

Algorithmic game theory

Martin Balko

10th (double) lecture

December 9th 2021



Mechanism design basics

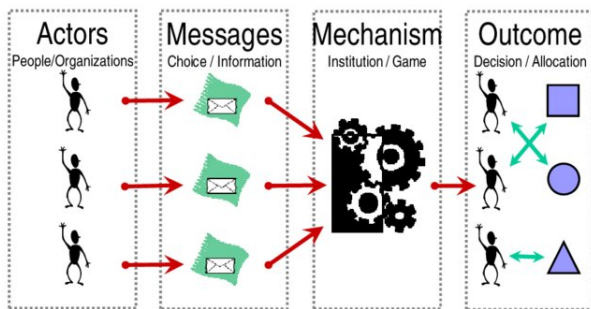
Mechanism design

Mechanism design

- Designing games toward desired objectives.

Mechanism design

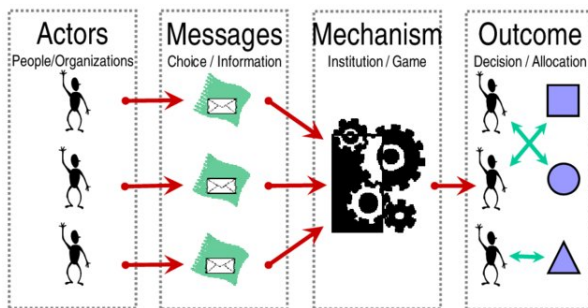
- Designing games toward desired objectives.
- We try to design rules of the game so that strategic behavior by participants leads to a desirable outcome.



Source: Innovations in Defense Acquisition: Asymmetric Information and Incentive Contract Design

Mechanism design

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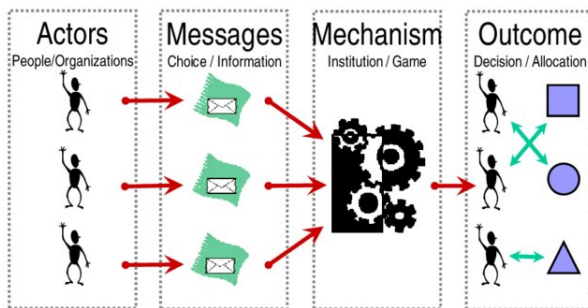


Source: Innovations in Defense Acquisition: Asymmetric Information and Incentive Contract Design

- We start with **single item auctions**.

Mechanism design

- Designing games toward desired objectives.
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Source: Innovations in Defense Acquisition: Asymmetric Information and Incentive Contract Design

- We start with **single item auctions**.
- We then extend these desired properties to a more general setting of **single-parameter environments** using so-called **Myerson's lemma**.

Sponsored search

Sponsored search

Google water restoration **Paid Ads** Search Advanced Search

Results 1 - 10 of about 9,420,000 for **water restoration**. (0.28 seconds)

Water Restoration
www.ChicagoWaterAndFire.com Fast, Free Estimates 24/7 On **Water** Removal. Call Us Now @ 630.829.9000

Fire & Water Restoration
www.PDRestoration.com Fast 24/7 Fire & **Water** Remediation Service in Chicago - 888-898-3891

Local Flood Restoration
SpectrumRestoration.com Flood & **water restoration** services since 1995. Call us at 800-730-3656

SERVPRO - Fire & Water Cleanup & Restoration
When fire and **water** take control of your life, we help you take it back - Like it never even happened. SERVPRO specializes in the cleanup and **restoration** of ...
[Locate a Franchise](#) - [Careers](#) - [Contact/Directions](#)
www.servpro.com/ - [Cached](#) - [Similar](#)

IICRC
According to the IICRC Standard and Reference Guide for Professional **Water** Damage **Restoration** (IICRC S500), there are three categories of **water** that cause ...
www.certifiedcleaners.org/news.shtml - [Cached](#) - [Similar](#)

RestorationSOS® - Water Damage & Fire Damage Restoration, Sewage ...
The Most Helpful **Restoration** Service in America - Affordable Services in Your Area - 24/7 Hotline.
www.restorationsos.com/ - [Cached](#) - [Similar](#)

Arizona Water Restoration Fire Damage Mold Remediation Crime Scene ...
Helping Hand Fire and **Water restoration** emergency flood damage and smoke clean-up contractors offer mold remediation, sewage intrusion, crime scene cleanup ...
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Arizona Fire and Water Restoration Services: Mold and Mildew ...
Arizona Fire and **Water Restoration**, Inc. is a full-service contractor, specializing in insurance restoration. Their services encompass the assessment and ...
www.azfirewater.com/ - [Cached](#) - [Similar](#)

Water Damage Local® - 24/7 Emergency Restoration Services
WaterDamageLocal.com offers 24/7 emergency services for **water** damage, flood damage, and sewage emergencies. All of our providers are pre-qualified, ...
www.waterdamagelocal.com/ - [Cached](#) - [Similar](#)

1-800 Water Damage Home
Locate a 1-800-WATER DAMAGE™ **restoration** service provider in your area. ... Our dispatchers and **water damage restoration** specialists are on-call 24 hours a ...
www.1800waterdamage.com/ - [Cached](#) - [Similar](#)

Emergency Water Damage Restoration
Flood loss prevention, specially drying and **water** damage **restoration** ... **Water Damage Restoration** Emergency Service Complete Basement Clean up & Dried

Sponsored Links

Water Damage Repair Pros
Chicago **Water Restoration** Experts
Free Estimates, Call 312-970-0985.
ChicagoWaterDamageRestoration.com

Water Damage
Fast & Cost Effective Recovery
Serving Alsip IL. Call 800-589-8845
bbsteamatc.com

24/7 Water Damage Cleanup
Licensed, Insured & Trained Prof.
We Are Here To Help. Chicagoland.
ServiceMaster-smgrs.com/WaterDamage
Hoffman Estates, IL

Water Damage
Expert **water** damage **restoration**.
Call today for more information.
servicemasterrestorationby.com
Hoffman Estates, IL

Water Damage Cleanup
Professional **Water** Damage Company
Emergency **Water** Damage Help
AYR-**Restoration** Add2too.com

Water Damage
24-Hour **Water** & Fire **Restoration**.
Reliable Certified Techs. Call Now.
www.AllFloodFire.com

Water Restoration
24-Hour Service. **Water**, Fire, Mold
Chicagoland Specialist Since 1986.
www.ACRRestores.com
Chicago, IL

Paul Davis Restoration
Water Fire Flood Clean up Repair
1-630-499-8002
www.floodFireCleanup.com
2740 Beverly Drive Unit C, Aurora, IL

Source: <https://proceedinnovative.com>

Myerson's lemma

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- A powerful tool for designing DSIC mechanisms.

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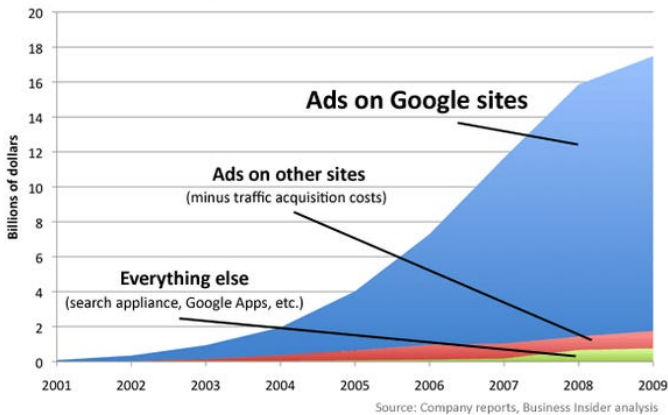


Figure: Roger Myerson (born 1951) receiving a Nobel prize in economics.





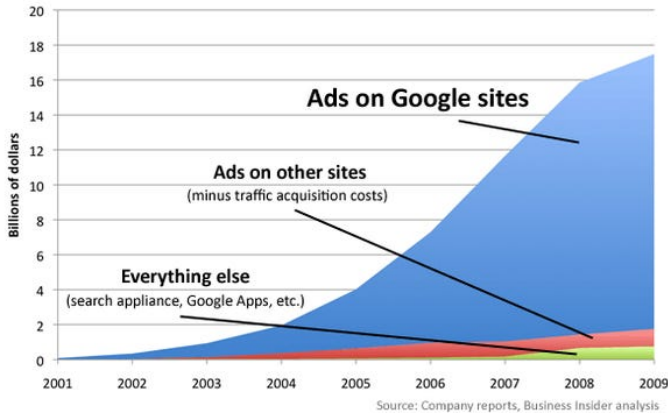
Google Revenue By Source



Source: <https://businessinsider.com>



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Thank you for your attention and see you in 10 minutes.



- Next lecture, we will focus on **revenue maximization**.

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ONE US DOLLAR BILL- WHAT'S IT WORTH?

Item condition: --
Time left: 2h 6m 28s (Jun 06, 2010 19:20:07 PDT)
Bid history: 0 bids

Starting bid: **US \$0.99**
Your max bid: US \$ **Place bid**
(Enter US \$0.99 or more)

[Watch this item](#)

Shipping: **FREE shipping** Standard Flat Rate Shipping Service
[See all details](#)
Estimated delivery time varies.

Returns: No Returns Accepted

Seller info
thephotobuddy
(2959 ★) [me](#)
99.9% Positive feedback

[Ask a question](#)
[Save this seller](#)
[See other items](#)

Visit store: [The Buddy](#)

Other item info
Item number: 2601
Item location: Orla
Flori
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Ships to: [Unit](#)
Payments: [Pay](#)
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Source: <https://goodgearguide.com.au>

- Next lecture, we will focus on **revenue maximization**.

The screenshot shows an eBay listing for a "ONE US DOLLAR BILL- WHAT'S IT WORTH?". The item is a one-dollar bill, and the listing includes a "FREE shipping" badge. The starting bid is US \$0.99, and the current bid history shows 0 bids. The listing also features a "Place bid" button and a "Watch this item" button. The seller is "thephotobuddy" with a 99.9% positive feedback rating. The listing is categorized under "Everything Else > Weird Stuff > Really Weird".

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Seller info
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(2959 ★) [m](#) [e](#)
99.9% Positive feedback

[Ask a question](#)
[Save this seller](#)
[See other items](#)

Visit store: [The Buddy](#)

Other item info

Item number: 2601

Item location: Orla
Flori
Stat

Ships to: Unit

Payments: Pay
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Thank you for your attention.