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Aspects of Marshaled Nash Equilibrium in Economical Demand-Offer Model

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Abstract

In this work we present the key idea in the systematic economical model, better known as 'demand-offer' process on the market, within the Nash equilibrium, we are to introduce the marshaled function in case of the winning side on market according to the outcome, which is to be satisfied by both acting sides: either supplier or consumer as well, we will also present the findings in Traveling Salesman Problem (TSP) according to the local search, which in turn can be globally applicable according to the optimization goal.

Keywords: Equilibrium, Economics, Demand-Offer, Model, Traveling Salesman Problem

1. Introduction

The famous bargaining problem and its analysis and resolution by J.F. Nash [1] was a long-standing approach and, in sight, a good finding of the games which can be also seen on the market, when supplier gives the offer and consumer accepts it according to the current demand [2-3].

Since, TSP is still an unresolved question and is known to be highly increasing in the number of elementary steps in order to solve the solution within the given boundaries [4-5], we are to present an approach of using rather 'divide and conquer' according to the global outcome, rather than dividing the existing problem into arbitrary sets, or even sets which are divided according to some criteria – in both cases the global optimal solution is to be considered as the highly-increasing factor, however, in the 'divide and conquer' strategy, we can select the strategy according to which the local optimum gets exactly to the global one within the finite and observable number of steps – thus, giving, optimal, full and even practical solution.

1.1. Definition

As to the game perspective, where both party can be either satisfied, there is still an outcome in which some party gets to the exclusion according to the winning strategy set, it's obvious that in some case the process of interaction between supplier and consumer can be final, when some of the party isn't satisfied and is about to quit the economical model's game – this can be better seen on the instance of unmarshaled function according to which, there should be an external 'noise', so that the rules of the game become fair in terms of that, or provided, no side of the party is almost about to quit the market game due to its dissatisfaction – in terms of Nash gaming theory it can be seen as an absolute value of the high difference between the values obtained by each side in the transaction or turn.

2. Insights of the Market

The segmented groups on the market can have a potential on the goods' lifetime, also we can include in the model the usual filled-in competitors who usually permit the certain exit strategy.

The evolution of the competing companies on the market can be also seen as a genetic model where their offer is combined along those which have shown the viable potential.

The term 'unmarshaled' control can be also applied on the presented market model where the passed offer evolves and becomes the property of the new generation of the parties competing on the market – this can be used as a fact for casuality and prediction.

3. Conclusion

We have defined the unmarshaled function which can be seen as arbitrated and external in order to resolve the 'unfair' behavior of Nash equilibrium on the example of the economical demand-offer model represented by consumers and suppliers as well – this function which is to be applied according to the criteria when the difference between obtained values by each side is absolutely of high difference.

Also we have presented a general finding of the global optimum according to local one, when there is finite number of steps for the global optimum to be reached via local optimization within the

existing criteria or strategy, since if it'd exist, it can be seen that TSP problem can be solved even for arbitrary or any dimension in full version and manner.

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