



Πανεπιστήμιο Αιγαίου

Ηλεκτρονική Επιχειρηματικότητα

Κινητό Ηλεκτρονικό εμπόριο

Δρ. Δημήτρης Δρόσος (ddrosos@aegean.gr)

Επίκουρος Καθηγητής

Τμήμα Μηχανικών Πληροφοριακών & Επικοινωνιακών Συστημάτων



Ευρωπαϊκή Ένωση
Ευρωπαϊκό Κοινωνικό Ταμείο



ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ & ΘΡΗΣΚΕΥΜΑΤΩΝ, ΠΟΛΙΤΙΣΜΟΥ & ΑΘΛΗΤΙΣΜΟΥ
ΕΙΔΙΚΗ ΥΠΗΡΕΣΙΑ ΔΙΑΧΕΙΡΙΣΗΣ

Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης



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- Το παρόν εκπαιδευτικό υλικό έχει αναπτυχθεί στα πλαίσια του εκπαιδευτικού έργου του διδάσκοντα.
- Το έργο «**Ανοικτά Ακαδημαϊκά Μαθήματα στο Πανεπιστήμιο Αιγαίου**» έχει χρηματοδοτήσει μόνο τη αναδιαμόρφωση του εκπαιδευτικού υλικού.
- Το έργο υλοποιείται στο πλαίσιο του Επιχειρησιακού Προγράμματος «Εκπαίδευση και Δια Βίου Μάθηση» και συγχρηματοδοτείται από την Ευρωπαϊκή Ένωση (Ευρωπαϊκό Κοινωνικό Ταμείο) και από εθνικούς πόρους.



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Θεματολογία

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- Βασικές έννοιες
- Υποδομή
- SMS
- Εμπόριο βάσει θέσης
- Mobile coupons / barcodes
- Επαυξημένη πραγματικότητα στο κινητό
- 6η αίσθηση
- Αόρατη υπολογιστική (Έξυπνα σπίτια, συσκευές και αυτοκίνητα)
- Mobile apps

Κινητό ηλ εμπόριο (mobile commerce)

5

- Κάθε συναλλαγή ηλεκτρονικού εμπορίου που γίνεται σε ένα ασύρματο περιβάλλον
- Αποτελεί μια φυσική επέκταση των ηλεκτρονικών συναλλαγών και μια ευκαιρία παράδοσης νέων υπηρεσιών σε πελάτες

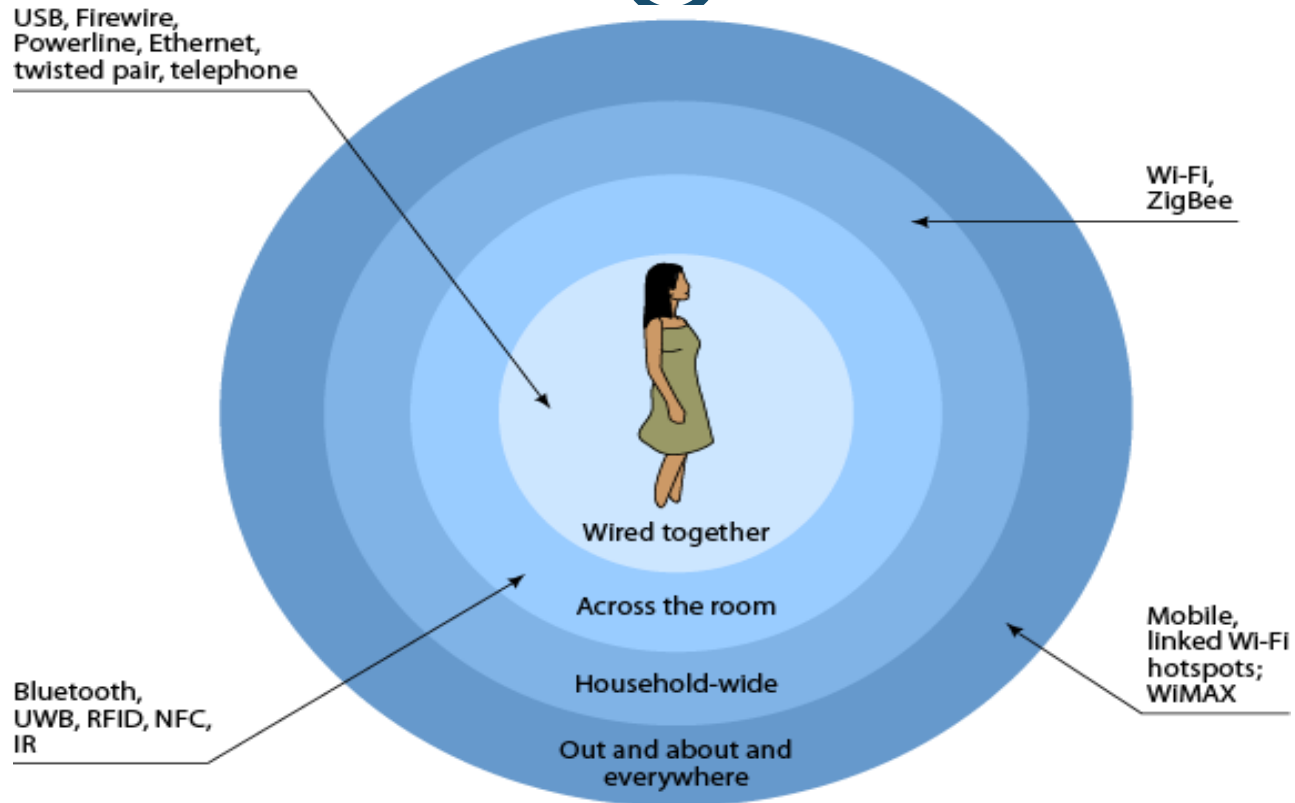
Ανάγκη

- Μόνιμη πρόσβαση σε πληροφορίες και υπηρεσίες, ανεξάρτητα από τον τόπο και το χρόνο

Καταλύτες

- Mobile phones – Smartphones
- Tablets
- Netbooks – Laptops
- Wireless network access

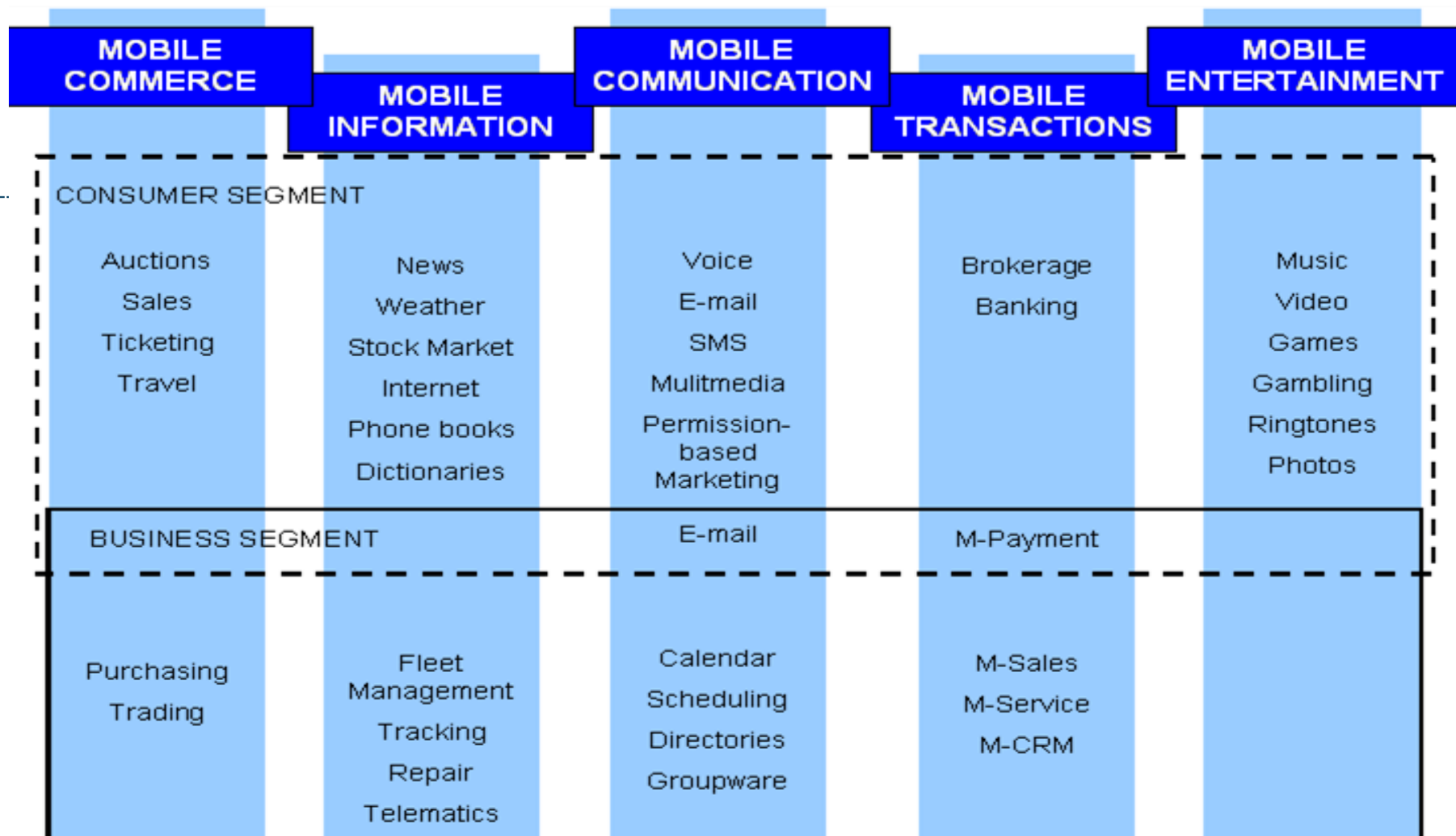
Mobile and Wireless Technologies Landscape



Ένα παράδειγμα: Zigbee vs. WiFi

<https://www.youtube.com/watch?v=buV11ZPJ7MQ>

Fields of Mobile Business



Εξέλιξη του κινητού B2C εμπορίου, πώς ξεκίνησε;



- Ibiza 2000, clubbing
- Smash Hits 2000, Poptext club
- Channel 5 2001, TV contest
- Cadbury's Txt'nWin, 2001 (4 million SMS)



Πώς φθάσαμε εδώ;

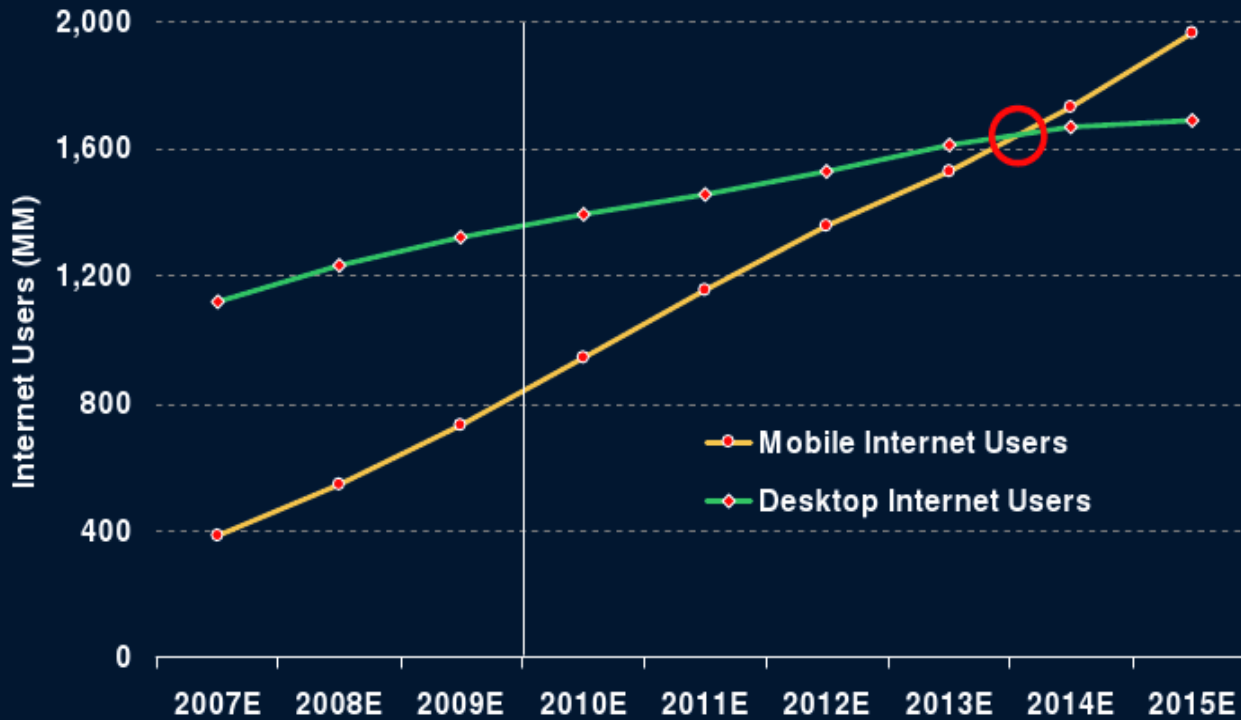
9

- 1906 first wireless phone patent
- 1973 first mobile call
- 1991 GSM - Finland
- 1998 a ringtone was sold
- 1999 Blackberry mobile email
- 2001 3G - Japan
- 2007 intro of iPhone (touch device)
- 2008 600.000.000 web through mobile access
- 2008 introduction of Apple's [App Store](#) for the iPhone and iPod Touch & Google's Android Market in October 2008



Mobile Users > Desktop Internet Users Within 5 Years

Global Mobile vs. Desktop Internet User Projection, 2007 – 2015E



Source: Morgan Stanley

Don't leave home without it!!!



Mobile Marketing Tools

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MOBILE MESSAGING



APPLICATIONS AND GAMES



MOBILE WEB AND EMAIL



VS



Mobile Website

Standard Website

MOBILE VIDEO AND TELEVISION (TV)



Mobile Marketing Tools

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MOBILE AUGMENTED REALITY



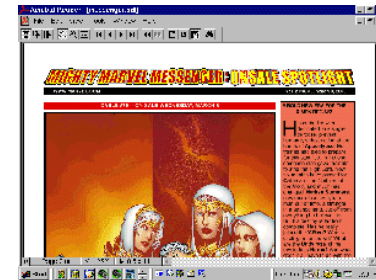
PROXIMITY AND LOCATION BASED SERVICES



QUICK RESPONSE CODES



Γιατί; Απάντηση: Η μόνη Οθόνη που απέμεινε



Clutter



IMPACT

Οι ιδιότητες του κινητού εμπορίου

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- Πέντε ιδιαίτερα σημαντικές ιδιότητες:
 - Πανταχού παρουσία
 - Ευκολία χρήσης
 - Άμεση σύνδεση
 - Εξατομίκευση
 - Εντοπιότητα προϊόντων και υπηρεσιών

Ανασταλτικοί παράγοντες του κινητού εμπορίου

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- Τεχνικοί περιορισμοί
 - Γραφικά και μέγεθος πληκτρολογίου
 - Ασφάλεια
 - Εύρος ζώνης
 - Κατανάλωση ισχύος και θέματα μετάδοσης σήματος
- Υγεία;

Μελέτη Περίπτωσης : “Guess the winner”



- Campaign held by Bmob in Shanghai for Tiger Beer in 2002
- Associates brand & 2002 World Cup
- Acquisition of subscribers throughout the campaign via posters & leaflets





Consumers send SMS to the number written in the posters & receive this answer



Then, they buy a Tiger Beer, find a coupon with a code & text in the latter

活动内容:

5月31日-6月30日,在虎牌啤酒指定现饮点购买虎牌啤酒1瓶(小瓶、大瓶或1扎杯),即获刮刮卡一张,多买多得,刮出密码后,将密码输入手机,发送到指定号码,即可加入“一瓶定胜负”——虎牌啤酒世界杯短信竞猜,将指定场次的胜负预测用代号形式发送至指定号码,如预测正确,便可参加当日抽奖,奖品为虎牌罐装啤酒1箱,猜中任何一场球赛结果,可参加最后的幸运大抽奖,有机会得到索尼高级数码相机,全程参与64场的竞猜者,更有虎牌送出的意外惊喜。

如何用手机短信竞猜:

中国移动用户发送至“2000”,中国联通用户发送至“9000”



奖品设置:

- 每天将从猜对的参与者中抽出3名幸运奖,各得虎牌罐装啤酒1箱
- 6月30日,活动结束后,将从所有猜中任一场比赛的竞猜者中抽出大奖
- 全程参与64场的竞猜者,将得到虎牌啤酒送出的惊喜礼物

领奖办法:

收到中奖短信
领奖时间:周
公司 市内办事处: 上海市肇嘉浜路288号中福商务楼4071室(4楼)领取奖品
101788 (公司热线), 64672098(市内办事处)

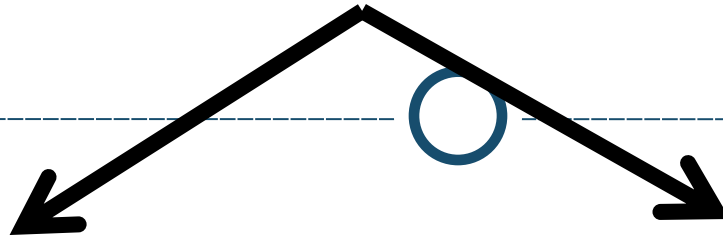
Code

Consumers receive instructions.

After having sent the guess, consumers receive confirmation



Confirming Guesses



“Confirm guess”



“Too late!”

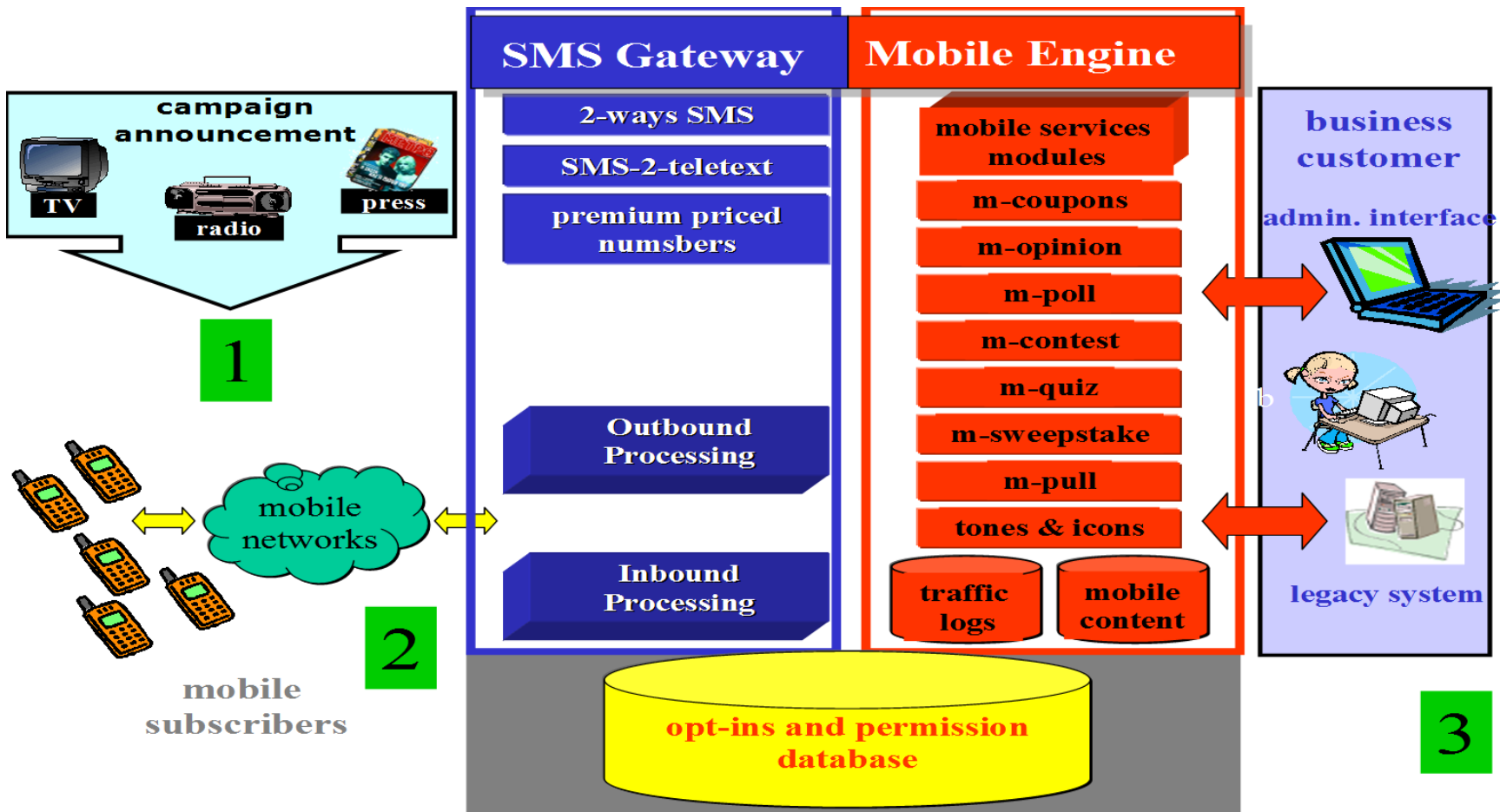


Results Notification

“You guessed
wrong”

“You guessed
right”





Group SMS



Your message
(160 characters maximum)

Left: FlashSMS:

From Sender:
Sender ID 2

To group(s):
group1

To individual:

Date & time to be sent: (leave default values to send now)
>Year >Month >Day >Hour >Min

Message validity period:
6 hour(s)


smssoul.com
ONLINE DEMO TOUR

You also have the option of sending sms to an individual recipient, but this cannot be sent simultaneously with group sms.

The next step is to choose a Sender ID. You can manage your sender IDs (or modify other settings) from the Profile section.

Advertiser Interface





Μήλον της Έριδος ✓
KOSMOS 93,6 FM ✓
Δεύτερο Πρόγραμμα ✓
EPTSMS competition ✓

Running services

- » Running services
- » Group management
- » History
- » Change password
- » Logout

Running services listing

» Run new

Title	Service	Status	
CHAMPIONS NET-SMS Phone 16/09	ATOpinion • CHNET on 4160	running	» Details » View logs » View results

Advertiser Interface





Μήλον της Έριδος ✓
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Running services

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- » Change password
- » Logout

This page will refresh automatically, every 30 seconds.

ATOpinion results

Messages

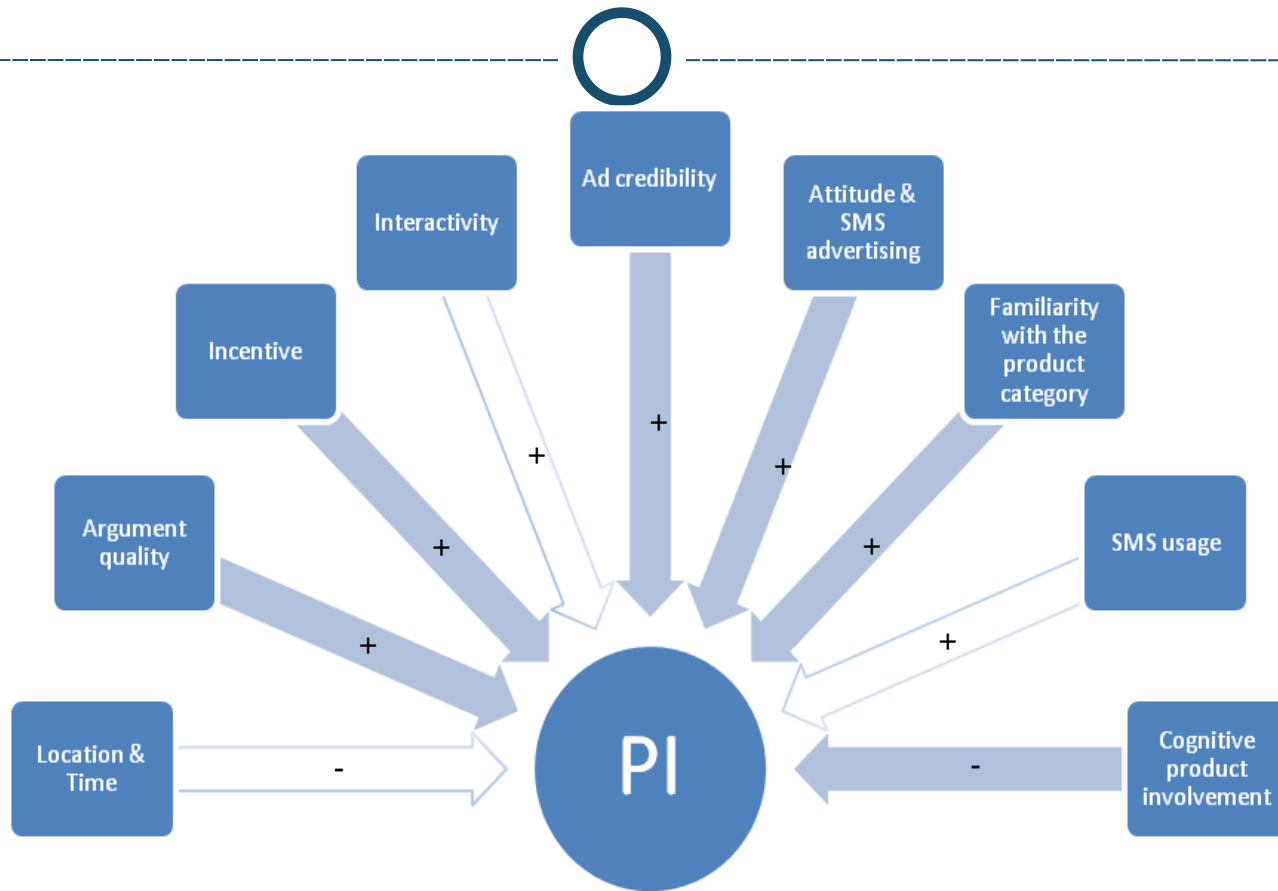
Showing messages 1 to 1.

GSM number	Message	Date and time
00306946374865 Γ		17/09/2003, 00:29:32

Παράγοντες που επηρεάζουν την αποτελεσματικότητα της διαφήμισης

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SMS and intention to purchase

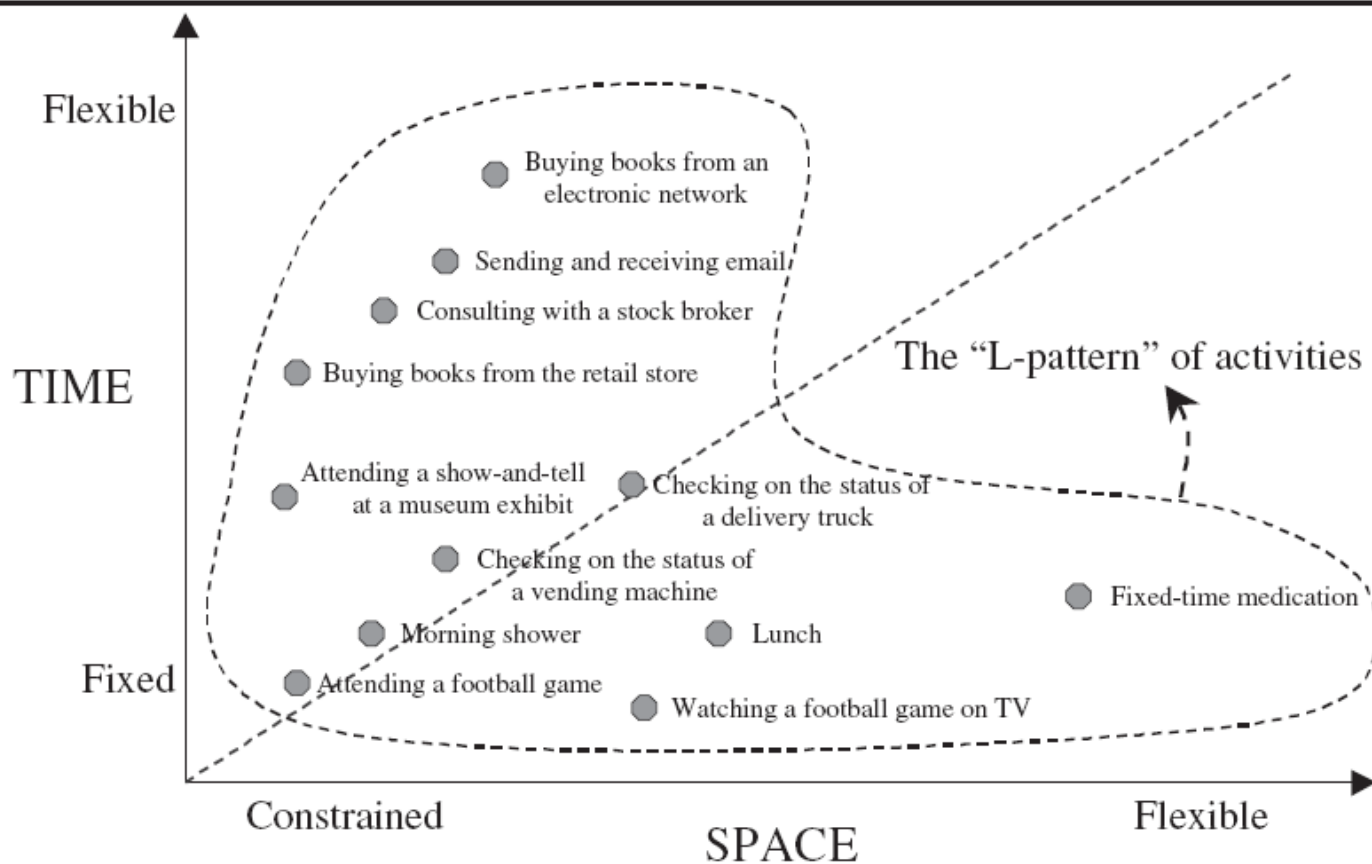


Activities without using a mobile device

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FIGURE 1

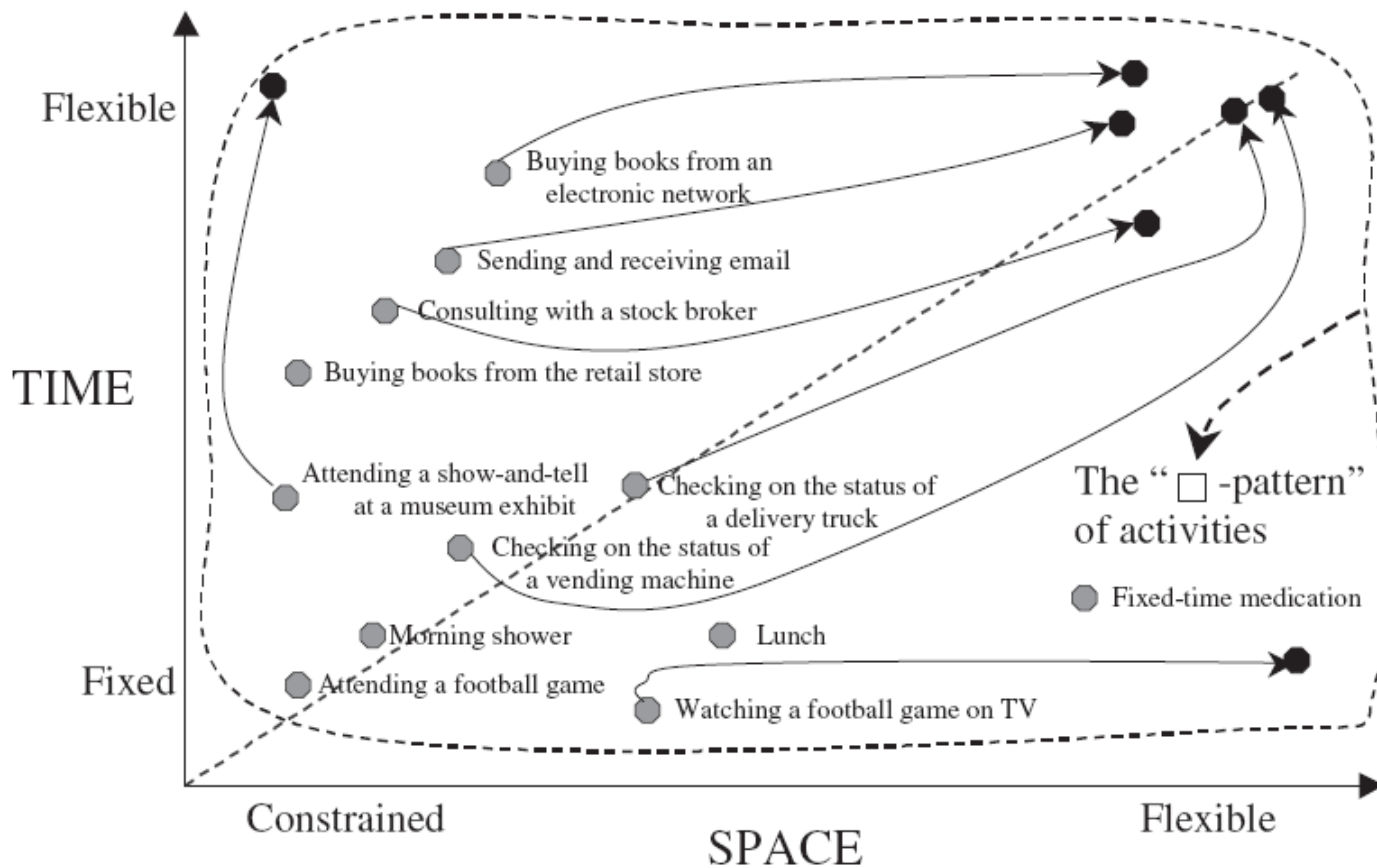
Space-Time Matrix: Activities in a World Without Mobile Technologies



Activities with mobile device

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FIGURE 2
Space-Time Matrix: Activities in a World With Mobile Technologies



Mobile coupons

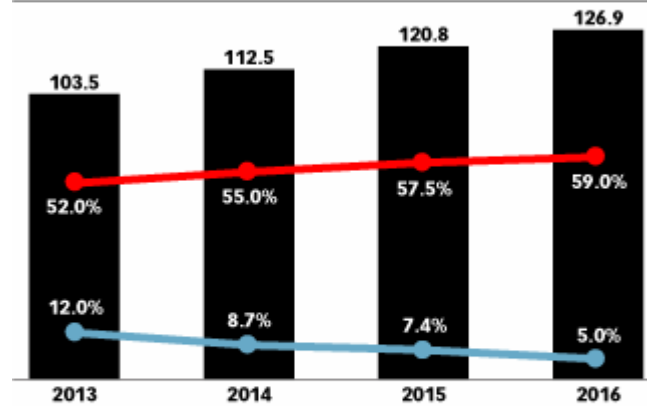
30

- Shoppers Turn to Smartphones and Tablets to Cash In Coupons (emarketer.com)
- <http://www.youtube.com/watch?v=6B35x4aFmKk>



US Adult Digital Coupon Users and Penetration, 2013-2016

millions, % of adult internet users and % change



■ Adult digital coupon users ■ % change
■ % of adult internet users

Note: ages 18+; internet users who redeemed a digital coupon/code via any device for online or offline shopping at least once during the calendar year; includes group buying coupons

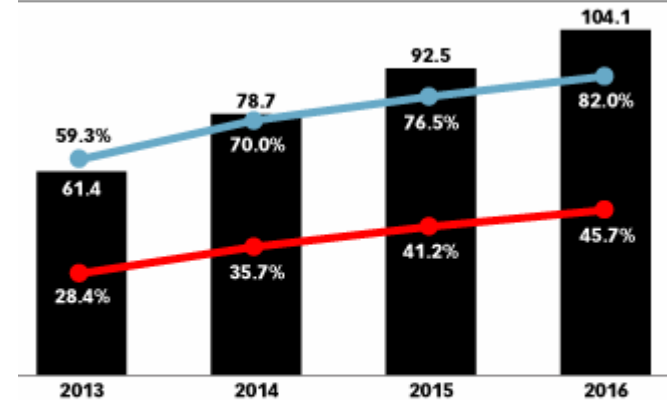
Source: eMarketer, Nov 2014

181600

www.eMarketer.com

US Adult Mobile Coupon Users and Penetration, 2013-2016

millions, % of mobile device users and % of digital coupon users



■ Adult mobile coupon users ■ % of digital coupon users
■ % of mobile device users

Note: ages 18+; individuals who used a mobile device to redeem a coupon/code obtained from app, mobile internet, QR code/other mobile barcode or SMS for online or offline shopping at least once during the calendar year; includes group buying coupons purchased via mobile device

Source: eMarketer, Nov 2014

181603

www.eMarketer.com

Real world hyperlinks are here to stay

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- The Internet will expand from a network of computers to a network of everything.
- Internet of things
- It may take some time before we switch to scanning objects for information, but this direct relationship between an object's online persona and the consumer will ultimately make life easier.
- Run out of razor blades for your shaver? Scan a real world hyperlink on your can of shaving cream and order more blades.

How it works

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- In order to read a QR code, consumers first need to be able to identify what a QR code is and how it works.
- They then need to download a QR reader app, if they do not already have one, in order to read the code.
- Once the code is scanned, however, the potential payback for consumers is vast and limited only by one's imagination.
- Whether it's access to exclusive content, deals, promotions or discounts, companies have a number of options to reward their consumers for scanning.



- The Internet of Things (IoT) is a computing concept that describes a future where everyday physical objects will be connected to the Internet and will be able to identify themselves to other devices.
- The term is closely identified with RFID as the method of communication, although it could also include other sensor technologies, other wireless technologies, QR codes, etc.

<http://vimeo.com/51878487>



- Augmented Reality:

projection of information to the user for an item of interest which is captured via the PC's camera

◦ Example: <http://www.youtube.com/watch?v=NK59BeqoSew>

- Mobile Augmented Reality:

projection of information to the user for an item of interest which is captured via the mobile phone's camera

◦ Example: <http://www.youtube.com/watch?v=R6c1STmvNJc&feature=related>

Mobile AR requires 5 key features:

- Camera
- GPS
- Broadband Connectivity
- Tilt sensors (accelerometer)
- Digital Compass

Drivers

- The launch of iPhone, Android, etc.
- The development of Location Based Services
- Mobile Internet Adoption is increasing
- Technological Advances – networks
- Data charges are being reduced

Mobile augmented reality

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- **Layar Browser Augmented Reality Browser**
- **select multiple layers of content to place into your Augmented Reality Browser allowing you to automatically find detailed content based off what your pointing your phone at.**
- **If you find what you need, you can click to get more information on almost anything.**
- http://www.youtube.com/watch?v=b64_16K2e08&feature=player_detailpage

Επαυξημένη πραγματικότητα στην καθημερινότητα

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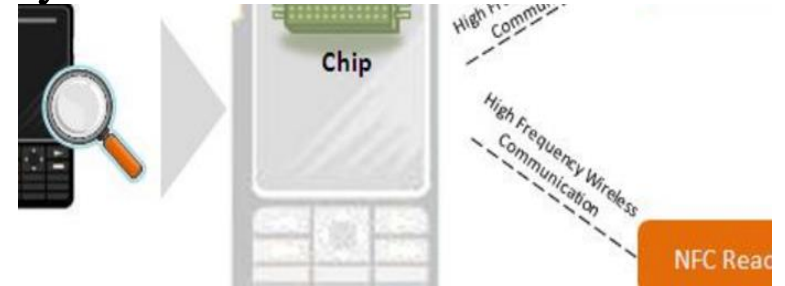
- http://www.youtube.com/watch?feature=player_embedded&v=-24ySXEMq1U
- https://www.youtube.com/watch?feature=player_embedded&v=gVulEbDd59I

Mobile Payments – Types (based on Payment Mode)



Near Field Communication (NFC)-Based Payments

1. Involve a mobile phone with an embedded chip - which acts as the mode of payment
2. Contactless communication between two devices over a range of 10 cm
3. The handset act as a smart contact credit/debit card, which can be read by any smart card reader and NFC device



Example:

<http://www.youtube.com/watch?v=of2GBIqP9eA>

Pervasive computing

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- Not virtual reality
- Integrated into everyday life
- https://www.youtube.com/watch?v=l_nacxK2U1M



Ubiquitous computing

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- Nano devices and microchips
- Always active (συνεχής πρόσβαση σε πληροφορ.)
- Ubiquitous connectivity
- Make life simpler and easier for consumers
- Mobile commerce's next step

- Smart homes

- Smart cars

- <https://www.onstar.com/web/portal/emergencyexplore?tab=1&g=1>

- Internet of things

- ✦ RFID

The screenshot shows a Windows Internet Explorer browser window displaying the eSuds.net FAQ page. The browser's address bar shows the URL <http://www.esuds.net/faq.do>. The page content includes a banner for 'eSuds' with the text 'Get out of the laundry room and on with your life.' and a list of FAQs.

FAQs

What is e-Suds™?
e-Suds™ is an innovative online laundry system that gives students the ability to:

- Go online to check if washers and dryers are available in specific laundry rooms.
- Use their student ID or PIN code to activate and pay for the wash and dry cycles.
- Receive notification that their wash and dry cycles are complete via email, cell phone or PDA.

What does "Available", "In Use" and "Cycle Complete" mean?
e-Suds™ reports the following statuses for washers and dryers:

- "Available" means that another user has not started a particular machine.
- "In use" means a user has started the machine and it is in use.
- "Cycle Complete" means the user has not opened the machine's door to remove their laundry, but the cycle is complete.

How do the notifications work?
Notifications work two ways:

1. If the laundry room is busy, you can request to be notified when a specified washer and/or dryer become available.
2. If you have laundry in a washer or dryer, you can request to be notified when your load of laundry has completed the washing or drying cycle.

What if I can't find my laundry room?
If you are able to successfully find your location and view the list of laundry rooms, it is possible that the specific laundry room you are looking for is not connected to the e-Suds™ system.

Why does the e-Suds™ Web site occasionally indicate that there is no more time remaining and that my dryer is in use?
For some types of dryers, the e-Suds™ Web site reports average time of the dryer cycle. This occasionally results in the Web site reporting that

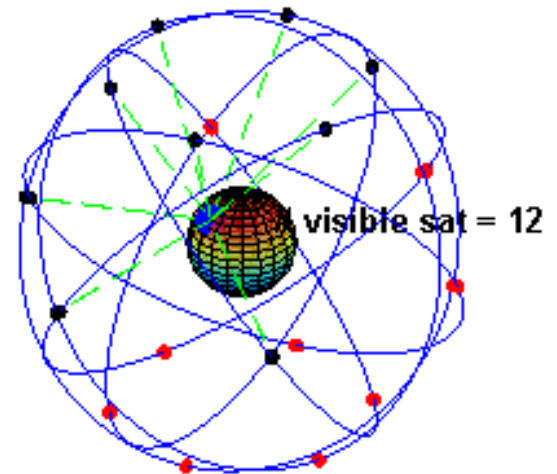
6th Sense

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- http://www.ted.com/talks/pranav_mistry_the_thrilling_potential_of_sixthsense_technology.html
- or <http://www.youtube.com/watch?v=YrtANPtnhyg>
- More info:
<http://www.pranavmistry.com/projects/sixthsense/>

- Global Positioning System (GPS)

- 24 satellites
- 12,700 miles over sea surface
- trilateration



GIS

44

- GPS into digital maps



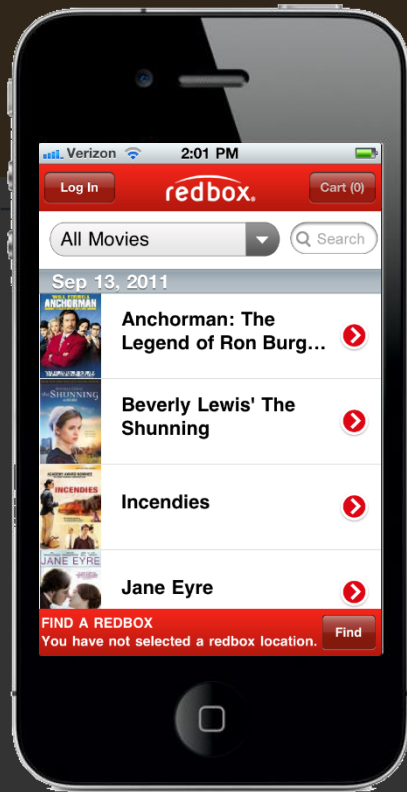
App vs. Website?

Mobile apps

- .A mobile app is a computer program designed to run on smartphones, tablet computers and other mobile devices.
- .Apps are usually available through application distribution platforms, which began appearing in 2008
- .Apple App Store, Google Play, Windows Phone Store, and BlackBerry App World.
- .Some apps are free, while others must be bought.
- .For apps with a price, generally a percentage, 20-30%, goes to the distribution provider (such as iTunes), and the rest goes to the producer of the app

Τάσεις για την αγορά

- Η δαπάνη των καταναλωτών για εφαρμογές apps ξεπέρασε τα 6 δισ ευρώ το 2013 στην ΕΕ.
- Οι εκτιμήσεις για το μέλλον είναι θετικές για το μέγεθος της αγοράς καθώς στα επόμενα 4 χρόνια το ποσό αυτό αναμένεται να εκτιναχθεί περί τα 19 δισ.
- Forbes: In 2014, app downloads are expected to top 179 billion. By 2017, this is going to rise to over almost 270 billion.
- 451 Research: «the average Android user downloads 4.1 apps per month, with 3.4 average free apps downloaded. For iOS, 451 Research said that the average iOS user downloads 6.2 apps per month, with an average of 4.3 free apps every month.»
- Total number of apps in store: 905,000 (iPhone) 850,000 (Android)
130,000 (Blackberry) 220,000 (Windows)
- http://blogs-images.forbes.com/niallmccarthy/files/2014/10/Giant-social-apps_Forbes.jpg
- Όπως γίνεται κατανοητό, παράλληλα με την αύξηση της πίτας στην εν λόγω αγορά, καταγράφεται και αύξηση στην εμφάνιση εταιρειών 43 startup, με πρωτοφανείς ρυθμούς.



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App pros and cons

- Very interactive
- Complex delivery
- Expensive development
- Frequent use
- Rapid content switching
- Design consistency

Implementation: Easy } Apps } Hard

Ένα παράδειγμα

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- <https://www.youtube.com/watch?v=X7RUYqzrFSg>



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Mobile-Website Advantages

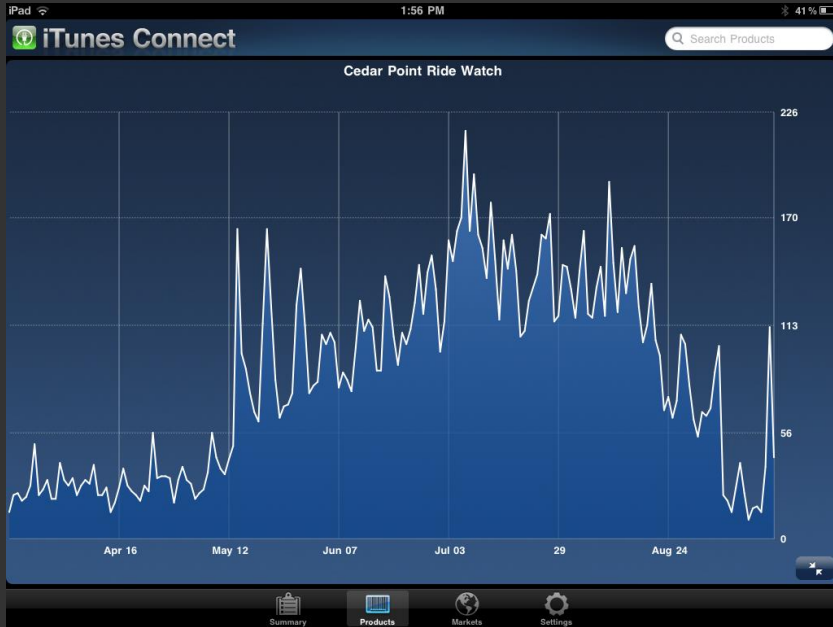
- Search Engine Optimization
- One-time use
- Content is key

Implementation:

Easy



Hard



Measuring Mobile Marketing

- **Mobile Interaction**
(page views, downloads)
- **Mobile Conversions**
(purchase, key actions)
- **Buzz / Branding**
(PR, social media)