Proactive Ticketing using GIS

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Agenda

1. Introduction
2. Usage of GIS in RJIL
3. Business Need of Proactive Assurance & Ticketing
4. Overall Solution
5. Implementation Approach
6. Detailed Process flow - Use Cases & Output
7. Conclusion
8. Forward Path
Reliance Jio Infocomm Limited

- Only Telecom Company in India – Licenses for high speed wireless broadband spectrum in all telecom circles
- Fixed and 4G LTE wireless services
- Services through: LTE, WiFi and FTTx
- 850 towns + 50% of rural India
- Current Stage: LTE network rollout in next 2 months & FTTx rollout about to start
GIS Implementation in RJIL

Approx 3000+

Country Level

East Zone, South Zone, West Zone, North Zone

Functional


Hierarchical

User, Reviewer, Approver

Geographical

Landbase available for 400+ cities

Planning

170K+ OFC route

Network Engineer

Ericsson Network Engineer

ArcGIS Suite
GIS in Network Plan and Build phase

- **Wireless**
  - WorkFlow Manager
  - Planned Inventory Creation in NED

- **InterCity / Intracity**
  - Automated IFC Map Generation
  - Change Management
  - As-Built Generation
  - Planned Inventory Creation in NE
  - OFC Route Planning on Desktop & Web
  - NDD Generation

- **FTTx**
  - Market Planning
  - Building Survey
  - High Level Design
  - FTTx Engineering
  - As-Built Generation
  - Network Inventory Capture

- **P R O G R E S S M O N I T O R I N G**
GIS in Operations phase

- CapEx Estimation
- Workflow management for incremental network build
- Progress Monitoring
- As-Built Updation for Fibre
- Pro-Active Outage Management
- Workforce Tracking
- Service Feasibility Check
- Lead Management
- Personal Coverage Viewer
- WiFi coverage on Google Maps on LBS
- Web + Mobile applications for fault updates
- Network performance/customer analysis on GIS
Need of Pro-Active Ticketing

Enable CSR to handle the customer calls in a proactive manner by notifying CRM.

**Customer** to be provided with information of planned and unplanned outages/downtime proactively.

Fault related information immediately to be provided to **key stakeholders** like NOC, Operations & Maintenance, and Construction.
Overall Solution

Provisioning System → OSS Suite → CRM

- Trouble Management
- Fault Management
- Alarm Data Collection

GIS → NE → Physical Inventory

Map View → Service

Internal Customer → External Customer

Outage Parameters for LTE/WiFi

FTTx outage parameters + list of affected customers

Outage Parameters for FTTx

LTE, WiFi, FTTx

Service View

Internal Customer

External Customer

EMS/NMS
Implementation Approach

1. Receive outage details
   - Receive create outage events information from OSS

2. Update Outage details
   - Outage details updation in GIS Database

3. Map view for outage details
   - Map view for outage details through Google map service and ArcGIS Server Services

4. Search Customer Address
   - Google Places & search APIs used to search the address

5. Search the equipment
   - Identify Operation to view the outages

6. Search Outage Reference Number
   - Search the outage details and display the list of outage equipment and zoom to the equipment after selection
User Groups

- Internal & External Customers
- Network Operations Centre
- Operations and Maintenance
- Construction
- Business
- Customer Sales Representative
Detailed Workflow and use cases

**Use Case 1**
- Customer queries to CSR with input as Address
  - CSR will locate the customer on map

**Use Case 2**
- CSR will search the site id of the faulty equipment
  - Map will zoom to the desired location
  - Location based on the site id of the faulty equipment
  - CSR will view if there are any Faulty equipment's
  - Faulty equipment's associated to any of the access points i.e. eNodeB / WiFi / FTTx / Faulty Links
  - CSR will also be provisioned to view the customers falling in the outage area

**Use Case 3**
- CSR will search the outage reference number received from HP-SM
Output
Search Address (Google Place API)
LTE Affected Services
LTE Outage Details
WiFi Outage Details
FTTx Outage Details
FTTx affected Service Buildings

[Map showing affected service buildings]
Integration with CRM
# Outage Parameters

<table>
<thead>
<tr>
<th>Information</th>
<th>Description</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of event</td>
<td>Planned or Unplanned</td>
<td>Planned</td>
</tr>
<tr>
<td>Network Fault Type</td>
<td>Business event description</td>
<td>Fault due to cut</td>
</tr>
<tr>
<td>Service Type</td>
<td>Network Service of the root cause outage e.g. MobiTV LOV</td>
<td>Wi-Fi</td>
</tr>
<tr>
<td>Device Id</td>
<td>Impacted Device ID</td>
<td>XXXXXXXXXX</td>
</tr>
<tr>
<td>Outage Reference Number</td>
<td>Unique reference ID of notification from originating system</td>
<td>4516</td>
</tr>
<tr>
<td>Estimated Time of Resolution</td>
<td>Estimated Date &amp; Time of Resolution.</td>
<td>2</td>
</tr>
<tr>
<td>Event Start time</td>
<td>Incident start time</td>
<td>12/1/14 1:26:00 PM</td>
</tr>
<tr>
<td>Status</td>
<td>Status of Notification: Open or Closed</td>
<td>Open</td>
</tr>
<tr>
<td>Source System</td>
<td>The System which Originated the Request Possible values: HPSM</td>
<td>OSS</td>
</tr>
<tr>
<td>Status Update Date Time</td>
<td>Timestamp for Status Update</td>
<td>12/1/14 5:36:00 PM</td>
</tr>
</tbody>
</table>
Conclusion

- Informed response to customer
- Increased awareness of outage restoration progress and estimated restoration times
- Accurate Location Information to O&M
- Reduced outage duration averages due to prioritizing
- Reduced outage frequency due to use of outage statistics for making targeted reliability improvements
- Superior customer experience
- Fewer complaints to regulators
Path Ahead

• Integration with Fibre Monitoring System (FMS) for display of fiber faults

• Development of native app on android platform

• Available to Jio customers over internet with Google Interface
Thank You