BUSINESS & STRATEGY

# Who Gets What - and Why

by Alvin E. Roth

*Who gets the kidney, school seat, or dream job is set by hidden rules. Roth shows how to design them well.*

## BEST POINTS FROM THE BOOK

**01** **In a matching market, choosing is not enough. You must also be chosen.**

You cannot just enroll at Yale or show up to work at Google. Jobs, schools, and organs go to matches both sides accept, so price does not do the deciding - rules do.

**02** **The first task of any marketplace is thickness: enough participants, ready to deal at the same time.**

Thin markets leave good matches undiscovered. That is why exchanges open and close at fixed hours, and why kidney exchange needed shared databases of patients and donors before it could save lives.

**03** **Thickness has a curse: congestion. Too many options to judge in too little time jams the market.**

Roth calls congestion the economic equivalent of a traffic jam. Thick markets must also be quick, giving people ways to evaluate real choices fast - or the abundance is an illusion.

**04** **When grabbing a deal early is an advantage, markets unravel - offers come earlier and earlier until almost no one has real information.**

Judges began hiring law clerks years before graduation, and employers use exploding offers that must be answered at once. Early deals thin the market and produce bad matches for both sides.

**05** **A market is safe when telling the truth is your best strategy.**

If honesty can hurt you, people game the system instead of revealing what they want. Well-designed rules make truth-telling safe - and simple enough that everyone understands how to participate.

**06** **A match only lasts if it is stable: no two people would both rather abandon their assignments and pair up with each other.**

Unstable matches invite side deals, and side deals quietly destroy the system. Stability is why some matching systems survive for decades while others collapse.

07 **Roth redesigned the match that gives nearly every new American doctor a first job.**

His applicant-proposing algorithm for the National Resident Matching Program produces stable matches and, for the first time, let married couples match to jobs in the same city instead of opting out.

08 **Kidney exchange turns one incompatible donor into a chain of rescues.**

A donor who cannot give to their own loved one gives to a stranger, whose donor gives onward. Roth co-founded the New England exchange; cycles of swaps are scheduled simultaneously so no one can back out mid-chain.

09 **New York City let students rank schools honestly - and matches got dramatically better.**

Under the old system, listing your true favorite could hurt you, so families gambled and schools played games. The redesigned match made truth-telling safe, and assignments to schools students never listed fell by roughly 90 percent.

10 **When you cannot just say what you want, a costly signal says it for you.**

Signals work because they are expensive to fake: new economics PhDs can signal one employer as their top choice, and colleges notice applicants who spend effort showing real interest. Cheap talk convinces no one.

11 **Some trades feel repugnant, and those feelings are real constraints on market design.**

Most societies ban selling kidneys even though a market might ease the shortage. Designers must respect those values - kidney exchange exists precisely because it increases transplants without money changing hands.

12 **Markets do not grow wild. Even free markets run on rules someone designed.**

Stock markets work because insider trading is banned and trades are guaranteed. Roth's point: since rules are always there, we may as well engineer them deliberately, like any other technology.

## THE BOOK, IN SHORT

Alvin Roth shared the 2012 Nobel Prize in economics for the theory of stable allocations and the practice of market design. This book explains a hidden half of economic life: matching markets, where price does not decide who gets what. You must be chosen as well as choose - by a college, an employer, a hospital, or a transplant program - and many of the most important of these markets, from kidneys to kindergarten seats, use no money at all.

Roth lays out what every market needs to work. Thickness: enough participants gathered at the same time. Freedom from congestion: the ability to judge real options before they vanish. Safety

and simplicity: rules under which telling the truth about what you want is the best strategy. And stability: outcomes no pair of participants would rather undo with a side deal. Markets fail in characteristic ways when these break - most dramatically by unraveling, as offers race earlier and earlier and people commit before they know enough, the way judges came to hire law clerks years ahead of graduation.

The proof comes from markets Roth helped build. He directed the redesign of the National Resident Matching Program, whose algorithm now matches tens of thousands of new doctors to residency programs each year and finally accommodated couples. He co-founded the New England Program for Kidney Exchange, where incompatible donor-patient pairs swap with strangers and altruistic donors start chains of transplants. And his team's redesign of New York City high school admissions made it safe for families to list their true preferences, cutting assignments to unlisted schools by about 90 percent.

The book also explores how people communicate in these markets through costly signals, and where design must stop: transactions a society finds repugnant, like paying for organs, stay banned even when a market could clear them. Roth's closing argument is that this is no contradiction. Markets are human inventions, as designed as any bridge or app - so when one fails, we can study it, rewrite the rules, and make it work better and fairer.

## DO THIS WEEK

This week, look at one matching market in your own life - hiring, applying for gigs, dating apps, choosing schools. Ask Roth's questions: Is it thick enough? Does timing force rushed or premature commitments? Is it safe to state your true preferences? Would the outcome be stable, or does everyone try to cut side deals? Fix the one weak spot you control - often it is as simple as signalling your real first choice clearly and early.

*By Alvin E. Roth, first published 2015 (Houghton Mifflin Harcourt). Full subtitle: The New Economics of Matchmaking and Market Design. Roth shared the 2012 Nobel Prize in economics with Lloyd S. Shapley. Read it to see the hidden rules deciding who gets scarce things, and how better rules make fairer results.*