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IOM455 April 07, 2010

Outline

- **Questions? Comments?**
- **We will discuss the test on Monday**
- **Goldratt discussion**
- **Negotiation**

Critical Chain

Topics of discussion?

TOC

uncertainty

Emotional stuff

Focus

MultiTasking

Critical Path/Chain

Student Syndrome

Time estimates

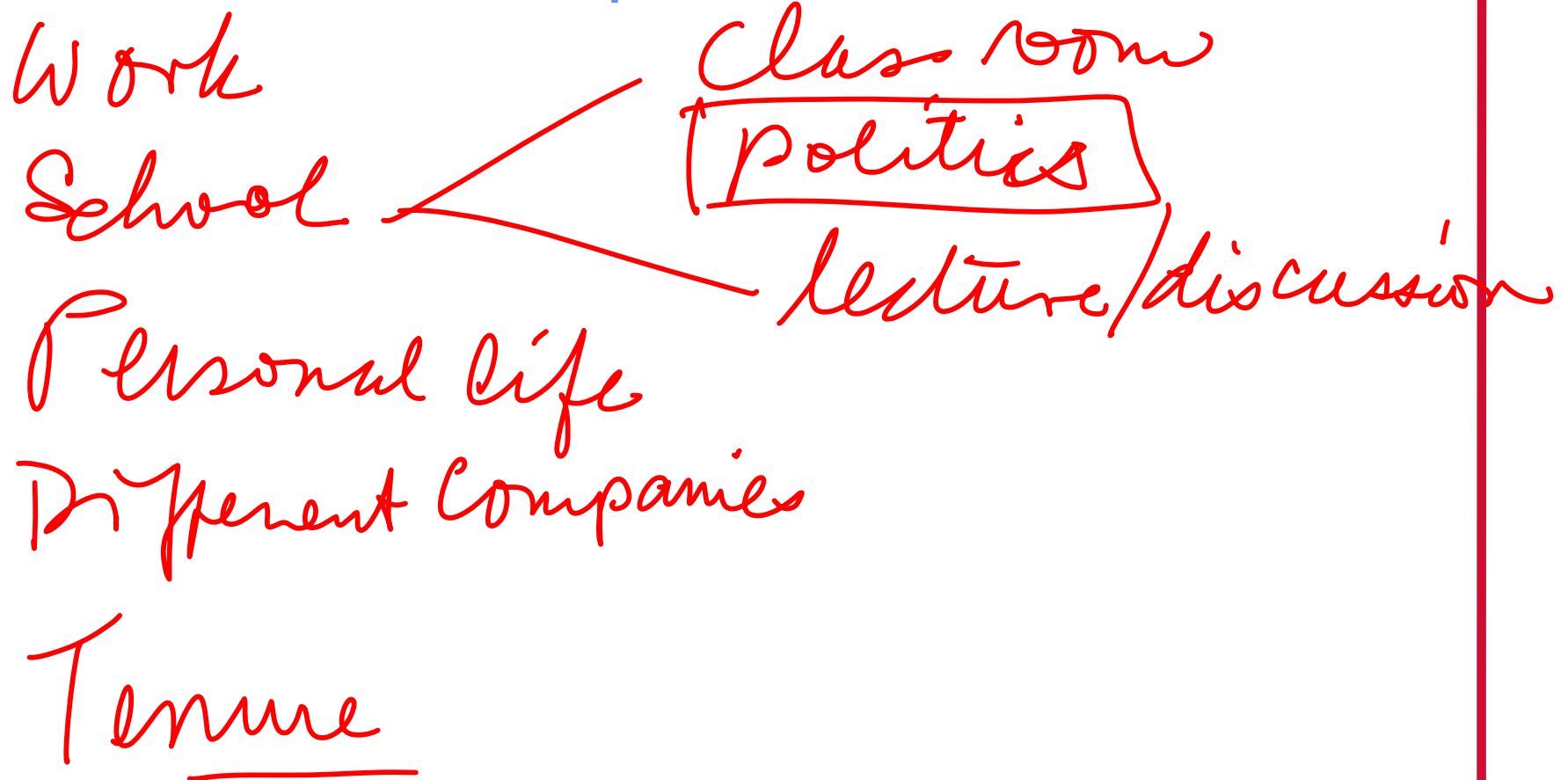
Motivation

Evaluation

Rewards

Buffers

Environments depicted in "Critical Chain"



Liked real application

Good examples / more memorable

Quick starts

Good story structure

Kept engaged

Too many names

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What did you learn?

padding estimates not useful

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Expected Monetary value

Simply put, the **expected monetary value** or **expected value** equals

Probability of occurrence x Value

EMV is the mean of the expected distribution of the payoffs

If a lottery distributes 1,000,000 ticket from which it draws a winner and the winner gets \$2,000,000, then

Expected Monetary Value = $(1/1,000,000) \times \$2,000,000 = \2

Another way to look at EMV as a weighted average

Caution – EMV's assume that increments in money have uniform intrinsic values

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Value and Desirability

Given a choice between these two alternatives, write down your answer. I will poll the class.

Option a) receive \$200,000

Option b) receive \$1,000,000 with a 20% probability, receive nothing with 80% probability

Split the given range into two ranges with equal desirability. I will poll the class.

0 - \$50,000

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Expected Desirability Value

This measure is intended to capture how strongly or intensely we feel about something

How do you assign these values?

- 1. Without extensive consideration – assign a portion to each**
- 2. Conditionally – comparing desirability on some scale**
- 3. Monetary value converted to a desirability value**

Let's look at the example:

Standard Publisher			Aggressive Publisher			Internet Publisher		
Prob.	Money	Desirability	Prob.	Money	Desirability	Prob.	Money	Desirability
0.2	300	35	0.2	100	15	0.5	0	0
0.6	500	50	0.5	500	50	0.2	500	50
0.2	700	62.5	0.3	1000	75	0.3	2000	100
<u>1</u>			<u>1</u>			<u>1</u>		
EMV	500		EMV	570		EMV	700	
EDV		49.5	EDV		50.5	EDV		40

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Expected Desirability Value - continued

The desirability values were derived as follows

The lowest to highest outcomes are 0 and \$2M. The objective is to decide how important each increment in money is. Let's start with:

From \$0 to \$500,000 = 50 points

From \$500,000 to \$2,000,000 = 50 points, that is

The judgmental mid-desirability point between 0 and 2M is 500K

Making two more judgements

The judgmental mid-desirability point between 0 and 500K is 200K

The judgmental mid-desirability point between 500K and 2M is 1M

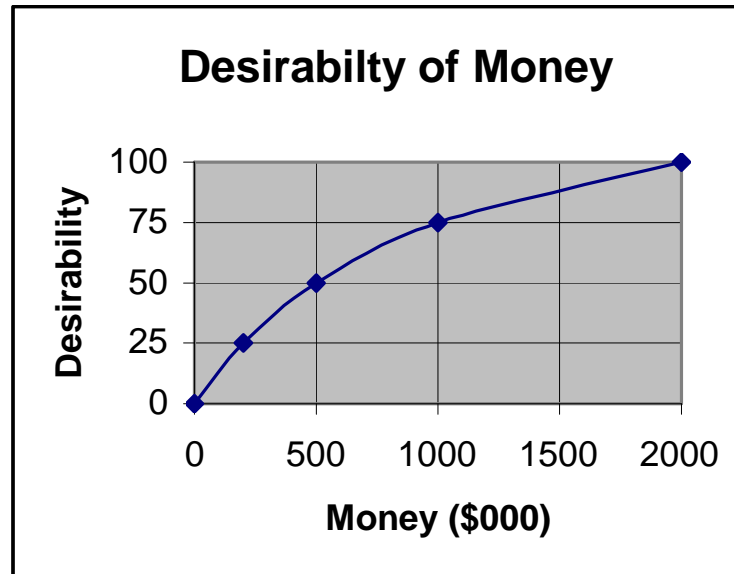
We can now put this into a table and graph on the next slide:

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Expected Desirability Value - continued

From this graph we find the individual desirability values

Money	Desirability
0	0
200	25
500	50
1000	75
2000	100



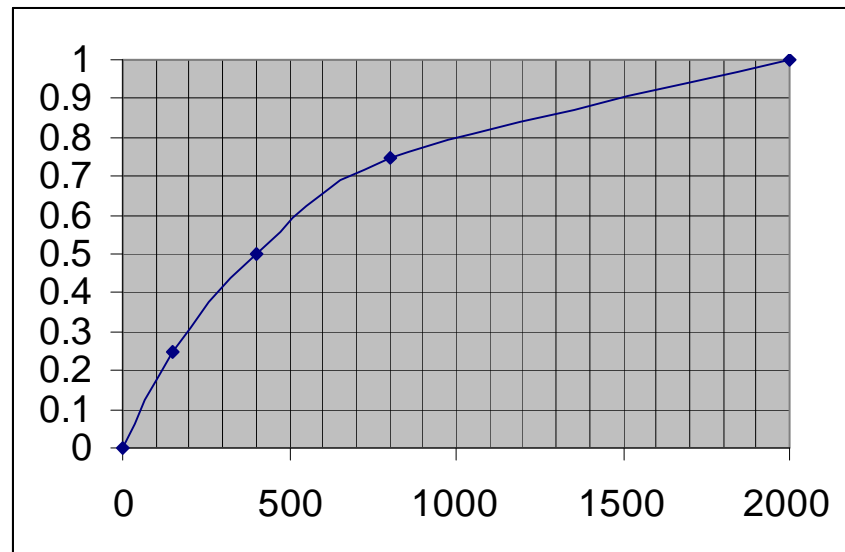
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Expected Utility Values - continued

As with desirability midpoints, we establish mid risk points
How much would you be satisfied with if the outcome was
certain as compared to a 50 – 50 chance of zero and the
max?

In our example

0 to 2M : 400K
0 to 400K: 150K
400K to 2M: 800K



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Expected Utility Values - continued

Standard Publisher			Aggressive Publisher			Internet Publisher		
Prob.	Money	Utility	Prob.	Money	Utility	Prob.	Money	Utility
0.2	300	0.4	0.2	100	0.18	0.5	0	0
0.6	500	0.6	0.5	500	0.58	0.2	500	0.58
0.2	700	0.7	0.3	1000	0.82	0.3	2000	1
<hr/>			<hr/>			<hr/>		
1			1			1		
EMV	500		EMV	570		EMV	700	
EUV		0.58	EUV		0.572	EUV		0.416

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Behavioral Decision Making

How do real people make decisions?

Most people, most of the time, do not follow the advice of theorists

What are the most frequent deviations from rational decisions?

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Behavioral Decision Making - Decision traps

Anchoring – Relying on a first impression

Status Quo – stick with the past

Sunk Cost – throwing good money after bad

**Confirming Evidence – we tend to pay more attention to
evidence that supports our position**

Wrong problem – influencing the response with the question

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How would you describe the chance of rain tomorrow?

How long does it take you to get to school?

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Behavioral Decision Making - Prediction Anomalies

**Thinking probabilistically – most people don't bother
likely, probably, maybe, more than likely, rarely, likelihood.
Possibility, good chance**

Lesson – be more precise

Conditional ambiguities - $P(A|B)$ vs. $P(B|A)$, Monty Hall

Overconfidence – using confidence intervals that are too tight

Lesson - practice

**Conjunction fallacy - $P(A \text{ and } B) > P(A)$. This must be false, but
when you substitute real events, people do make the mistake**

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Allocation

The allocation game says that the allocator has \$100. He/she offers the recipient any amount between 0 and \$100. If the recipient accepts, he/she receives the offered amount and the allocator gets the rest of the \$100. If the recipient refuses, they each get nothing.

Select a partner

Decide who is the allocator

Play once

Record the result

2 refusal

< 5
5 - 15
15 - 25 2
25 - 35
> 35 - 40
40

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Monte Hall

Three closed doors

A car behind one of the doors as a prize

Contestant chooses a door

**Monte opens one of the other two doors – there is no car
behind it**

**He asks the contestant whether he/she wants to stay with their
original guess or wants to switch**

Which would you do and why?