Mobile Payments

market scenarios and strategic options for service providers

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Agenda

- Mobile payments facts
- Ericsson strategic vision
- Architecture components & business models
- Conclusions

Ericsson

NETWORKS LEADERSHIP
- #1 GSM networks supplier (> 300 networks WW)
- #1 in WCDMA (129 references out of 234)
- Leading HSPA supplier
- Leader in fixed and IP networks

Redback NETWORKS
AN ERICSSON COMPANY

Information & Collaboration

SERVICES LEADERSHIP
- #1 in telecom services
  - 29,500 services professionals
  - 15% growth YoY (end 2007)
- #1 in managed services

MOBILE HANDSETS (SonyEricsson)
- 50/50 partnership with Sony
- #4 in mobile handsets
- #1 in mobile music (Walkman series)

WORLDWIDE PRESENCE
- over 140 countries
  - Supporting networks with > 1 Bn subs

Sony Ericsson

TANDBERG television
Part of the Ericsson Group

TV

Mobile Media

The world leader in convergent communications

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mobile payments in Italy

- **Nov 2007** PosteMobile, the MVNO launched by Poste Italiane, launched remote P2P (peer-to-peer) mobile payments
  - payments between PostePay customers
  - e-topup of Prapaid accounts
  - SIM based service

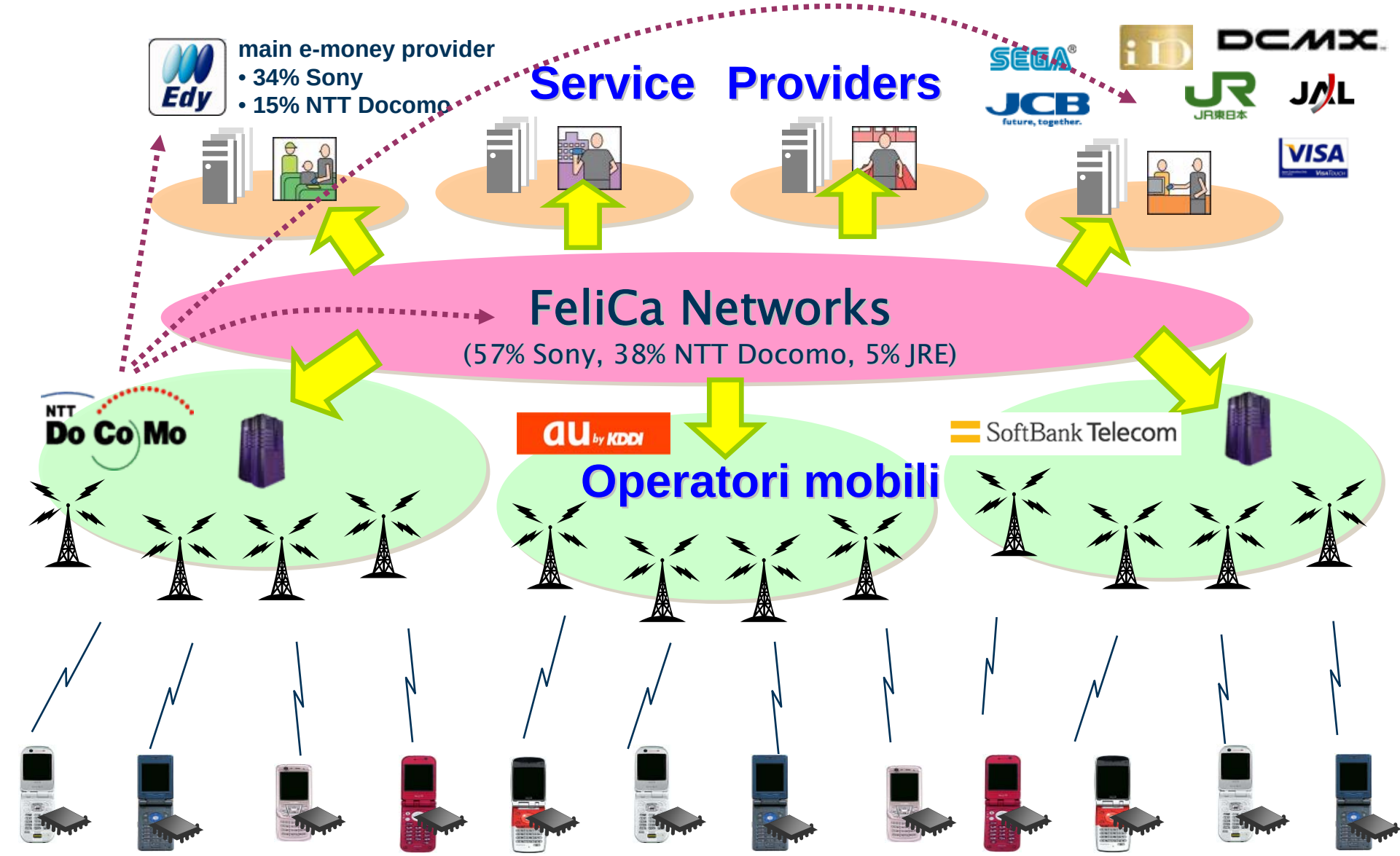
- **Feb 2008** Telecom Italia announced launch of remote P2P payments by end 2008
  - SIM based
  - partnership with Banks

- **Feb 2008** Noverca (Acotel group) signed an MVNO agreement with a “primary Telco operator”, in the frame of a partnership agreement between **Acotel** and **Intesa San Paolo**

Mobile Payments: alternative models

	CONTACTLESS PAYMENTS	REMOTE PAYMENTS
		
concept	**handset → payment tool**	**payment → mobile service**
success stories	**Japan (Felica)** EU: deployment started on 2007	**Philippines, Asia, Africa** EU: Poste (Italy), BASE (Belgium)
pioneers	**Sony, NTT Docomo**	**PayPal**
standardization	**GSMA (Pay-Buy mobile), NFC Forum**	**GSMA (MMT)**

Mobile Felica (Giappone)



Mobile Felica, results

- Penetration: **50%** [end 2007]
  - share of handsets Felica enabled
- Usage: **30%** [end 2007]
  - users with a Felica-enabled handset that used mobile Felica at least once
- Roll-out & ROI
  - **1997**: first Felica card (Hong Kong)
  - **2000-01**: Felica infrastructure (R/W, cards) operating in Japan
  - **2004**: Felica Networks start-up / launch of Mobile Felica
  - **2007**: break-even for Felica Networks

- 4-5 between infrastructure deployment and mobile launch
- 7 years to Mobile Felica break-even (Felica Networks)

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Mobile Payments: alternative models

CONTACTLESS PAYMENTS

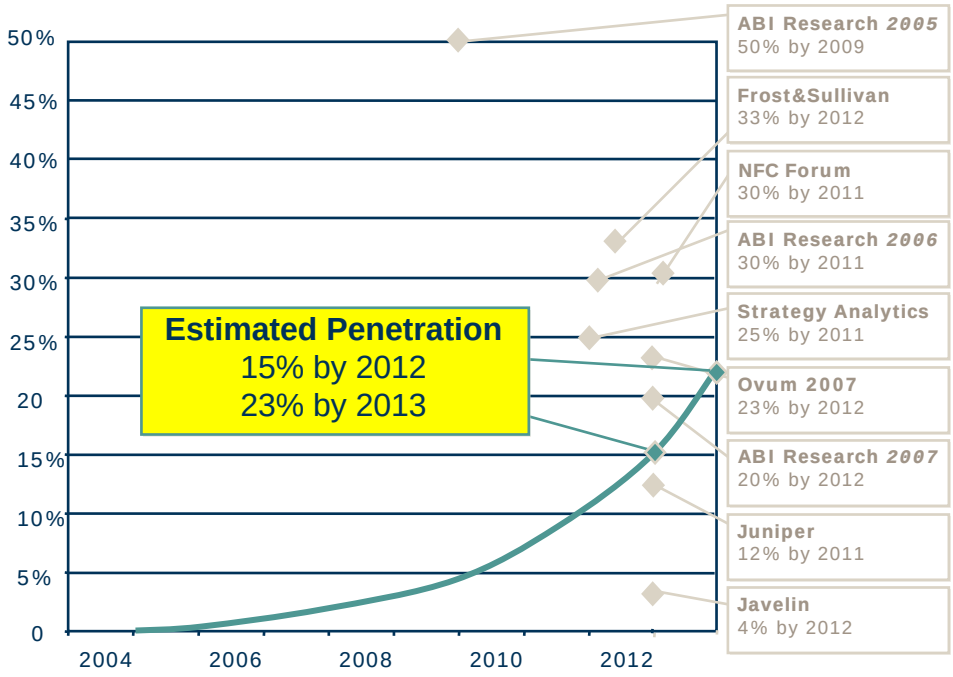
REMOTE PAYMENTS

technology	**NFC**	**SMS, http**
SIM	✓ REPLACEMENT NEEDED	(✓) REPLACEMENT OPTIONAL
HANDSET	✓ REPLACEMENT NEEDED	
POS (R/W)	✓ REPLACEMENT NEEDED	

Mobile NFC vs. Mobile Felica

- Mobile NFC based on Felica model
  - Felica ⇔ NFC
  - Felica Networks ⇔ TSM
- Complex value chain
  - TSM (3rd party) role
  - Mobile Operators' role due SIM ownership
- Unclear business model for Telco

Share of NFC handsets / total global base



Source: Greenwich consulting for Ericsson

- **CONCLUSIONS**
  mobile NFC will take >5 years to become mass market

Mobile Payments: alternative models

	CONTACTLESS PAYMENTS	REMOTE PAYMENTS
technology	NFC	SMS, http
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HANDSET	✓ REPLACEMENT NEEDED	
POS (R/W)	✓ REPLACEMENT NEEDED	

Mobile peer-to-peer payments: use cases

Person-to-Person

P2P informal transactions
parent → child
friend → friend

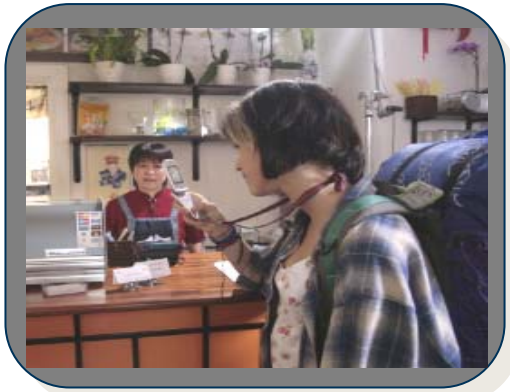
Payments

P2M transactions
e.g. m-parking, m-gov, m-commerce

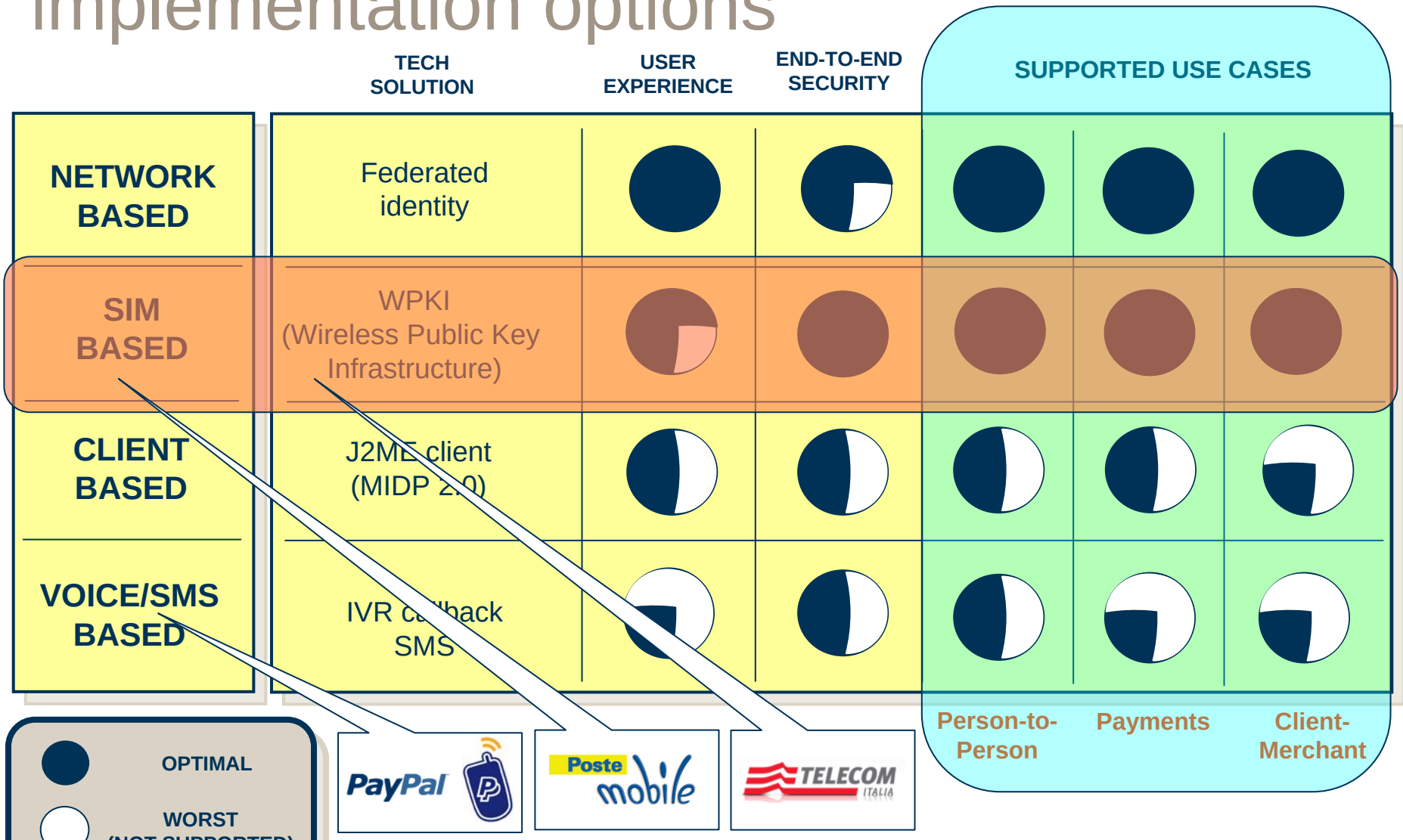
Client-Merchant

F2F transactions
e.g. taxi, kiosks

P2P mobile payments: key end-user requirements

	Person-to-Person parent → child friend → friend	**Payments** m-parking m-gov, m-commerce	**Client-Merchant** taxi kiosks
			
(MONTHLY) ACCOUNT REPORT	✓	✓	✓
PIN	✓ (OPTIONAL BELOW 20€)	✓ (OPTIONAL BELOW 20€)	✓ (OPTIONAL BELOW 20€)
SIGNED RECEIPT	NOT NEEDED	✓	✓
REAL-TIME MONEY TRANSFER	NOT NEEDED	NOT NEEDED	✓

P2P mobile payments, implementation options



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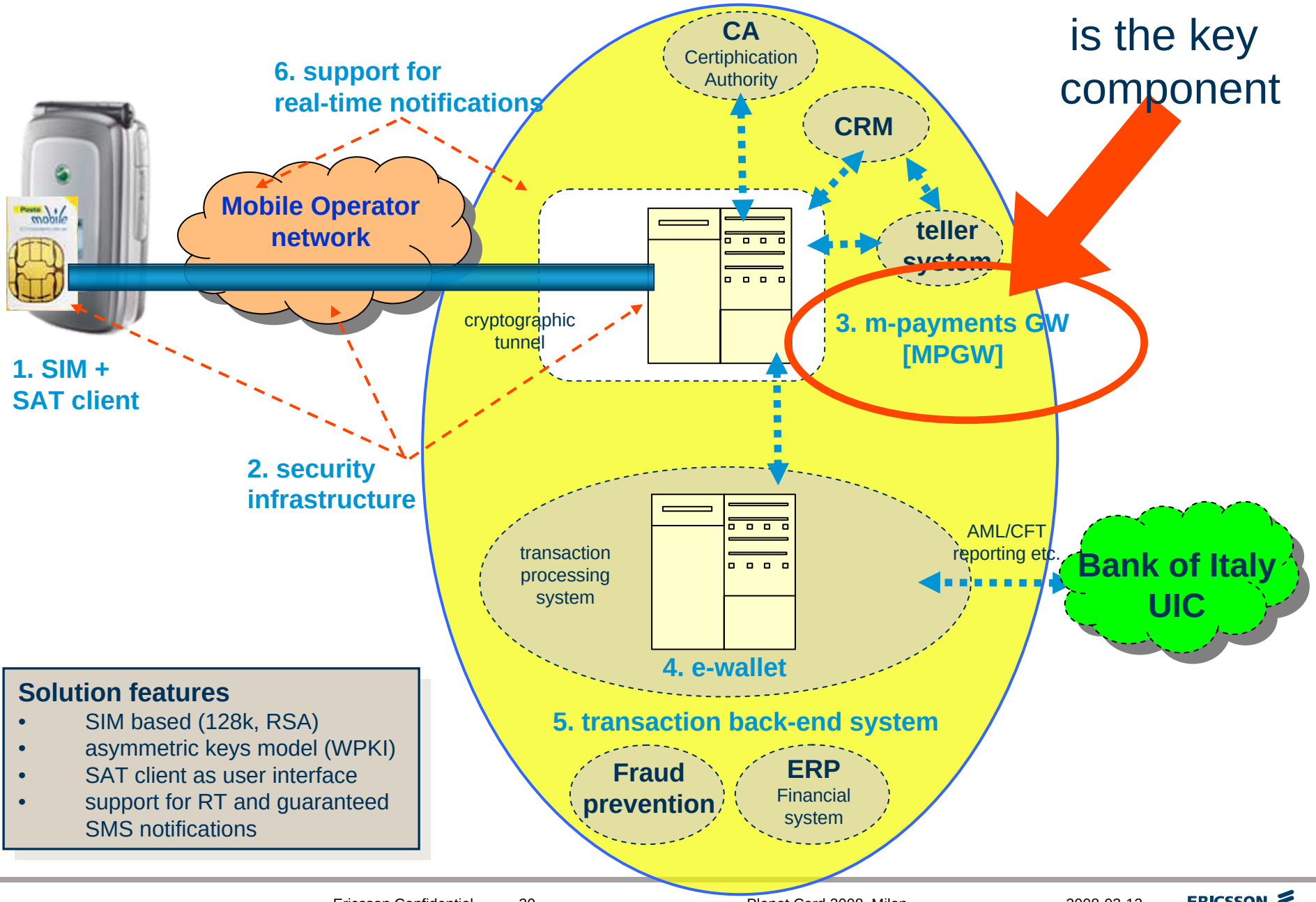
PosteMobile architecture

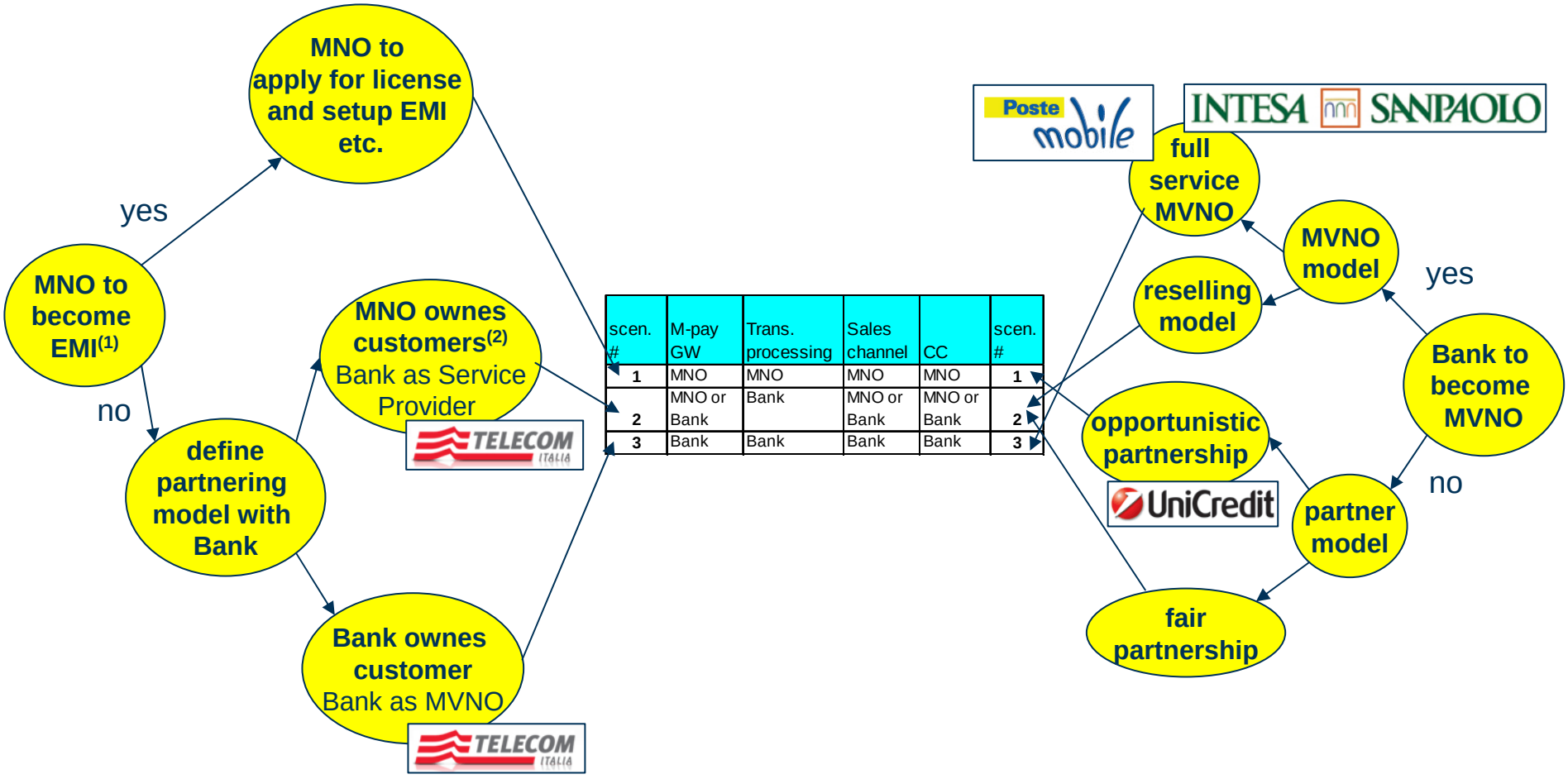
MPGW is the key component



Solution features

- SIM based (128k, RSA)
- asymmetric keys model (WPKI)
- SAT client as user interface
- support for RT and guaranteed SMS notifications

m-payments business models: decision tree for MNOs and Banks (sample)

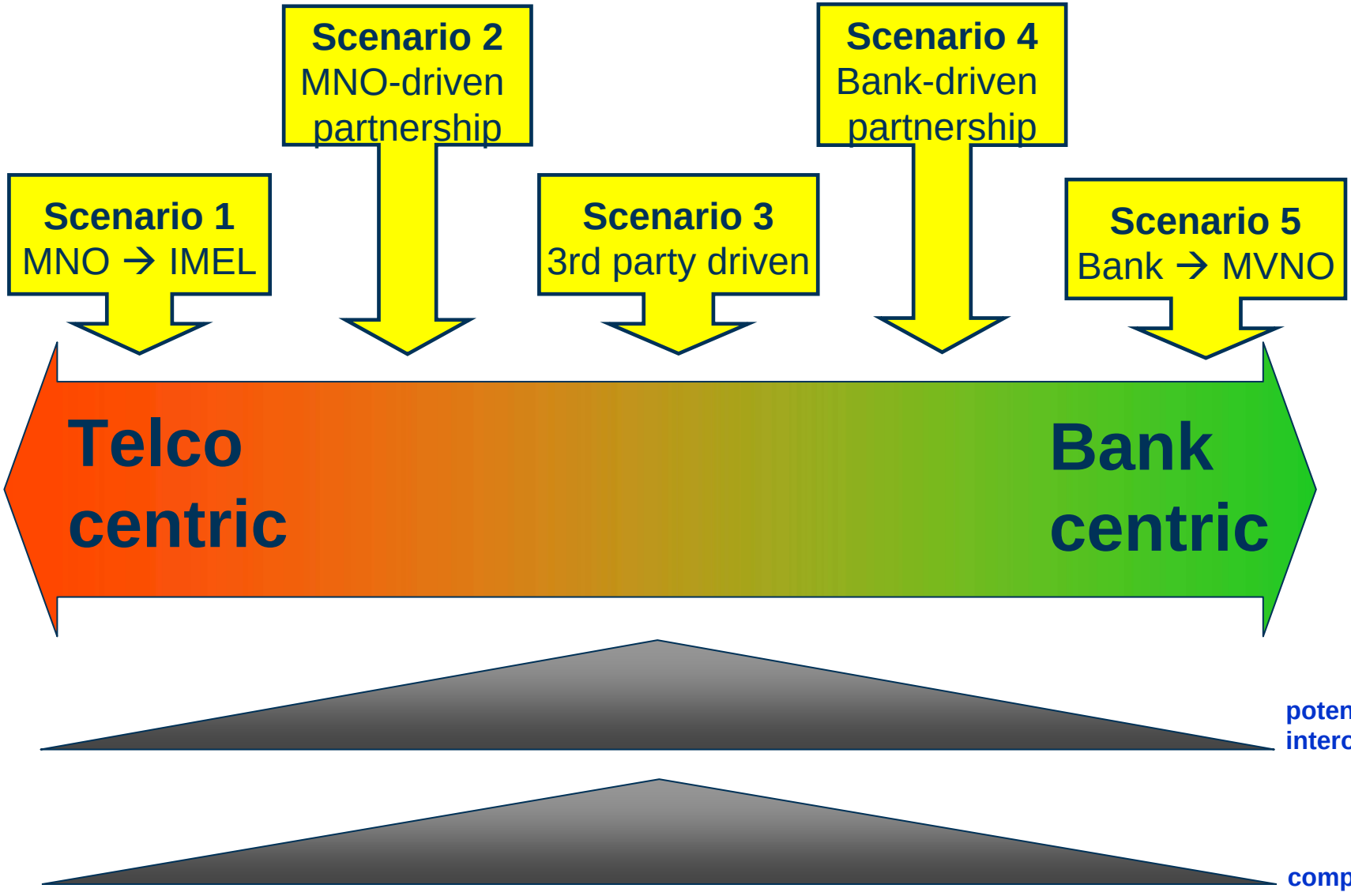


(1) EMI = E-Money Institute (IMEL in Italy)

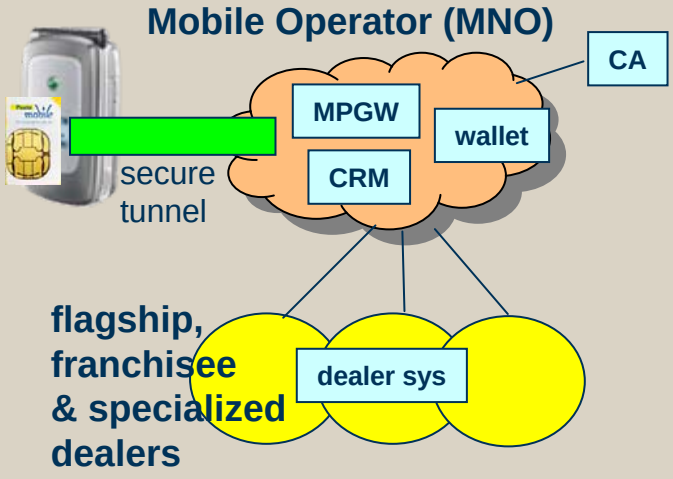
(2) MNO acting as service provider for (small) banks

Note: TI and Banks position desumed based on public information

Business models taxonomy



Scenario 1

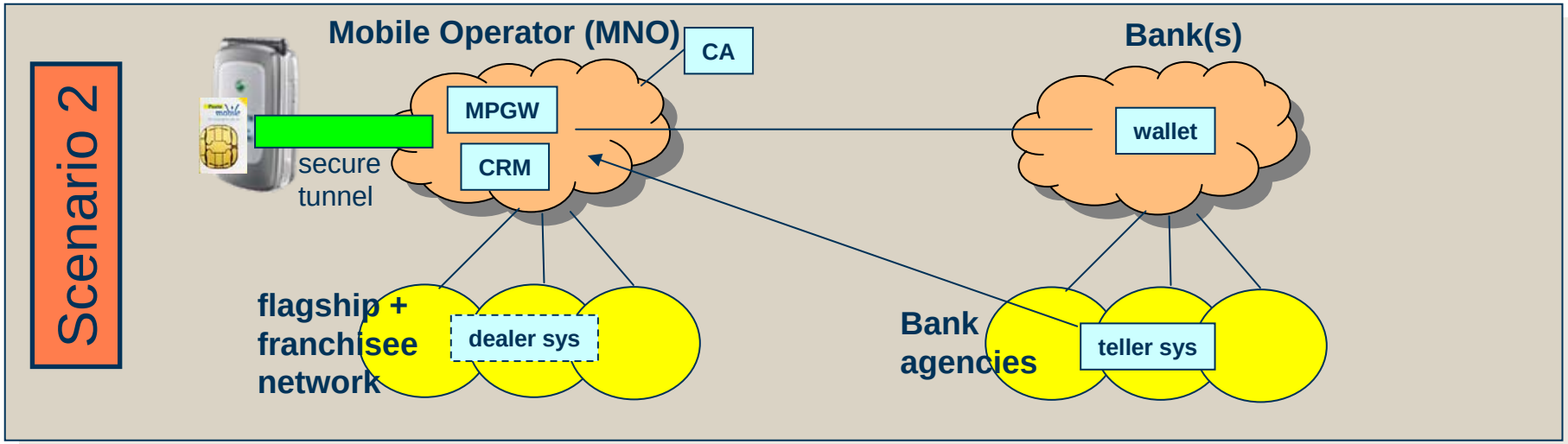


- MNO acting as EMI (E-Money Institute) or Payment Institute[1]
- banking license, e-wallet and back-end setup up to MNO
- 100% investments up to MNO

Banks perspective

- Pros
  - opportunity for co-branding and transaction processing
- Cons
  - competition increase
  - Banking system cut-off from m-payments market development

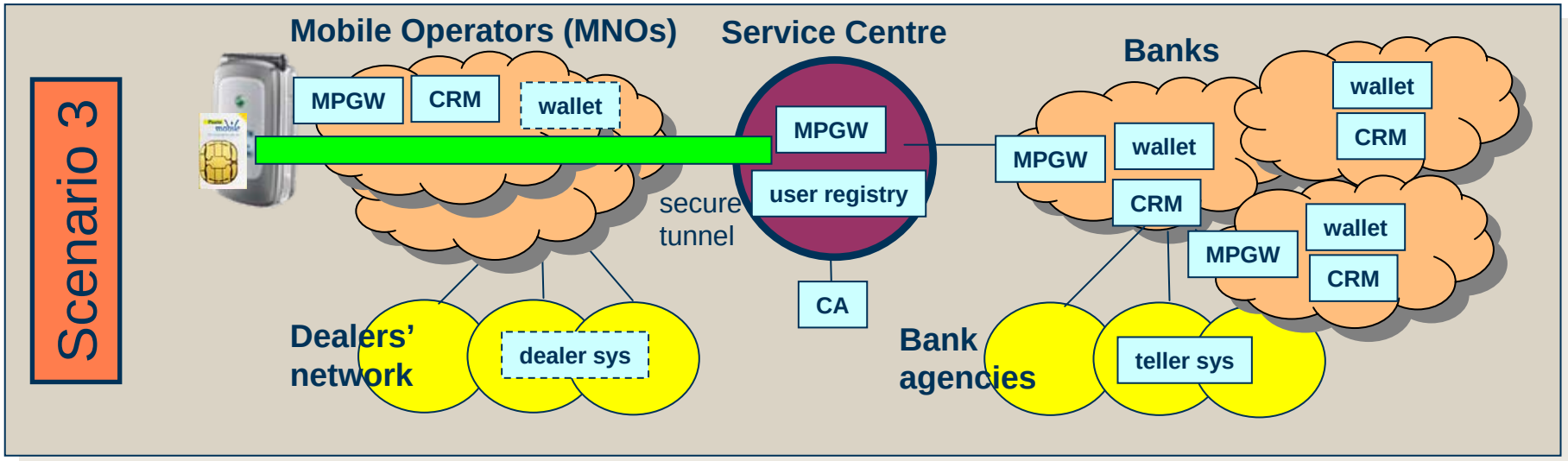
[1] since 2010



- MNO acting as turnkey m-payments service provider
- Bank acting as Financial service provider
- Interesting model for small-medium Banks and possible start-up model for large ones
- investments mainly up to MNO

Banks perspective

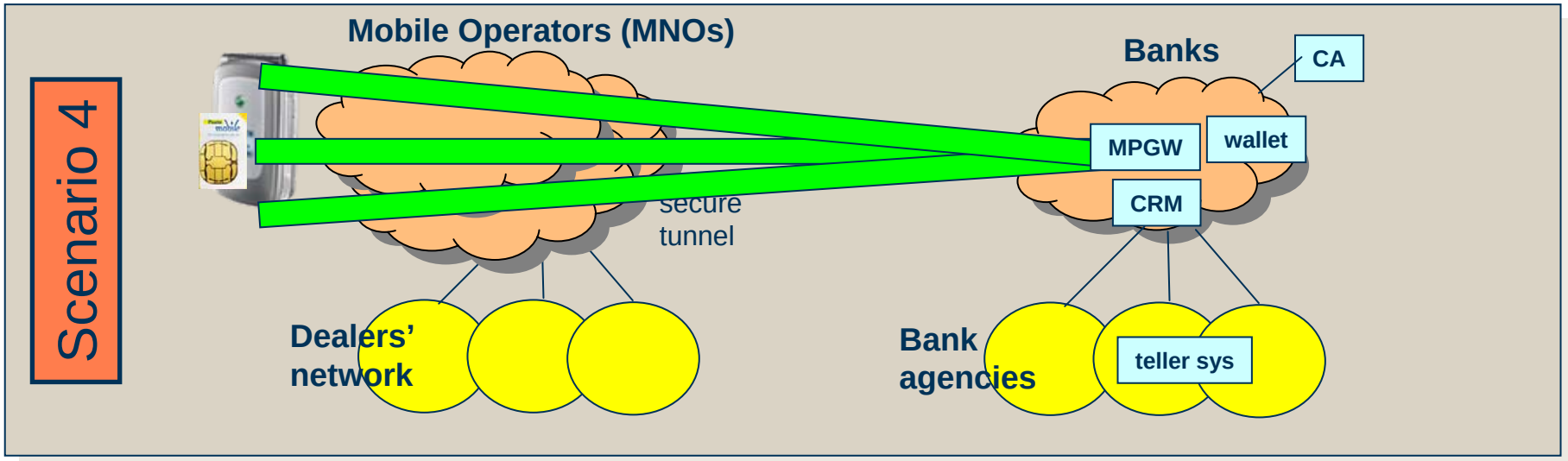
- Pros
  - churn reduction
  - service differenciation
  - limited investments and risks
  - using MNO franchisee network may be an option
- Cons
  - no interoperability
  - partial control over user experience and add-on services



- Trusted 3rd party acting as Interoperable Service Centre
- Naturally evolving towards Mobile NFC ecosystem
- investments shared between MNOs and Banks

Banks perspective

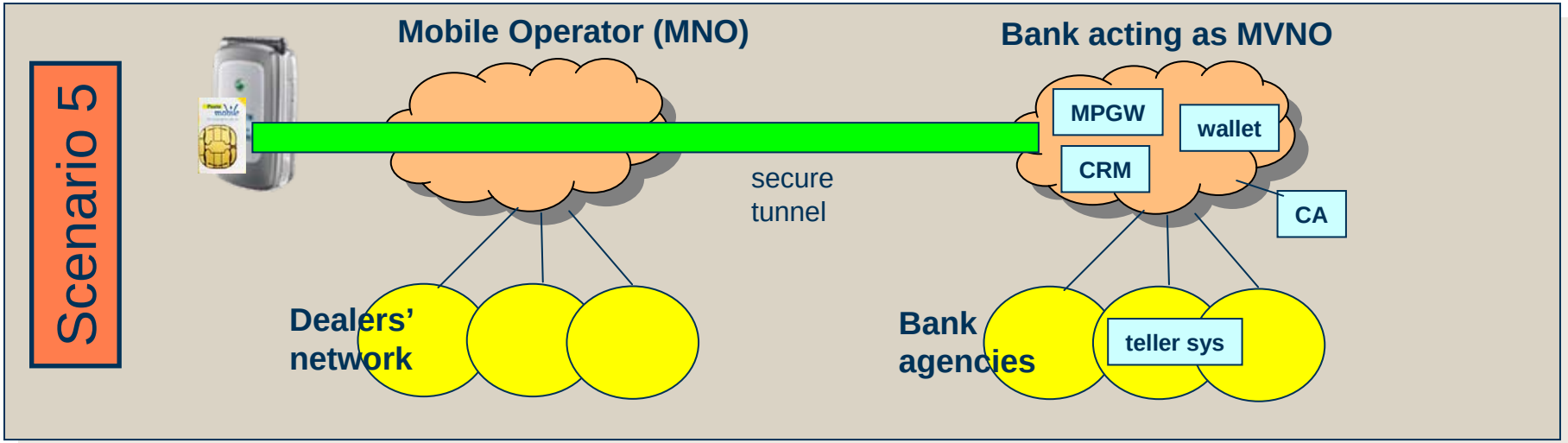
- Pros
  - only scenario to guarantee full MNO/Banks interoperability
  - open model allowing any role
    - MNO → IMEL
    - Bank → MVNO
- Cons
  - complex provisioning, service activation and assurance
  - complex agreements negot.
  - critical value chain and business model at start-up



- Bank distribute and control MNO SIMs without becoming MVNO
  - customer still retain existing MSISDN, tarif plan etc.
  - only m-payments application is managed by the Bank
- Likely target scenario for large Banks
- investments mainly up to Bank

Banks perspective

- Pros
  - churn reduction
  - customer ownership
  - control on user experience and add-on services (e.g. m-commerce, m-taxes)
  - focus on core business
- Cons
  - difficult to negotiate with MNOs



- PosteMobile service model
- MNO acting as "dumb pipe"
- Banks acting as MVNO
  - full-service model
- 100% investments up to Bank

Banks perspective

- Pros
  - churn reduction
  - full customer ownership
  - full control on user experience and add-on services (e.g. m-commerce, m-taxes)
- Cons
  - high level of investments
  - MNO swap requested to customers

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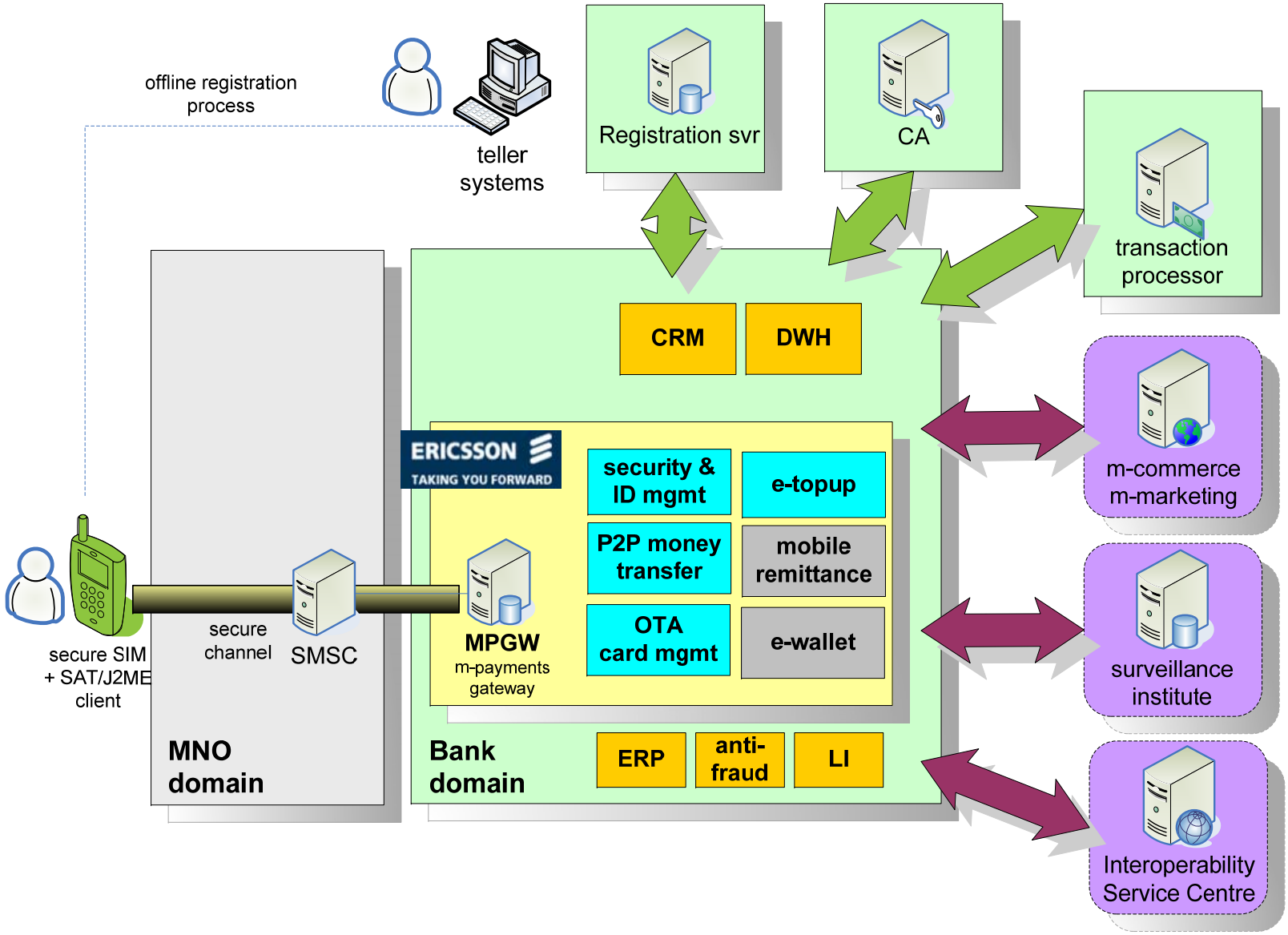
Ericsson P2P Payments solution



why Ericsson

- Standard-based WPKI solution
- Flexible and future proof: ONE platform supporting
  - remote P2P payments
  - mobile remittance
  - mobile top-up
  - multiple business models
    - internal and external e-wallet
    - MNO centric
    - Bank centric
    - 3rd party centric
- Scalability
  - just 1 or 2 SMS for transaction
- SIM-vendor independent
  - multiple SIM vendors supported, lower costs
- Evolving as TSM in a Mobile NFC ecosystem

Conclusioni

- mobile payments: contactless (NFC) vs. remote
  - mobile NFC > 5 anni
  - remote payments (P2P) è partito
  - consenso su soluzione SIM-based
- modelli di business
  - Telco-centrico
  - Banca-centrico
  - 3rd party-centrico
- Fattori di decisione
  - propensione all'investimento
  - customer ownership
  - catena distributiva
- Evoluzione del mercato
  - start-up: modelli semplici
  - interoperabilità e roaming fondamentali nel lungo termine
  - numero limitato di tecnologie e vendor candidati a divenire "standard"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