ASEAN IVO FORUM 2016

IoT Mobile Micro Payment to Support Government Related Services for Smart City: A Case Study in City Parking

Team Members:

Dr Nadiatulhuda Zulkifli, Prof Dr Sevia M Idrus & Yousri Taibin
Universiti Teknologi Malaysia

Mr. Sahrul Hilmi Ibrahim,
Telekom Malaysia

Mr. Hazim Ahmadi,
Telekom Indonesia

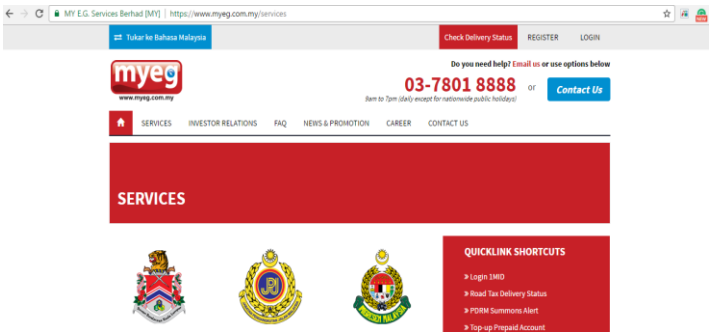
IoT MOBILE MICRO PAYMENT

- A large percentages of IoT based services involve financial transaction for following purposes:
  - E.g. Payment for content, services, transaction fees
- What is IoT Mobile Micro Payment?
  - Mobile Micro Payment – Small amount of money paid online using mobile devices e.g. smart phone
  - IoT micro mobile payment is any mobile micro payment activitiy over IoT platform or supporting IoT ecosystem

GOVERNMENT RELATED SERVICES USING IoT-MMP

- Payment for government related services can now be made online using bank transfers or cards

- Example, in Malaysia:
  - Own online portal by state agencies
  - Third party handling payments for federal agencies to pay road tax etc.



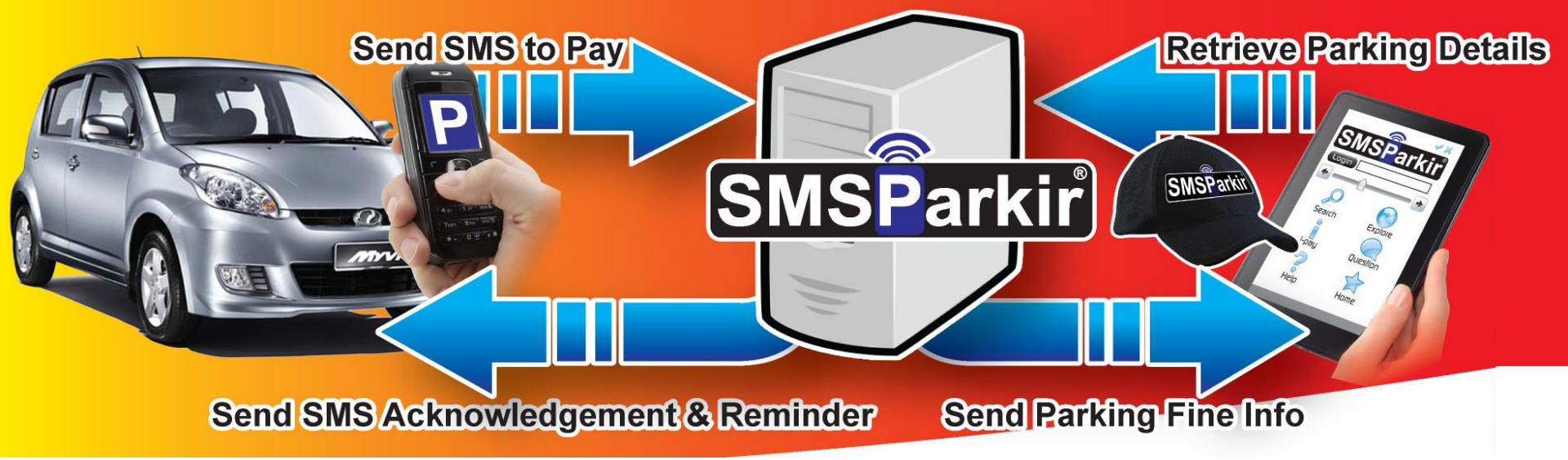
GOVERNMENT RELATED SERVICES USING IoT-MMP

- Parking has also implemented mobile payment
  - Pay using credit card, mobile wallet or bank transfer over website or smart App

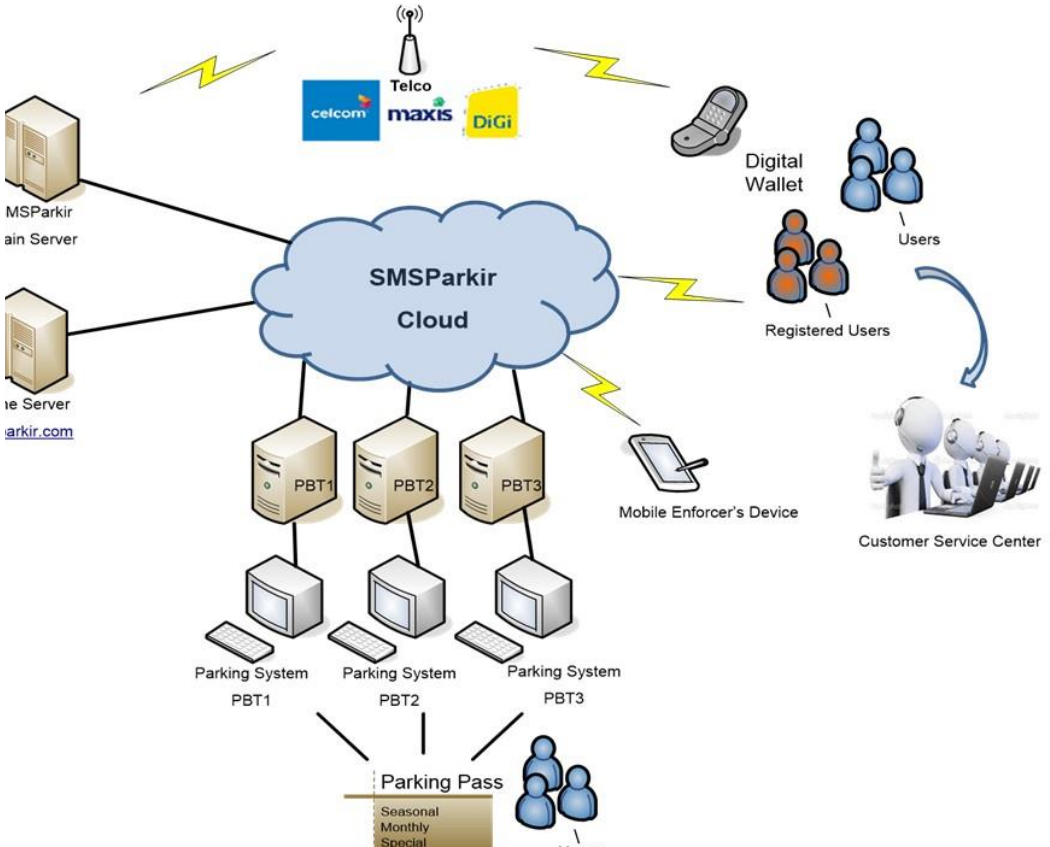
- However, these payment methods are not micro mobile payment
  - Not for very small money transaction
    E.g. Parking fee RM0.60 half an hour in Johor
  - Using online bank transfers or credit card not attractive due to bank charges
  - Public needs to put money in an account e.g. RM20 before using the service

SMSPARKIR

- SMSParkir is the first government service (parking) in Malaysia that uses mobile micro payment method:
  - Public pay parking fee using phone airtime, supporting both prepaid or post-paid users
  - Before phone air time can only ringtone music downloads, no
- Implemented in June 2016 at a local council in Johor, one of states in Malaysia
  - No initial payment needed



- User friendly parking payment using SMS and Apps.
- Supported by car parking management system based on ICT technology and enforcement system using mobile communication technology.
- Online car parking monitoring system and more efficient data management.
- Developed by UTM customized to the need of Malaysian local municipalities with the aid from Cradle Fund, Ministry of Finance and Malaysian Innovation Agency, Prime Minister Department.



FIELD TEST PRIOR TO IMPLEMENTATION

Public Field Test in May 2012
Jalan Titiwangsa, Tampoi, Johor Baharu.
Bil. Lot Parkir: 480 lots
Respondents:

- **Public users: 520**
- **MBJB Enforcers: 5**

PARKING SOLUTION IN ASEAN USING IoT-MMP

Implementation beyond Malaysia would require:

- Contextual background study on local parking operation and regulation
- Localization of the smart parking solution platforms that fulfills:
  - User-specific features:
  - Parking Operator-specific features
- System integration towards commercial prototype
- Field test for up to 5000 parking lots in the urban area
- Optimization of the system based on the feedback
- Construction of regulation and business plan upon finalization of the involved system components and process.

CONCLUSIONS

- Parking based on IoT-MMP as deployed currently in MPBJT, Johor has huge potential to be implemented in other ASEAN cities e.g. Jakarta, Indonesia.
- However, careful studies are needed with local collaborators to identify technical and non-technical issues that are subject to local context
- ASEAN-IVO funding bring together researchers in the field of smart city parking technology to promote and encourage more solutions that can benefit the society within the IVO members