All Roads Lead to Next-Gen-ATMIA

ATMIA EU 2019 - Rome

Marcel Ficken – RXL2020

Connect browser (mobile, tablet, pc) to VoxVote and ...

go to
live.voxvote.com

VX voxvote

Enter 5 digit event number

64871

Ok, next

VoxVote Question #1

What do you do?

RXL

PAST ZONE   PRESENT ZONE   FUTURE ZONE

ABN AMRO   Cash Center   ATM
ING BANK
RABOBANK

GSV

geldmaat   Paul Marselis
Roel van Anholt

EVRY   ATM Pooling   Quickscan   Shaping
Model   the Future
Marit   Nordics   NL
Gartland

WIND   ATMIA
For Next Gen API App ATMs

Rick   Multi-   ATM   Hypervisor
Anderson   Industry   Industry

RXL

Marcel   ATMIA   ATMIA Advisor
Ficken   Consultant   Next-Gen
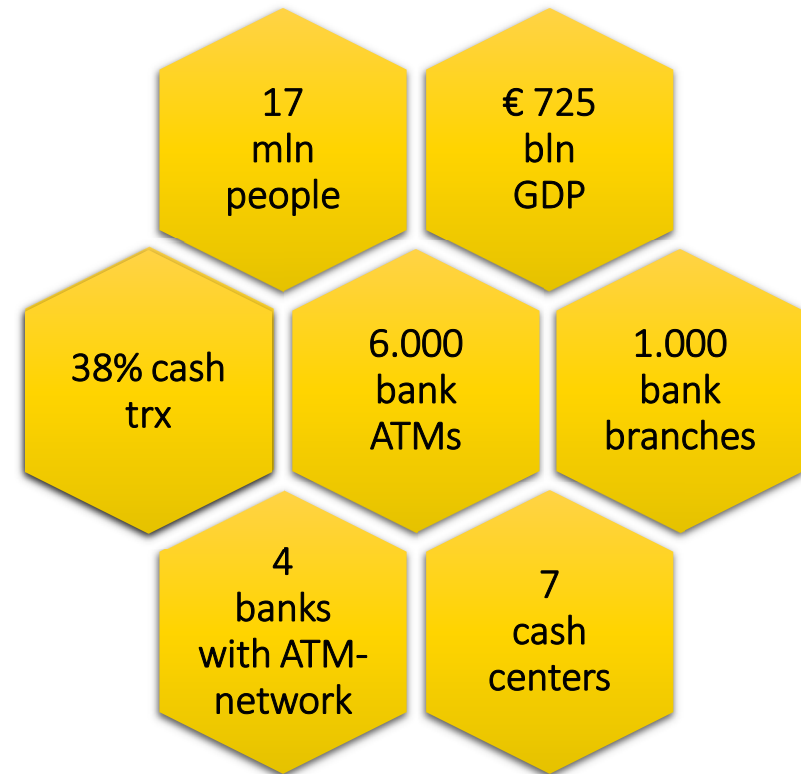
RXL

ATM pooling in the Netherlands

ATMIA – Rome (October 15–17, 2019)

Roel van Anholt Head of Services Office

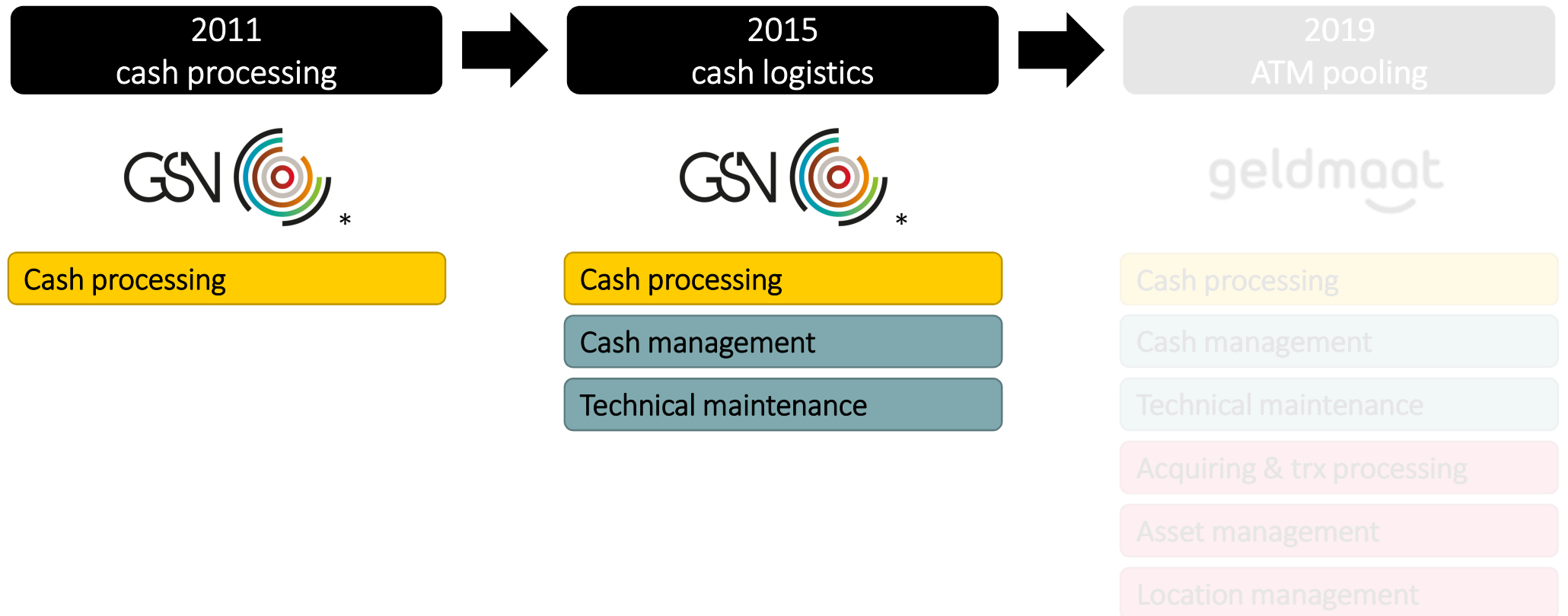**Paul Marselis** Strategy & Business Development

geldmaat

The Netherlands: a densely populated, developed country

17 mln people

€ 725 bln GDP

38% cash trx

6.000 bank ATMs

1.000 bank branches

4 banks with ATM-network

7 cash centers

geldmaat

Past: Geldmaat expanded its activities since its founding

2011 cash processing		2015 cash logistics		2019 ATM pooling
	→		→	

2011 — GSN *

Cash processing

2015 — GSN *

Cash processing

Cash management

Technical maintenance

2019 — geldmaat

Cash processing

Cash management

Technical maintenance

Acquiring & trx processing

Asset management
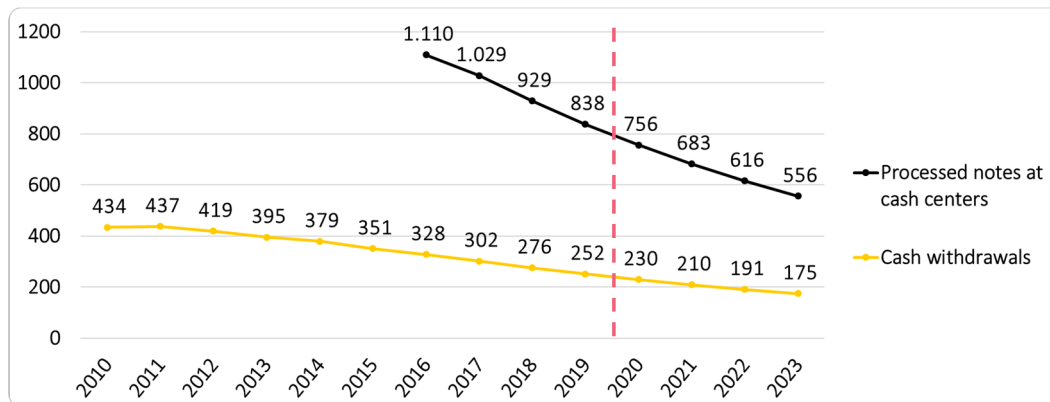
Location management

* GSN = Geldservice Nederland before the re-branding to Geldmaat
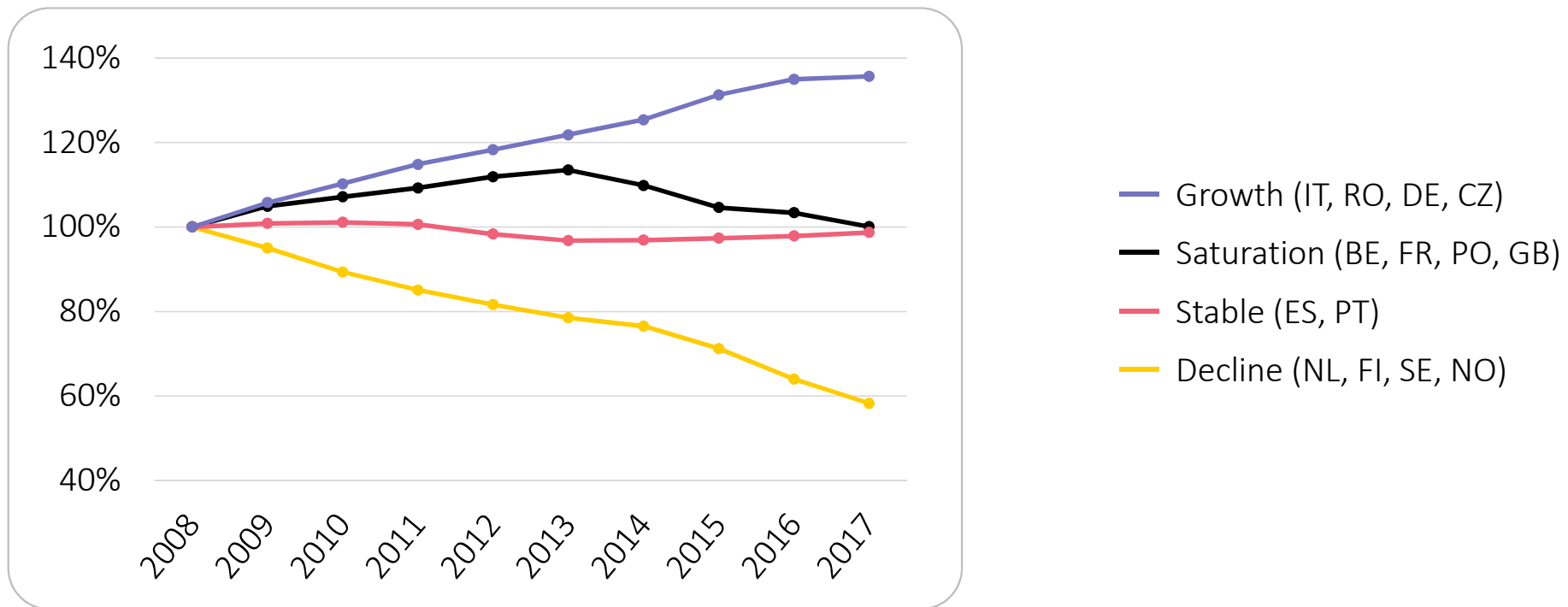
geldmaat

Cash trends in the Netherlands
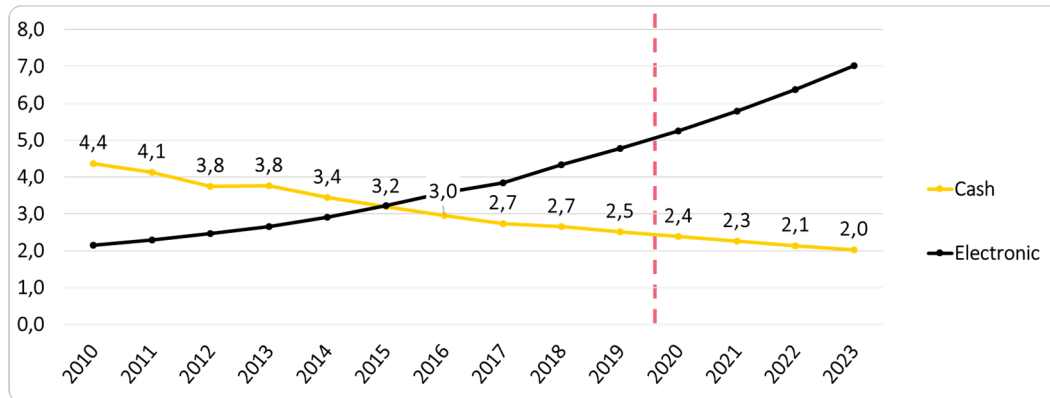
Netherlands: the number of cash payments (*1 bln) at POS is in decline
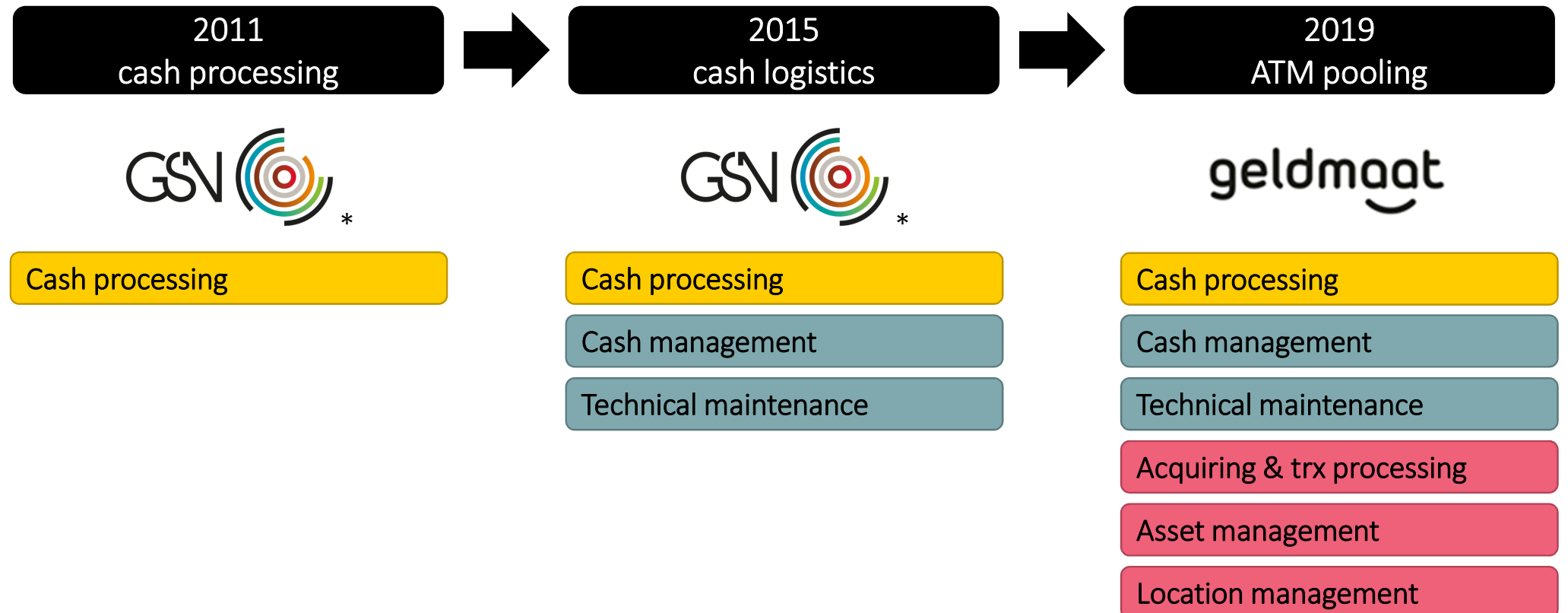

Geldmaat: the number of withdrawals at ATMs & processed notes at cash centers (*1 mln) in decline

geldmaat

European countries show various trends in the number of cash withdrawals (index 2008)

Source: European Central Bank

geldmaat

Present: Geldmaat gradually evolves into an ATM pooling company

2011 cash processing		2015 cash logistics		2019 ATM pooling

GSN *

GSN *

geldmaat

2011	2015	2019
Cash processing	Cash processing	Cash processing
	Cash management	Cash management
	Technical maintenance	Technical maintenance
		Acquiring & trx processing
		Asset management
		Location management

* GSN = Geldservice Nederland before the re-branding to Geldmaat

geldmaat

ATM pooling ≠ independent ATM deployer

Geldmaat = ATM pooling		Independent ATM deployer
Bank owners		Non-bank owners
Cost center		Profit center
Socially motivated (3xA+S)		Commercially motivated

geldmaat

Why ATM Pooling?

Costs per transaction do nothing versus Cash2020 – Indicative and indexed

Impact Cash2020

Transactions | Cost per trx do nothing | Cost per trx Cash2020 | % cash transactions out of total
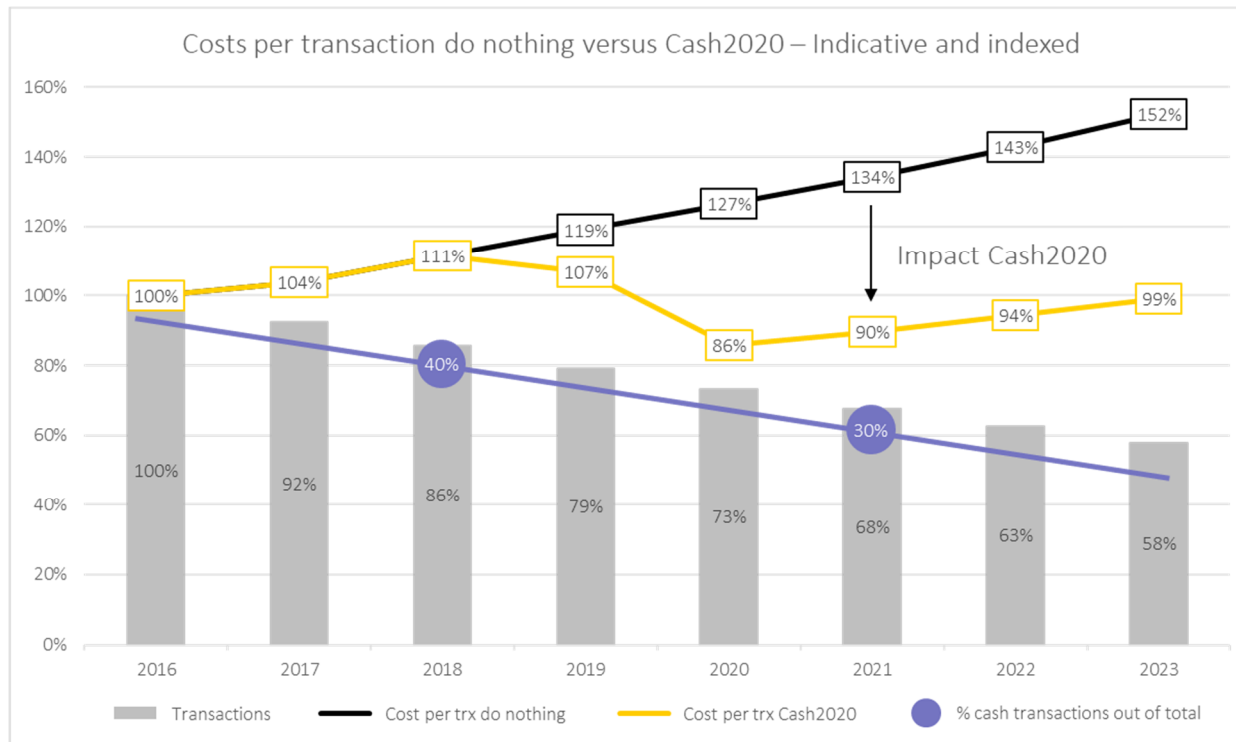
- ➤ ATM Pooling = consolidation in the foreground

- ➤ Positive effects are temporary

Rendering: Geldmaat in the streets

geldmaat

ATM pooling key milestones

12/2016
Exploring talks between Geldmaat and Bankomat
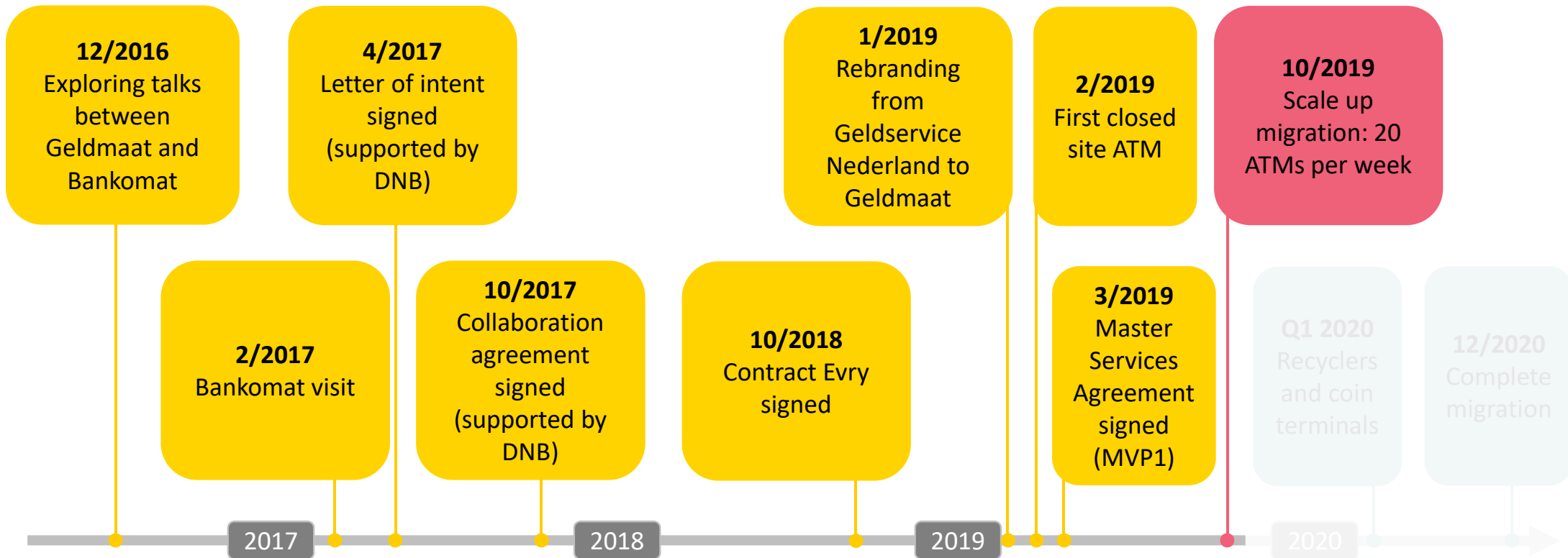
2/2017
Bankomat visit

4/2017
Letter of intent signed (supported by DNB)

10/2017
Collaboration agreement signed (supported by DNB)

10/2018
Contract Evry signed

1/2019
Rebranding from Geldservice Nederland to Geldmaat

2/2019
First closed site ATM

3/2019
Master Services Agreement signed (MVP1)

10/2019
Scale up migration: 20 ATMs per week

Q1 2020
Recyclers and coin terminals

12/2020
Complete migration

2017

2018

2019

2020

geldmaat

What does ATM pooling bring to end-users

- ➤ End-users are offered a standardized, easy-to-use service

- ➤ Number of deposit (recycling) terminals doubles

- ➤ Everyone has access to an ATM within a 5km distance

- ➤ High ATM-uptime due to a new processing platform

- ➤ A new security standard

- ➤ Assisted service at retail locations

- ➤ Transactions remain affordable

geldmaat

Lessons learned so far

➢ Keep momentum (in beginning)

➢ Governance structure focused on vivid decision-making

➢ Design one new standard (plug) and let each bank connect to the standard (socket)

➢ Make sure the end-state ATM-network is designed before you start migrating

➢ Make sure you have the details of all hardware being migrated

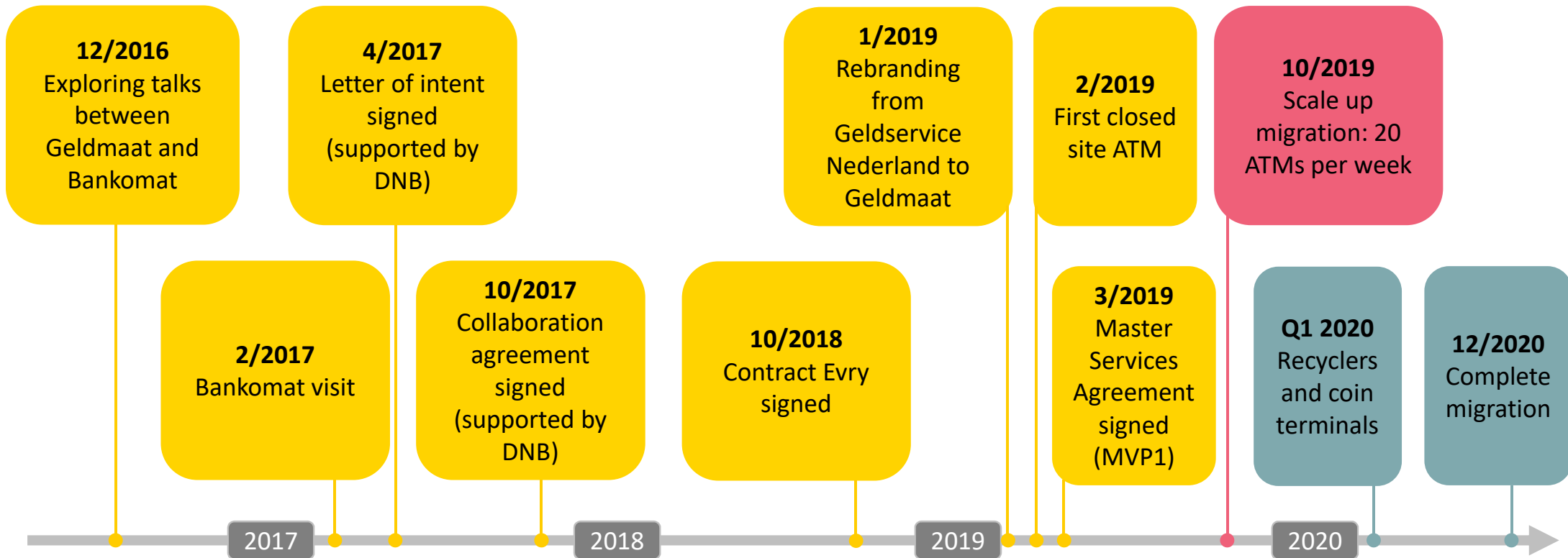➢ Try to get rid of legacy quickly: this is the time to build a new foundation

➢ As pooling company your focus should be on seamless integrating of vendor products/services

➢ Be aware of mixed interests of all parties involved to avoid slowing down during migration
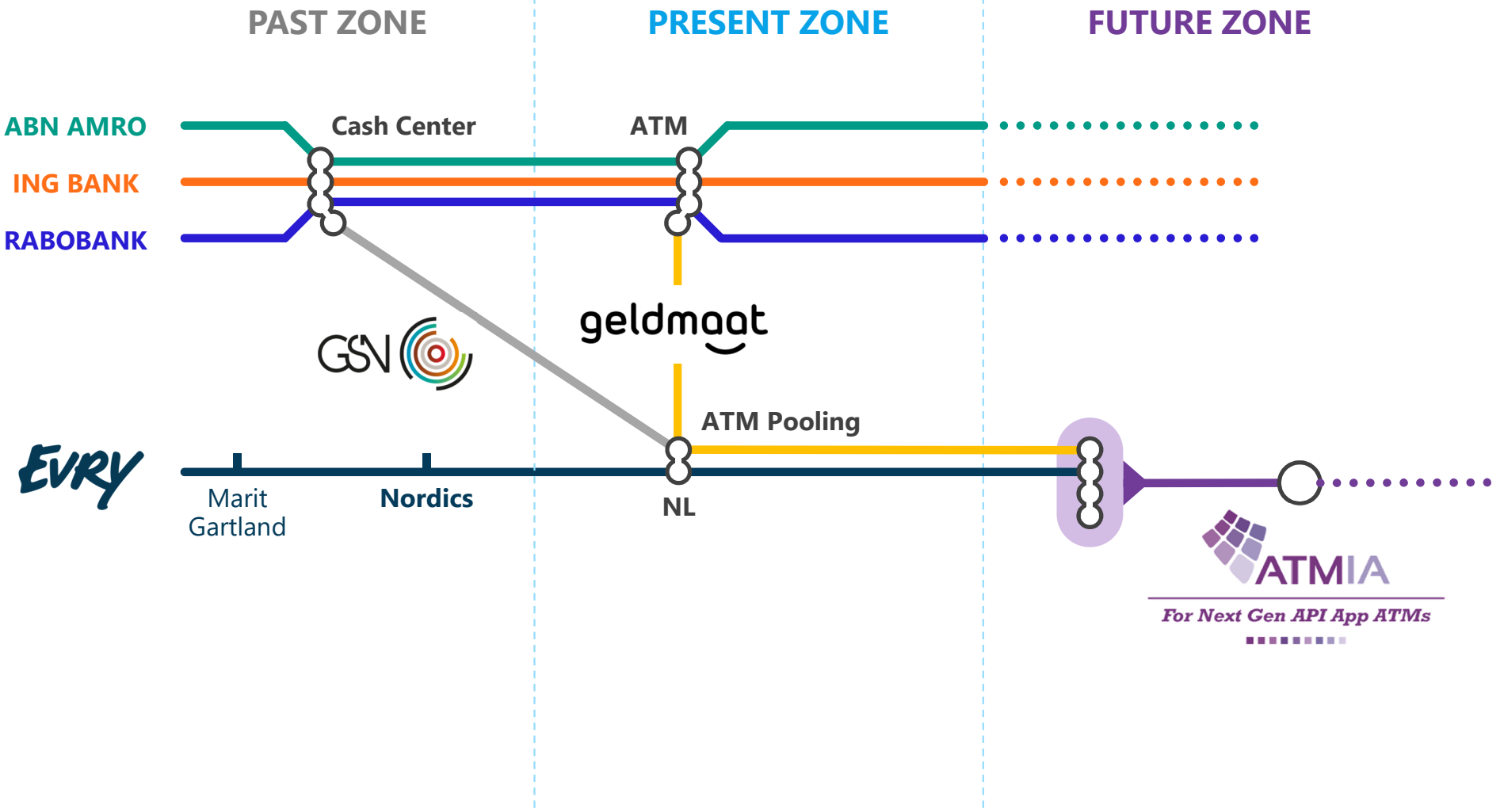
➢ 'Minimum viable product' approach works

geldmaat

ATM pooling key milestones

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2/2017
Bankomat visit

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Q1 2020
Recyclers and coin terminals

12/2020
Complete migration

2017 — 2018 — 2019 — 2020

geldmaat

Voxvote Question #2

Why would banks participate in an ATM pooling initiative?

geldmaat

PAST ZONE   PRESENT ZONE   FUTURE ZONE

ABN AMRO

ING BANK

RABOBANK

Cash Center   ATM

GSV

geldmaat

ATM Pooling

EVRY

Marit Gartland   Nordics   NL

ATMIA
For Next Gen API App ATMs

RXL

EVRY ATM Services

ATMIA – ROME (OCTOBER 15–17, 2019)

MARIT GARTLAND HEAD OF STRATEGY AND BUSINESS DEVELOPMENT

EVRY

Did

ATM services at a glance

Our ambition: The European ATM consolidator

Market position Nordics and the Netherlands*

#1

60 customers in 11 countries

ATM Customers footprint

Trondheim

Oslo

Stockholm

Helsinki

# of employees	Customer satisfaction	Employee satisfaction
75	**80%**	**84%**
Dec-2018	Q4 2018	Q4 2018

* SOURCE: COMPANY INFORMATION.

EVRY

Sensitivity: Internal
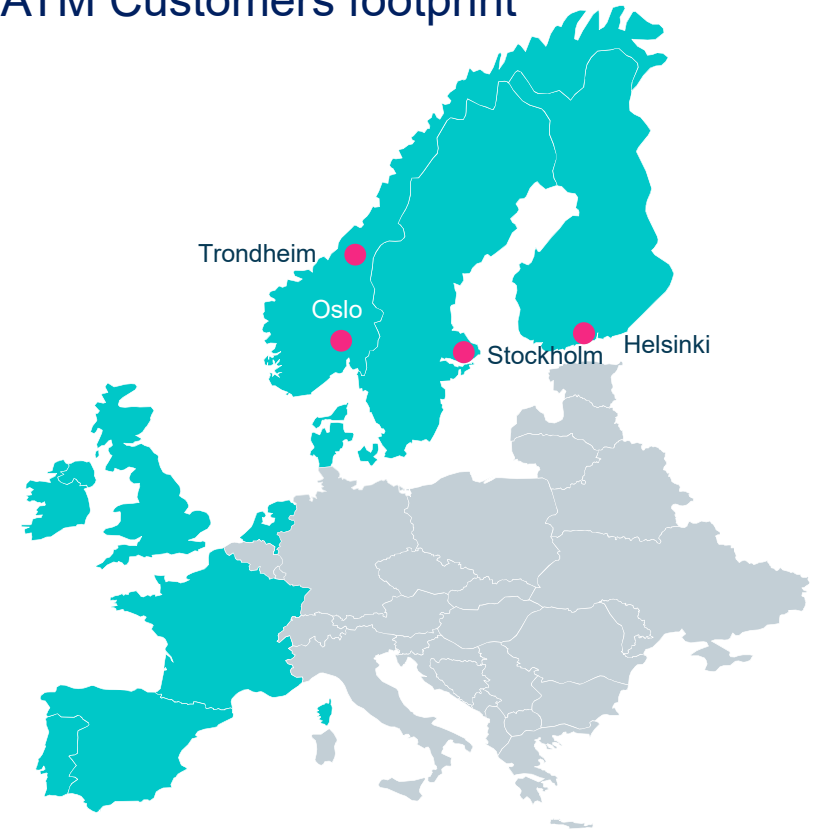
Past: EVRY

a Journey with our Nordic customers

1977
Proprietary Software

2005
- MultiVendor ATM Software
- Online Software Distribution

2008
Going international

2011
Bankomat ATM Pooling

2015 – 2017
13 countries

1991
Central Solution

2007
Managed Service

2009
Hardware buy-out

2013
Link certified
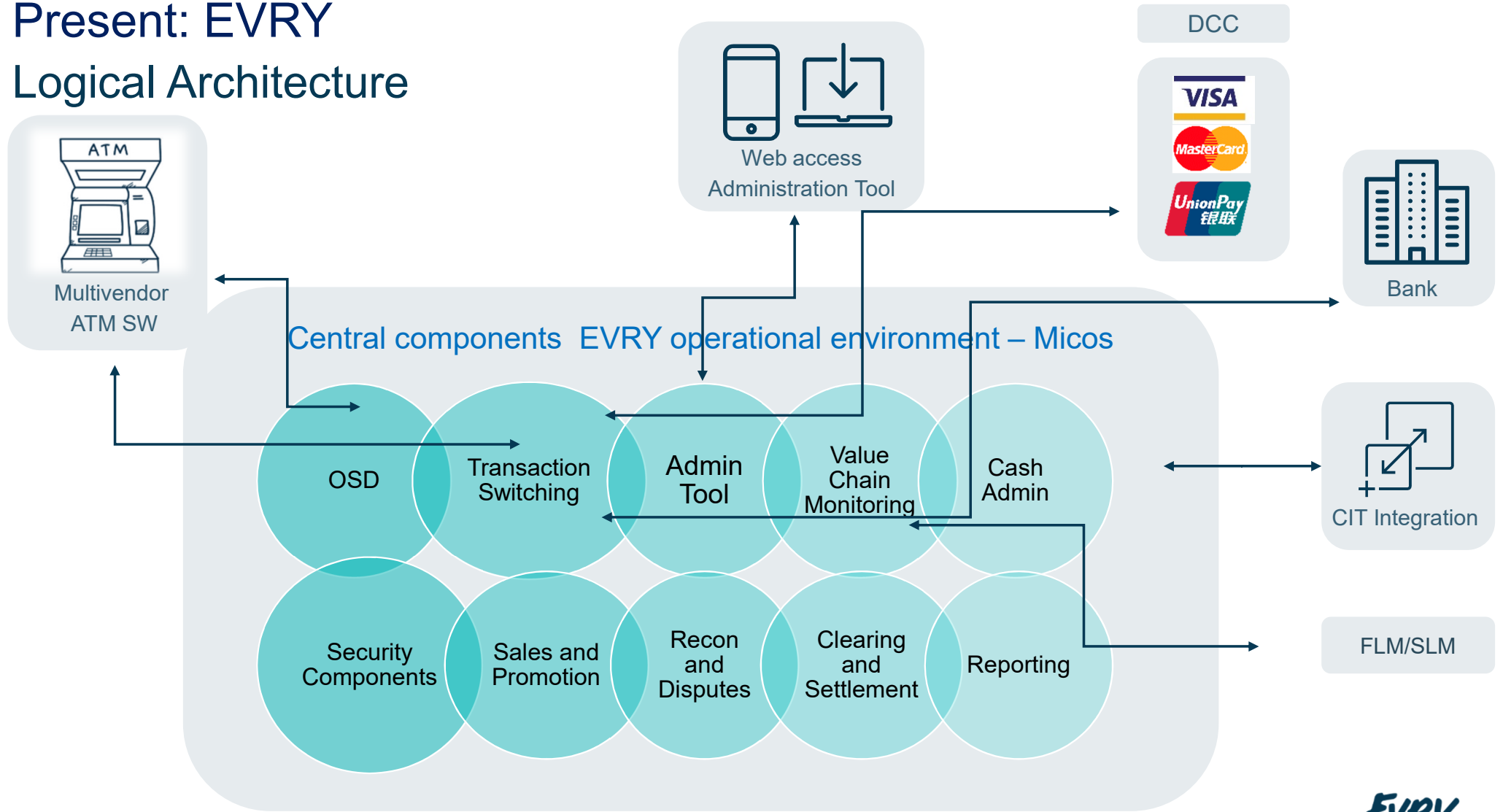
2018
Geldmaat

1980

2005

2010

2015

TODAY

EVRY

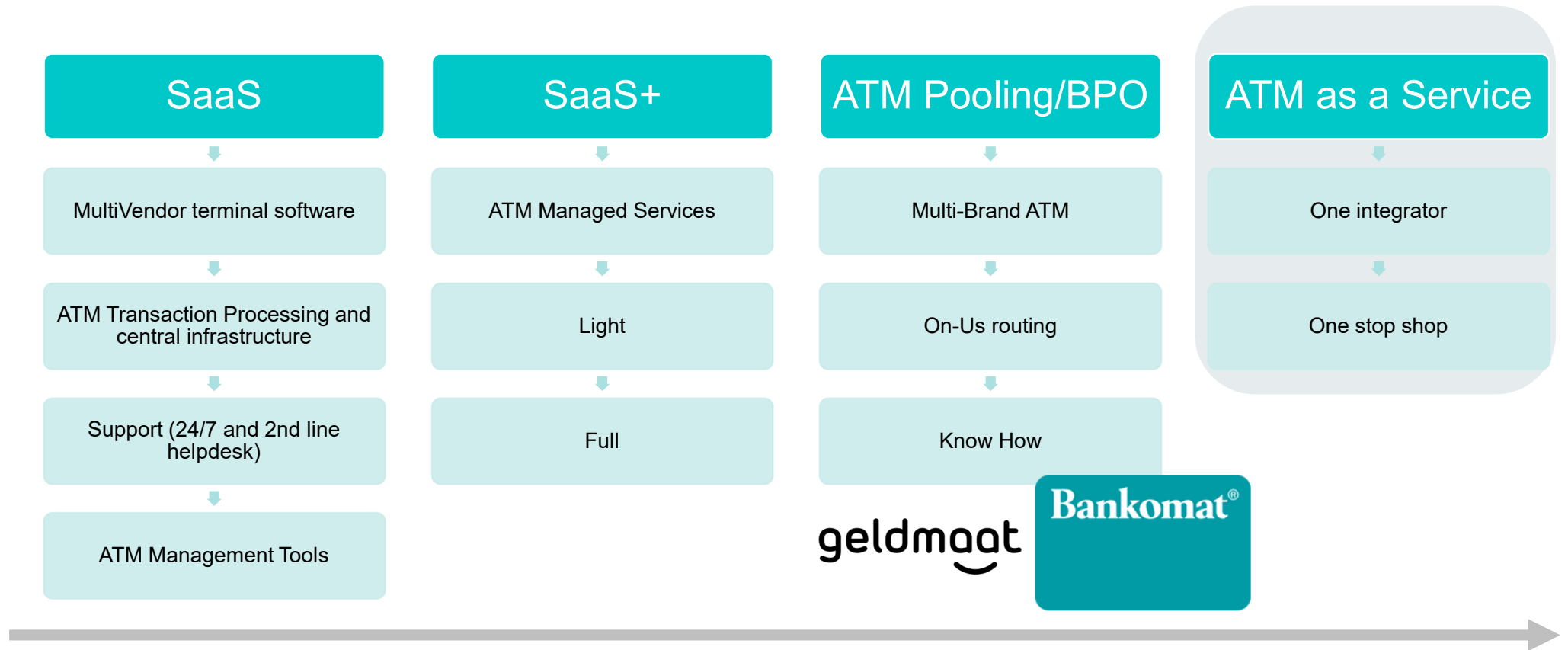# We reduce cost of cash in society

....and create a digital advantage into the future.

EVRY

Present: EVRY
Logical Architecture

Multivendor ATM SW

Web access Administration Tool

DCC

VISA
MasterCard
UnionPay 银联

Bank

Central components EVRY operational environment – Micos

OSD

Transaction Switching

Admin Tool

Value Chain Monitoring

Cash Admin

Security Components

Sales and Promotion

Recon and Disputes

Clearing and Settlement

Reporting

CIT Integration

FLM/SLM

EVRY

Present: Delivery Models

SaaS	SaaS+	ATM Pooling/BPO	ATM as a Service
MultiVendor terminal software	ATM Managed Services	Multi-Brand ATM	One integrator
ATM Transaction Processing and central infrastructure	Light	On-Us routing	One stop shop
Support (24/7 and 2nd line helpdesk)	Full	Know How	
ATM Management Tools			

geldmaat   **Bankomat**®

EVRY

Voxvote Question #3:

Which Delivery Model would you prefer?

EVRY

PAST ZONE   PRESENT ZONE   FUTURE ZONE

ABN AMRO   Cash Center   ATM

ING BANK

RABOBANK

geldmaat

ATM Pooling

EVRY

Marit Gartland   Nordics   NL

WIND

Rick Anderson   Multi-Industry   ATM Industry   Hypervisor

ATMIA

For Next Gen API App ATMs

ATMIA Europe ATM & Payments Innovation Summit
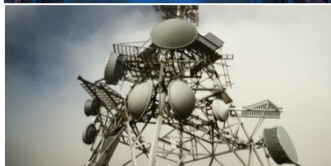## *The Journey Continues*
15 - 17 October 2019

Rick Anderson

Delivery Director, Professional Services

WIND

**WHEN IT MATTERS,
IT RUNS ON WIND RIVER.**

Wind River is the world's largest embedded SW company

FOUNDED
1981

ACQUIRED BY
INTEL
2009

INDEPENDENT
2018

FOR NEARLY
40 YEARS
WIND RIVER
HAS BEEN
THE LEADER
FOR PROVIDING
OPERATING
ENVIRONMENTS TO THE
MISSION
CRITICAL
INDUSTRIES
WHERE FAILURE IS NOT
AN OPTION

#1 COMMERCIAL RTOS, EMBEDDED LINUX

2.5B EMBEDDED DEVICES DEPLOYED

500+ CERTIFIED AIRCRAFT MODELS

100M VEHICLES WITH WIND RIVER SW

WIND

Industry #1 - Mobile - Open Handset Alliance Vision

- 11 years ago…the feature phone was considered "state-of-the-art"

- What would it take to build a better mobile phone - a "smart phone"?

- A commitment to openness, a shared vision for the future, and concrete plans to make the vision a reality

- Welcome to the Open Handset Alliance™, a group of 84 technology and mobile companies who have come together to accelerate innovation in mobile and offer consumers a richer, less expensive, and better mobile experience

- Together we have developed Android™, the first complete, open, and free mobile platform

- We are committed to commercially deploy handsets and services using the Android Platform

WHEN IT MATTERS, IT RUNS ON WIND RIVER.

Industry #2 – Oil/Gas - OPAF Vision

- A standards-based, open, secure and interoperable process control architecture which:
  - Enables access to a leading-edge capability
  - Allows integration of best-in-class components
  - Preserves asset owners' application software; Significantly lowers cost of future replacement
  - Promotes innovation and value creation
  - Applies across multiple process industries
  - Is commercially available
  - Is an inclusive collaboration between users and suppliers to provide the framework for an open systems architecture innovation and value creation

WHEN IT MATTERS, IT RUNS ON WIND RIVER.

Industry #3 – ATM – NextGen ATM Vision

- Just like mobile and oil/gas, this trend is happening in auto, aerospace and defense, and other industries

- The ATMIA can learn from this

- The NextGen ATM is travelling down a similar path

WHEN IT MATTERS, IT RUNS ON WIND RIVER.

WIND

One Unofficial Vision of the NextGen ATM

- **Open** – less vendor lock-in, more easily customizable, better interoperability

- Accelerated **innovation** will result in new **value creation**

- **New customer features** – mobile interface, micro services

- **Richer operator features** - app stores, improved software deployment, improved security, leading edge capabilities like orchestration

- Improved **preservation of assets** (a support cycle that matches typical ATM life)

- New level of industry **collaboration**

- Life in the fast lane – everything starts **moving more quickly**

- Less expensive? Time will tell…
  - There will be **new revenue generation opportunities**

WHEN IT MATTERS, IT RUNS ON WIND RIVER.

WIND

VoxVote Question #4

- How far along are you with the Windows 10 migration?
  - Under Research
  - Preparing
  - Business Case
  - BC Approved & Planning
  - Currently Migrating
  - Migrated to Windows 10

WHEN IT MATTERS, IT RUNS ON WIND RIVER.

WIND

VoxVote Question #5

- Have you heard about hypervisors before?
  - Yes
  - No

WHEN IT MATTERS, IT RUNS ON WIND RIVER.

WIND

Hypervisor

- A hypervisor is software that allows one or more operating systems to run at the same time on the same hardware

- Or, a hypervisor is software that separates a computer's operating system and applications from the underlying physical hardware

- It's a form of virtualization software
  - This happens through the creation of virtual machines - Host OS & Guest OSs

- Why we should embrace hypervisors…
  - To take a new OS (like Windows 10) and support it on old hardware (like your old Intel Motherboard)
  - To allow co-existence and isolation of multiple OSs/applications (ATM financials in one virtual machine and new micro-services / applications in another)
  - Allows faster software upgrades and less ATM downtime

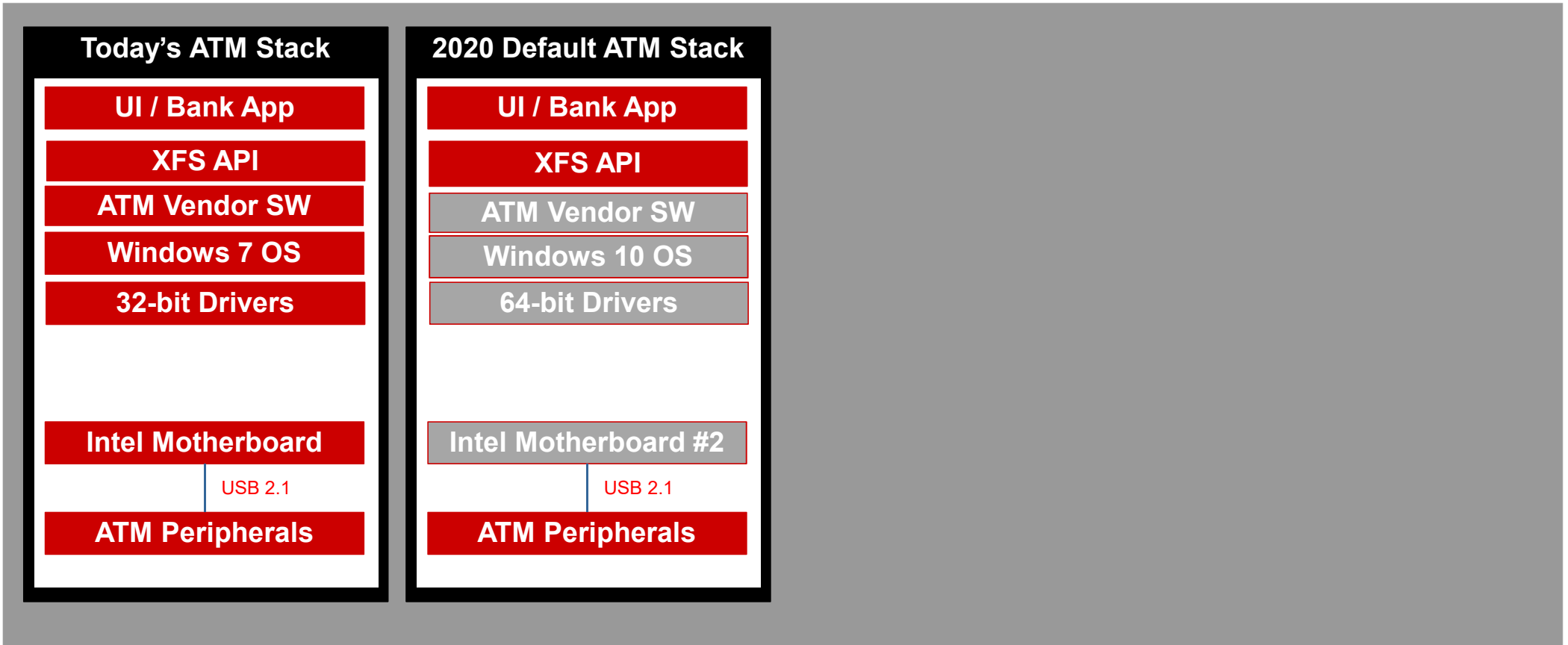**WHEN IT MATTERS, IT RUNS ON WIND RIVER.**

WIND

What can we do today?

- Wind River introduced the hypervisor concept to ATMs
  - Solutions up and running on a few NCR and Diebold ATMs
  - Added Linux + Hypervisor between the HW and Windows OS

- Today's challenge – ATM provider support
  - Need to convince ATM vendors to take a look at Hypervisors as a potential technology solution
  - Make your voice heard - Talk to your ATM provider!

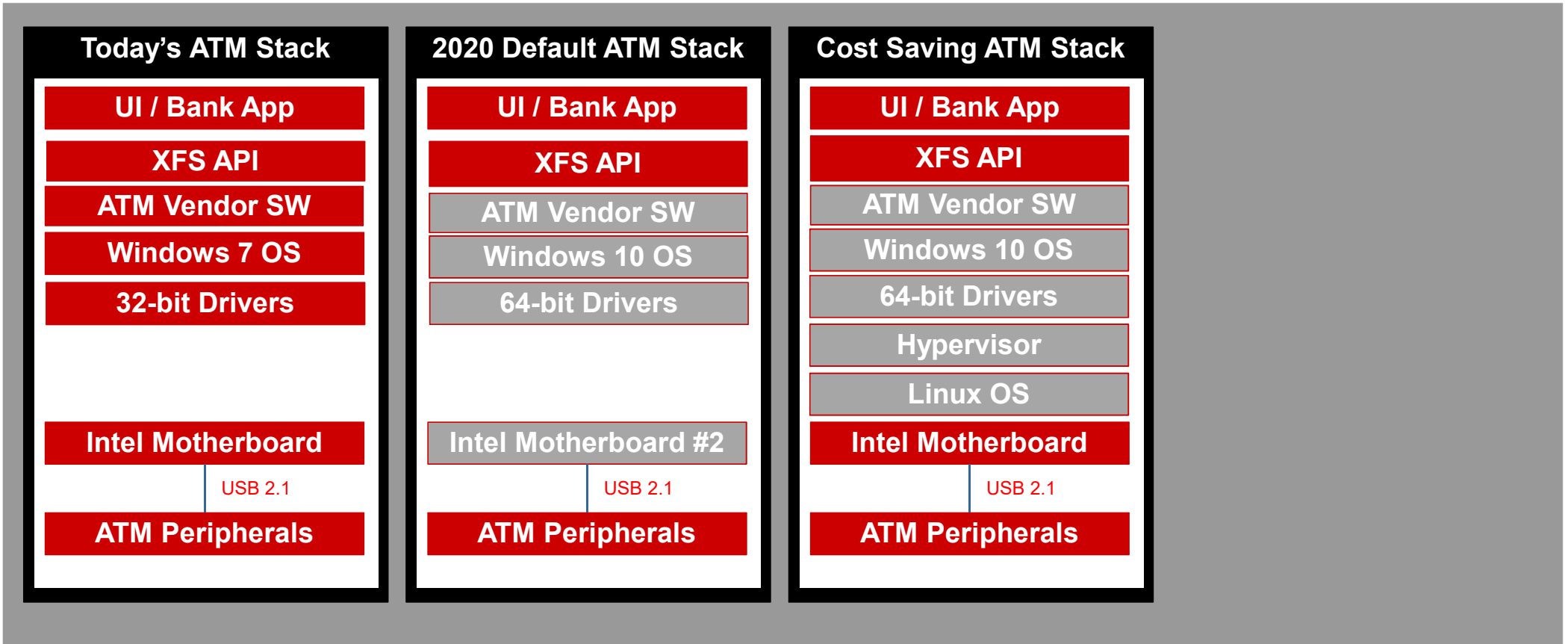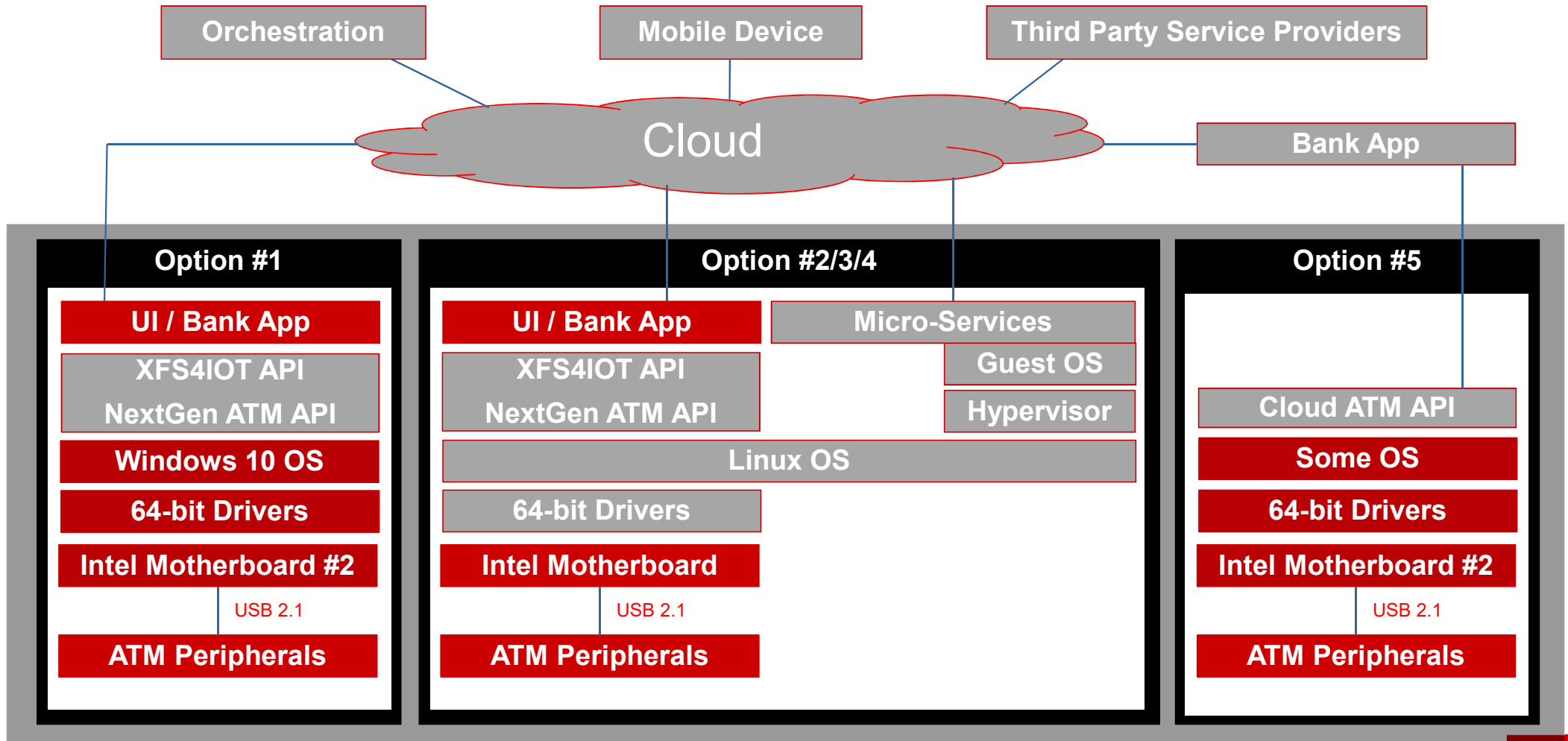**WHEN IT MATTERS, IT RUNS ON WIND RIVER.**

WIND

Short Term Architecture

Today's ATM Stack

- UI / Bank App
- XFS API
- ATM Vendor SW
- Windows 7 OS
- 32-bit Drivers

Intel Motherboard

USB 2.1

ATM Peripherals

WHEN IT MATTERS, IT RUNS ON WIND RIVER.

WIND

Short Term Architecture

Today's ATM Stack	2020 Default ATM Stack
UI / Bank App	**UI / Bank App**
XFS API	**XFS API**
ATM Vendor SW	**ATM Vendor SW**
Windows 7 OS	**Windows 10 OS**
32-bit Drivers	**64-bit Drivers**
Intel Motherboard	**Intel Motherboard #2**
USB 2.1	USB 2.1
ATM Peripherals	**ATM Peripherals**

WHEN IT MATTERS, IT RUNS ON WIND RIVER.

WIND

Short Term Architecture

Today's ATM Stack	2020 Default ATM Stack	Cost Saving ATM Stack
UI / Bank App	UI / Bank App	UI / Bank App
XFS API	XFS API	XFS API
ATM Vendor SW	ATM Vendor SW	ATM Vendor SW
Windows 7 OS	Windows 10 OS	Windows 10 OS
32-bit Drivers	64-bit Drivers	64-bit Drivers
		Hypervisor
		Linux OS
Intel Motherboard	Intel Motherboard #2	Intel Motherboard
USB 2.1	USB 2.1	USB 2.1
ATM Peripherals	ATM Peripherals	ATM Peripherals

WHEN IT MATTERS, IT RUNS ON WIND RIVER.

WIND

Mid to Long Term Architecture

Orchestration

Mobile Device

Third Party Service Providers

Cloud

Bank App

Option #1

| UI / Bank App |
| XFS4IOT API |
| NextGen ATM API |
| Windows 10 OS |
| 64-bit Drivers |
| Intel Motherboard #2 |
| USB 2.1 |
| ATM Peripherals |

Option #2/3/4

| UI / Bank App |
| XFS4IOT API |
| NextGen ATM API |
| 64-bit Drivers |
| Intel Motherboard |
| USB 2.1 |
| ATM Peripherals |

Micro-Services

Guest OS

Hypervisor

Linux OS

Option #5

| Cloud ATM API |
| Some OS |
| 64-bit Drivers |
| Intel Motherboard #2 |
| USB 2.1 |
| ATM Peripherals |

WHEN IT MATTERS, IT RUNS ON WIND RIVER.

WIND

VoxVote Question #6

- Are Hypervisors a potential solution for our industry?
  - Yes
  - Don't Know
  - No
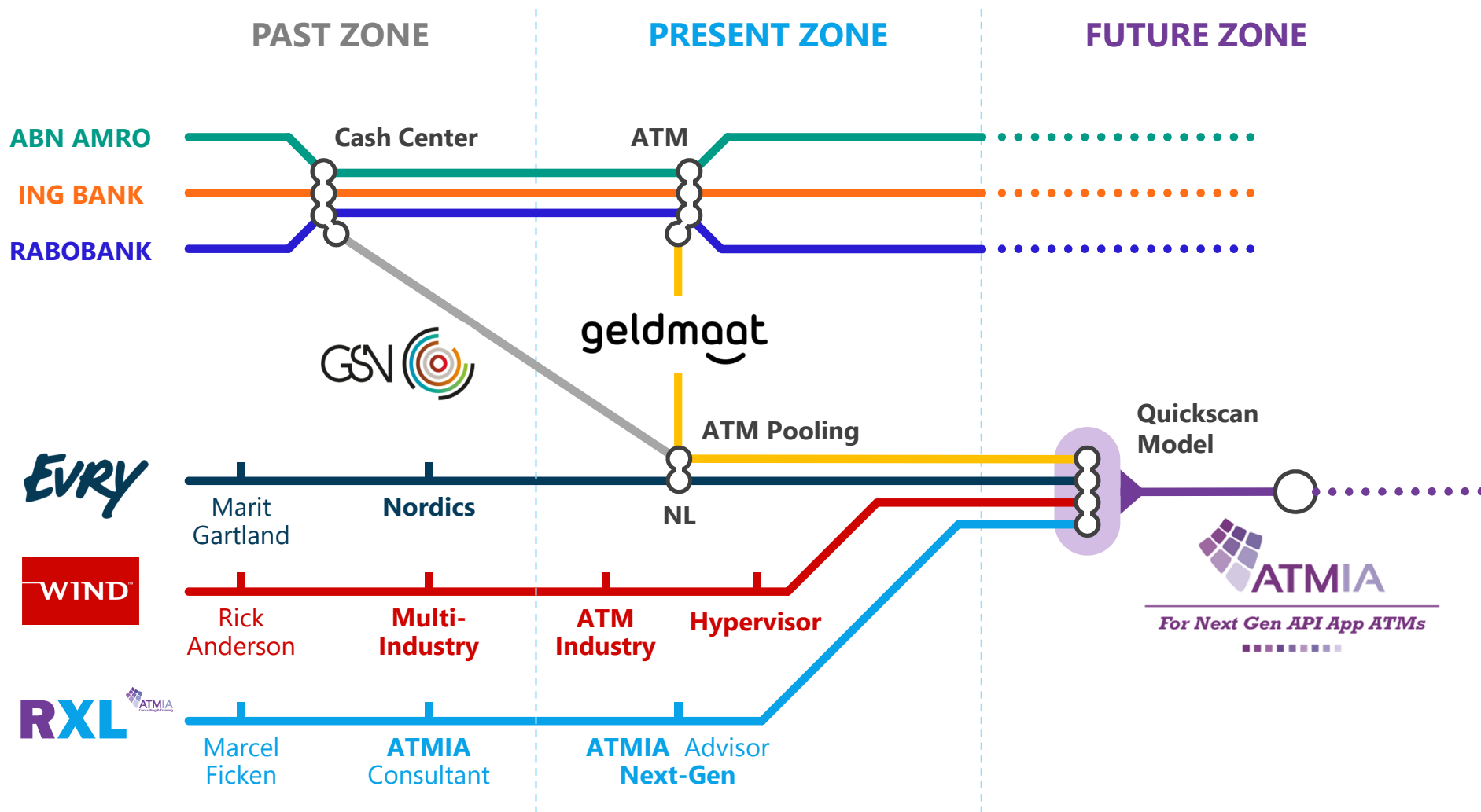
WHEN IT MATTERS, IT RUNS ON WIND RIVER.

WIND

Connect browser (mobile, tablet, pc) to VoxVote and ...

go to
live.voxvote.com

VoxVote Question #7

What do you know about NextGen?

Next Gen ATM Consortium

ATMIA

For Next Gen API App ATMs

BLUEPRINT 2019

Architecture Basics

Explained in 3 minutes

Created by RXL
RXL2020.EU

Connect browser (mobile, tablet, pc) to VoxVote and …

go to
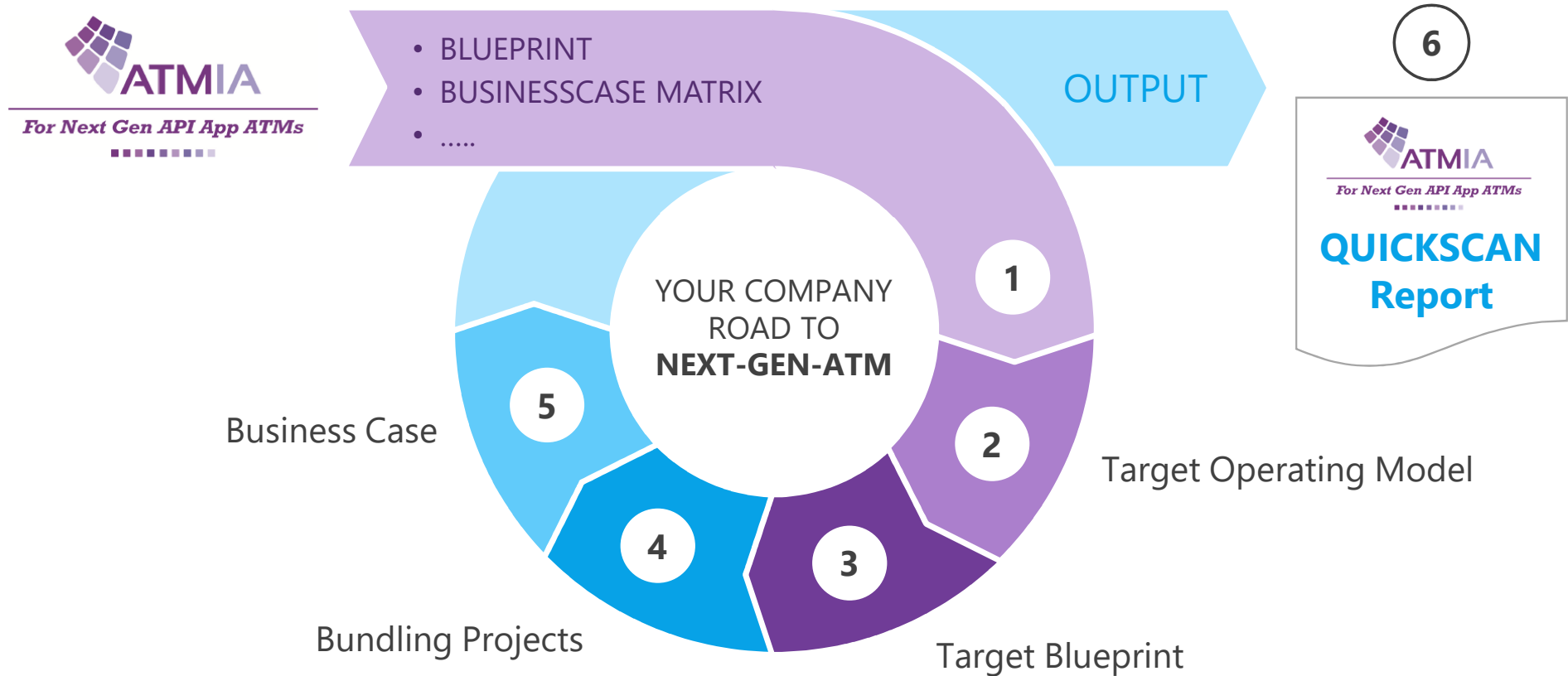**live.voxvote.com**

VX VOXVote

Enter 5 digit event number

64871

Ok, next

VoxVote Question #8

Which of the follow Next-Gen ATM key-questions do you have?

Next-Gen-ATM QUICKSCAN Model

How YOUR COMPANY can become Next-Gen-ATM ready !

- BLUEPRINT
- BUSINESSCASE MATRIX
- .....

OUTPUT

6

QUICKSCAN
Report

YOUR COMPANY
ROAD TO
NEXT-GEN-ATM

1

2 Target Operating Model

3 Target Blueprint

4 Bundling Projects

5 Business Case

Next-Gen-ATM QUICKSCAN Model - EXAMPLE

How YOUR COMPANY can become Next-Gen-ATM ready !

geldmaat

ATMIA
For Next Gen API App ATMs

- BLUEPRINT
- BUSINESSCASE MATRIX
- .....

1

YOUR COMPANY
ROAD TO
NEXT-GEN-ATM

2

Target Operating Model

RXL ATMIA

Step-2: Target Operating Model

geldmaat

Banknotes

Make

Partner/Buy

Coins

Buy

3. Infra layer

Make:
- Inventory forecast/ordering
- Technical maintenance
- Data/transaction analytics
- Cash processing analytics
- Location/GEO optimization

Partner/Buy:
- Network gateway / acquiring license (EVO)
- Monitoring platform (EVRY)
- Cash processing platf. (CPS)

Coins — Buy:

Coin terminals as a Service
- Geldmaat only decides on locations and branding
- Terminal and cash ownership outsourced
- All-in contract based on transaction-fee
- Management tool for KPI/analysis (read-only)

2. App services layer

Make:
- n/a

Partner/Buy:
- ATM driving (EVRY)
- Appication server (EVRY)
- Testing & certification (EVRY)

1. End-point devices layer

Make:
- GMT user interface (based on EVRY s/w)

Partner/Buy:
- Multi vendor s/w (EVRY)
- Device h/w, OS, firmware: NCR, DN, Gunnebo

RXL ATMIA Consulting & training

Next-Gen-ATM QUICKSCAN Model - EXAMPLE

How YOUR COMPANY can become Next-Gen-ATM ready !

ATMIA
For Next Gen API App ATMs

- BLUEPRINT
- BUSINESSCASE MATRIX
- .....

YOUR COMPANY
ROAD TO
NEXT-GEN-ATM

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2 Target Operating Model

3 Target Blueprint

Step-3: Target BLUEPRINT

EVRY

	Target Operating Model	
	FI/Deployer (Geldmaat)	**Processor** (Evry)
3. **Infra layer**	n/a	Network gateway
2. **App services layer**	n/a	ATM driving
1. **End-point devices layer**	User Interface (ATM-APP)	Multi vendor s/w (ATM Appliance)

API

ISO20022

RXL

Next-Gen-ATM QUICKSCAN Model - EXAMPLE

How YOUR COMPANY can become Next-Gen-ATM ready !

For Next Gen API App ATMs

- BLUEPRINT
- BUSINESSCASE MATRIX
- .....

1

2 Target Operating Model

3 Target Blueprint

4

Bundling Projects

YOUR COMPANY ROAD TO **NEXT-GEN-ATM**

Step-4: Bundling Projects
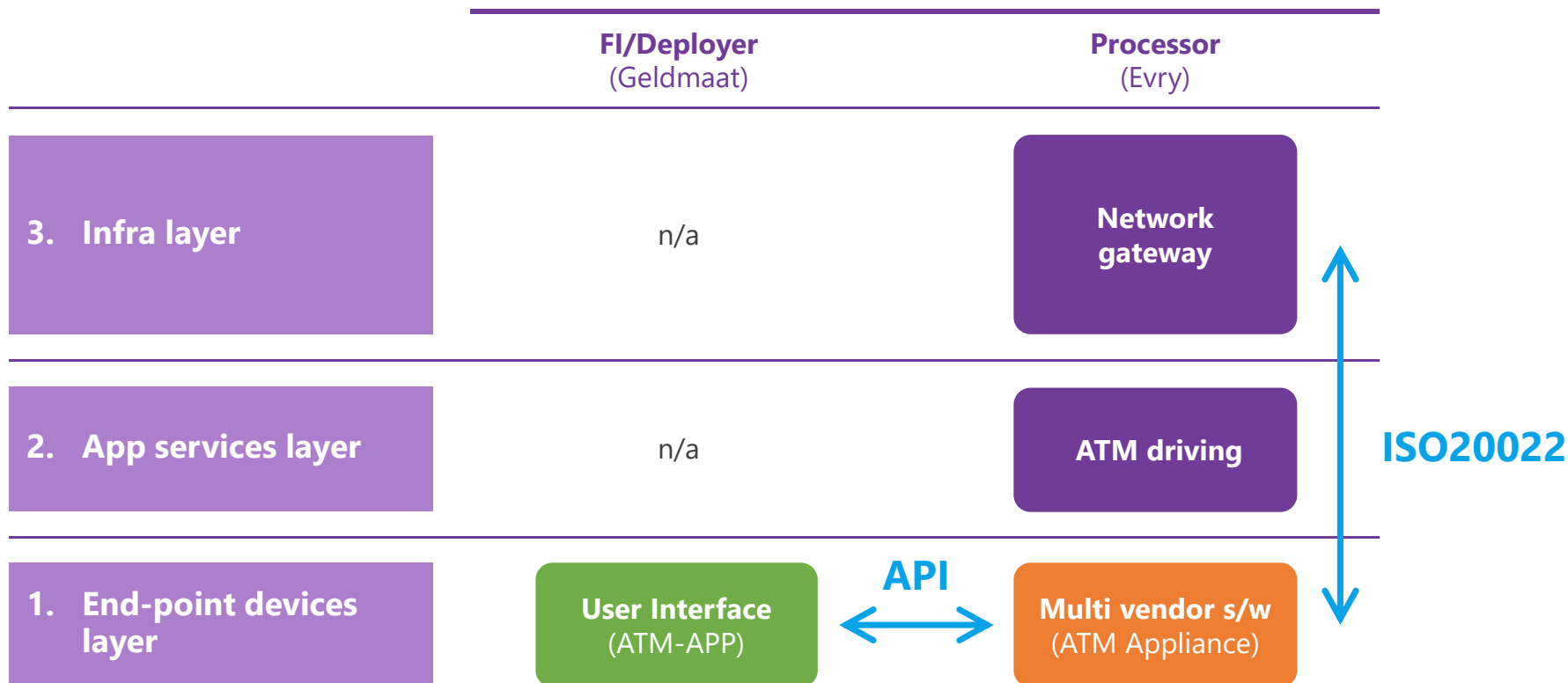
WIND

Today's ATM Stack

| UI / Bank App |
| XFS API |
| ATM Vendor SW |
| Windows 7 OS |
| 32-bit Drivers |

| Intel Motherboard |
| USB 2.1 |
| ATM Peripherals |

Cost Saving ATM Stack

| UI / Bank App |
| XFS + NGA API |
| ATM Vendor SW |
| Windows 10 OS |
| 64-bit Drivers |
| Hypervisor |
| Linux OS |

| Intel Motherboard |
| USB 2.1 |
| ATM Peripherals |

Next-Gen ATM-APP using NGA API

Upgrade to Windows 10 using hypervisor technology

Leverage on current ATM appliance hardware

RXL ATMIA

Next-Gen-ATM QUICKSCAN Model - EXAMPLE

How YOUR COMPANY can become Next-Gen-ATM ready !

ATMIA
For Next Gen API App ATMs

- BLUEPRINT
- BUSINESSCASE MATRIX
- .....

YOUR COMPANY ROAD TO **NEXT-GEN-ATM**

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2 Target Operating Model

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RXL ATMIA
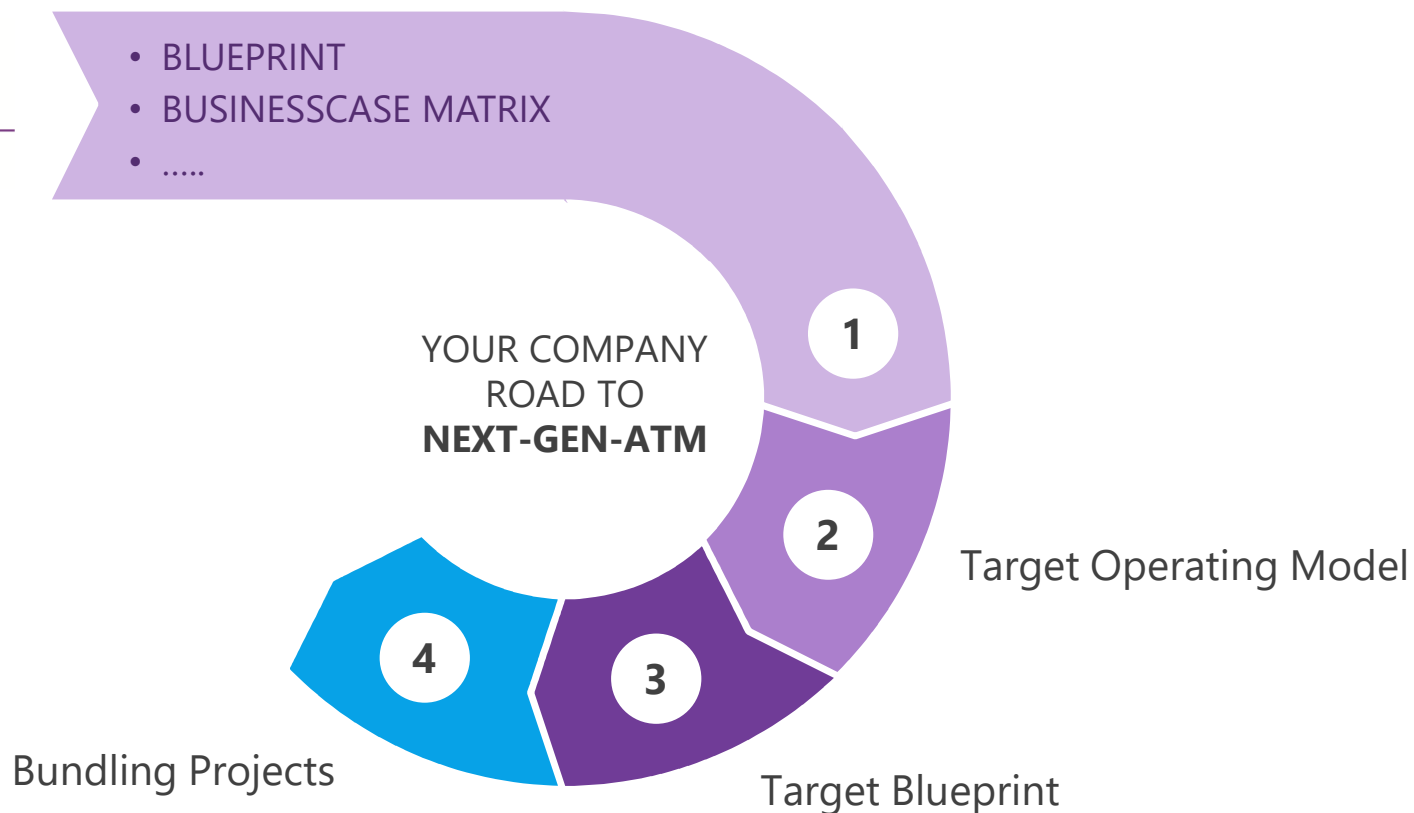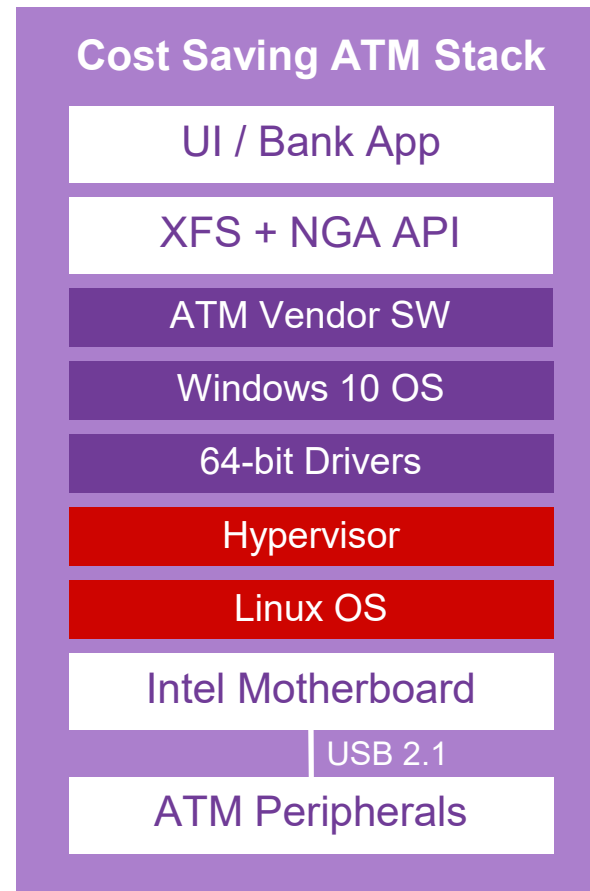
Step-5: Business Case Economic Matrix

21 items
Higher
REVENUE

New Services
like Instant Cash
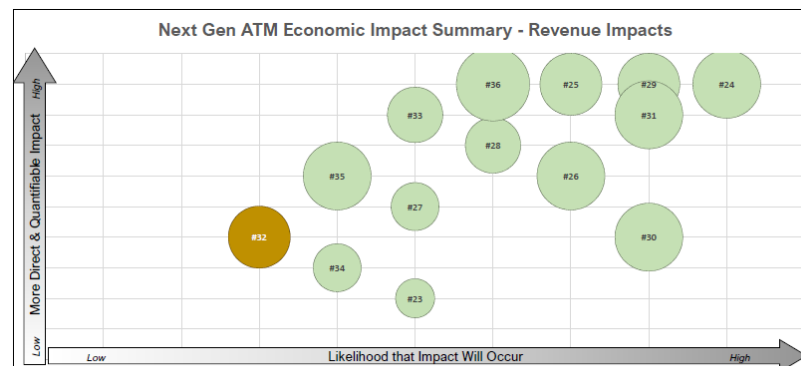
Next Gen ATM Economic Matrix
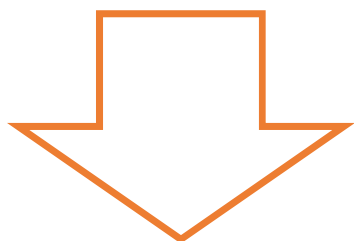
AVG 20-40% Lower cost
using **O/S Hypervisor**
compared to a Hardware upgrade

One-Time APP Development
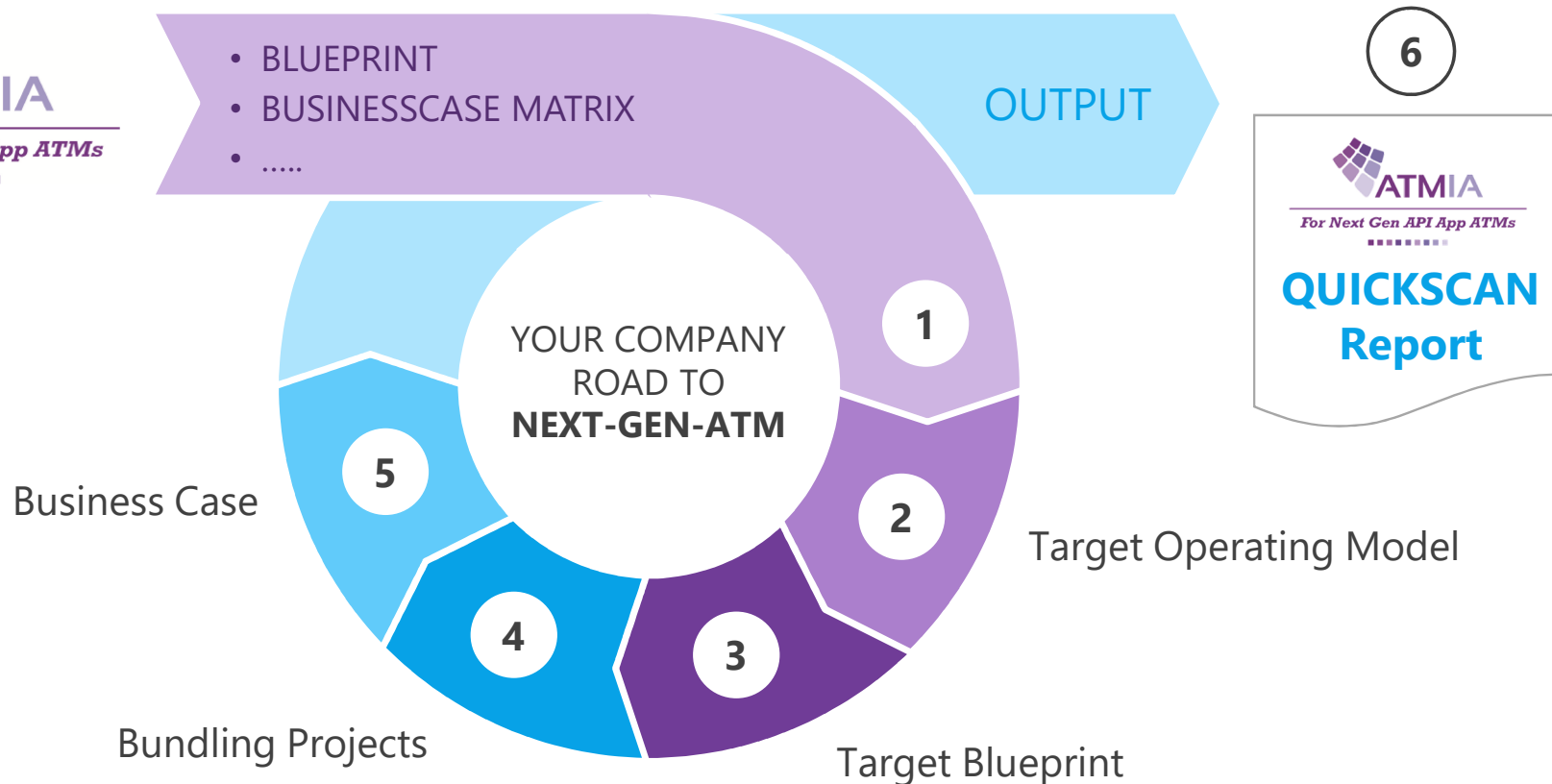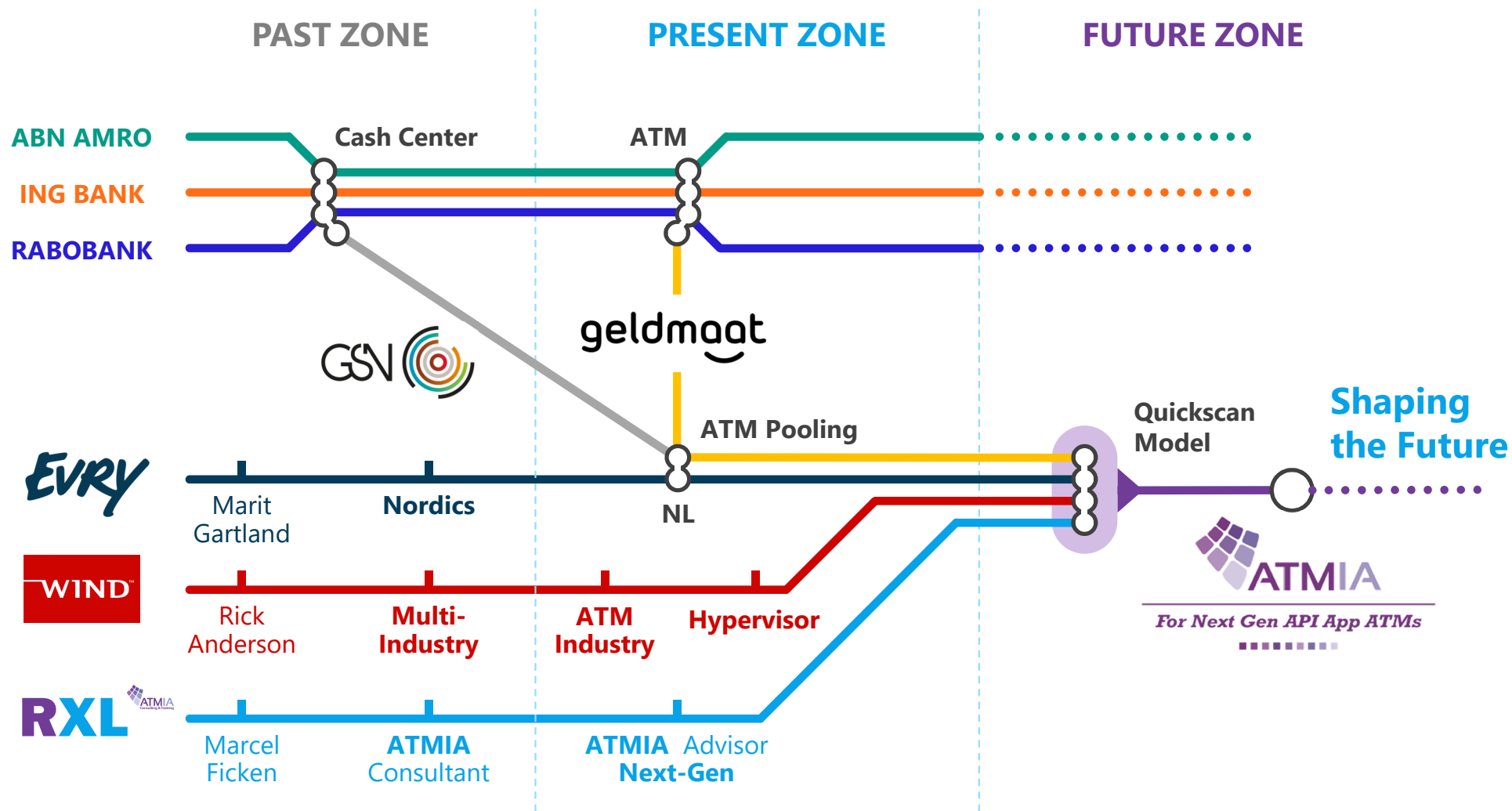with same User Experience
for ATM device and Mobile (COD)

22 items
Lower
COST
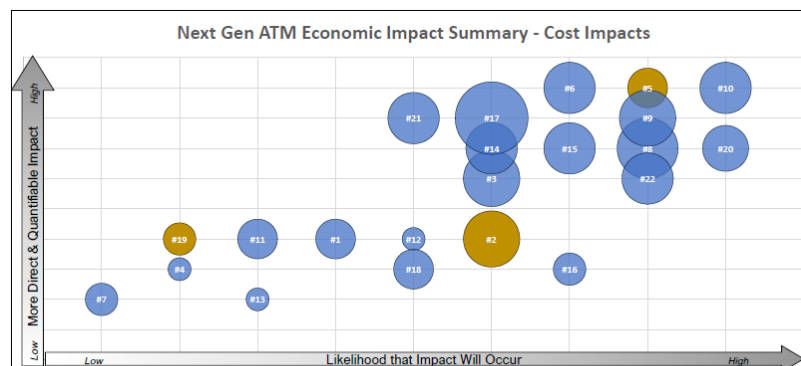
Next Gen ATM Economic Matrix

Next-Gen-ATM QUICKSCAN Model - REPORT

How YOUR COMPANY can become Next-Gen-ATM ready !

- BLUEPRINT
- BUSINESSCASE MATRIX
- .....

OUTPUT

6

QUICKSCAN Report

YOUR COMPANY ROAD TO **NEXT-GEN-ATM**

1

2 Target Operating Model

3 Target Blueprint

4 Bundling Projects

5 Business Case

RXL

PAST ZONE • PRESENT ZONE • FUTURE ZONE

ABN AMRO — Cash Center — ATM

ING BANK

RABOBANK

GSN

geldmaat

ATM Pooling

EVRY
Marit Gartland — Nordics — NL

WIND
Rick Anderson — Multi-Industry — ATM Industry — Hypervisor

RXL
Marcel Ficken — ATMIA Consultant — ATMIA Next-Gen — Advisor

Quickscan Model

Shaping the Future

ATMIA
For Next Gen API App ATMs

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Connect browser (mobile, tablet, pc) to VoxVote and ...

go to
live.voxvote.com

VOXvote

Enter 5 digit event number

64871

Ok, next
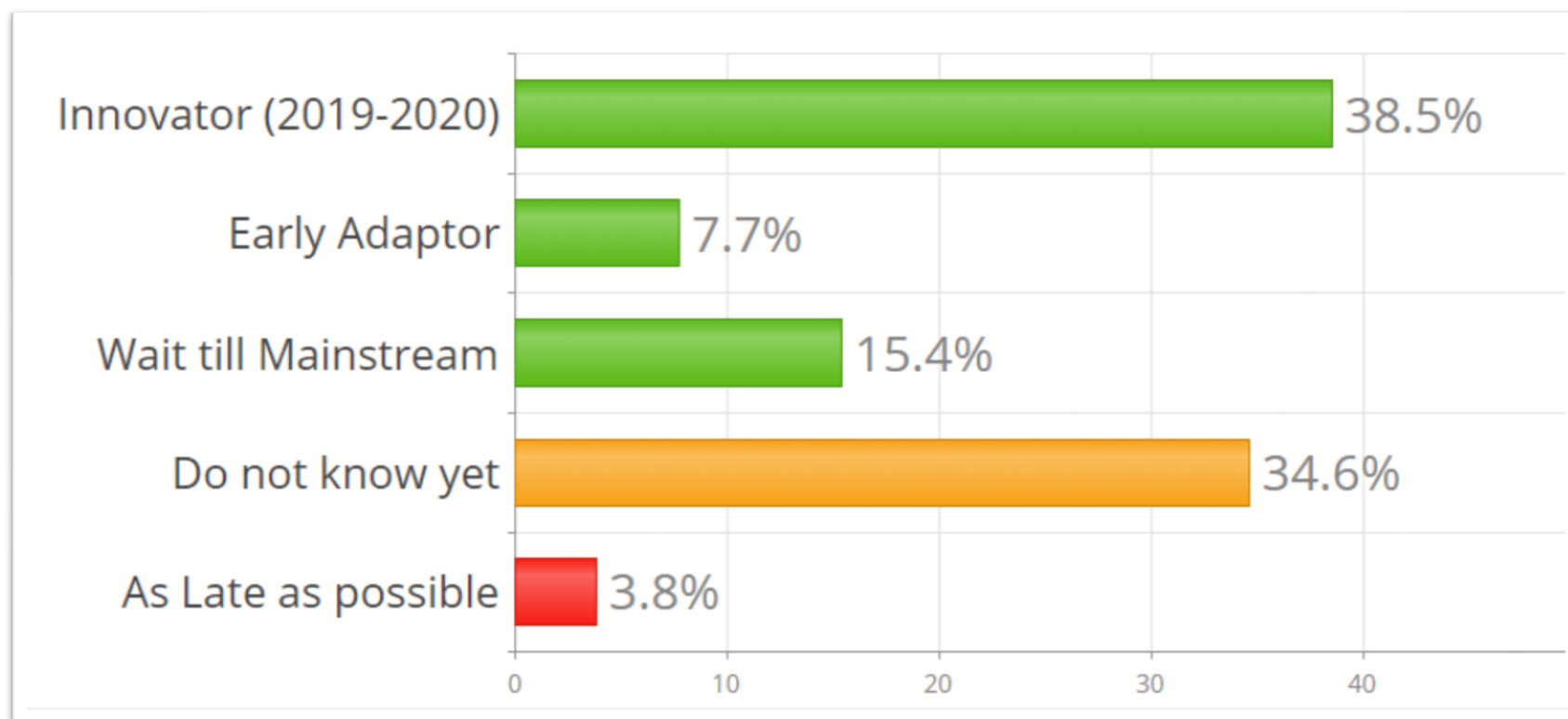
VoxVote Question

Shaping the Future Together

Deployer / Provider Questions (9-12)

Market – Customer Questions (13-17)

Next-Gen ATM Level of Priority (18)

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What is your Next-Gen ATM level of priority?

Workshop 2 : All Roads Lead to Next-Gen ATMIA EU 2019 Rome - Voting Results

Next Steps

- **Innovators (early adaptors) participate in Next-Gen ATM - Proof of Concept**

- **Download Next-Gen ATM Quickscan Model Whitepaper (No #1 of Sept 2019)**

  https://www.atmia.com/whitepapers/next-gen-atm-quickscan-2019--marcel-ficken/2355/

- **Join the Next-Gen ATM Consortium and Implementation Workinggroups**

- **Visit the ATMIA Booth for more information**

PAST ZONE   PRESENT ZONE   FUTURE ZONE

ABN AMRO   Cash Center   ATM

ING BANK

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GSV   geldmaat   Paul Marselis
Roel van Anholt

ATM Pooling   Quickscan   Shaping
Model   the Future

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Anderson   Industry   Industry

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Ficken   Consultant   Next-Gen

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