CS5224 AY2016/17 – Semester 2
Assignment 2 - Team Project with 4 Members – 30%
Business Case for a SaaS Service
(revised on 10 February 2017)

The aim of this assignment is to put together the topics covered in the lectures to develop a case for adopting cloud computing. Assume your company's business model is to offer value-added services using publicly available government data, and with two choices of hosting these services by developing new in-house IT resource or buy cloud service.

The Singapore government data site (data.gov.sg) is divided into 9 categories including economy, education, and environment among others. Start off with a team discussion to identify a theme for a value-added SaaS service. Search the government data site for the required datasets. Credit will be given to a new innovative service that uses more than one set of data across (preferred) or within these nine categories. Avoid redoing services that are already available. Alternatively, you could start by surfing the data site to determine what data are available before determining the SaaS to be developed.

The assignment consists of two main parts: (a) business case for a SaaS service in a selected area of interest and (b) design and implementation of the SaaS service with simple analytics. Your web-based SaaS page must include at least: (i) a few simple direct queries of the selected data, and (ii) a SaaS service that takes data and performs simple analytics to provide new value-added information for the users. To form a user theme, the SaaS service should be composed using more than one set of data. As there are already applications using these data, credit will be given to new innovative SaaS applications. See app showcase at https://ref.data.gov.sg/AppShowcase/AppList.aspx and list of business case projects last year (see course page). Next, design and implement the two SaaS services using IBM Bluemix or Amazon EC2. The implementation must include a web interface, i.e., SaaS services accessible from an URL.

Submission
Your business case submission must include a **report** with at least the following, presentation slides (not more than 10 slides) or poster (preferred and a template will be provided), and a **soft-folder** containing your implementation (codes with some documentation):

1. *Title* (< 10 words): must be short, clear and eye-catching and represent the scope of the business case, authors and affiliations

2. *Executive summary:* includes at least the objective, highlight the innovative contributions, etc.

3. *Business Case Identification*: problem statement and formulation, purpose and target users for the propose services and assumptions if any, comparison with available services

4. *Business Model*: discuss your business model to offer value-added services using publicly available government data, is this free and how will revenue be generated, compare and justify between the propose SaaS services and traditional web services using on-premise IT resource, etc.

5. *SaaS Architecture & Implementation*: discuss your SaaS architecture design, algorithms, solution methods and implementation, highlights requirements and limitations related technical concerns and implementation considerations, etc. A working prototype is expected.

6. *Economic Factors*: highlights the economic benefits and key considerations, pricing models to adopt and issues, tradeoff between cost and SLA, etc.

7. Conclusion

Read Appendix G in the main textbook that consists of a checklist for developing a business case. Your **business case report** must cover at least the above items. Assumptions must be clearly defined and the use of diagrams to convey the design, architectures, workflow, implementation, etc is highly encouraged (also helps to convey your idea in the presentation). All team members are expected to participate equally in the project. Please highlight in the report and whenever possible the part(s) that you have contributed. The standard rules of NUS regarding plagiarism apply.

Evaluation
Marks (30 marks) will be divided as follows:
1. Interim report (5%)
2. Demo (10%)
3. Final report (10%) and slides or poster (5%)
The final report must **not exceed 12 pages** (12pt font) with 5 marks for making the business case (item a above) and 5 marks for the design and implementation (item b above). A penalty of three marks for exceeding the page limit.

Demo
This will be carried out in the last week and agreed upon between the team and the TA.

Best Projects
As an incentive, the best overall project can be awarded an extra 10% credit (3 marks) and another 10% credit each for the most innovative SaaS service and the best cloud implementation.

Deadlines
1. **5 Feb (Sun)**: *Group leader to submit member details* (name and matriculation number) and *tentative project title*
2. **19 Feb (Sun)**: *Preliminary report* of 1-2 pages including the selected theme, business model, SaaS services to be developed, preliminary design and implementation plan. A penalty of 5% for not submitted the preliminary report.
3. **12 Mar (Sun):** *Interim report* (same requirements as final report)
4. **11-14 Apr (Tue-Fri):** *Demo* (further details to be announced)
5. **16 Apr (Sun)**: *Final report (in pdf), slides (ppt and for non-ppt submit the pdf) or poster, codes with documentation)* – packed all these into a zip file using your project acronym as the filename; **no extension**

All submissions to IVLE workbins only.