**Project overview**

In recent years, there has been a rapid growth in mobile users and demand on mobile packages. These changes offer new opportunities for mobile operators to gain market share. Other than price, customers look for a provider that gives better service and functionality when deciding on their subscription plan.

According to the previous work, we can improve the current system by providing:

- Real-time data usage, and spending monitoring and notification for subscribers
- Real-time customized promotions for subscribers
- A greater number of customized offers for subscribers

This project has joined hands with a company to deliver a new mobile broadband charging system benefitting both the mobile operator and the mobile plan subscriber. The system provides a better user-experience through implementing a database and calculation algorithm. A gateway is also implemented to customize product promotion messages. To demonstrate the effectiveness of the proposed system, a simulator is developed and evaluated with a mobile operator in Hong Kong.

Our proposed system is built on the four functional nodes as shown below, each with dedicated tasks:

- **Account Information and Refill (AIR)**: Manages refill and provisioning actions and terminates the interface for integration with self-service portals and administration systems.
- **Account Finder (AF)**: Co-located with AIR, AF is used to locate the SDP of the subscriber being served.
- **Service Data Point (SDP)**: Holds account, subscriber data and the rule logic for rating and policy decisions.
- **Online Charging Control (OCC)**: An access node in the Charging System integrated solution.

**Implementation and Testing**

- **Step 1: Rating Management Application**
- **Step 2: Account Administrator**
- **Step 3: Traffic Simulator**
- **Step 4: Service Data Point Management Application**
- **Step 5: Message Viewer**

**Details of the configurations**

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<thead>
<tr>
<th>Offer Type</th>
<th>Usage Threshold Id</th>
<th>Corresponding Offer Id</th>
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</thead>
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<tr>
<td>Account Offer</td>
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<tr>
<td>Timer Offer</td>
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<td>Provider Offer</td>
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</tbody>
</table>

**Results**

To conclude, the proposed system can achieve all of the intended objectives through the introduction of four nodes (Account Finder, Account Information and Review, Service Data Point and Online Charging Control) and their own applications (Rating Management Application, Service Data Point Management Application and Account Administrator). Simulations have been completed successfully with three stages testing, and the system was accepted by the mobile operator who serves as our client in the project. In the future, improvements can also be made by upgrading the mobile application of their company in order to fully utilize the functions that are provided by this system.