Geo-Enabled Urban Transportation Management – Demand, Planning and System Improvement

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Outline of Road Transportation Management

Urban Transportation Management - challenges

Transport Demand
- How to collect information related to transport demand?
  - Measure traffic volume by
    - Probe System
    - CCTV
    - Traffic Sensor

Transport Planning
- Decide the Plan and Policy
  - Road Construction Plan
    - Highway
    - Flyover, Bypass
  - Policy of Private car
  - Car Pool
  - Green Car (EV, HY, PHV)
  - Policy of Public Transport
    - TAXI, Bus, Monorail, Subway, etc.

Infrastructure and System Improvements
- Infrastructure Construction
  - Road Construction
  - Public Transport
- System Development
  - Traffic signal upgrade
  - Sensor and CCTV Deployment
  - Traffic Info. Provision
Highway Traffic Management – Challenges

Use cameras installed at road side to:
- Measure traffic volume and vehicle velocity
- Detect unusual event such as traffic congestion and accident
- Detect vehicle speed

Traffic Length and velocity

Abnormal Conditions

License Number Recognition Measurement at Travel Time

Traffic counter
Geo-technology Intervention –
Probe car Traffic Information System

- Collect vehicle position data, create traffic information such as congestion.
- Support traffic management / report / city planning and so on.

Traffic Data Collection and Utilization by Probe car Information System

**Traffic Data Collection and Processing**
- Car No.
- Position
- Speed
- Date & Time

**Data center**
- Route computation
- Traffic congestion

**Features**
- No roadside sensor or camera
- High-precision traffic information
- Support various kind of vehicle tracking device
- Expand geographical coverage of traffic info.

**Traffic Data Utilization**
- Traffic control
- Evaluation of traffic Congestions
- Traffic simulation
- Traffic info for Web Navigation sys. Mobile phone etc.
Geo-technology Intervention – Road Inventory and Information Management

Road data consolidation for adequate planning and maintenance of road.
Administrators can perceive the traffic information, the camera image, and the weather information at the same time.
Simulators & Electronic Toll Management System

ETC system comprising of VMS (Variable Message Sign board), ATCC (Automatic Traffic Counter System), CCTV, POS (Point of Sale) terminal and control systems.
Summary – Way Forward
Key Market Drivers India Geospatial Industry

- Increasing demand from government sector, a major growth driver — Various state governments have numerous e-governance initiatives that utilize GIS applications

- Cloud platforms leveraging the growth opportunities of Geospatial market — This is likely to create new application areas, add new users — Likely to commoditize GIS

- Current smart cities will explore opportunity for greater efficiency of utilities — GIS expected to create optimization platforms.

- Development of next generation geospatial solutions by suppliers expected to create new data creation techniques, effective maintenance and frequent updating of data.

- Lack of understanding of the Geospatial Technologies and its effective use amongst large pool of end users - Opportunity for suppliers to create awareness and build strong value proposition for potential users to explore Geospatial Services.

- Opportunity to fuse spatial, temporal, social, sensors, historical and other structured/unstructured data to create ‘big’ datasets. This big geospatial data can then be used to provide real time intelligence and insights.
Annexure – Corporate Foundation

- Founded in 1910 as a machine repair shop at Kuhara Mining Company in Hitachi City, Ibaraki Prefecture, Japan (Incorporated in 1920)

- Hitachi founding spirit: Harmony, Sincerity, Pioneering spirit

- Corporate credo: Contribute to society through the development of superior, original technology and products

Founder Namihei Odaira

Original repair shop in Ibaraki (1910)
Annexure – Focusing on “Social Innovation Business”
Annexure –
Global Framework Comprised of 6 Regions

Hitachi Group in India *(As of March, 2016)*
Business bases: Approx. 33
(Including branch offices and minority share holder companies)
Employees: Approx. 10,000
Thank You
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