IDENTITY’S ROLE IN SECURING THE IOT CONNECTED CAR

Ashley Stevenson
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Strange Times for the Automotive Industry
We are currently experiencing the biggest change the automotive industry has ever seen. It all comes down to whether we believe we can earn as much money in the future from mobility services as we can from selling cars. I see tremendous opportunities for this. Being able to offer people premium mobility at any given moment is an exciting prospect.

Peter Schwarzenbauer
Member of the Board of Management of BMW AG, responsible for MINI, Rolls-Royce, BMW Motorrad, Customer Engagement and Digital Business Innovation BMW Group
New mobility is challenging automakers' assumptions

'NEW MOBILITY' THREATENS THE FOUNDATION OF AN AUTO INDUSTRY BUILT ON THE PREMISE THAT MORE IS BETTER.

Greg Gardner, Detroit Free Press
Core Pieces of New Mobility

Connectivity

Sharing

Autonomous

Services
Automotive – Gateway to Smart Mobility

Connected Cars are just the tip of the iceberg in the emerging modern mobility ecosystem – and all of it needs identity
“Hyperpersonalized mobility services inside and outside the vehicle will be a key competitive differentiator for automotive OEMs in context of the connected and automated vehicle.”

Dr. Martin Birkner - Research Director, Automotive and Smart Mobility

“85% of Auto Executives agree that the digital ecosystem will generate higher revenues than the hardware of the car itself”

KPMG Global Auto Exec Survey 2017
NEW MOBILITY = DIGITAL SERVICES

&

DIGITAL SERVICES REQUIRE DIGITAL IDENTITY
What is Digital Identity?
Digital Identity

The information that makes something unique
The Four Corners of Digital Identity

Credentials and Authentication

Establishing Digital Trust and Assurance
The Four Corners of Digital Identity

Authorization

Yes or No?
The Intersection of Security and Experience
Privacy and Consent Matters

- Data Access
- Data Exchange
- Data Monetization
- Device Data
- Consumer Trust
- Regulatory Compliance
User Managed Access

How individuals could control personal data and device access in the IoT environment

- Login
- Sharing Management Console
- Manage/Use
- Configure Policies
- Share
- Doctor
- Mechanic
- Accountant
- Family Member
- Recipient
A Familiar Paradigm
Apple makes more money with services than AirPods, Apple TV, Watch, and iPad sales combined

by Natt Garun | @nattgarun | Nov 2, 2017, 5:56pm EDT
Connectivity

Personalization

Services

Autonomous

Privacy Controls

Sharing
It’s All About Relationships
Cars and Connected Devices
A RADICAL IDEA...?
Just Say No to...IoT
Instead...

- Connected Devices...
  - Exist to better serve customers and business processes
  - Are not effective in silos
  - Require varying levels of Trust and Security
  - Need Digital Identities, Credentials, Authentication and Authorization
  - Are very different across different industries and use cases, and therefore;
  - Are underserved when referred to in bulk as “IoT”
Security Challenges with Connected Devices

How to guarantee privacy and confidentiality?
Connected Car Ecosystem Example

Driver
- authenticate
- authorize
- In-vehicle Application
- manage data sharing
- data capture

Bluetooth/BLE
- proximity based security
- secure pairing/device relationships
- offline mode support

Messaging
- authenticate
- authorize
- interaction
- secure messaging
- data encryption

Control
- attestation
- on-boarding
- provisioning
- authentication
- authorization

Service backend
- backend operations
- data access
- data sharing and consumptions
- access policies enforcement
- data decryption

Maintenance Portal
- access granted by car owner

Mechanic/specialist

Husband

Family
Trusted Credentials – People vs. Devices

- **Passport**
  - High assurance
  - Credential based on strong identity, from trusted authority
  - Attestation based on chip-level credential security

- **Driver’s License**
  - Medium assurance
  - Credential only trusted within a given context
  - Attestation given operating system level security

- **Conference Badge**
  - Low assurance
  - Credential defined implicit
  - Attestation using device-derived credential
BEYOND AUTOMOTIVE
A Startup's Plan To Cut Air Freight Costs In Half With 777-Size Drones

In 2020, Natilus's large unmanned planes could carry 200,000 pounds of goods across the world. But first, a 30-foot prototype must pass test runs.

17x faster than a standard cargo ship

50% the cost of a Boeing 747

EXAMPLE: 200,000 LBS of cargo from LA to Shanghai assuming $3 / gal for jet A
Automotive is evolving into a new “Mobility” Industry

This new industry favors the *as-a-service* model over ownership

Digital Identity expands Security and Privacy from compliance & prevention tools to critical business enablers

Cars and Mobility is just one industry example

Reconsider “IoT” and think of connected device roles in terms of industries, business use cases and value chains
Apply What You’ve Learned

- Identify your customer’s connected endpoints (includes devices) and consider how to apply the 4 corners of identity beyond humans.

- Think about how to integrate IoT Device and Device identities with human and organizational identities.

- Learn more about the User Managed Access Standard.

- Check out other standards and open source bodies such as Automotive Grade Linux (AGL) and the Car Connectivity Consortium (CCC).