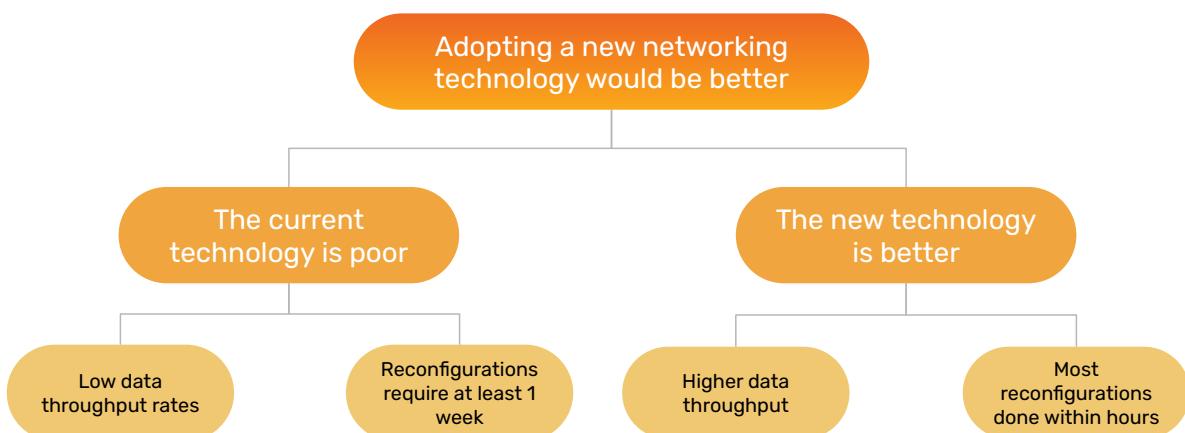


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Source: Persuading with Data (Miro Kazakoff)

New technology would provide higher data throughput and be easier to reconfigure

Higher data speeds

New tech average data throughput is 2.5x faster than current tech

New tech peak data throughput is 1.25x faster than current tech

Easier to reconfigure

72% of reconfigurations take more than 1 week with current tech

50% of reconfigurations would take less than 1 day with new tech

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New technology would reduce the major causes of complaints about network speed

New tech would provide a faster network

New tech average data throughput is 2.5x faster than current tech

New tech peak data throughput is 1.25x faster than current tech

New tech would reduce bottlenecks

72% of reconfigurations take more than 1 week with current tech

50% of reconfigurations would take less than 1 day with new tech

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Source: Persuading with Data (Miro Kazakoff)

# Avoid Intellectually Blank Main Ideas

Intellectually Blank Main Idea	Effective Main Idea
เราได้ทำการทดสอบระบบ ที่ลูกค้านำเสนอแล้ว	ระบบที่ลูกค้านำเสนอผ่านการทดสอบทุกรายการ และงานได้สืบว่าระบบปัจจุบัน
มีเหตุผลที่ทำให้ยอดขายลดลง	ปัญหาในระบบการผลิตส่งผล ต่ำยอดขายที่ลดลงมากที่สุด
มีความเสี่ยงในแผนดำเนินการ	ถ้าเกิดข้อผิดพลาดเกิน 10% ของปริมาณการ ไว้ จะทำให้เราขาดทุน

Source: Persuading with Data (Miro Kazakoff)

Effective points don't just identify the topic that groups the points below them together; they summarize what that grouping implies.

Intellectually blank main ideas are especially damaging to your persuasive power.

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