Coordinating supply and demand on an on-demand service platform with impatient customers

Bai, J., So, K. C., Tang, C. S., Chen, X., & Wang, H. (2019) https://doi.org/10.1287/msom.2018.0707

Coordinating supply and demand through agent pay

The supply (independent 'agents')
e.g. Uber drivers



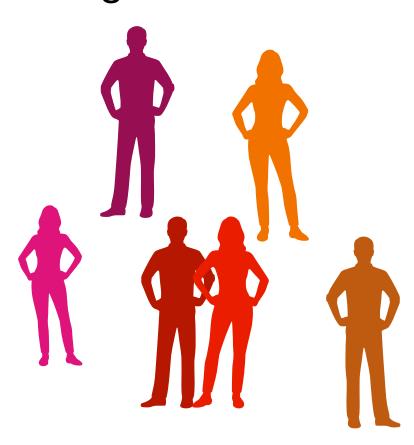




Goal: Maximize earnings

The demand (impatient customers)

e.g. Uber riders



Goal: Minimize cost and wait time

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The supply (independent 'agents') e.g. Uber drivers







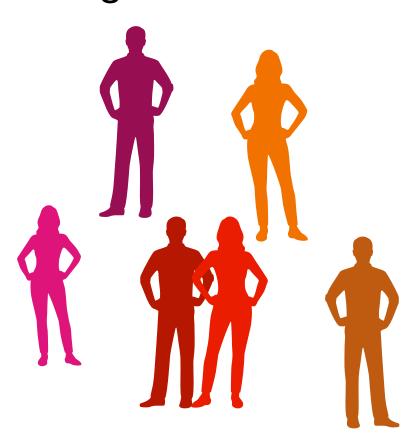
Goal: Maximize earnings

Depends on:

wage rate

The demand (impatient customers)

e.g. Uber riders



Goal: Minimize cost and wait time

Depends on:

price

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The supply (independent 'agents')
e.g. Uber drivers



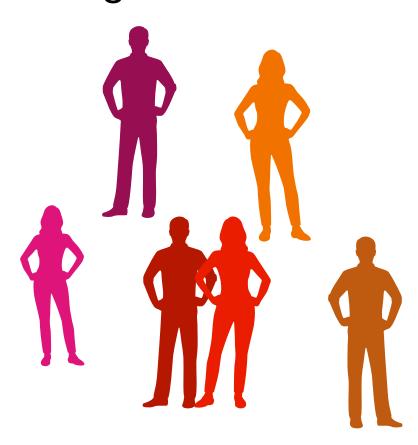




Goal: Maximize earnings

The demand (impatient customers)

e.g. Uber riders



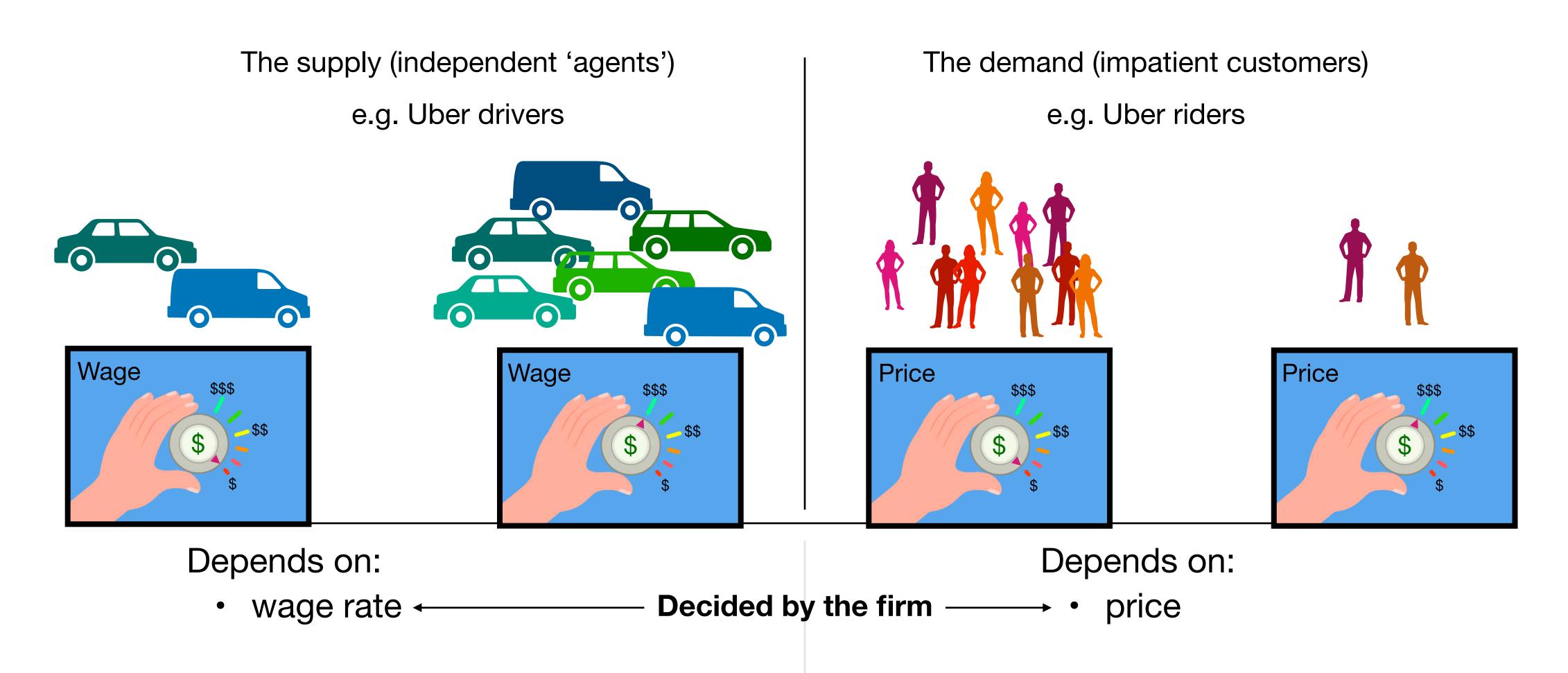
Goal: Minimize cost and wait time

Depends on:

Depends on:

wage rate ← Decided by the firm → • price

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The supply (independent 'agents') e.g. Uber drivers



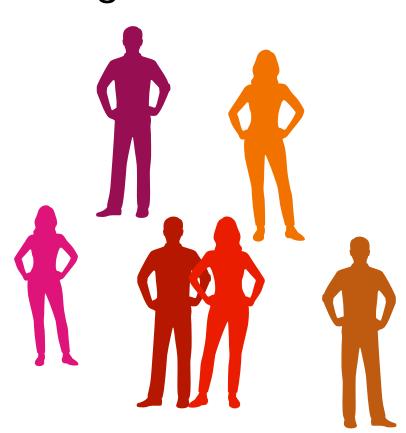




Goal: Maximize earnings

The demand (impatient customers)

e.g. Uber riders



Goal: Minimize cost and wait time

Depends on:

— Decided by the firm — • price

Depends on:

utilization (demand)

wage rate ←

supply

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The supply (independent 'agents') e.g. Uber drivers



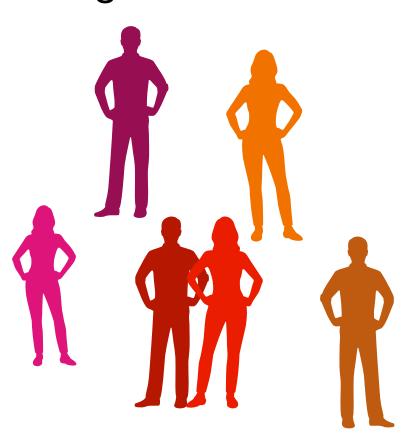




Goal: Maximize earnings

The demand (impatient customers)

e.g. Uber riders



Goal: Minimize cost and wait time

Depends on:

wage rate ← Decided by the firm ← price

utilization (demand) ----- Heavily intertwined ----- • supply

Depends on:

Coordinating supply and demand through agent pay

