

NEOWAVE

ABOUT SMART OBJECTS IN TRANSPORT MARKET

Smart Objects at the heart of services offer for urban communities and transport operators.



Cartes 2008 show is an opportunity to demonstrate capacities and interests in Smart Objects, especially in transportation environment for users, operators and organizational authorities. In this particular framework, Neowave is proud to introduce an innovative example of Smart Object: its product range **Weneo PASS**.

A Smart Object is a personal, portable and communicating device, which allows its owner to get identified in its environment and/or in its community.

In the lineage of Smart Cards, Weneo is a perfect secured transactions tool.

ANALYZING MARKET NEEDS

In the past few decades, in a world where technological evolutions run in a long term process, contactless cards and/or tickets solutions brought high throughput, reliability, security and easiness of use.

It seems like most of the new implemented networks tend to be in Contactless mode regarding advantages it generates.

Otherwise, we notice the huge success of e-ticketing through Air and Railway transports confirming benefits from dematerialization.

Currently, operator's main issue is multiplication of transactional tools. In fact, diversity in these tools both allow targeting different kind of users and also facilitating services' access; but lead to additional costs for operators.

Nowadays, users and operators wish there would be more communication between parties. This is why, Weneo is positioning like a real communication vector. Operators can promote its own services and let users know about news, promotions,... On the other hand, users can enjoy a very special customer relationship: express its needs, wants, requests, blames, etc.

SMART OBJECTS vs SMART CARDS

Never wanted to replace Smart Cards and/or Tickets, which remain the best solution "good value for money" for public transportation applications, Smart Objects want to outdo Smart Cards' gaps in terms of connectivity (PC & Web), on line reloading, mass storage capacity and unachieved processing power.

Indeed, Smart Cards suffer from readers' weak deployment, which limit their use and prevent from using them for new Web services.

SMART OBJECTS vs VIRTUAL CARDS

Some Transport ticket integrators have already developed solutions, which allow reloading of virtual Transport cards. Hence anybody can load new contracts in one secured card from a Website.

Users have no information about time needed to update new information on the infrastructure on his way, which can lead to really unpleasant situation: being blocked at night in the metro station because infrastructures do upload early in the morning. Another major issue is about addressing non connected validator in bus for example.

SMART OBJECTS vs PAYMENT THROUGH A NFC MOBILE PHONE

NFC mobile experimentations like the past ones in Strasbourg, Caen and Marseille demonstrated Operators and users' interest for dematerialization solutions. Main Telecom operators consider chip availability to mid 2009, waiting for

applications deployment in 2011/2012. Otherwise, this wait-and-see period will undeniable lead to the emergence of new media in the lineage of “Smart Objects”, answering a real need from operators not ready to wait for NFC mass volume deployment.

In this case, Smart Objects are transactional tools finding its market place between Smart Cards and NFC mobiles. Smart Objects do not replace Cards but offer new portfolio of Web services to users.

WENEO: NEOWAVE’S SMART OBJECT



In the lineage of Smart Cards, with a USB form factor, Neowave product range Weneo outdoes Smart Cards’ limits in terms of connectivity, mass storage capacity, unachieved processing power and security.

Weneo introduces itself as a new e-media ready to realize contactless transactions and to take benefit from Web services.

Thanks to its open architecture, Weneo solution is compatible with current networks and infrastructures – no modifications are required, neither on protocol, neither on application software. Weneo contains chip of Smart Cards already qualified and certified.

Neowave product range Weneo is right away operational on existing networks and infrastructures. Just one development may be required in order to realize Web interface to communicate with Smart Object and proceed to uploading on line and so on with operators’ services.

Take notice that Web services we discussed above are exactly the same that those required to realize NFC transactions with mobile.

WENEO PRODUCT RANGE FEATURES	OPERATORS AND ORGANIZATIONAL AUTHORITY’S BENEFITS	USERS’ BENEFITS
State of the art technology	✓	✓
Transport tickets’ dematerialization	✓	✓
Distribution costs’ optimization	✓	
Compatible with existing networks and protocols	✓	
Communication / Promotional tool	Link between users and operators	Link between users (like a community)
A unique e-media for all transport/banking applications	✓	✓
Mass storage capacity & unachieved processing power	✓	✓
Security	✓	✓
Autonomy	✓	✓
Web & PC connectivity	✓	✓
Opportunities to new services from operators and their partners	✓	✓
Occasional traveller management	✓	✓

Case study n°1: WENEO « SCHOOLBOY/GIRL »



Considering the daily life of any schoolboy/ schoolgirl who owns a Weneo. Let's state:

- ▶ 7 am, student leaves home with his Weneo hanging up on his keys. He shows his Weneo to bus driver to validate his access thanks to owner's photo on the Weneo.
 - ▶ 8 am, he enters school by presenting his Weneo.
 - ▶ 10 am, break time at school, student buys fruit in vending machine thanks to electronic wallet within his Weneo.
 - ▶ 12:30 am, he gets canteen's access and his specific personal rights thanks to his Weneo.
 - ▶ 1:30 pm, he enters library and lends some books thanks to his Weneo, which will integrate all books lending history.
 - ▶ 1:45 pm, he uses his Weneo to make copy at the photocopier (e-purse banking application).
 - ▶ 2:00 pm, student charges lesson documentations on his Weneo.
- ▶ 5:00 pm, he downloads documentations on his computer.
- ▶ 7:30 pm, his father takes a look at the Weneo, has access to his child's grades in a private partition with his personal code access.

Case study n°2: WENEO PASS TOURISM

Considering tourist needs coming to a new city, miscellaneous requests may rise.

For example:

- ▶ In a touristic city, having access to public transportation, museums, exhibitions, cinema, theatre, sports club,... No need to wait hours to buy tickets at the window and even better why not having the opportunity to charge tickets before your trip.
- ▶ An electronic wallet for small payment: vending machines, fast foods, etc.
- ▶ An exchange & communication mean. Even more, Weneo can manage loyalty programs.

IS SMART OBJECT'S PRICE AN OBSTACLE?



Smart Objects Weneo are obviously slightly more expensive than Smart Cards, but do not provide the same kind of services. Some users could be willing to pay more in order to have access to personalized services, like:

- ▶ Uploading on line, update, profile changes, add/remove and/or modify a commercial contract on line.
 - ▶ On line enrolment and self personalization with the Weneo PASS (locked ID photo)
 - ▶ Personalized Loyalty program.
 - ▶ Direct access to new services' information.
 - ▶ Targeted promotion.
 - ▶ Direct access to partners' site.
 - ▶ Setting up a direct relationship with the operator: requests, blames, satisfaction,...
 - ▶ Exchange every kind of information with users' community by the way of a forum.
 - ▶ Take benefit from secured USB function so as to save every personal data (from 512 MB to 4GB)
- ▶ Access to an optional electronic wallet : contactless payment (without credit card number)
- ▶ At the end, having access to other Smart Cards applications like e-ticketing (i.e: access and subscription to various cultural, sport events).

All these services, not available with Smart Cards, become real and operational with Weneo at approximately the same price as a classic good quality USB key just allowing mass storage capacity.

Our products take benefit from massive use of components which make them up and can easily reevaluate their price to be compliant with transport market price.

WHAT DO SMART OBJECT WENEO SOLUTION NEED TO BE DEPLOYED?

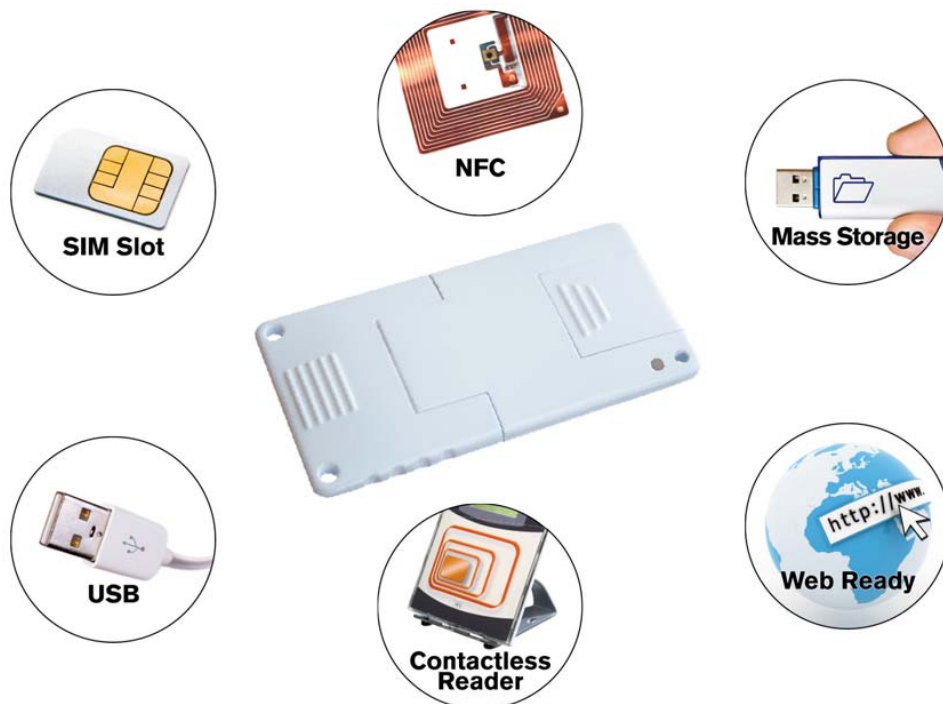
1. Weneo's production and personalization:
For a given transport network, we'll have to charge specific keys in Weneo (Smart Cards' initialization). It could also be necessary to affect one specific identification solution in order to differentiate Cards.
2. Existing networks and infrastructures :
The embedded chip within Weneo product is a qualified chip for a considered network. Consequently, there is no need to adapt one technology to another.
3. Services available via Internet :
Compliant work and online services (online payment) on Weneo product depend on which infrastructure operators have already developed. In any case, Neowave can supply the Smart Object dedicated technology to operators in order to interact with Weneo from Web server.

Weneo products are from Smart Objects' First Generation, that is to say totally integrated in both contactless world revolution and Web services' explosion. Within this dematerialization's move, Weneo Smart Objects from Neowave represent a real opportunity for operators and users of public transportation.

Immediately available, totally in accordance with current standards, compatible with existing networks, Weneo's spreading can be fast and thus answer users' expectations in terms of autonomy and access to new services.

Different from Smart Cards, Weneo Smart Objects apply to users, group of users like schoolmates, students, tourists and/or urban community who want to have access to new services and being able to enjoy every facet of our product in their daily life.

Thanks to its affordable price and a modern design, Weneo product is liable to become a major attraction for users who will tend to appropriate product like they already do with their mobile phones.



Whether you have any commercial questions, please feel free to contact our Vice President Marketing and Sales Michel LEDUC Tél : +33 (0)4.42.50.70.05 / michel.leduc@neowave.fr