Contract Design 102: Introduction

1) Welcome to this episode on contract design. In the last episode, I might have convinced you, why it is useful for parties to have an enforceable contract.

2) But this does not answer the question **why the state has an interest to lend its power** to parties to enforce such contracts.

   a. Here is the reason: As a general matter, enforcing contracts is good for social welfare.

   b. This is because people who voluntarily enter into a deal usually do so in order to make themselves better off. Provided the contract causes no harm to third parties, enforcing such an agreement will therefore also increase social welfare.

   c. Of course, this assumes that parties know their interests and have a certain level of practical knowledge and experience. The state therefore does not enforce contracts if one of the parties is an infant, or is mentally incapacitated.

   d. Second, the argument assumes that contracts are indeed freely entered into, and that the decision by the parties is not based on mistaken assumptions. Hence, contracts are not enforced in cases of duress, certain kinds of mistake, misrepresentation or fraud.

e. Finally, the state might not enforce contracts if they create negative effects, so-called negative externalities on others. For example, an agreement between two parties to murder a third party might be in the interest of both parties involved but obviously hurts the third party. Such contracts are usually not enforced on public policy grounds.

f. But, beyond these circumstances, it is usually safe for the state to enforce contracts. This is the rationale for the freedom of contract, under which the state generally enforces an agreement without looking too much at its content.

3) It is hardly possible to overstate the importance of facilitating transactions between parties. To see this, consider how facilitating trade enables **division of labor and specialization** which is the source of much of our social wealth:

a. In an economy, in which everybody produces their own food, their own tools, and their own clothes, productivity will be low as nobody can focus on being good at any of these tasks.

b. Division of labor therefore spurs productivity as people can specialize. But division of labor would not be possible unless people can **trade** with each other. If one person specializes on say hunting, the other on

weaving clothes, and a third one on producing tools, people will have to trade with others.

c. The **cheaper** and more efficient it is to trade, the more division of labor is possible, the more specialization can occur, and the richer we are. The state can support this by providing an infrastructure that allows contracts to be enforced.

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4) I hope I have now convinced you, **why contracts exist**, and **why the state enforces contracts**. Let's now talk about why it is important that a contract is well-structured.

a. As mentioned before, the state -- within limits -- enforces contracts as written by the parties.

b. A big part of how well transactions work therefore depends on the content of a contract. That is, how well we as the contract designers do our job.

5) Let's work through a simple example how contract design matters:

a. Imagine a good that can be of **high or low** quality. The high quality good is worth **80** to a buyer while the low quality good is worth **20** to a buyer.

i. The **seller knows** that the good is of high quality (as she has used it in the past), and she values it at **60**. But the **buyer does not know**, as he cannot tell the

difference between a high and a low quality good by just looking at it.

ii. Let's say the buyer, based on his experience, assigns a probability of **50%** to the scenario that the good is of high quality. What is the expected value of the good for the buyer?

1. Well, if there is a 50% chance the good's value is 80 and a 50% chance it is worth 20 the expected value will be [50%*80+50%*20 =] **50**.
2. This will be the highest price at which the buyer would buy the good.
3. [willingness to pay=50]

iii. What is the lowest price at which the seller is willing to sell?

1. We said the seller values a good she knows to be of high quality at **60**. [willingness to accept=60] So, will there be a sale if the buyer offers no more than **50**? - **No**. [50<60]
2. This this is a problem, as the parties fail to trade a good that is worth 80 to the buyer and 60 to the seller, leaving money on the table.
3. This money that is left on the table is what economists refer to as "transaction costs."

b. Can we design a contract that solves this problem?

i. Imagine the seller promises to **compensate the buyer** in case the good turns out to be of low quality.
ii. Then, the buyer will get 80 independent of the quality of the good.
    1. Either he gets a good of high quality that he values at 80, or he gets a good of low quality that he values at 20 + a compensation payment of 60.
iii. Now the great thing is that the seller can offer this warranty term for free, as she knows the good is of high quality.
iv. Will the buyer be willing to buy the good at a price between 60 and 80?
    1. Yes, he gets 80 for sure.
v. Is this a price that the seller is willing to accept.
    1. Yes, because remember she values the good at 60.

c. Here is the insight:
    i. **Contract design matters**. Including the clause creates value of 20 (as a good that is worth 80 to the buyer and 60 to the seller changes hands, when without the clause the deal would not happen.)

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6) **This concludes our introduction**. Let me now state the goals for the class:

a. You will learn about situations in which **failure to find the right contractual solution** will create transaction costs that are higher than they should be, or -- that might even be so high that there is not transaction at all.
b. You will learn how to mitigate transaction costs in these situations by being smart contract designers – or as Oliver Williamson, who won the Nobel prize in 2009 would say, by **being smart transaction cost engineers**.
c. Finally, you will learn to **read contracts and criticize them** according to whether they create the right mechanism to solve the **incentive problems** that parties face.