

MOBIQUITOUS Information Systems

*(towards « mobiquitous smart places »
with a **BOTTOM-UP** paradigm)*

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on Skype and Flickr**

Contents

□ Strategic vision :

- **« We'll BIP and TAG our MOBIQUITOUS CLOUDy future**

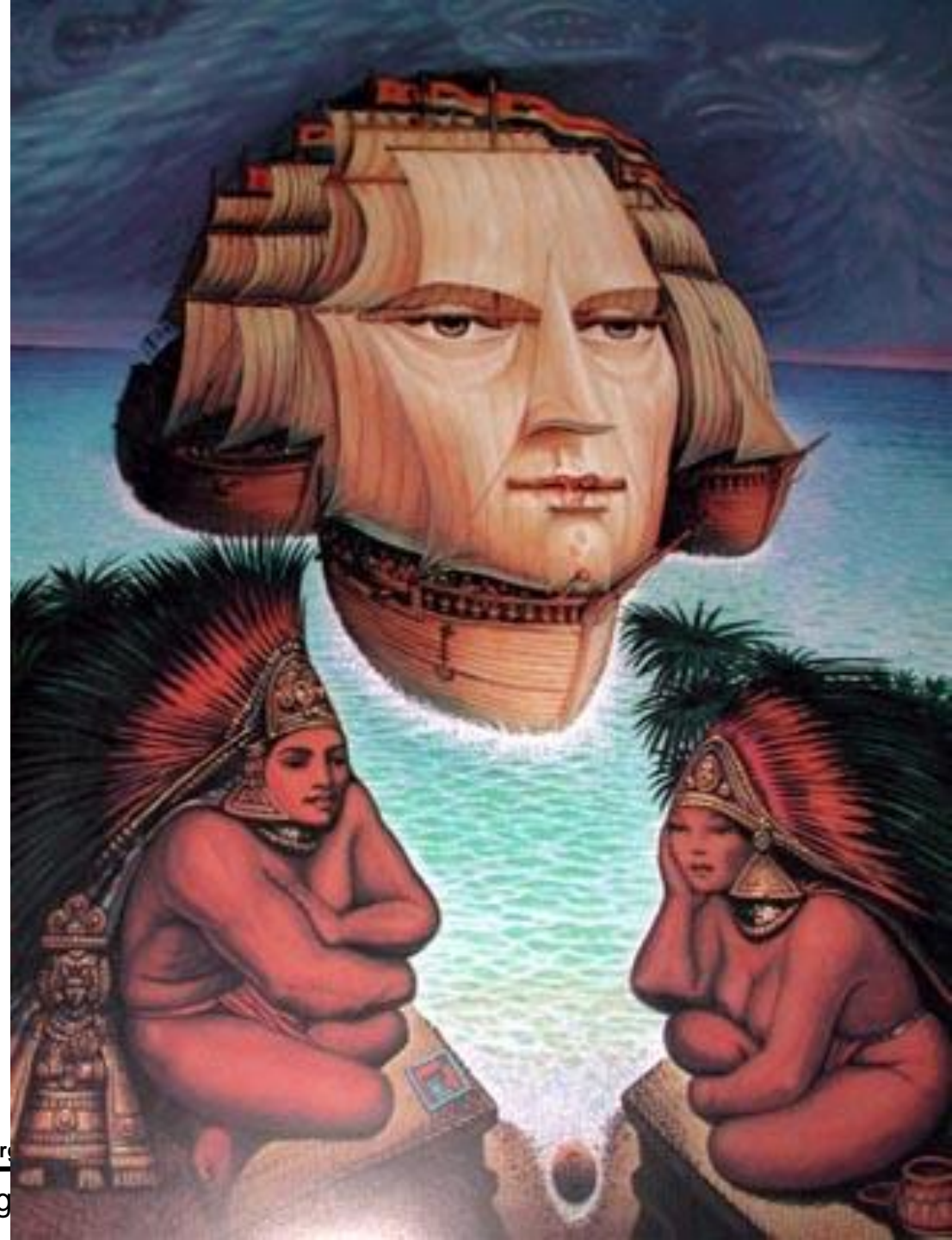
- ... In SMART PLACES of the LOCAL Wide Web»**

- ... With a BOTTOM-UP paradigm (Innovation, revolutions, ..)**

□ Some Concrete innovative MOBIQUITY projects in the University of Nice Sophia Antipolis (and DreamIT Foundation)

Be OUT of the box !

- « *Your Highness ...determined to send me, to the country of India...and furthermore directed that I should not proceed by land to the East as is customary, but by a Westerly route, **in which direction we have hitherto no certain evidence that anyone has gone*** » Christopher COLUMBUS



Digital Future ?

- **« The next big shift in the Internet is mobile: billions of devices are on the Internet, including more than one billion cell phones, and billions of java card devices that can get connected by plugging them into a reader or cell phone, or connecting via a radio reader. The conversations the devices have with each other have swamped human conversations.**

... So the main area for development of the Internet is to link these devices at the edge – including those with RFID tags – into conversations, which often do not pass through the main cloud of Internet but pass through the device – it's a technology shift and a use shift”



John Gage at MBDS (1999)

How was life in 1992 ?

(MBDS creation !)

- No Public Internet
- No Cell Phones
 - NO SMART PHONES !



Some major mistakes ...

- ❑ **Christopher Collombus was WRONG !**
 - « The world is FLAT »
- ❑ **Marx was right**
 - « To everybody depending on their needs»
 - « You could change YOUR world »
- ❑ **Lamartine was wrong**
 - Objects have a soul (and become more and more « intelligent »)
- ❑ **BEN is right**
 - Conformism leads to death



Key resource of this millenium (idem LOVE and happiness) ?

- French – « Le bonheur est une chose merveilleuse: plus tu en donnes plus il t'en reste » (PASCAL)**
- English - happiness is a marvellous thing: the more you give, the more you are left with**
- Arabe: السعادة شيء جميل كلما أعطيتها كلما بقيت لك**
- Creole (Haïti) - Ala yon bèl bagay se kontantman, plis ou bay ladan'I plis ou rete ladan'!!**
- Russian : Счастье – волшебная вещь: чем больше ты его даришь, тем больше тебе остаётся»**
- Spanish - la felicidad es un artículo maravilloso: cuanto más se da, más le queda a uno**
- Occitan - la felicitat es una chausa meravelhosa: mai ne'n donas, mai te'n rèsta**
- Swedish - lycka är något underbart: ju mer du har att ge, desto mer har du kvar av den.**
- Italian - la felicità è qualcosa di meraviglioso: più ne dai e più te ne rimane**
- German - Glück ist eine wunderbare Sache: je mehr du schenkst, desto mehr hast du**
- Roman - 'a felicità è quarcosa de meravijoso: più 'a dai e più te ce rimane**
- Hungarian - a boldogság csodálatos dolog: minél többet adsz belőle, annál több marad neked**
- Brazilian Portuguese - a felicidade é uma coisa maravilhosa: quanto mais você dá, mais você recebe**
- Latin - beatitudo res mira est: plus das plus tibi manet**
- Dutch - het geluk is iets prachtigs: hoe meer je er van weggeeft, des te meer je er van overhoud**
- Esperanto - felicxo estas io mirinda; ju pli multe da gxi vi donas, des pli multe al vi restas**
- Flemish - het geluk is iets fantastisch, hoe meer je ervan geeft, hoe meer je krijgt**
- ~~**Basque - zoriona gauza miresgarria da, zenbat eta gehiago eman, orduan eta gehiago daukazu**~~

INFORMATION !

- ❑ 1-1 = 2 !
 - ❑ Abundance
 - ❑ Positive value of interconnexion !
-
- ❑ « *Poverty is denial of access to Information* »
Frantz Verella (Haiti)

UBIQUITY (Broadband Internet)



mozilla LABS
ubiquity

Internet and Information

- ❑ More TRANSISTORS than RICE grains (with a lower cost of production) or ANTS !
- ❑ **100 000 New Internet users / a day**
 - 800 millions PC's connected to Internet
- ❑ in China : + 500 000 new cell phone users a day
 - **1000 millions of cell phones sold in 2009**
- ❑ 1 billion of tagged objects (RFID)
 - 1000 billions of tagged objects connected to Internet by 2020 (IPv6)
 - 3 billions Google searches each month

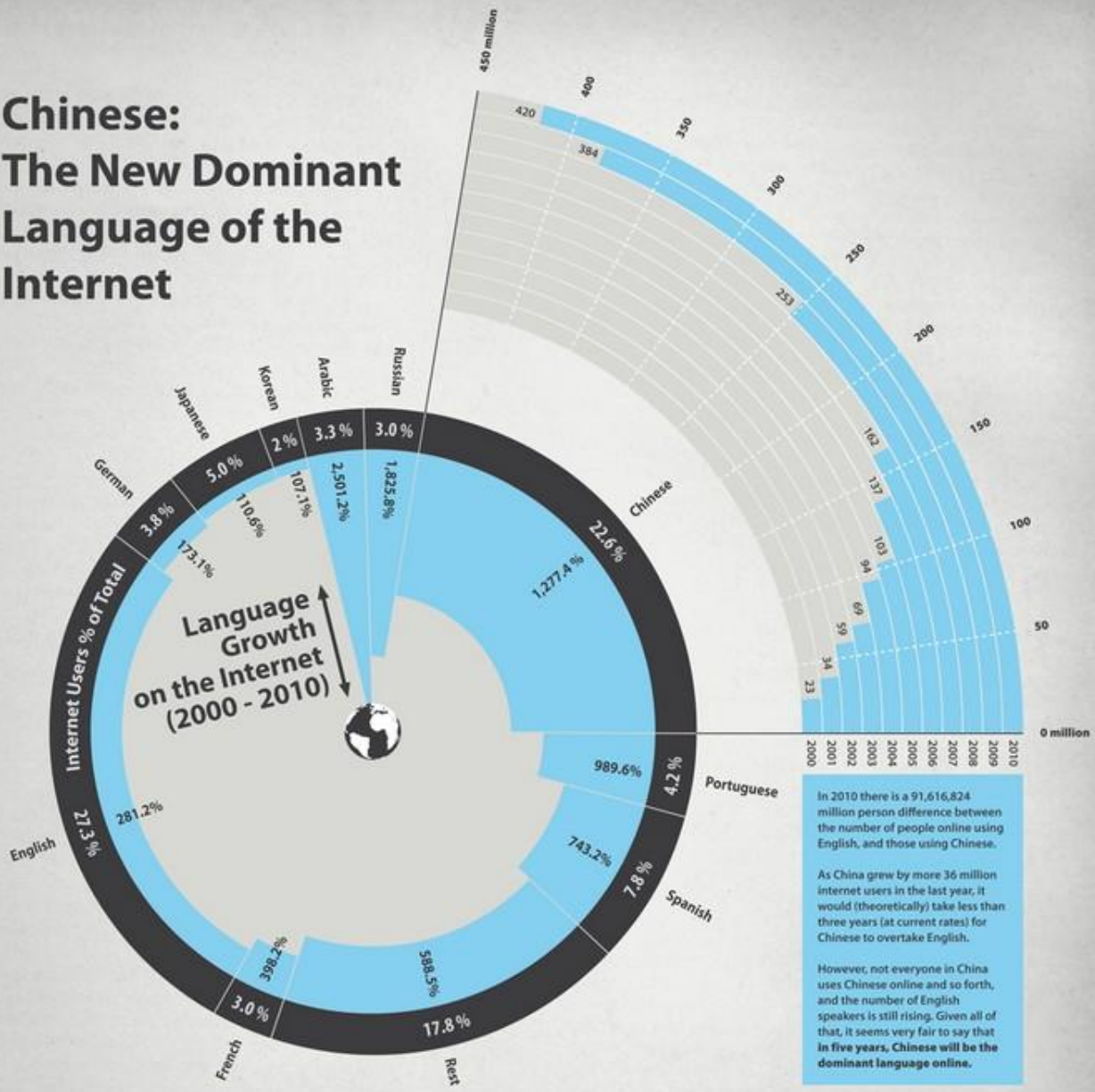
The number of text messages each day is > than the population of the planet

In 2010 in Japan QR CODE scans >> SMS

3000 books published each day

4 exabytes (1019) of unique NEW information will be generated this year (> in the previous 5000 years)**

Chinese: The New Dominant Language of the Internet



In 2010 there is a 91,616,824 million person difference between the number of people online using English, and those using Chinese.

As China grew by more 36 million internet users in the last year, it would (theoretically) take less than three years (at current rates) for Chinese to overtake English.

However, not everyone in China uses Chinese online and so forth, and the number of English speakers is still rising. Given all of that, it seems very fair to say that in five years, Chinese will be the dominant language online.

Internet **UBIQUITY** , BIP and LWW !

WEB2.0

Fom *WORLD-* wide Web

to ...

LOCAL-Wide Web

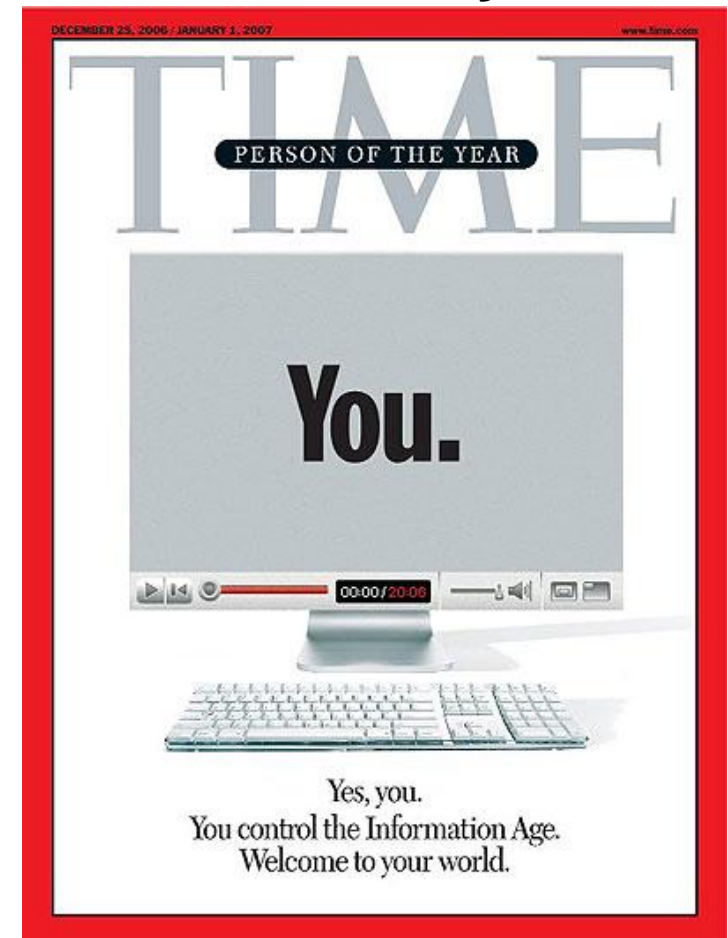
Web 2.0 and « USERWARE »

- User-generated content
 - Tribal knowledge
 - Proximity marketing
- From person to « communities »

- *MOBILE WEB 2.0 !*
 - *Twitter (NEXT CNN)*
 - *Facebook*
 - *Foursquare*

 - *Then QUORA and mobiquitous serendipity ☺*

Man of the year 2006



From « Micro-campaigner 2.0 » to « president 2.0 » ?

Mac Cain (WEB 1.0) vs OBAMA (WEB 2.0) !

http://my.barackobama.com/page/dashboard/private

The screenshot shows a Mozilla Firefox browser window displaying the 'my.barackobama.com' dashboard for a user named Serge Miranda. The page features a blue header with the Obama-Biden logo and a quote from Barack Obama: "I'M ASKING YOU TO BELIEVE. Not just in my ability to bring about real change in Washington ... I'm asking you to believe in yours." Below the header is a navigation menu with links for LEARN, ISSUES, MEDIA, ACTION, PEOPLE, STATES, BLOG, and STORE. A prominent red button says "PLEASE DONATE". The main content area is divided into several sections: "MY PROFILE" with an "Edit Profile" button, "NEIGHBOR TO NEIGHBOR" with a "1/10" activity index, "MY BLOG" with a "Manage Blog" button, and "MY ACTIVITIES" which includes a table with columns for "All", "7 Days", and "30 Days". The table lists various activities such as "Events Hosted", "Events Attended", "Calls made", "Doors Knocked", "Number of blog posts", "Donors to your personal fundraising", and "Amount raised". On the right side, there are links for "My Home", "Community", "Events", and "Find Friends". The browser's address bar shows the URL "http://my.barackobama.com/page/dashboard/private". The Windows taskbar at the bottom shows the "démarrer" button, several open applications, and the system clock showing "FR 09:46".

- FACE BOOK co-founder

- 3.5 millions of « micro-campaigners » (80% < 25 ans)

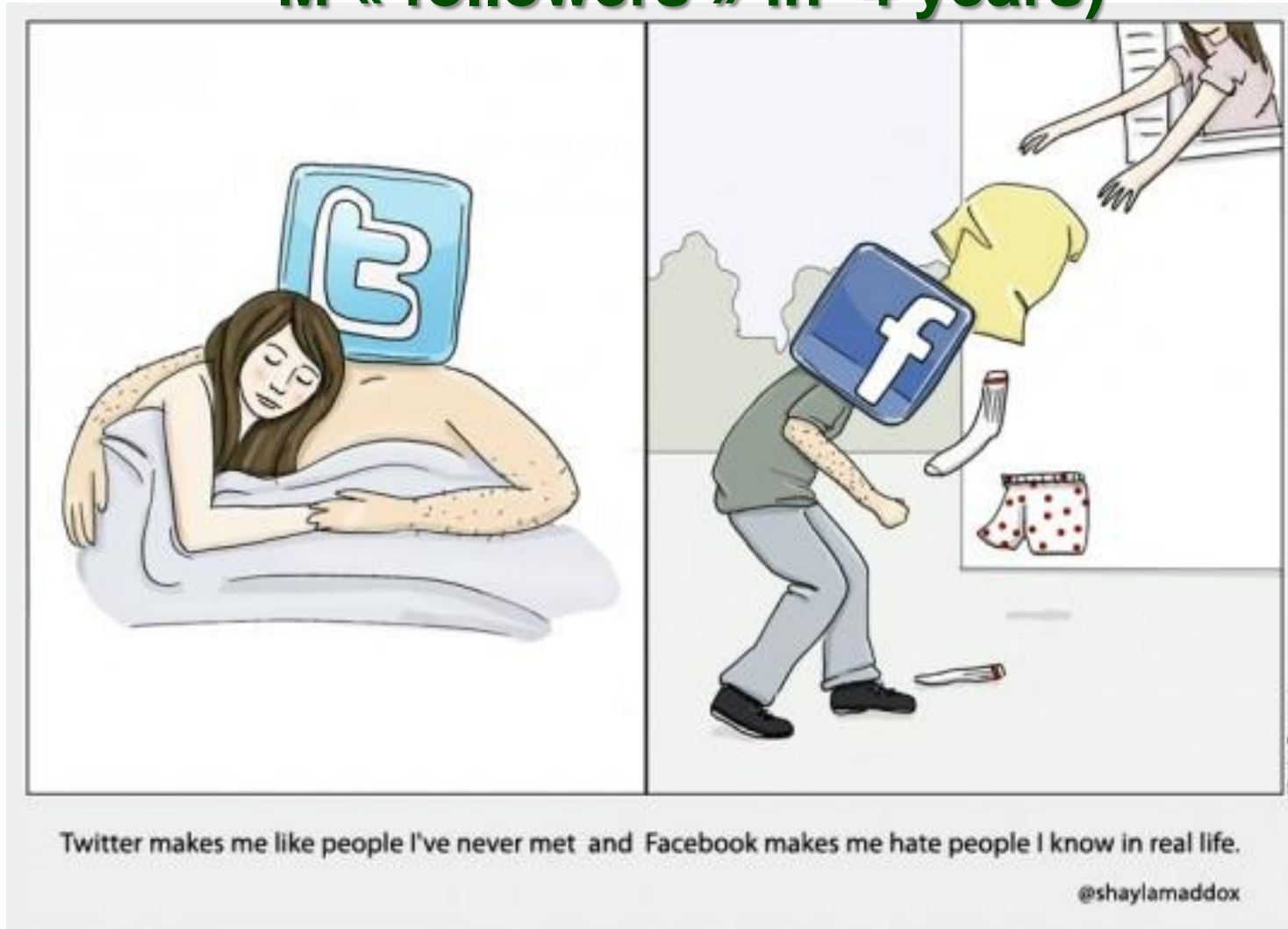
>300 M de dollars of « micro-donations »

- report of « micro-actions »

-NO HIERARCHY !

ROOSEVELT (Radio) → KENNEDY (TV) → CLINTON (internet) → OBAMA (Web2.0)

Facebook (> 700 M friends ») ,... Tweeter (>150 M « followers » in 4 years)



Marketing 2.0

US Internet Users Who Are More Likely to Purchase from a Brand After Becoming a Subscriber, Fan or Follower, April 2010

% of respondents

Twitter follower



Email subscriber



Facebook fan



■ Agree

■ Neutral

■ Disagree

Source: ExactTarget, "Subscribers, Fans and Followers: The Collaborative Future," provided to eMarketer, Sep 8, 2010

119500

www.eMarketer.com

Towards 1 Billion in Facebook ...

The 1000 most-visited sites on the web

Data: April 2010

[Learn more about this list](#)

Rank	Site	Category	Unique Visitors (users)	Reach	Page Views	Has Advertising
1	facebook.com	Social Networks	540,000,000	35.2%	570,000,000,000	Yes
2	yahoo.com	Web Portals	490,000,000	31.8%	70,000,000,000	Yes
3	live.com	Search Engines	370,000,000	24.1%	39,000,000,000	Yes
4	wikipedia.org	Dictionaries & Encyclopedias	310,000,000	20%	7,900,000,000	No
5	msn.com	Web Portals	280,000,000	18.1%	11,000,000,000	Yes
6	microsoft.com	Software	230,000,000	14.8%	3,300,000,000	Yes
7	blogspot.com	Blogging Resources & Services	230,000,000	14.7%	4,400,000,000	Yes
8	baidu.com	Web Portals	230,000,000	15%	27,000,000,000	Yes
9	qq.com	Email & Messaging	170,000,000	11.1%	25,000,000,000	Yes
10	mozilla.com	Internet Clients & Browsers	140,000,000	9.2%	2,100,000,000	No
11	sina.com.cn	Web Portals	130,000,000	8.4%	3,600,000,000	Yes
12	wordpress.com	Blogging Resources & Services	120,000,000	7.7%	1,200,000,000	Yes
13	bing.com	Search Engines	110,000,000	7%	2,700,000,000	Yes
14	adobe.com	Programming	110,000,000	6.9%	1,000,000,000	Yes
15	163.com	Web Portals	98,000,000	6.3%	2,700,000,000	Yes
16	taobao.com	Shopping	98,000,000	6.3%	10,000,000,000	No

New apps around 2.0 like automatic « DAILY JOURNAL » with twitter !

The screenshot shows a Mozilla Firefox browser window with the address bar displaying `http://paper.li/SergeM06`. The page title is "The Serge Miranda Daily - Mozilla Firefox". The browser's menu bar includes "Fichier", "Édition", "Affichage", "Historique", "Marque-pages", and "Outils". The address bar also shows "transmedia" and a search icon. The browser's toolbar includes "Les plus visités", "Débuter avec Firefox", "À la une", "Hotmail", "Personnaliser les liens", "Windows Media", and "Windows". The browser's tab bar shows "Gmail - (aucun objet) - miranda.serge...", "The amira ben ghanem Daily", "The Serge Miranda Daily", and "transmedia lab".

The page content includes the "paper.li alpha" logo, a search bar, and navigation links: "my paper.li", "create a newspaper", and "sig". The date "Thursday, Oct. 14, 2010" is displayed. The main title is "The Serge Miranda Daily" with a profile picture of Serge Miranda. Below the title, it says "as shared by Serge Miranda + 231 followed people on Twitter". A "Like" button is visible. A black bar contains the text "Next update in about 24 hours", "Alert me", "Promote it", "Archives", and "See all articles".

The main content area features a large signature of "Serge Miranda" and the text "El imperio por dentro (Primera parte)". Below this, it says "cubadebate.cu - Me asombra la ignorancia generalizada en torno a problemas vitales para la existencia de la humanidad, en una época en que esta cuenta con fabulosos medios de comunicación que no eran siquiera imaq...".

On the right side, there is a section titled "How Cisco Does Social Media - Bruce Upbin - Tradigital" with a sub-header "blogs.forbes.com - Oct." and a timestamp "122010 - 7 :01 pm [3 views] 0 recommendations". The text reads: "By BRUCE UPBINGratutitous Ellen Page photo. Image via WikipediaThe latest in our Social Media Masters series is up today. This time we took a diffe...". Below this is a small profile picture of "Padmasree" and the text "Participez à la conférence de".

At the bottom right, there is a section titled "TODAY'S TRENDING TOPICS" with the text "Stories #usa Technology Business #haiti Art & Entertainment Environment Education". Below this is a small image of a woman's face.

The browser's status bar at the bottom shows "Terminé".

MOBILITY !

MOBILITY போக்குவரத்து

WHERE WE'VE COME FROM

For the first settlers in Auroville, walking and cycling presented the most practical and accessible forms of transportation. The classic bullock cart was a widely used option for the transportation of heavy goods. There was only one daily bus to Pondicherry. Personal motorised vehicles were a

HOW FAR WE'VE COME

The combination of a growing population, distances to cover that make walking impracticable, and long hot summers, has helped contribute to the growing use of personal motorized vehicles in Auroville. Millions use bicycles, but you can also see a lot of motorbikes, and taxis, the occasional bullock cart and so on. Transportation is a necessity for many. They in

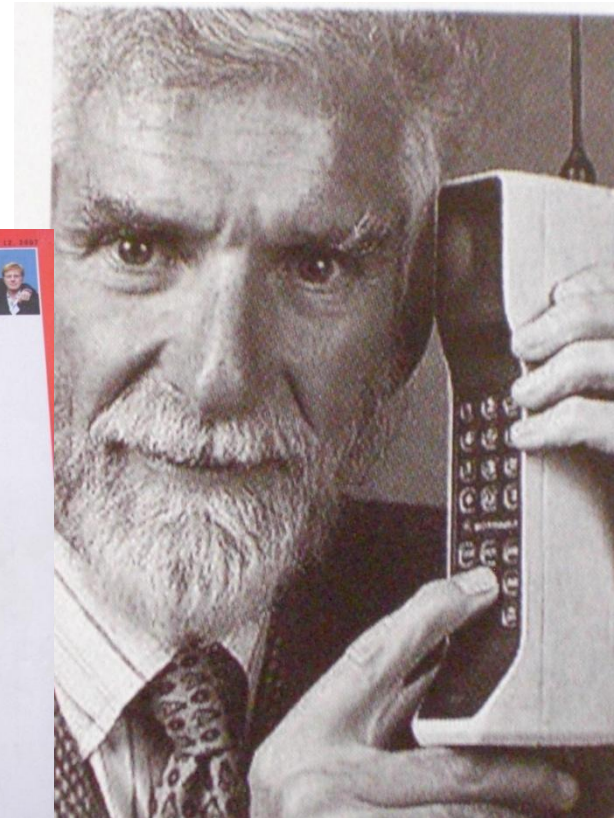
Mobility and Cell phones



**Graham Bell
(1847, 1922)**

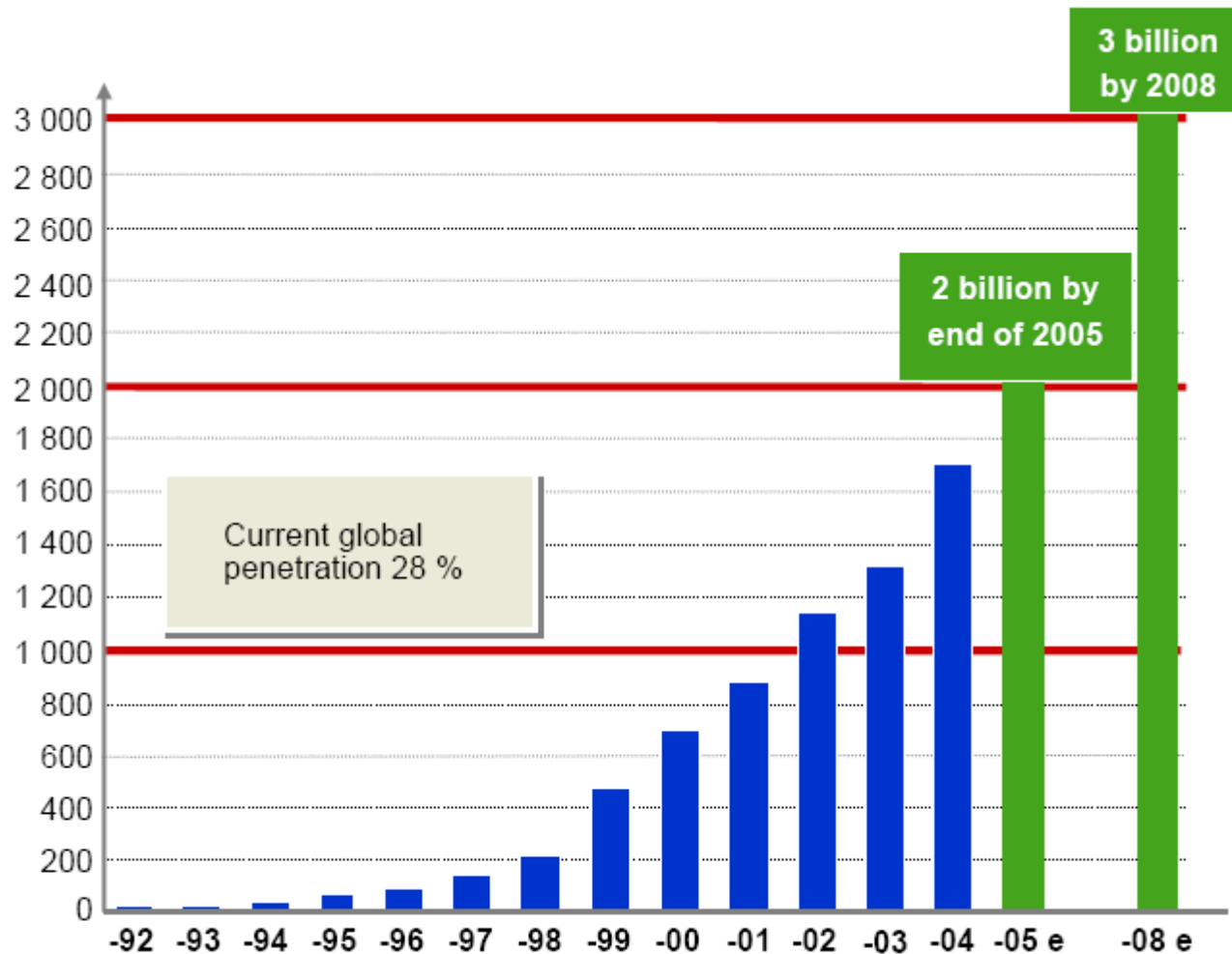


TIME-2007



**Martin Cooper
(Motorola,
1973)**

JULY 2010 : 5 Billion cell phones (Ericksson)



Source: Nokia

The Cell phone became a real computer (...a « *smart* » phone !) !



**Painter in Port
au Prince Dec
2010**

3.3 Billions of SMART PHONES by 2015



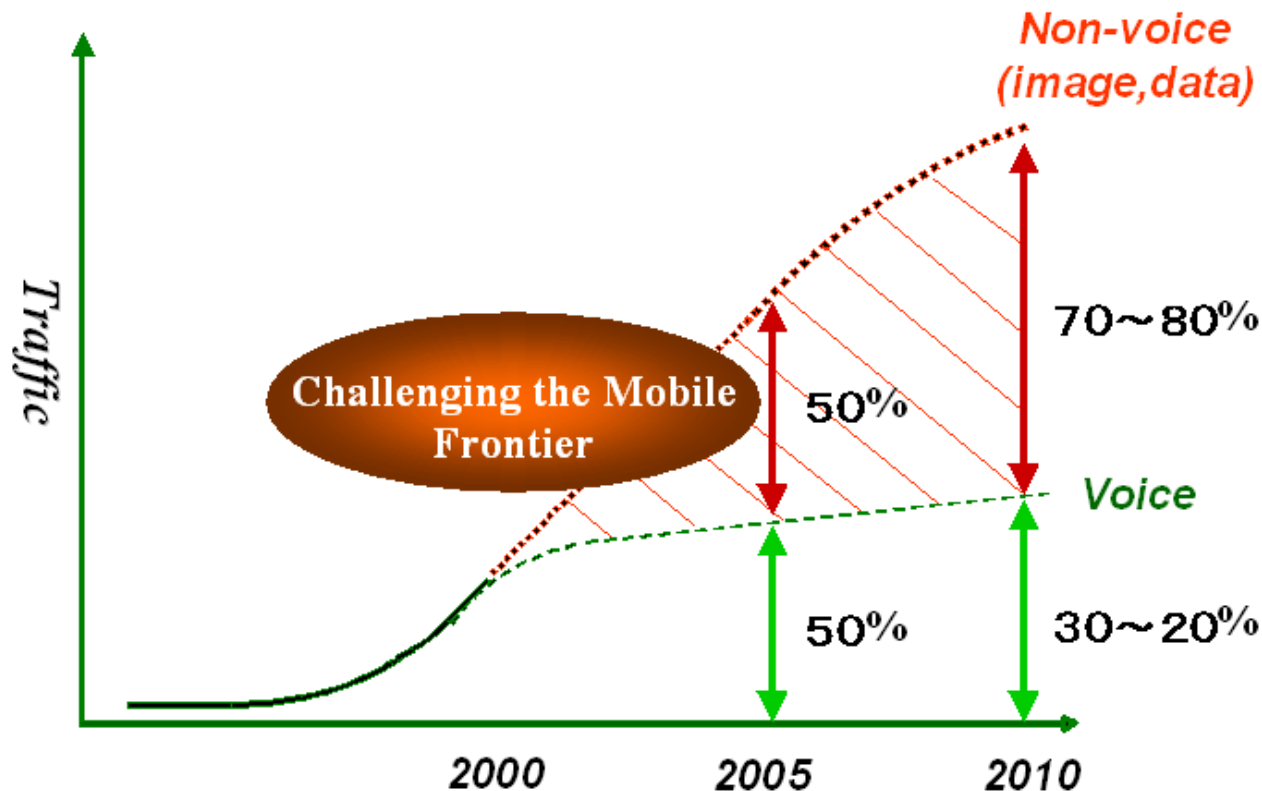
The Smartphone won the battle of the pocket !



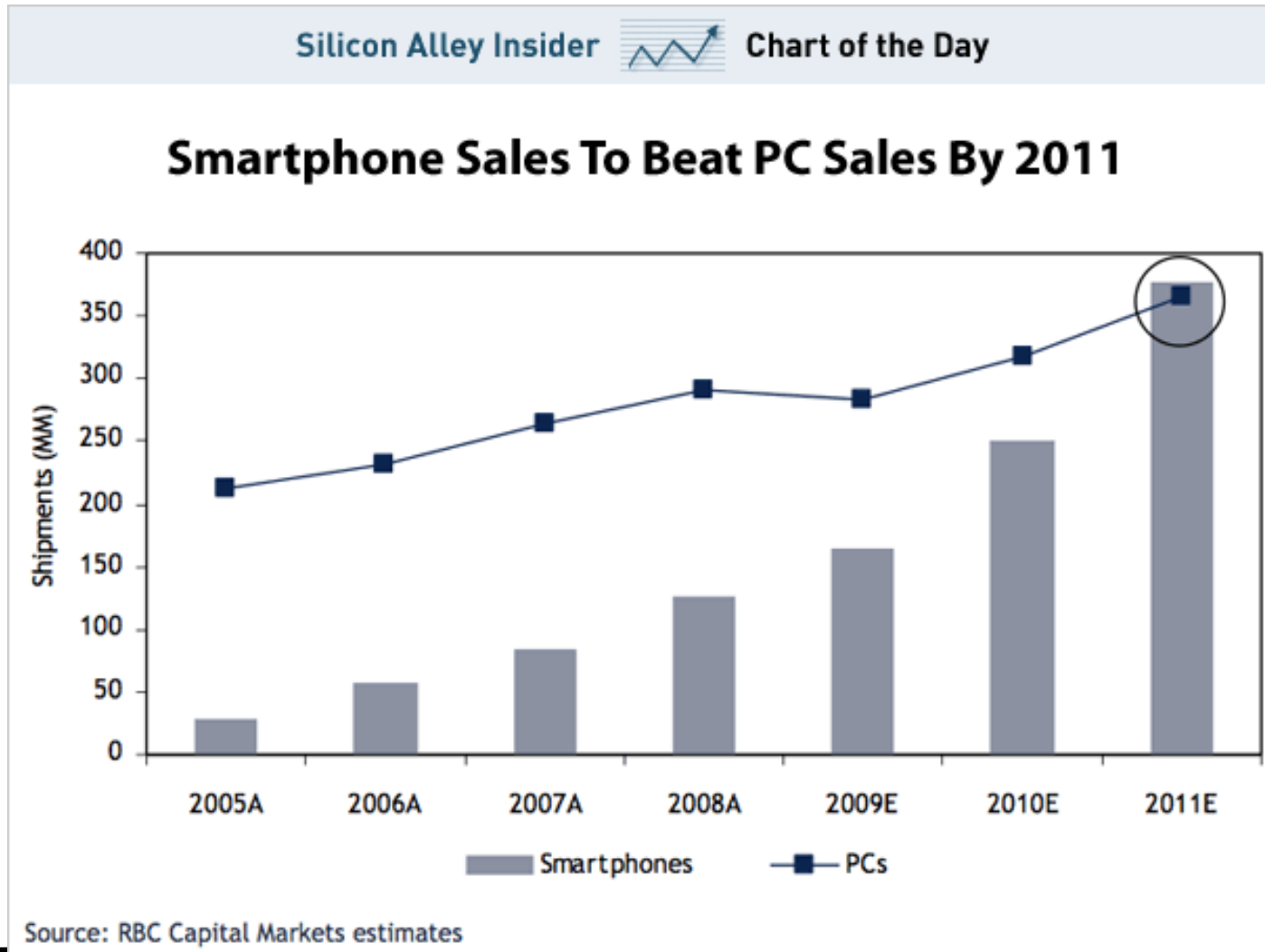
Cell Phone tomorrow ?

- Universal Remote controller (pic, movies, MP3, TV, key, payment,...)

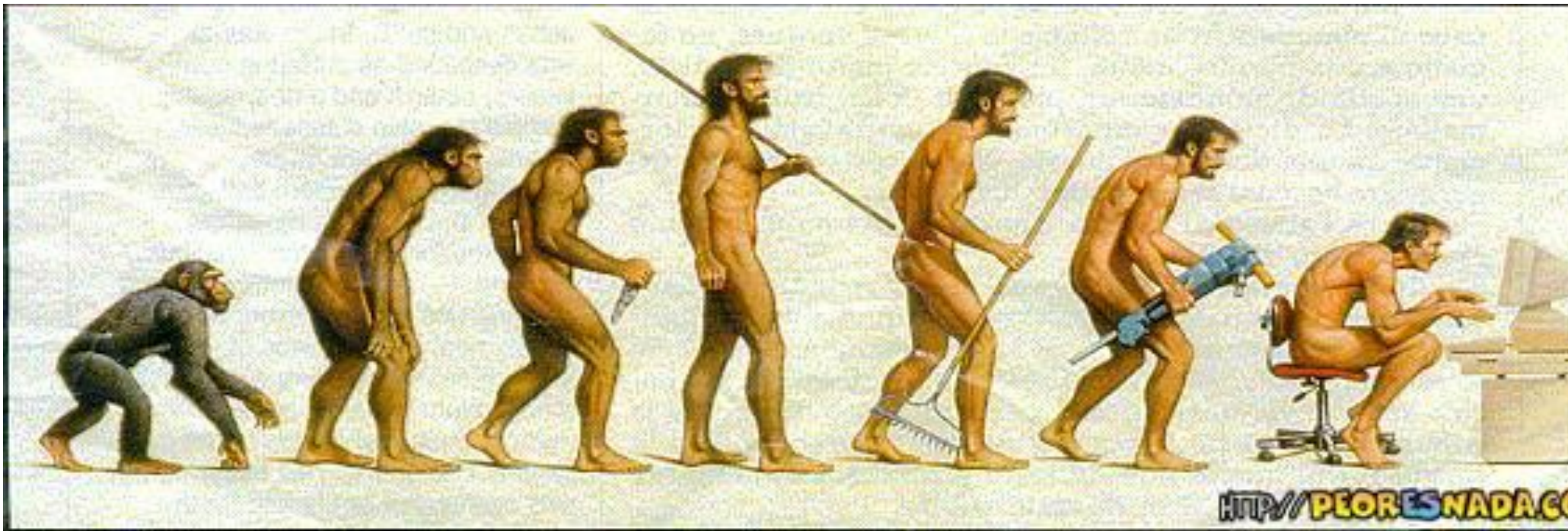
Development of Mobile Multimedia



SMART Phone Smartphones and PC



With the cell phone : 4th screen in the history of humanity *(5th with Tablet/Ipad)*



« TRANSMEDIA ? »

- ▶ **Ex : FILM « BURIED » on the 10th of NOV 2010**

<http://www.buried-lefilm.com/univers.php>

- multi task and multi screen

- ▶ **Concept defined by Marsha Kinder in 1991**

– « *Transmedia intertextuality works to position consumers as powerful players* »

- ▶ **Prof MIT Henry Jenkins (2003, MIT)**

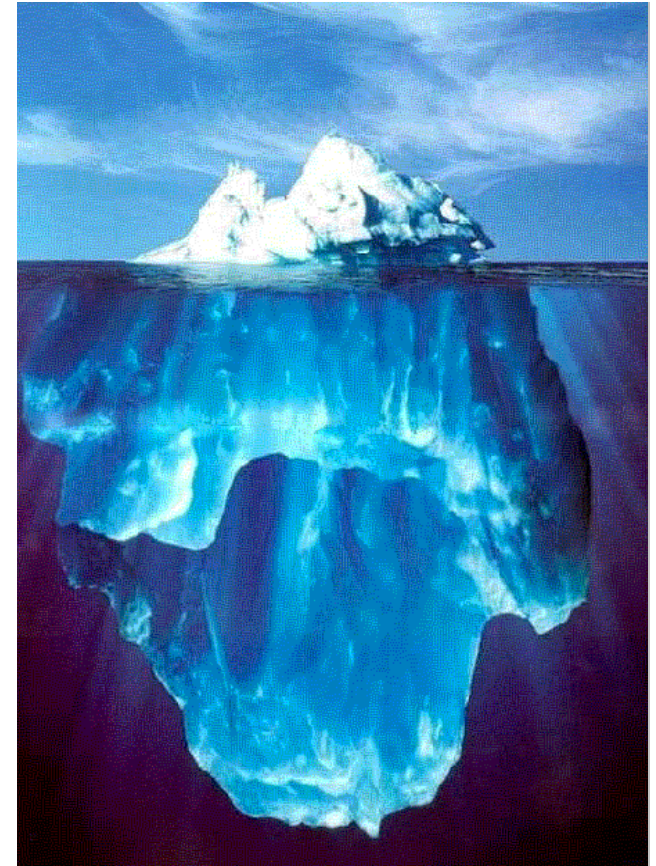
– **Book : « Convergence culture »**

Towards mobiquity : **« Digital CONVERGENCE »**

« *Tip of the Iceberg* »

- **Wireless revolution (for TELCO's)**
- **Internet revolution(in CS)**

**→ CONVERGENCE of
telecommunications and
computing**



« **MOBIQUNITY** » ?

Bridge between REAL and DIGITAL worlds

□ **MOBI**lity

→ Cell Phones

□ Ubi**QUNITY**

→ Internet

*Mobile Internet /
MOBIQUNITY*

*is next big wave (I-
Phone, Android, ..)*



Towards *Mobiquitous Information Services*

« *Mobiquity effect* » ? (Moore, Morris, Metcalfe, Gilder,...)

Moore's law on computer power : *La puissance d'un processeur (nombre de transistors par puces) double tous les 18 mois (100 fois par décennie) (jusqu' à 2030)*

Le nombre de transistors dans le monde dépasse

- de 20% le nombre de fourmis,

- le nombre de grains de riz (avec un coût de production inférieur).



- ⌋ **Gilder 's law on bandwidth** *La bande passante double chaque année*
- ⌋ **Metcalfe 's law on Network value** *La valeur d'un réseau dépend du carré du nombre de ses nœuds*
- ⌋ **Morris law on storage** *Le nombre de gigabits par pouce carré double tous les ans (d'où la baisse du coût de stockage ; 1 Tera octet pour 0,25 Euros en 2015)*
- ⌋ **OC law on tagged objects** : *Le nombre d'objets taggés double tous les ans*

1st Equation for mobiquity : $E=MC^2$!

□ « $E=MC^2$ »

-Energetic Resource

-Multimedia

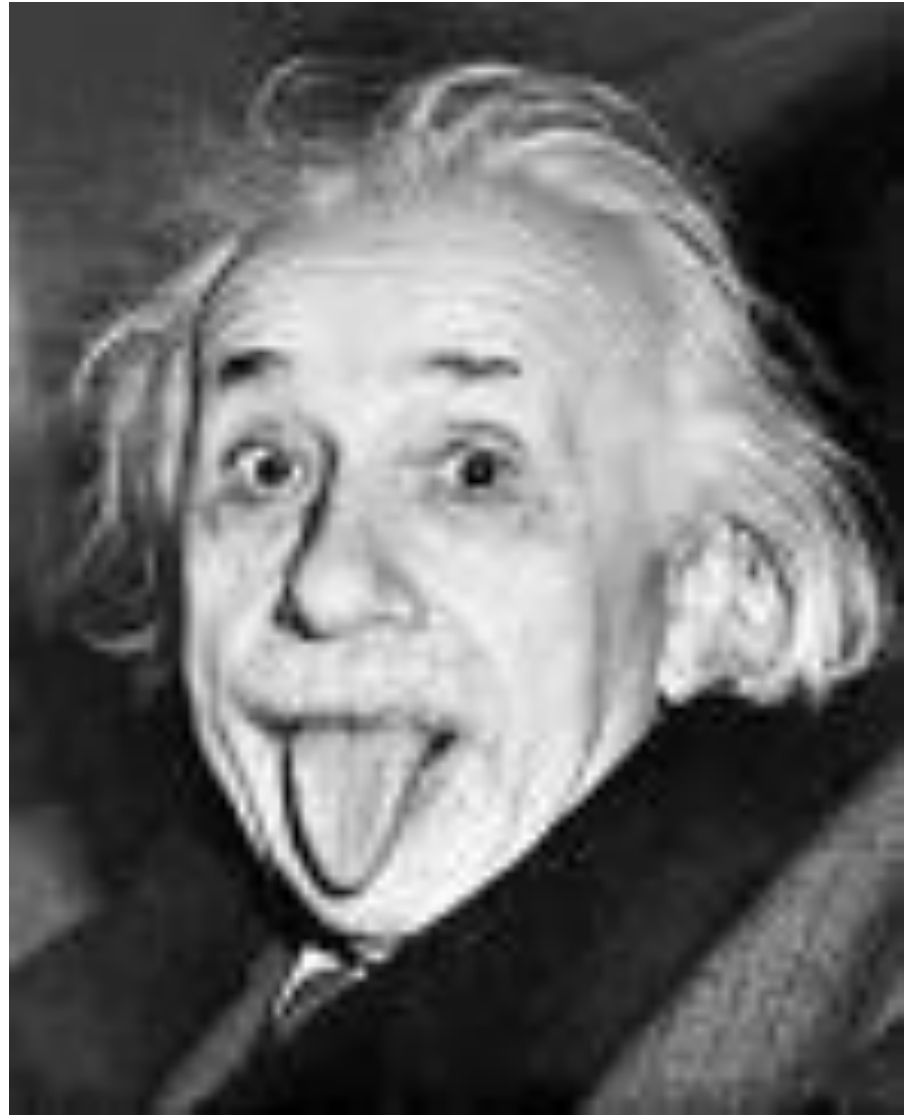
-Computer (Internet)

+

Communication

(Wireless)+

Ex : iPHONE

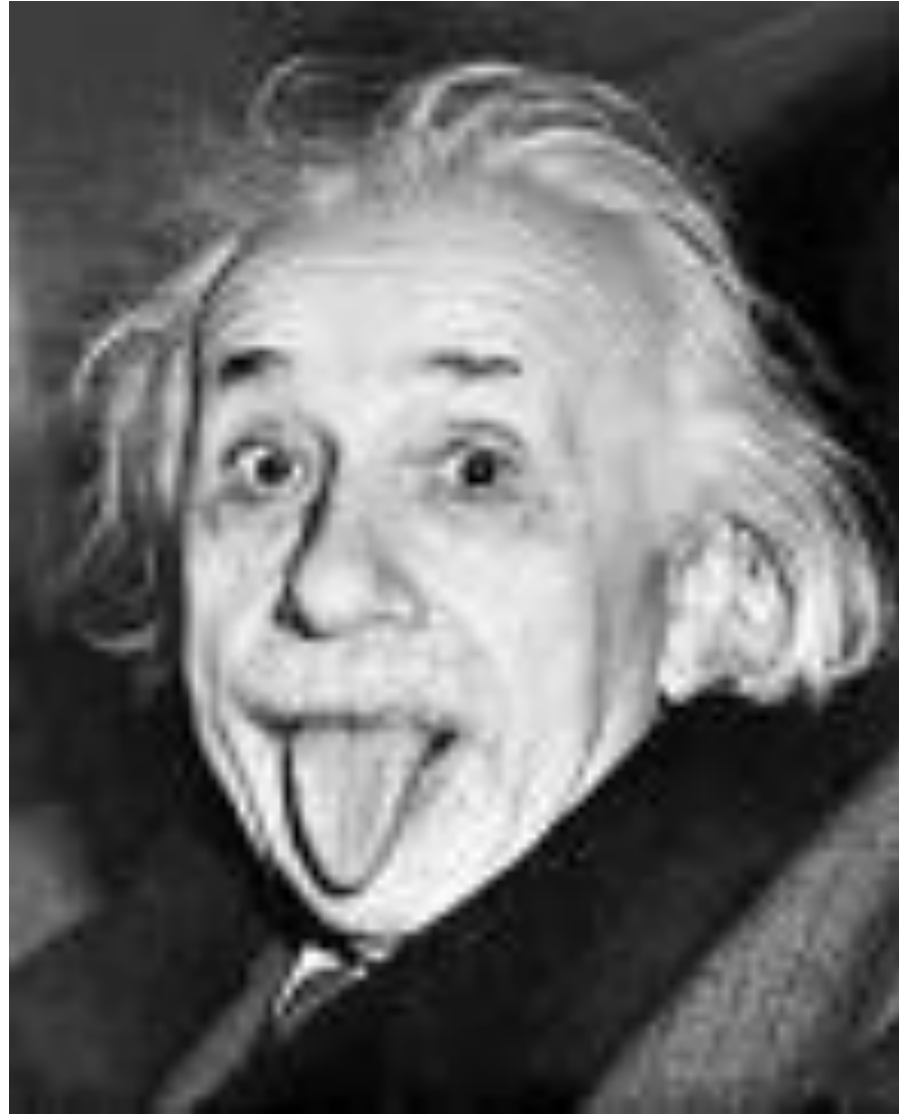


2nd Equation for mobiquity : E= MC3 !

□ « E= MC3 »

- Energy
- Multimedia
- Computer +
- Communication +
- Consumer
Electronics

Ex : iPad



Mobiquitous FUTURE ?



Nexus S (NFC Google Phone in Dec 2010)

« Creative DELETION » Shumpeter

(Demandez l'heure à un ado, demandez lui de prendre une photo, il ...sort son mobile !)



Kodak factory in Harrow (Londres) in 1890

Strategic evolution

From TOOLS to SERVICES to « SMART PLACES » (« LOCAL » Wide Web)

- location/time-based services ...
- 5 pre-defined dimensions with NFC phones !

From TOOLS to « (information) SERVICES » :

AVIS >> HERTZ

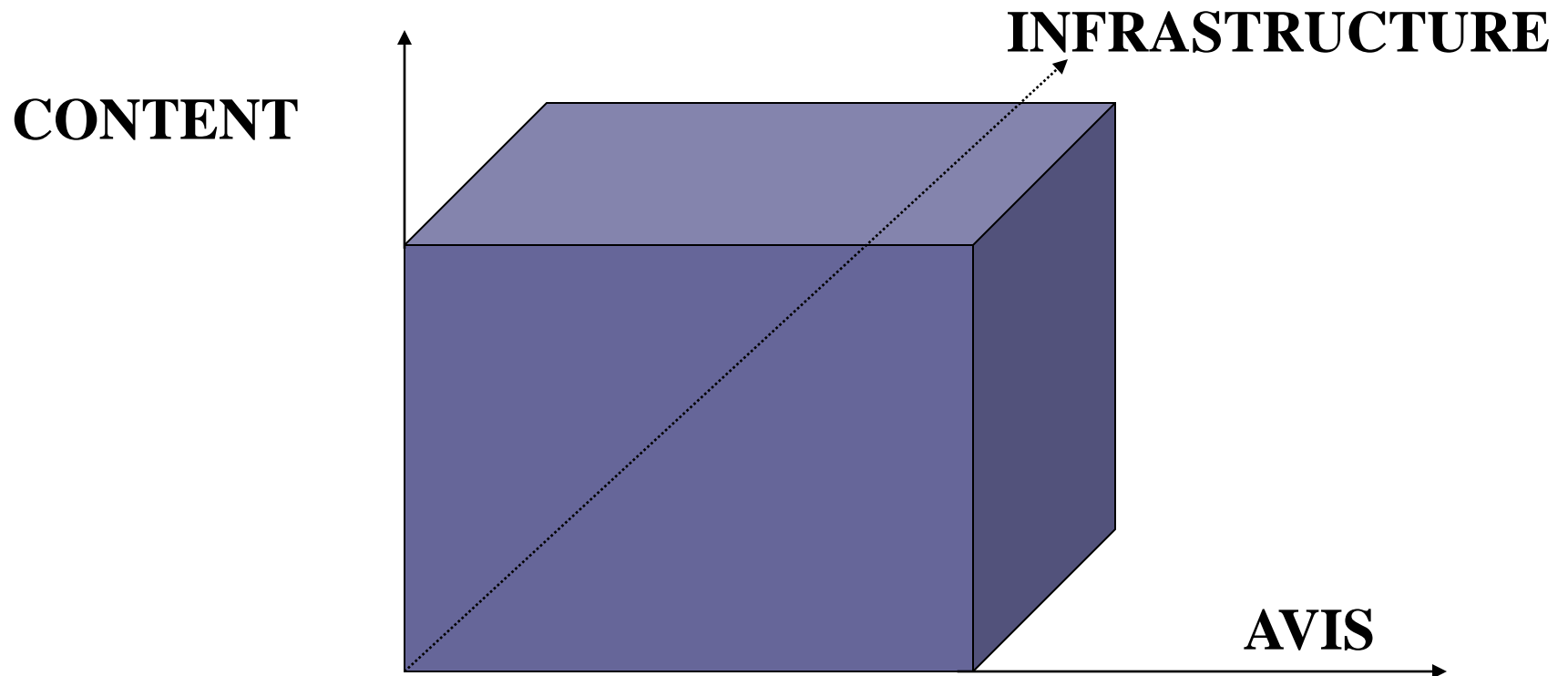
AVIS : *Added-value information services*

HERTZ : *Heoric Executive Retreat to Zero*

- Illimited creativity on SERVICES !
- Only chance for EUROPE ?
 - Software : USA
 - Hardware : ASIA

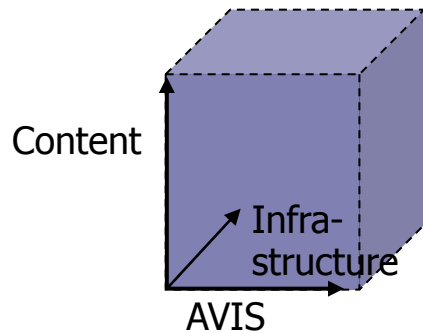
Convergence thru SERVICES

« A cube is a metaphor for a strong relation » J.Olsson

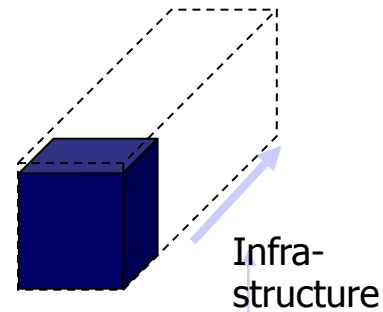


Convergence thru SERVICES

A cube, built upon three axes, can be used as a metaphor for the relation

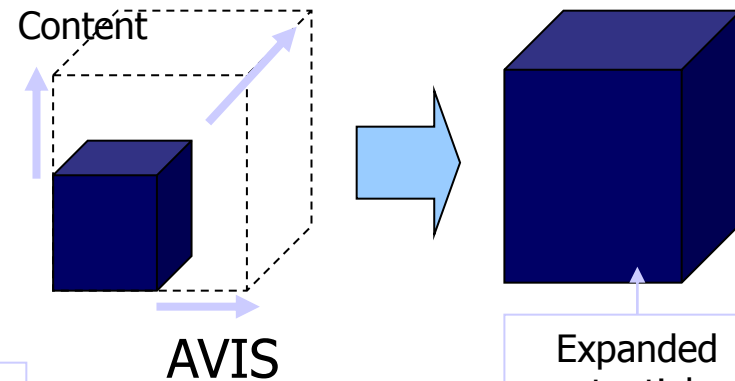


If we consider wireless as only an additional channel, we only "pull" the infrastructure axis



No optimization of the potential in the relation

Over time, wireless will lead to new behaviours and needs. This is a trigger to develop new content and AVIS



Expanded potential – Expanded relation

THINK NEW AVIS of Mobiquity : By exploring the mobiquity potential, CUSTOMER relation expansion

From TOOLS to SERVICES !



*« If we can predict the future of the infrastructure **we cannot predict the future of services...** services cannot be controlled **TOP DOWN** ...Digital divide on services not in technology...from services to **SMART PLACES...** »*

Leonard Kleinrock, June 2008, Brussels

From AVIS to « smart places »



**Ex: Car
Sharing**

**With the cell
phone to
manage
complexity**

From Tools to Services toSMART PLACES

TOOLS (« **Quantity** ») → SERVICES (« **Quality** ») → SMART PLACES (« **Authenticity** »)

“Authenticity” J.H.Gilmore, B.J.Pine, Harvard Business School, 2007 ;



So our ubiquitous future will be ... « SMART » !

Smart objects !in

Smart Places !

with communicating terminals being

SmartPhones !

Cf IBM in 2011 : ... « A smarter PLANET »

Mobiquitous INFORMATION Services

- ❑ Mobiquitous tourism : *From MAXI-MIN to MINI MAX ?*
- ❑ Mobiquitous Campus
- ❑ Mobiquitous health
- ❑ Mobiquitous Building
 - MBDS Building in Port of Prince in 2011
 - Mobiquitous library in Grasse in 2015
- ❑ Mobiquitous Commerce : *Street and POS marketing*
- ❑ **Mobiquitous revolution and democracy**
- ❑ **« Mobiquitous VIRTUAL CASH »**
- ❑ **Mobiquitous serendipity ...**

Beyond Social networks : from « *personalized serendipity* » to « *ubiquitous serendipity* »

The Information Discovery Matrix



« *Mobiquitous Virtual CASH* » Mobiquitous LETS and barter » !

- Cf LETS (« *Local EXCHANGE and Trading Systems* ») in the 80's
 - Michael Liton (1983)
 - Towards Mobiquitous LETS ?
- « PAYMENT ACCOUNTS » outside banks for unbanked (MNO? Google? Apple ?..)
 - CASH becomes VIRTUAL ! No More Fund transfer ?
- Product and service EXCHANGE with Mobiquitous virtual CASH
 - « TIME bank » « Time dollar »,...
 - « PEZE » (« *Plan d ECHANGE Zero Ennui* ») :
mobiquitous barter within Campus .

Mobiquity wave :

We'll BIP and TAG the future !

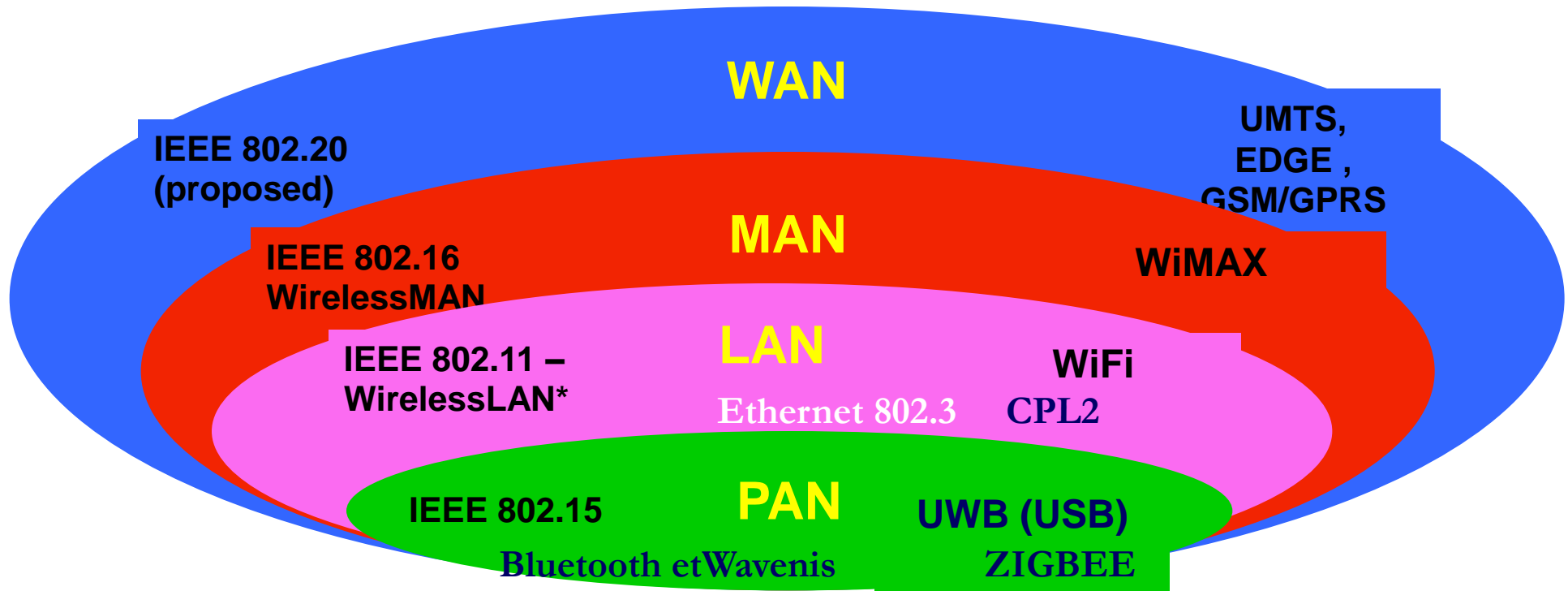


BIP

(Broadband Internet in the Pocket) ?

- ❑ 2001 : 3G
- ❑ 2002 : RFID (walmart, Dod)
- ❑ 2004 : NFC (RFID reader in the cell phone)
- ❑ 2002 : WIFI
- ❑ 2005 : WIMAX and ...INTEL then
www.wimaxforum.org
- ❑ 2008 : WIMAX « rev E »
- ❑ 2010 « 4G »/LTE

BIP)



WAN : Wide Area Network

LAN : Local Area Network

MAN : Metro Area Network

PAN : Personal Area Network

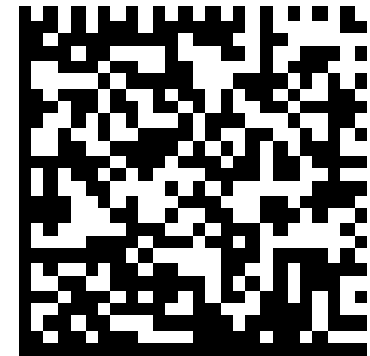
TAGS ?

→ **One TERA (10**12) TAGGED OBJECTS in 2020 !**
(with an IPv6 Internet address) !

TAGS ?

- wireless : RFID (NFC,..)
- VISUAL (1D, 2D, ..)
 - 2D TAGS (QR Code, ...)
- *SOUNDS (Tagattitude,...)*
- *Virtual (GoogleS, ..)*

flashcode



contact

2D TAGS



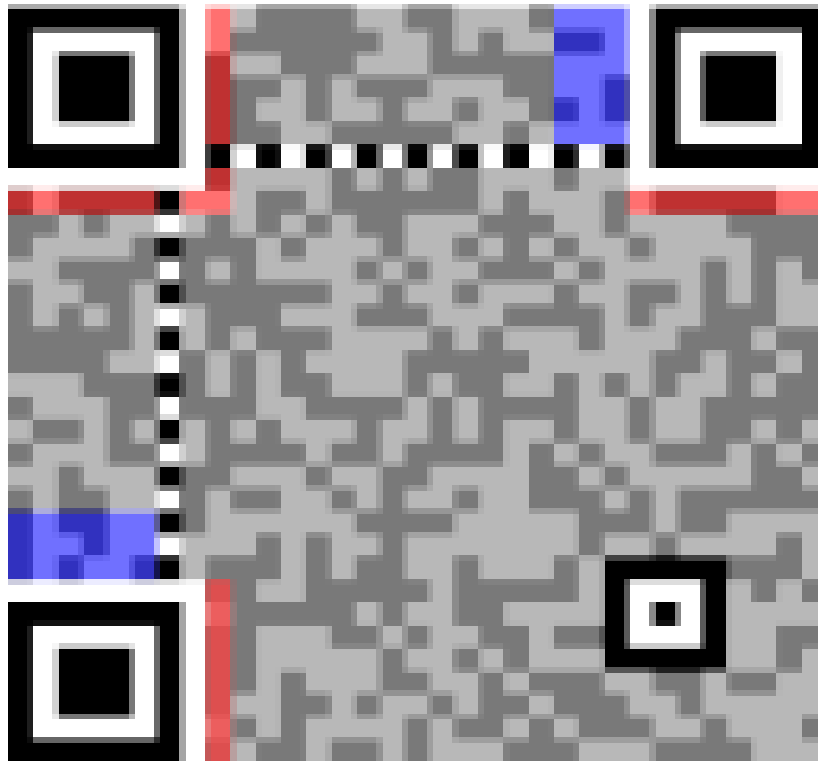
And GOOGLE ? (beginning 2010) ?




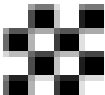
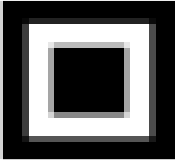
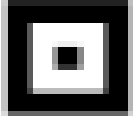

+ *googleS* !

150 000 QR Code stickers for preferred places
in ...Google !



QR Code (Wikipedia)



-  1. Version Information
-  2. Format Information
-  3. Data and Error Correction Keys
-  4. Required Patterns:
 -  4.1. Position
 -  4.2. Alignment
 -  4.3. Timing

Forbidden Add by Calvin Klein in 2010 !



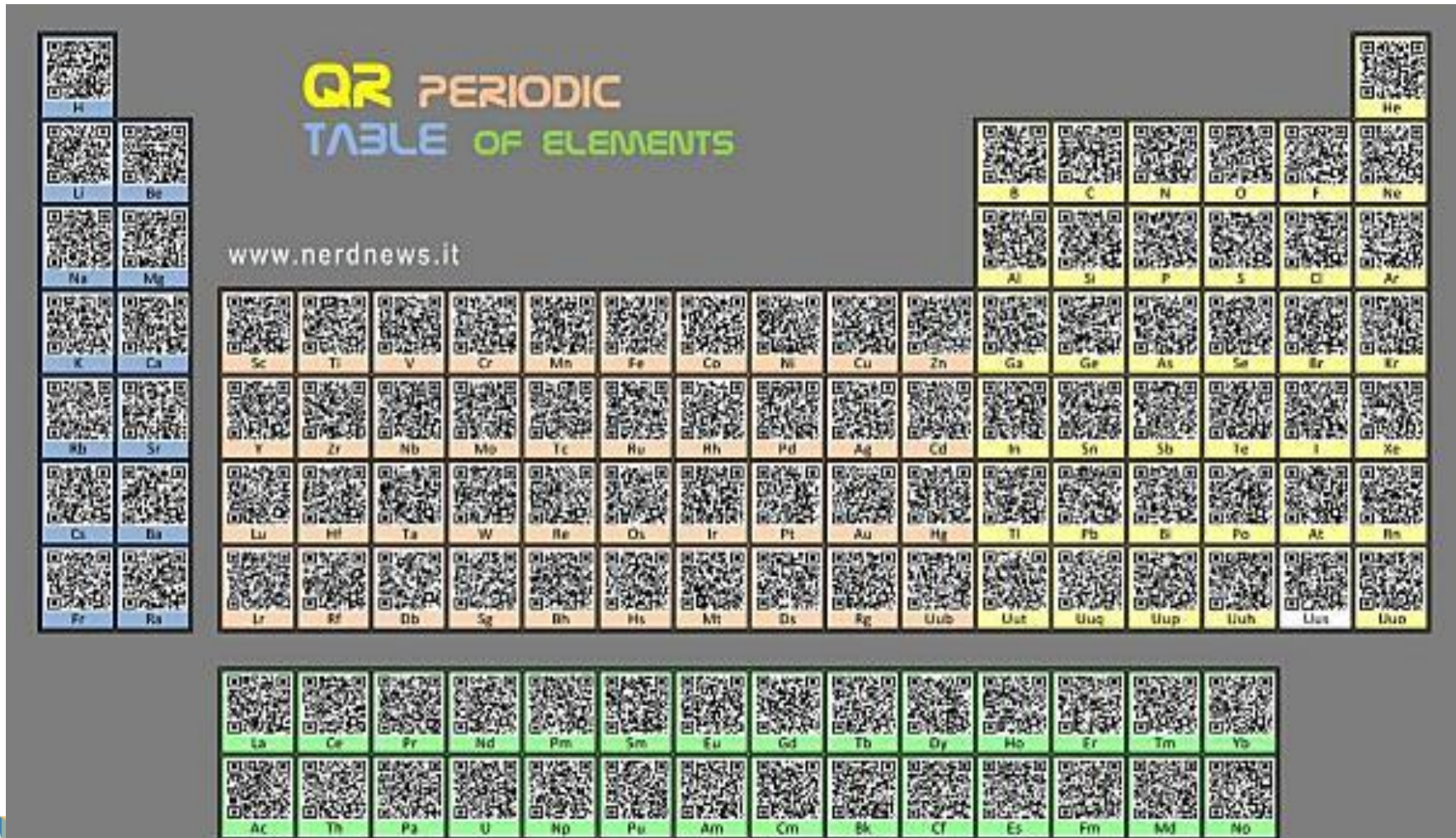
Tagged Stamp in Spain in 2010...



Periodic Table of elements ...

QR PERIODIC TABLE OF ELEMENTS

www.nerdnews.it



The image displays a periodic table where each element's symbol is placed within a square containing a QR code. The table is organized into several groups: alkali metals (Li, Na, K, Rb, Cs, Fr), alkaline earth metals (Be, Mg, Ca, Sr, Ba, Ra), transition metals (Sc to Zn, Y to Cd, Lu to Hg), post-transition metals (Al to Zn, Ga to Hg), metalloids (B, Si, As, Sb, Te, Po), nonmetals (C, N, O, F, S, Cl, Br, I, At), noble gases (He, Ne, Ar, Kr, Xe, Rn), and the lanthanide and actinide series at the bottom. The lanthanide series (La to Lu) and actinide series (Ac to No) are shown in a separate row at the bottom, colored green. The main body of the table is colored yellow. The title 'QR PERIODIC TABLE OF ELEMENTS' is written in large, colorful letters at the top left. The website 'www.nerdnews.it' is printed below the title.

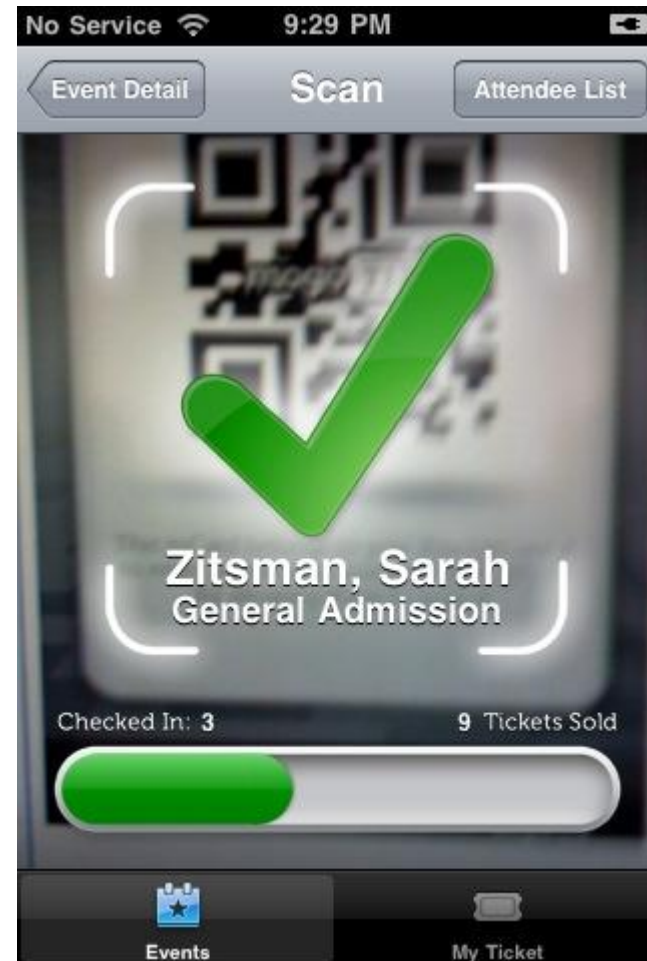
H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	Lu	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Lr	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Uub	Uut	Uuq	Uup	Uuh	Uus	Uuo
Lanthanide Series																	
La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb				
Actinide Series																	
Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No				

Offer of the day

(dynamic change of the same QR Code)

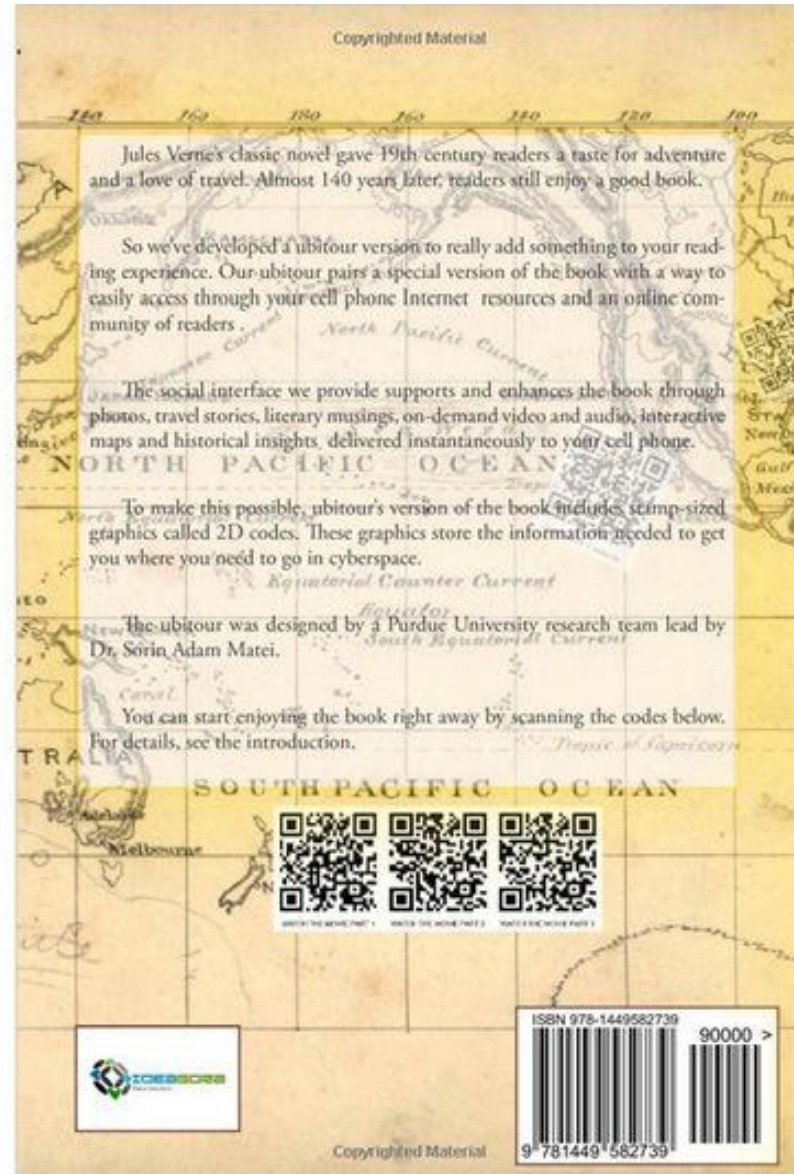
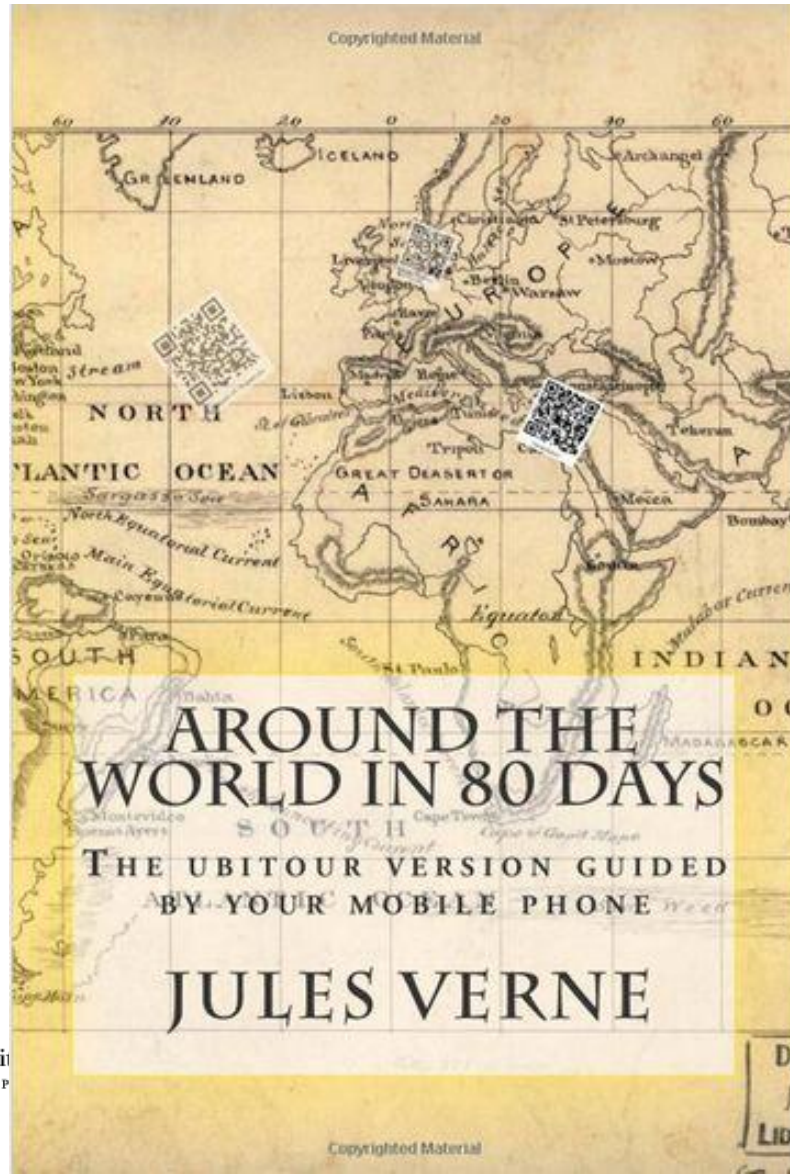


Virtual Coupons and tickets

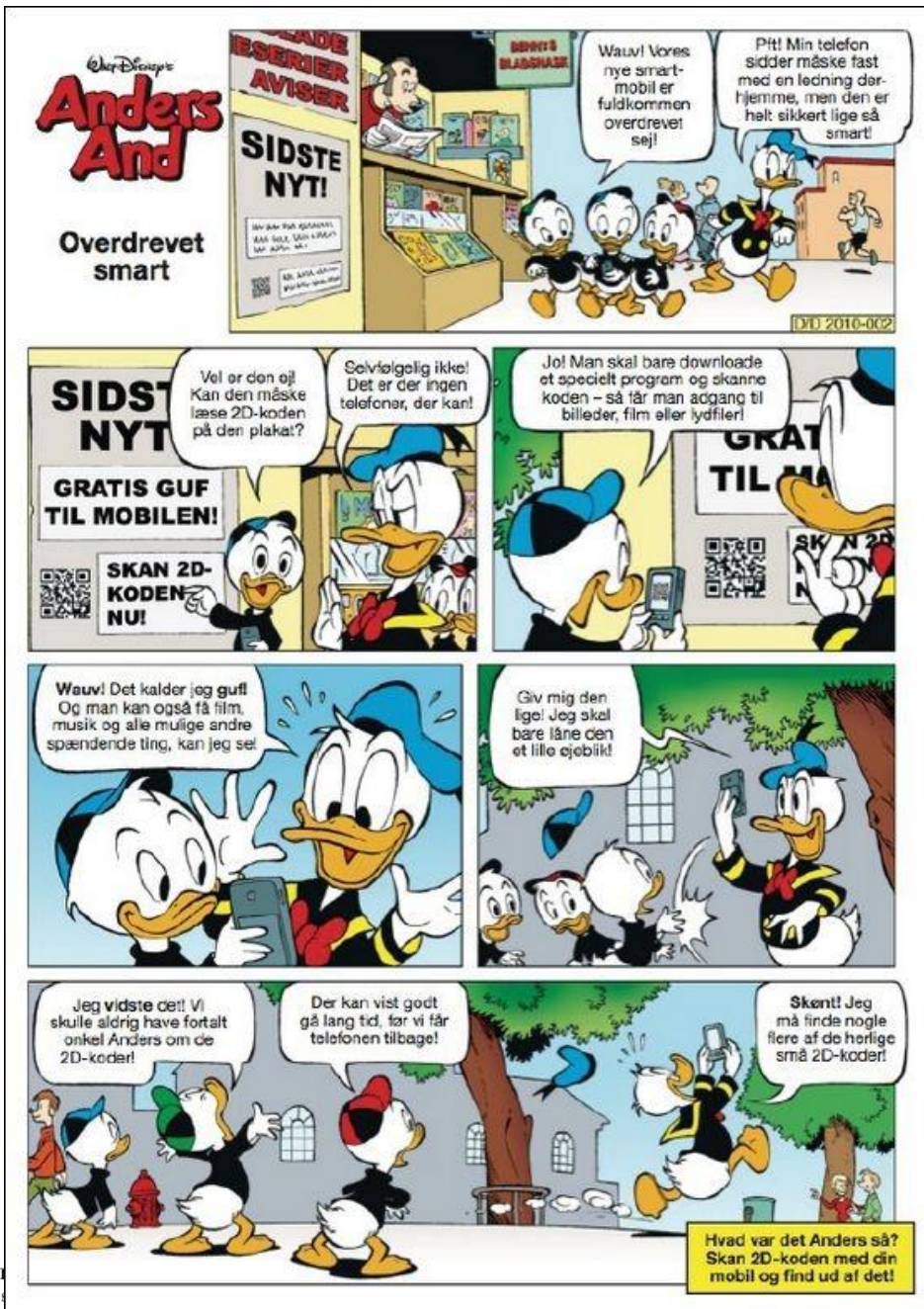


BOOKS : Jules Verne 2010

“QR footnotes”! Around The World In 80 Days



Children book in Denmark with QR codes in 2010 Rolling Stone Mag in January 2011



... feel cool
he breaks
throw my
... particu-
his songs.
s. "I know
a Sex Pis-
's for the
ith that."
rking lot
'concerts,"
'Year's. I
'you ever
it of you,"
igarettes
ptember,
'cocaine
about it,
... Atlantic
... he says,
... ut I don't
... They're
... ell, man,
ng."
ie promo
awkward,
... n't make
, flicking
ere isn't a
at makes
©

use your smart phone to scan this code or visit justanotherider.com for a free download of "just another rider"

available everywhere
january 18th

ROUNDER **fye**

www.greggallman.com
www.rounder.com

SO MANY SOLOS,
SO LITTLE TIME.



Greg Howe with his LE924
©2010 Laguna Guitars, photo: Iulia Chiculita

LAGUNA
GUITARS
PLAYLAGUNA.COM

To watch videos of
Greg Howe in action,
scan this QR tag with
your smartphone or visit
YouTube.com/PlayLaguna



QR Code and Music



Rochester JAZZ Festival in 2010

QR Code and Real Estate ...



Agents & Brokers

Compare value plans
& sign up today

Agencies & Brokerages

Learn about branding options &
special pricing



QR Code and Tourism



**Park Code
in Central
Park in
2010**

New York (January 2011)

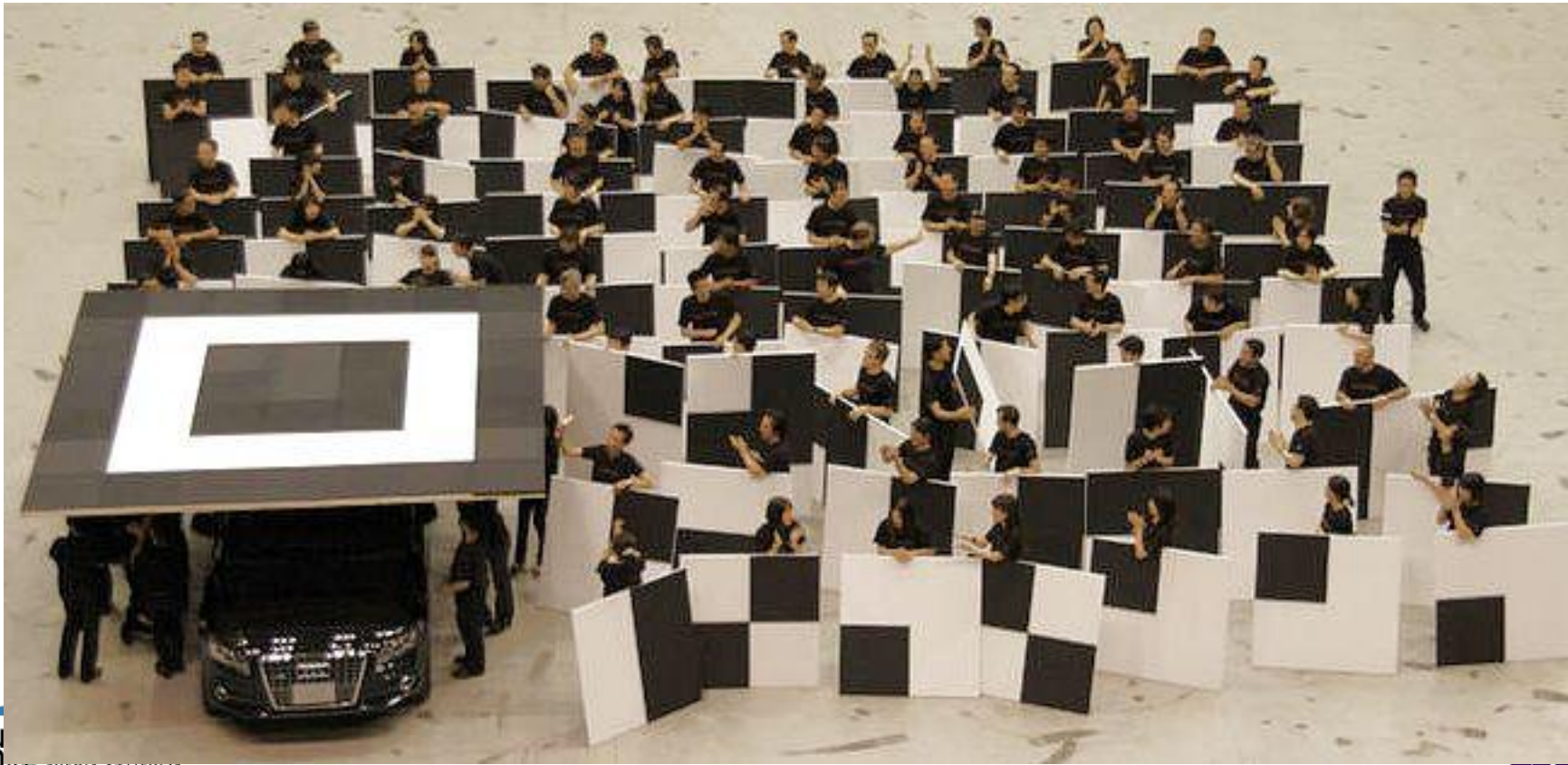


Korea



JAPAN : In Dec 2010 : more scanned QR Code than sent SMS !

Human AUDI ad. in 2010 in Japan





Food !

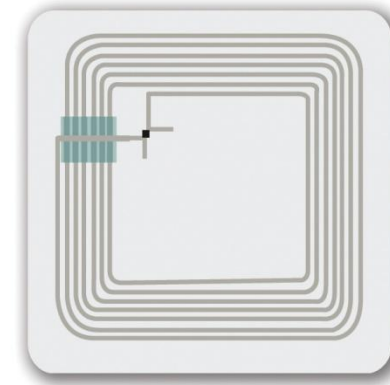
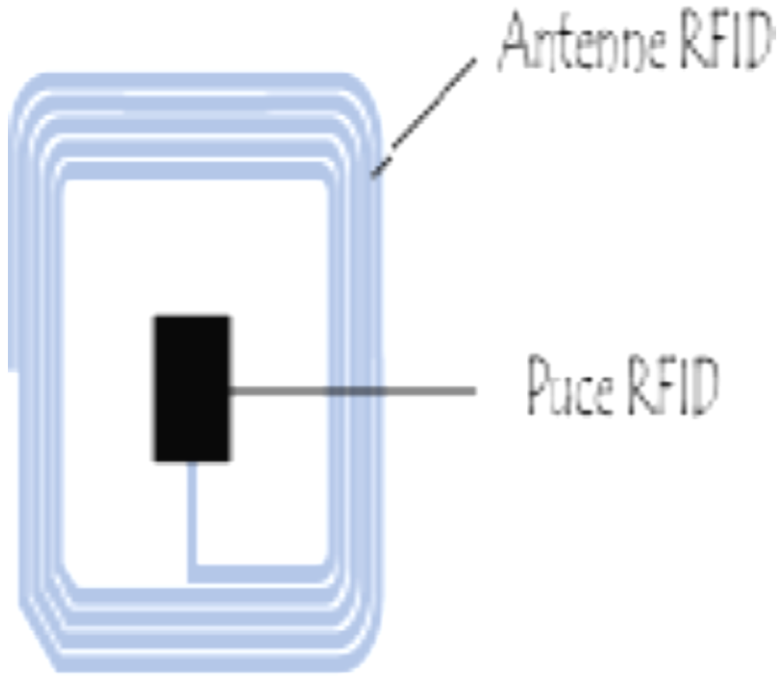
...tagged TUMBS in Japan!



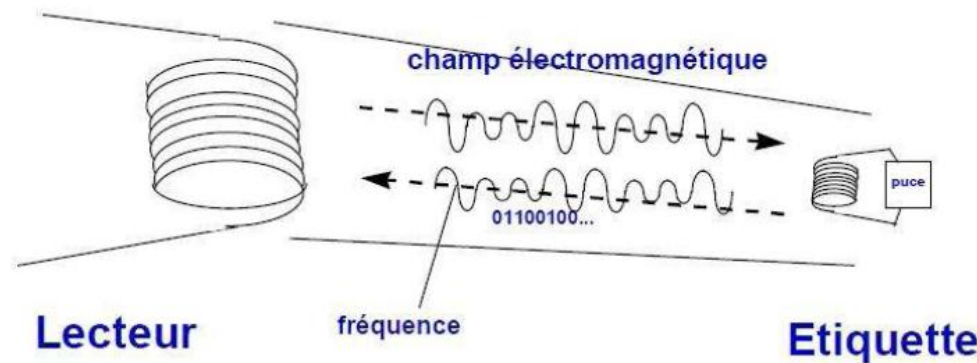
先祖を敬愛する事が
あなたや子孫を見守られる事に
つながります。



Tag RFID (Radio Frequency ID) ?



**RFID from ASK
(Sophia Antipolis)**



NFC (Near Field Communication) 2004 : Nokia, Sony, Philips and www.nfcforum.org

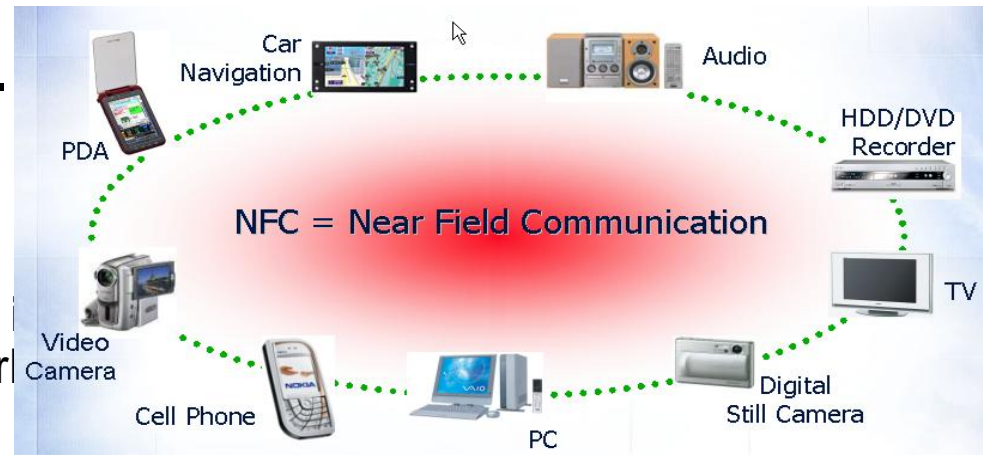


**TOUCH'n
PLAY
paradigm**

NFC (Near Field Communication)

□ NFC (2004, Philips, Sony, Nokia !!!)

- The most deployed RFID standard
- Complementary of Blue tooth the PAN (Personal Area Network) WIFI, GPRS,...



□ « TOUCH » paradigm

- Touch' n pay
- Touch' n go
- Touch'n open, Access,
- → **TOUCH'N PLAY**



2006
Samsung
NFC
Phone



2009

The 3 « S » of NFC : **S**peed, **S**ecurity, **S**implicity



NFC basics

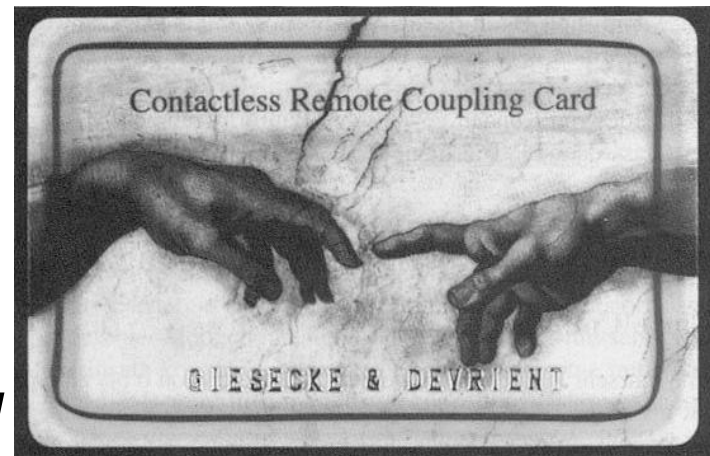
- ❑ NFC : Extension of contactless wireless RFID
Technology : 13, 56 MHZ
- ❑ NFC : Universal standard :
 - ISO 18 092
 - ECMA 340
 - ETSI : TS 102 190 V.1.1.1
- ❑ NFC Compatible with ISO 14 443 A and Felica
- ❑ NFC Distance : 4 inches/10 cm
- ❑ NFC Data rate : up to 424 Kbits:sec

NFC in cell phones : *Communicating objects become « alive »*

□ **LIFE (in biology) =
INFORMATION +
COMMUNICATION**

(Hair research at L'Oreal ,
Frédéric II of Prussia)!

□ *From Internet among « PC » and
persons » to Internet « **AMONG
THINGS** » with IPv6*



NFC ...

- ❑ **ABI Research : From 2009 to 2013 : + 200%/year of increase in selling NFC Chips**

- ❑ **NFC Contacless cards and SD cards**
 - → NFC Infrastructure (m- payment, transport)
- ❑ **NFC Cell Phones**
 - Sim Centrics (in France)or not
- ❑ **NFC ADD ON (around the SIM)**
 - Oberthur, Techmahindra,..
 - ASK
 - M2T
 - Wireless Technology/Nexperts (for iPhones)
- ❑ **Bluetooth NFC STICKERS**
 - Twinlinx (France) with SE from Sagem in 2010
 - TranZfinity (San Diego)

Three standardized NFC modes

- ❑ « Read/Write mode » (active → passive)

<Idem QR CODE>

- ❑ NO SECURITY

- ❑ QR CODE alternative

- ❑ « Emulation Card » (passive → active)

- ❑ « SECURE ELEMENT » (SIM or ?)

- ❑ JAVA CARD; Encryption

- ❑ « Peer to peer » (active ↔ active)

NFC potential in Cell Phones

Digital content

URL
Health
Picture
RFID
Video
Song
Comment
Web
SMS
E-Mail
...
SMELL !

Gets Information
by TOUCHING



NFC 3G Phone

Generates
information

Web 2.0



SERVICES

Marketing
Digital safe
Meetings
Post card
Digital family
Blogs
MOBILE 2.0 : Twitter,
Facebook

NFC APPLICATIONS ? (NFC Forum)

☐ Short term

- M-payment (USA, and ...emerging countries..)
- M-transport (Europe, Oyster/London, Navigo/paris,..)

☐ Mid/long Term

- Intelligent Posters, Customized-Information TAGS
- M-ticketing and couponing
- M-marketing (POS, ..)
- M_Social networking
- NFC-based APP STORE

The 5 « W » of NFC cell phones ! !

2) WHERE and 3) WHEN ?

(Here and now! Ici et Maintenant !)

4)
WHEREABOUT ?
(GOAL ?)

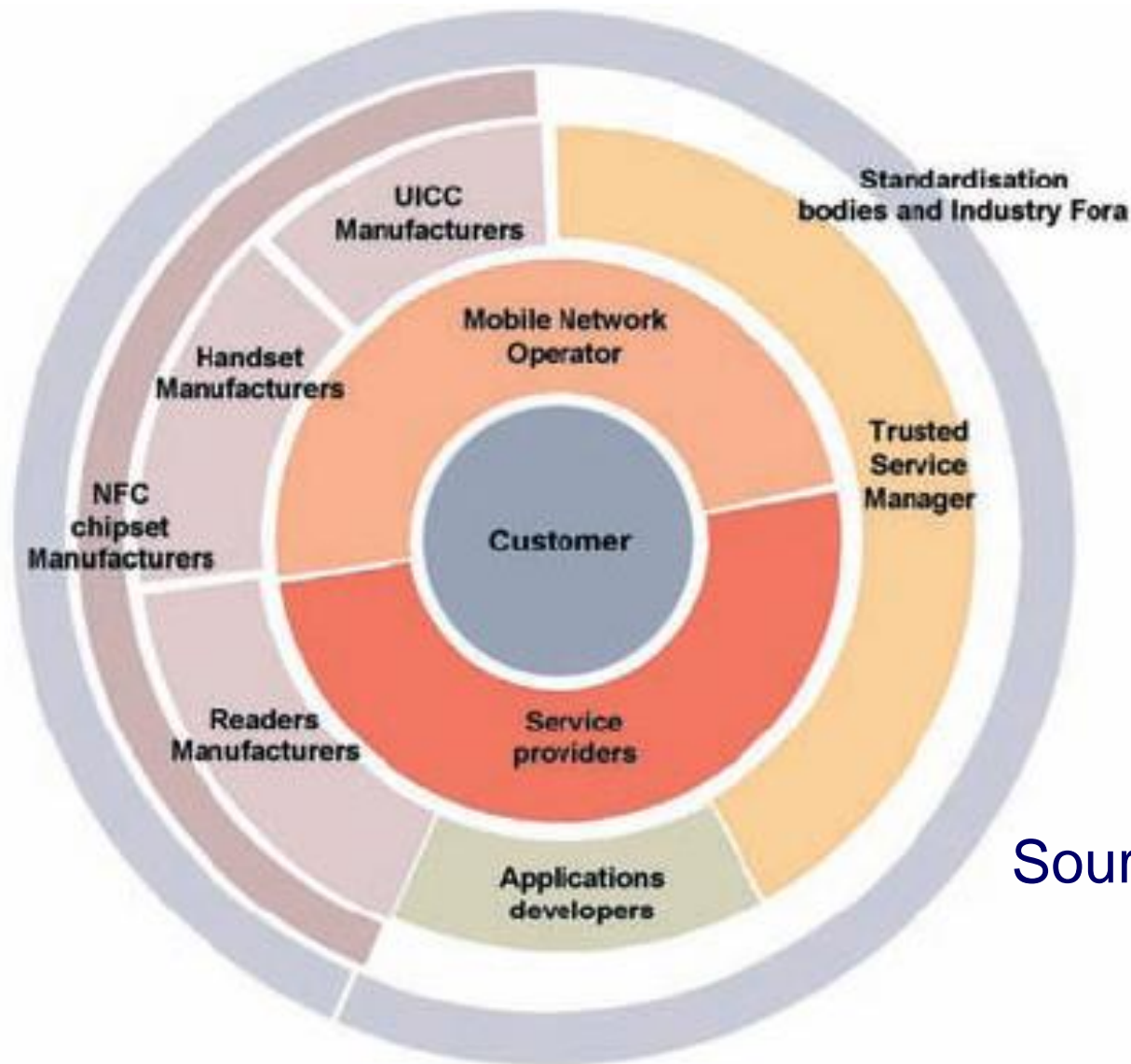


5) **WHAT ?**

(Triggered NFC services; NFC App Store, mobile 2.0/Blogging)

1) **WHO ?** *(Authentication. Profile)*

NFC eco-system: value chain players



Source GSMA

And Smartphones became NFC in 2010



Iphone V5 in 2011



Nexus S GOOGLE in Dec 2010

NFC Smartphone NFC from Nokia : C7 (January 2011)

génération numérique
TK TECHNOLOGIK



Bluetooth Cell phones rendered NFC with an active sticker



Ex MIMAX sticker from Twinlix (France) and
Think'nGo

Next-Stop MOBIQUITY :
SURFACE COMPUTING
AUGMENTED (& reduced)
REALITY

....

Walls ...start talking ... « Userware »



adouci



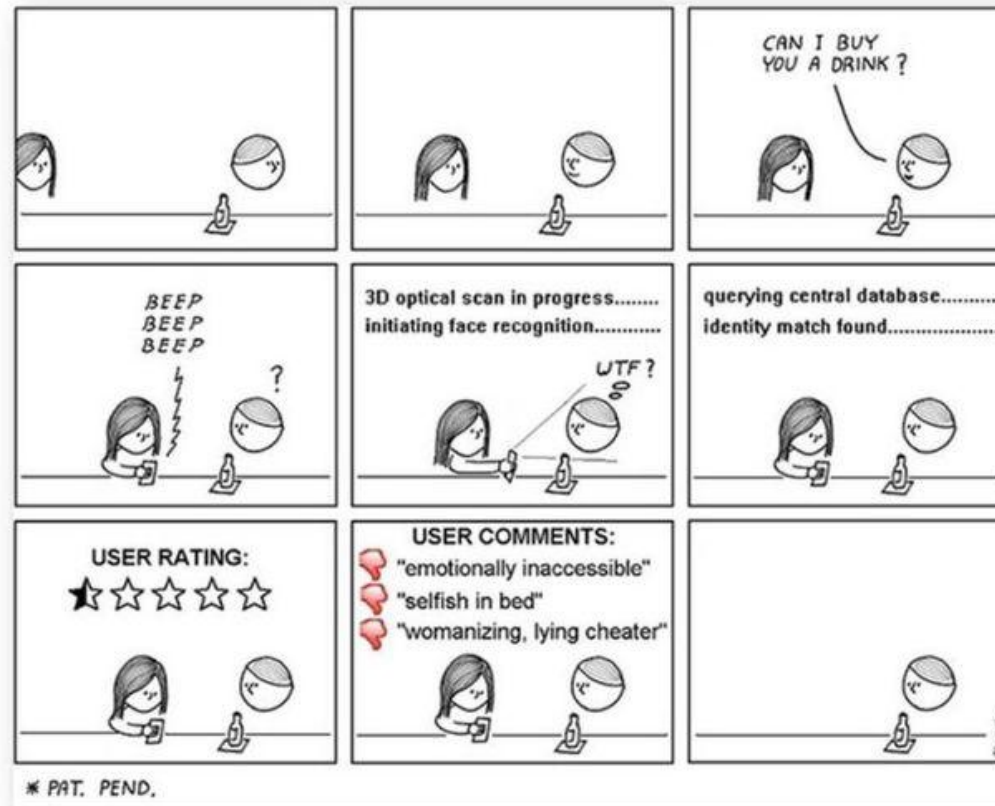
La musique adoucit les murs (Rue Croulebarbe, 14 Avril 2008)

Surface Computing



- Microsoft, Sony
- Intelligent Vibrations, Intuilab (France)

Augmented reality



« Real strolling in virtual space/time » : Strolling in Nice in 1860 !



AR Video (real estate and tourism) with Wikitude in June 2010 in Nice



2. Ubiquitous architectures (« infostructure »)

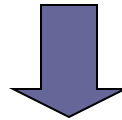
Mobiquitous Infostructure evolution

« *To make visible what is invisible and make invisible what is visible* »

John GAGE , SUN, (March 2001, Monte Carlo)

« *Computing is no longer a discrete activity bound to a desktop : pervasive computing is fast becoming a part of everyday life* » Dr Jung-Kook Hong (IBM)

Mainframe Computing ('70) Personal Computing ('80)



Internet computing (2000): « 3-tier »

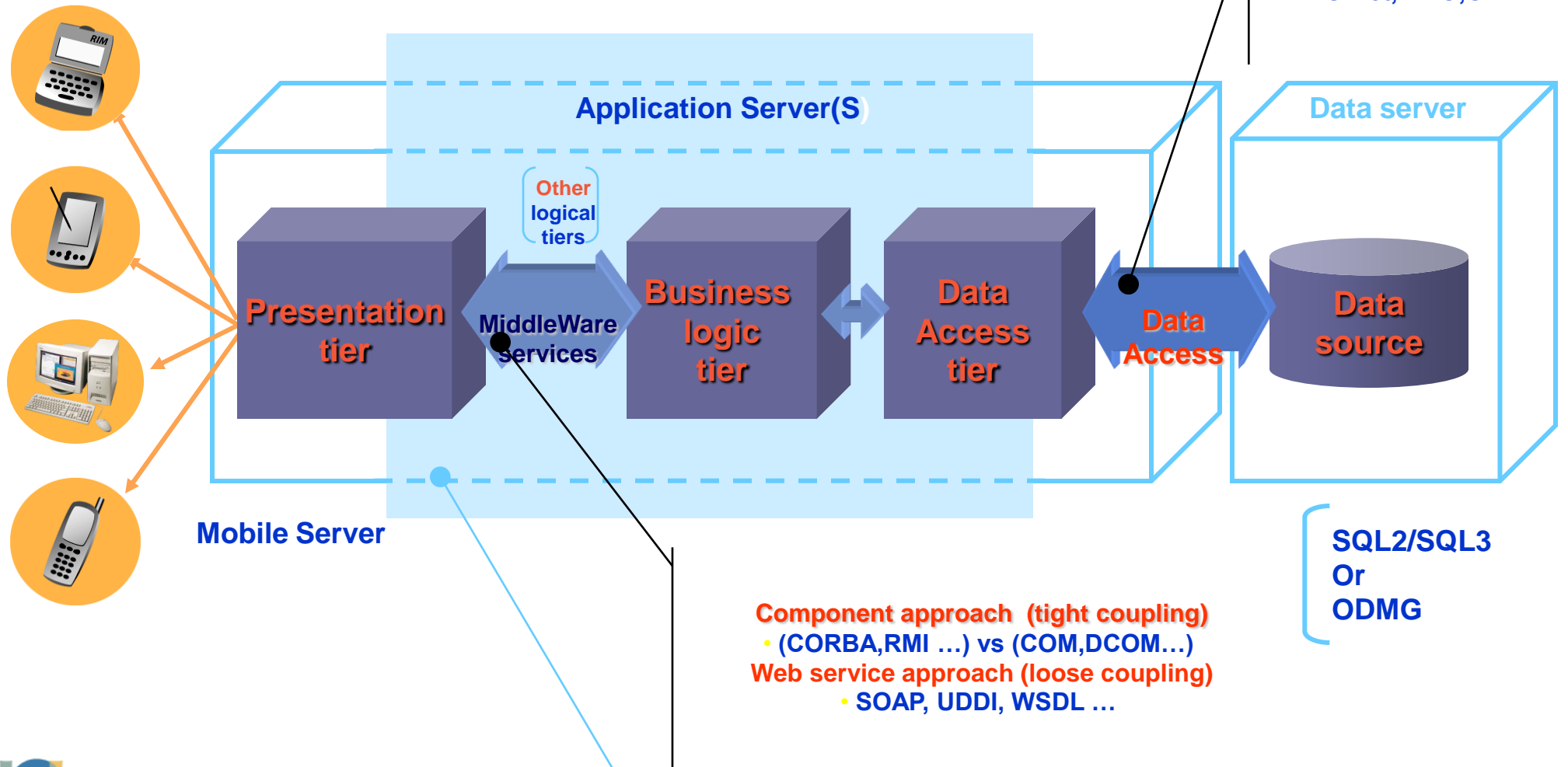


Mobiquitous
Computing (2020)

Peer-to-peer
Computing (2010)



From « 3-tier Infostructure »



JDBC, SQL/J ...
Vs
ADO.Net, ADO, ODBC ...

SQL2/SQL3
Or
ODMG

- Component approach (tight coupling)**
 - (CORBA, RMI ...) vs (COM, DCOM...)
- Web service approach (loose coupling)**
 - SOAP, UDDI, WSDL ...

déploiement sur 1 ou n serveurs

...to 5-tier Architecture (2010)

□ 5 aggregative layers

- (1960- 90) **Data base Servers** (*foundation*)
- (1990) **Application servers** (Web services XML)
- (2000) **Mobile servers** (PDA, Cell Phone...)
- (2010) **EDGES servers** (RFID, NFC, captors,..)
- (2015) **Interaction servers** (*Context-aware,..*)

OTA and TSM

- ❑ OTA (Over the Air)
- ❑ TSM (Trusted Service manager)

OTA (« Over The Air ») platform

- ❑ Remote download of applications, content, services, tickets, coupons are then possible in a secured OTA way.
- ❑ OTA platforms should be interoperable which is not yet the case with three major existing approaches:
 - SIM-Centric (MNO controlled),
 - SynchML (Open Mobile Alliance standard)
 - J2ME/HTTP (like in NFC stickers and Global Platform).

« SPLIT TSM » (Global Platform Feb 2011)

- TSM for MNO
- TSM for Service providers (banks,..)
 - Example : FIRST project

Mobiquitous innovative projects in ...



« MBDS » and « DreamIT » Context



**Foundation of
the University of
Nice on ICT and
MOBIQUITY
(multidisciplinary)
since 2009**



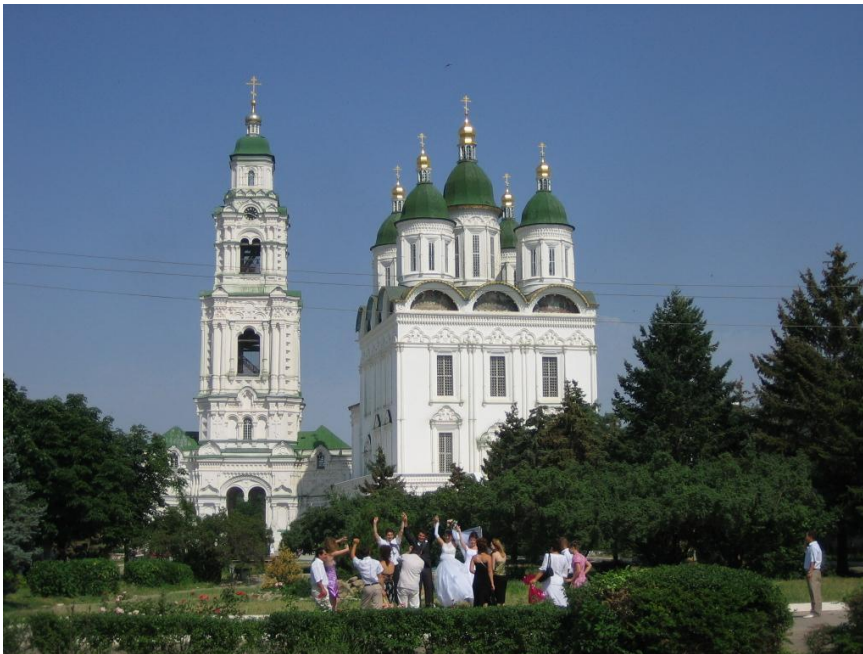
**Innovation LAB and
Master degree in CS
since 1992**

www.mbds-fr.org

www.youtube.com/mbdsimagine (**POC videos**)

MBDS in Morocco (1998) : Rabat and Casablanca
MBDS in Haïti (1998)
MBDS in the University of Astrakhan, Russia (2007)
MBDS in Tunisia (2010)

MBDS in Madagascar (Stand By since 2005)

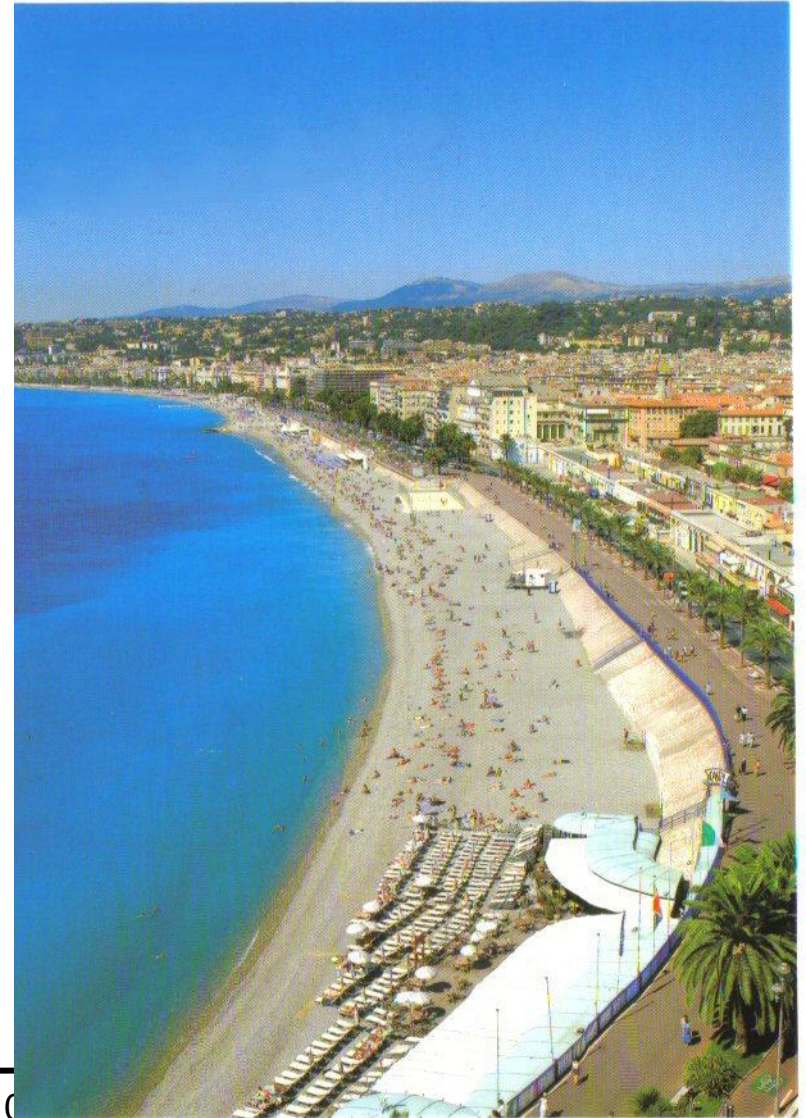


Astrakhan, RUSSIA, 2006

NICE an « NFC city » in May 2010



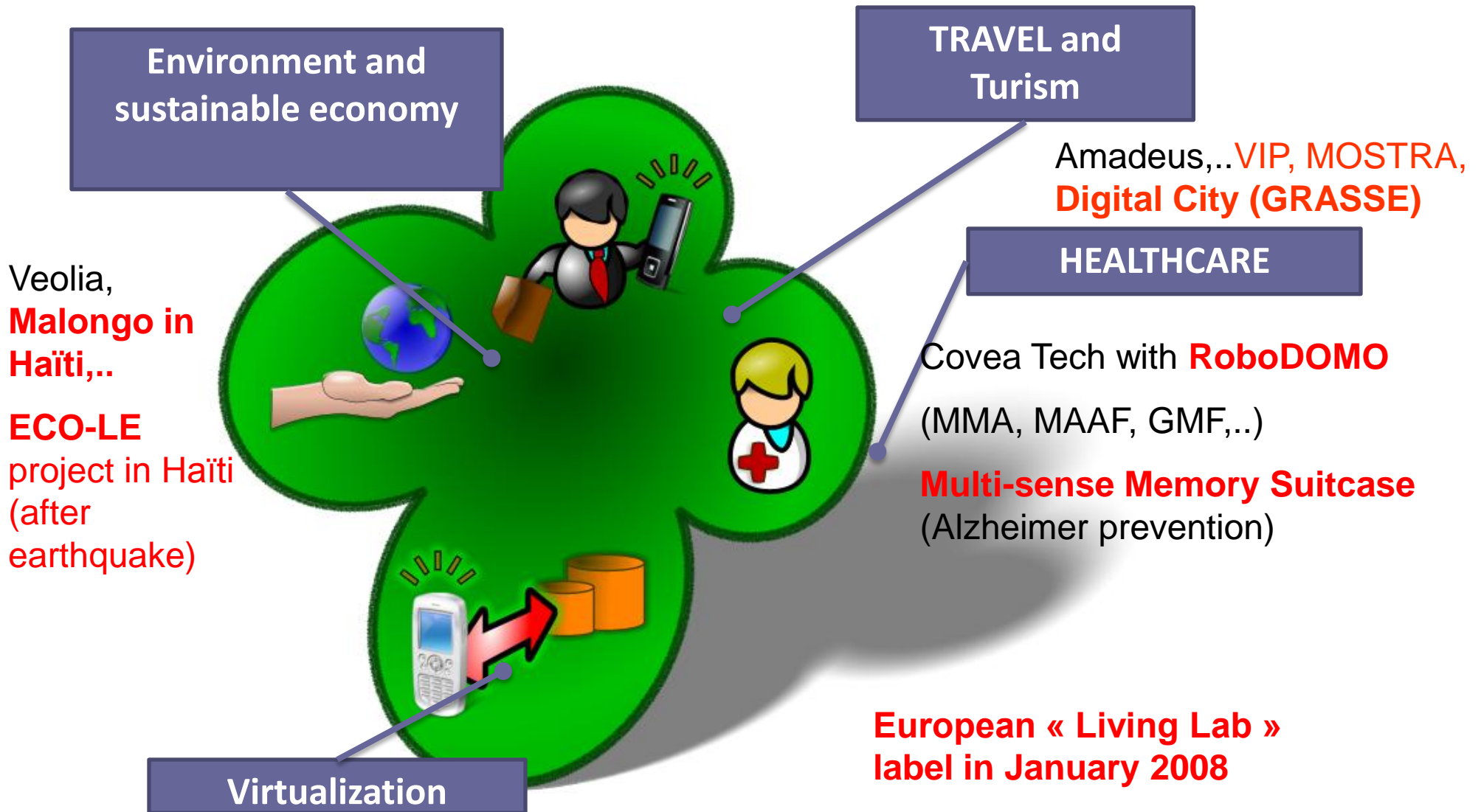
« VIP » demo to the mayor of Nice and Minister of Industry who announced Nice an NFC CITY (May 2009) due to « *MBDS Innovation lab.* »



Tags in NICE Bus Tops (May 2010)



4 Key business areas in DreamIT Foundation



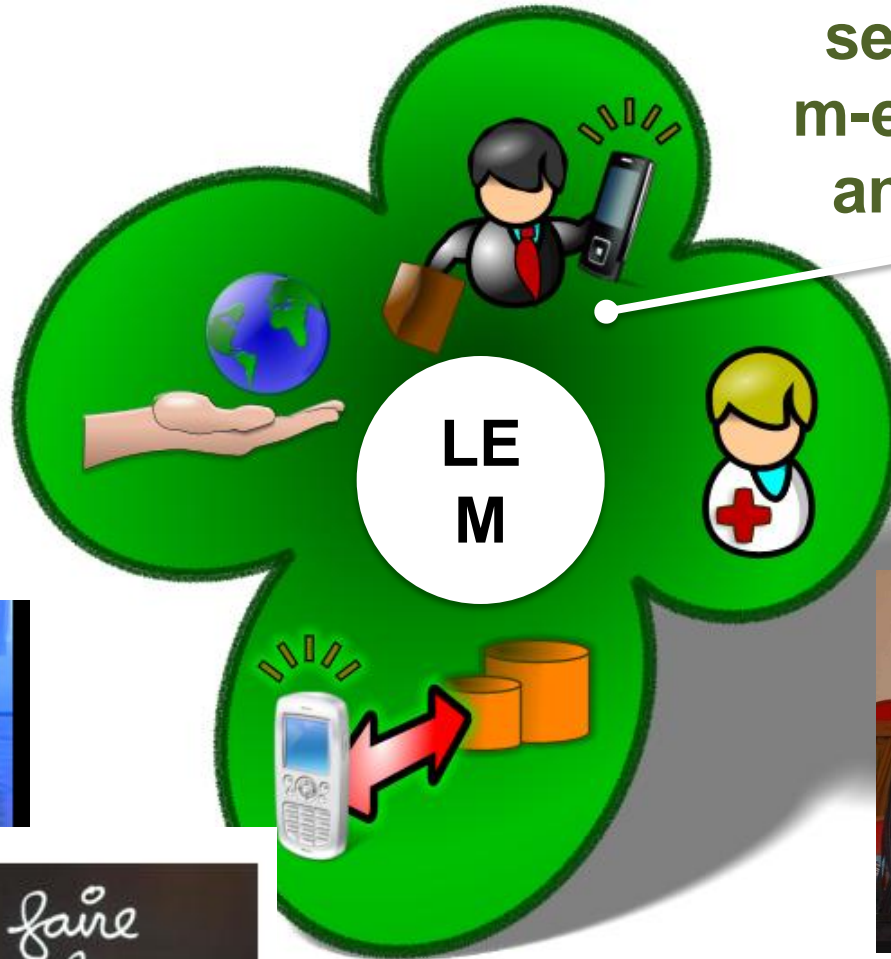
Credit Agricole...**CAMPUS**
NOVA, NICE FUTURE
CAMPUS (NFC)

4 MBDS innovative POC and pilot projects

- ❑ « MBDS2.0 » : tag (QR Code, NFC) management platform for **ubiquitous tourism** with augmented reality and Social networking (Open Source in 2011)
 - Nice, Grasse, Menton, Sophia in France
 - Sidi Bou Said (Tunisia), Digital Kremlin in Astrakhan (Russia), Medina in Casablanca ?, Santo Domingo
- ❑ « ROBODOMO » project for **isolated elderly people (2006-2011)**
- ❑ « FIRST » : m-payment project in India (Haïti, Morocco?) with TATA and Gemalto **for emerging countries (2011-2013)**
- ❑ « NICE FUTURE CAMPUS » in Nice University for **students (launched on Feb 18th 2011 with 200 students)**

MBDS2.0 platform : a *GUIDE in the pocket*

Mobiquitous
services for
m-ecotourism
and culture



TASSOU 's present 2008

« MBDS2.0 Open -Source tagging and blogging platform»

Социальная сеть «Вальроз 2.0»

- Place blogging
- Interfaces with Facebook, Twitter, Youtube...by TOUCHING
- VENTOSE Cafe (digital cafe of the future)
- Augmented reality with Google(Android) and Apple (I-phone)

The image shows a screenshot of the MBDS2.0 web interface for a location named "In The Square Festival, Wolverton". The interface includes a header with the "MK Open Guide to Milton Keynes" logo, a main content area with text and a "Map of this place" section, and a sidebar with navigation links. A red box highlights the "Map of this place" section, which contains the coordinates "Lat/Lon: 52.0613, -0.8101" and a "Google map" button. A blue arrow points from the "Google map" button to a separate map view on the right. This map view shows a street map of the area around Wolverton, with several red location pins and a small photo gallery overlay. Below the map view, there is a "Visitor locations" section with a small globe icon. At the bottom right of the screenshot, there is a text box that reads "Le contenu peut être modifié et enrichi par les internautes".

« Invisible paths » in Valrose Campus (Sept 19th 2009)

- 1 *Chien*, entrée du Parc (statuaire : Victor-Félix Cavaroc)
- 2 *Bassin au Cygne entouré de Néréides* d'après Serres
- 3 Vases Médicis (thèmes d'*Amphitrite et Poséidon, Zeus et la chèvre Amalthée*)
- 4 *Lions de Némée* (fondeur : Jean-Jacques Ducel)
- 5 *L'Empereur Commode* (statuaire : V. F. Cavaroc)
- 6 *Marie-Leczinska en Junon*, avec son chien d'après Guillaume Coustou l'Ancien (1677 - 1746)
- 7 *Louis XV en Jupiter* d'après Nicolas Coustou (1658 - 1733)
- 8 *Marie-Adélaïde de Savoie en Diane*, accompagnée d'un chérubin, d'après Antoine Coysevox (1640 - 1720)

STATUAIRE DU PARC VALROSE

- 15 *L'Eté*, fonte d'après Eugène Lequesne (1815 - 1887) en surplomb du Théâtre
- 16 *Le Printemps*, fonte d'après Eugène Lequesne en surplomb du Théâtre
- 17 *Fontaine aux Putti*, belvédère du Château (fondeur : Durenne)
- 18 *Baigneuse* d'après Etienne Falconet (1716 - 1791)
- 19 *Bacchus*, entrée de l'ancienne cave à vins
- 20 *Faïet de Chiens* d'après Henri Jacquemart (1824 - 1896), fonderie du Val d'Osne
- 21 *La Nymphé Mélissa et la chèvre Amalthée* d'après Pierre Julien (1731- 1804) et Hippolyte Julien (1840 -?), fonderie du Val d'Osne



- 9 *Chérubins moissonneurs* (fonderie du Val d'Osne)
- 10 *Bassin aux Nénuphars* avec cinq chérubins, d'après Mathurin Moreau (1822 - 1912)
- 11 *Serge et Véra Von Derwies enfants* (1869) par Giovanni-Battista Trabucco (1844 - 1910)
- 12 *Chérubins porte-candélabres*, entrée du Château (fondeur : Antoine Durenne, 1822 - 1895)

- 13 *Naïade et Dryade* d'après Jean-Jules Salmson (1823 - 1902) entrée du Théâtre (fonderie du Val d'Osne)
- 14 *Chère Amalthée* (fonte) en surplomb de l'entrée du Théâtre

- 22 *Organisation et élaboration des cellules végétales* de Hans Hedberg (né en 1917) céramique près du Bâtiment de Chimie, c. 1970
- 23 *Le Génie ailé de la Chimie tenant un réseau de molécules* par De Crozals, c. 1970
- 24 *La Réaction de fonte des métaux placés au centre d'incandescence des fours solaires* par De Crozals, c. 1970
- 25 *Cheral* de Paul Troubetzkoi (1866 - 1938) près du Petit Château
- 26 *Sphinxes*, sortie Cimiez (statuaire : Cavaroc)

Tags in Valrose Campus (June 2010)



CULTURE

Placer votre mobile sur cette cible

Place your phone at this mark



Pour la cible NFC téléchargez l'application gratuite MBDS 2.0 en touchant le cible.

For the NFC target, upload the free application MBDS 2.0 by touching it.

CULTURE

Prenez ce code en photo

Take a photo of this code



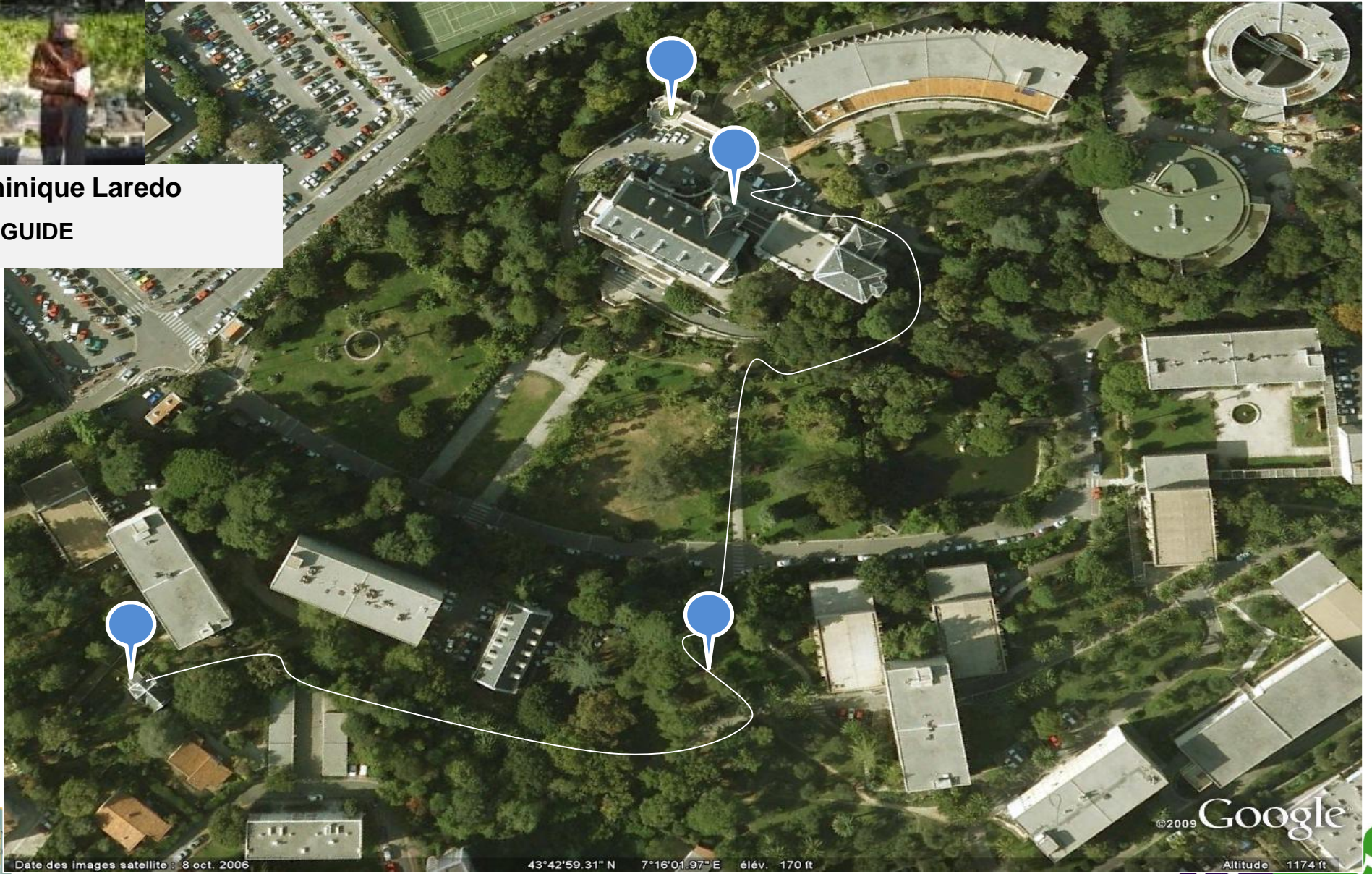
Pour le code 2D téléchargez au préalable une application gratuite comme i-nigma.

For the 2D Code, first upload a free application like i-nigma on your smartphone.

Cultural invisible path



Dominique Laredo
As a GUIDE
UNS



Biodiversity invisible path (Pr. Jean De Vaugelas)



JUDEA tree
(love tree)

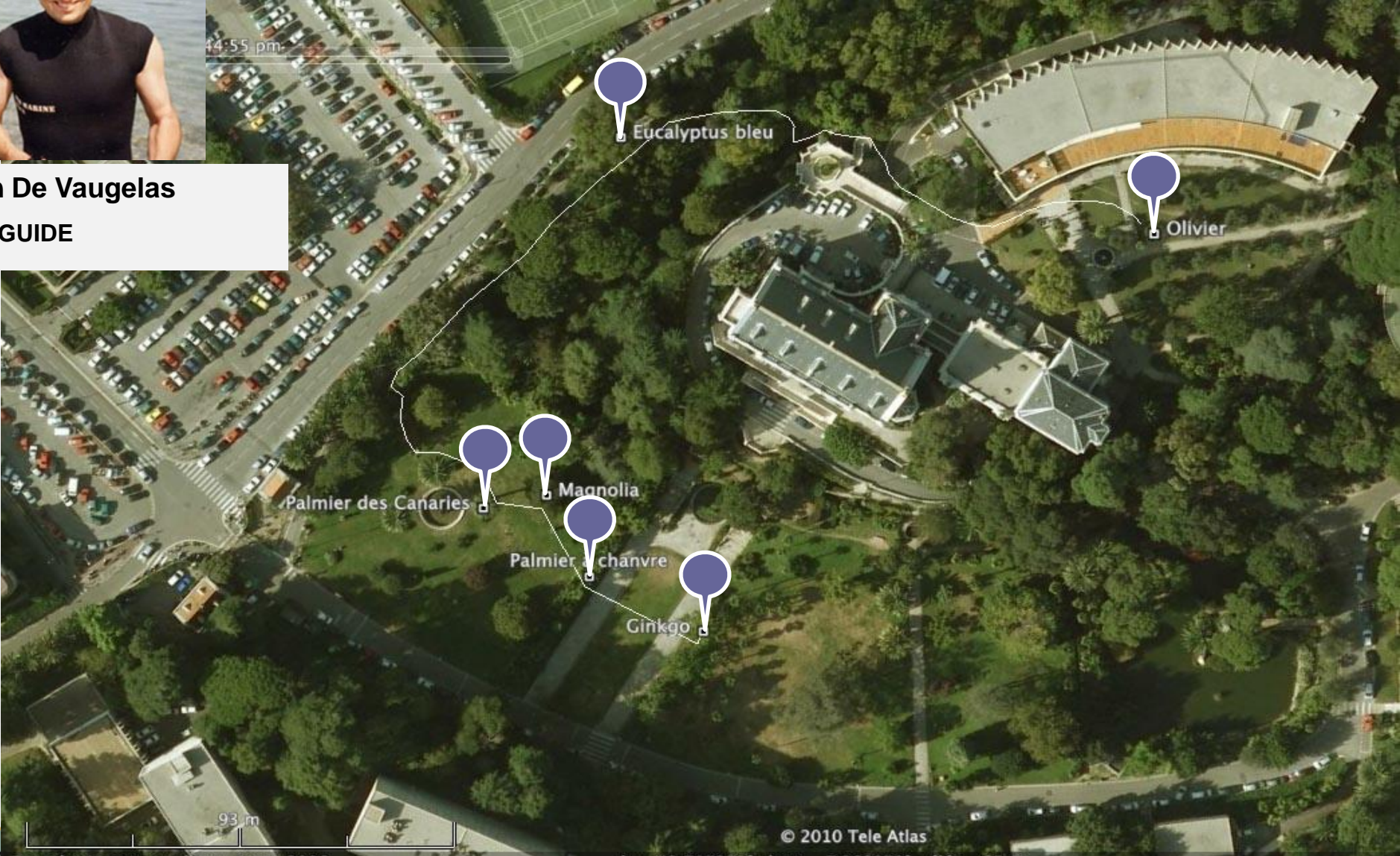
Biodiversity path



Jean De Vaugelas

As a GUIDE

UNS



93 m

© 2010 Tele Atlas

Date des Images satellite : 8 oct. 2006

lat 43.717272° long 7.269079° élév. 65 m



QR Code and NFC tags on Valrose Campus with MBDS2.0 (Nice)

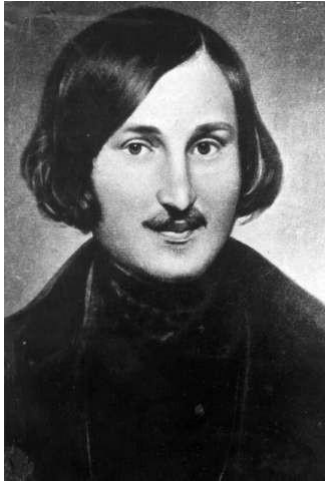


MIDLET version of MBDS2.0

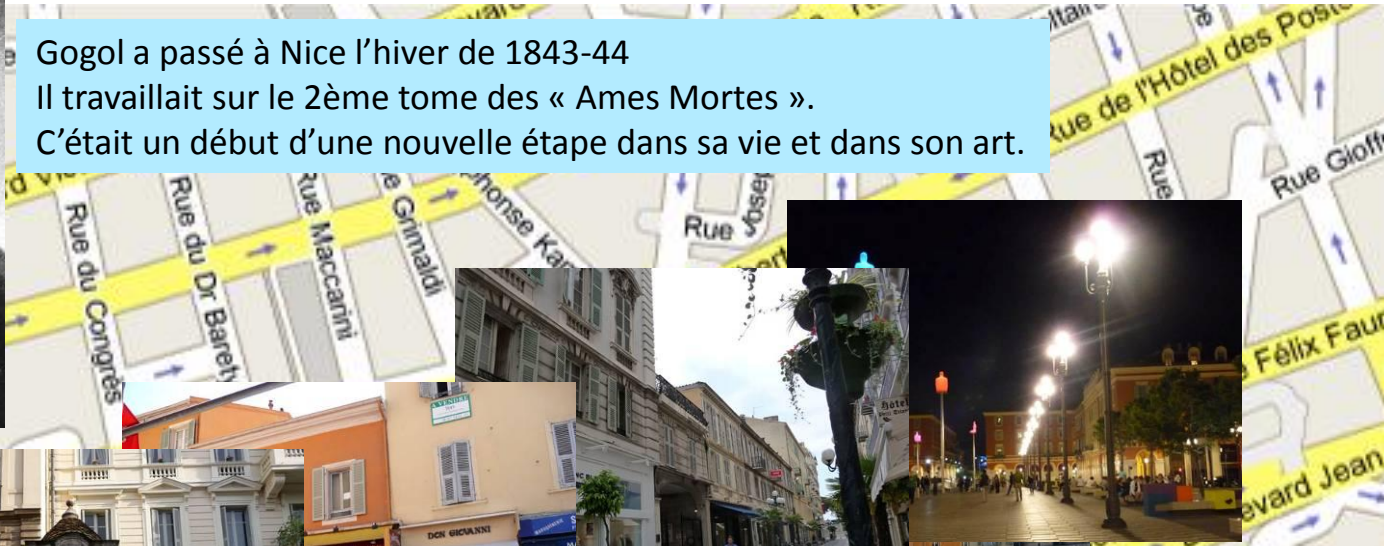


GOGOL's invisible path in Nice

«невидимый путь» Гоголя



Gogol a passé à Nice l'hiver de 1843-44
Il travaillait sur le 2ème tome des « Ames Mortes ».
C'était un début d'une nouvelle étape dans sa vie et dans son art.



Place Masséna à côté de l'Hôtel "Etranger" (2009)

Rue Paradis où Gogol vivait dans la maison
de ses amis Wielgorsky – il disait que cette période
était son "paradis"

Rue de France où Gogol passait pour aller voir Mme Smirnova-Rosset
là où se trouvait l'Hôtel "Etranger"
(lithographie de 1840 dans le musée Masséna)

Croix de Marbre érigée en 1568 et
pas changée depuis.
Gogol s'y promenait avec Mme Smirnova-Rosset
et la famille de Wielgorski

MBDS 2.0 deployment in ...



- ❑ MENTON 2010
- ❑ VALROSE Campus (June 2010)
- ❑ GRASSE (Nov 2010)
- ❑ Astrakhan (Russia)
- ❑ SIDI BOU SAID (Tunisia), Santo Domingo
- ❑ Santiago de Compostela (Spain)
- ❑ Alexandria (Egypt)

Menton area with MBDS2.0 platform in June 2010



Grasse city on November 2010 (1st Waalled QR code in France) !...



With JP Leleux Mayor and senator



« L'Innovation autrement »

Jean-Pierre LELEUX

Sénateur des Alpes-Maritimes

Maire de Grasse

Président de la communauté d'agglomération Pôle Azur Provence

Le Conseil Municipal de la Ville de Grasse

Serge MIRANDA

Professeur d'informatique à l'Université de Nice Sophia-Antipolis(UNS)

Président de la Fondation partenariale DreamIT sur les nouvelles technologies

**Vous invitent à assister à l'inauguration
du chemin du patrimoine tagué (QR Code et NFC*)
du centre historique de Grasse**

Le samedi 20 novembre à 10h30

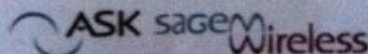
Salle du Conseil Municipal – Hôtel de Ville de Grasse



Interview de Jean-Pierre LELEUX

Pour lire ce QR Code, téléchargez gratuitement l'application i-nigma

*NFC : Near Field communication. Le téléphone mobile au standard NFC du futur contenant un lecteur RFID (Radio Frequency Identification) permet en touchant un objet tagué N d'obtenir une information multimedia dans ces « chemins invisibles ». Un Smartphone équipé d'un lecteur (gratuit) de QR CODE (Code barre en 2D) permet d'obtenir la même information en photographiant le tag.



GRASSE in Nov.2010 ...



BUZZ : « INNOVER AUTREMENT » <*Just INNOVATE differently*>



Buzz Marketing GRASSE (20 Nov 2010)

Nice Matin 19 Nov 2010



20th of Nov 2010 in Grasse



Tagged poster in Grasse

Présentation d'un panneau

GRASSE - SENSIBILITÉ
PLATEFORME D'INNOVATION

CHEMIN DU PATRIMOINE HISTORIQUE

Musée International de la Parfumerie International Perfume Museum

Le musée se développe aujourd'hui dans plusieurs édifices. Son entrée se fait par la cour d'honneur de l'Hôtel de Pontevès : son corps de bâtiment est inséré entre cour et jardin, à la parisienne. Pendant la Révolution, la demeure de l'émigré Pontevès fut le siège du Directoire du département du Var.

The museum has developed in several buildings. The entrance is by the court of honour of the Hôtel de Pontevès: the main building is enclosed between the courtyard and gardens, in Parisian fashion. During the Revolution, the home of the emigrant Pontevès was the headquarters of the board of directors of the Var country.

TOUCHER CETTE CIBLE AVEC UN TELEPHONE NFC après avoir téléchargé l'application gratuite Grasse 2.0

PLACE YOUR PHONE NFC ON THIS TARGET
Download the free application Grasse 2.0

PHOTOGRAPHER CE CODE AVEC VOTRE TELEPHONE après avoir téléchargé une application gratuite comme l-i-egrasse

TAKE A PHOTO OF THIS CODE WITH YOUR SMARTPHONE
Download a free application like l-i-egrasse

Logos: Ville de Grasse, CAPAP, Musée de France, Université de Grasse

Logo propre à la démarche NTIC à Grasse

Textes: 2 x 300 caractères en français et anglais

2 photos de l'intérieur du monument

Tags :

- NFC : à toucher
- Flashcode: à photographier

Logos : Ville, CAPAP, Musée de France, Université ...

Pic Nice Matin (Nov 2010)

... you before us the synod hall (a reunion hall where the secular clergy met). Seen from the bishop's palace plaza, this hall is distinguished by a succession of triple bay windows that bring all of their allure to the facade. The texts also mention the existence of a « tinel » (refectory). The chapel, said to be the « bishop », is identifiable from the outside by its arcature (series of arcades) bearing sculpted designs.

TOUCHEZ CETTE CIBLE AVEC UN TELEPHONE NFC
après avoir téléchargé l'application gratuite Grassie 1.0

PLACE YOUR PHONE NFC ON THIS TARGET
Download the free Grassie 1.0

PHOTOGRAPHIEZ CE CODE AVEC VOTRE TELEPHONE
après avoir téléchargé une application gratuite comme i-nigma

TAKE A PHYTO OF WITH YOUR SMARTPHONE
Download a free like i-nigma



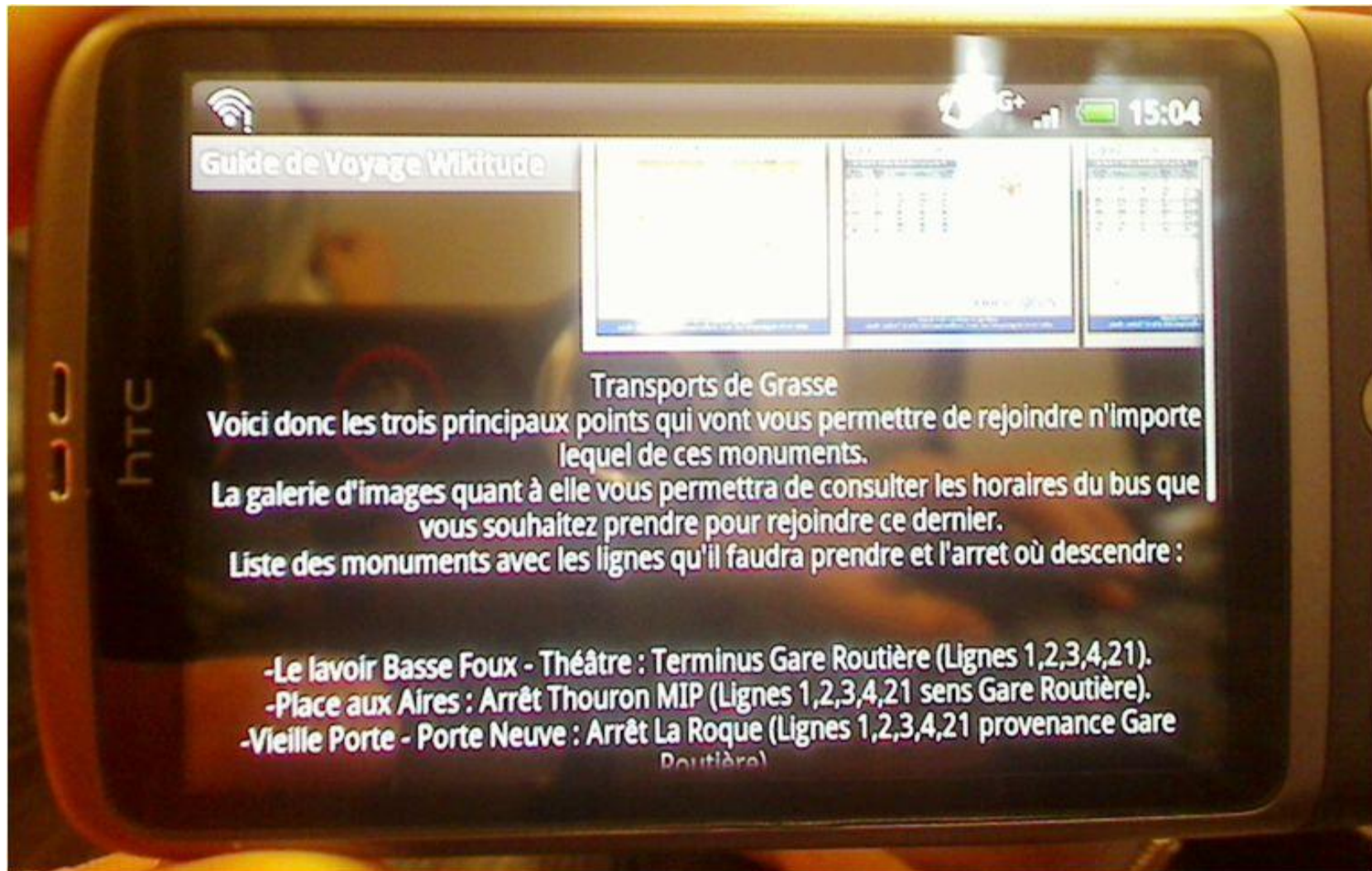
Augmented reality in Grasse : « Strolling in 1900 with Charles Negre »



Entrée de la gare du funiculaire

Le funiculaire arrivait à l'extrémité du Cours Honoré Cresp sur l'ancien emplacement de l'hôpital. La première pierre fut posée en 1908. Sa construction permis l'aménagement d'une partie du Cours avec une salle d'arrivée dite la Rotonde et une rampe d'accès arrivant sur le boulevard Fragonard crée en 1851.

AR in Grasse (Transport)



ART NOVA project (2007)



**TASSOU's totem made with tagged
« old » cell phones (Sept 2006)**

Art Nova project (2007)

Example with BEN (www.ben-vautier.com)



Mobile 2.0 : Bozza/BLOG at

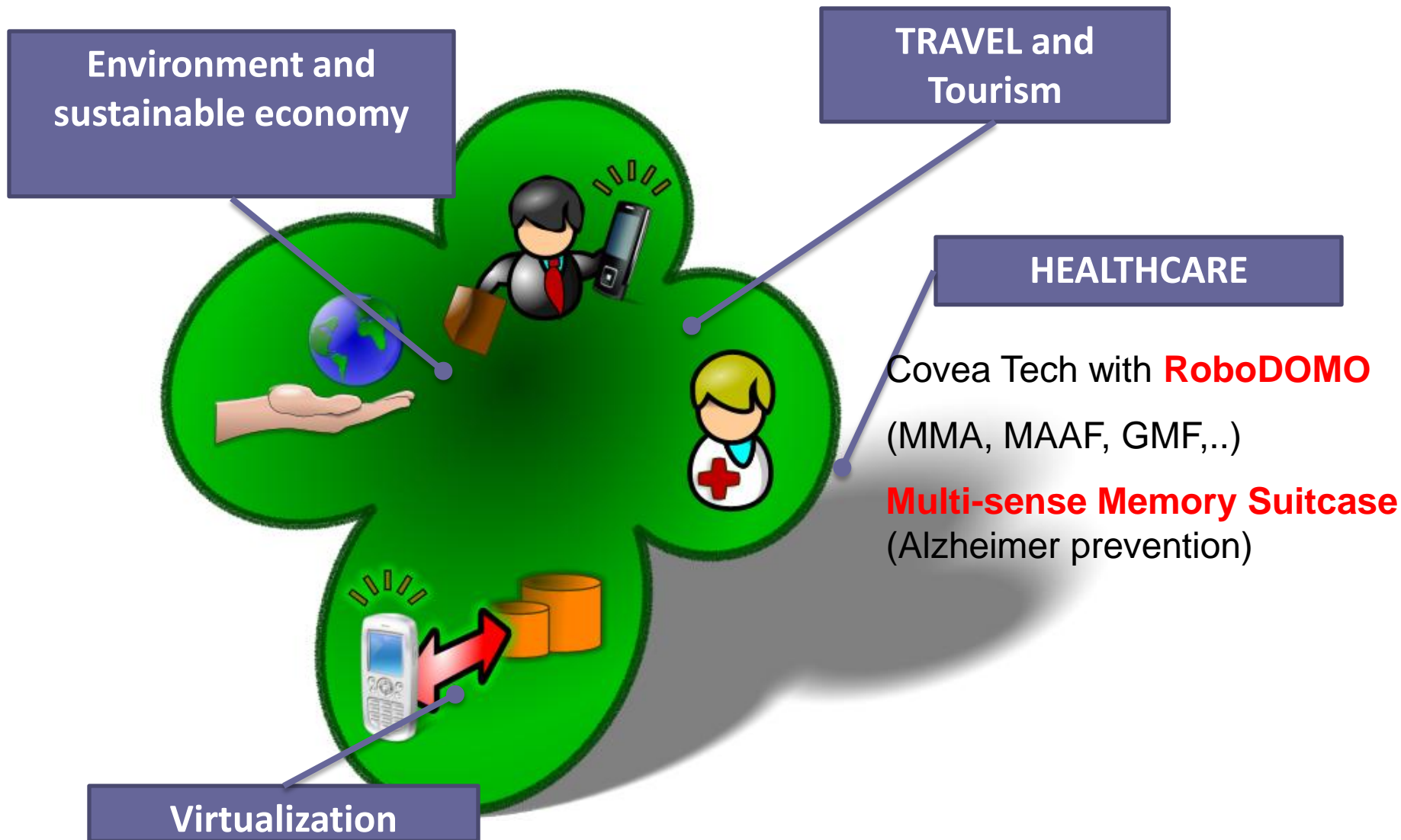
bozza.blogdns.com

ART NOVA (Ben)



Discussion avec BEN le 12 Juin 2010 : « *l'ART est un dialogue entre deux EGOs (et deux imaginaires toujours reliés par un artefact) que le téléphone mobile du futur ne pourra qu'amplifier* »

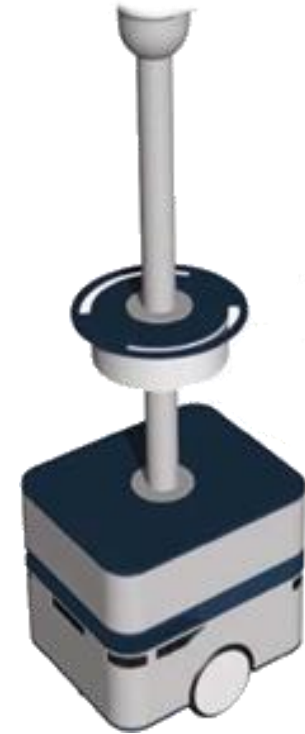
AAL and NFC



ROBODOMO project



Professeur Serge Miranda



RoboDOMO projects (2006, 2008 and 2010)



V1 (2006) with Robula 40



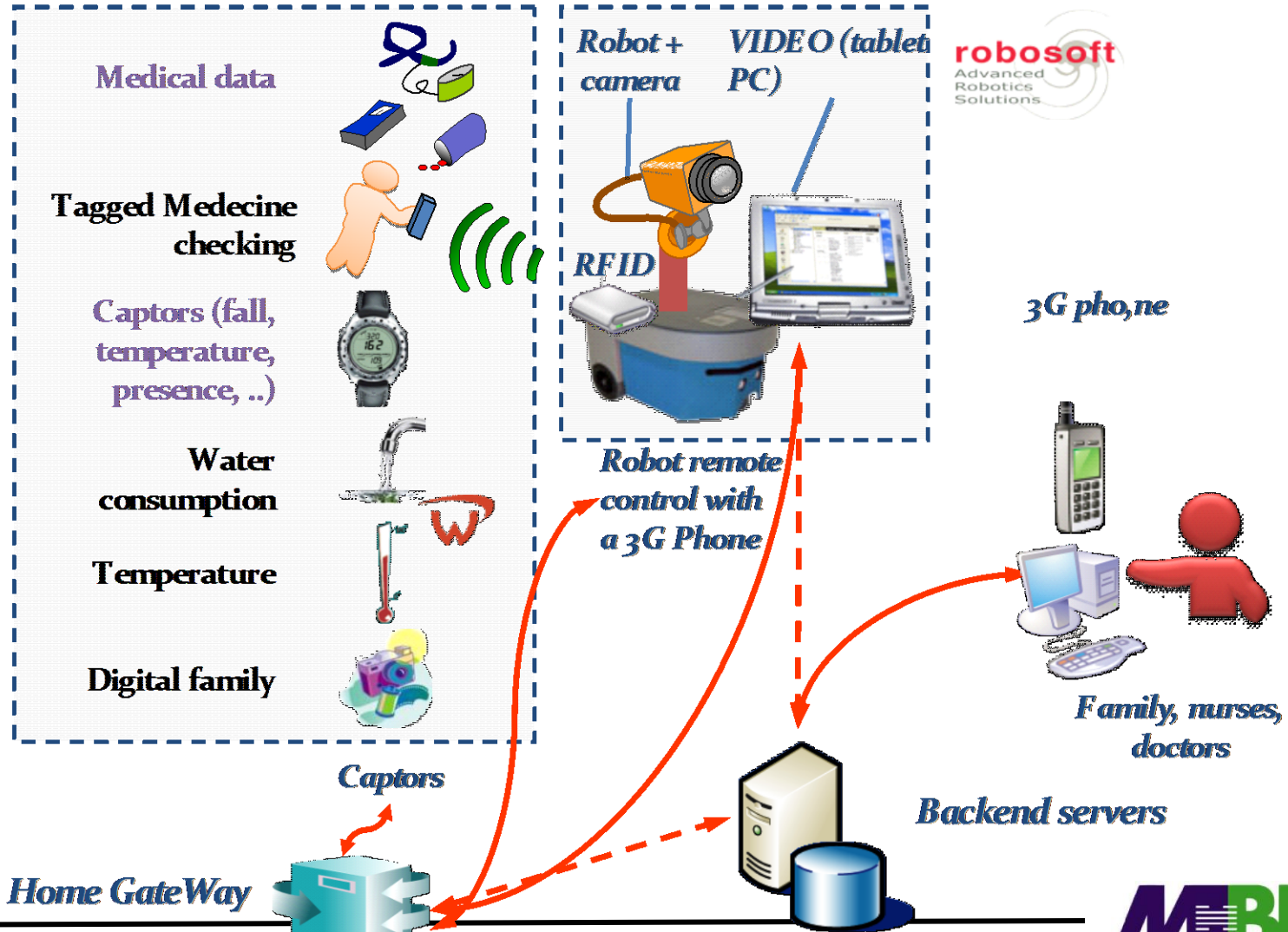
V2 (2008) with Robulab 10



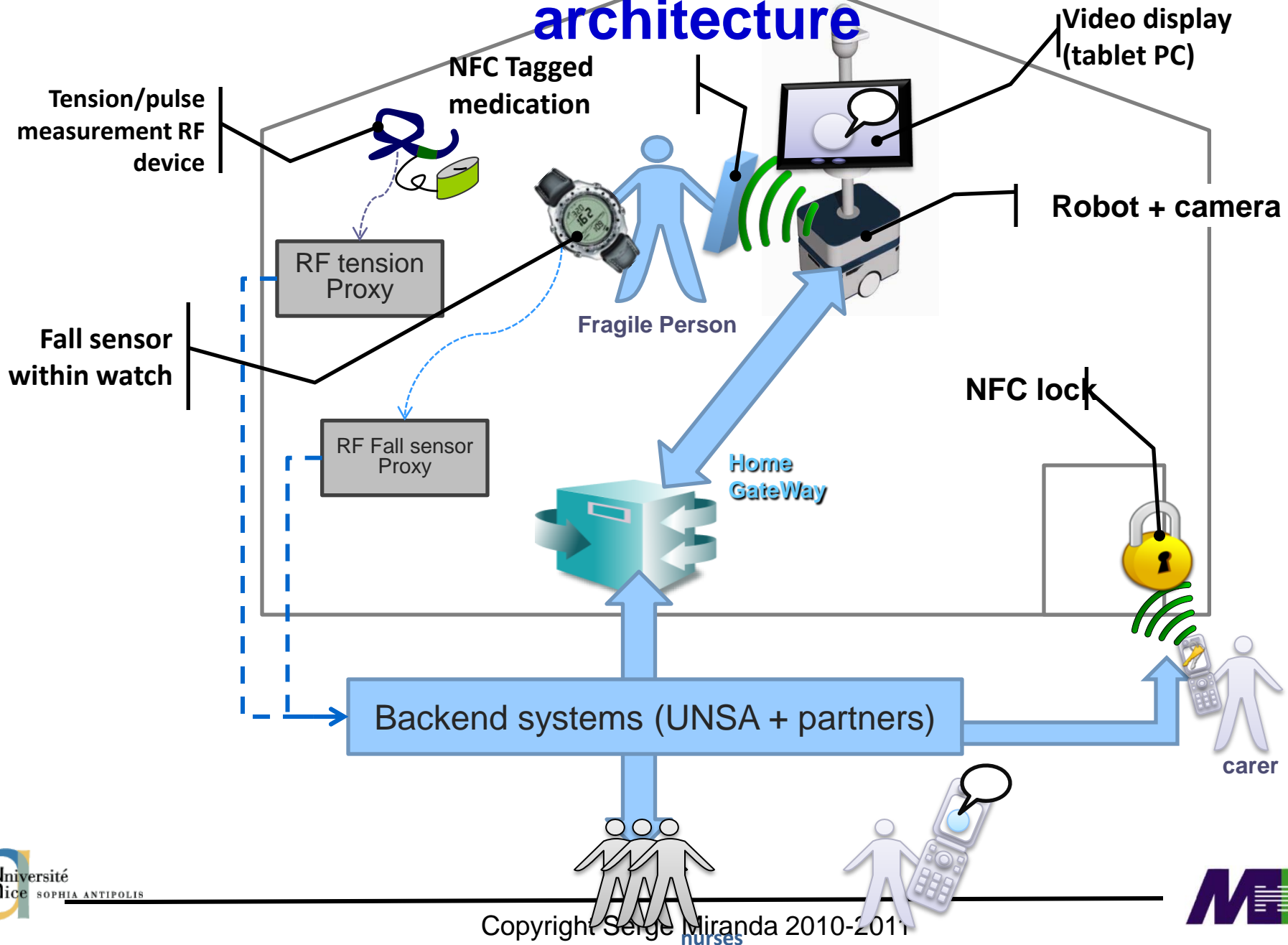
V3 (2010)

Portfolio of M-services

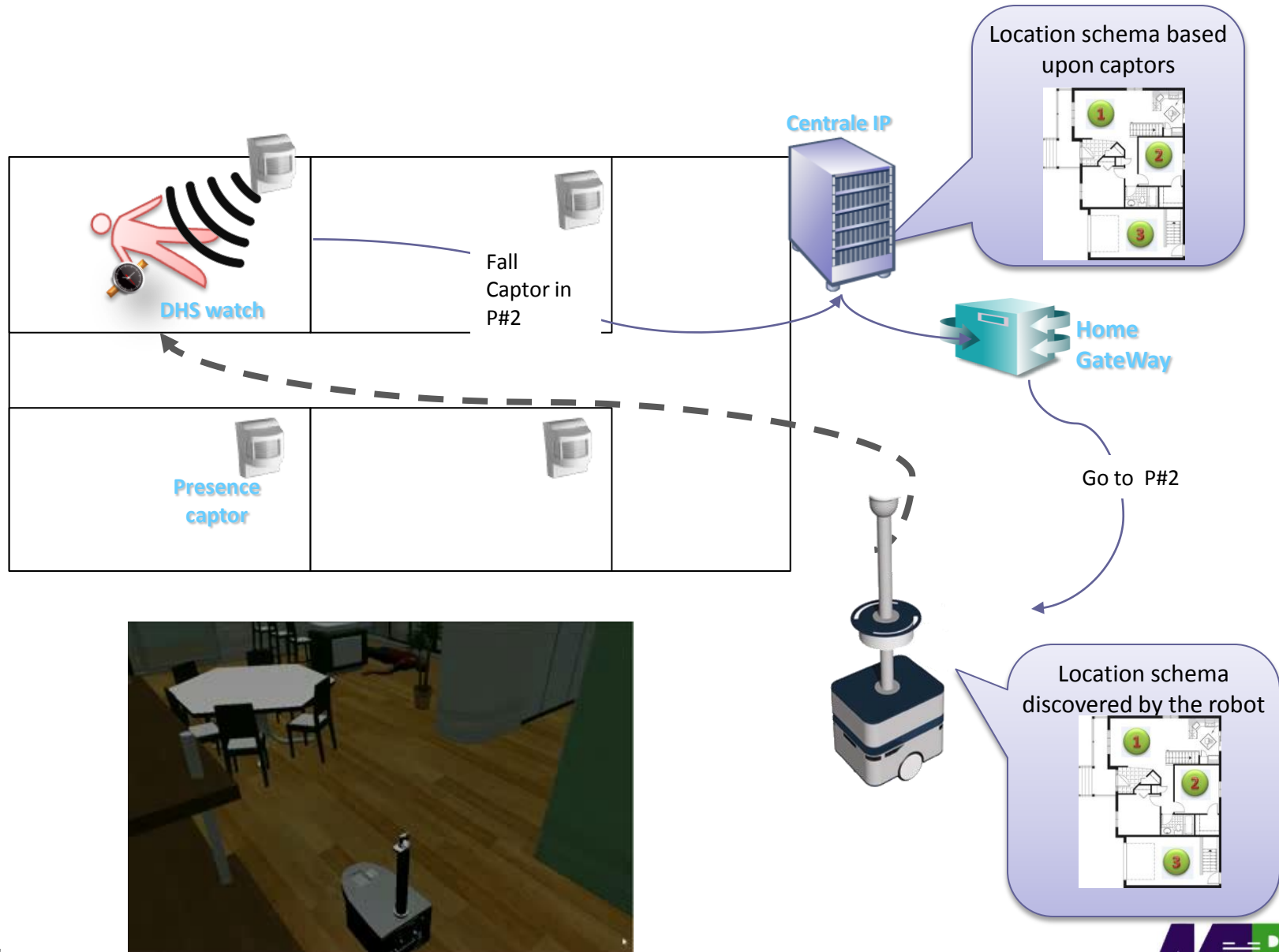
Robot



RoboDomo global architecture



Location-based home system for an « Intelligent » Robot (SRI partnership)



Customized services

Medecine checking



Health monitoring



Fall alerts



Video messaging



Infotainment (widgets)



Visioconferencing



Family and environment

Robot/Camera control thru 3G phone



Robot/Camera control thru Web Interface



Location-based service at home

Door opening for emergency



Patient monitoring (Google Health interface)



Voice Recognition, Administrative support (virtual CESU with NFC)

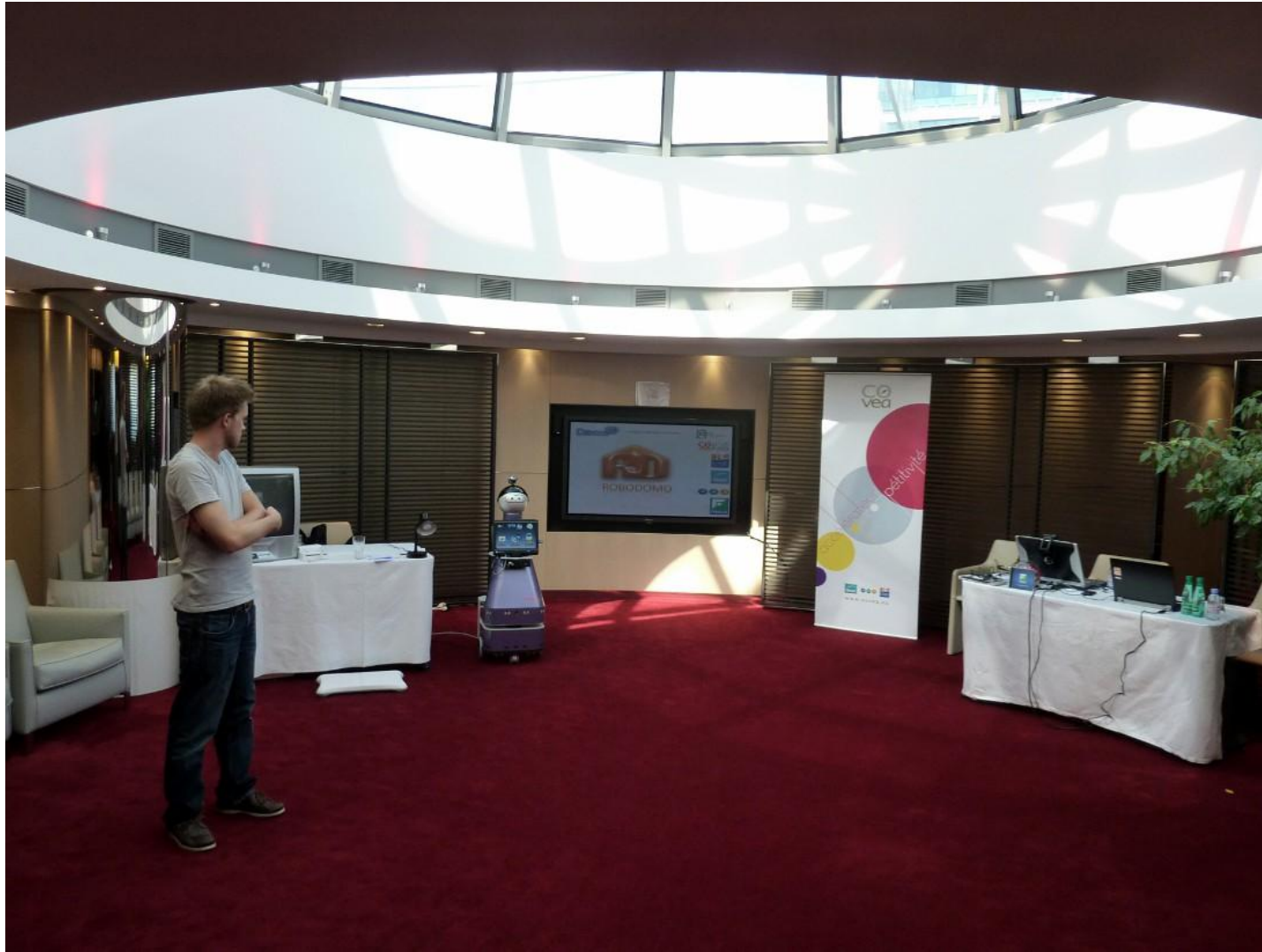


(karto merging)



- Done
- To be finalized

Sept 2010 : Public demo in Paris at Covea Tech conference

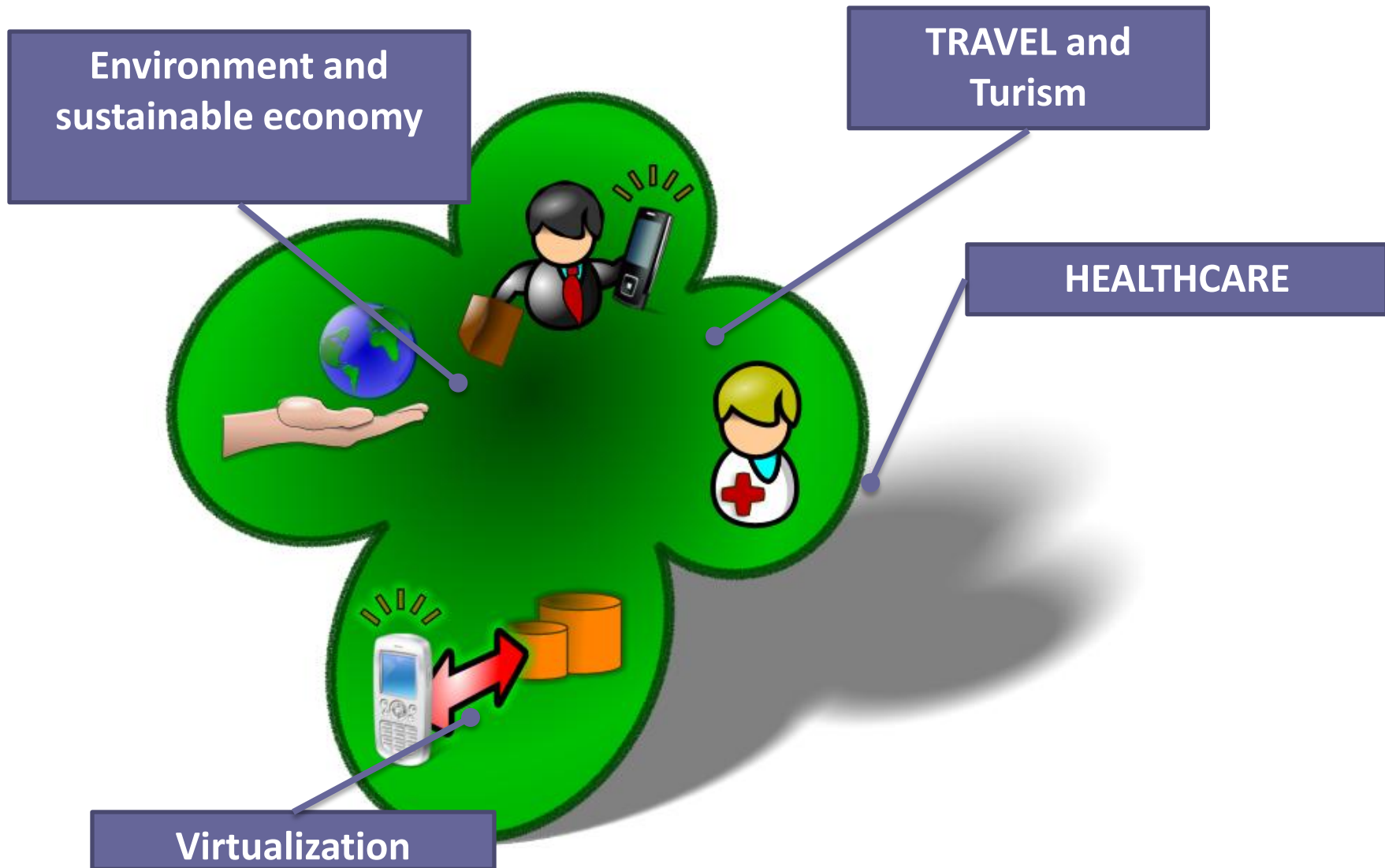


Memory Multisense NFC Suitcase for Alzheimer in 2010

(Innovation AWARD from Groupama in Sept 2010)



VIRTUALIZATION and NFC



Credit Agricole... **CAMPUS**

Université **NOVA, NICE FUTURE**

CAMPUS (NFC)

Copyright Serge Miranda 2010-2011

« NICE Future Campus » Project (2009-2011)

- Launching the Pilot project with 200 Students on February 18th 2011



La technologie NFC investit Valrose



Deux cents étudiants vont participer à une expérimentation du MBDS : faciliter la vie étudiante avec des téléphones portables NFC en exploitant les possibilités de la technologie sans contact. Le lancement officiel de l'opération aura lieu vendredi 18 février 2011 à 14 h dans la salle des Actes du Grand Château à Valrose.

LIRE EN PAGE 4

Nice Future Campus – NFC- (2009-2011)

- ❑ EXTELIA as CO-leader with MBDS/DreamIT Foundation
- ❑ Orange R&D, Cassis, BMS, Twinlinx, ASK
- ❑ Grant from Minister of Industry (2 Million Euros)
 - 2/18 2011 for pilot deployment (50 students) in Valrose

« CAMPUS Nova » project With Credit Agricole, Nokia, IBM : Virtualization of the student ID card in an NFC Phone (2008)

Credit/de
bit Card



Room access

Cash exchange
(P2P)

Student
ID Card



Micro-payments

Ticket RU



Student
restaurant

Room
access
card



Transport
card



Library

Coupons



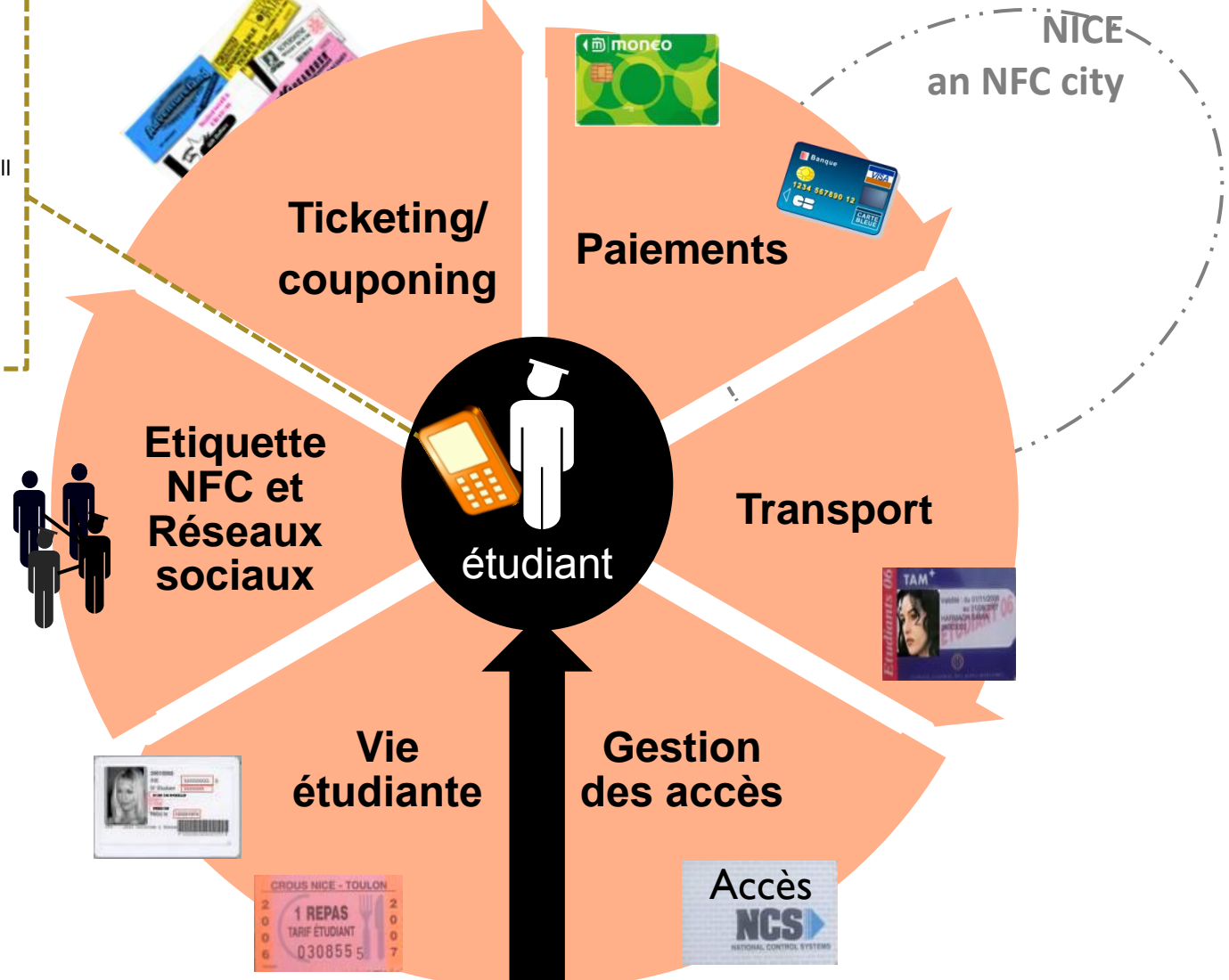
Troc intramuros
(le « PEZE »)

Dorm access

Portfolio of NFC services in a SIM card



« Student ID card becomes virtual in the cell phone with a portfolio of Mobiquitous innovative services »



Project background : NFC Container (Pole TES), CAMPUS NOVA (MBDS avec CA), VIP (MBDS), TICKET TAP (MBDS), VENTOSE Café (MBDS) & BluLink (Pole SCS)

NFC targets on Campus

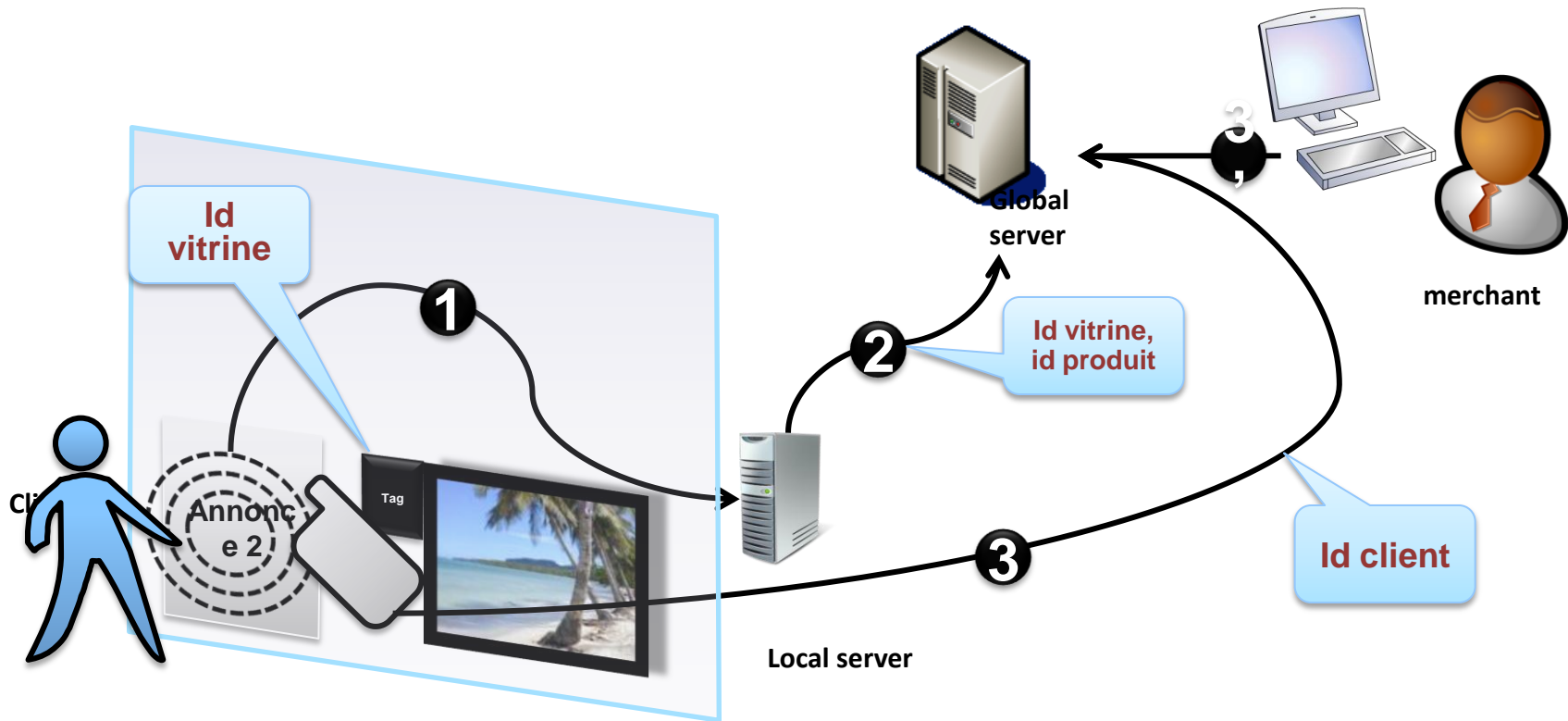


Nice Future Campus



VIP project

(Interactive shop Window)



□ TOUCH ME project (couponing)

(WIMA award in 2007)



VS.



Present



Future

Copyright Serge Miranda 2010-2011

ImaJEANS

- with Rica Lewis, AIRTAG
- Street marketing/ POS marketing

côte d'azur www.nicematin.fr - vendredi 21 septembre 2007 - page 7

■ tendance

Sophia : le jean du futur dévoile tout... avec un téléphone portable

Ce matin, Natacha flâne aux Galeries Lafayette de Cap 3000. Elle passe devant le rayon jeans. Sort son téléphone portable. L'apporte. Reçoit aussitôt un message : « 20 % de remise sur cet article » - 10 chansons gratuites à télécharger ». Vingt minutes plus tard, Natacha sort vêtue du jean en question. Elle y a greffé une mini-védo personnalisée, qu'un curieux peut visualiser en approchant son portable du pantalon de Natacha... avec son consentement. Viens toucher mon jean, je te dirai qui je suis! C'est le futur proche qu'invente un institut de l'université de Nice-Sophia Antipolis, le bien nommé *Imagine*. Celui-ci a livré, hier, un aperçu de ce qui attend le consommateur en prenant l'exemple d'un jean. Infos texte, photo, vidéo, musique : il ne lui manque que la parole.

Plus simple qu'un coup de fil
« Demain, les nouvelles technologies seront là, partout », soutient Serge Miranda, directeur du master MBDS qui pilote *Imagine*. Tout un symbole : l'université et son partenaire Rica Lewis présentent ce jean du futur dans le temple de la consommation de Saint-

Laurent-du-Var⁽¹⁾. Mais qu'a-t-il de plus que les autres, ce futur? Un « tag ». Un code-barre nouvelle génération relié par *radio frequency identification* (RFID) à une base de données, auxquelles on accède par contact avec un mobile équipé de *Near field communication* (NFC). Encore plus simple qu'un coup de fil, cette technologie est déjà testée pour ouvrir des portes, voire régler la note.

Serge Miranda résume cette technique en « 3.S : speed (*connexion rapide*), simplicity (*un toucher suffit*), security (*l'utilisateur peut protéger ses informations*) ». Et de rapporter l'estimation affolante réalisée par le NFC forum : « D'ici 2012, il y aura 500 millions de téléphones tactiles dans le monde ». Du reste, ce n'était hier que la première étape d'un projet visant, fin 2008, à appliquer ces technologies à l'échelle de... Nice. Le futur en est à ses balbutiements.

CHRISTOPHE CIRONE
1. Dans le cadre des « Journées innovation » des galeries Lafayette de Cap 3000, du 10 au 30 septembre.

Savoir +
www.mbd5-fr.org

IL RACONTE SON HISTOIRE
■ « Ce jean porte le label Max Havelaar. Il garantit que le coton utilisé pour sa fabrication provient du commerce équitable. Acheter ce jean, c'est aider les cultivateurs et agriculteurs d'Afrique centrale. » Par un message de ce type, agrémenté d'une vidéo, le produit présente au client son « histoire ».

IL INVENTE LE « MARKETING DE PROXIMITÉ »
Grâce aux « tags » embarqués à bord du vêtement, le commerçant peut consulter en temps réel l'état des stocks. « Est-ce qu'il me reste du 40 ? La démarque est-elle suffisamment attractive ? » Selon les infos qui lui remontent des « tags », il peut réagir rapidement en ajustant ses messages promotionnels.

IL STOCKE DE LA MUSIQUE
■ Chansons, jingles... Ne cherchez pas le lecteur MP3, il est dans le jean ! Atout ludique mais aussi argument commercial, cette fonctionnalité permet de stocker ses titres favoris sous la couture du pantalon, et d'en faire profiter ses amis mélomanes.

IL DÉCRIT SON PROPRIÉTAIRE
■ Pour une fois, c'est au propriétaire « d'habiller » son jean. Autrement dit, de le personnaliser en ajoutant, par exemple, un message vidéo. Pour ce faire, il suffit de se filmer avec son portable avant de l'approcher du « tag ».



(Photo François Vignola)

Mostra project with Amadeus (2006)

□ NFC Awards in 2007 at WIMA in Monaco (www.wima.mc)



LISA Car Sharing Project in Nice ?

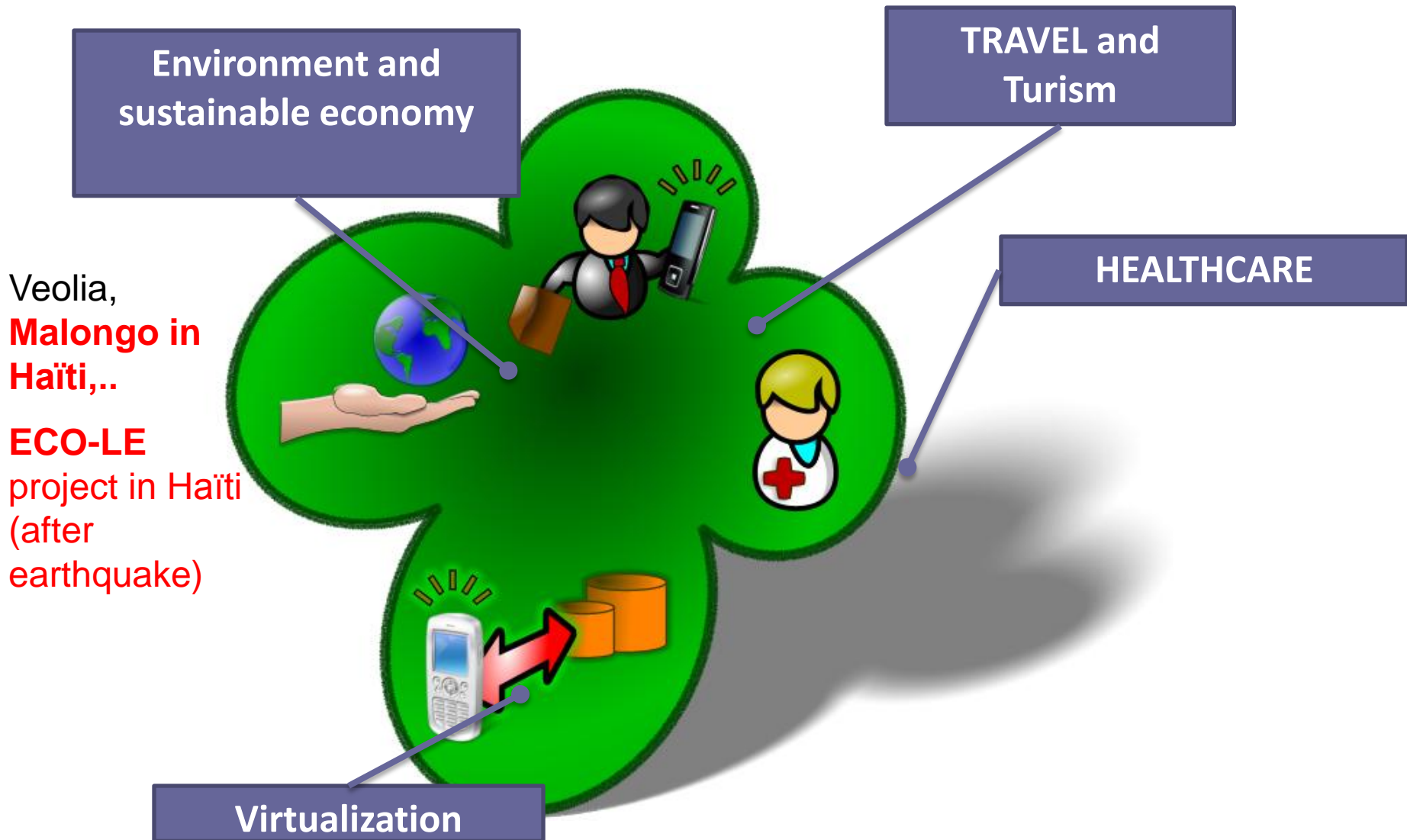
- Electric Renault TWIZY vehicles (2 seats) in Nice with end-to-end transport services (bikes, tram, buses)

- NFC Renault car < cf MBDS Project in 2006 >
 - Identification
 - Opening/Engine start
 - Multimedia customization
 - Cell phone transfer



Twizy Z.E

4 Key business areas in DreamIT Foundation



FIRST project **(India, Haiti, Morocco) *a banker in the pocket***

Financial

Inclusion based upon

Rural ubiquitous

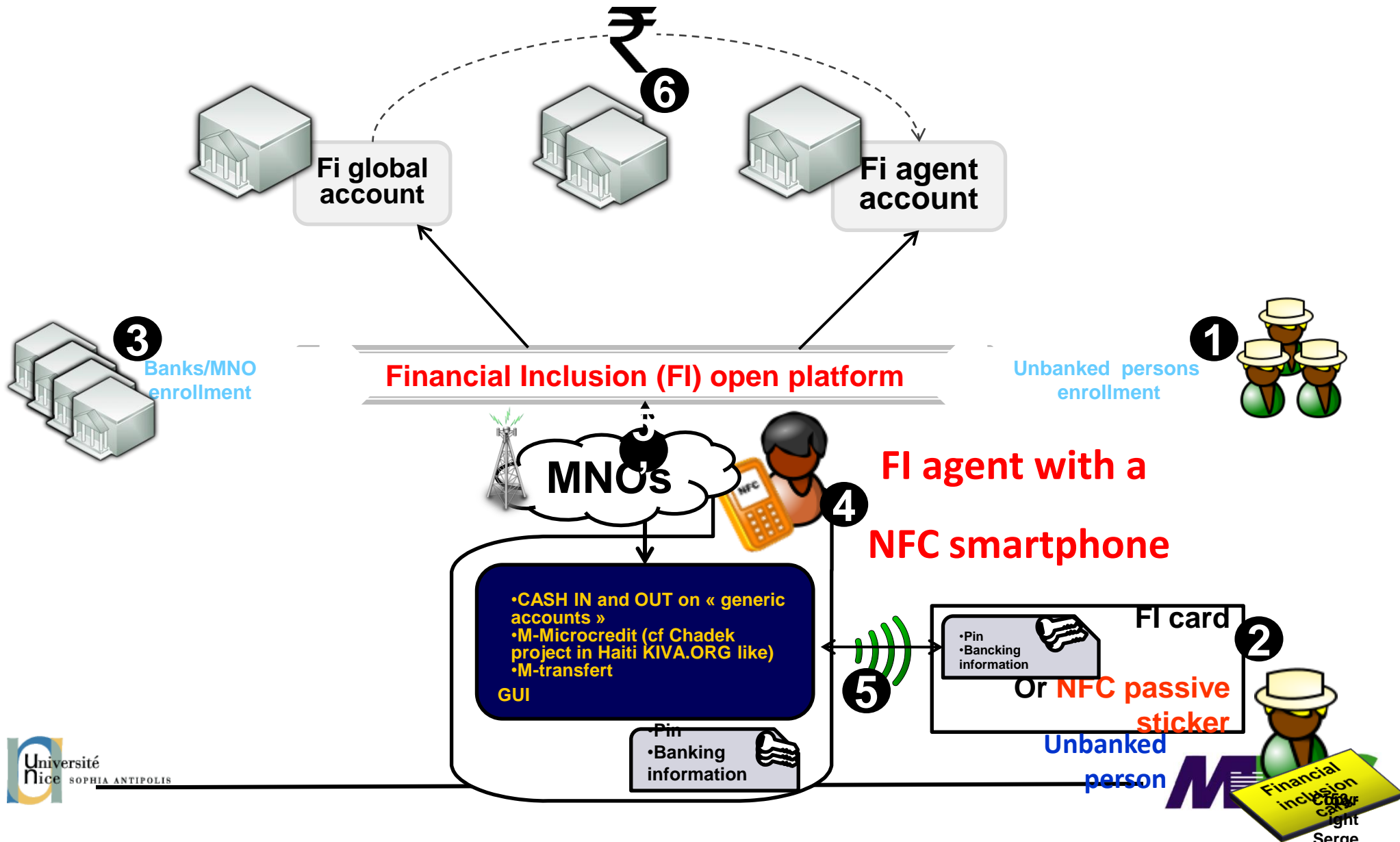
Services

Technology platform

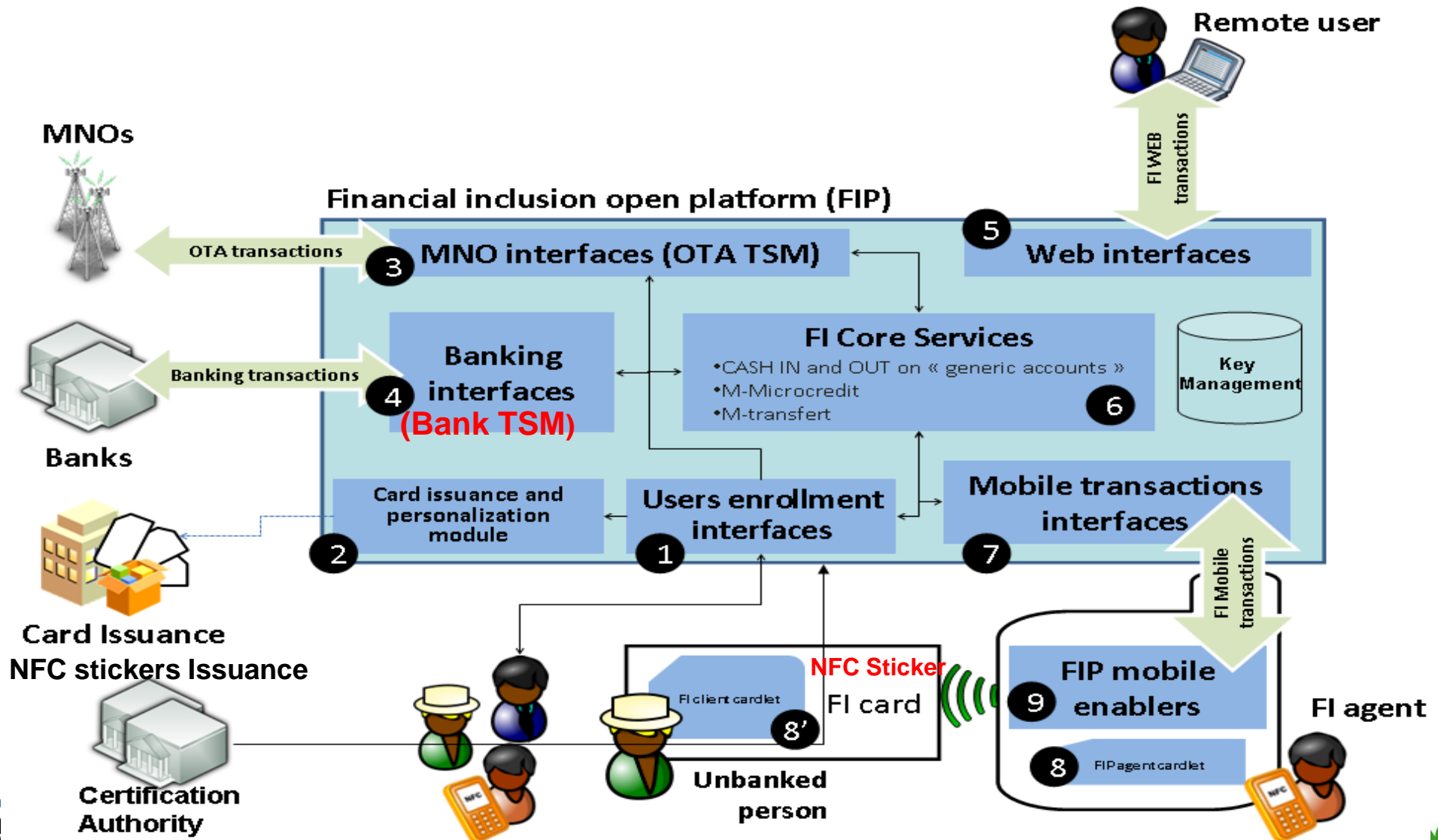
« FIRST » NFC mobiquitous SERVICES

- Use CASES logic
 - CASH IN and OUT on « PAYMENT accounts »
 - M-transfer with « VIRTUAL MOBIQUITOUS CASH »
 - « The NFC Smartphone is the banker »
 - *NFC FIRST Application loaded by touching NFC tagged posters*
- APPLICATION development using our « NFC CONTAINER » approach for better efficiency

FIRST System overview



FIRST building Blocks with Dual (Split) TSM



FIRST salient ICT innovative features

□ NFC ecosystem

- NFC smartphone for last banked person , the FI agent(MNO prepaid-card reseller,..) attached to a rural village and managing the global « *village account* »
- NFC cheap passive stickers for unbanked persons (having a virtual payment account on the « *village account* ») for authentication

□ Dual TSM (« SPLIT TSM ») global NFC symmetric architecture

- Balance between banks and MNO's having their own TSM and TSM interoperability

FIRST Project

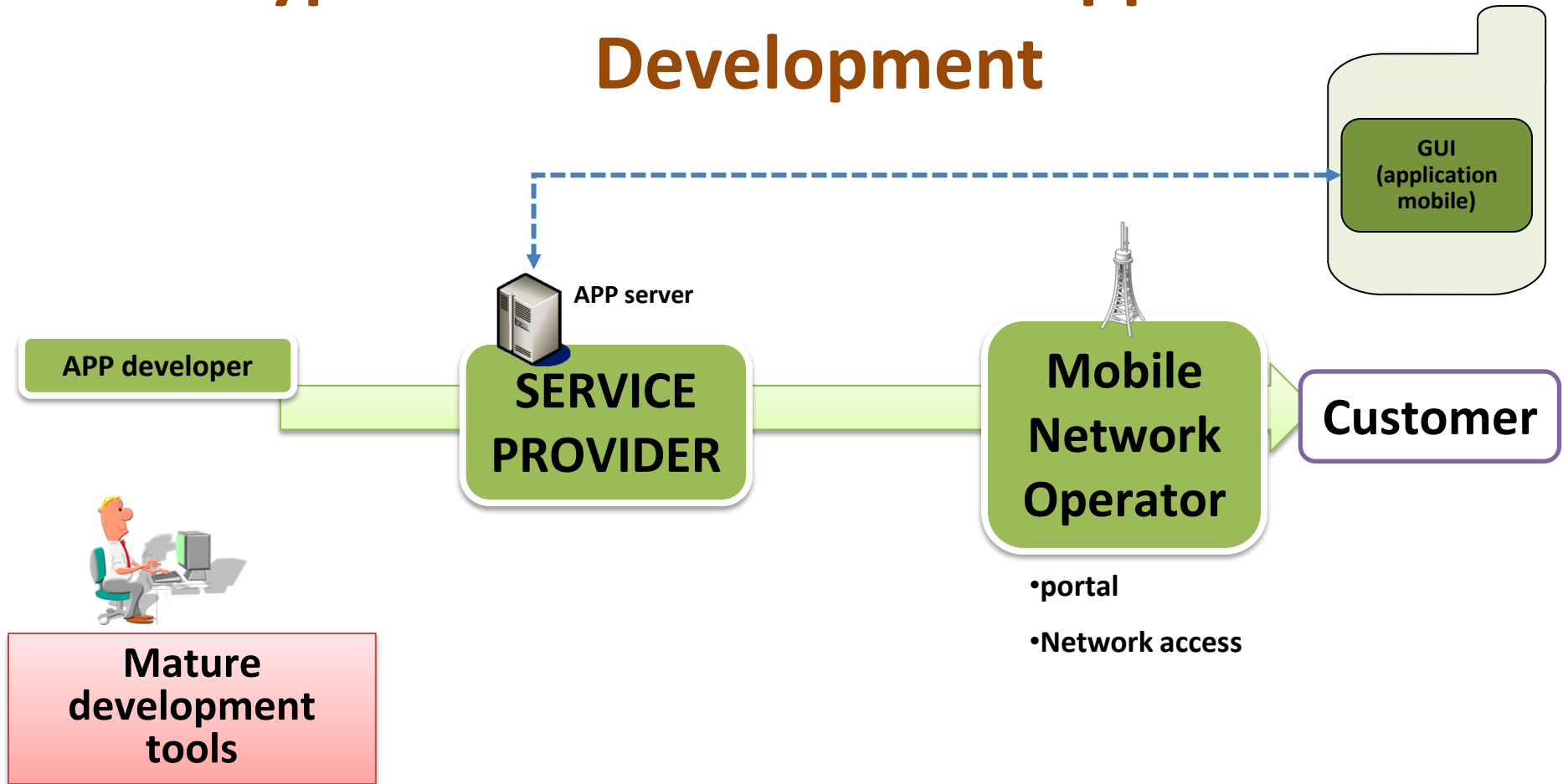
- A very **PRAGMATIC** bottom- up **INNOVATIVE** standardized approach with short-term pilot projects in India (in 2011, Haiti and Morocco in 2012)
- Starting with the *bottom-billion of the pyramid* !
 - → New Business models
 - → New ...Banking Theory with Virtual ubiquitous cash

NFC Development Ecosystem

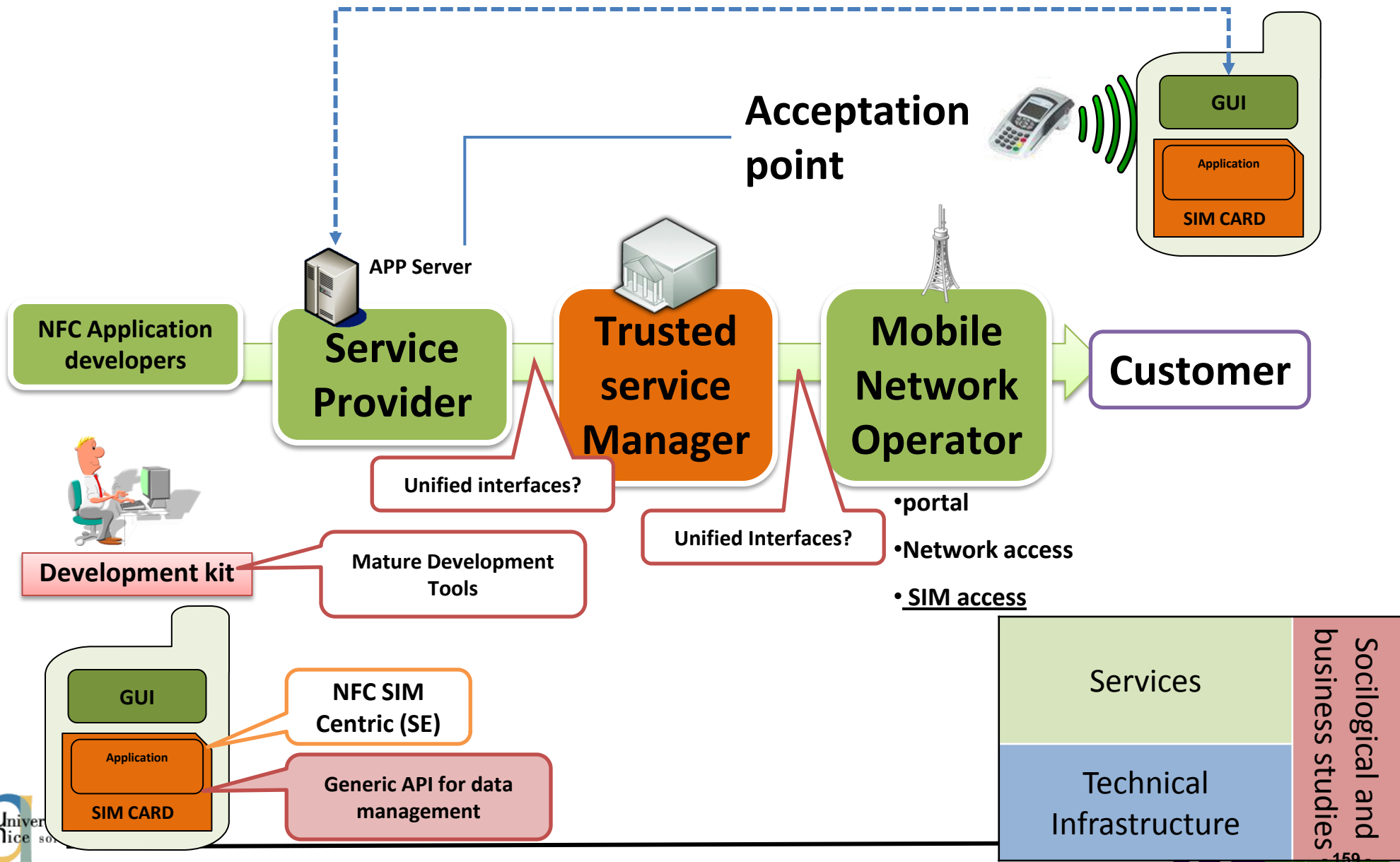
A very simple pragmatic idea :

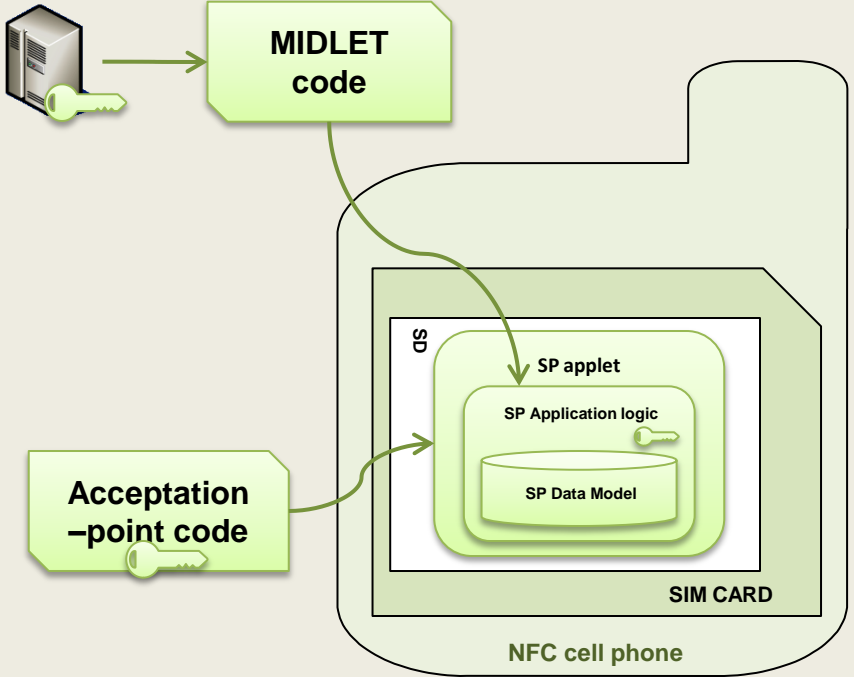
« We Propose a high-level card API for mobile service developers stemming from DB approach to ease NFC app. development »

Typical Mobile Internet application Development

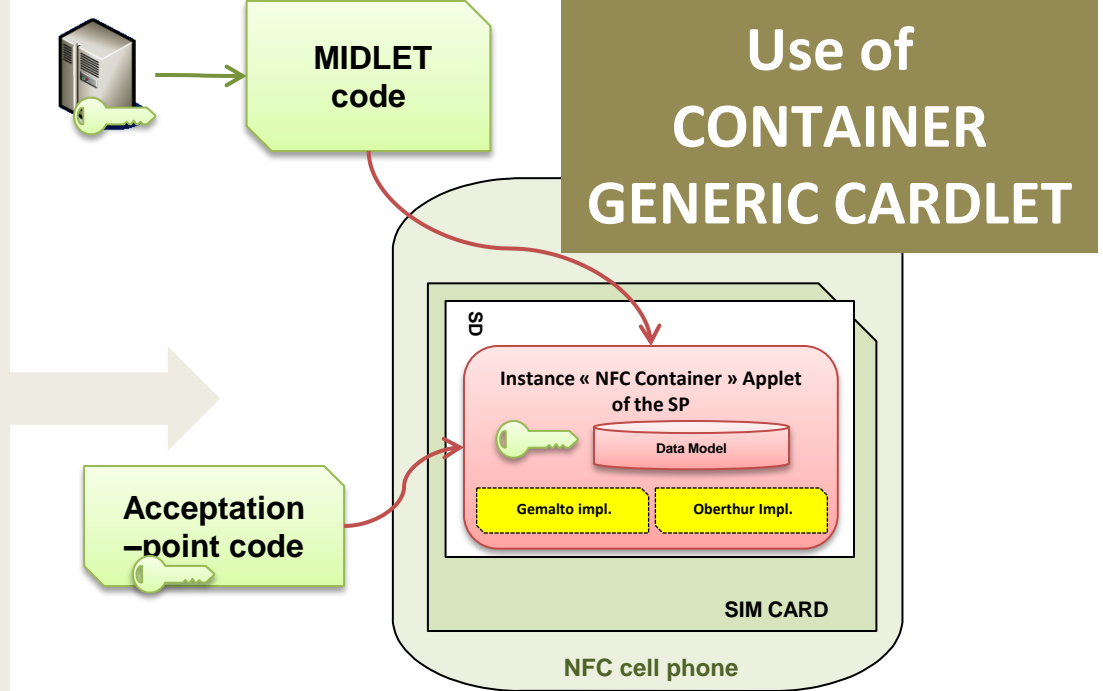


NFC Development : A Complex ecosystem

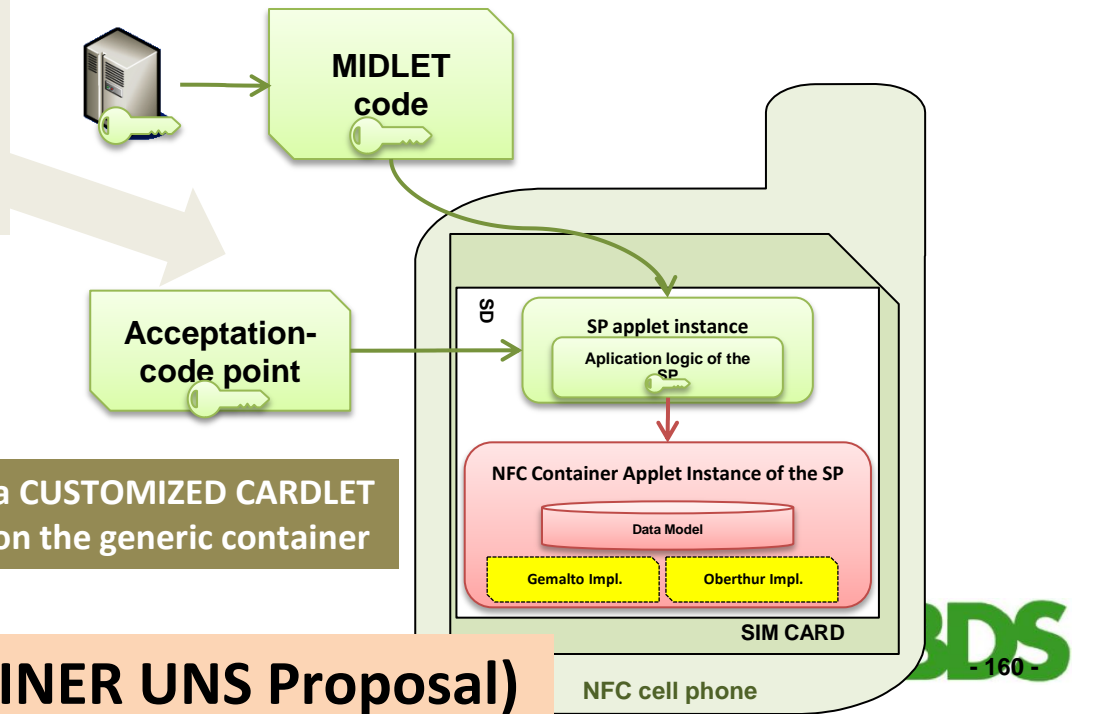




Complete DEV by the service provider BEFORE



Use of CONTAINER GENERIC CARDLET



Use of a CUSTOMIZED CARDLET based on the generic container

- CONTAINER NFC API code for data mngt
- SERVICE PROVIDER (SP)
- Application KEY of the SP
- Specific API of the SP
- Generic API



GENERIC API approach (NFC CONTAINER UNS Proposal)

Optimized reduced coding for NFC App developer

```
...
short index = GetIdxToDO(tag);
if (index == (short) DO_NOT_FOUND) {
    //---- DO not found -> create a new one
    short index2free = GetIdxToFreeSpace();
    short freesize = (short) (SIZE_MEMORY -
        index2free); // calculate size of free space
    short DOsize = (short) (lc+LEN_TAG+LEN_LEN);
    // calculate size of the new DO
    if (DOsize <= freesize) {
        // it is enough space for a new DO
        memory[index2free] = (byte) tag;           // set
        DO tag
        memory[(short) (index2free+LEN_TAG)] = (byte)
        lc;           // set DO length
        // copy the DO atomic into the memory
        Util.arrayCopy(cmd_apdu,
            (short)((ISO7816.OFFSET_CDATA) & 0x00FF),
            memory, (short)
            (index2free+LEN_TAG+LEN_LEN), lc);
    }
}
```

VERSUS

```
void
insertRecord(byte[] record,
short recordOffset,
short recordLength)
```

```
//Adds a record in the current
structure.
```

« Mobiquitous CASH, LETS and barter » !

- Cf LETS ('Local EXCHANGE and Trading Systems ») in the 80's
 - Michael Liton (1983)
 - Towards Mobiquitous LETS ?
- « PAYMENT ACCOUNT » (MNO? Google? Apple ?..)
 - CASH becomes VIRTUAL ! No More Fund transfer ?
- Product and service EXCHANGE with VIRTUAL CASH
 - « Bank of TIME »
 - « PEZE » (« Plan d ECHANGE Zero Ennui ») :
mobiquitous barter within Campus .

TAP'nFLOUSS project (MBDS Morocco, 2009)

- ❑ NFC Cash dispenser/ATM (Omnidata, NCR)
- ❑ NFC Phone
 - NFC ADD ON (M2T)
 - NFC stickers (Twinlinx)
- ❑ 75% of the population owns a cell phone with only 25% bankable
 - → M-transfer on 50% of the population !
- ❑ Demo and Mediterranean M-payment summit on June 2011 in Casablanca

Casa Karibe Nova Project in Haiti : Tracking coffee for fair trade with MALONGO (Alcatel Lucent, Comcel,..)

- ❑ NFC/RFID and 2D TAGS (Semapedia in 2006 then Flashcode in 2008) for end users
- ❑ NFC demo in May 2006 in Paris and formal agreement (MOU) in May 2007 in Port of Prince (Haiti) with WIMAX pilot project launched in March 2008 in rural area of Haiti (Cap Rouge)



CAP ROUGE NIMERIK (March 2008)



Frantz Verella (Minister of Telecommunications) on March the 29TH in Cap Rouge (Haïti) : « **Poverty is a denial of access to INFORMATION** »

MBDS buiding in the Univ of Haiti



MBDS buiding before and after the earthquake of Januray 2010er 2010 in The University of Haiti (Port of Prince)

March 2011



**Haiti in March
2011
towards the
1st
« Mobiquitous
building in
America » to
be
inaugurated
on April 2011**



MBDS Students receiving their NFC cell Phones on March 2011



Questions ?



« If you are crazy, it is possible. Remain open to creativity and innovation » **John Gage**, 28 Oct 99 MBDS Sophia

« Stay hungry, stay foolish » **Steve Jobs**, Stanford, 2007

Charles Babbage en 1812 :

« Propose to any english man any principle or any new instrument however admirable and you 'll observe he will spend his energy to demonstrate it could 'nt work. Propose it to an american, he will congratulate you and spend his energy to find new applications »