Marketing & Data Analysis

Intro. Data & Marketing

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Data & Business

Using data works for business

Extent of BI&A Implementation — 0.434 → Business Performance

Business Intelligence & Analytics Workforce divided by All workforce

ROI (investment)
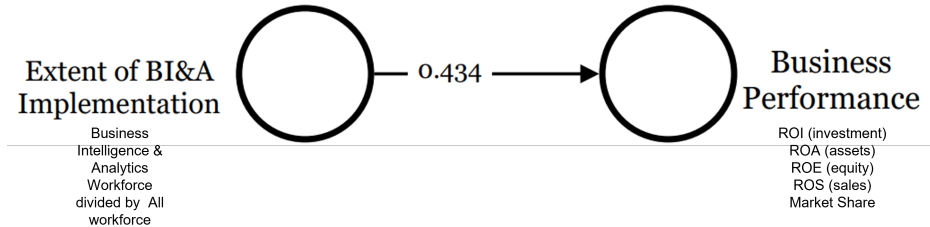ROA (assets)
ROE (equity)
ROS (sales)
Market Share

Figure: Daneshvar Kakhki and Palvia, 2016

Evidence based management

Let's play battleship first

Discuss in class:

Should we play battleship with a random strategy? Are there better players? What data can you exploit?

Why do you think data matters for Marketing? When it does and when it does not?

Evidence based management

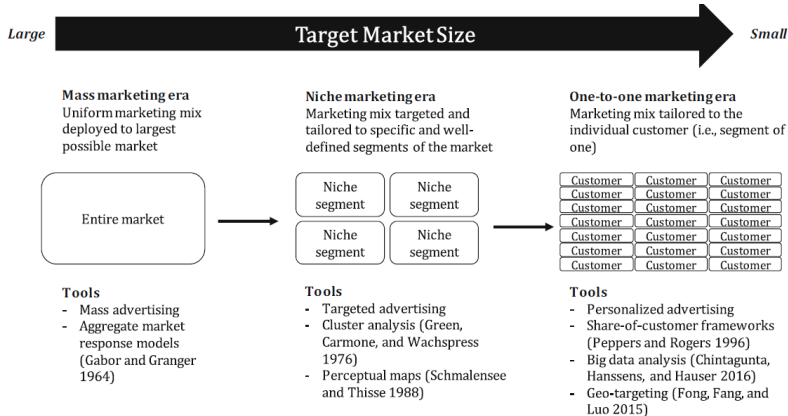Strategies could vary by market size

Figure: Palmatier and Crecelius, 2019

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First Principles and Analytics (inspired by Palmatier et al., 2022)

Customers produce data

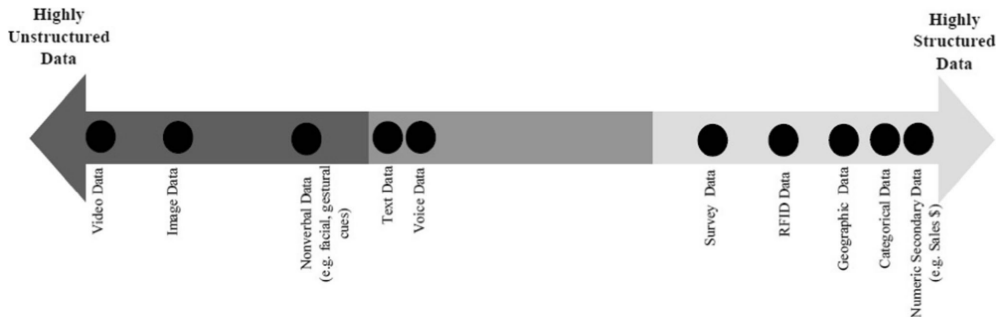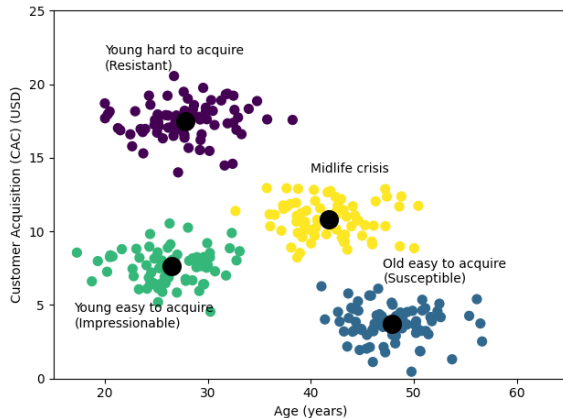- Data sources (internal, external, synthetic)
- Data types

Figure: Balducci and Marinova, 2018

Patterns in customers' data

- Clustering
- Visualization

All/some customers differ
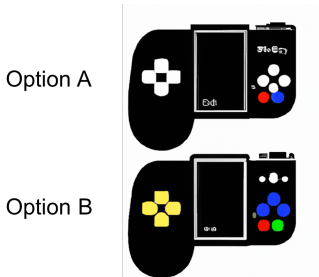
- Inference
- Experiments

Figure: Which one sales more?

Customers are reasonable

We can model customers

- ■ Rational attention models
- ■ Drift-diffusion models
- ■ More

I do not need or find a cybertruck attractive

I find a cybertruck attractive

Marketing Campaign

Result: I do need and now love cybertruck

Prob. of results:
0.1 vs 0.9

Statistical Software

Excel? Power-Bi?

Why Excel / Power - Bi?

- Intuitive
- Fast to use
- Widely used

Why not Excel / Power - Bi?

- Reproducibility of point and click
- Arbitrary transformation of cells
- Prone to errors (Excel problems, Excel Horror Stories)

Python / R

Why Python / R?

- Reproducibility
- Widely used
- Up-to-date techniques

Why not Python / R?

- Steep learning curve

Jupyter Notebooks

Let's go to Google Collab for Jupyter Notebooks

References

Balducci, B., & Marinova, D. (2018). Unstructured data in marketing. *Journal of the Academy of Marketing Science*, *46*, 557–590.

Daneshvar Kakhki, M., & Palvia, P. (2016). Effect of business intelligence and analytics on business performance.

Palmatier, R. W., & Crecelius, A. T. (2019). The "first principles" of marketing strategy. *Ams Review*, *9*, 5–26.

Palmatier, R. W., Petersen, J. A., & Germann, F. (2022). *Marketing analytics: Based on first principles.* Bloomsbury Publishing.