Auctions vs. Beauty Contests: an Empirical Study

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Presented at ISART 03
March 4, 2003 Boulder, Colorado

Spectrum Access

- Spectrum Commons?
- Property Rights?
- Licensing?
  - Government as Gatekeeper
  - Exclusive
  - ElectroSpace Based

How best to license?

- Japan – gave it away: success
- Europe – overpaid: failure

- Market Based
  - Auction for setting price
  - “Fair”
  - Generates gov’t revenue
  - Takes capital away from investment

- Regulated
  - Beauty Contest comparison
  - Subject to lobbying
  - Labor intensive for gov’t
  - Can build out more quickly

Our Approach

- Study 3G deployment
- Country by country license comparison
- Regress level of deployment vs.
  - Government and
  - Non-government variables
3G Deployment

- 3G = {WCDMA, CDMA-2000, ...}
- Level of Deployment:
  0. Contracting Equipment Manufacturers
  1. Network Buildout
  2. Network Testing
  3. Service Trials
  4. Service Provisioning

Country Comparisons

- 49 Countries
  - 18 Auctions
  - 9 Beauty Contests
  - 22Incomplete
- Analyzed as of 4/02

Question 1

- Do fees promote or hinder deployment?
  - Is it Manhattan or Detroit?
- Regress Deployment Level vs. Fees

Results

- Fees promote deployment(?)
- BC are more efficient with fees
Question 2

- What factors affect deployment?
- Linear regression on data subsets
- Test for significant variables

Variables

- Non-Government Variables:
  - GDP per capita
  - Urban population percentage
  - Total Population
  - Cellular teledensity
- Government Variables:
  - License fee per person
  - Number of licenses
  - Independent regulatory authority

Results

- Beauty Contest vs. Auction
  - Beauty Contest > Auction (0.8)
- The following accelerate deployment:
  - High GDP
  - BC + govt carrier
  - BC + more licenses

Auctions are Riskier

Study Limitations

- Limited number of countries
  - Equally weighted
- Snap shot in April 2002
- Subjective assignment
  - Hong Kong
- Cause and Effect
Conclusions

- Beauty contests have shown more promise
  - Perhaps because regulators/licensees have more experience

- Competition is important
  - Competition for capital in BC and Auctions
  - Multiple Licensees in BC

- Should track progress over time.