pkrm *We help achieve more with current communication technologies*

Mobile payments with femtocells

Secure, simple, common, worldwide

PKRM

2016

The Team

Eryk Szweryn

CEO PKRM

- IT Engineer, MA of Management and Marketing, MBA
- Over 12 years experience in companies from inter alia: IT, marketing, pharmaceutical, government institution – Wyeth, Pfizer, AstraZeneca, Atende (ATM SI), Service Centere of Prime Minister Cabinet

Łukasz Strzałkowski

Board member PKRM, Owner Foto-Kody.pl

- IT Master Engineer
- Over 13 years experience in IT projects, investment management, real estate – Empik Media & Fashion S.A., EO Networks, Foto-kody.pl, Platforma DRM, Polski Błonnik, Own business activity

Kamil Kania

Project Manager PKRM

- MA of Economics, BA of Quantitative Methods in Economics, scholarship programs at Wirtschaftsuniversität in Vienna and National Taiwan University in Taipei
- Work experience at: The Boeing Company, Business Service Ltd, Science and Technology Park EUROCENTRUM

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Our last successes

- **<u>Orange FAB 2015 - 1st place in Poland for best startup.</u>**

- **Citi Mobile Challenge 2015 – World Finals – Intelligent Bank with femtocells.**
- **Telekom Innovation Contest 2014 – T-Mobile World Semi-Finals.**
- **OrangeBIHAPI 2014 - 2nd stage – Proof of Concept – Smart and Safe House.**
- **Smart City** – Imagine with Orange 2015 – prize for being in Top ideas.
- **Mobile Money** – Imagine with Orange 2015 – prize for being in Top ideas.

BIHAPI

TELEKOM INNOVATION CONTEST

Citi® Mobile Challenge
EUROPE, MIDDLE EAST & AFRICA

imagine with Orange

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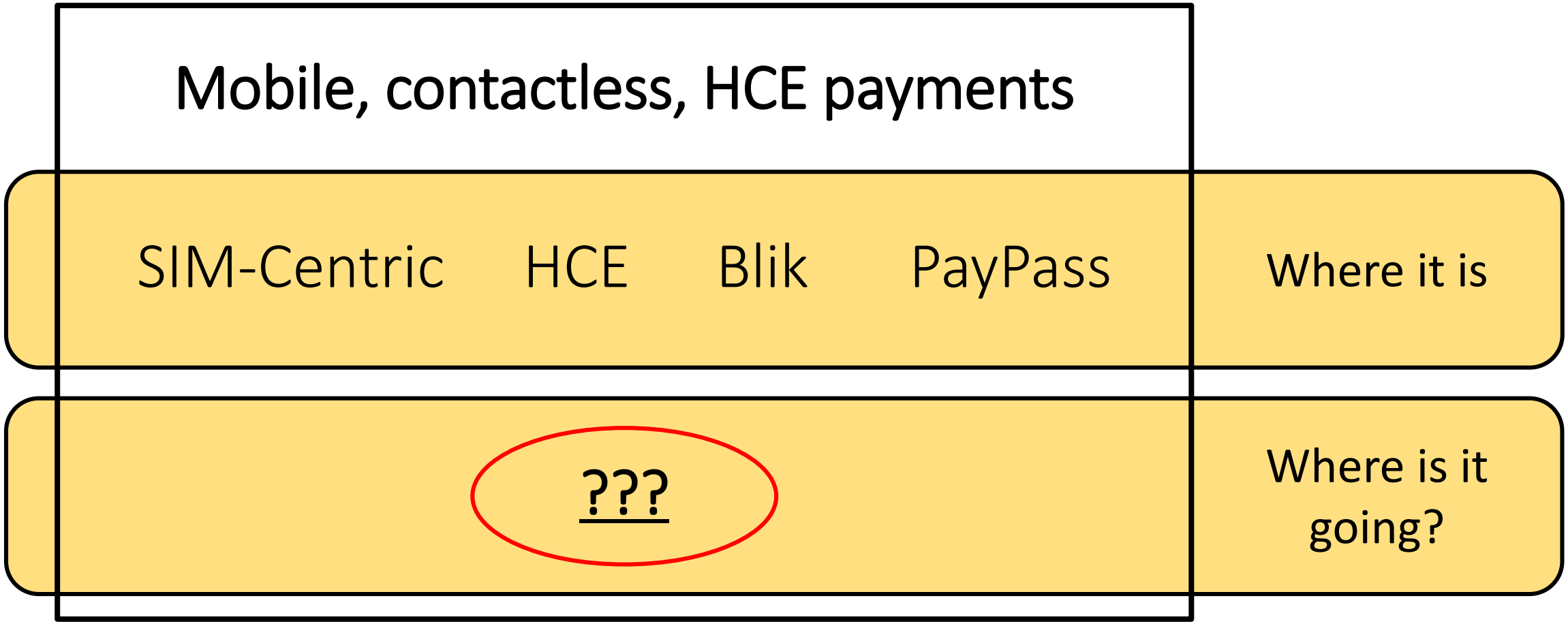
The conference



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Current technologies

Security

- Matter of payments bases on uncoded NFC connection, which is not difficult to be hacked
- Threat of mobile phone's viruses

Simplicity

- Requires application downloaded and installed
- User account has to be configured
- SIM-centric: needs special SIM Card ordered

Common usage

- Work only for smartphones - 60% of mobile phones in Poland*
- Requires NFC module installed and switched on

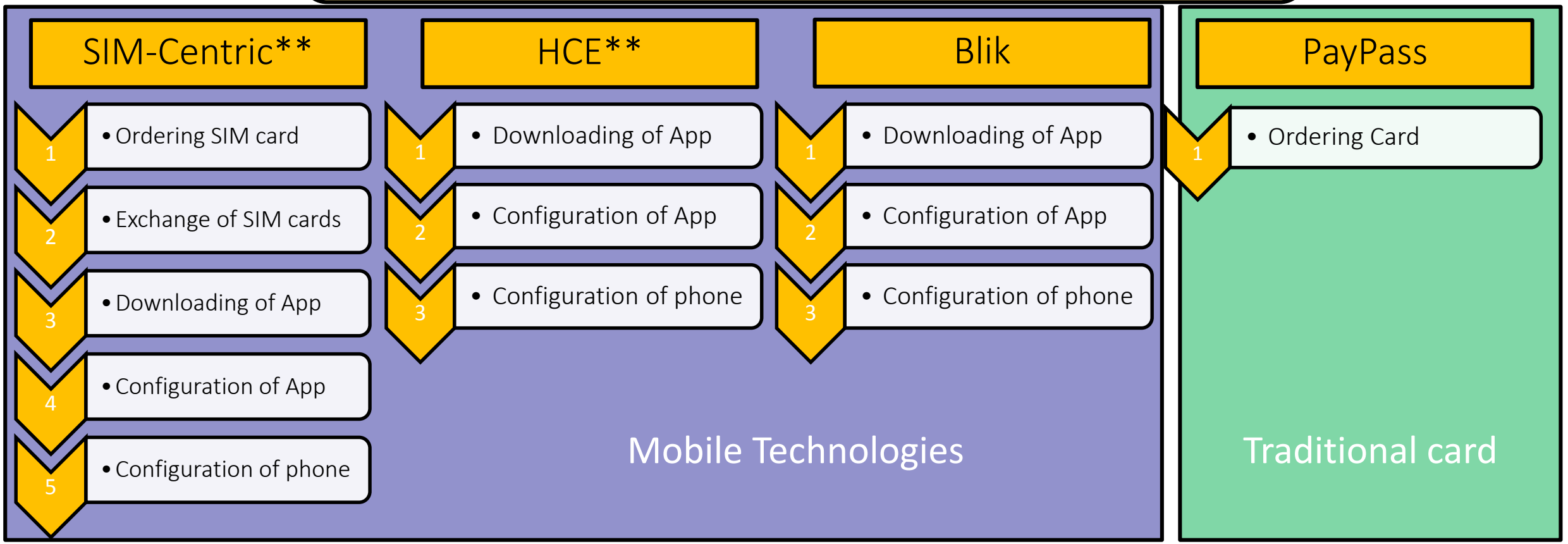
Global potential

- Limited utility of some of current solutions abroad
- Many apps are created only in Polish language

* Polska.Jest.Mobi 2015 Report

Steps to first payment

- 65% of respondents have never paid with their mobile phones*
- Only 17% of respondents do it regularly (at least once a week)*



* Polska.Jest.Mobi 2015 Report

** Obligatory NFC module in mobile phone

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Where are payments going?

Future payment technologies need to be:

- Secure
- Simple
- Quick
- Universal
- With international potential
- Confidential

The answer: **Femtocells**

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What is femtocell?

- Small, low-power cellular base station, originally used to strengthen provider's signal in areas like homes or offices
- Range of femtocells varies from several centimeters to several kilometers, but it is typically 25-50 meters
- It is recognized by mobile phones as an equal cellular base station, and phones automatically log in to them

Due to its limited range, it can be used to Location based services

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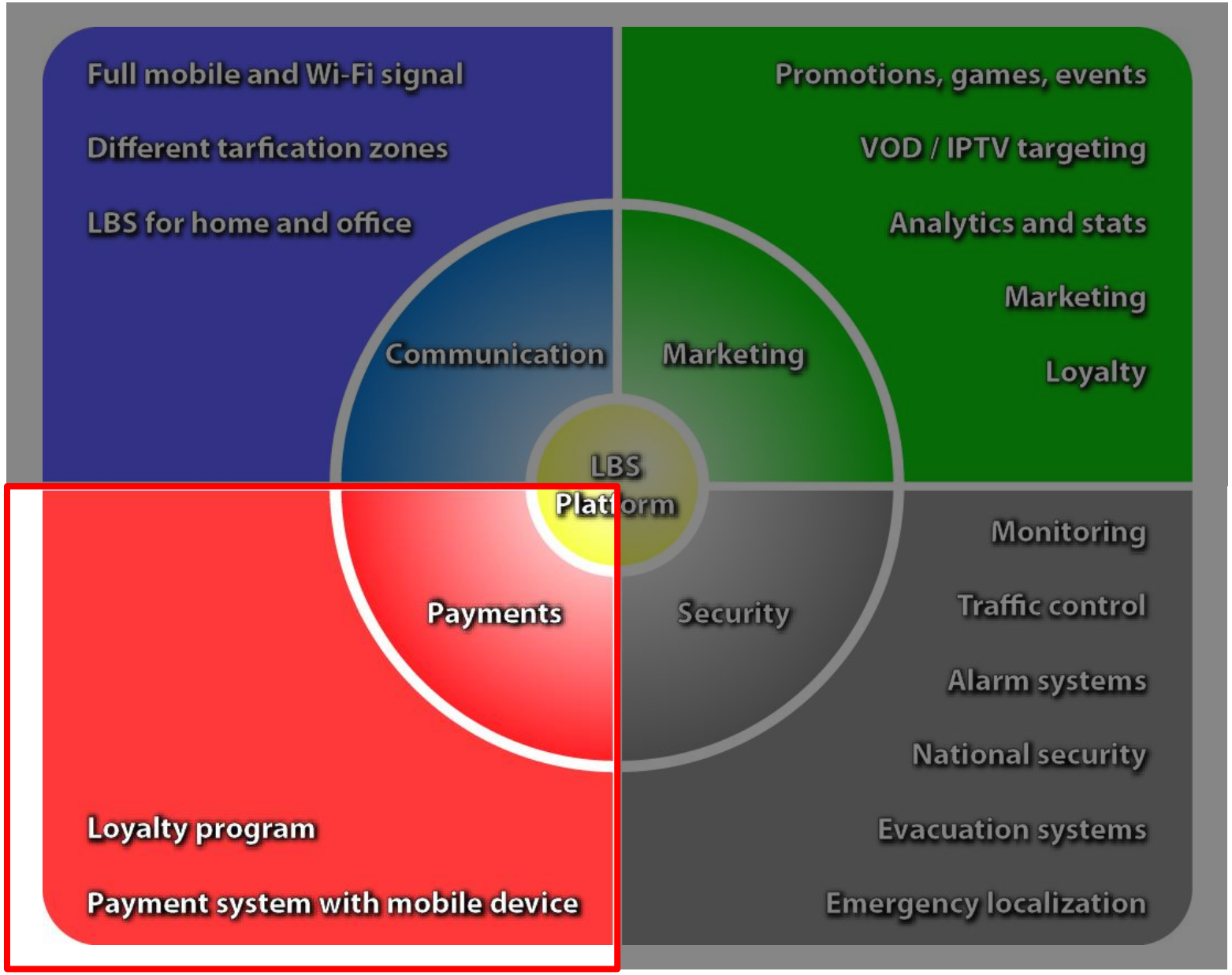
Full mobile and Wi-Fi signal
Different tarfication zones
LBS for home and office
Promotions, games, events
VOD / IPTV targeting
Analytics and stats
Marketing
Loyalty
Communication
Marketing
LBS
Platform
Payments
Security
Monitoring
Traffic control
Alarm systems
National security
Evacuation systems
Emergency localization
Loyalty program
Payment system with mobile device

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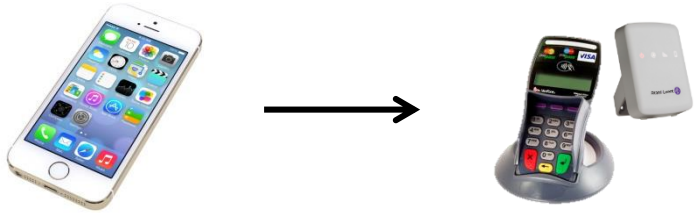
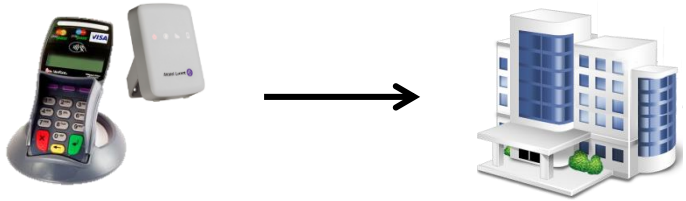
How does it work?

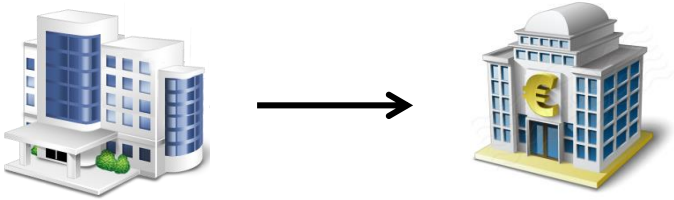
1. User touches with their phone a femtocell which is built into the terminal



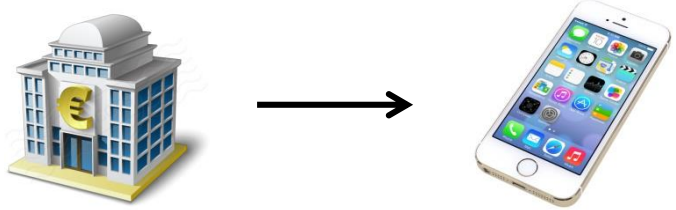
2. Information about the action is transmitted to a phone provider and recognized as a wish of payment



3. Phone provider informs a merchant processor about the event



4. Merchant processor sends to the user Menu USSD to accept the payment



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Menu USSD

Menu USSD

- Communication protocol, which is performed by all sorts of mobile phones
- Does not require any application and hardware
- Provides responsive multi-level questionnaires
- Works on licensed frequency
- Can be provided in user's language (recognized by phone number)
- Is able to verify the age of user

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Femtocells – key success factors

Security

- Licensed frequency
- Each attempt of hacking network is an offence prosecuted ex officio
- SIM Card cannot be cloned and work at the same time

Simplicity

- No application
- No additional configuration required
- No underling magic from customer's standpoint

Common usage

- Work with every single mobile phone, not only with smartphones
- Does not required any additional module in mobile phone

Global potential

- Can interact with a user with their native language
- Works all over the world and is coherent with every mobile phone

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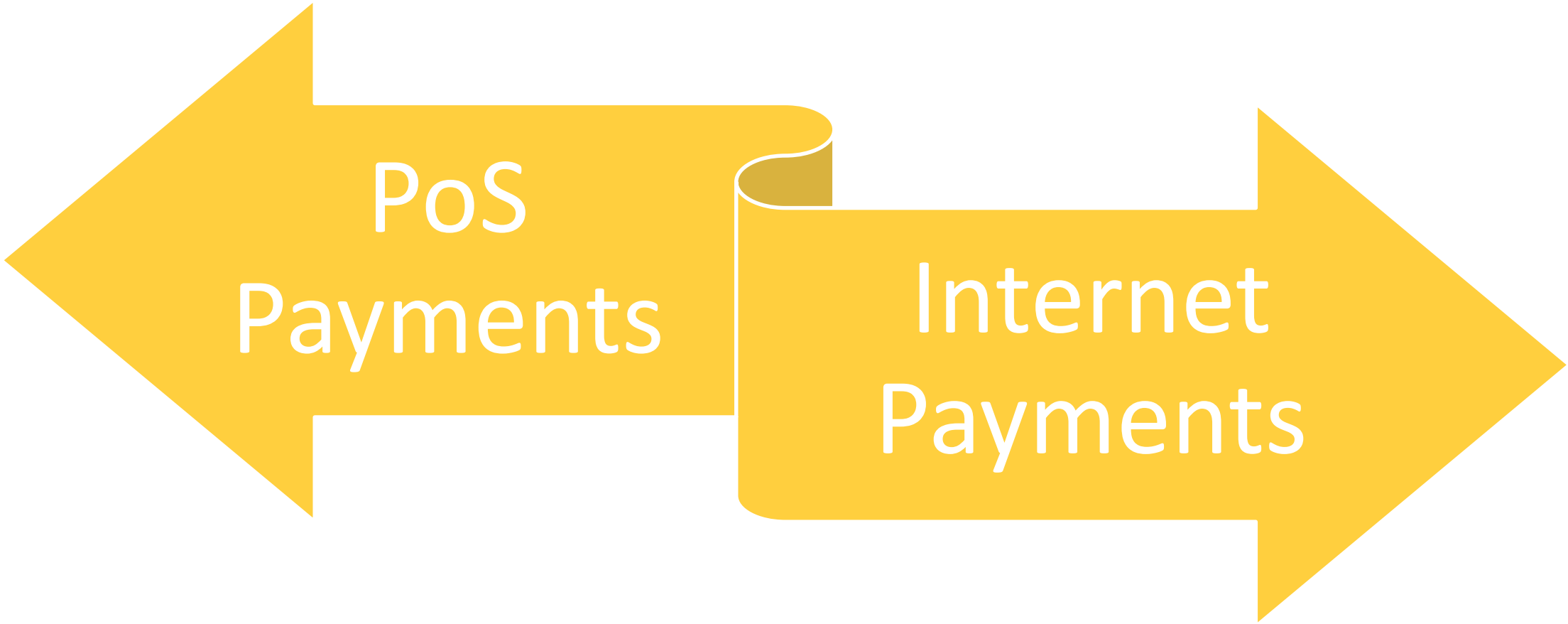
Mobile transactions



- Requires femtocell, which is built into the terminal
- Requires cell for mobilephone number in transaction questioner

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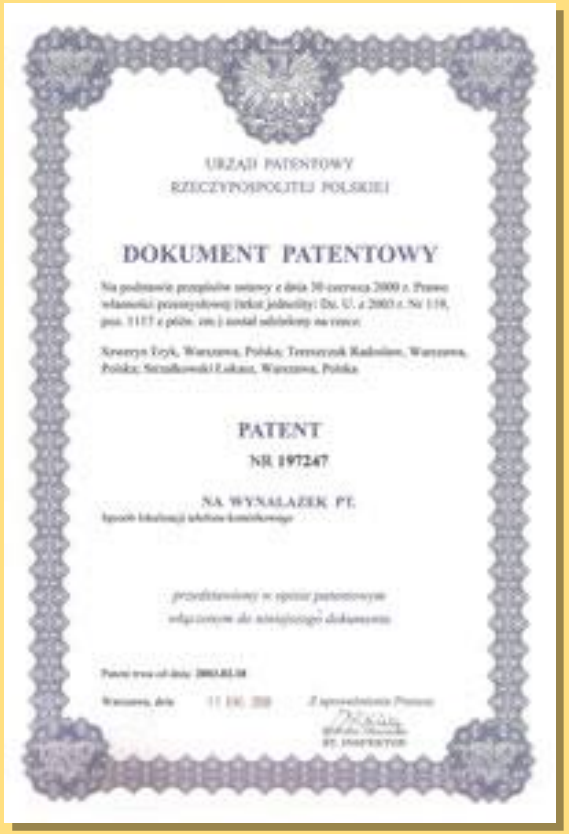
Models of usage

	Merchant processor	Mobile phone provider
Ownership of licensed frequency and femtocells	Owned by provider	
Push transfer	Gets push from mobile phone provider	Gets push directly from femtocell
Menu USSD	Generated by processor's system	Generated by provider's system
Way of charging	From user's bank account	Added to the bill
Financing entity	By merchant acquirer	By itself or merchant acquirer

Our patents

Polish patent, no. 197247 (April 11th, 2008)



URZĄD PATENTOWY
RZECZYPOSPOLITEJ POLSKIEJ

DOKUMENT PATENTOWY

PATENT
NR 197247

NA WYNALAZEK PT.

EPO patent, no. 2003466 (Feb 19th, 2014)

Europäisches Patentamt
European Patent Office
Office européen des brevets

URKUNDE | CERTIFICATE | CERTIFICAT

Es wird hiermit bescheinigt, dass für die in der Patentschrift beschriebene Erfindung ein europäisches Patent für die in der Patentschrift bezeichneten Vertragstaaten erteilt worden ist.

It is hereby certified that a European patent has been granted in respect of the invention described in the patent specification for the Contracting States designated in the specification.

Il est certifié qu'un brevet européen a été délivré pour l'invention décrite dans le fascicule de brevet, pour les Etats contractants désignés dans le fascicule de brevet.

Europäisches Patent Nr. | European patent No. | Brevet européen n°
2003466

Patentinhaber | Proprietor of the patent | Titulaire du brevet

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München, den / Munich, / Fait à Munich, le 19.02.14

Benoît Battistelli
Président des Europäischen Patentamts
President of the European Patent Office
Président de l'Office européen des brevets

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We help achieve more
with current commucation technologies

Thank you for your attention

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