



**INTRACOM**

NEW TECHNOLOGIES DEPARTMENT

User Requirements Analysis  
assisted by  
Online Questionnaires

Lessons Learned in PISTE, Implications for MELISA and LoVEUS

Dr. Thanos M. Demiris

INFORM Workshop in Athens – March 20<sup>th</sup> 2003



## Overview

### Presentation Units

1. The Requirements Engineering Process in the Group
2. Requirements in PISTE
3. Lessons learned
4. Requirements in LoVEUS and MELISA
5. Conclusions



# 1

## Requirements Engineering

### The Process in the Research Projects



## Requirements Phases in Projects

### The Requirements Philosophy of the Projects

- ✓ Inherent Expertise in Consortia
  - Technology Providers and Integrators
  - Basic Research/Core Technology Enhancements
  - Service/Infrastructure Providers
  - End Users
  
- ✓ Requirements in Phases
  - **Estimation** of requirements based on application domain knowledge (Warning: BIAS!)
  - Requirements **validation**
  - Requirements **consolidation**
  - Validation based on requirements



## Questionnaires

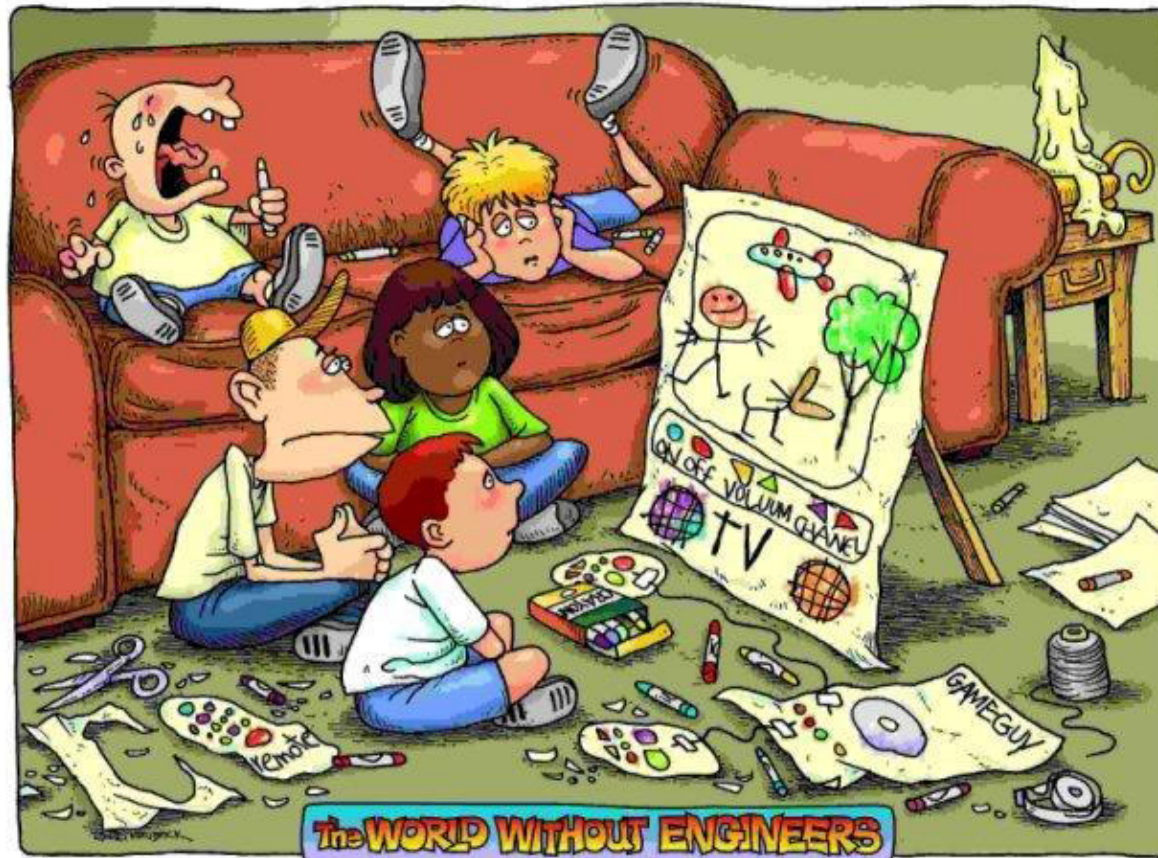
### Who to ask...

- ✓ Different Categories of involved entities
  - Actors, the ones that will operate the product(s)
  - Clients, the marketing departments of the exploitation partners
  - Customers, the ones that will finally buy the product
  - Stakeholders: all other people involved in the delivery of input for the requirements-document
  
- ✓ What do we expect to learn from each of them
  - What is the routine that we will replace/support/ease?
  - Exact information flow
  - Desired control flow
  - What are their “dreams”?
  - How much are they willing to pay for these dreams to come true?



## Questionnaires

At the appropriate level of detail...





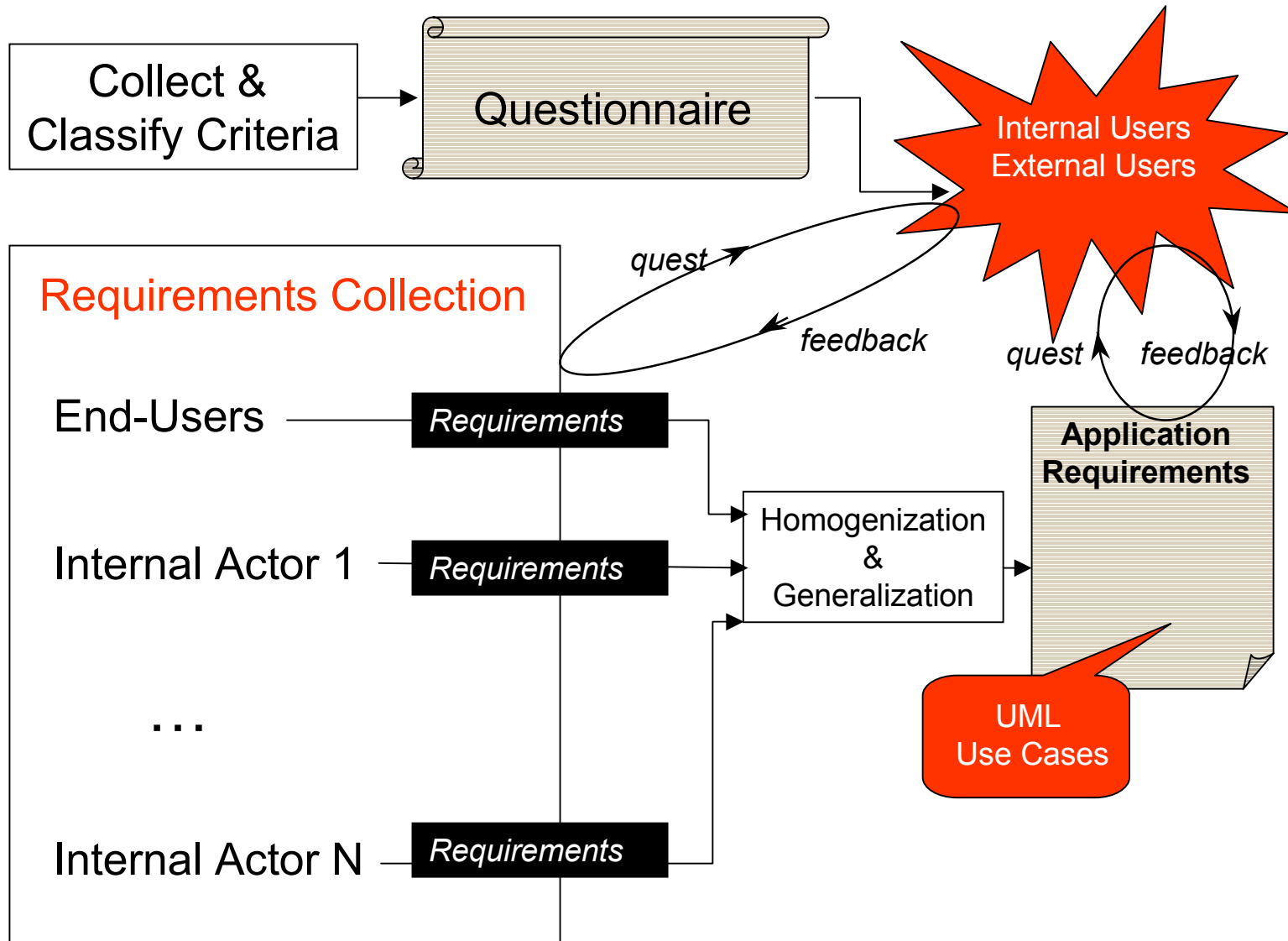
## Questionnaires

### How to ask...

- ✓ Informal discussions (the corridor case...)
  - Most productive
  - Products of chance
  - No paper to write on...
  
- ✓ Interviews
  - Time restrictions and schedule incompatibilities
  - Resource limitations (either small groups in the company, or external groups to be financed)
  - Skilled people necessary
  
- ✓ Online Questionnaires
  - Natural extension of high-technology projects...
  - An interesting alternative to explore...
  
- ✓ User Workshops (ARIS Project)

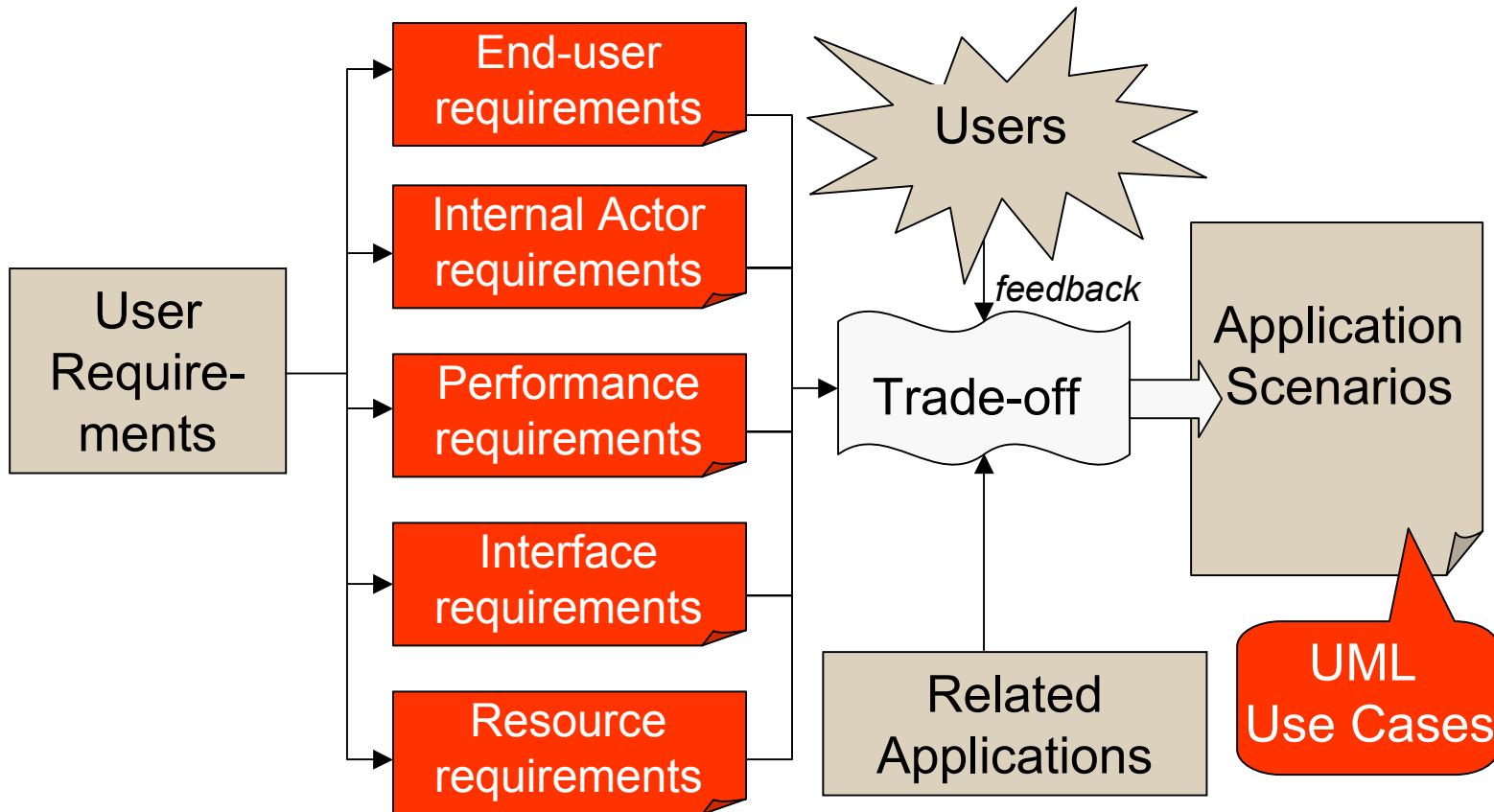


# Requirements Collection Process





# Requirements Collection Process





# 2

## Requirements in PISTE



## Overview of the PISTE Project

### The Project Fact Sheet

- Project Acronym: IST-1999-11172 PISTE
  - Full title: Personalized Immersive Sports TV Experience
  - Start Date: 30 months
- Overall duration: 538,4 PMs
- Initial Res. Plan: 5.293.707 €
- Budget estimate: 2.600.000 €
- Commission funds: 11 Contractors +
  - Consortium: 1 Subcontractor





## Overview of the PISTE Project

### The PISTE System Architecture

Enhanced Content Creation



"Non intrusive" Content Capturing



Broadcasting over existing (DVB) infrastructure

Enhanced Content Viewing and Interactivity





# Overview of the PISTE Project

## The PISTE 2D Application Scenarios

**ist** INTERACTIVE PROMOTION™ **PISTE**

**FC Sion**

- Grichting Stéphane
- Hottiger Marc
- Duruz Gregory
- Beney Nicolas

**FC Bâle**

- Varela Carlos
- Yakin Hakan
- Gimenez Christian

**Varela Carlos**



**BIRTHDAY:** 15.09.1977  
**POSITION:** Attacker  
**NUMBER:** 8  
**NATIONALITY:** Suisse  
**SIZE:** 1m82  
**WEIGHT:** 76 kg

**Viewer**



Comet visibility:

**Command**

Time [s]

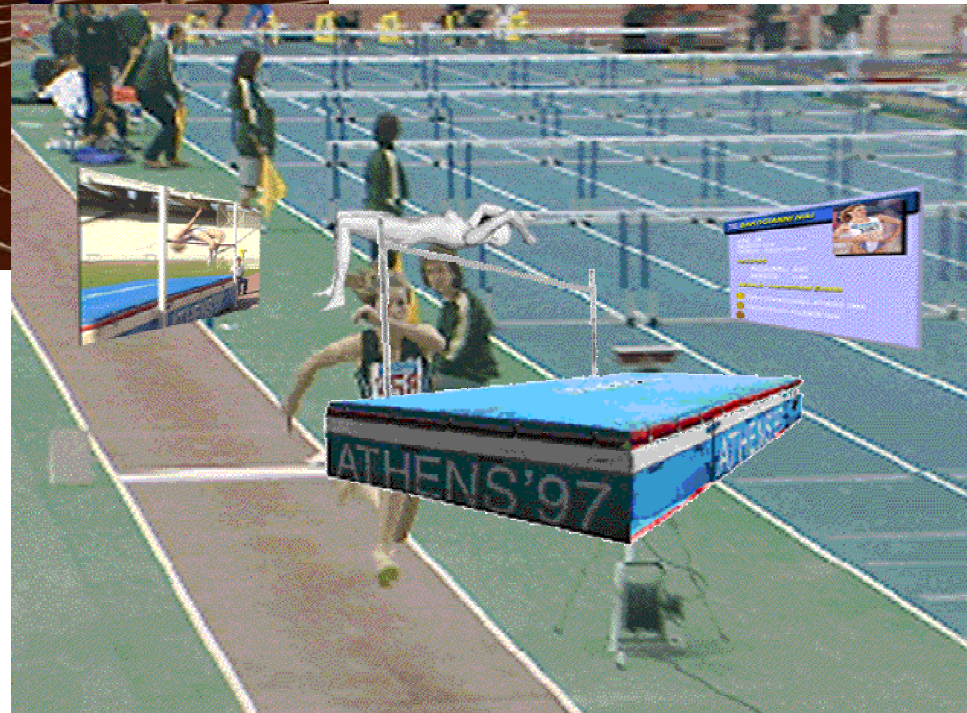
- 0.00 Starting Action ( 0 )
- 0.32
- 0.64
- 0.96
- 1.28
- 1.60
- 1.92 Shoot ( 48 )
- 2.24

Show the video



# Overview of the PISTE Project

## The PISTE 3D Application Scenarios





# PISTE Questionnaires

## Going Online

Spectators' Questionnaire 1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites History Print

Address <http://piste.intranet.gr/public/questionnaires/Viewer.htm> Go

Links Conferences \_ Workshops European Programmes General ITV \_ DTV \_ DVB Medical Imaging Multimedia Archives

**PISTE** Questionnaire

**Introduction** *Spectators' questionnaire (1 of 3)*

**Main Goals**

**Project Participants**

**Technical Approach**

**Public Section**

**Private Section**

**Contact Details**

**Related Links**

**Profile of the Interviewee**

Name \* :

Surname \* :

Email \* :

Age:

Occupation:

Education:

**1. How often do you watch sports events or sports news?**

Every day

Approx. three times a week

Once a week

Occasionally, a few times per month

Only before/during/after major sports events (a few times per year)

Rarely, but I read sports newspapers

Rarely, but I browse Web-pages related to sports

*Piste's way of comparing the attempts of two athletes simultaneously representing them in the same image (watch a movie - provided by InMotion Technology, member of PISTE consortium)*

*Another PISTE way of comparing the attempts of two athletes simultaneously (a virtual 3D athlete, representing the World Champion, runs among the "real" athletes).*

Done Internet



## PISTE Questionnaires

### The Details of the Questionnaires

- ✓ A team involved in the requirements process for at least 3 months (of preparation) and 1 more at a later stage (evaluation)
- ✓ Three Different Types of Questionnaires
  - Broadcasters
  - Athletes, Trainers and Sports Officials
  - Viewers
- ✓ Each of the questionnaires consisted of 3 to 5 sections
  - Consisted of 3 to 5 sections
  - Included video clips and pictures



## PISTE Questionnaires

### The Details of the Questionnaires

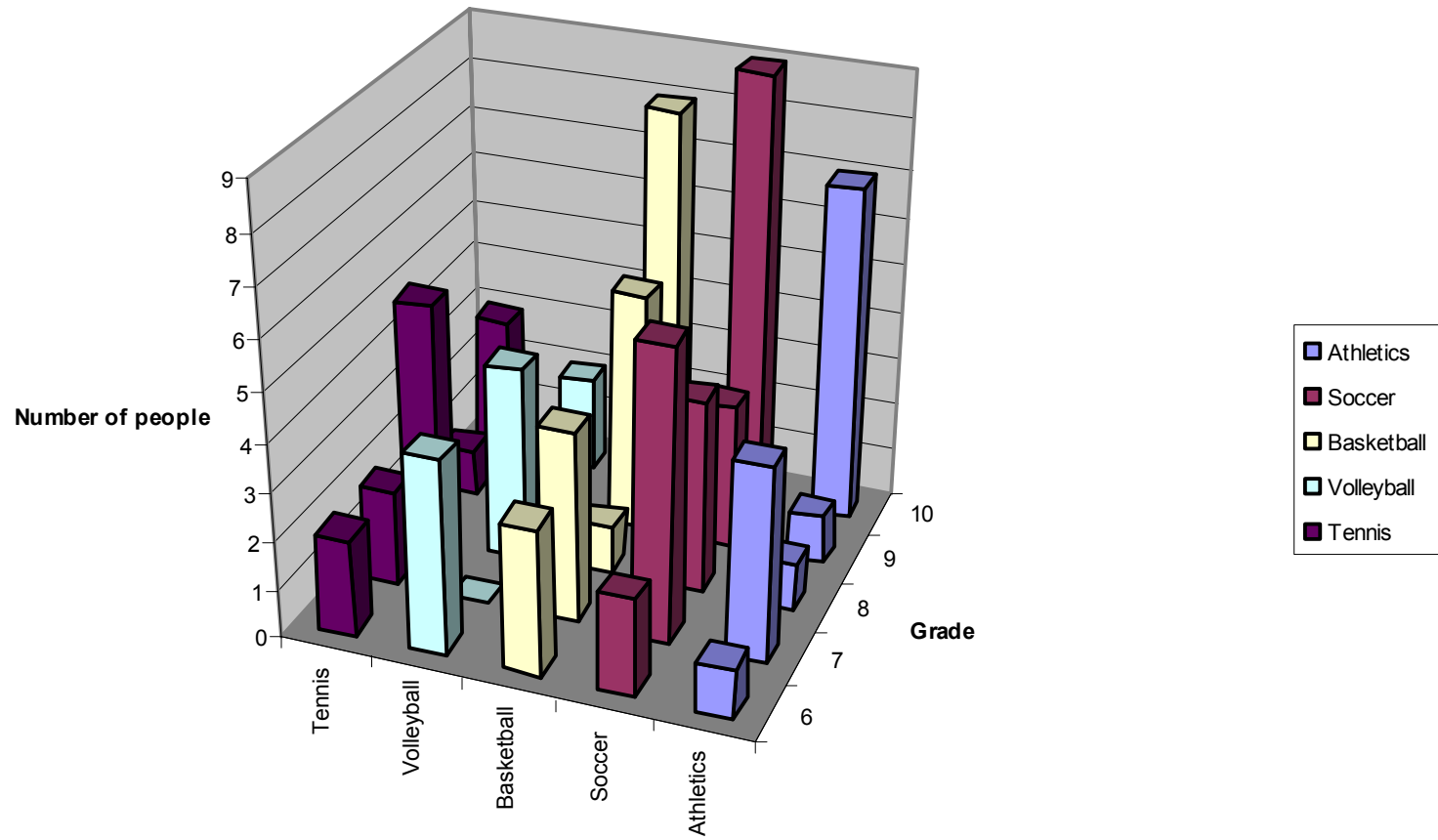
- ✓ Publication in News-Groups
- ✓ Boost after introduction in the E.R.T. portal
- ✓ Lots of (Verbal) "Propaganda"
- ✓ 54 entries within 2 months
- ✓ 3 countries mostly
  - Greece
  - Poland
  - Germany
- ✓ Results in their majority as expected
- ✓ Influence on Requirements: confidence
- ✓ Ongoing evaluation (survey to statistics)



# Questionnaire Results in PISTE

## The favorite sports

Interest in Sports in General (Grade 6-10)

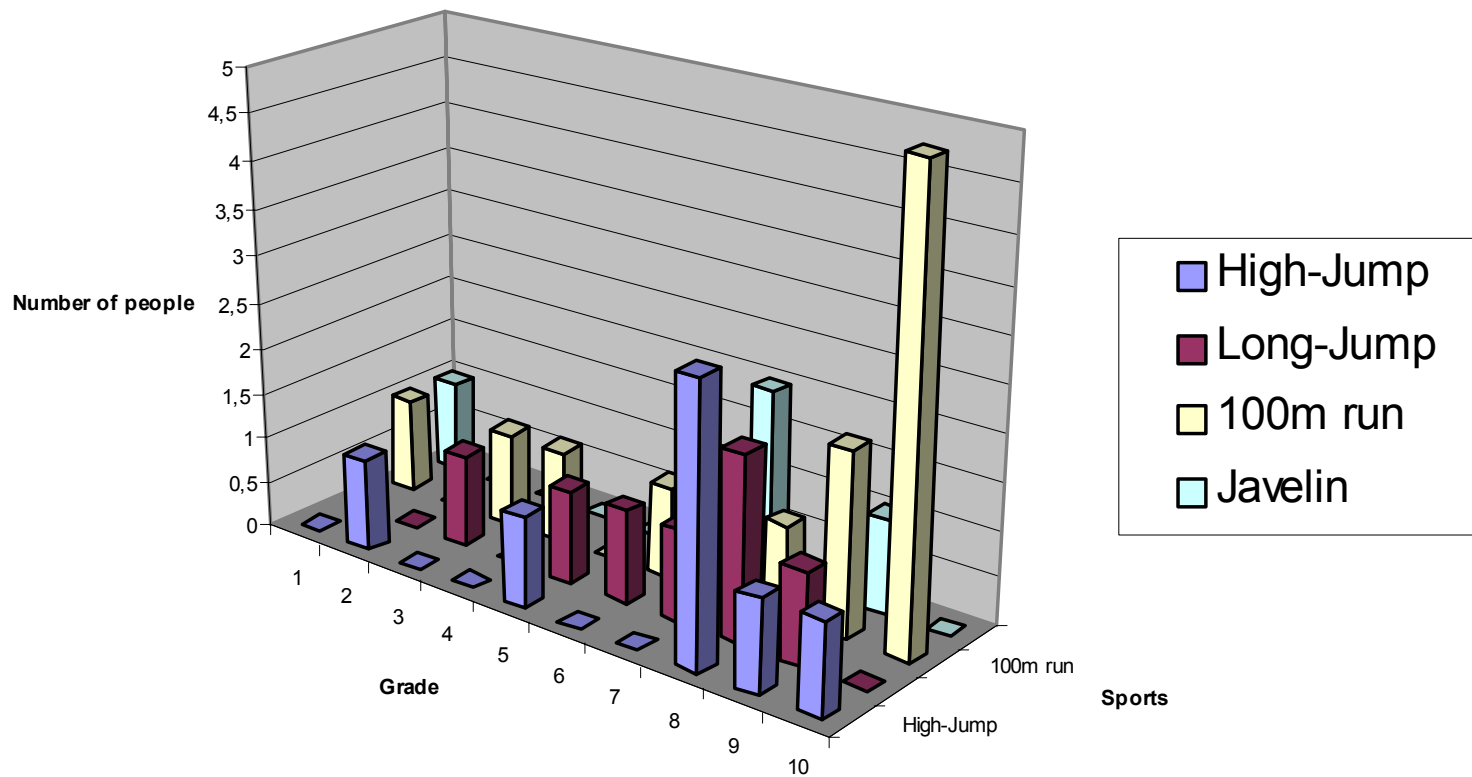




# Questionnaire Results in PISTE

## The special case of athletics

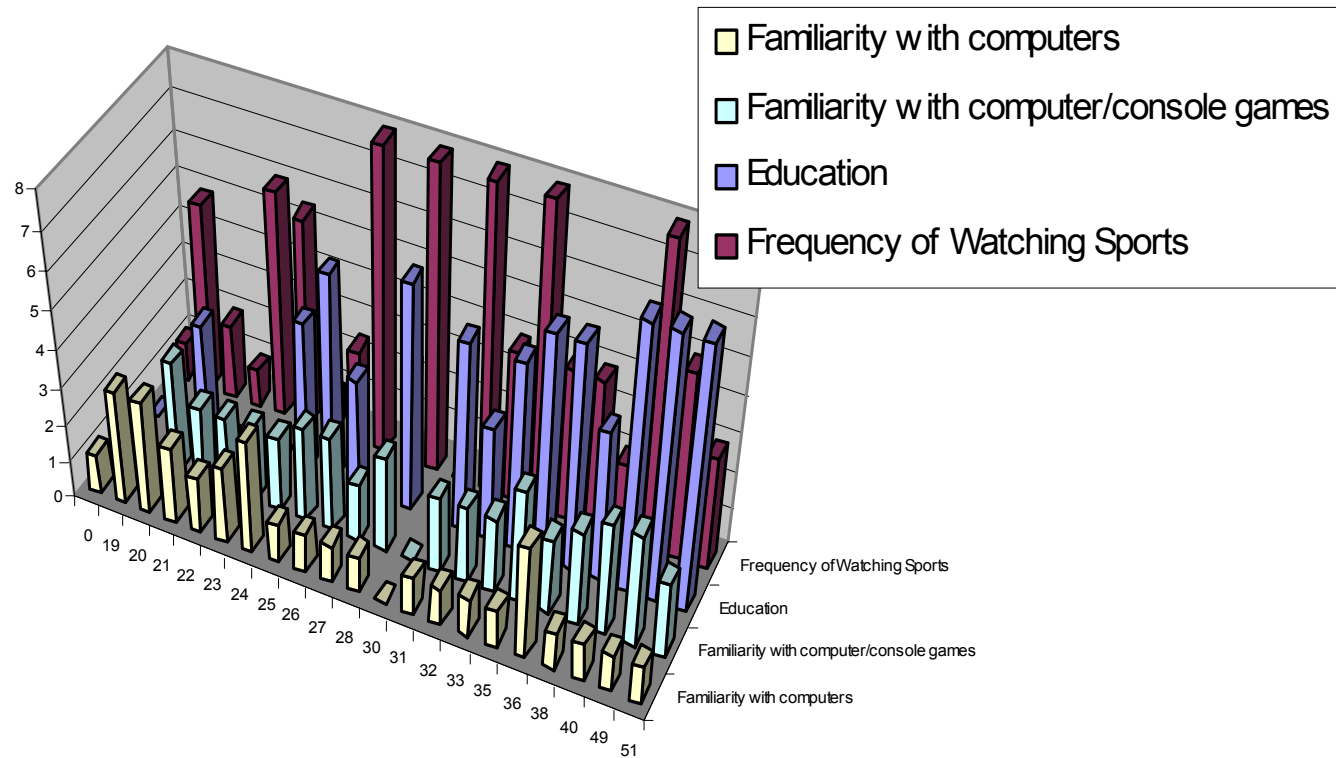
Interest in Athletics





# Questionnaire Results in PISTE

## Viewer Skills

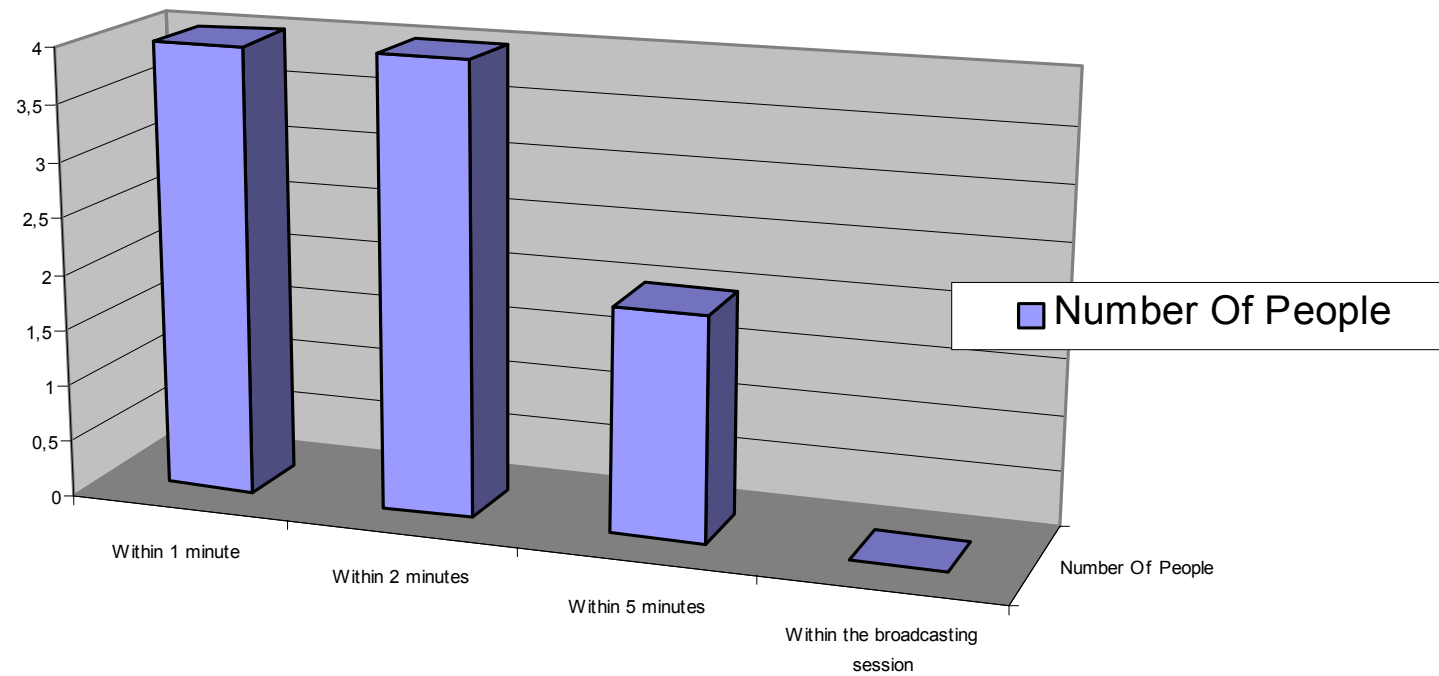




# Questionnaire Results in PISTE

## Real Time Behavior of the System

How much time after the attempt of an athlete is completed would you still want to examine the replay?

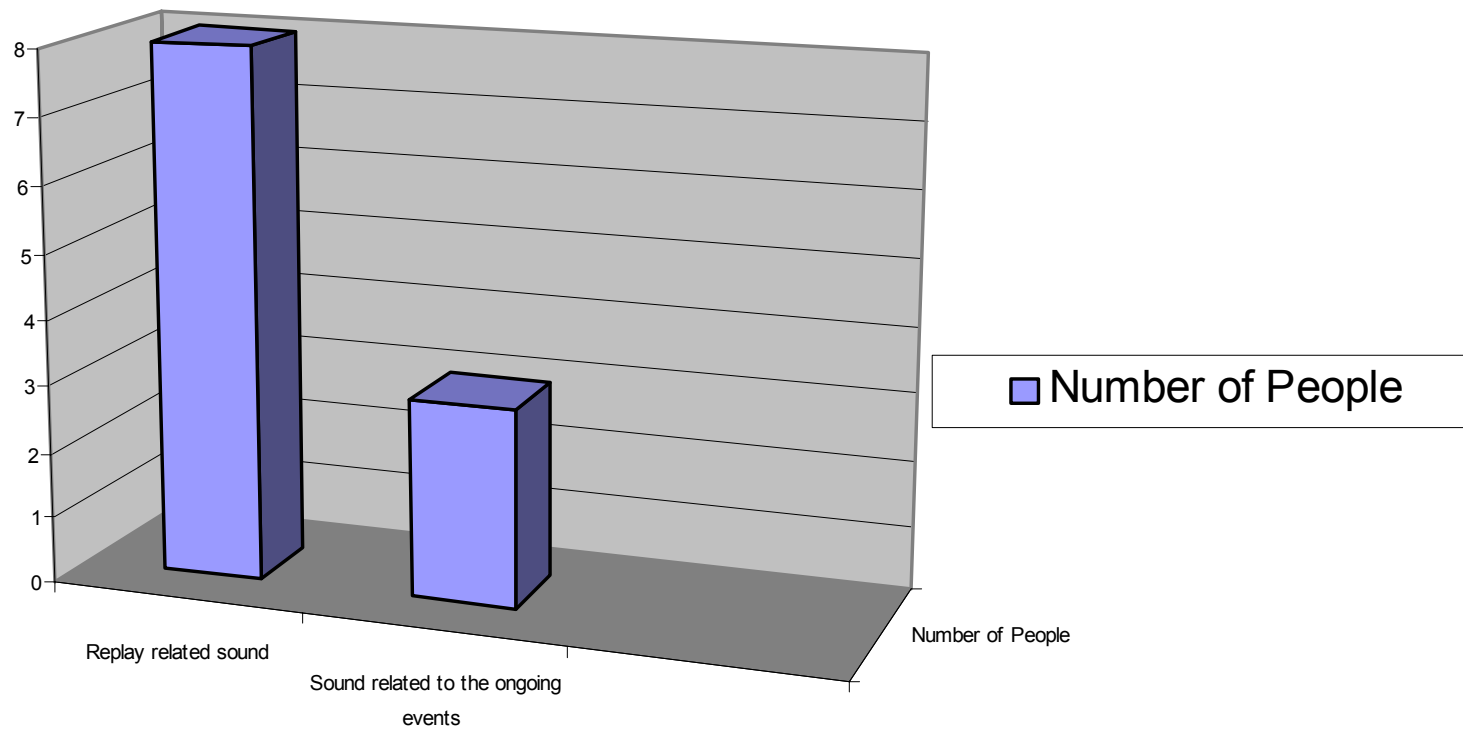




## Questionnaire Results in PISTE

### The special case of audio for locally stored replays

During a replay do you prefer to hear:





## Usability in PISTE

### The PISTE Sender Side

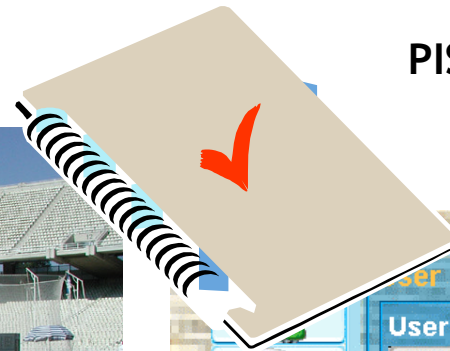




# Usability in PISTE

## The PISTE iTV Receiver

PISTE Interactive  
TV Style-Guide



**MAIN MENU**

USER: GREGORY

Add Profile

View/Modify Profile

Delete Profile

Back

Exit

**ADD VIEWER PROFILE (Dialog 1)**

Name: \_\_\_\_\_ Age: \_\_\_\_\_ Gender: **Male**

3D Game: **Yes** Language: **Greek**

3D s/w Familiarity: **Yes** Navigation: **Free**

EXIT

Color-coded navigation buttons: Red diamond, Green diamond, Yellow diamond, Blue diamond, Black diamond.

**User Profile**

User: **E. Panas** Main Group: **Family**

Not-Member: **Member**

Name: **Test** Family: **Friends**

Surname: **Test** Friends: **Sports**

Age: \_\_\_\_\_ Password: **\*\*\*\*\***

Gender: **Male** Confirmation: **\*\*\*\*\***

**Preferences**

Selected	Not Selected
<input checked="" type="checkbox"/> Sports	<input type="checkbox"/> Sports
<input checked="" type="checkbox"/> Athletes	<input type="checkbox"/> Athletes
<input checked="" type="checkbox"/> Country	<input type="checkbox"/> Country
<input checked="" type="checkbox"/> Time	<input type="checkbox"/> Time

Navigation: Up, Down, mp4



## Usability in PISTE

### User Evaluation Workshops





# 3

Lessons learned



## Lessons learned

### General Questions to be Asked – A sample list

- ✓ What percentage of the target group(s) can be reached online?
- ✓ Is the selection procedure of the people “approached” unambiguous? (active “recruiting”)
- ✓ Data Protection: Information about data obtained without the knowledge?
- ✓ Complete and serious vs. incomplete and spam – what is the selection procedure in the automated process?
- ✓ Are the lists of Questions “distilled”? How much time is necessary?
- ✓ Is the user in full control (especially interrupts)?
- ✓ European Products need Europe-wide coverage.



# 4

## Requirements in MELISA and LoVEUS



## Overview of the MELISA Project

### The Project Fact Sheet

- Project Acronym: IST-2001-34755 MELISA
  - Full title: Multiplatform e-Publishing for Leisure and Interactive Sports Advertisement
  - Start Date: May 1<sup>st</sup> 2002
- Overall duration: 33 months
- Initial Res. Plan: 540,5 PMs
- Budget estimate: 5.340.335 €
- Commission funds: 2.900.000 €
  - Consortium: 12 Members (after one amendment)





# Overview of the MELISA Project

## The Application Scenarios



**DRIVERS CHAMP. 2001**

27th 12:00	6196	Wendell W. -Winner
27th 12:00	6171	Richard M. -Winner
27th 12:00	6172	Cordell G. -Winner
27th 12:00	6173	Richard K. -Winner
27th 12:00	6174	Schmucker R. -Winner
27th 12:00	6175	Montoya J. P. -Winner
27th 12:00	6176	Frentzen H. -Winner
27th 12:00	6177	Stanton -Winner
27th 12:00	6178	Villeneuve J. -Winner
27th 12:00	6179	Holmberg G. -Winner
27th 12:00	6180	Ernie E. -Winner
27th 12:00	6181	Trulli J. -Winner
27th 12:00	6182	Darti L. -Winner
27th 12:00	6183	Panik B. -Winner
27th 12:00	6194	Bene -Winner
27th 12:00	6191	Mazzacane G. -Winner



**ProRACKET 2000**

Product	Cap Size	String Tension
ProKmax CORE 1 (\$289.99)	4 1/8	70
String Type	Qty	
FREE HEAD Synthetic Gut 16G		

[CLICK](#) Add to Cart to see the [wwwSPORTS](#) price

**Visit ProRACKET.SHOP online!**



# MELISA Questionnaires

## Going Online

MELISA - Overview - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://melisa.intranet.gr/overview.htm#

Links Customise Links Free Hotmail Windows Windows Media

**MELISA** Contact Us | Site Map | Members Only

Overview Achievements Documentation Related Links

**Overview** Description

**Description**

MELISA aims at establishing the infrastructure to support the virtual value chain for sports events broadcasting over wireless and digital television networks, by offering valuable, revenue building services. The platform will provide services for optimal presentation of complex interactive real time video content, for advertisements and an advanced real-time gaming (betting) engine, all linked to the launch of related e-commerce transactions.

MELISA will target the following application scenarios:

- Provision of enhanced content and statistics; Information on game statistics and visual enhancements will provide a friendly, easily assimilated interface.

Search for:

**What's New**

Fill in our Questionnaire:

English

ist information society technologies

Betting - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://melisa.intranet.gr/quest/betting.asp?Rec=20/3/200313:52:48

and horse appears highlighted. The transaction takes place and your bet request is registered. At the end of the race, you are supplied with a win or loose message according to the outcome and information on gains.

**Ready to Bet?**

1600m

#	Odds	Bet
1	8/1	Bet
2	9/1	Bet
3	7/1	Bet
4	12/1	Bet
5	2/1	Bet
6	10/1	Bet
7	7/1	Bet
8	5/1	Bet

09\*

Money \$0570  
Bet: 00  
Win \$0000  
Confirm Bet

Hippodrome de Saint-Cloud  
Samedi 10 Mars  
Temps à la fin de la course: 1:32.3  
Témoignage: Prof. Philippe  
PubliCity enfants et familles de 3 ans

Statut: Voyage collectif  
Monte: Française  
Entraineur: A. Spang  
Propriétaire: Fr-Inhany PVEF

1. Are you interested in subscribing to such betting service and placing bets as described?

Yes  
 No

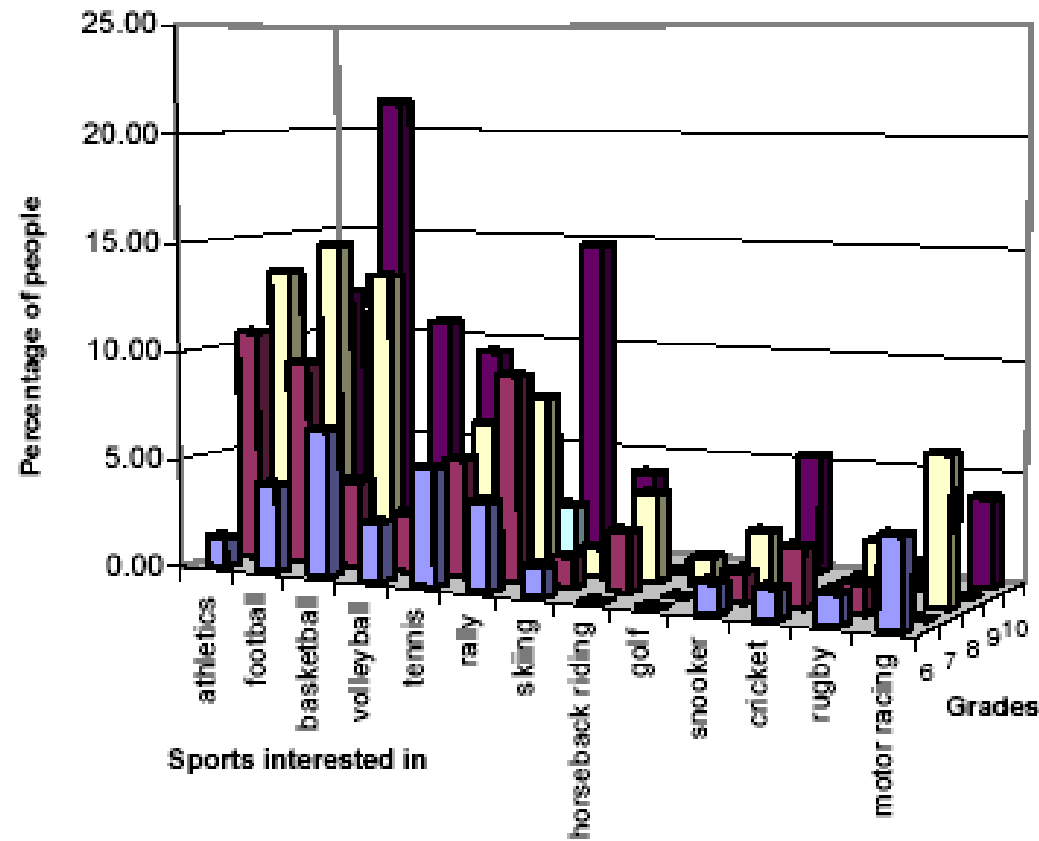
If **No**, please skip the following questions and click "Next" at the bottom of the page.

2. What type of subscription / pricing would you prefer for such a service?



# Questionnaire Results in MELISA

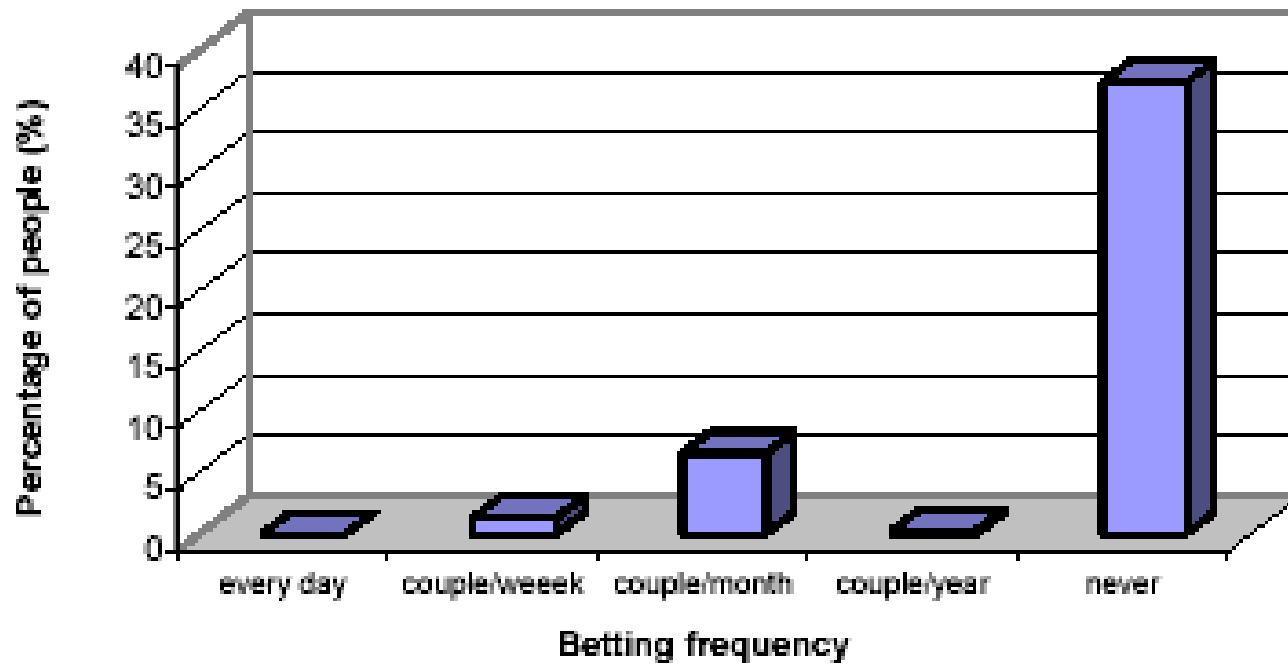
## The favorite sports





## Questionnaire Results in MELISA

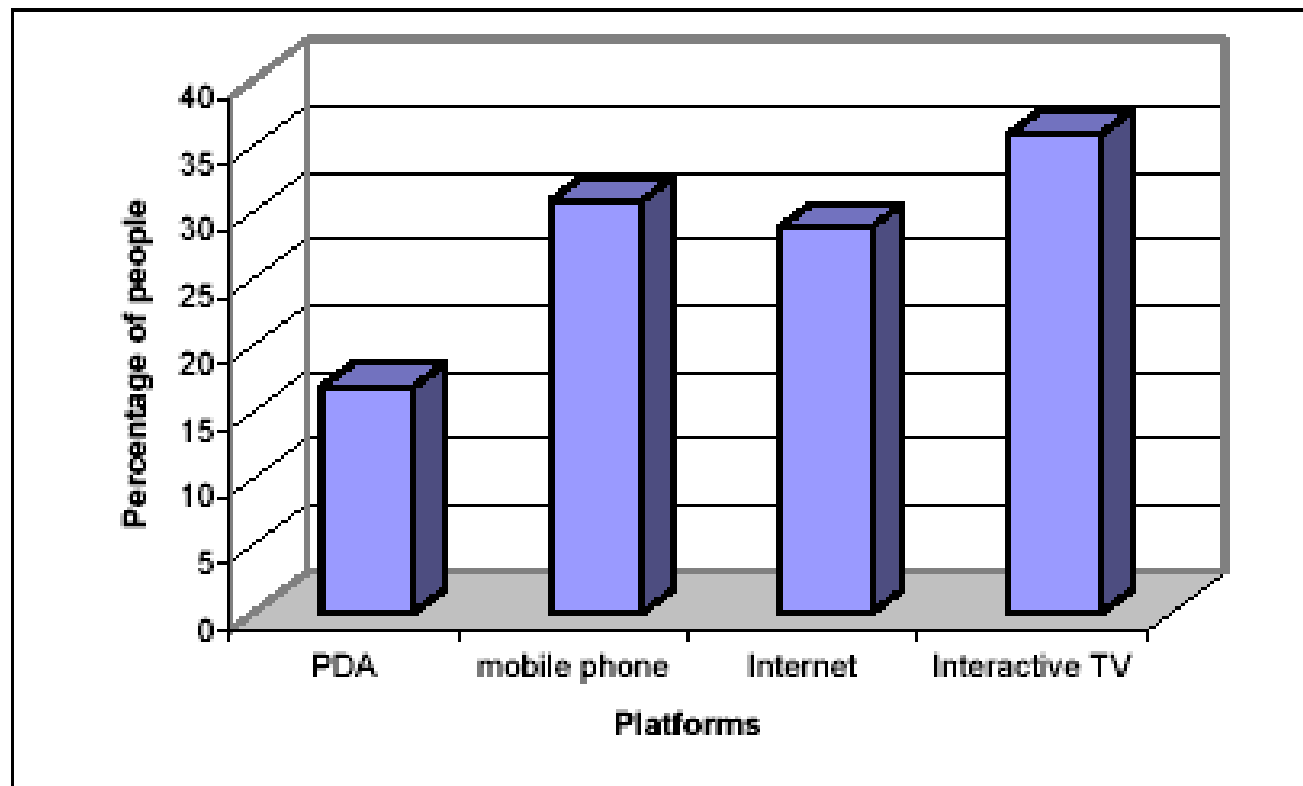
### Betting and the wrong group selection?





## Questionnaire Results in MELISA

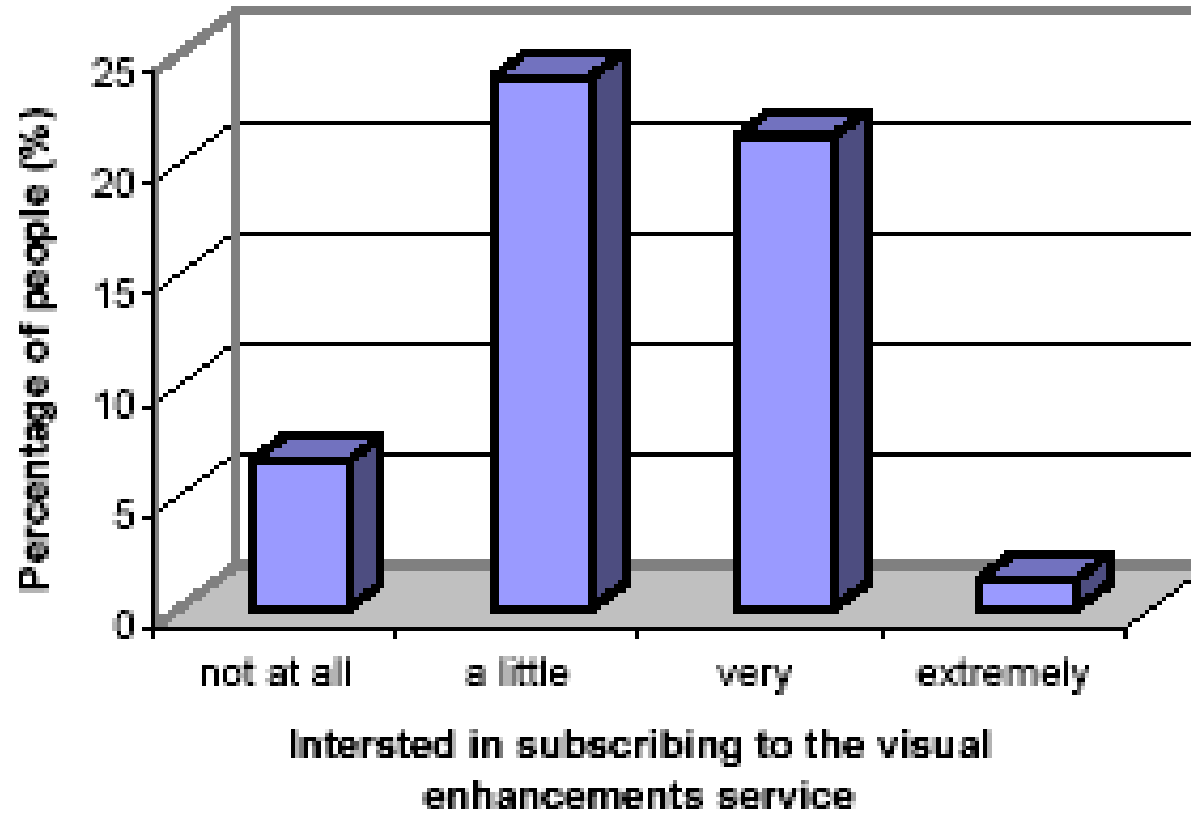
### Preferred Platforms





## Questionnaire Results in MELISA

### Business Model Information





## MELISA Questionnaires

### The Details of the Questionnaires

- ✓ 75 people within the initial period (less than 1 month)
- ✓ Ongoing survey
- ✓ An update of the evaluation to take place before the initial prototype
- ✓ A replacement of the mock-ups to take place after the initial prototype
- ✓ A risky experiment of combining trials evaluation and questionnaire updates!



## Requirements in the LoVEUS Project





# 5

Conclusions



## Conclusions

### Why and how to use online questionnaires

- ✓ Only if you can give a concise and clear picture
- ✓ The advantage is NOT time, it is the AMOUNT
- ✓ Usability is something that needs to be applied to the online questionnaires themselves
- ✓ Big numbers can be expected if and only if
  - A well visited site makes the appropriate advertisement
  - The person to reply does not spend too much time
  - Learns something while doing or
  - Earns something after having done...
- ✓ Like every other tool: it is a useful tool for high-technology projects, if used appropriately!

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