







The Power of Framing and Reframing

Eric K. Clemons © September 2018

1

Solving Important Problems You Haven't Seen Before

-  Pay attention, remember what you've seen before, look for patterns
-  Act like it really matters to you
 -  Manage your nervous college interviewer — people are complicated but seldom incomprehensible
 -  Don't sleep on the floor of St. Louis Airport — figure out what the problem really is
 -  Don't go over the waterfall — when nothing else works, buy yourself time
 -  Do any of the responses generalize, making these truly useful patterns?

2

Solving Important Problems You Haven't Seen Before

- Can this be taught?
- Will I teach it in this class?
 - Only up to a point
 - I will certainly teach all of you how to recognize a useful set of business patterns
 - I will show you techniques for reframing
 - I will not be able to teach all of you how to survive some totally unanticipated threats to your lives
 - Nor will I create life-threatening situations for practice
 - Although such exercises are essential elsewhere, we don't permit them on campus

3



Solving Important Problems You Haven't Seen Before

- Unfamiliar and unstructured situations can be daunting



4








Solving Important Problems You Haven't Seen Before

-  Unfamiliar and unstructured situations can be daunting
-  You can sort them out



5

Solving Important Problems You Haven't Seen Before

-  I'll do the best I can to provide structure
-  Will you be graded on your ability to manage reframing and deal with unfamiliar situations?
 -  Only up to a point
 -  I will not place you in life threatening situations
 -  I will not grade you on a pass-or-die scale
 -  I want this to continue to be fun
 -  And you can learn from immersion in unfamiliar situations

6

Reframing to Reveal Hidden Patterns You Know

- Several useful forms of Transformation
 - Make it into a problem ***you've already seen before***
 - We do this in scenario analysis
 - And this is the ***most important*** transformation of the course
 - Push it to the ***Limit***
 - Change the ***Boundary Conditions***
 - Create a New ***Sequence*** of Equivalent Questions

7

Reframing to Reveal Hidden Patterns You Know

- A barometer, and a physics exam
- **FORTUNE** and **The New York Times**
Unilever and **P&G**, and the “inevitable” end of promotions
- → Gas diffusion and entropy

8

Reframing to Reveal Hidden Patterns You Know



Taking a question that is difficult to answer as given



Transforming the question into a **new question**, or **sequence** of questions, that is easier to answer

9

Two Boats A'Running



Transforming the question into a **new question**, or **sequence** of questions, that is easier to answer



Two ferries running around Manhattan



One goes clockwise and takes three hours



One goes counterclockwise and takes four hours



One fast ferry and one slow ferry leaves every 15 minutes, on the hour and every quarter hour, 24 hours a day, 7 days a week



You catch an 8 AM fast ferry and I catch an 8 AM slow ferry





We start counting the ferries we see, as soon as we leave the station



Which of us will count more ferries?







10

Two Boats A'Running

-  **Transforming** the question into a **new question**, or **sequence** of questions, that is easier to answer
-  **The hard way to answer the question**

11






Two Boats A'Running

-  **The hard way to answer the question**
-  Everything is relative ...
-  Imagine that you're on the slow ferry. Pretend for this analysis that it's not moving and that all the fast ferries are approaching it. What's the apparent speed of the approached fast ferries? The apparent velocity is the sum of the two speeds.
 -  Fast ferries travel a distance of X in H_F hours, so their true speed is X/H_F MPH.
 -  Slow ferries travel X in H_S hours, so their true speed is X/H_S MPH.
 -  The combined speed of the two ferries is $X/H_S + X/H_S$ MPH, or $((H_S + H_F)/H_S \cdot H_F) \cdot X$ MPH.

12

Two Boats A'Running





The hard way to answer the question

-  What's the frequency of the arrival of the fast ferries as seen from the slow ferry? Well, there are 4 fast ferries per hour, spread every quarter of an hour over the HF hour circle. So there is a fast ferry every $X/4 \cdot HF$ miles.
-  How long before the slow ferry sees the first fast ferry? Distance divided by speed of approach is $(X/4 \cdot HF) / ((HS + HF)/HS \cdot HF) \cdot X$.
-  This reduces to $HS/4(HS+HF)$ hours. So the slow ferry "sees" a ferry every $HS/4(HS+HF)$ of an hour, or $4 \cdot (HS+HF) / HS$ ferries per hour.
-  Multiply this by the duration of the slow ferry's circuit to get $4 \cdot (HS + HF)$
-  By symmetry, this is the same number seen by the fast ferry

13

Two Boats A'Running

The easy way to answer the question

-  **Transforming** the question into a **new question**, or **sequence** of questions, that is easier to answer
-  Divide it into two questions
 -  How many **old boats** are already out there waiting for you to pass them? Pretend you are on the last boat before the company ceases operations forever
 -  And how **new boats** are going to be "created" during your trip? Pretend you are on the first boat that ever left the dock

14

Two Boats A'Running

- How many **old boats** are already out there waiting for you to pass them?
- That's actually pretty easy!
- 4 times an hour, for either 3 or 4 hours












15

Two Boats A'Running

- And how **new boats** are going to be “created” during your trip?
- That's pretty easy also
- If you're on a slow boat ...
 - You are out for four hours
 - There is a fast boat created every 15 minutes, or four an hour
 - And you pass all of them, so you pass 16
- If you're on a fast boat ...
 - You are out for three hours
 - There is a fast boat created every 15 minutes, or four an hour
 - And you pass all of them, so you pass 12





16

Two Boats A'Running

-  So how many boats do you pass, **in total**?
-  If you're on a slow boat ...
 -  You pass the 12 old boats that were already out
 -  You pass the 16 new boats that left while you were traveling
 -  So you pass 28
-  If you're on a fast boat ...
 -  You pass the 16 old boats that were already out
 -  You pass the 12 new boats that left while you were traveling
 -  So you pass 28

17

Two Boats A'Running

-  Another related question ...
-  Suppose we only start counting **after** our ferries meet, and we count until we get back to the original station
-  Now which of us will see more ferries?
-  Is there an easy way to solve this version of the problem, **after** having solved the first version?

18

Reframing to Reveal Hidden Patterns You Know

- Several useful forms of Transformation
 - Make it into a problem ***you've already seen before***
 - We do this in scenario analysis
 - And this is the ***most important*** transformation of the course
 - Push it to the ***Limit***
 - Change the ***Boundary Conditions***
 - Create a New ***Sequence*** of Equivalent Questions

19

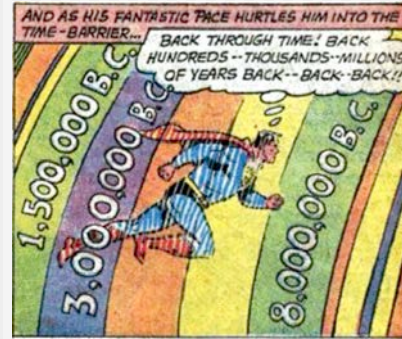
Push it to the Limit

- Superman and time travel
- The Channel Conflict Problem

20

Push it to the Limit — Superman and Time Travel

- How can Superman travel go backwards in time?
- What happens when I toss you a football on a 787 moving at 540 miles per hour?
- What happens when the 787 approaches the speed of light?
 - Time compression**
- What happens when the 787 passes the speed of light?
 - Time reversal**
- Really? Of course not!










21

Push it to the Limit — Channel Conflict

- British Airways and Unilever
- To embrace eCommerce or not?
- To sell direct, and bypass American Express, Carlson-Wagons Lits?
- To sell direct, and bypass Sainsbury and Tesco, Wal-Mart and Kroger?
- “How should I know?” (Remember, it’s 1994!)
- Wrong Answer!**
- Useful pattern:** <<Never say “I don’t know” to the chairmen of the largest companies in their industries!>>











22

Push it to the Limit — Channel Conflict

-  British Airways and Unilever
-  To embrace eCommerce or not?
-  **Useful pattern:** <<Never say “I don’t know” to the chairmen of the largest companies in their industries!>>
-  How I got to go to London anyway
-  And why I still couldn’t solve either problem
-  I didn’t think I had seen anything like it
-  Another old physicists’ trick — embed problem in a bigger problem, see if you find a pattern







23

Push it to the Limit — Channel Conflict

-  British Airways and Unilever
-  To embrace eCommerce or not?
-  The old physicists’ trick — embed problem in a bigger problem, see if you find a pattern
-  Like the Merrill Bloomberg problem
-  Set up two problems, for travel and for grocery, which represent two extremes
-  They looked very similar:
 -  You needed to enter
 -  You needed to earn money
 -  You needed to survive attack
-  Channel encroachment as a Newly Vulnerable eMarket!






24

Push it to the Limit — Channel Conflict

-  British Airways and Unilever
-  To embrace eCommerce or not?
-  Channel Encroachment as a Newly Vulnerable eMarket!
-  Decision is now clear!
-  British Airways — Do whatever you want!
-  Unilever — Be afraid. Be very afraid!



25

Push it to the Limit — Channel Conflict

-  Channel Encroachment as a Newly Vulnerable eMarket!
-  Analysis generalizes to many other industries
-  Home Depot and ***The Letter***
-  Learning from historical patterns
-  Learning from the experience of others





26

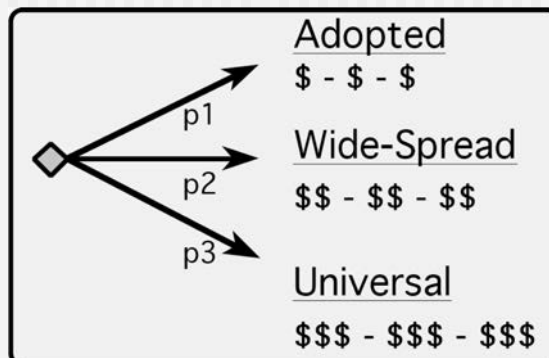
Changing the Boundary

-  The Clock Maker Problem
-  The Bloomberg Problem

27








Changing the Boundary — Merrill and Bloomberg

-  When you need a number and can't get one!
-  Merrill Lynch and Bloomberg
-  To sell or not to sell?
-  NPV of selling? Can't know! But don't need to.





28

Changing the Boundary — Merrill and Bloomberg

-  Merrill Lynch and Bloomberg
-  Decision is now clear
-  How do the *Sell* and *Don't Sell* scenarios differ?
-  “*Something is better than nothing!*”
(This is a general principle)
-  Problems Merrill encountered?
 -  ***Trap of the wrong base case***
 -  ***Trap of the vanishing status quo***






29

New Sequence of Questions

-  The easy way to solve the two ferries problem
-  Market makers obligations to the London Stock Exchange



30

Old Problem a New Way — Match Your Colleagues' Style

-  The Pesky Monty Hall Problem
-  Imagine that there are 999 doors, and the Genie is **always** behind one, but he is allowed to run and hide behind any one of the 999 doors ...
-  Imagine that there are 999 doors, and the Genie is **almost always** behind one (999 chances out of 1000), but he is allowed to run and hide ...
-  Imagine that there are 999 doors, and the Genie is **almost always** behind one (999 chances out of 1000), but he is allowed to run and hide ... and you have opened 998 of them ...
-  Why add letting the Genie run and hide? How does that help think about the problem?






31

In Your Life ...

-  When have you needed to reframe a problem to make solution possible?
-  When have you needed to reframe a solution to make discussion possible?







32

In Conclusion

-  Reframing a problem can make its solution more obvious
-  Reframing a problem can also make solving a problem computationally much easier
-  The Newly Vulnerable eMarkets pattern was developed by reframing
-  ***This takes practice***
-  ***Easy access to computers is sometimes a crutch and a barrier to solution***

33

In Conclusion

-  How much of this can really be taught?
-  First, speed is often over-rated
-  Preparing for deregulation, or for a press conference, is not the same as avoiding going over a waterfall or dealing with military combat
-  Second, most business situations can be reframed into something more familiar with time
-  This course is about gaining a new set of familiar situations driven by changes in information
-  This can be taught

34