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Golden rules for open and interoperable ticketing

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Webinar

June 29, 2021

MODERNIZING PUBLIC TRANSPORT IN AFRICA

Innovations in fare payment systems for transport

What is ticketing ?

Ticketing is not (only) the payment of transport, it is the gateway to mobility and freedom of movement for all

Ticketing is a tool in the hands of political authorities to define mobility policies

It is essential to **have control over the ticketing system**.
It is a question of **sovereignty over fare policies and mobility policies**

A sovereign ticketing system

A famous anecdote

An organizing authority that no longer sets the price of transport: Transport for London

Under the open payment scheme, Citymapper was able to offer a lower metro fare than that set by TfL on its multi-mobility pass, without TfL being informed. TfL received the correct remuneration, the cost of the reduction being borne by Citymapper.

Closed Loop ticketing systems are a guarantee of sovereignty for the political authority

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Good practices

For an open and interoperable ticketing system

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Ensure system agility and flexibility

- Ensure system scalability
- Guarantee a constant high level of security
- Implement any pricing policy without constraints
- Implement interoperability without constraints
- Accept new operators during the whole life of the system

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Control and cost of ownership of the system

The total cost of ownership (TCO) of a system is the global cost of an asset throughout its life cycle, about fifteen years for a ticketing system.
It includes the initial costs of the system, hardware, software, deployment, etc., but also all its operating costs, maintenance, administration, telecoms, consumables, etc.
and evolutions

To minimize the lifetime cost of ownership, a transport operator or authority must therefore control its system in all its aspects

The right level of control is the one that allows, for any significant evolution of the system, to put in competition the realization

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Six best practices to apply

BE IN CONTROL OF HIS DATA MODEL

CONTROL ITS SECURITY ARCHITECTURE

ADOPT A MODULAR ARCHITECTURE BASED ON APIS

HAVE A DUAL SOURCE FOR EACH COMPONENT OF THE SYSTEM

RELY ON STANDARDS AND CERTIFICATES OF CONFORMITY

USE OPEN SOURCE SOFTWARE WHEN POSSIBLE

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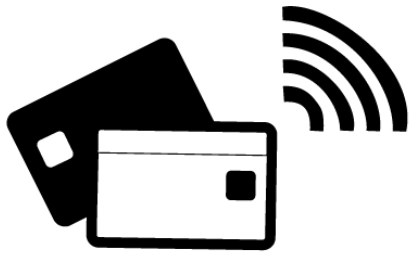
Multisource: the example of Calypso

Multiple sources, including chips and and software for cards

Guaranteed resilience and lower costs



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Qilium Smartcard Technology

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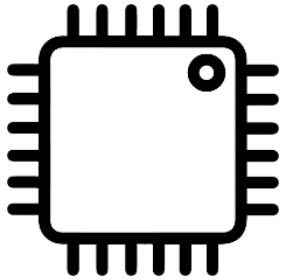

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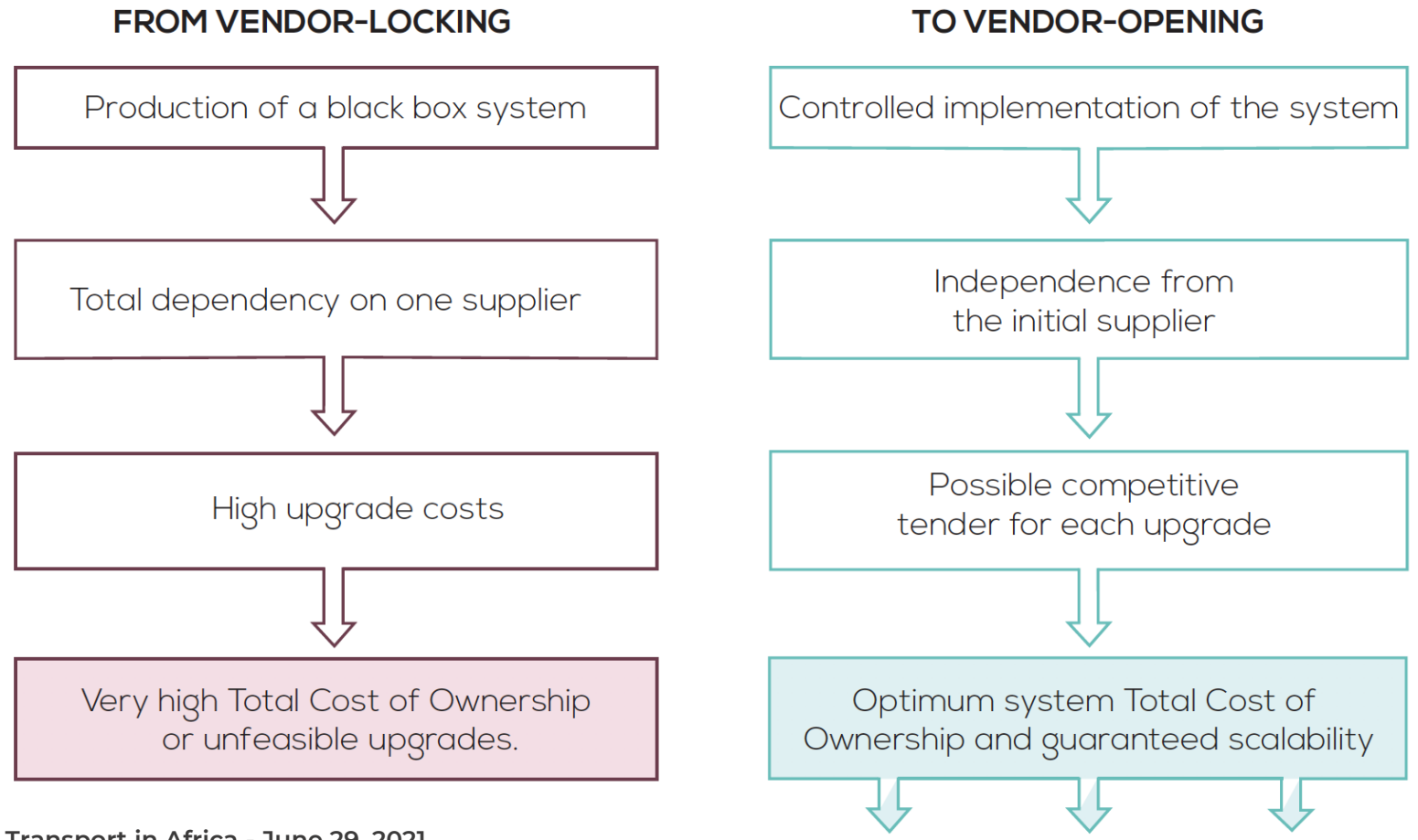
Open solution versus proprietary solution

The consequences on the life span and cost of the system



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Thank you

Philippe Vappereau – CNA chairman

Annex

The six best practices in more detail

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Promote open and standardized solutions

HAVE CONTROL OVER YOUR DATA MODEL

- **The mobility service provider must be able to control and adapt its data model**
- **The danger is to let a system vendor implement its own data model.**
- **The best option is to use open and standardized data models if available.**

Promote open and standardized solutions

CONTROL ITS SECURITY ARCHITECTURE

- **Own the cryptographic keys**
- **Use a standard security architecture**

ADOPT A MODULAR ARCHITECTURE BASED ON APIs

- **Have different independent modules with published APIs**
- **Decorrelate hardware from software**

Promote open and standardized solutions

HAVE A POTENTIAL DUAL SOURCE FOR EACH SYSTEM COMPONENT

- **Reduces the risk of system failure in the event of a supplier default**
- **The card component (the chip) is the most critical element of the system**

Promote open and standardized solutions

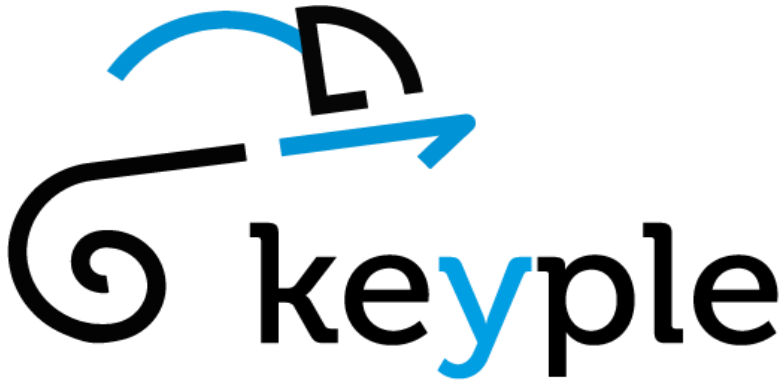
RELY ON STANDARDS AND CERTIFICATES OF CONFORMITY

- **At RF (radiofrequency) level, CEN TS16794**
- **At the functional level, Calypso for example**

Promote open and standardized solutions

USE OPEN SOURCE SOFTWARE

- **Ensuring fair competition between suppliers**
- **A significant economic impact on the cost**



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