Software Piracy

> The unauthorized copying of an organization’s internally developed software or illegal duplication of commercially available software to avoid fees

Considerations in ethical decision-making and software piracy.
Wagner, Sanders, 2001

1.
Model Description

Research

- A more positive attitude towards software piracy will lead to greater intention to commit software piracy.
- A higher level of subjective norms supportive of software piracy will lead to greater intention to commit software piracy.
- Software cost will have a positive effect on attitude towards software piracy.

Abstraction

- People represented as agents
- Links between people represent network
- Attitude towards piracy represented as their ethical value or morality
- People influence each other in a certain radius in the network
- Price of software and wait period affects ethical value

State Variables

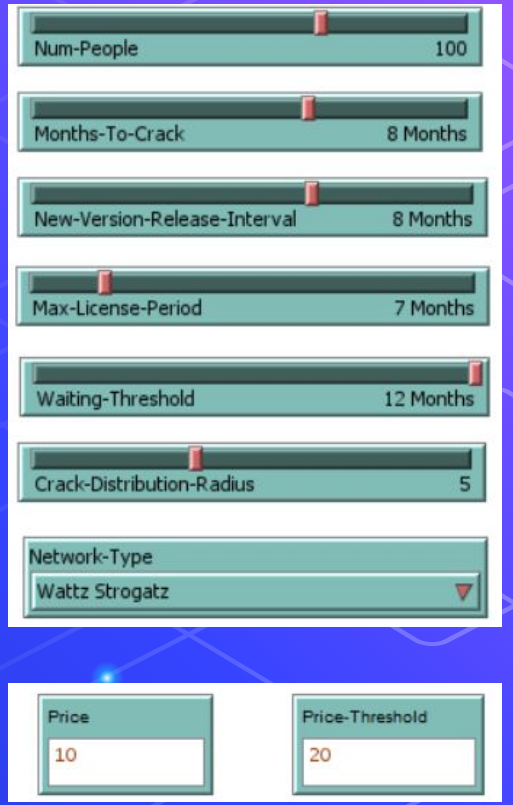
- Morality: Stores the ethical value of the individuals
- Obtained-software? : Stores whether an individual has obtained any version of the software
- License-period: The license period of currently obtained software by ethical individuals
- Obtained-version: The version of the obtained software
- Wait-period: Maximum time individuals can wait for new version of software before changing their ethical value
- Price-range: Maximum price ethical individuals would like to pay for obtaining the software

Implementation

- Change Morality: The individuals change their ethical value depending on the price of software and their waiting threshold.
- Reset License: The individuals with high ethical value check if their license period has expired and set the variable obtained-software? accordingly..
- Buy Software: A random number of individuals with high ethical value having expired license are selected and buy the software. Each such buyer increases the profit of the company by the price of the software and is assigned a random license duration.
- Crack Software: A certain individual with low ethical value is assigned the job to crack the software whenever a new version is available and distribute it.
- Get Cracked Software: A random number of individuals with low ethical value download the cracked software if they don’t have it and distribute it to other like minded individuals.

Input Parameters

- Number of people
- Pirated software release interval
- Original software release interval
- Maximum license period
- Maximum waiting threshold
- Pirated software distribution radius
- Network type
- Price of software
- Maximum budget of people



Outputs

- Plot showing profit and loss
- Current month
- Original software version
- Pirated software version

2.
Demo

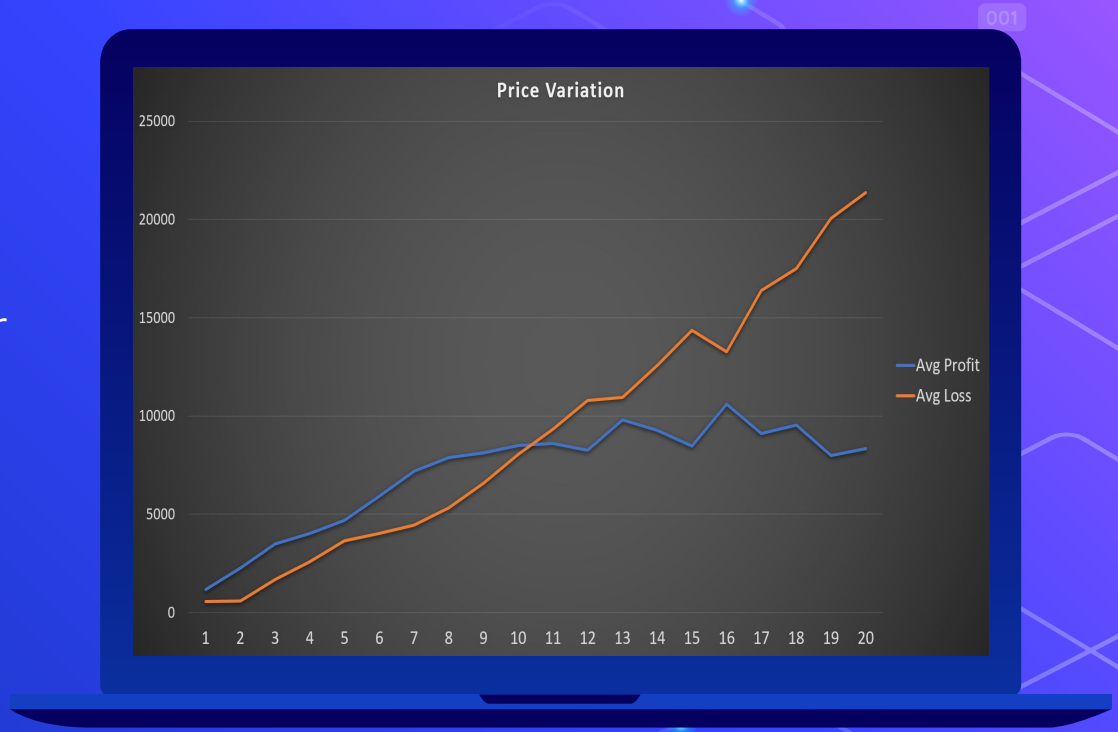
3.
Experiments

Price Variation

- Price was varied from 1 to 20 units
- Maximum budget of people was random between 1 to 20
- Other parameters kept constant
- Profit and loss averaged out over multiple runs

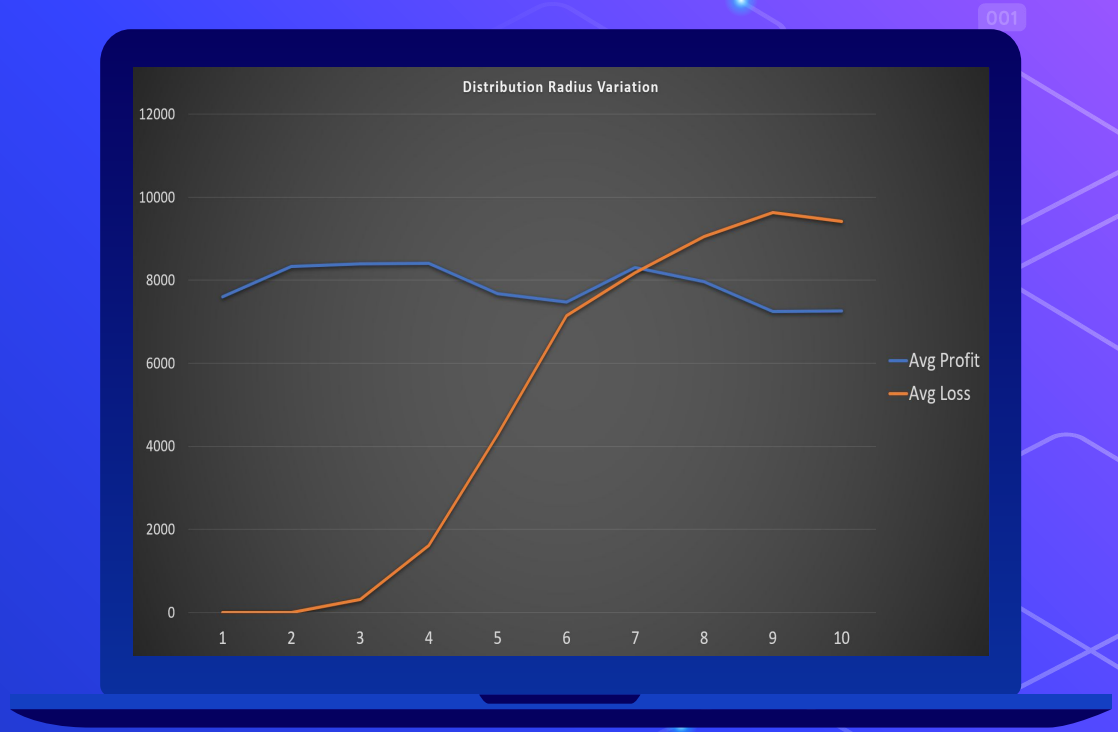
Price Variation

- As the price increases, losses start increasing
- Losses surpass profits after certain point
- Threshold is almost same for both networks



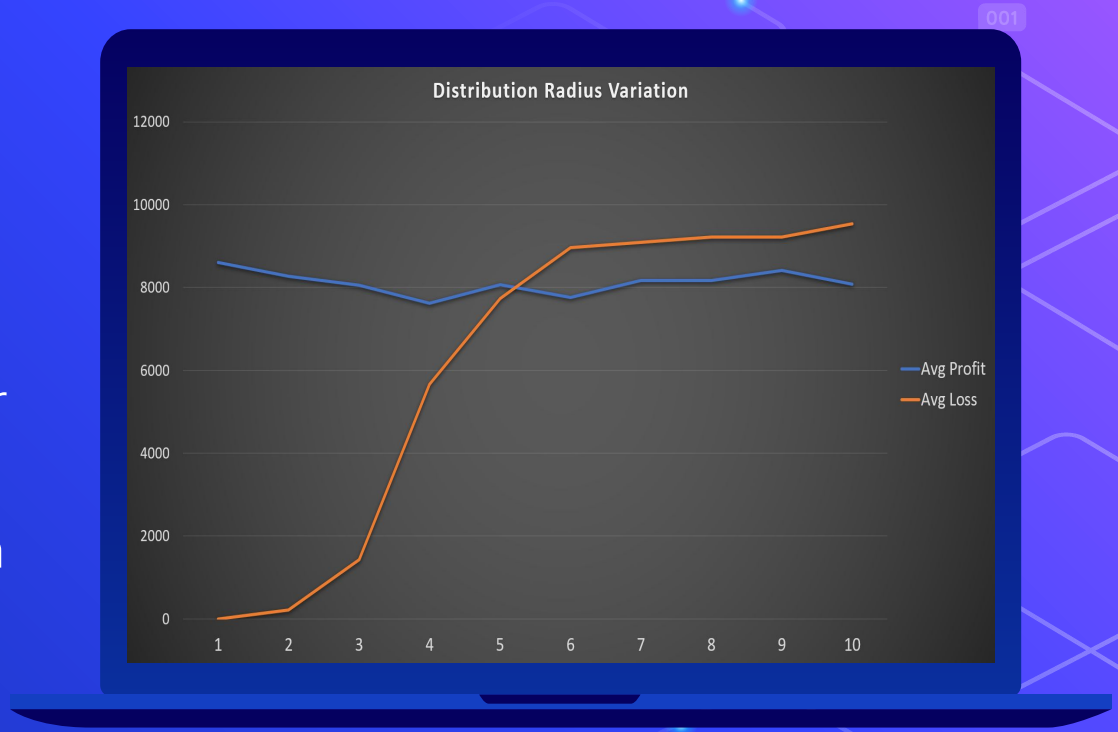
Distribution Radius Variation

- Radius was varied from 1 to 10 units
- Other parameters kept constant
- Profit and loss averaged out over multiple runs



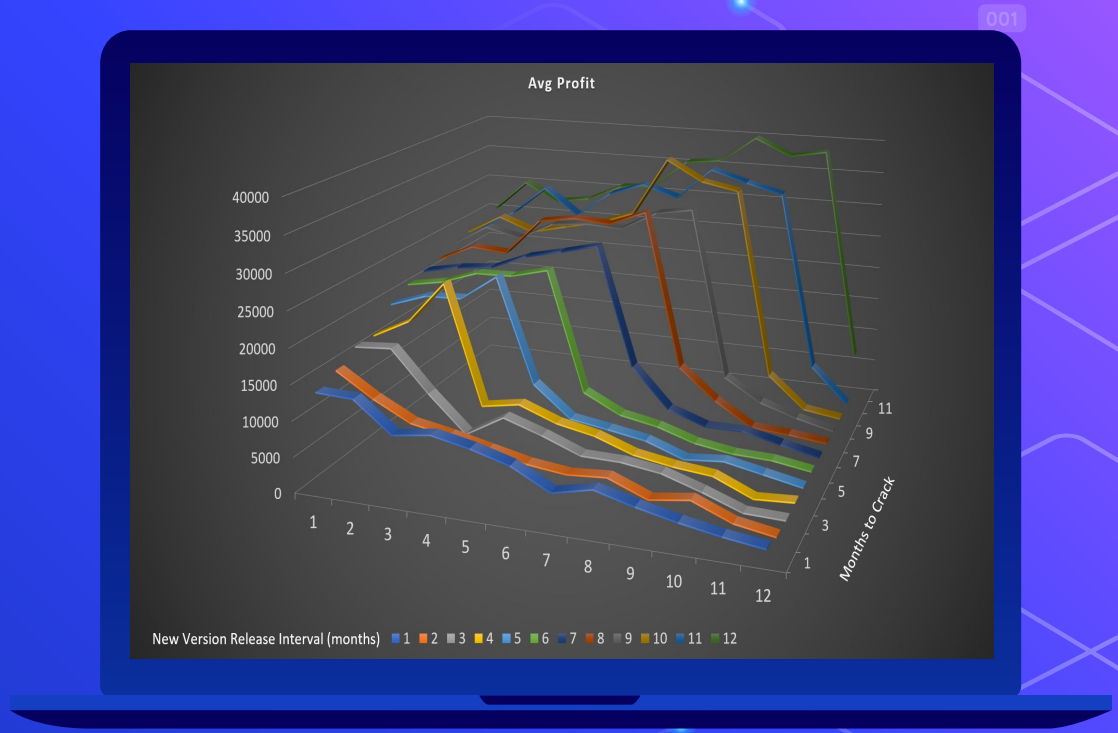
Distribution Radius Variation

- As the distribution radius increases, losses start increasing
- Losses surpass profits after certain point
- Losses grow much faster in Watts Strogatz network



Release Interval Variation

- Release interval were varied from 1 to 12 months
- Other parameters kept constant
- Profit and loss averaged out over multiple runs



Release Interval Variation

- Release interval were varied from 1 to 12 months
- Other parameters kept constant
- Profit and loss averaged out over multiple runs

Conclusion

- Model has a limited scope currently.
- Models very simplistic scenarios.
- Explains the dependence of various factors on the attitude of individuals.
- Model can provide a means to create policies against software piracy.
- Software Piracy is a phrase that is open to different interpretations by different individuals.

Thanks!