



Mu Sigma

Introduction to Storyboarding

MSU Session

Do The Math

Chicago, IL

Bangalore, India

www.mu-sigma.com

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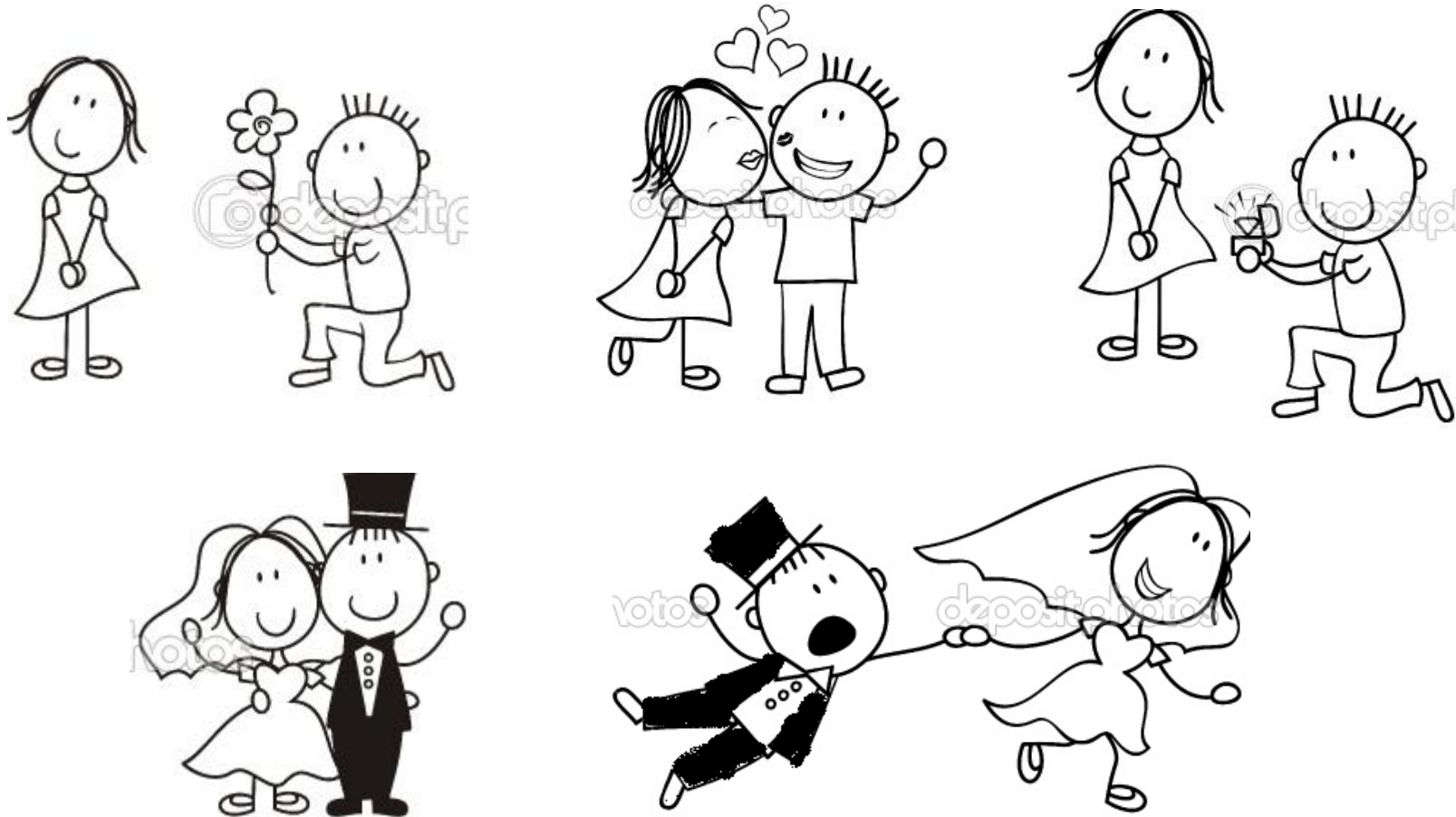
Proprietary Information

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Agenda

- ▶ What is a storyboard? Why should we do it?
- ▶ Where does it fit in into the muPDNA?
- ▶ How do you create a storyboard?
- ▶ Horizontal & Vertical Logic
- ▶ Exercise

Two people fall in love and get married





A storyboard is actually used in movies before actual scenes are shot

Storyboards are graphic organizers in the form of illustrations or images displayed in sequence for the purpose of pre-visualizing a motion picture, animation, motion graphic or interactive media sequence.

Can you put these pictures in the right order?



Can you put these pictures in the right order?



A story board can be developed while identifying the analyses needed to test hypotheses

Storyboarding

Define problem

Structure problem

Identify analyses to test hypotheses

Perform hypothesis testing

Report findings & insights

Introduction

Bing wants to improve search experience by identifying query context and delivering relevant results

Complications - The Gap / Trigger

- Identify factors that are helping in determining the query context
- Identify gating factors that determine whether it is possible to use 'context'

Desired Future State

- Bing is able to identify the query context from the searched text and is able to deliver more relevant & focused results to improve user experience

Questions - which need answers

- How can Bing improve Search experience by understanding context better?
- What are the key factors that will help in answering 'context' better?
- How can this help in delivering right context to users?

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SCQ

The Hypothesis matrix enables a structured approach to analytical design and data selection

The IGT Hypothesis Matrix

MECS Hypothesis (H)	Key Questions (KQ)	Exploratory Data Analysis	Decreasing Importance			
			DE Bucket 1	DE Bucket 2	...	DE Bucket 6
H1.A	K1.Q1
H1.B	K1.Q2
H1.C	K1.Q3
H2.A	K2.Q1
H2.B	K2.Q2
H2.C	K2.Q3
H3.A	K3.Q1
H3.B	K3.Q2
H3.C	K3.Q3

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MPDNA

High Level Approach

Microsoft will engage Mu Sigma in a pilot engagement with specific scope involving query contextualization

- Mu Sigma team will support Microsoft team in a specific area of this larger initiative
- Exact details and nature of support to be identified during the course of the project
- A sample scope is laid out as below

Model Development Process

Define query assisted factors → Establish hypotheses → Data analysis → Experimentation/Support → Recommendations

Model Development Process

- Model Preparation and Training**
 - Obtain data for pilot
 - Gain understanding of the data
 - Prepare an analytical model
 - Understand missing value handling
- Exploratory Data Analysis**
 - Identify relevant features
 - Validate the value set of features
 - Test the hypothesis and obtain results for use in later processes
- Validation**
 - Prepare datasets for performance analysis
 - Developing specific experiments
 - Post experiment evaluation
 - Conduct ad-hoc analysis
- Summary**
 - Confirms conclusions from data analysis and experiment design

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Analysis Plan

Microsoft

Diamond Pricing

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R/SAS etc

Questions

Findings

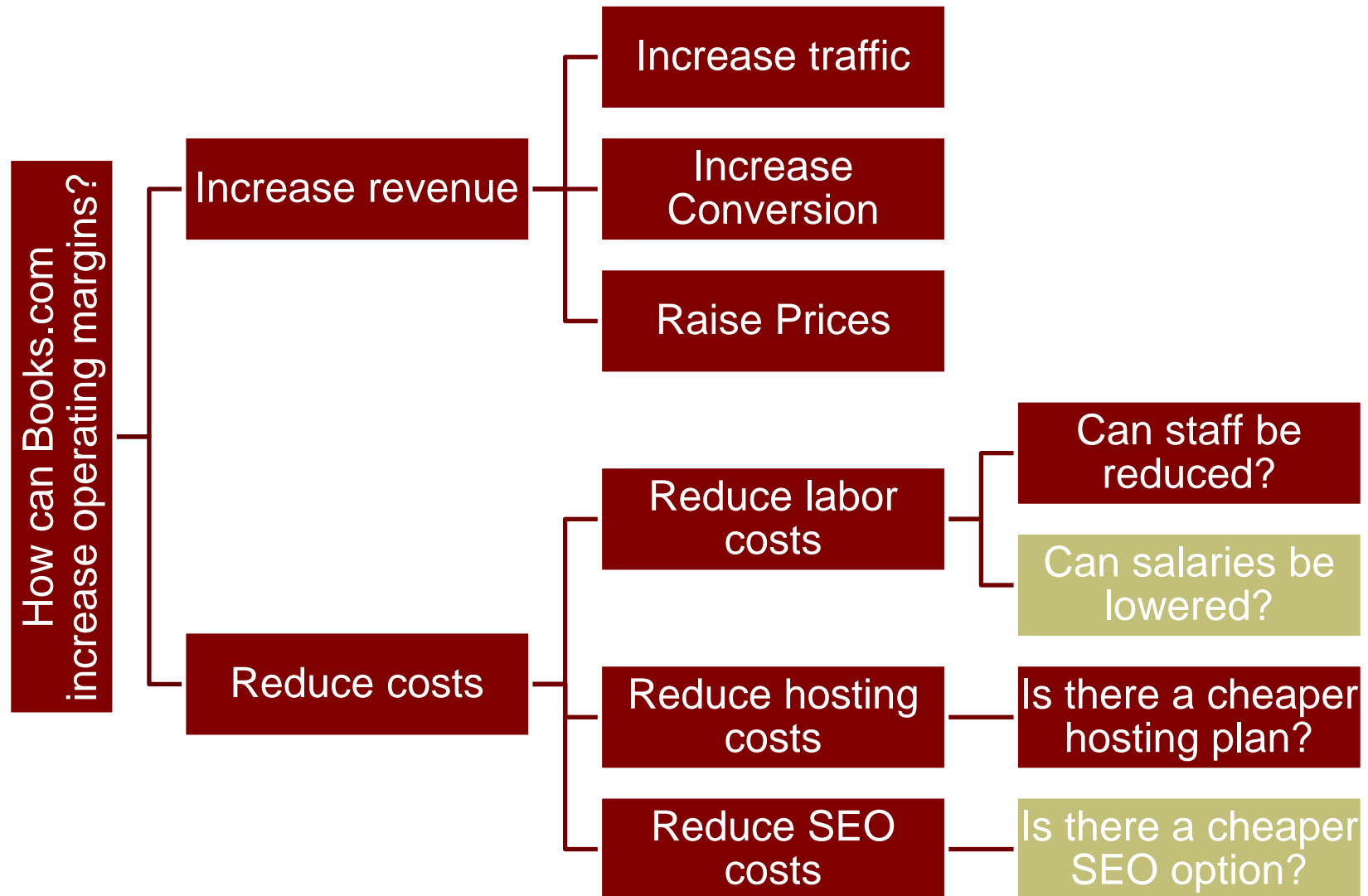
Insights

Recommendations

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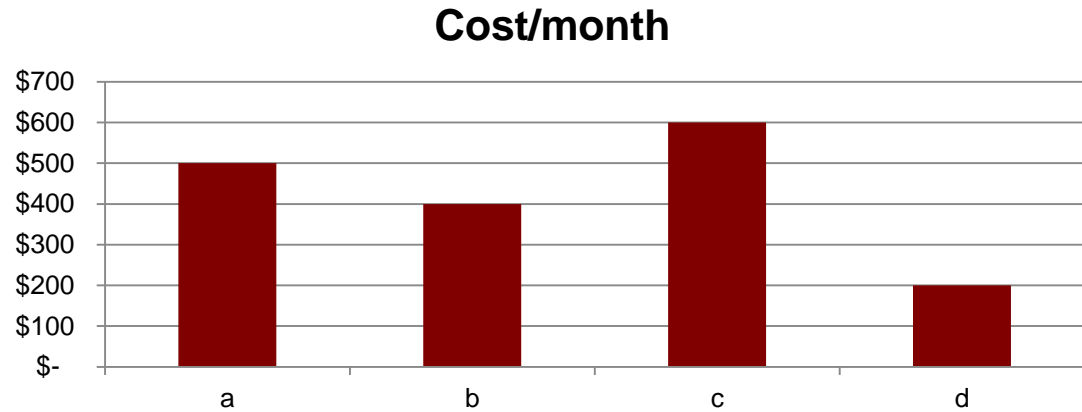
Presentation

Consider a small portion of a problem where we are trying to increase the operating margins of a online bookstore

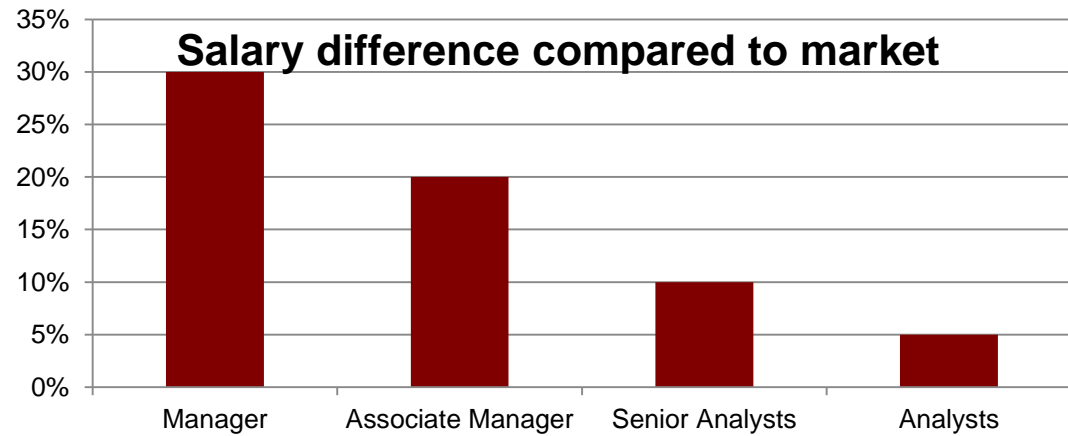


Always sketch out the visual that you would like to use

Is there a cheaper SEO option?



Can salaries be lowered?



Before you do the analysis, think about what the expected findings would be

Can staff be reduced?

Most employees are already working long hours and are engaged in extra duties. It is unlikely that staffing levels can be cut

Can salaries be lowered?

Some levels of employees are paid more than market average and there is room to cut salaries

Is there a cheaper hosting option?

We can move hosting to India and reduce hosting costs by approximately 30%

Is there a cheaper SEO option?

Books.com can use a overseas analytics company like Mu Sigma to perform SEO at much cheaper costs

You may be right or wrong however it is important to capture expected findings

Now let's make a storyboard using these expected findings

Most employees are already working long hours and are engaged in extra duties. It is unlikely that staffing levels can be cut

Some levels of employees are paid more than market average and there is room to cut salaries

We can move hosting to India and reduce hosting costs by approximately 30%

Books.com can use a overseas analytics company like Mu Sigma to perform SEO at much cheaper costs



Some levels of employees are paid above market average

There is no excess capacity as employees are working long hours and taking on extra tasks

We can move hosting to India and reduce hosting costs by approximately 30%

Books.com can use a overseas analytics company like Mu Sigma that can reduce SEO costs by 25%

Can we write these more clearly to build a story?

These expected findings become your headline

Can you see the story?

Certain levels of employees are paid above market average



There is no excess capacity as employees are working long hours and taking on extra tasks



We can move hosting to India and reduce hosting costs by approximately 30%



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The storyboarding process is powerful enough to cover any concerns that you may have

- ▶ What if the data or message in the storyboard changes after the analysis?
- ▶ What if my storyboard has no story?
- ▶ What if I have data that does not fit in my storyboard?

The storyboard forces you to be concise and deliver a message as opposed to delivering data



Header

Head (optional)

- ▶ Bullet
 - Sub-bullet (as needed)
 - » Sub-bullet (as needed)

Kicker - optional

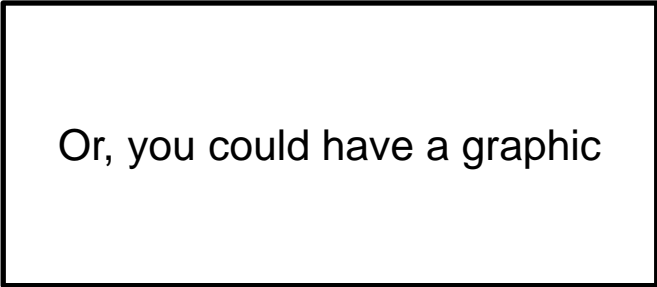


The key message (headline) goes here

A key category or idea

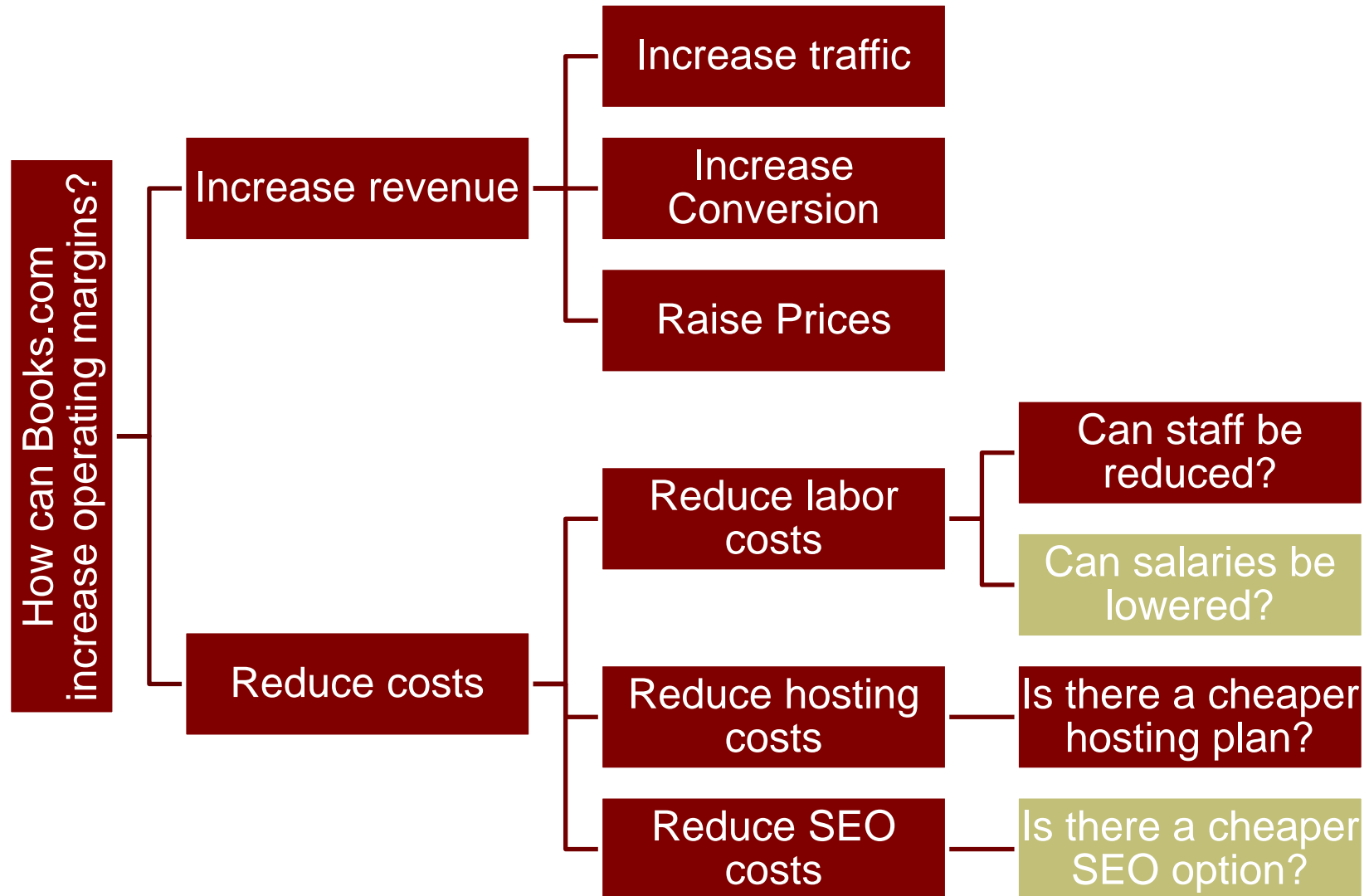
- ▶ Main point
 - Sub point

- ▶ Second main point
 - Sub point



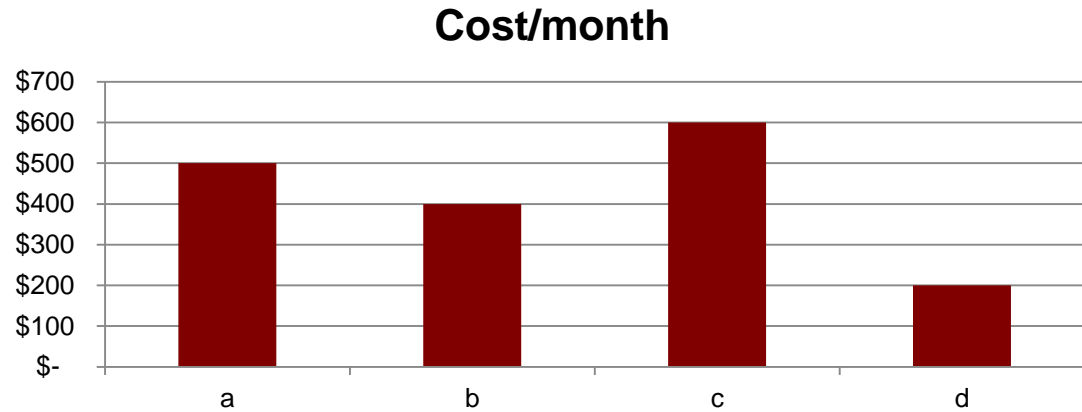
The implications – “so what?”

Where do you find the body of your slide? – first a recap

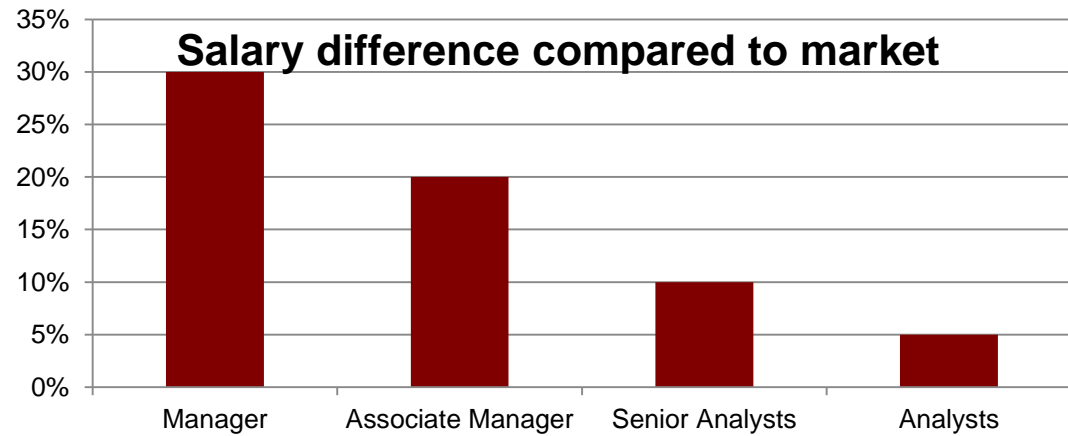


Where do you find the body of your slide? – first a recap

Is there a cheaper SEO option?



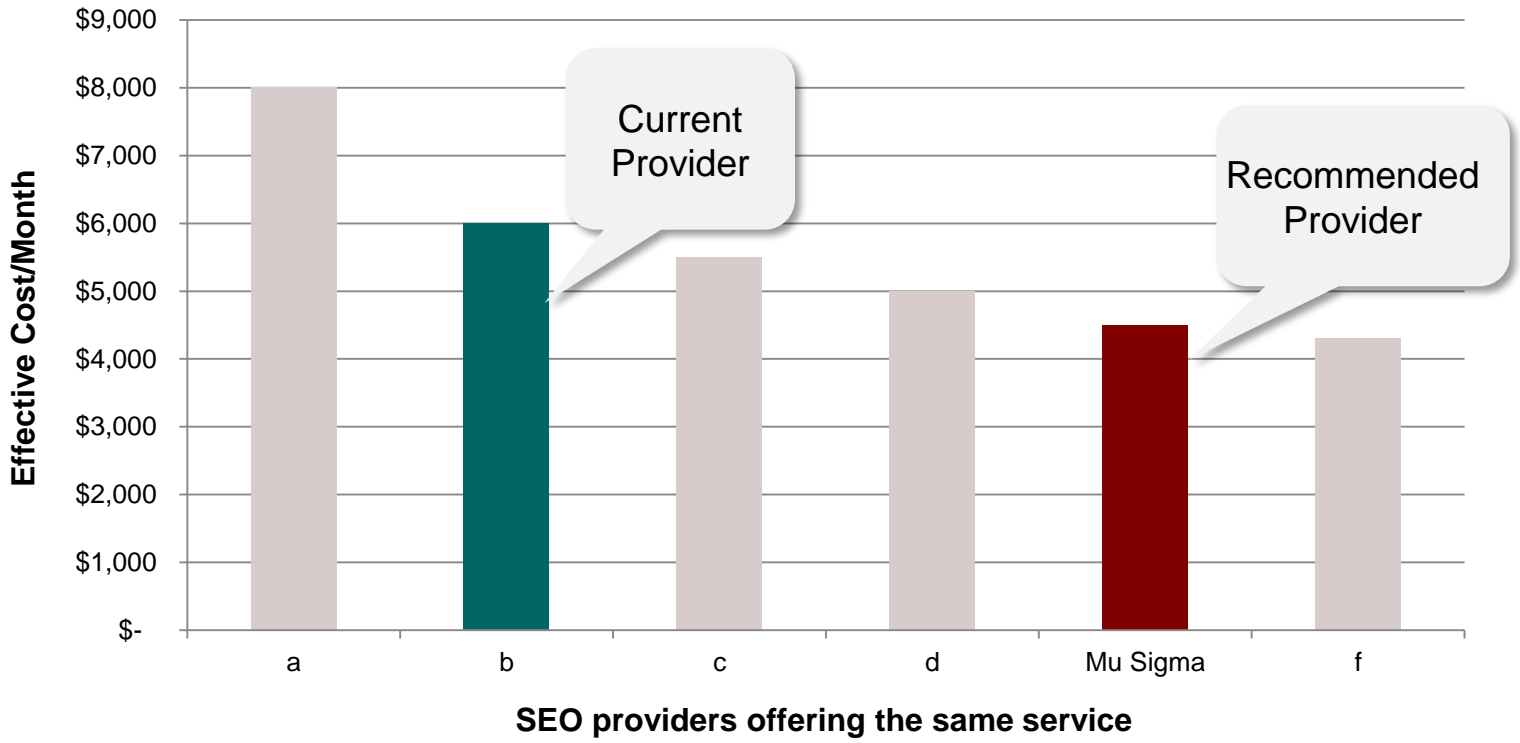
Can salaries be lowered?





Books.com can use overseas analytics company like Mu Sigma to reduce SEO costs by 25%

Comparing Costs of SEO Providers (US\$) (October 2012)



There is potential to outsource other work

Good headlines focus attention on the page's main idea

- ▶ Usually a brief sentence
 - One line is best
 - Two lines maximum

- ▶ Avoid empty statements
 - “The next step of the analysis is as follows”

- ▶ Say something meaningful that directs the attention to the page's important point
 - Eg: “ROI varies greatly across businesses”

- ▶ Use headlines as the “storyboard” of your document
 - Reading only the headlines should tell a coherent story

Each page, like a paragraph, tells a small story

- ▶ Create a logical flow top to bottom
- ▶ Be sure it fits the logic of the overall story
- ▶ Don't overwhelm the audience
 - By jamming too much information on the page
 - With material that is beyond its comprehension
- ▶ Don't "underwhelm" your audience
 - With too little (or trivial) information
 - By making the simple information seem complex

Follow the rule of two

- ▶ Limit every element in the format to two lines
 - Presentation title
 - Subtitle
 - Headlines
 - Heads
 - Bullets
 - Dashes
 - Kickers
 - Etc.

Human eye finds it difficult to understand more than two lines of text

So, what did we learn today?

- ▶ What is a storyboard?
- ▶ How are they useful in consulting?
- ▶ How do you create a storyboard?
- ▶ Creating slides to support the storyboard
- ▶ Some tips



Thank you