Negotiations

Introduction
Negotiation types
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Negotiation support
Automatic negotiation?
Negotiation “definition”

Negotiation is the process in which parties that perceive one or more incompatibilities between them, try to find a mutually acceptable solution.
Negotiation science (?)

- Symmetric prescriptive ⇒ game theory
- Symmetric descriptive ⇒ sociology, psychology, etc.
- Asymmetric perspective ⇒ management, decision theory, etc.
- External perspective ⇒ mediation
Negotiations vs. auctions

- **Auctions:**
  - Meant to determine the value of product
  - Work in market situations (more buyers and/or sellers)
  - Well defined product
  - Only information through bids
  - Focused on outcome
  - In principle no “log-rolling” (connections between bidders to raise or lower the price)
  - No externalities expressed
Negotiations vs. auctions

- Negotiations:
  - Can be used to create the value of product
  - Work in situations with 1 buyer and seller
  - Product might not be defined completely yet
  - Preferences might not be clear before negotiation
  - Information exchange is integral part of negotiation
  - Process is important
  - Relations between parties might be important
  - Externalities and “log-rolling” possible
Negotiations vs. bargaining

- **Bargaining:**
  - Single issue negotiation between two parties
  - Usually bargaining is a zero-sum game
  - Bargaining can be seen as part of negotiation
Issues in disputes

1. Two or more parties?
2. Are the parties monolithic?
3. Is the game repetitive?
4. Are there linkage effects?
5. One or more issues?
6. Is an agreement required?
7. Is ratification required?
Issues in disputes

8. Are threats possible?
9. Are there time constraints and/or costs?
10. Are the contracts binding?
11. Are the negotiations private or public?
12. What are the group norms?
13. Is third-party intervention possible?
Types of negotiation

- Distributive negotiation
  - The pie is fixed and is divided among the parties ⇒
  - More suitable for using game-theoretical analysis

- Integrative negotiation
  - Try to expand the pie that is divided in order to find new compromises
Distributive) negotiation phases

1. Determine the process
2. Determine the issues
3. Quantify the issues
4. Determine preferences for packages
5. Maximize the utility
6. Get commitment/compromises
7. Close the deal (secure commitment)
Negotiation method: SOFT

1. Participants are friends
2. The goal is agreement
3. Make concessions to cultivate friendship
4. Be soft on people and problem
5. Trust others
6. Change your position easily
7. Make offers
8. Disclose your bottom line
9. Accept one-sided losses to reach agreement
10. Search for the answer they will accept
11. Insist on agreement
12. Try to avoid a contest of will
13. Yield to pressure
Negotiation method: HARD

1. Participants are **adversaries**
2. The goal is **victory**
3. **Demand** concessions as a **condition** to friendship
4. Be **hard** on people and problem
5. **Distrust** others
6. **Dig in your position**
7. Make **threats**
8. **Mislead** as to your bottom line
9. **Demand** one-sided **gains** as a **price for agreement**
10. Search for the agreement **you** will accept
11. Insist on **your position**
12. Try to **win** a contest of will
13. **Apply** pressure
Negotiation principles

1. Principled negotiation
2. Separate the problem from the people
3. Focus on interests not positions
4. Invent options for mutual gain
5. Use objective criteria
Good outcomes?

We walk away or an agreement

1. Better than our BATNA
   (Best Alternative To a Negotiated Agreement)
2. Satisfies our interests well, theirs enough
3. Is among the best of many options
4. Is legitimate
5. Involves commitments that are realistic and operational
Negotiation preparation

1. Alternatives, establish your BATNA and estimate theirs
2. Interests, find out your interests, understand their current choices
3. Legitimacy, find standards
4. Options, develop options
5. Commitments, which options can you commit to
6. Communication, what do we want to learn
7. Relationship, what kind of relationship do we want
8. Systems, how do we negotiate
Negotiation support

Example: smart-settle

http://www.smartsettle.com/
Automated negotiation

- Mainly about bargaining:
  - Single issue
  - Two parties
  - One-shot transactions
- Research: multi-issue negotiation
- Open: finding/generating new options
The Trade-off Algorithm

To be beneficial to the other the preference of the other must match the similarity function

\[
\text{trade-off}_a(x, y) = \arg \max_{z \in \text{iso}_a(\theta)} \{\text{Sim}(z, y)\}
\]

complexity \( \approx kn \)