



CONNECTING CULTURES
ENABLING ECONOMIES

6th to 10th October 2019

دائرة النقل
DEPARTMENT OF TRANSPORT



UNITED ARAB EMIRATES
MINISTRY OF INFRASTRUCTURE
DEVELOPMENT



الإمارات العربية المتحدة
وزارة البنية التحتية
التنمية

INNOVATIVE APPROACHES TO DECISION MAKING IN ROAD ASSET MANAGEMENT

W09: ASSET MANAGEMENT – DOES IT MATTER?

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GDDKiA

KONGRES
ZID

ZARZĄDZANIE
INFRASTRUKTURA
DROGOWA

WHY DECISION MAKING IS SO IMPORTANT ?

- The scale and complexity of the infrastructure,
- User expectations;
 - ✓ So that they know, what to expect,
 - To provide adequate level of service,
 - To have it on time,
 - Sometimes even to be able to participate in it,
 - ✓ Times that lack time.
- Decision-making time costs money....

*... and money, this is the lowest cost,
because in some cases it can be cost of people's life !*

DECISION CAN BE WORTH SOMEBODY'S LIFE

! Transport is one of the main sources of air pollution

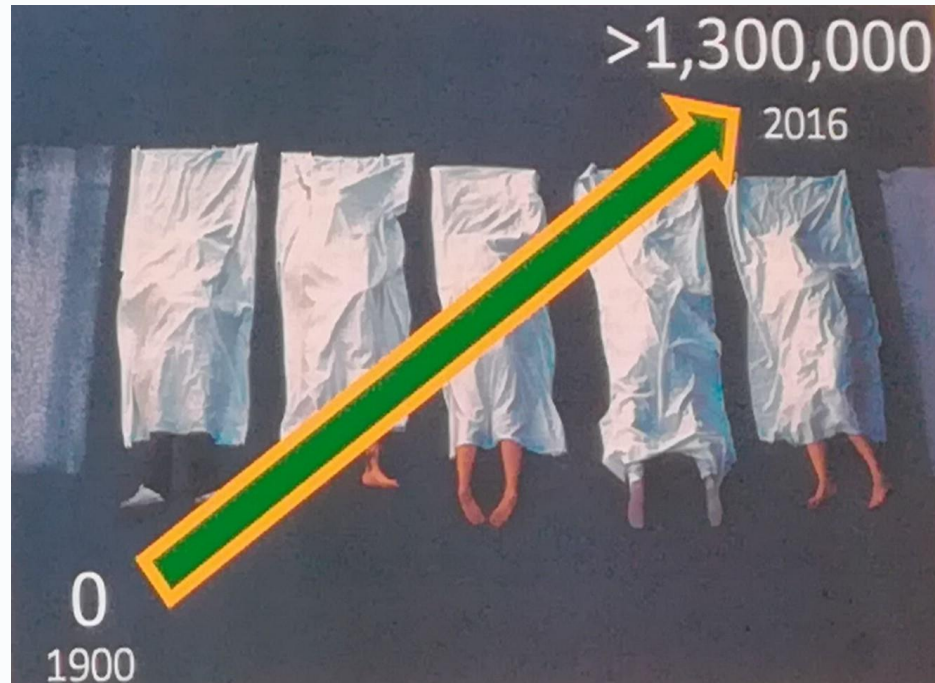
! Traffic crashes kill more children and young people aged 5–29 than any other cause.

! Traffic crashes cause about 127 000 deaths and 2.4 million injuries a year in the European Region

! Accidents remain the most important category of external cost of transport in Europe: €158 billion a year or 2.5 – 3.0% of GDP in 17 Member States.

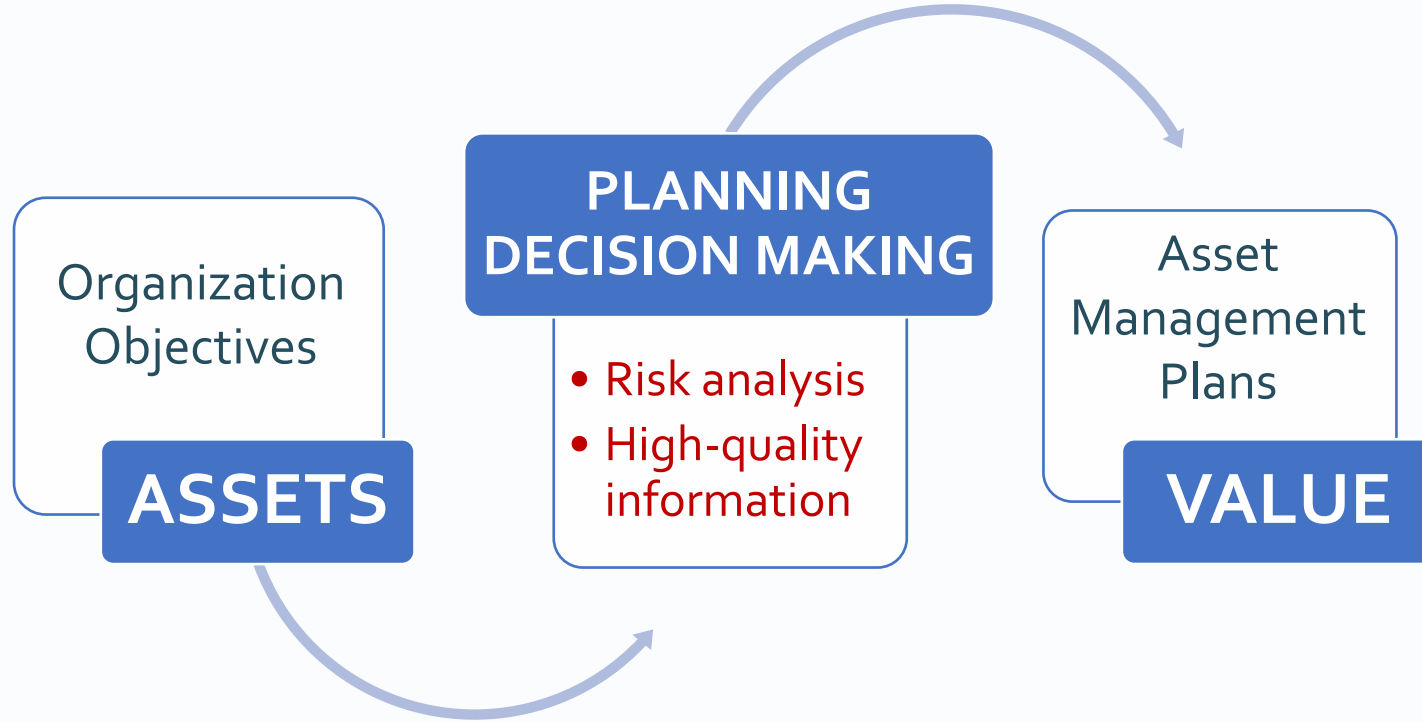
! The consequences of accidents are almost twice as severe for pedestrians as for car occupants.

Source: <http://www.euro.who.int/en/health-topics/environment-and-health/Transport-and-health/data-and-statistics>

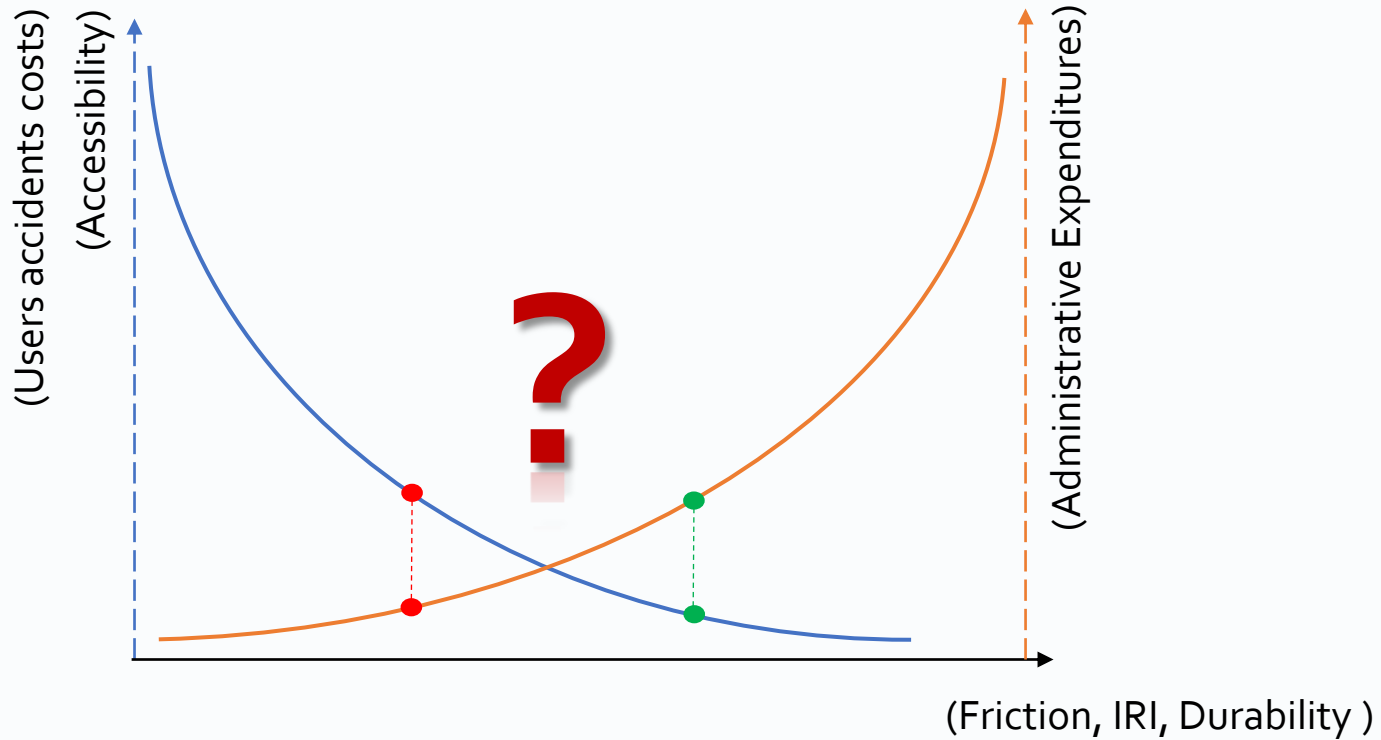


ISO 55000 - ASSET MANAGEMENT FRAMEWORK

... to enable an organization to obtain value from assets



... to enable an organization to obtain value from assets ???



Decision making is risky, but the biggest risk is to avoid this risk !

Contribution of road traffic to GDP lies between 4% and 10% !
It has health, social, environmental impact !

...as if that wasn't enough...

We operate in a "turbulent environment,, - We have to deal with this risk !
The subject of our activity is more and more technically complicated !
We must ensure the „bloodstream“ works at all Times !

...but...

We have data and we parameterize more and more phenomena !
We are able to anticipate changes in the technical condition !

...SO...

We are able to create "**Digital Twin**" of road infrastructure



REPORT on the organization's ability to create and use a „digital twin”.

REPORT on innovative tools in a field of;

Inventory

Road asset management and risk management

Condition assessment and deterioration modeling

Maintenance

Improvement

Communication

Institutional and organizational issues

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PIARC TECHNICAL COMMITTEE D1 „ASSET MANAGEMENT“



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have data and we parameterize

Inventory
Condition assessment
Define KPI's

to deal with this risk

Risk management

to anticipate changes

Deterioration modeling

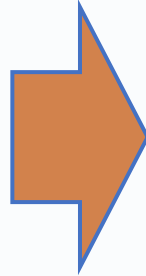
ensure the „bloodstream“ works

Maintenance
Improvement

...have data and we parameterize - INVENTORY

Database System;

- High-quality data
- Relationships between data
- Accomodate new technologies
- Properly structured
- Easily accessible to a user
- Consumable for use
- Efficient
- Constantly updated



CONDITION ASSESSMENT

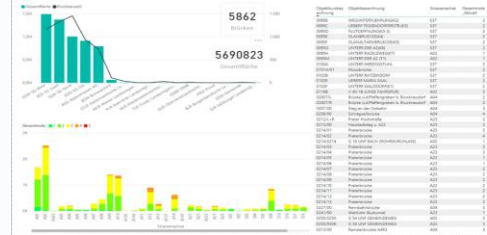
GIS system ASFINAG, Austria.



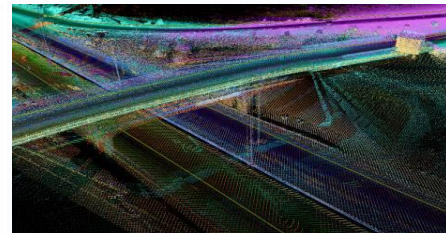
RIMS; NEXCO-EAST, Japan



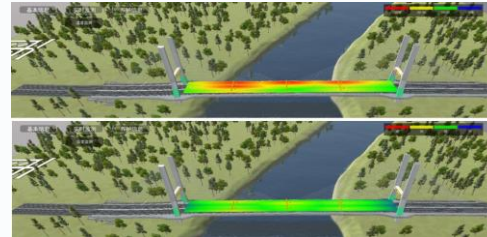
BI; ASFINAG, Austria



LIDAR, United Arab Emirates



BIM - JSTI Group, China



3D modeling ASFINAG, Austria



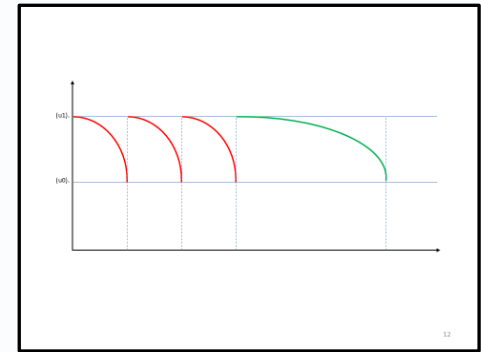
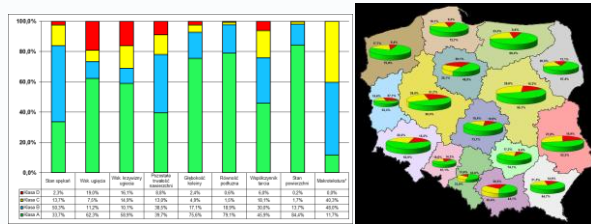
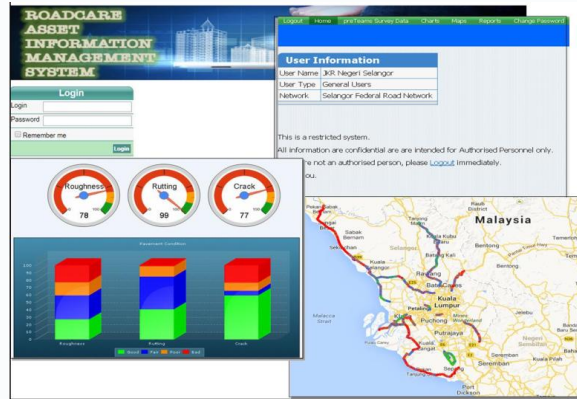
...have data and parameterize – to anticipate changes

Data Collection

Scoring System

Formulating KPI's

Deterioration modeling





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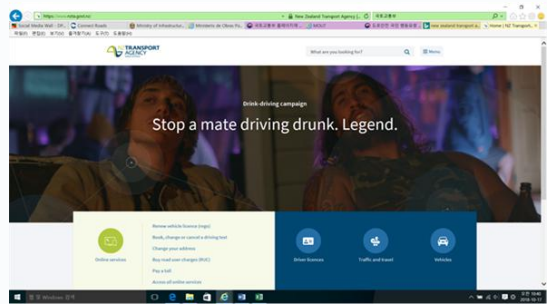
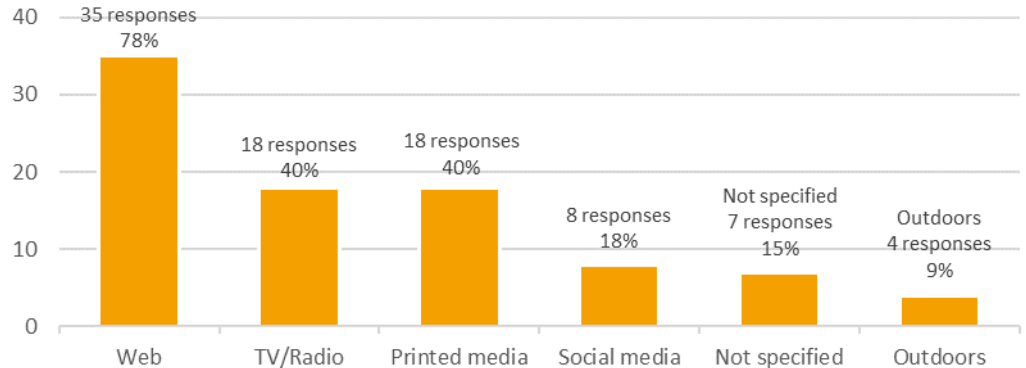


الإمارات العربية المتحدة
وزارة تطوير البنية
البنية التحتية

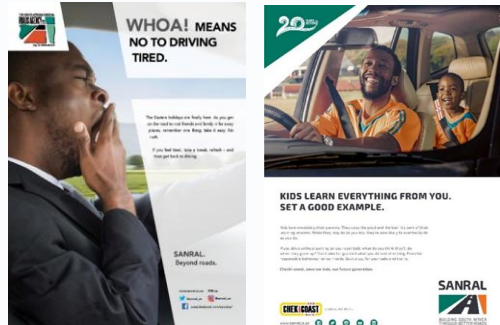


COMMUNICATION ?

YES – EVEN IN TWO DIRECTIONS !



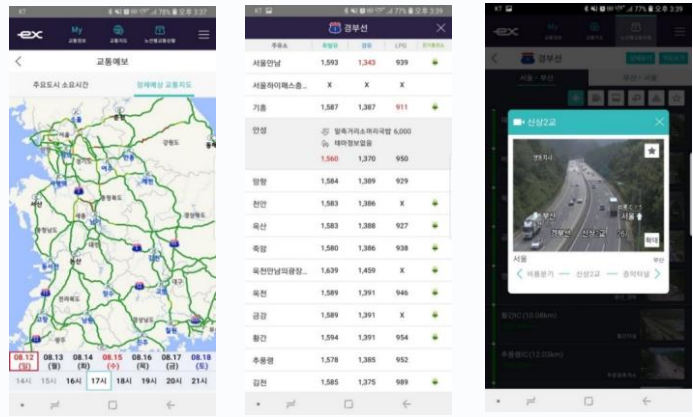
Video clip on drunken driving hazard; New Zealand Transport Agency website



Campaigns on road safety education & awareness SANRAL in South Africa



Performance reporting by VDOT, USA



Road Plus App used in South Korea

When the people of the future look back at our century of auto life, will they regard it as a useful stage of forward motion or as a wrong turn? It is possible that, 100 years from now, the age of gassing up and driving will be seen as just a cul-de-sac in transportation history, a trip we never should have taken?

Source:

<https://www.newyorker.com/magazine/dept-of-motor-vehicles>

JULY 29, 2019 ISSUE

WAS THE AUTOMOTIVE ERA A TERRIBLE MISTAKE?

For a century, we've loved our cars. They haven't loved us back.

By Nathan Heller July 22, 2019





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