

# LDT S5 & S6: DT Dimensions: Experimentation & Value Proposition

DTSL

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# Data vs. Opinion

## Famous Predictions of Customer Behavior

“[The iPhone is] the most expensive phone in the world, and it doesn’t appeal to business customers because it doesn’t have a keyboard, which makes it not a very good e-mail machine.”

—Microsoft CEO Steve Ballmer (2007)

“People have told us over and over and over again, they don’t want to rent their music . . . they don’t want subscriptions.”

—Apple CEO Steve Jobs (2003)

“Television won’t be able to hold on to any market it captures after the first six months. People will soon get tired of staring at a plywood box every night.”

—Attributed to 20th Century Fox studio head Darryl F. Zanuck (1946)

Hippo

# Prominent Examples of Experimentation

- Bing
- Booking.com
- Google

# Experimentation: Traditional versus Digital

- Decisions made based on ?
- Testing ideas - cost, speed and ease?
- How frequently can experiments be conducted?
- Failure Avoidance/ Learning
- Focus on "finished" product or MVPs & iteration

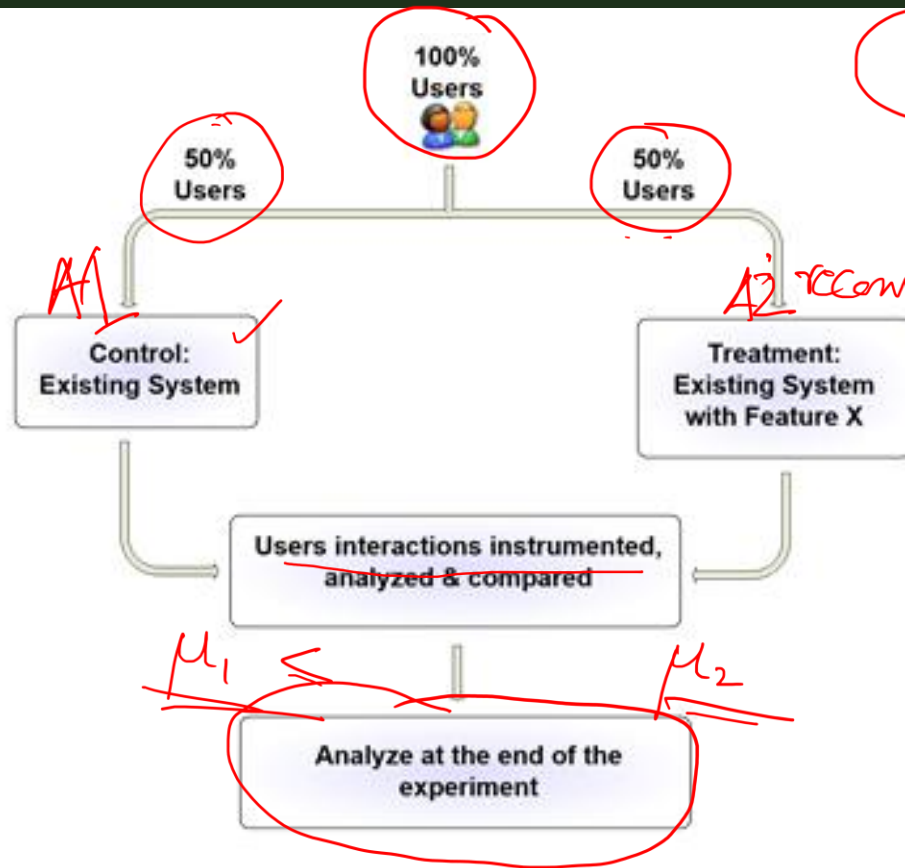
# What is Experimentation?

- Iterative process of learning what does and does not work
- Goal of experimentation is learning - about customers, markets, and possible options leading to the right solution.
- Types of experiments: Convergent and Divergent

# Convergent Experiments

- Key principles of Formal Scientific experiment
  - Causal Hypothesis
  - Test and Control groups
  - Randomly assigned participants
  - Statistically valid sample size
  - Blind testing
- Examples
  - A/B tests
  - Obama's presidential campaigns, Capital One Bank

# A/B Tests



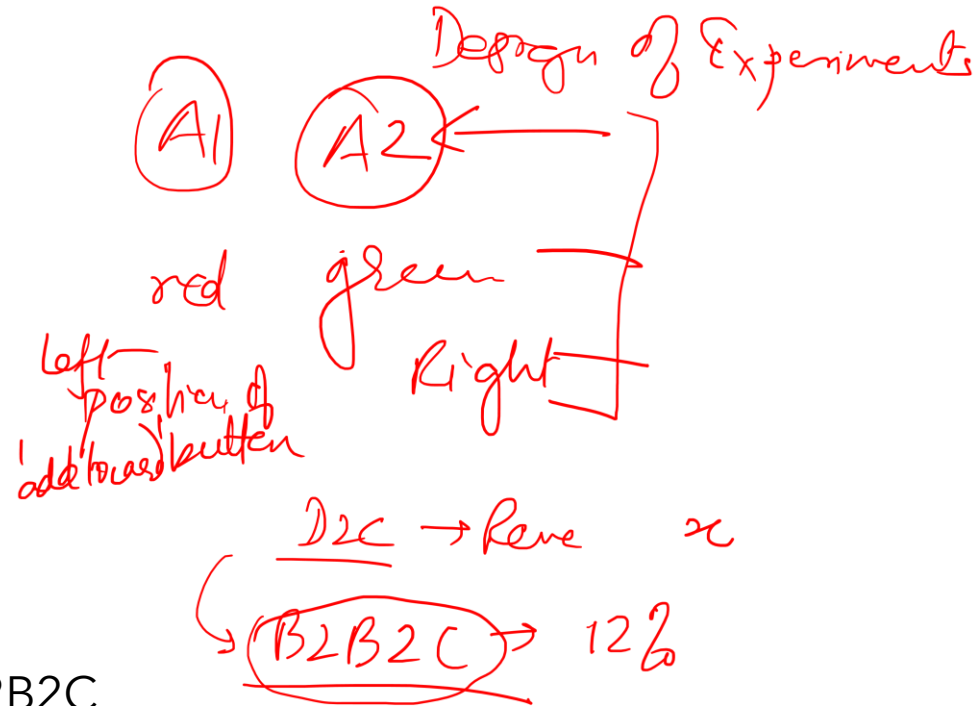
The Growth of Experimentation at Bing



FROM "THE SURPRISING POWER OF ONLINE EXPERIMENTS," SEPTEMBER-OCTOBER 2017, BY RON KOHAVI AND STEFAN THOMKE

# A/B Tests

- Univariate/Bivariate A/B Tests ←
- Examples of A/B Tests
  - Modification of a new feature ✓
  - Change of User Interface ✓
    - New Layout
  - Back-end change ✓
    - Algorithm for recommendation
  - Different business model: D2C to B2B2C
    - Offering free shipping



# Large Scale Controlled Experimentation

Experiments per day

The screenshot shows two versions of an advertisement side-by-side. The top version is labeled 'Control' and the bottom version is labeled 'Treatment'. Both ads contain the text: 'Esurance® Auto Insurance - You Could Save 28% with Esurance.', 'www.esurance.com/California', and 'Get Your Free Online Quote Today!'. The treatment version includes an additional line of text: 'Get a Quote · Find Discounts · An Allstate Company · Compare Rates'. Red handwritten annotations include a bracket on the right side of the ads, a circle around the 12% conversion rate, and a bracket at the bottom of the treatment ad.



Key Points to keep in mind

- Culture to experiment - Who can experiment
- Key Evaluation Metric - sales, repeat usage, click-through rates, time spent on site
- Experimentation Infrastructure: CI/CD (Controlled rollouts), Feature flagging




# Divergent Experiments

## ➤ Process of Divergent Experiments

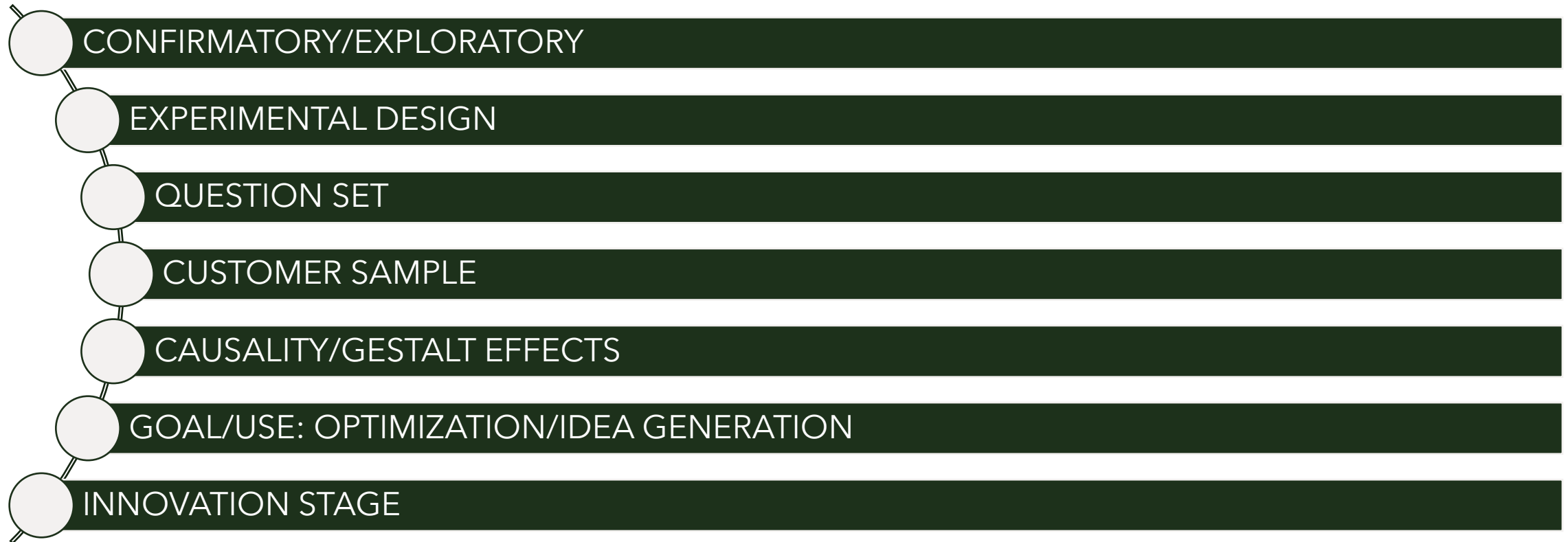
- Clear process for conceiving of options or ideas
- Creating meaningful prototypes
- Real-world feedback on critical assumptions

$$\begin{array}{l} H_0: \mu = 5.5 \\ \hline H_1: \mu > 5.5 \end{array}$$

# Similarities

- 
- Increase knowledge
  - Test assumptions
  - Look outside for answers
  - Requires willingness to learn

# Differences in Experiments



# Which One To Choose?

- Exploratory learning - to generate and develop new ideas
- Confirmatory learning - to verify and define ideas
- Which area of business is the innovation for?
- Different stages of the same innovation project

# How is Digital Impacting Both

- Making rapid experimentation possible - Google search, Booking.com
- Offering new tools for experimentation - Optimizely, 3D printing
- Increasing the speed of experimentation
- Reducing the cost of experimentation - Bundling of products
- <https://www.youtube.com/watch?v=zFMgpxG-chM>

# Principles of Experimentation

- Learn Early
- Be Fast and Iterate
- Fall in Love with the Problem, not the Solution
- Get Credible Feedback
- Measure what matters now
- Test your assumptions
- Fail smart
  - Did you learn from the failed test?; Did you apply that learning to change your strategy? Did you fail as early and cheaply as possible? Did you share your learning?

# Value Propositions: Recorded Music

*for end users (music lovers)*  
*MP3 and broadband*

Value Proposition	Recording industry	Napster	iTunes	Spotify
Great music	✓	✓	✓	✓
Instant access		✓	✓	✓
Vast selection on Fingertips			✓	✓
Songs Choice ✓		✓	✓	✓
Free ✓		✓		✓
Portable device ✓			✓	✓
Copyright Safe ✓	✓		✓	✓
Social Sharing ✓				✓

*Sharing*

✓

# Value Proposition: Change in Strategic Assumptions



Value Proposition Defined By?



Current vs. Unmet value proposition



How to judge change/technology?

# Routes Out of a Shrinking Market Position

*tech*

*V.P*



New Customers  
(Same Value)

- e.g., Mohawk Fine Papers

*customers*

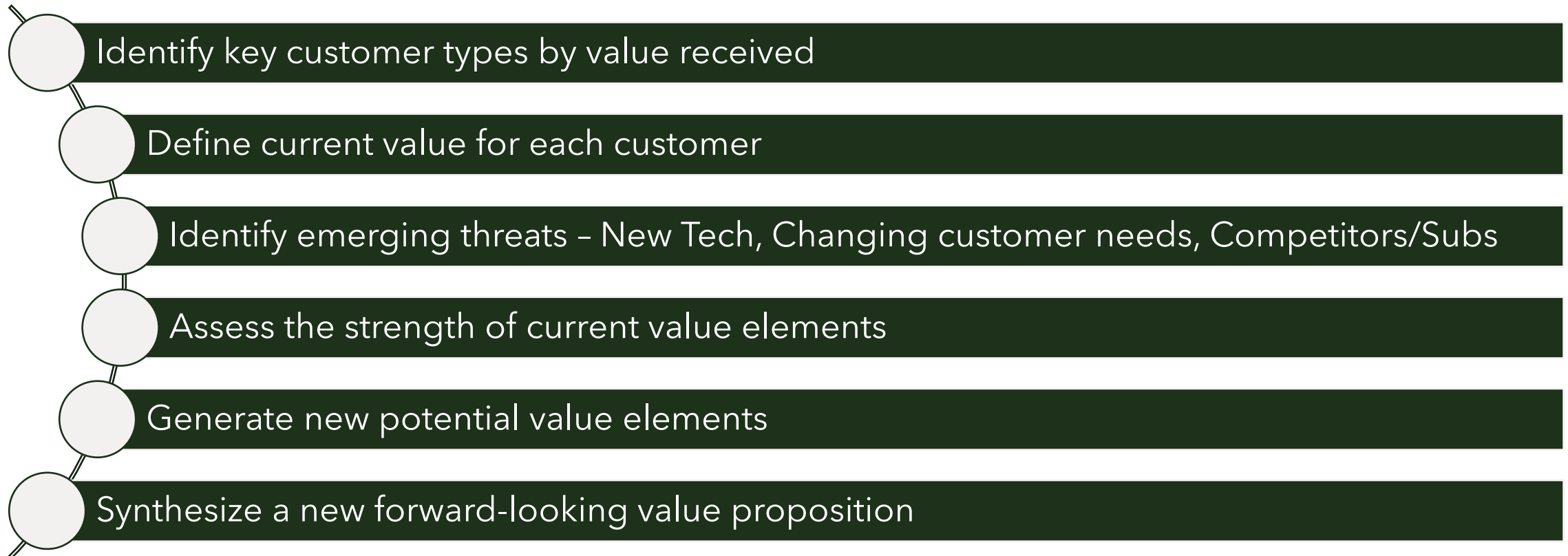
New Value (Same  
Customers)

- Recorded music industry ← iTunes
- Encyclopedia Britannica ←

New Value + New  
Customers

- Marvel comics

# Value Proposition Roadmap



# References

- A/B Testing For Products: <https://www.youtube.com/watch?v=LwU8fPqtf8A>
- <https://exp-platform.com/Documents/2013%20controlledExperimentsAtScale.pdf>
- <https://hbr.org/2017/09/the-surprising-power-of-online-experiments>