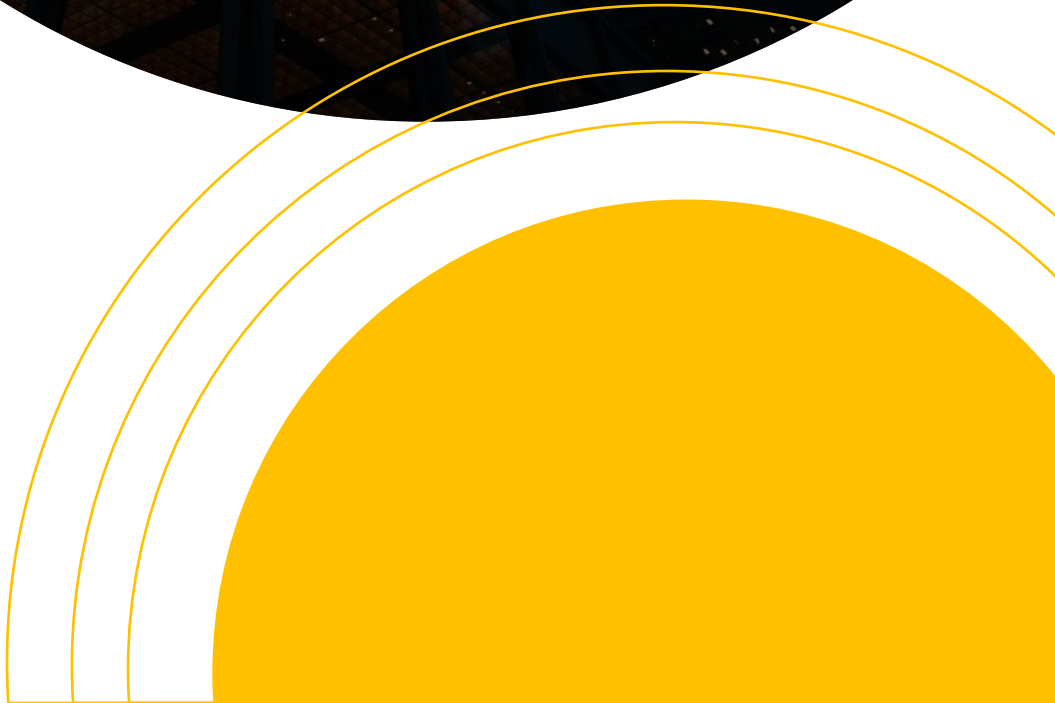


# Technology & Innovation in Billing Systems For Revenue Enhancement





Technology and innovation are transforming billing systems in local government, leading to:

- ✓ Greater efficiency
- ✓ Transparency
- ✓ Convenience for both the government and its citizens.







# Presentation Milestones

**01.**

**Revenue Sources  
& Billing  
Challenges**

**02.**

**Technological  
Advancements &  
Innovations**

**03.**

**Benefits of Digitizing  
Billing**

**04.**

**Best Practice  
Sharing & Call to  
Action**





# Main Revenue Sources

**01.**

## Taxes

Main source of revenue, typically accounting for 90% of revenue

- Mainly Property Tax

**02.**

## User Charges & Fees

Combined with other revenue sources, accounts for 8% revenue

- Service Fees
- Licenses and Permits
- Fines and Forfeitures

**03.**

## Intergovernmental Transfers

Continues downward spiral but generally sits between 2 – 5%

- Grants from Higher Levels of Government
- Revenue Sharing with Government

**04.**

## Other Revenue Sources

Contribution accounted for under user fees & charges

- Investment Income
- Sale of Assets
- Rents and Royalties
- Donations & Private Contributions
- Borrowing



# General Challenges **Billing**



## Inefficient Manual Processes

Reliance on paper-based systems can lead to errors, delays in bill generation and delivery, and difficulties in tracking payments.

01



## Inaccurate Billing

Incorrect property valuations, outdated records, and manual data entry can result in inaccurate bills, leading to disputes and non-payment.

02



## Slow Revenue Collection

Delays in processing payments, lack of effective follow-up on overdue accounts, and weak enforcement of revenue laws hinder revenue collection.

03



## Lack Payment Options

Limited payment channels (e.g., only in-person payments) can be inconvenient for citizens and slow down the process.

04



## Poor Transparency

Lack of clear information on billing procedures, charges, and payment options can lead to citizen dissatisfaction and unwillingness to pay.

05



## Integration Issues

Disconnected billing systems with other municipal systems (e.g., property management, customer service) can create inefficiencies and data silos.

06



## Growing Indigent Base

An increasing number of residents unable to afford services can lead to higher levels of unpaid bills.

07



## Resistance to Change

Both staff and citizens may resist the adoption of new digital billing systems.

08



## Security Concerns

Transitioning to digital systems requires robust cybersecurity measures to protect sensitive data.

09



## Limited Resources & Capacity

Local governments may face budget constraints and a lack of skilled personnel to implement and manage modern billing systems.

10





# Technological Advancements & Innovation

01.

## Digital Payment Options

Offering a variety of digital payment methods, including online payments, mobile payments, and auto-pay options

- Enhances convenience for citizens
- Can lead to faster payment collection rates

02.

## Online Portals

Web portals provide citizens with self-service options

- View own billing history
- Pay bills online
- Submit inquiries
- Manage own account

03.

## Cloud Based Solutions

Many local governments are transitioning to cloud-based billing systems.

- Reduced infrastructure costs
- improved data accessibility from anywhere
- Enhanced scalability to handle increasing data and users
- Automated software updates

04.

## Geographic Information Systems (GIS) Integration

Integrating billing systems with GIS allows for a visual representation of service locations and billing data on maps

- Improves coordination between departments
- Aids in asset management





# Technological Advancements & Innovation

05.

## Artificial Intelligence (AI) & Machine Learning (ML)

AI-powered analytics can process large volumes of billing data

- Identify trends & provide insights for better resource management and decision-making
- Detect anomalies (like potential fraud or leaks)
- Chatbots utilizing AI can also handle basic customer inquiries, freeing up staff for more complex issues.

06.

## Data Analytics and Reporting

Advanced reporting tools and dashboards provide local governments with a comprehensive view of billing data

- Enabled to monitor revenue
- Identify areas for improvement
- Make data-driven policy decisions

07.

## Automated Workflows

Automating routine tasks like generating bills, sending payment reminders, and processing payments streamlines operations

- Reduces errors
- Improves efficiency

08.

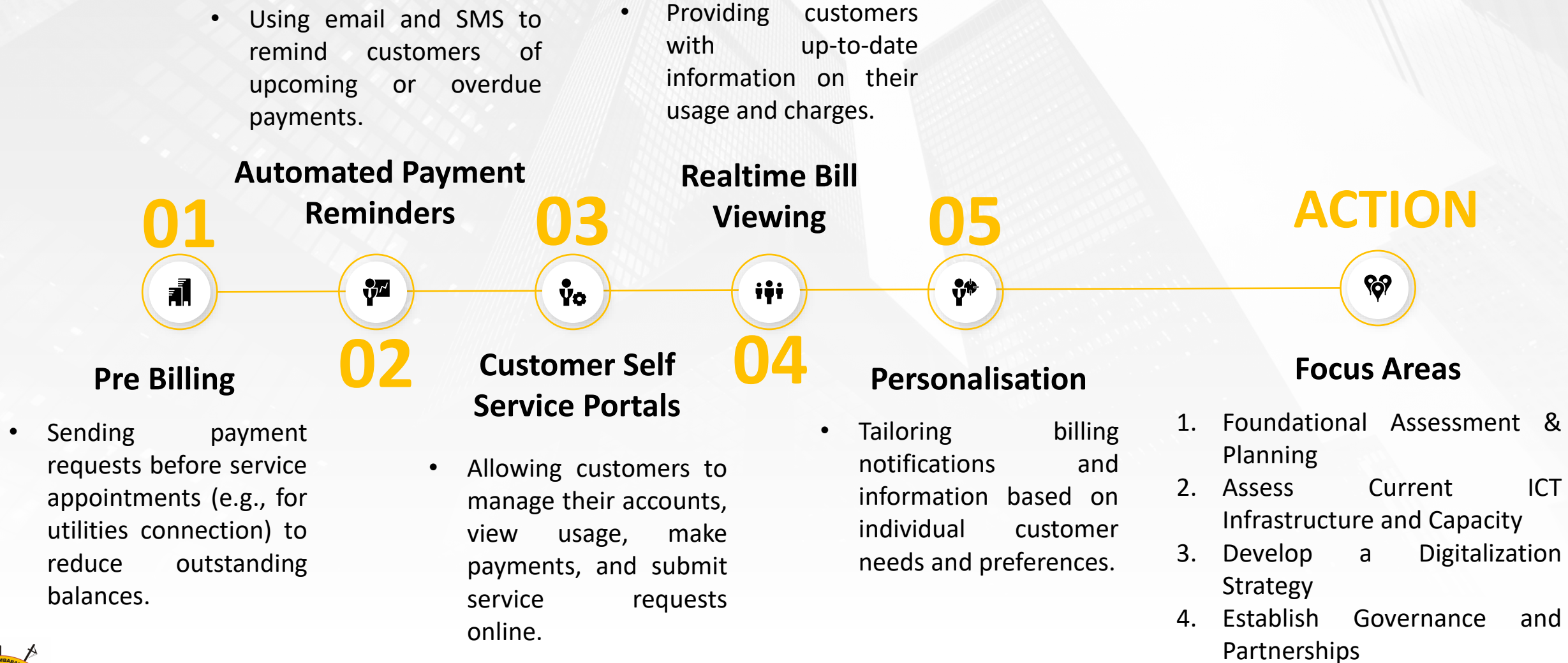
## Integration with Other Systems

Modern billing systems can integrate with other local government software, such as enterprise asset management (EAM) and customer relationship management (CRM) systems

- Creates a unified platform for better data sharing
- Coordination across departments



# Ideas Innovative Features





# Benefits of Technology & Innovation in Local Government Billing



## Enhanced Efficiency & Productivity

01

Automation and streamlined processes reduce manual work, minimize errors & free up staff to focus on more complex tasks.



## Improved Accuracy

02

Automated data collection and validation reduce the likelihood of billing errors and disputes.



## Cost Savings

03

Reduced manual labor, lower printing and mailing costs (with e-billing) & better resource management contribute to significant cost savings.



## Increased Transparency

04

Online portals and clear digital bills provide citizens with easy access to their billing information, fostering trust and accountability.



## Enhanced Citizen Engagement

05

Convenient online and mobile options, along with faster issue resolution, improve the overall citizen experience.



# Benefits of Technology & Innovation in Local Government Billing



## Better Revenue Management

06

Accurate billing, efficient payment processing, and tools to identify potential revenue leakage contribute to improved financial stability.



## Data Driven Decision Making

07

Analytics and reporting capabilities provide valuable insights for informed policy decisions and resource allocation.



## Improved Security

08

Modern digital systems often have robust security measures to protect sensitive citizen and financial data.



## Environmental Sustainability

09

Reduced paper usage through digital billing options contributes to environmental conservation.



# Best Practice **Sharing**





# SMART TAIPEI

Government as a Platform

City as a Living Lab

**smart**taipei





# Taipei at a Glance

## MASS TRANSPORTATION

Airport, International Harbor,  
High Speed Rail, Train, MRT, Bus,  
Shared Bikes and Motors.

## RESIDENTIAL POPULATION WITH BACHELOR'S DEGREE OR HIGHER

**25%**

Accounting for 25% of Total  
City Population

## NUMBER OF COLLEGE AND UNIVERSITIES

**30**

colleges and  
universities

SIZE OF TAIPEI  
**271.8km<sup>2</sup>**  
POPULATION  
**2.7million**

## NUMBER OF REGISTERED COMPANIES

**180,000**

Approximately 180,000  
companies

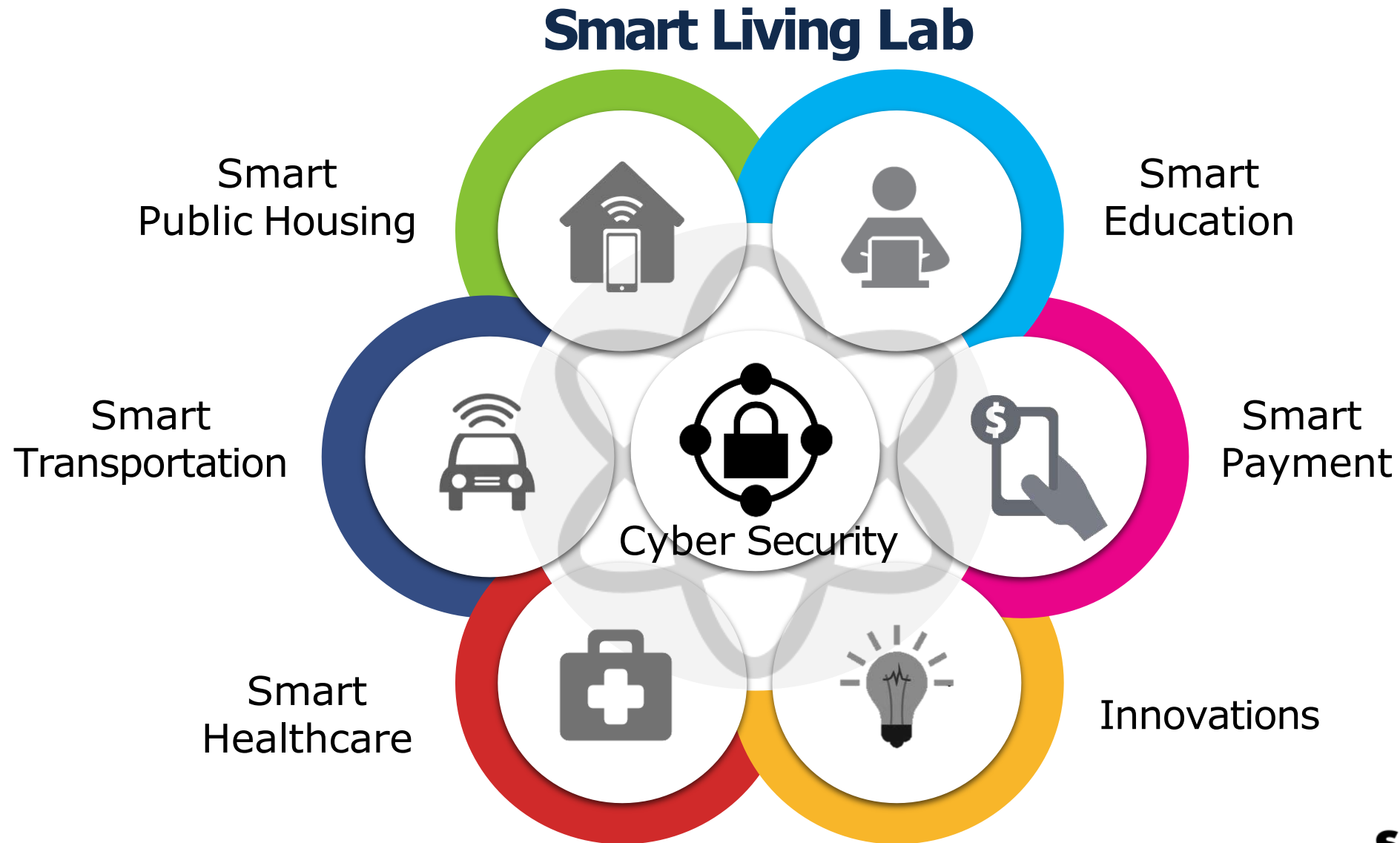
## NUMBER OF INTERNATIONAL EXHIBITIONS

**TOP 30**

in Global Ranking



# Key Directions of SMART TAIPEI

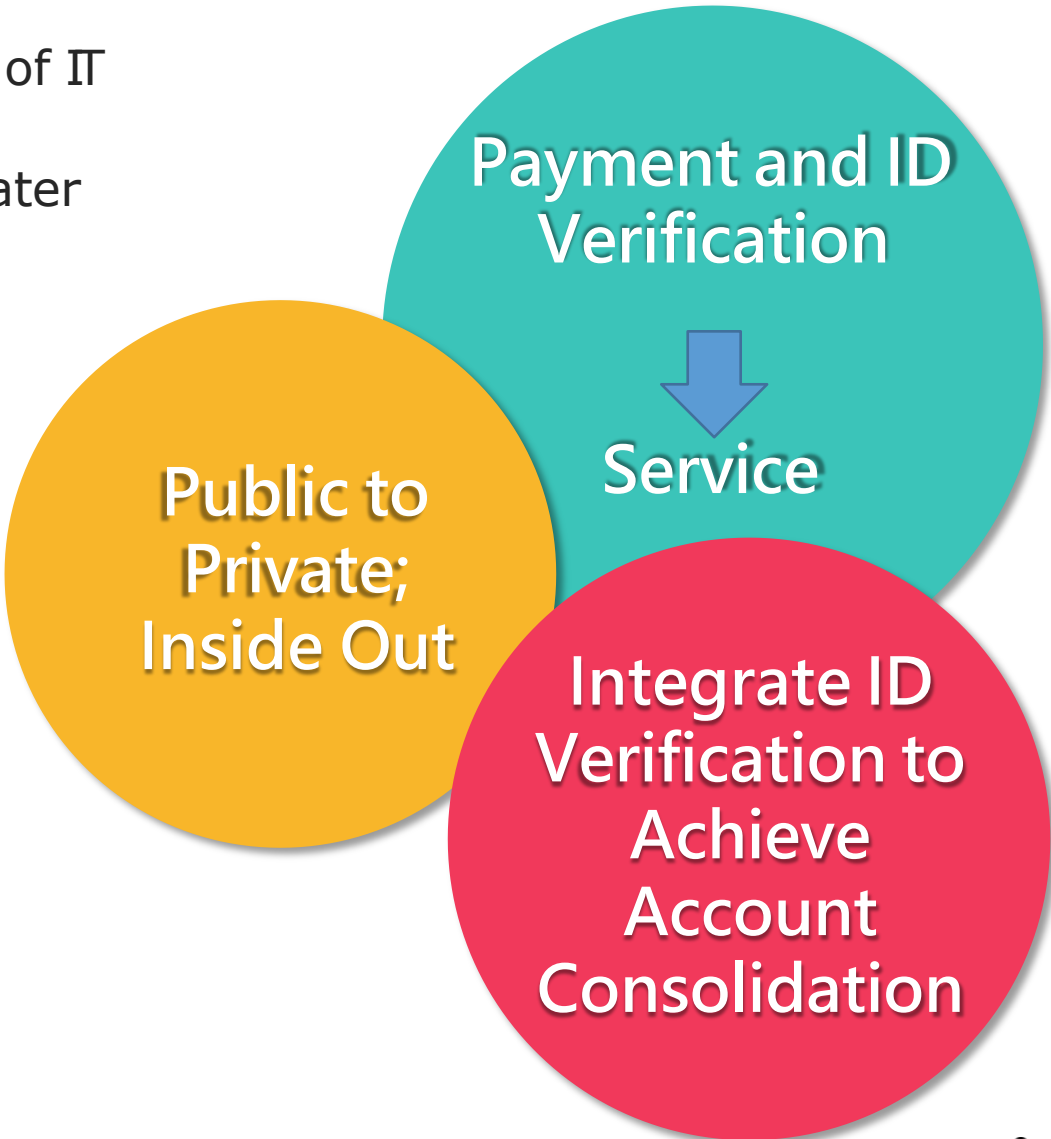
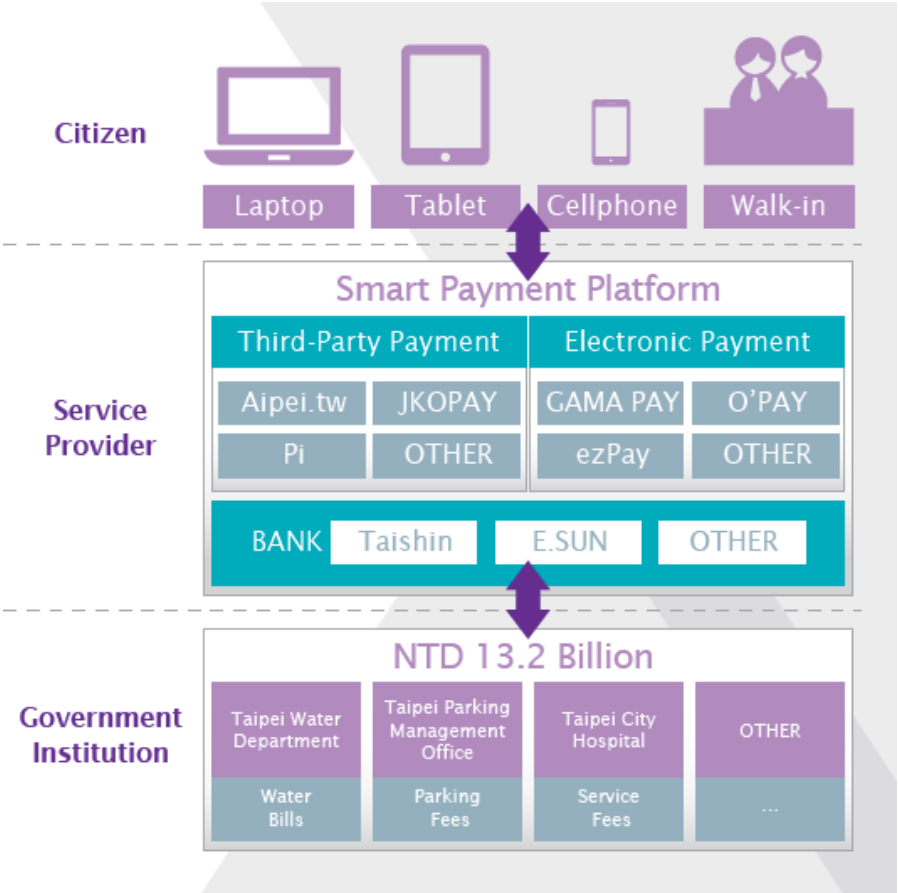




# Smart Payment



- Smart Payment Platform launched by Dept. of IT
- 8 Services Providers
- Smart payment platform for parking fees, water bills and Taipei City Hospital service fee.





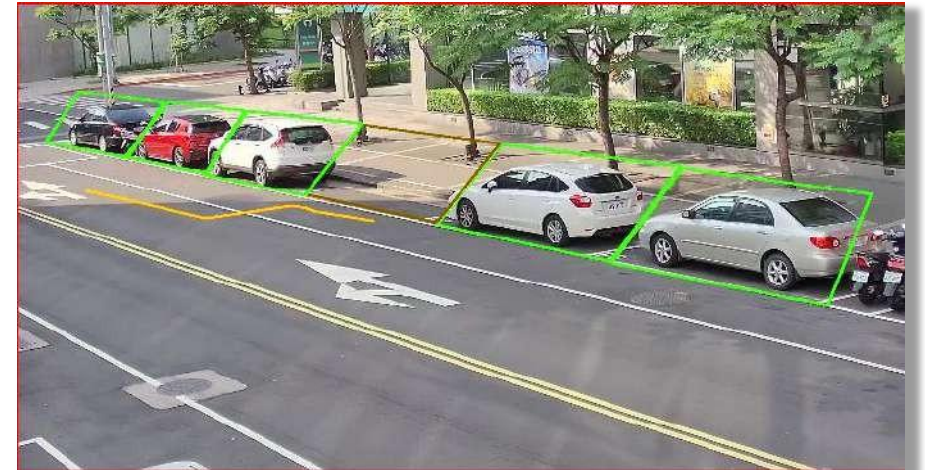
# Pilot Project for High Bit Video Detection System for Smart Parking Billing

## Assist Smart Parking Billing by Using High Bit Video Detection System

- Field tests at two blocks at Nangang Dist. and Songshan Dist., respectively
- Assist operations by Parking Management and Development Office
- Efficiency comparison between this system and manual billing
- Monitoring platform (for block management, parking space management, payment management, parking status information, vacant space information and record inquiry)



序	流水號	所屬區域	所屬公司	所屬道路	所屬停車場	停車位編號	車牌號碼	入位時間	離位時間	停車時間	管理員編號	數據來源
1	181029152156635	臺北市-內湖區	臺灣	行愛街	行愛路路邊停車場	TW0201003	■■■■■■■■■■	2018-10-29 15:20:13	2018-10-29 15:24:04	00:03:51	識別主機	識別主機



Labor  
Cost  
Reduction

Data  
Collection  
and  
Application

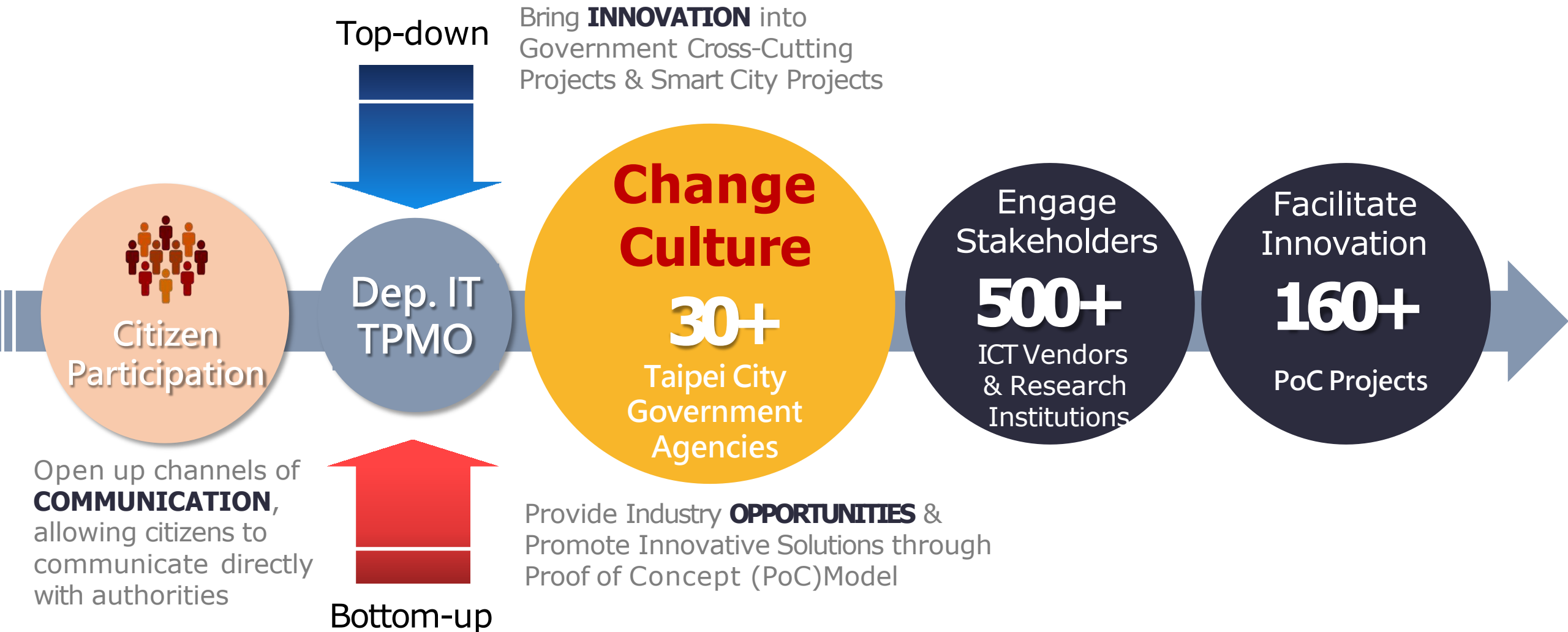
User  
Charge

Real-time  
Spatial  
Information

Video  
Database



# Mechanisms





# Call to **Action**





# Practical Steps Digitizing Billing



## Foundational Assessment & Planning

- **Engage Stakeholders**
- **Focus on High-Impact Areas** eg
  1. **Revenue Collection (Rates, Fees):** Lengthy queues, manual record-keeping, payment reconciliation issues.
  2. **Permitting and Licensing:** Slow application processes, lack of transparency.
  3. **Citizen Grievance Redressal:** Inefficient tracking and resolution of complaints.
  4. **Internal Communication and Workflow:** Paper-based approvals, lack of information sharing.



## Assess Current ICT Infrastructure and Capacity

- **Technical Audit:** Evaluate the existing hardware, software, network connectivity, and cybersecurity measures. Understand the current state and identify gaps.
- **Skills Assessment:** Determine the digital literacy and technical skills of existing staff. Identify training needs.
- **Resource Availability:** Analyze the budget and human resources available for digitization initiatives.



## Develop a Digitalization Strategy

- **Define Vision & Goals:** Articulate achieve through digitization
- **Set Prioritized Objectives:** Based on the pain points and resource assessment
- **Outline a Phased Approach:** Break down the digitalization journey into logical phases
- **Consider Technology Options:** Research and evaluate potential technologies and solutions
- **Address Data Management & Security:** Develop clear plan for data storage, security, privacy & compliance
- **Plan for Change Management & Training:** Recognize that digitization requires changes in processes and workflows



## Establish Governance & Partnerships

- **Form a Digitalization Steering Committee:** Multi departmental
- **Explore Partnerships:** Identify potential partnerships with national government agencies, NGOs, local technology providers, or educational institutions that can provide technical expertise, funding, or training support.







#MbabaneMyCity





# Thank You

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