

# *Mobile tolling services*



# Key electronic tolling trends

Regional electronic toll collection systems converge into a nationwide ETC system

- > Regional interoperability has already been established in wide parts of the world

The shift from manual tolling towards all electronic tolling (AET) continues

- > ANPR camera image quality and OCR engine performance are counted on more and more
- > Desire to meet road user models is increasing – unbanked, day passes, rental cars

Managed lanes incorporating dynamic pricing and HOV schemes continue to grow

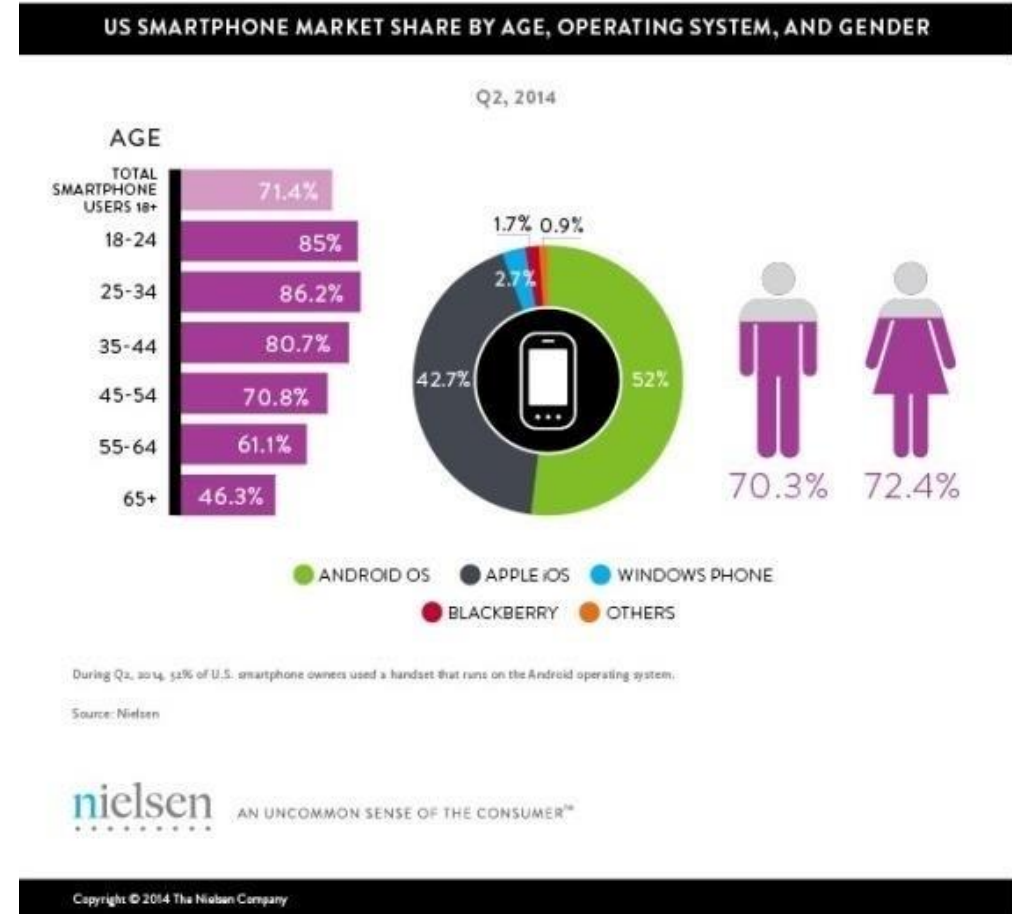
- > Over 60 managed lane projects are currently open, under construction or in planning in North America as of today

Use of smartphones in the context of electronic toll collection increases

- > Customer relationship management
- > GNSS/GPS based tolling device
- > Video tolling verification

# Mobile market trends

- > Smartphone adoption and transportation applications are becoming the norm\*
  - > Two-thirds of Americans and 85 % of millennials own a smartphone
  - > One fourth of Americans rely to some degree on a smartphone for accessing online services (more mobile than desktop users)
  - > Two-thirds of smartphone owners use their smartphone at least occasionally for turn-by-turn navigation while driving



\*Sources:  
Nielsen: <http://www.nielsen.com/us/en/insights/news/2014/mobile-millennials-over-85-percent-of-generation-y-owns-smartphones.html>  
PewResearchCenter: <http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/>

# Enhancing the tolling experience within AET



## Opportunities to improve the user experience

- > Calls from road users about toll balance, invoices, etc.
- > Visits at the customer service center for adding funds to the account, etc.
- > Drivers have to wait weeks for feedback on their video toll trips
- > Drivers are charged surcharges from car rental companies



## Cost to collect video toll is higher than AVI transactions

- > High turnaround times due to manual image validation
- > DMV look-ups
- > Mailing cost
- > Loss of toll revenue



## Mobile tolling services

# Kapsch mobile tolling services

Solving today's pains of electronic toll collection (ETC)

## Customer relationship management



## Video enhancement



Creating new gains for ETC

## Value-added services



# Customer relationship management



- > Secure registration & login
- > Secure PCI-DSS compliant environment for
  - > Registration of payment means
  - > Processing of cashless payments, e.g. adding funds
  - > Support of pre- and post-payment schemes
  - > Purchase eVignettes
  - > Purchase route tickets
- > Account balance checks
- > Edit account, vehicle, tag, and personal information
- > Find nearby customer service centers
- > Toll rate calculator
- > Transaction- and balance history
- > Real-time notifications

Sign Up

Full Name  
Catherine Janeway

E-Mail  
catherine@starfleet.org

Password  
..... Show

SIGN UP

Purchase eVignette

Select Vehicle Class and Duration

Car max 3.5t  
Cargo Vehicle max 3.5t  
Motorcycle

10 Days €9.80  
2 Months €26.70  
1 Year €86.70

Select First Day of Validity

First day of validity: Apr 12, 2016  
Last day of validity: Jan 31, 2017

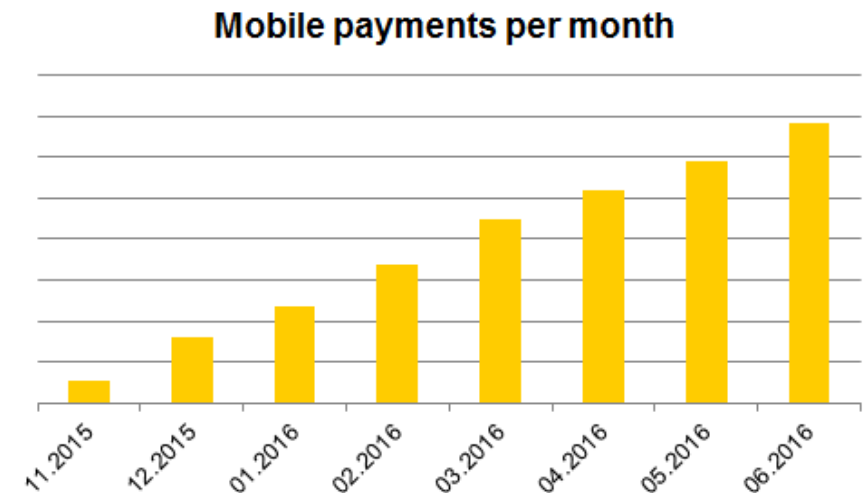
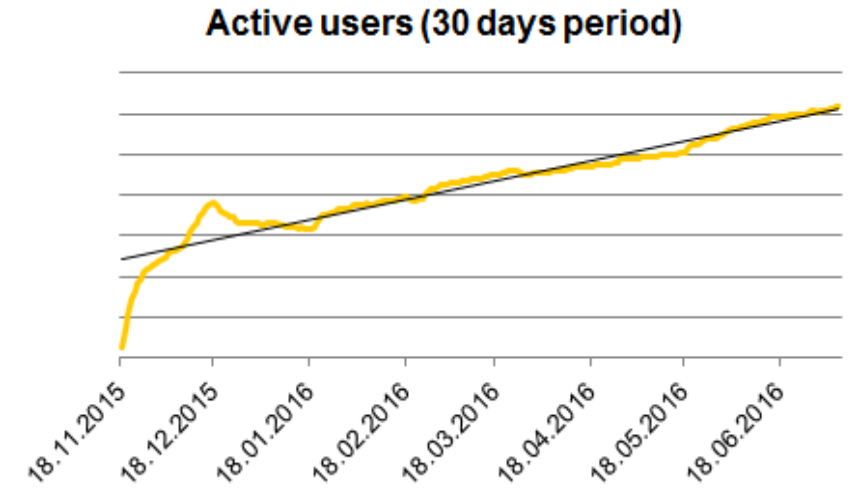
Insert Vehicle Identification Data

License Plate Number  
USS-Voy.. USS-Voyager 277 AT

Input Payment Details

# Customer relationship management

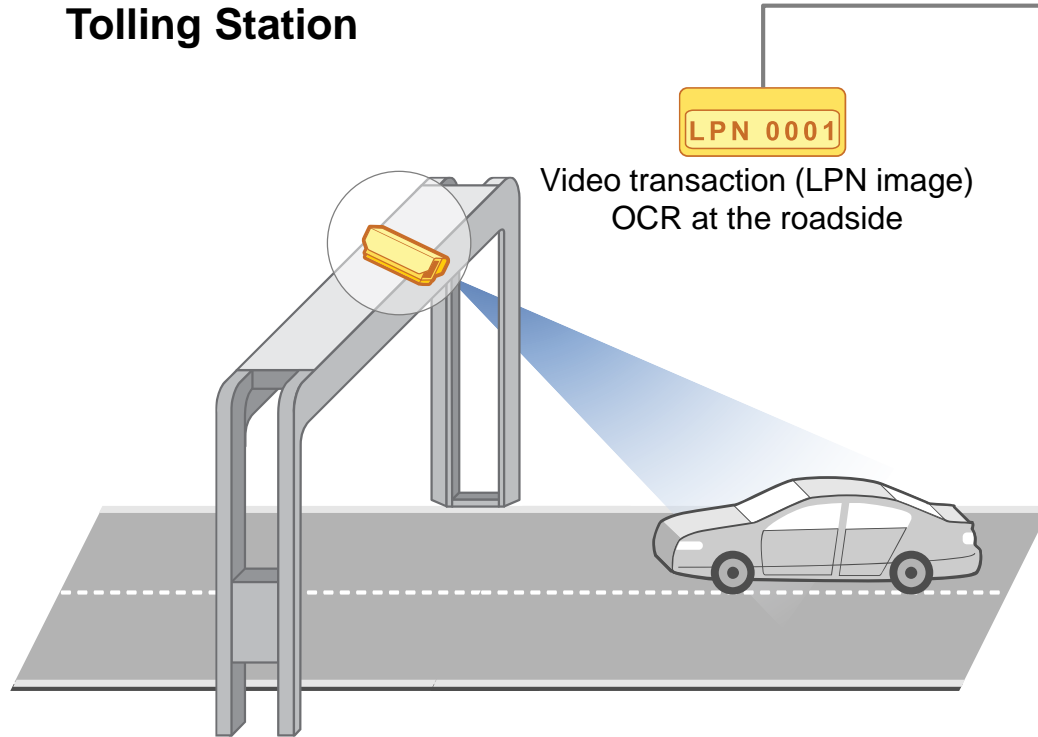
- > Introduced in Polish nationwide tolling system in November 2015
- > Multi-lingual (9 languages) and multi-channel advertisement campaign (webpage, newspapers, video interview, call center, customer service points, SMS, newsletter, e-mail, twitter, information on debit notes)
- > Observed changes
  - > Driver testimonials confirm the improved customer journey
  - > Permanent 20 - 30 % drop in calls to the call center
  - > Constantly increasing number of active users and payments



# Video enhancement

Video tolling as of today is used by > 20 % of all road users.

## Tolling Station



### Current Processing\*

**85% Automatic Validation**

**2 % False Positive Rate**

**15% Manual Review**

**2% Not Human Readable**

**10% DMV/Skip Trace**

**100% reviewed < 48 hours**

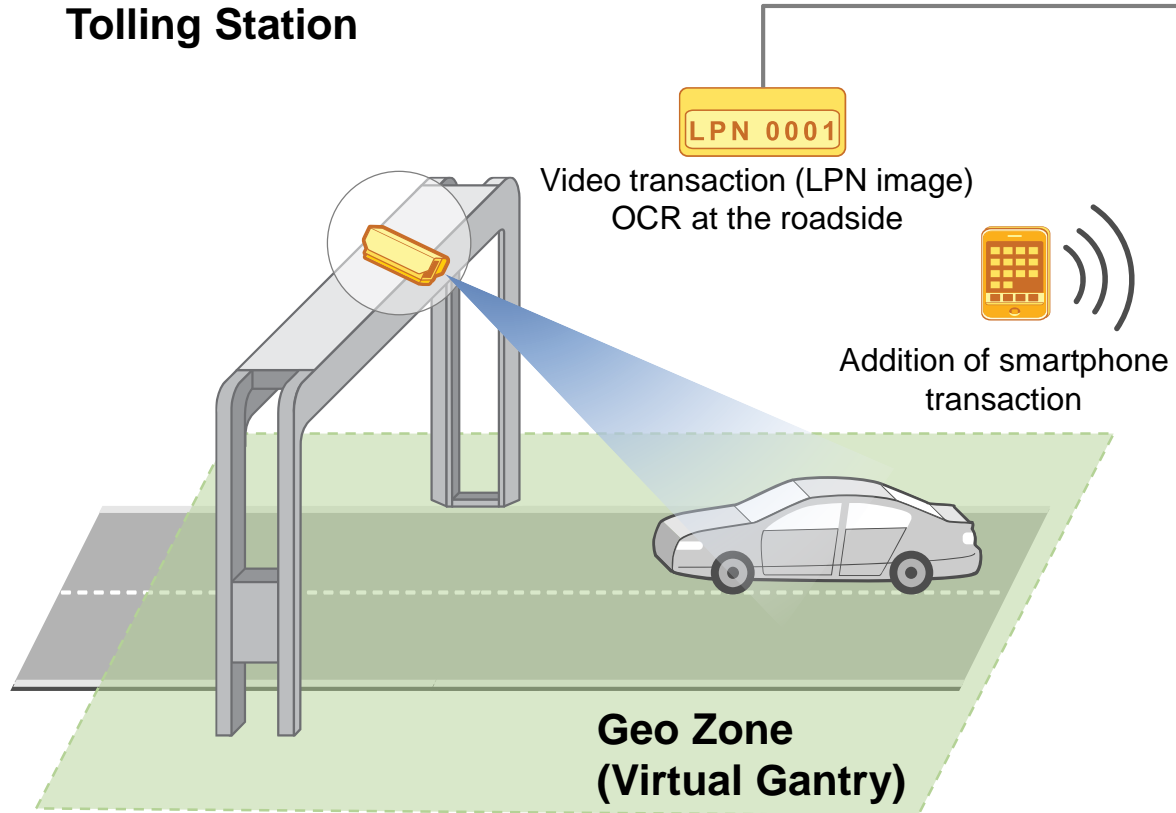
\* Sample Agency, indicative figures



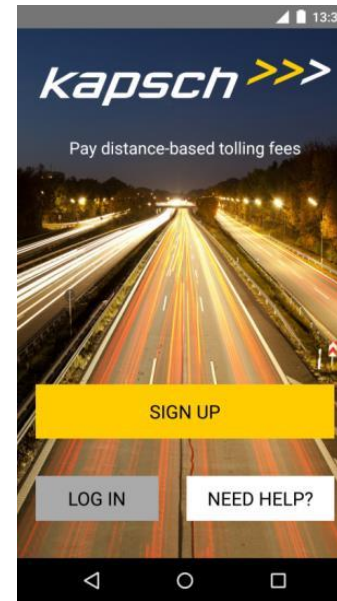
# Video enhancement

Adding mobile tolling enhances your video performance.

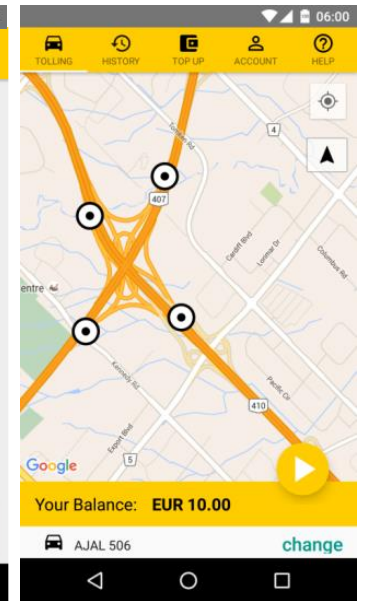
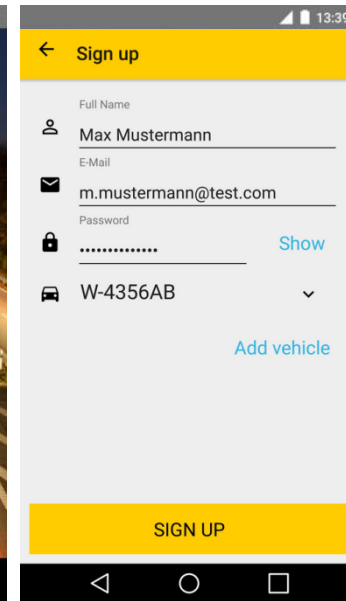
## Tolling Station



## Current Processing\*



## Kapsch Processing



\* Sample Agency, indicative figures

# Future applications....

Value-added services.

## Advanced traffic management

- Accurate level of service calculations through data fusion from smartphones and stationary traffic sensors specifically for the toll highway
- Incident reporting from road users
- Real-time pre- and on-trip information for the road user

## Enforcement

- Capture LPNs via the mobile's camera
- Lookup LPNs & transponder IDs
- Issue fines

## Parking

- Find free parking spaces, remember the last parking location, and pay for parking
- Reduce congestion at highway entries and exits caused by drivers looking for a parking space

## Others

- HOV declaration
- M-commerce
- Personal telematics
- Etc.



# Mobile tolling services results



Opportunities for improving the user experience? → Yes, mobile tolling services improve the customer journey

- > Turn violators into customers
- > Reduced number of calls and call durations
- > Provision of near real-time feedback on the toll trips
- > Expandability towards value-added services



Expensive? → No, mobile tolling services reduce operational costs

- > Increase captured revenue
- > Less manual image validation cases
- > No need for DMV look-ups and mailing of invoices
- > Reduced loss of toll revenue

*Thank you for your attention.*

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