========== Review Form ==========

Paper ID: **JPC#1401031503**

Author(s): **Lu Cheng**

Title: **Particle Swarm Optimization for Reliable QoS-Aware Web Service Selection**

Recommendation to Editors with A-D: **D**

A. Accept

B. Accept with minor changes

C. Accept with major changes

D. Reject

Please, fill the following items with 1-5

(5 =Excellent, 4=Very Good, 3=Good, 2=Fair, 1=None)

****. Relevance to the Journal: **4**

****. Originality: **3**

****. Significance of Contribution: **2**

****. Technical Soundness: **1**

****. Quality of Presentation: **2**

****. Paper Length: **2**

****. Title Appropriate: **2**

****. Abstract Adequate: **2**

****. Paper Organization: **4**

****. Number of References: **4**

****. Confidence in your Assessment: **4**

Detailed comments to Authors:

While this paper has a good overall structure and discusses a topic that is relevant to the journal, there are key issues that need to be fixed before it can be accepted for publication.

The first set of problems is in the presentation of the Three-Phase Web Service Selection (TPWSS) approach. The following points should be considered:

1. **Phase I claims to transform QoS quantitative values to QoS qualitative concepts. The problem with this claim is that quantitative data cannot be transformed into qualitative data, since by definition qualitative data can only be observed but not measured. A theoretical model is presented to explain this transformation, but the lack of examples does not help the reader in understanding the transformation in practice. Finally, the transformation process is based on the cloud model, but this model is typically used to translate from qualitative to quantitative data, which makes it not applicable for the task at hand in this Phase. In my view, Phase I is the main original contribution of this paper, and as such it should be presented and explored in much more depth than it currently is, also addressing the issues brought up above.**
2. **Phase II performs skyline computing to filter out services that do not meet the requirements for the final composition. This process generates a set of service candidates that are not dominated by any other candidates in terms of their QoS attributes. This set is often referred to in literature as the Pareto front, and similar approaches are often used when performing Multi-Objective (MO) service selection and composition. In MO approaches, however, the calculation of the Pareto set occurs during the optimisation process as part of its fitness function (in this case, PSO), and typically not before it. Justification on why the author has chosen to perform skyline computing separately, as well as an analysis highlighting the advantages and disadvantages of using the proposed approach in comparison to Multi-Objective methods, is necessary to establish its validity.**
3. **The paper does not consistently present explicit connections between phases, that is, it is not always clear how the output produced by one phase is used by subsequent phases. In particular, it is not clear how the three values produced in Phase I (Expected value, Entropy and Hyper-Entropy) are used in Phase II. As one of the main contributions of this paper, this must be explored in detail.**

The second set of problems is in the presentation of experiments and of their results. Please consider the following points:

1. **The experimental evaluation compares the proposed approach with two other approaches, yet it does not explain why these approaches were chosen for the comparison and how they differ from the proposed method.**
2. **The experiment setup subsection mentions that two types of datasets were considered --- QWS and synthetically-generated sets. However, there is no further mention of the QWS dataset, so it is not clear why two dataset types were necessary.**
3. **Results are based on a success rate, but it is not clear how this rate is calculated. Without an explanation, the results are meaningless.**

Detailed Comments to Editors: