Value Proposition for vMVNO Solution
(Integrated PCRF & MVNO-GW)

Concept of NEC vMVNO Solution

Various advanced technologies and innovations leads NEC for the development of *Worlds first virtualized MVNO solution*

<table>
<thead>
<tr>
<th>Full range of operation</th>
<th>Flexible system</th>
<th>rapid-response service</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Full support from installation to operation</td>
<td>• Optimal service model for small start</td>
<td>• Extensive service menu</td>
</tr>
<tr>
<td>• Visual and easy-to-follow operation screen</td>
<td>• Miniaturization realized by running on general IA servers</td>
<td>• Support of unprecedented service customizations</td>
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Simple • Flexible • Speedy

Comprehensive strength of NEC group

Excellent track record in the field of mobile technologies

Proven support system

Test Case- NEC vMVNO Solution

Major savings from our Solution

<table>
<thead>
<tr>
<th>Parameters</th>
<th>% of OPEX Savings</th>
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</thead>
<tbody>
<tr>
<td>Network Features and Management Layers</td>
<td>28%</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>53%</td>
</tr>
<tr>
<td>Staffing for Service Provisioning and Operation</td>
<td>65%</td>
</tr>
<tr>
<td>Floor / Site Rental</td>
<td>66%</td>
</tr>
<tr>
<td>System Upgrades, integration and Commissioning</td>
<td>89%</td>
</tr>
<tr>
<td>Technical and Support and Maintenance</td>
<td>52%</td>
</tr>
<tr>
<td>Network TCO</td>
<td>39%</td>
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</tbody>
</table>

Integration with vPCRF & vMVNO-GW offers flexible integration to operator’s back-end systems through industry-standard interfaces

Business Challenge

One of the leading MVNOs of Japan was facing the challenge below as part of its differentiation strategy from other MVNO competitors:

- Full utilization of the Bandwidth purchased from the MNO in order to increase network efficiency
- Implementation of unique mobile data services to increase revenue
- Introduction of flexible mobile data plans to meet the diverse consumer needs

Use Case- A leading MVNO in Japan

Solution by NEC

Deployment of NEC

Results

The leading MVNO was able to:

- Accelerate the development and deployment of the mobile services
- Increase subscribers by more than 30% & revenue by 3% year-on-year & maximize network usage by offering M2M & MVNE platforms

Orchestrating a brighter world

Empowered by innovation
Scope of the Solution

Solution Key Features

- Extensive flexibility in service & billing
- Monitoring & Optimization of network traffic
- Field-Proven mobile packet core software platform
- Single node for multiple functions: Supports 2G/3G & LTE in a single node (WiMAX and Wi-Fi will be supported)
- Exclusive focus on MVNO/MVNE environment: vAPN, Volume limit enforcement, Charging Data Collection (CDC), and Deep Packet Inspection (DPI), among others

The above diagram explains how NEC vMVNO solution can be scoped in the MNO-MVNO ecosystem

Major Benefits from vMVNO solution

Enriched Service Portfolio with Resource Optimization

You can control bandwidth & data usage at the granularity of subscriber, application, or access network. You can simply develop wide variety of value-added services and optimize the resource from MNO at the same time, which leads to a significant revenue growth

Easy to Deploy, Easy to Manage

- Complex deployment
- Poor manageability
- Redundant packet processing due to dispersed nodes deployment
- Increased U-plane packet delay due to multi-hop traversal

Easy deployment
- Optimized manageability
- Optimized packet processing by consolidating functions into one node
- Reduced U-plane packet delay by eliminating multi-hop traversal

Fast Deployment in Vendor Free Environment

NEC vMVNO solution adopts Commercial Off-The-Shelf (COTS) server as a platform, can be deployed on server from any vendors like HP, IBM, Dell etc. It’s one of the advantages of virtualization.

vMVNO can be deployed on COTS server therefore can also utilize the existing infrastructure of MVNO/E/A

Grow Today, Grow Tomorrow, Always Grow in-time

Achieved complete decoupling of software and hardware functions without compromising carrier grade quality, which provides high scalability & flexibility to the solution

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