Big Data Analytics for Insights and Business Growth

Dr. Mark Wang

Chief Data Scientist

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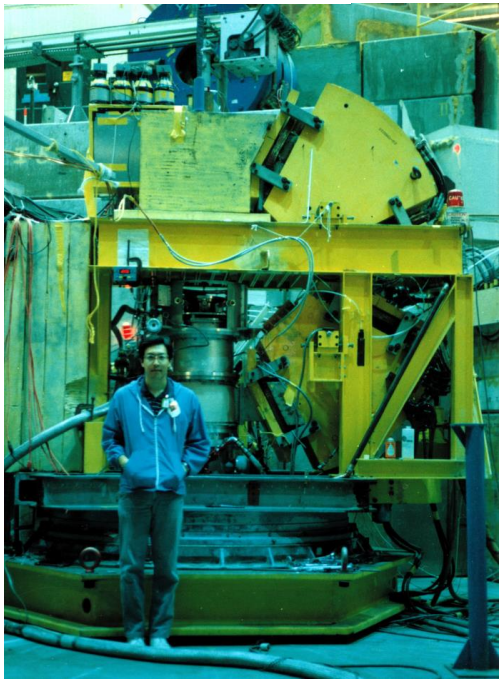
Dr. Mark Wang



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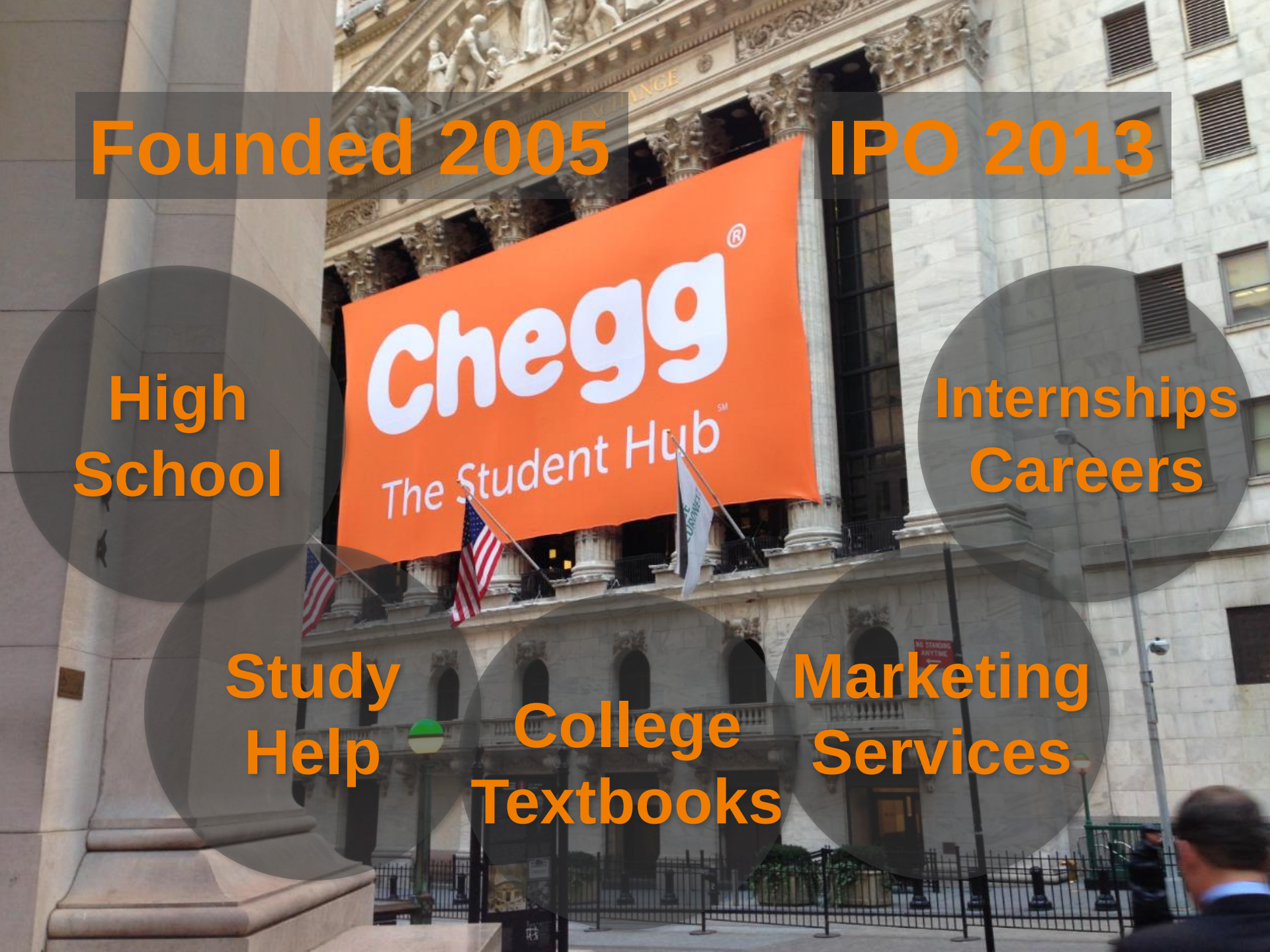
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Save time

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Get smarter

Outline

- Types of Analysis
- Analysts and Data Scientists
- Company Culture

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E-Commerce Site Analytics

Visitors

Search

Cart

Account

Confirm

Order

Do you have what I want?

How much does it cost?

How fast can I get it?

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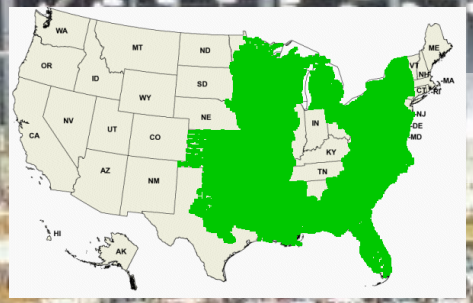
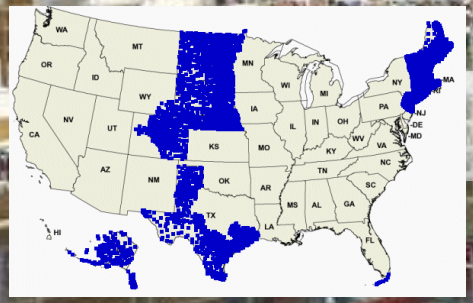
How Fast Can I Get it?

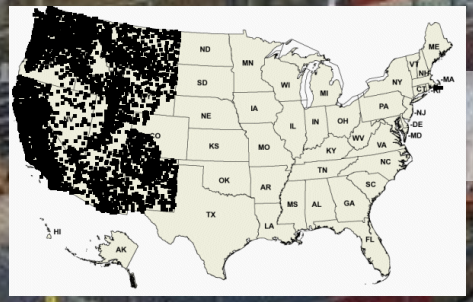
Zone 1



Zone 2



Zone 3



Zone 4

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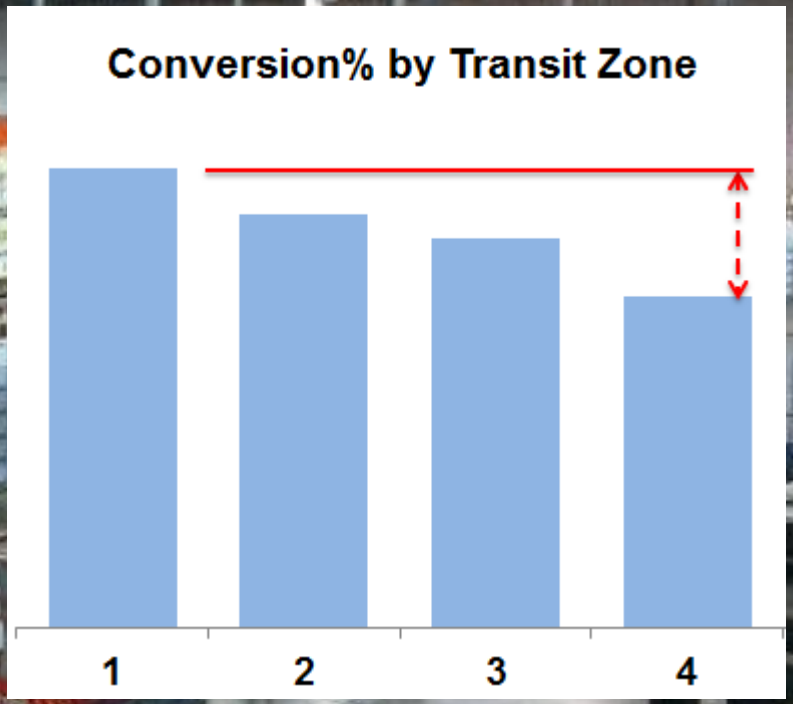
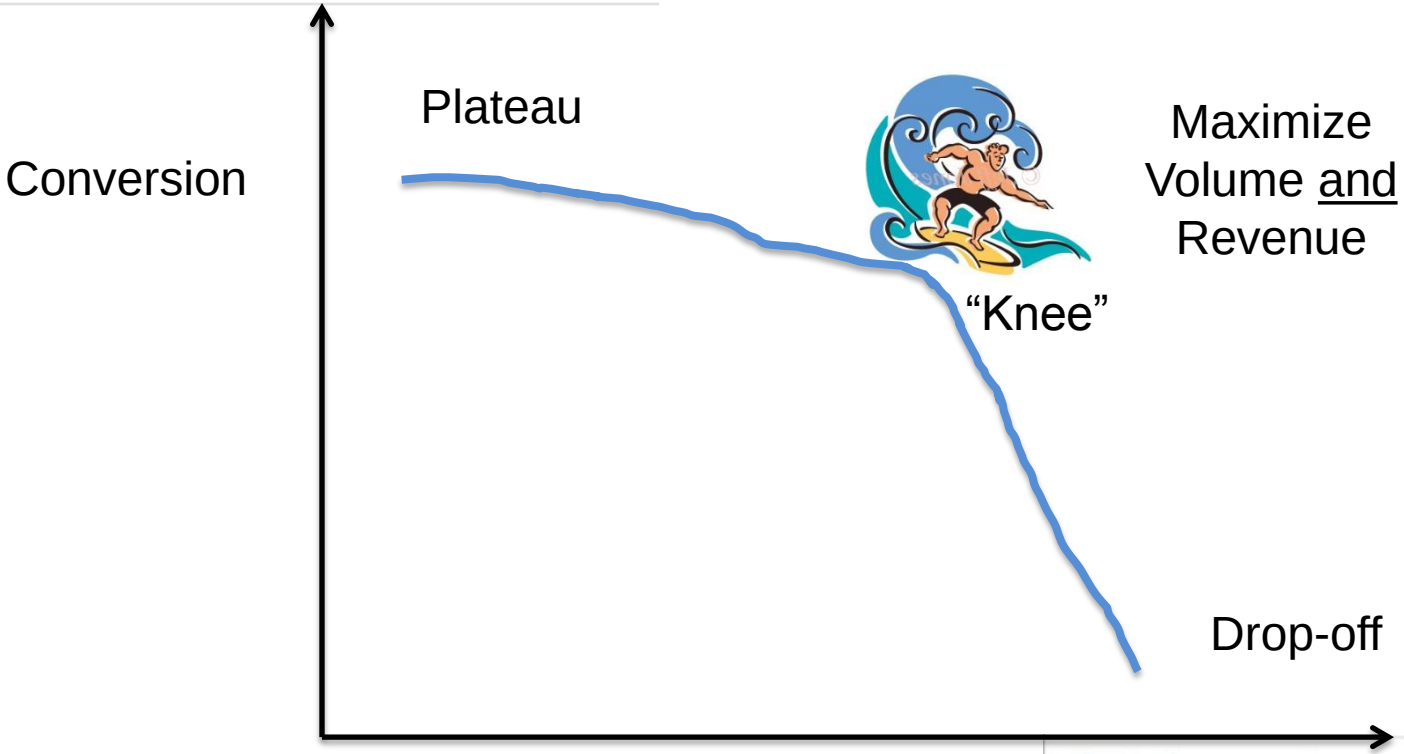


How Much Does it Cost?

Meta Wallace @meatbawlsays_ 2h
just got a 300 dollar book for chem for 15 bucks. i LOVE chegg.



Josie Osie @notjosie 5h
@sity91 wow wth chegg is charging me $40 to rent a book when the school sells it new for $44

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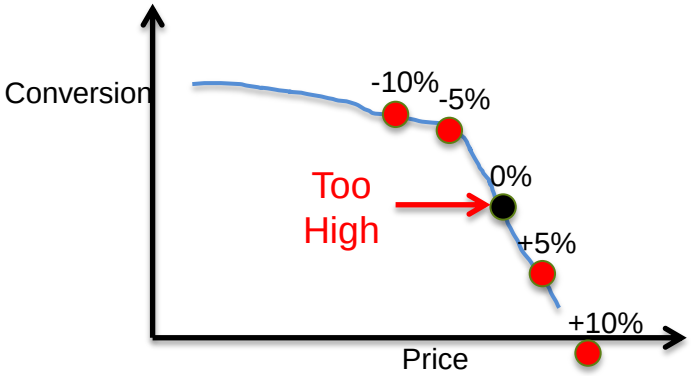
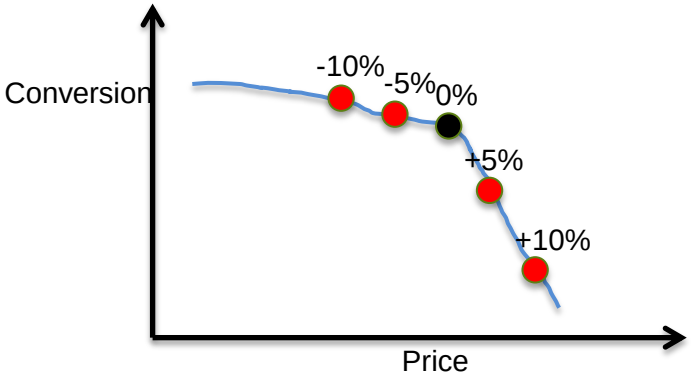
Fundamental Questions – A/B Testing

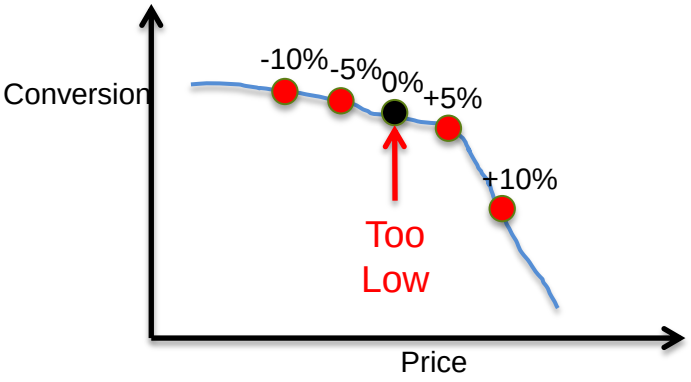
Are Prices Too High?



Are Prices Optimal?



Are Prices Too Low?



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Big Data

- Volume
- Velocity
- Variety
- Variability
- Complexity
- Unstructured

Big Potential

- Deep Insights
- Predictive
- Personalization
- Hypergrowth
- Disruption

Big Investment

- IT Infrastructure
- Cloud Servers
- Machine Learning
- Visualization
- Hadoop

Want a FREE donut?

Want to BUY a drink?

E-Commerce Conversion “Funnel”

Visitors

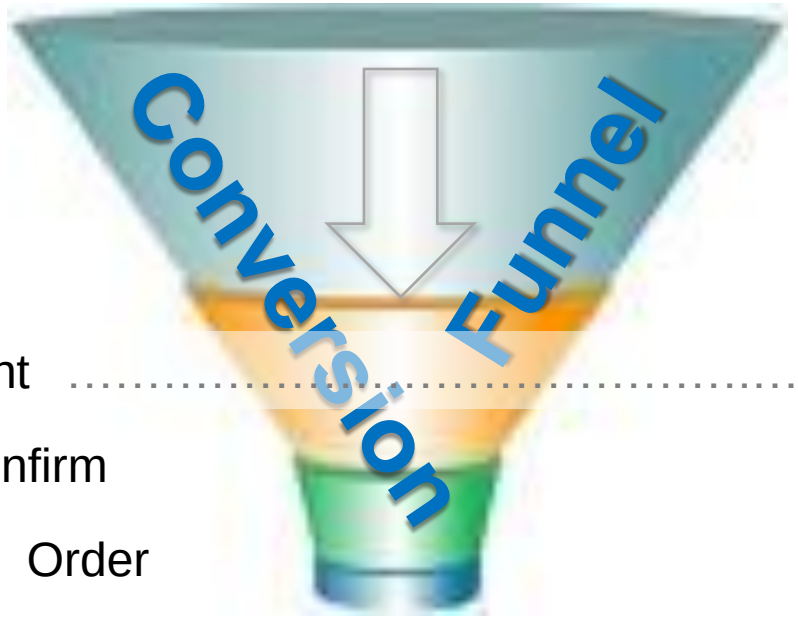
Search

Cart

Account

Confirm

Order



User Searches

Name/Address/Email

Customers

Personalize and Tailor Experiences

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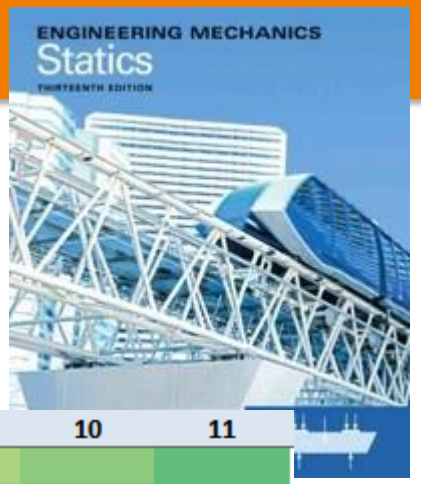

WHAT and WHEN do students need help?

Chapter Number

Date	1	2	3	4	5	6	7	8	9	10	11
Aug.11											
Aug.18											
Aug.25											
Sep.1											
Sep.8											
Sep.15											
Sep.22											
Sep.29											
Oct.6											
Oct.13											
Oct.20											
Oct.27											
Nov.3											
Nov.10											
Nov.17											
Nov.24											
Dec.1											
Dec.8											
Dec.15											
Dec.22											
Dec.29											

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Personalized Emails

Past

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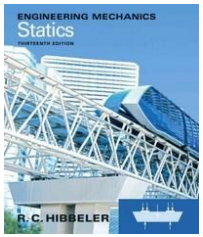
Current

Need help with **Engineering Mechanics Statics?**



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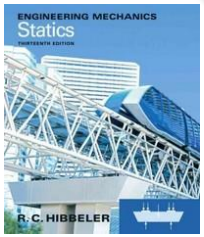

Question:

An escalator is driven by a chain connected to pointa that supports a force *F*. The rollers at pointsa and*b* have frictionless bearings and ride in a loose-fitting track. If a person weighing 200 lb is being lifted at a steady speed and other weights may be neglected, determine the required chain force*f* and the reactions at the wheels at*a* and*b*. If the person is being lifted at a variable speed, will the force*f* be different than that calculated earlier? Explain.

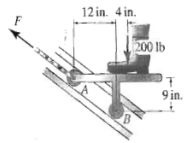

Figure P5.4

See Answer

High Growth High Margin

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Outline

- Types of Analysis
- **Analysts and Data Scientists**
- Company Culture

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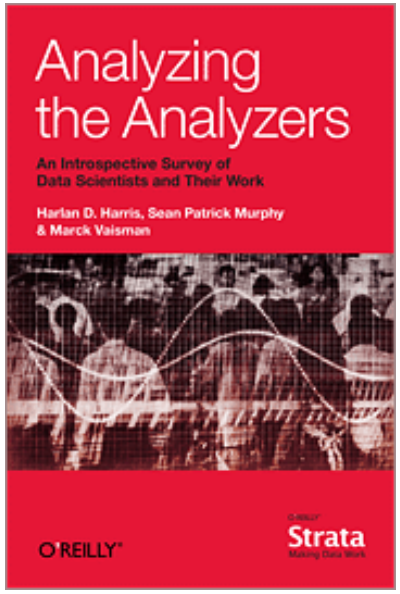

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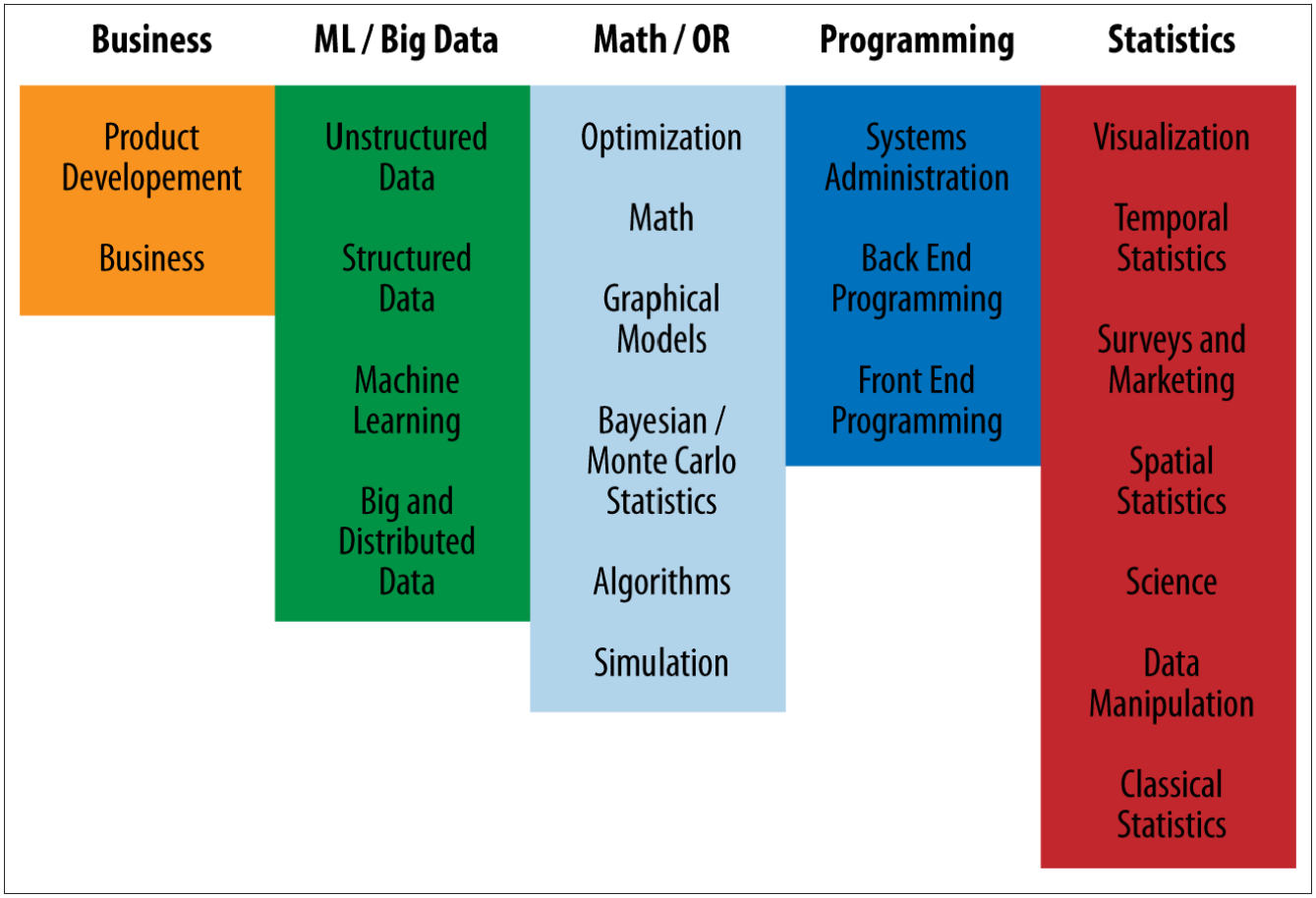

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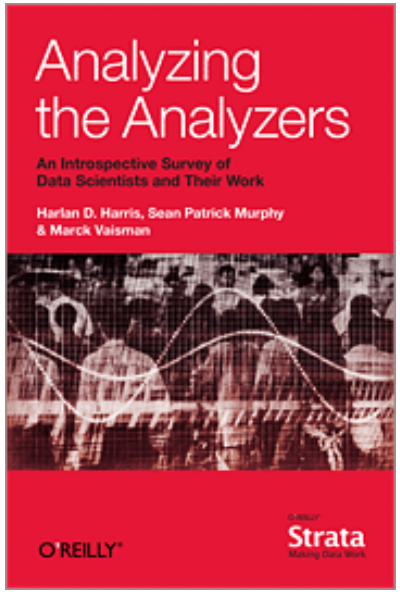

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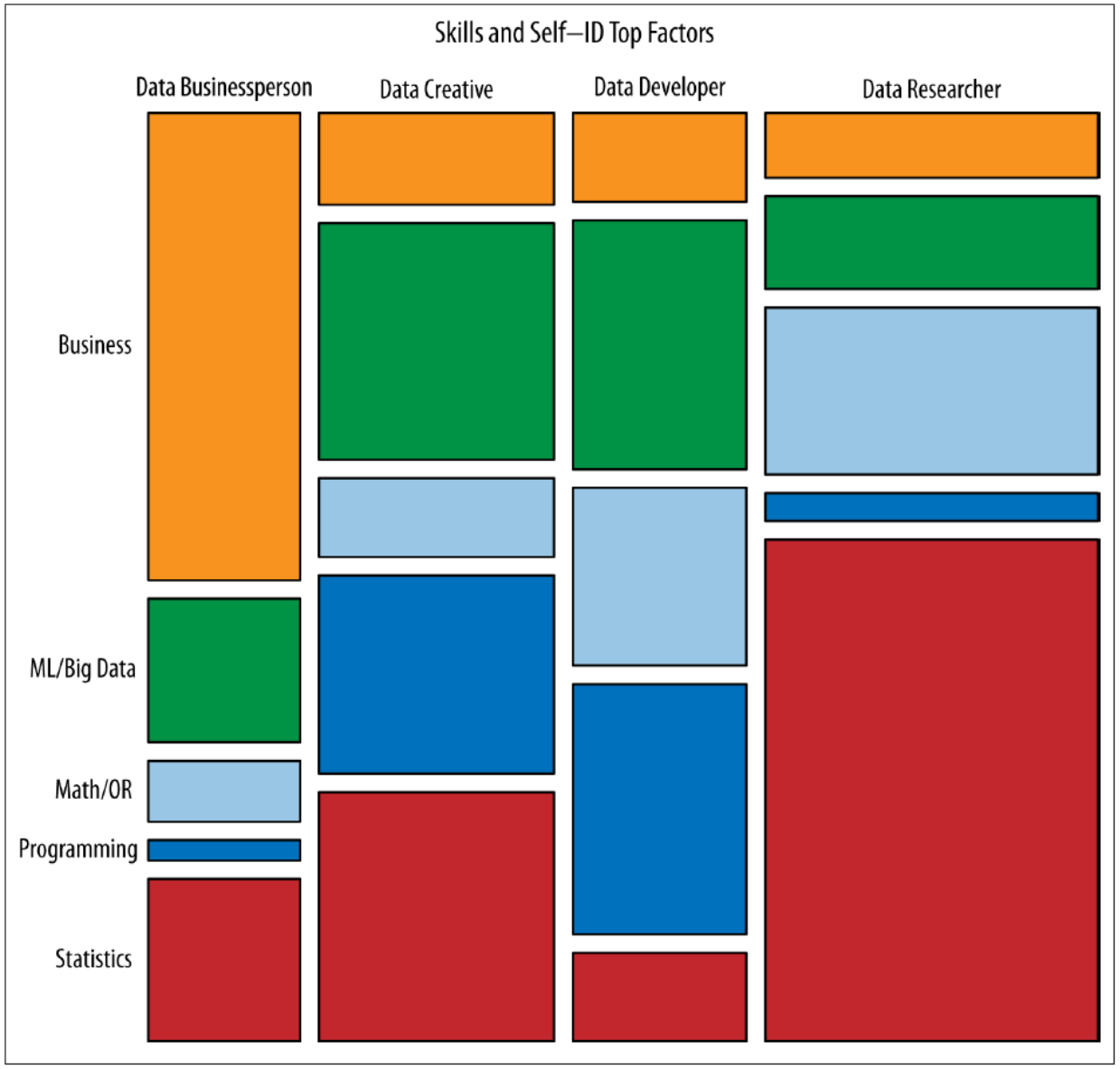

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Initial Focus Was Commerce

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COLLEGE LIFE

Rent or buy
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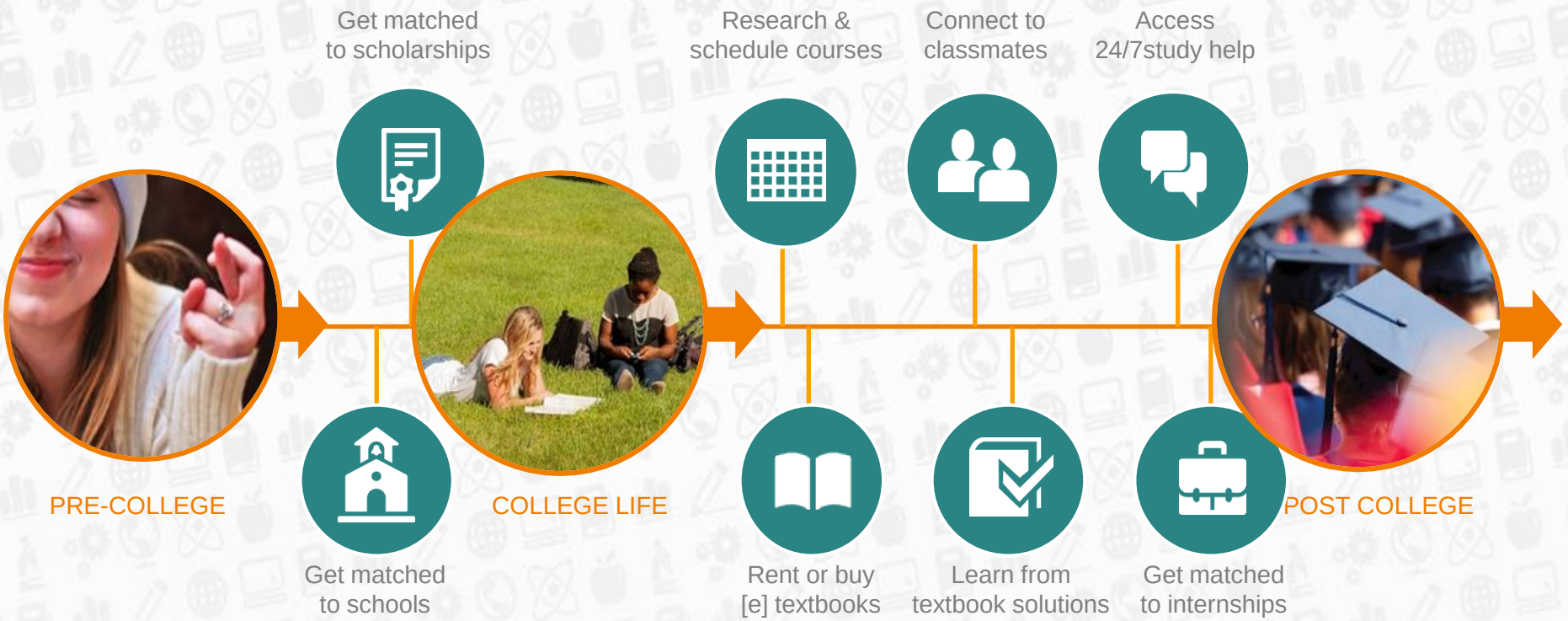
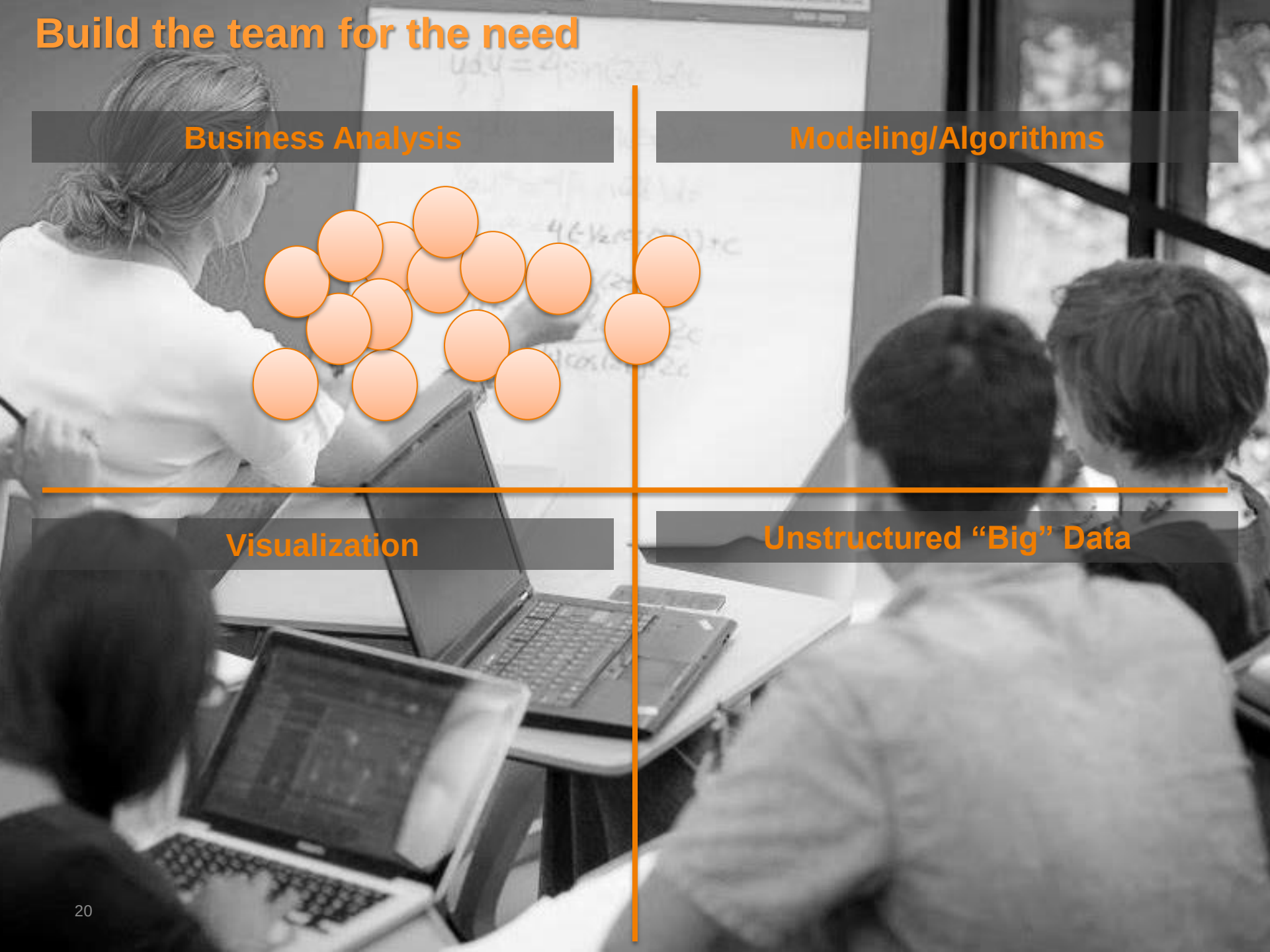
POST COLLEGE

Student services today



Build the team for the need



"So you want to hire me as a Data Scientist for Intelligent Virtualized Deep Machine Learning Real-time Big Data in the Cloud for Social Networks? Ok, but if you also want Hadoop, increase my salary by 50%."

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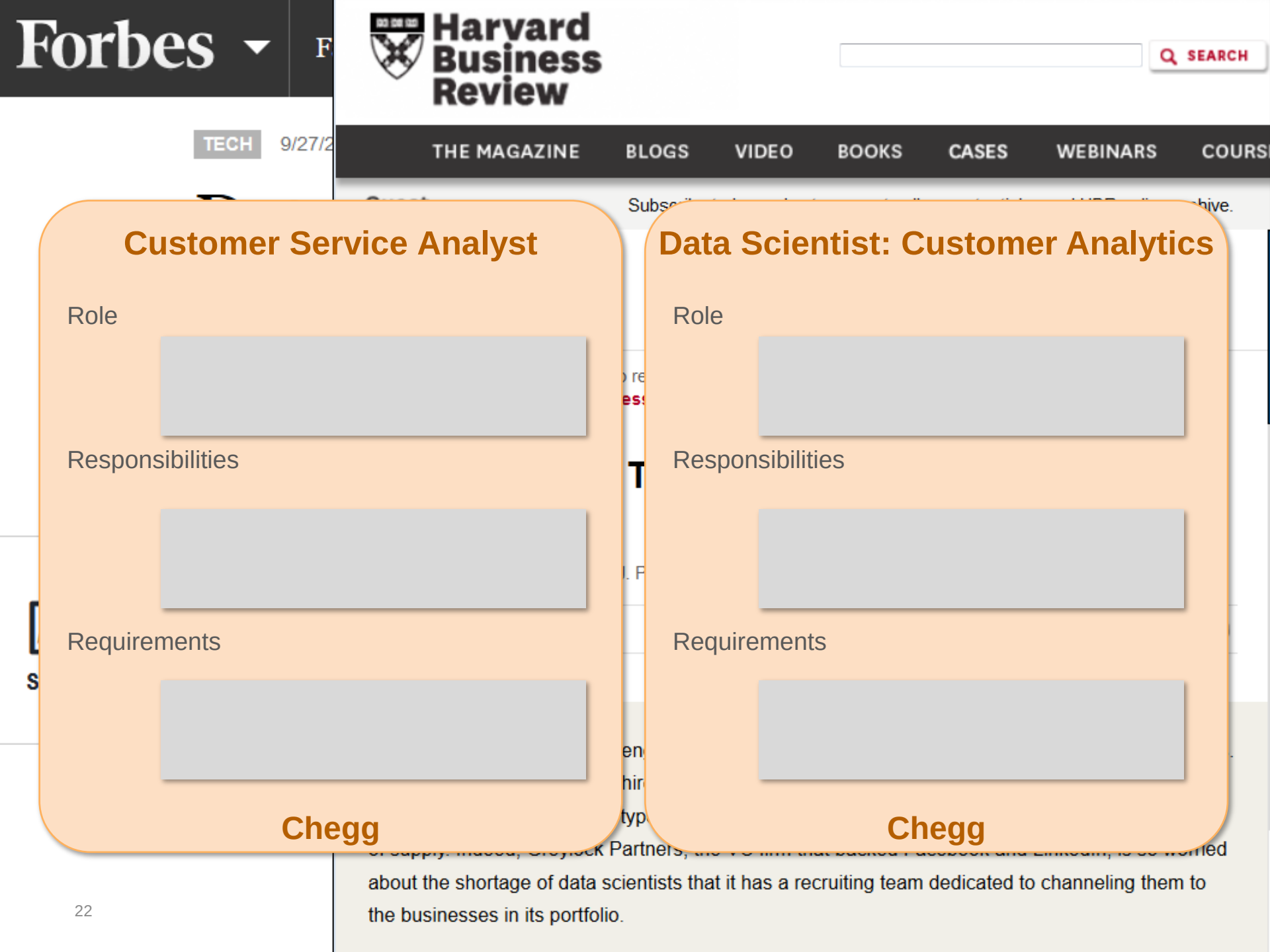

Customer Service Analyst

Role

Responsibilities

Requirements

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Data Scientist: Customer Analytics

Role

Responsibilities

Requirements

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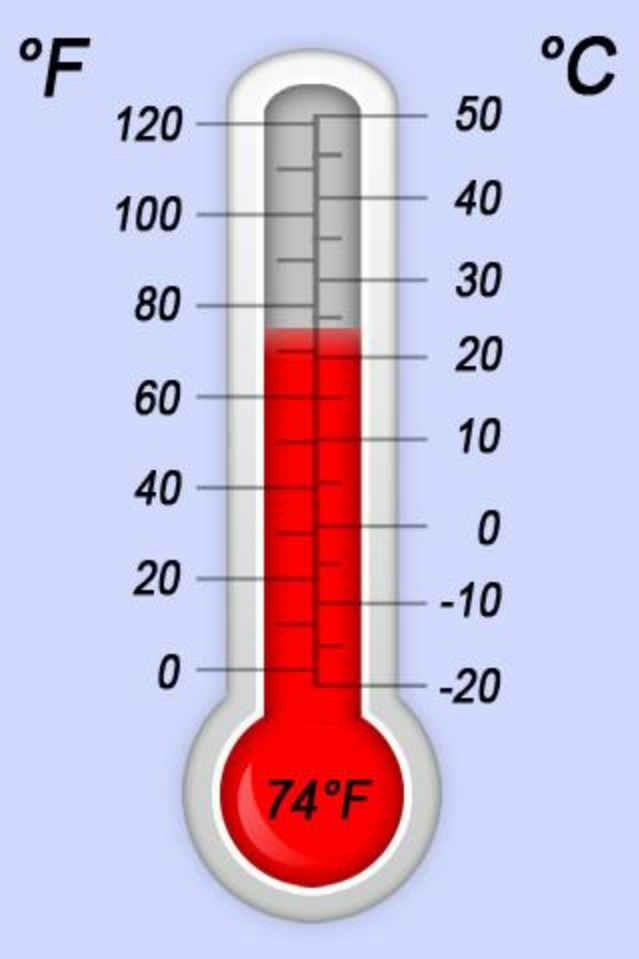
Want Thermostats, Not Thermometers



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People that MAKE things happen
People that WATCH things happen
People that say, “What the heck just happened?”

Outline

- Types of Analysis
- Analysts and Data Scientists
- **Company Culture**

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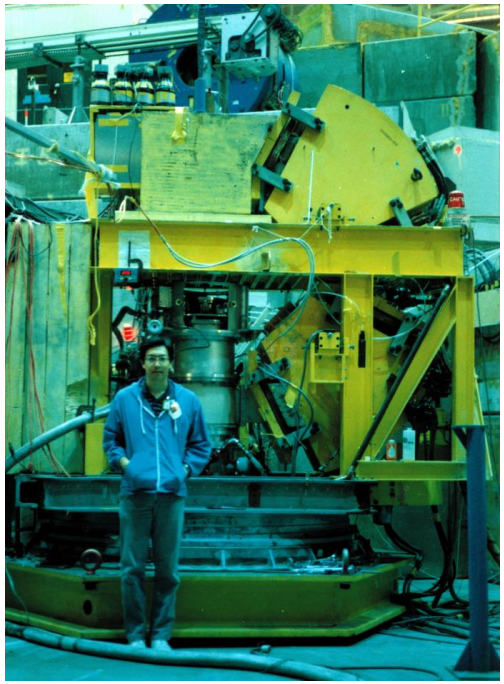
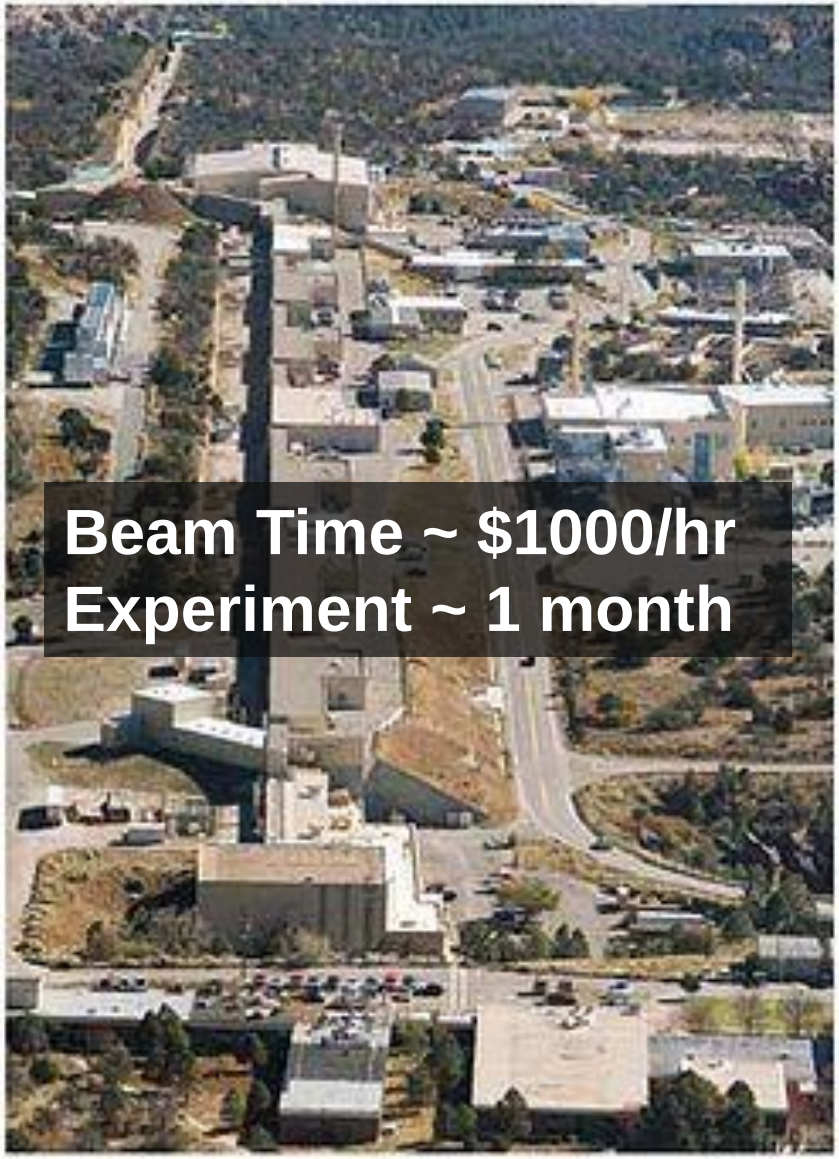
Scientific Peer Review

Proposal → Advisory "Murder" Board → Project Engineering Build Experiment





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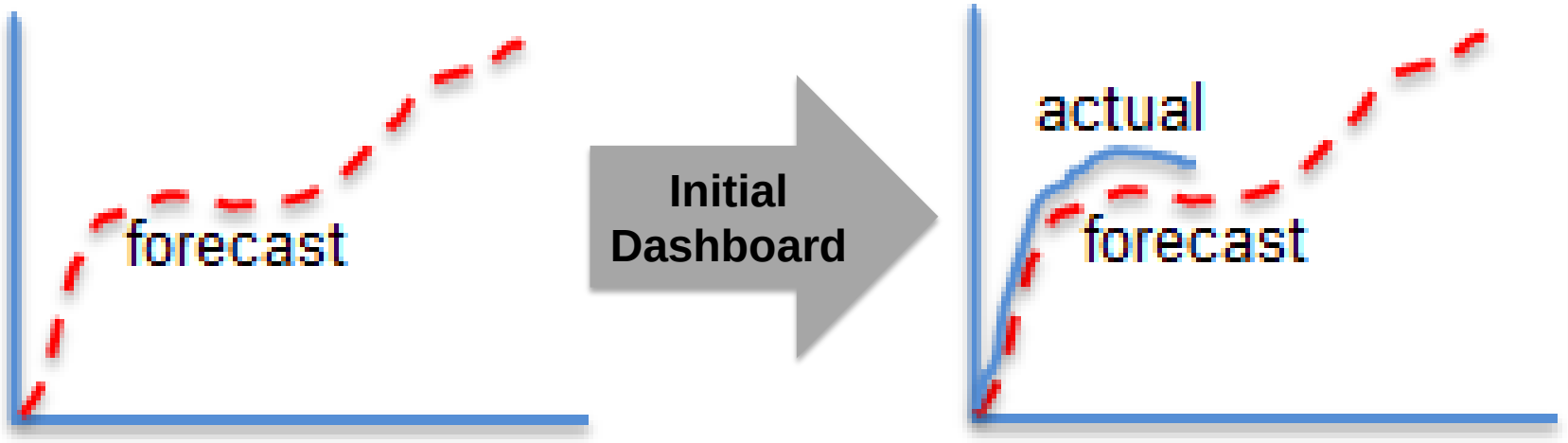
Chegg Values

Debate, Decide, Do

1. Problem we are solving?
2. What does success look like?
3. Is it big enough to matter?



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Have to measure to improve…

…can't lose weight without a scale

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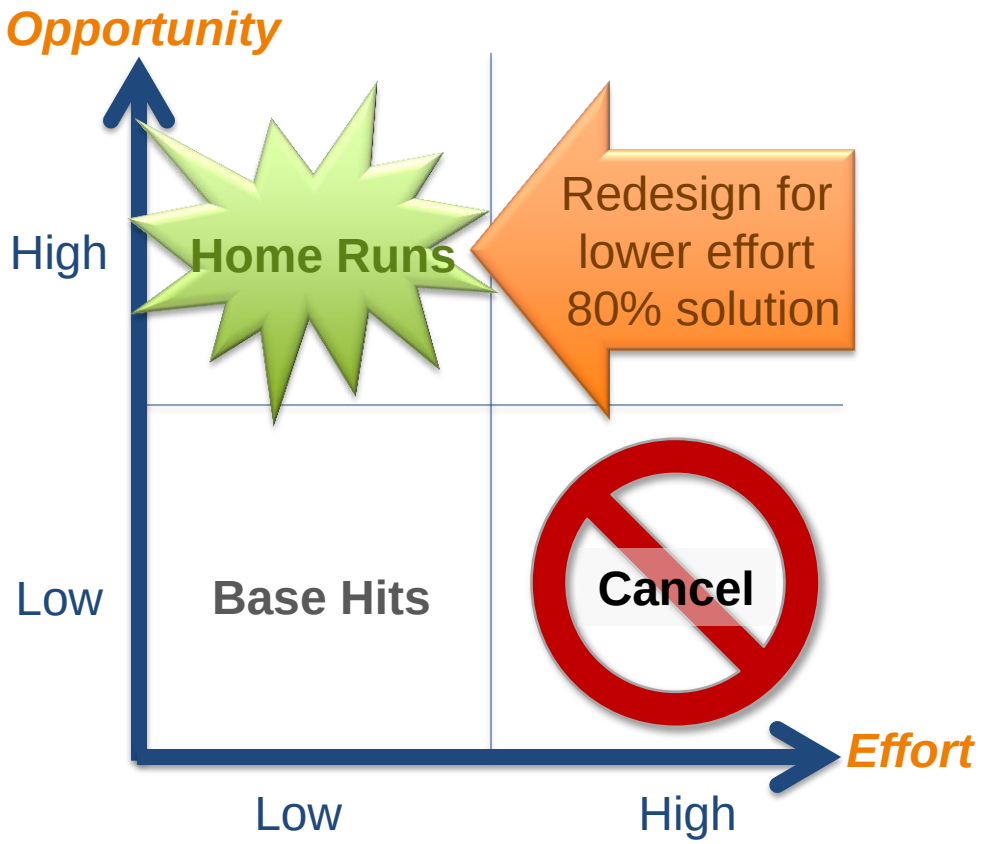
Is it Big Enough to Matter?

Analyst Success = Home Runs



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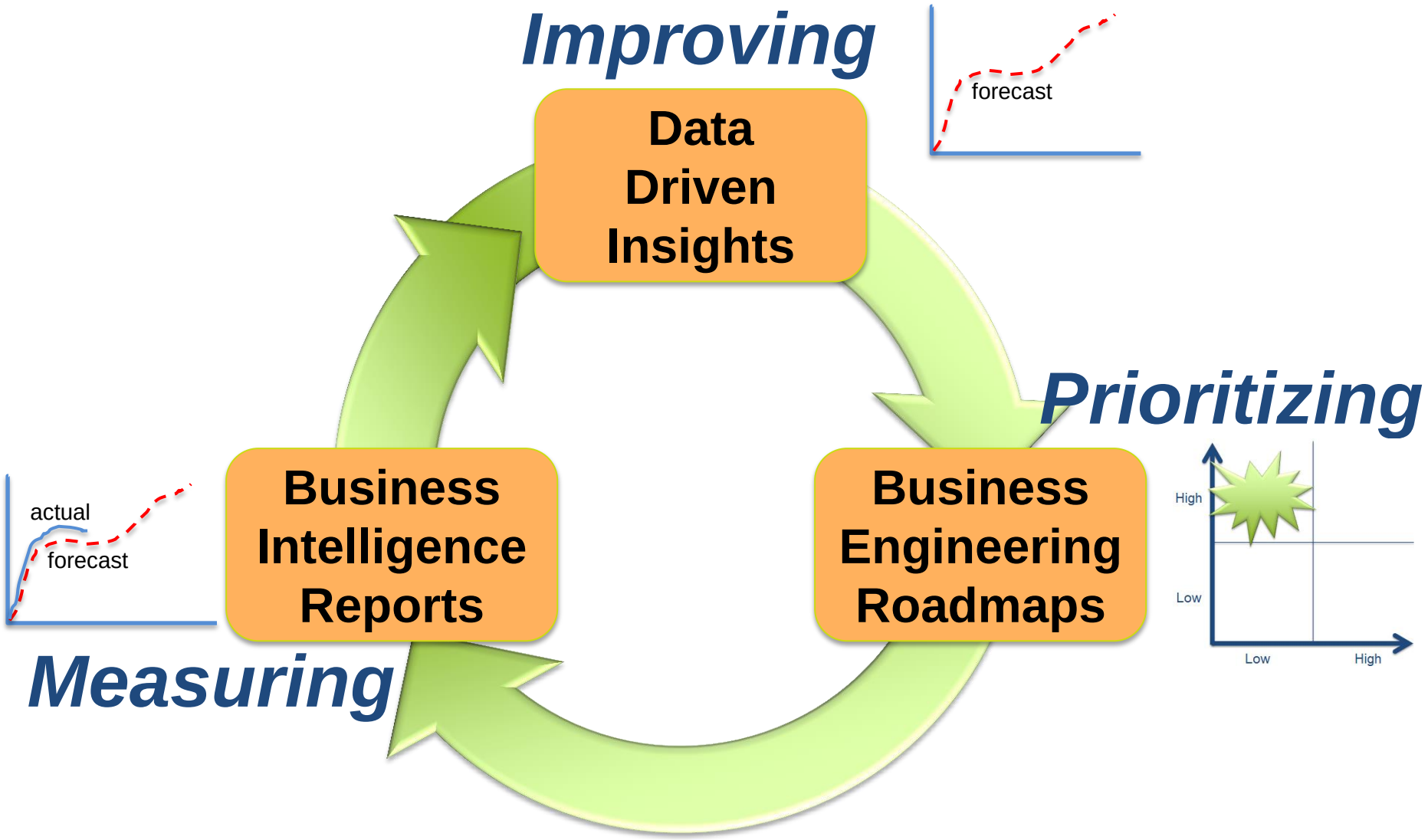
Turning Analysis to Action



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Lessons

- Measure performance, not activity

How WELL, not how MUCH

- Assess both benefits and risks

Break it, Fix it Fast

- Ask questions that move the business

Better Filters, not Bigger Pipes

We're Here to Help Students Succeed

- **Dream Big!**
- **Debate, Decide, Do**
- **Find Better Ways to Do Things**