



- **Twinlinx history:** Created in August 2006 by Jacek Kowalski, Founder and former CEO of Inside Contactless, leading contactless chips supplier, based in Aix-en-Provence, South of France
- **Know-how:** 50 men\*year experience in the contactless and NFC markets, chip technology license from Inside Contactless
- **Our Vision:** NFC technology will be integrated with the mobile phones to bring to people convenience and to ease their everyday life
- **Mission:** Develop NFC technological and applications platform allowing consumers to get an easy, fast and cost effective access to NFC applications
- **Market recognition:** TWINLINX received the "Customer Value Enhancement" award from Frost & Sullivan in 2011

## What is missing for the NFC market takeoff?

- Lack of phones: Without phones in the pocket of consumers, NFC applications cannot be used
- Business models: No global business model which allows to create gains for all market players necessary in the NFC food chain.
- Critical mass: Need to achieve rapidly a critical mass of users to get the return on investment for an NFC application issuer
- Simultaneous offer: Need to bring to the market simultaneously many NFC handsets, payment infrastructure and services.

**To solve these problems, Twinlinx created MyMax NFC sticker**

***"A revolutionary thin electronic sticker bringing NFC capability to your phone"***



- Upgrades your mobile phone with full NFC (*Near Field Communication*) technology
- Connects to the phone using Bluetooth communication
- Can integrate any secure contactless chip for card-like transactions
- Powered by a integrated thin rechargeable battery

Exchange between a sticker and NFC phone

Exchange between 2 stickers



- Peer-to-Peer
- Reader mode
- Card mode



- Peer-to-Peer
- Reader mode
- Card mode



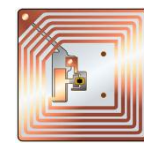
Card Mode (MyMax is a Card)

Reader Mode (MyMax is a Reader)

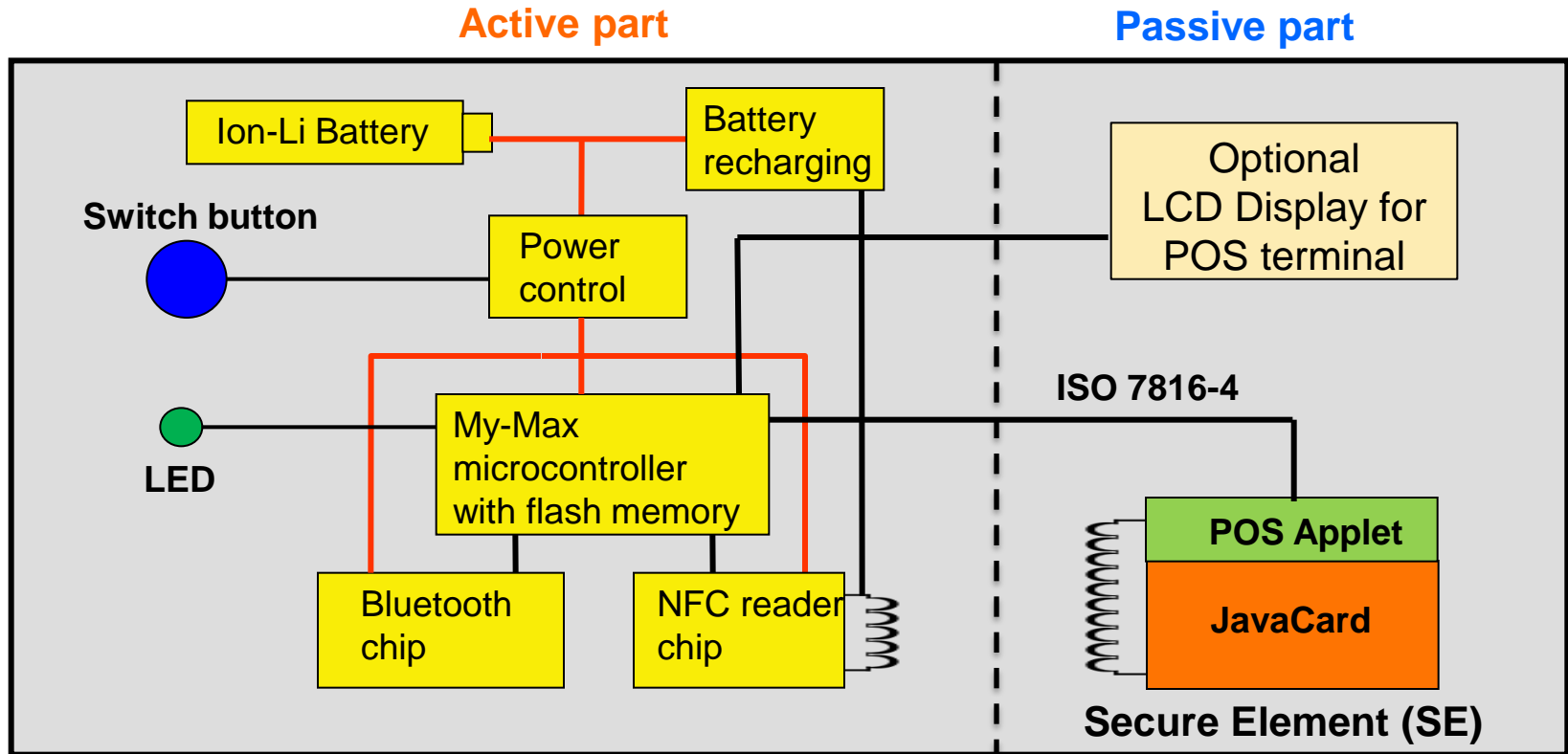


- Payment terminal
- Metro gate
- Access control reader ....

- Cards
- RFID tags

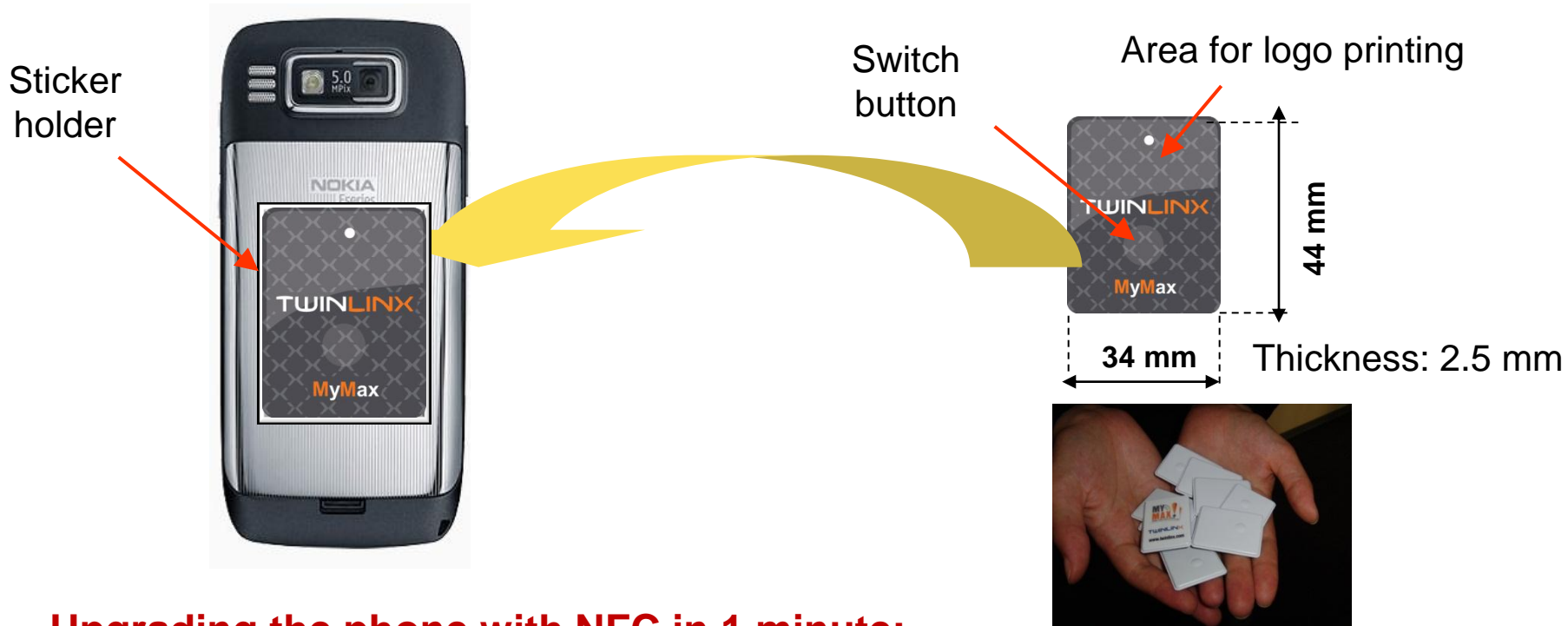


# MyMax architecture



- **Passive part:** Can integrate any contactless chip (ex. JavaCard with Visa/MC/Mifare)
- **Active part:** Battery powered, manages Bluetooth and RF Reader communication
- **When switched-off:** Behaves like a standard contactless card, no battery used
- **When switched-on:** Behaves as reader to read the internal SE or external contactless tags or cards

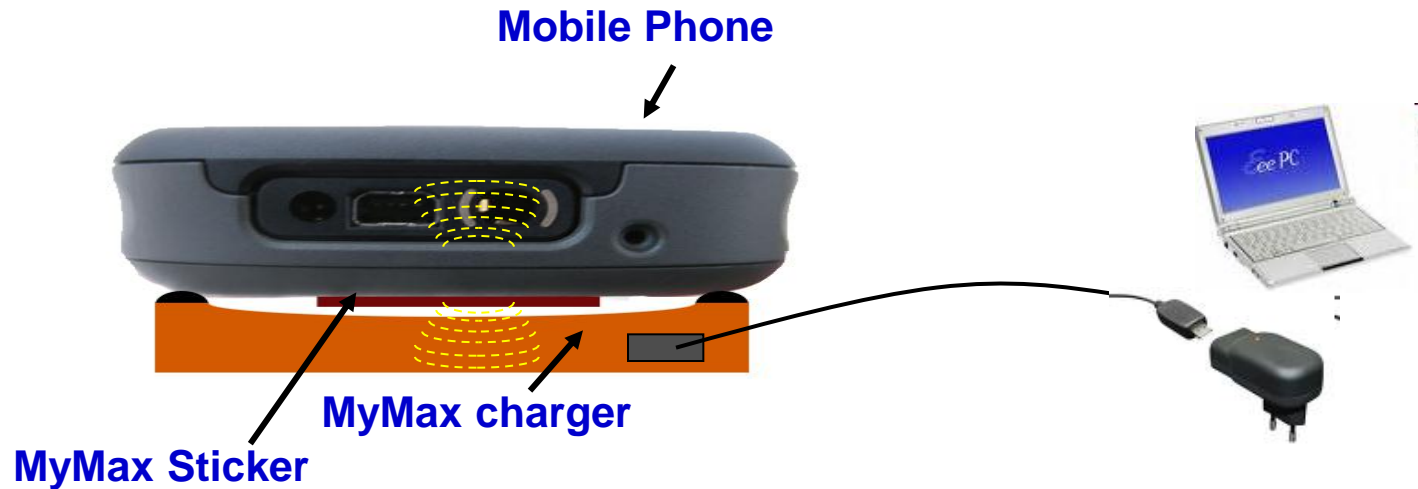
# MyMax pairing



## Upgrading the phone with NFC in 1 minute:

1. Stick the holder to the back of the phone and insert the sticker inside
2. Send an sms to the number written on the pairing procedure notice
3. Click on the link received by sms to download the NFC application
4. Click on the Pairing MyMax in the NFC Application menu
5. Push the sticker button for 3 seconds till the LED starts blinking
6. Enter on the Pairing Key written on the back of the sticker

# MyMax battery recharging



- Use 13.56 MHz RF field for battery recharging
- To power the charger, phone charger or PC USB output can be used
- Enters the charging mode automatically after 1 minute when put on the charger
- When in the charging mode, LED of the sticker is blinking and switches off when the battery is fully charged (can be checked by taking the phone off from charger)
- Battery recharging time: 2 hours

## ▶ **CD Rom**

- NFC Sticker PC based emulator
- ePurse Demo (applet, MIDlet, PC app.)
- Contactless reader drivers
- Source code for demos
- APIs for communications with the sticker
- Documentation :
  - User Guide
  - Programmers guide
  - Secure Element spec

## ▶ **3 NFC Tags (Mifare Ultralight)**

## ▶ **USB Contactless reader**

## ▶ **Bluetooth Dongle**

## ▶ **3 MyMax Stickers with holders**





**Android**



**iPhone**



**J2ME**



**Windows**

- Works with most of the phones on the market: 250 models checked
- No impact of the phone electronics and material on the sticker operation
- Can trigger the application on phones having “push registry” function
- Specific sticker version for iPhone

<b>Card mode</b>	<ul style="list-style-type: none"> <li>▪ Works like a contactless card with power supplied by the external reader</li> </ul>
<b>Activating the sticker</b>	<ul style="list-style-type: none"> <li>▪ Special API command integrated in the phone application</li> <li>▪ Tag/card detection</li> <li>▪ Contactless field detection</li> <li>▪ Push button integrated on the sticker</li> </ul>
<b>Switching off</b>	<ul style="list-style-type: none"> <li>▪ By pushing the switch button</li> <li>▪ After 1 minute of inactivity</li> </ul>
<b>POS Function</b>	<ul style="list-style-type: none"> <li>▪ Integrates SAM functions to manage payment terminal security</li> </ul>
<b>Mifare Compatibility</b>	<ul style="list-style-type: none"> <li>▪ Integrates card emulation function by the SE (JavaCard)</li> <li>▪ Integrates Mifare security in Reader mode to access external Mifare cards</li> </ul>
<b>Battery Duration</b>	<ul style="list-style-type: none"> <li>▪ 300 external tag/card accesses</li> <li>▪ 30 days in active sleep mode (all activation features ON)</li> <li>▪ 2 years in deep sleep mode (only push button activation available)</li> </ul>
<b>RF Com Distance</b>	<ul style="list-style-type: none"> <li>▪ Card Mode: 2-3 cm depending on the internal SE and external reader size</li> <li>▪ Reader Mode: 1-3 cm for cards reading depending on the contactless chip</li> </ul>

# MyPOS payment terminal (in development)



- Use the same architecture and design as MyMax sticker
- Integrates additional LCD display and larger capacity rechargeable battery
- Bluetooth connection to the merchant's phone integrating POS application
- 1 month stand alone operation without the battery recharging
- Plug-in external SAM with certified banking security
- Humidity resistant
- 30-50 Euros price depending on volumes

## Various packaging forms



**Plastic**



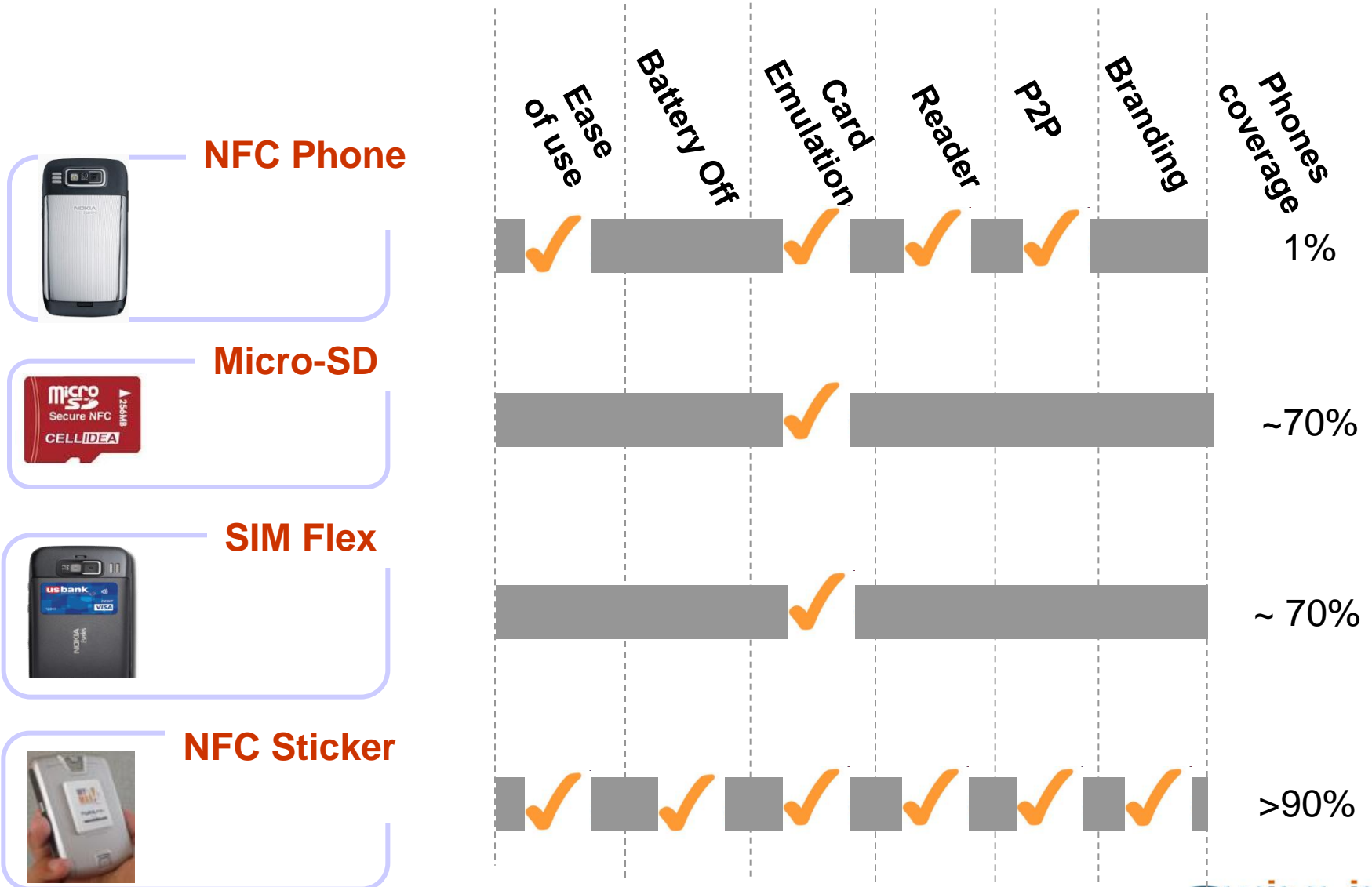
**Epoxy**

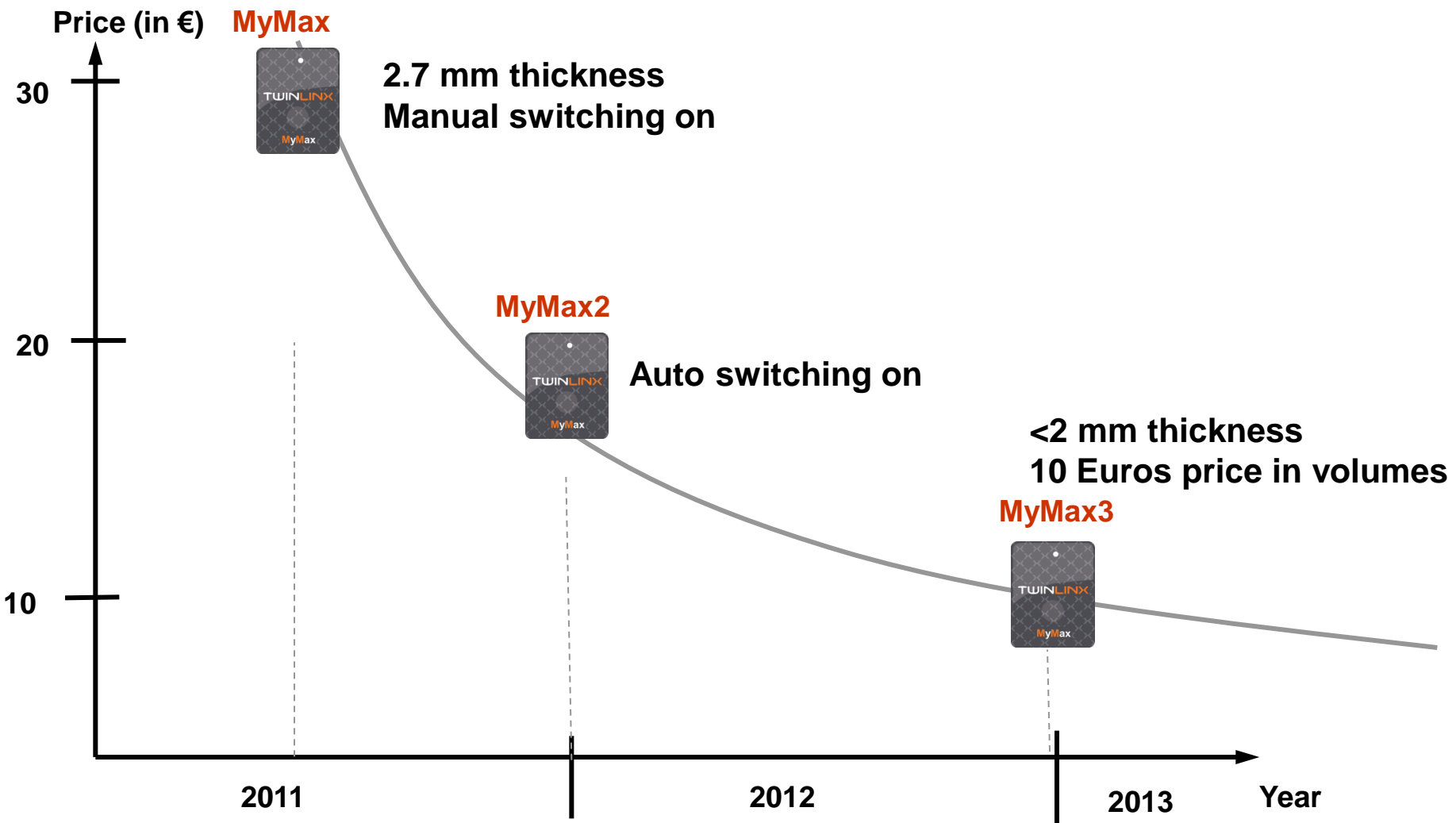


**Skins for smartphones**

- Plastic and Epoxy stickers maintained by a holder on the back of the phone
- Sticker integration in the skins/cases for Smartphones
- Various logos possible on Plastic and Epoxy stickers

# MyMax vs other NFC solutions





## Advantages of MyMax sticker

- **Compared to the phones integrating NFC**
  - External Secure Element controlled by the sticker issuer
  - No perturbations of NFC operation by the phone electronic
  - Compatible with standard smart card personalization procedures
  
- **For consumers**
  - No need to change the phone and SIM to get NFC functionality
  - The same user experience as with an NFC phone
  - Can be removed and paired with a different phone model
  - Can decorate the back of the phone
  - Can integrate other hardware features than NFC (GPS, sensors, ...)
  
- **For the sticker distributor**
  - Control of the Secure Element
  - Works with most of phones already in the pocket of consumers
  - No need to convince consumers to change his phone
  - Much lower deployment costs compared to the cost of NFC phones
  - Possibility to reach rapidly a critical mass of users

## How MyMax solves the NFC market problems?

- Lack of phones: No need to wait for arrival of NFC phone, works with phones in possession of consumers
- Business models: Sticker distributors can implement their business model and return on investment independently on the other market players
- Critical mass: Smart card distribution model allows to reach rapidly a critical mass of users
- Simultaneous offer: Twinlinx products offer allows covers all requirements for NFC deployment

# CONTACT INFORMATION

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