ePolls and evaluations

Yannis Stamatiou,
Computer Technology Institute (CTI) & Press – "Diophantus"

ABC4Trust Summit Event
Brussels, January 20, 2015

Course evaluations at Greek Universities

- Performed under the supervision of the *Hellenic Quality Assurance and Accreditation Agency (HQAA)*

- At University level: *Quality Assurance Unit* (QAU)

  At department level: *Quality Assurance Team* (QAT)

  Both implement HQAA's evaluation procedures.

- Courses are evaluated by the students that happen to be in class at a day chosen near the end of the semester.

- The students complete the questionnaires in class while the instructor and a QAT member wait outside.

- The QAT member is given the completed questionnaires in a sealed envelope by three student representatives.

- The QAT members do the same for each course and then give the questionnaires to the QAU for processing.

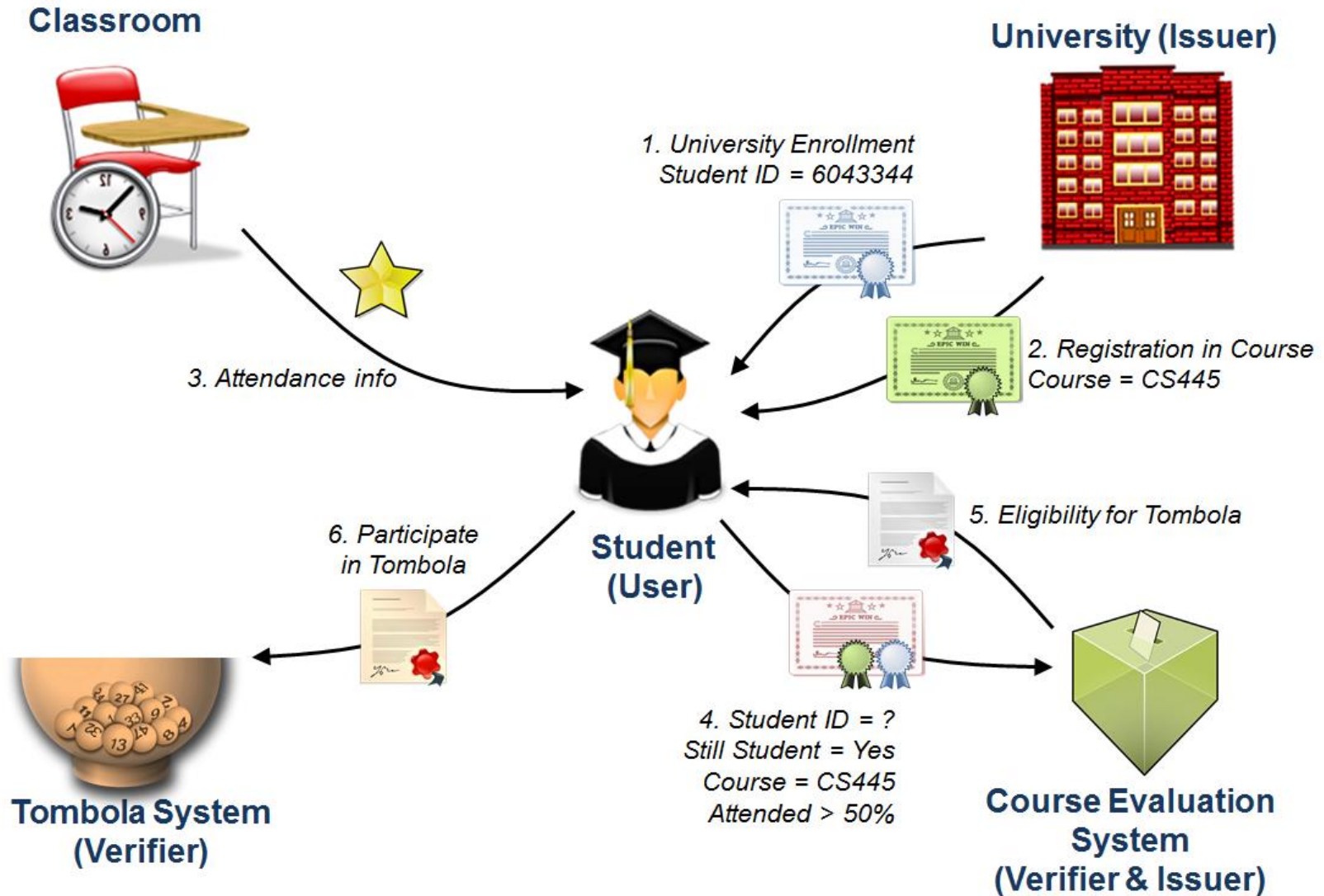# The Computer Engineering & Informatics Department (CEID) and the pilot

- Established in 1985

- 5-year computer engineering curriculum

- ~250 new students each year

- Co-located with CTI in the University of Patras campus

- Maintains close collaboration with CTI

- A compulsory course taught at CEID was selected for the pilot: *Distributed Systems* I, a 7th semester theoretical class which has already started):

  - ✓ 72 students were registered to the course.

  - ✓ 45 students volunteered to participate in the pilot.

  - ✓ 30 students volunteered to participate in the questionnaire-based evaluation of the pilot

The pilot's goal and the students' activities

- The goal of the pilot was to provide proof of concept for Privacy-ABCs in a remote course evaluation application in higher education

- The students obtained credentials on smart cards before the semester began

- During the semester, upon entering the lecture room they waved their smart cards in front of a contactless reader to obtain one more attendance unit

- At the end of the semester, they visited the course evaluation system and prove, in order to be allowed to evaluate the course, the following *without revealing their true identity*:

  - *are registered students of the department*

  - *have registered the course under evaluation*

  - *have attended the minimum required number of course lectures (setting this minimum to 0 allows all students to participate)*

The pilot scenarios

Classroom

University (Issuer)

1. University Enrollment
Student ID = 6043344

2. Registration in Course
Course = CS445

3. Attendance info

5. Eligibility for Tombola

6. Participate
in Tombola

**Student
(User)**

4. Student ID = ?
Still Student = Yes
Course = CS445
Attended > 50%

**Tombola System
(Verifier)**

**Course Evaluation
System
(Verifier & Issuer)**

High Level Pilot System Architecture and Components

High Level Architecture / Patras Pilot
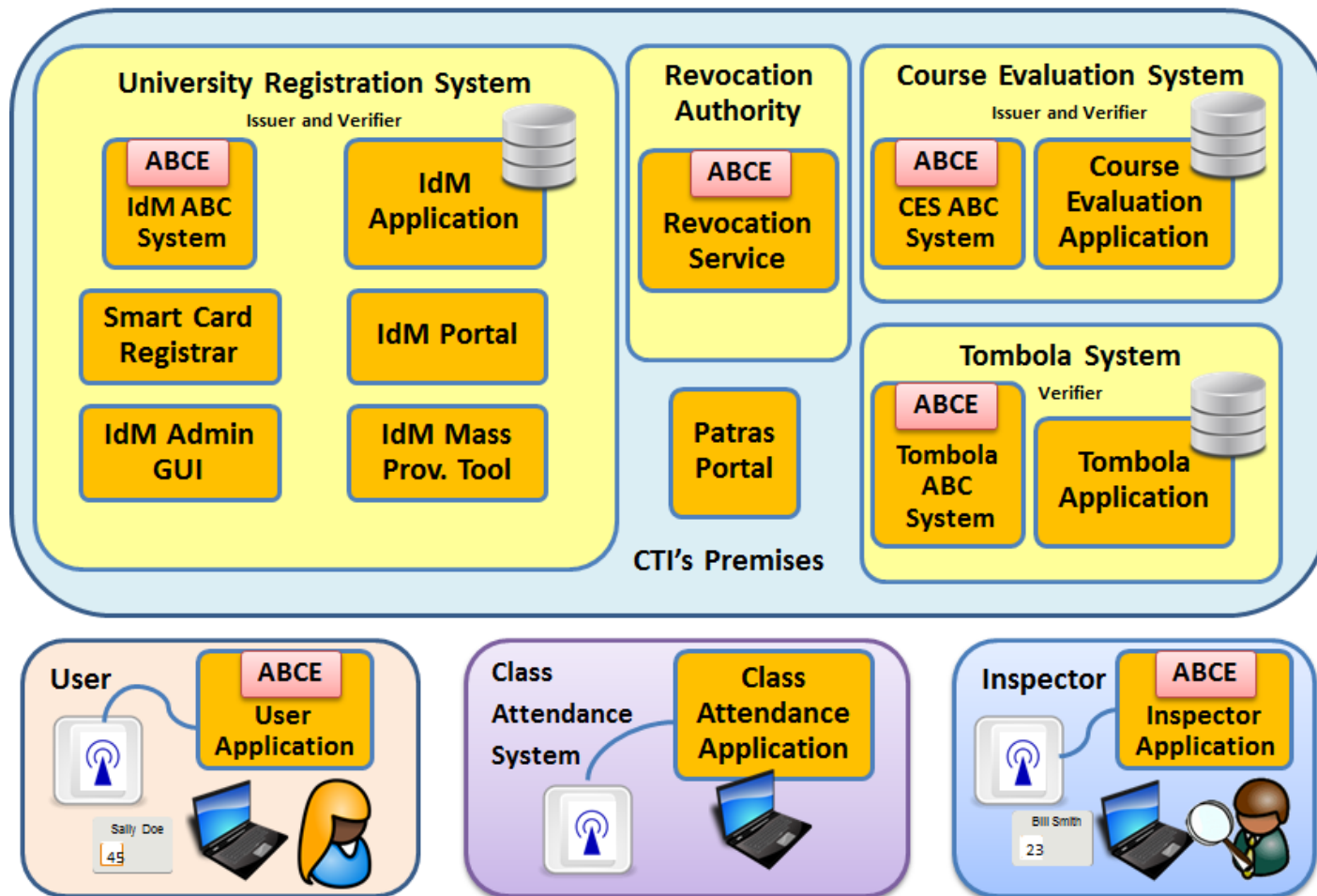
Student Credentials

1. **University Credential**
   (Idemix)

2. **Course Credential**
   (U-Prove)

3. **Tombola Credential**
   (Idemix)

credUniv (**revocable**):

- First Name:
- Last Name:
- University Name:
- Department Name:
- **Matriculation Number:**

credCourse:

- Course Identifier:

credTombola:

- **Matriculation Number:**

Carry-over attribute:

Participating in the Pilot

Beginning of the Semester

- Get Smart Card
- Register Smart Card
- Get a University Credential
- Get a Course Registration Credential

During the Semester

- Collect Class Attendance Evidence
- Periodic Backup of Smart Card
- Smart Card Restore in Case Needed

In the end of the Semester

- Participate in the Course Evaluation
- Obtain Tombola Credential (if so desired)
- Participate in the draw to win a prize
- Inspect the Tombola Credential to identify the winner
- Revoke the University Credential, if necessary

University Pilot Portal

From the University Pilot Portal students can access the following:

- ✓ The University Registration Server in order to collect their credentials.

- ✓ The Course Evaluation Server in order to evaluate the target course.

- ✓ The required software for interacting with the systems.

- ✓ Instructions manual.

The entry to the pilot: The University Pilot Portal

- The University Pilot Portal is a web information and system access portal for the pilot (https://ces.cti.gr/Portal/Portal.html)
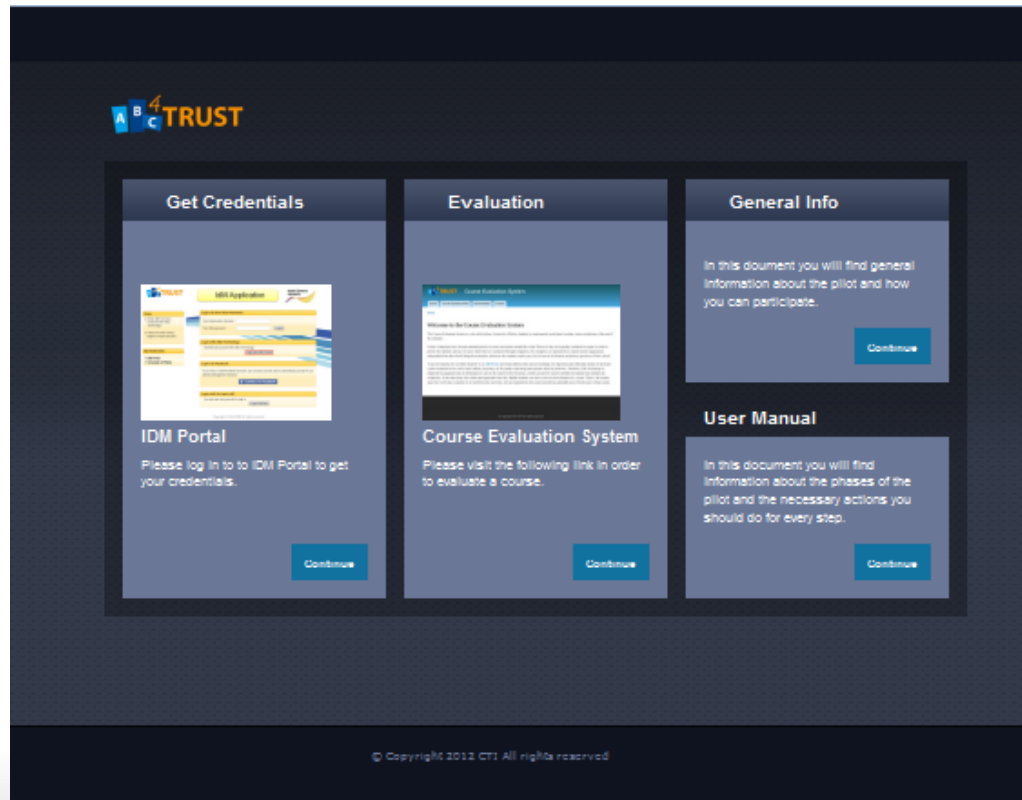
Now comes the demo!

Samples of evaluation Results

- **Usage feedback:**
  - For course evaluation: all 30
  - For Tombola: 26
- **Good results on usability (we list some selected factors):**
  - Ease of use
  - Interface usability
  - Ease of obtaining credentials
  - Ease of learning
  - Helpfulness of user manual
  - Helpfulness of the CTI team
- **Smart card usage & students' concerns:**
  - Worried about losing the smart card: 6 out of 30
  - Feel uncomfortable about storing data on smartcard: 2
 - Used backup function:12

Samples of evaluation Results

- **Importance of anonymity in Course Evaluations:**
  - All students agree on the importance
- **Willingness to use Privacy-ABCs in other scenarios:**
  - 80% of the students are willing to use this technology
- **Preference of Privacy Preserving Electronic Evaluations over paper-based ones:**
  - 93.3% prefer Electronic Evaluations with privacy mechanisms.
- **Perceived Anonymity and Privacy:**
  - Almost all students strongly felt a sense of anonymity and privacy protection by Privacy-ABCs.
- **Behavioral intention to use:**
  - Almost all students would like to continue using Privacy-ABCs-based evaluations.

Beyond the pilot

Today, CTI has a new role as a governmental educational agency and operates resting on four strong pillars:
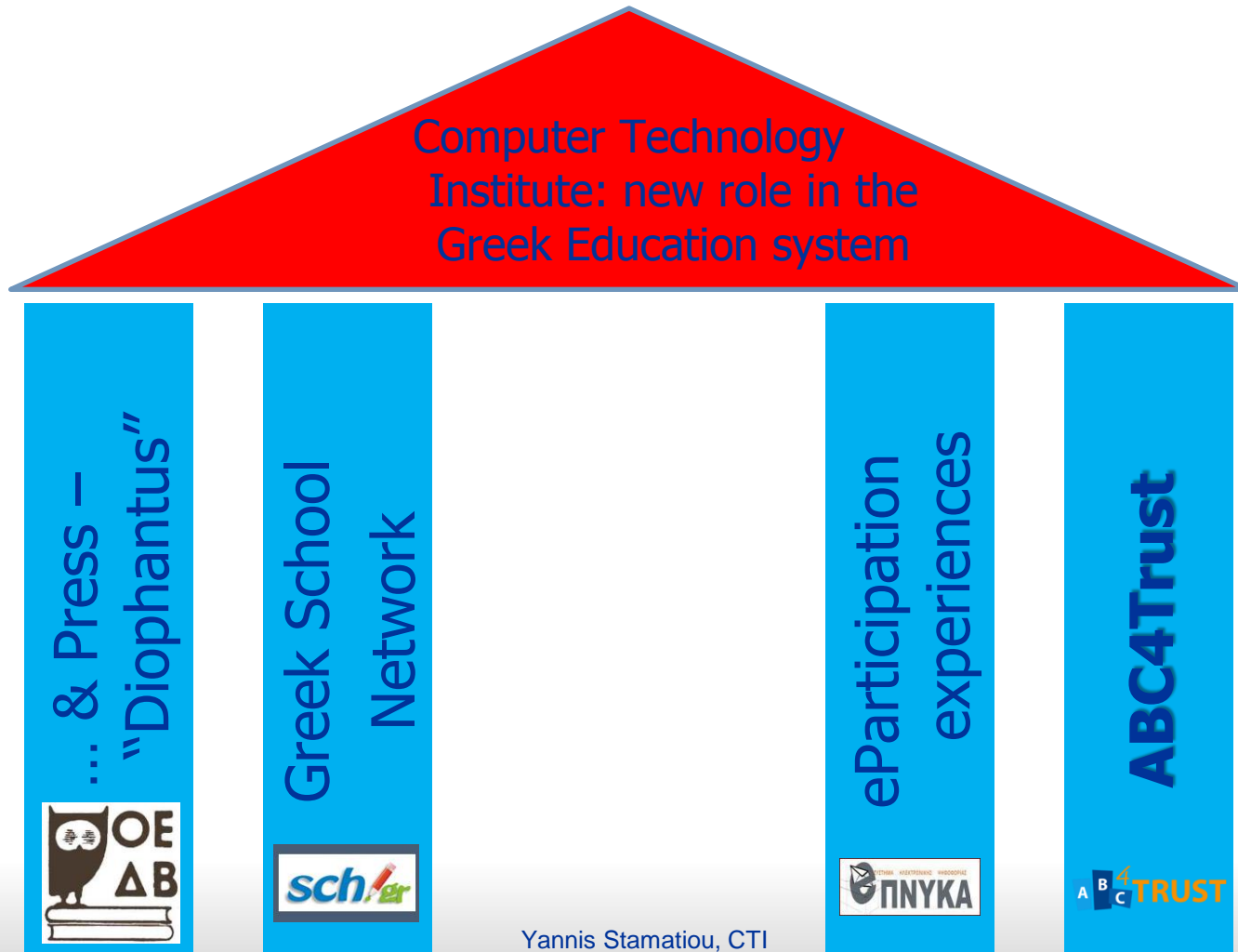
Computer Technology Institute: new role in the Greek Education system

... & Press – "Diophantus"

Greek School Network

eParticipation experiences

ABC4Trust

Yannis Stamatiou, CTI

Conclusions

- Students believe that benefits of using the system are bigger than the effort to use it.

- Almost all students would prefer using a Privacy-ABCs for course evaluations.

- Usability of the prototype:
  - Good usability results, but: CS students are not average users while CTI team helped a lot!

- Next goal: promote the pilot system as an ePolling/eEvaluation instrument at all education levels.

- Long-term vision: enhance the system to support more privacy-related services for the Greek Schools Network.

Thank you!

www.abc4trust.eu

Questions?

ABC⁴TRUST

SEVENTH FRAMEWORK PROGRAMME