A Mobile Learning System to Engage Students

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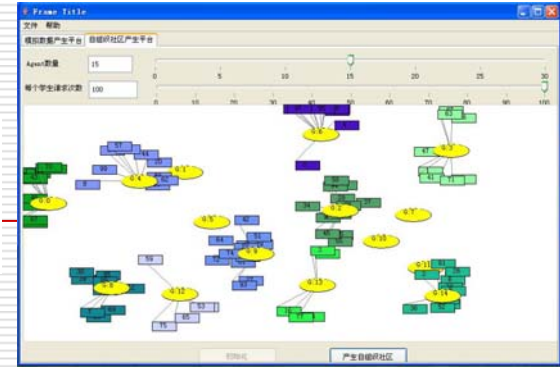
Director of E-Learning Lab

Shanghai Jiao Tong University

June 20, 2008

Background
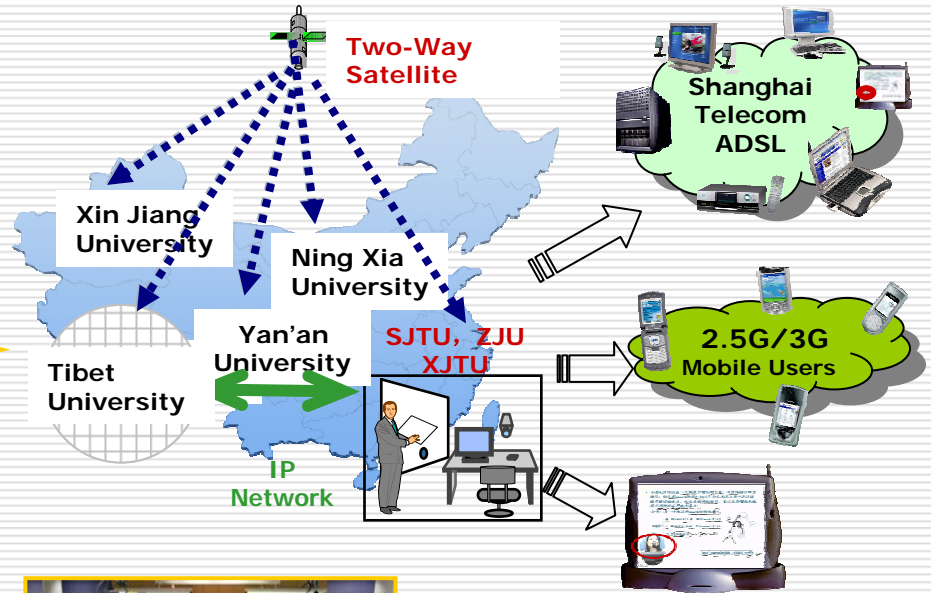
Self-organizing
communities
Mobile learning

High quality control of
large-scale learning

**Pervasive
delivery & effective
interaction**

**Fresh
content**

**Two-Way
Satellite**

Xin Jiang
University

Ning Xia
University

Tibet
University

Yan'an
University

SJTU, ZJU
XJTU

**IP
Network**

Shanghai
Telecom
ADSL

**2.5G/3G
Mobile Users**

IP TV broadcasting

**Blended
learning**

**Standard
natural
classrooms**

Fresh content from the traditional classroom

We have made a survey among 5000 subjects. The survey shows that only **280** students prefer to learn traditionally web-based courses while most students select real-time learning.

Standard Natural Classroom

Smart Board
Supporting Multiple Lecture Notes (Word, PPT, Handwritting, etc.)

Lecture Notes Screen
Supporting Multiple Lecture Notes

Feedback Screen
Supporting the *Real Time Interactive System* (Teachers may fine tune their teaching based on students' short messages.
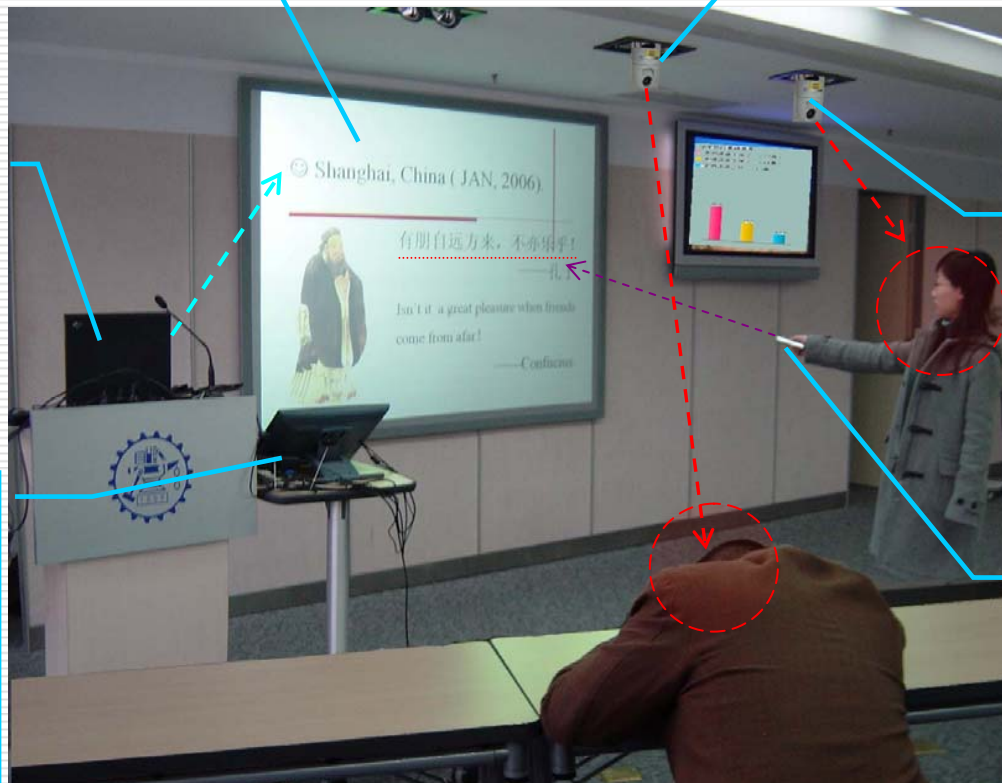
Monitor Camera
Supporting the *Student Attention System* (Capture absquatulaters in the classroom)

Localizer Camera
Supporting the *Teacher Tracking System* (Auto-track according to the teacher's locomotion

E-Pen
Supporting the *Laser Track System* (Infrared Sender)
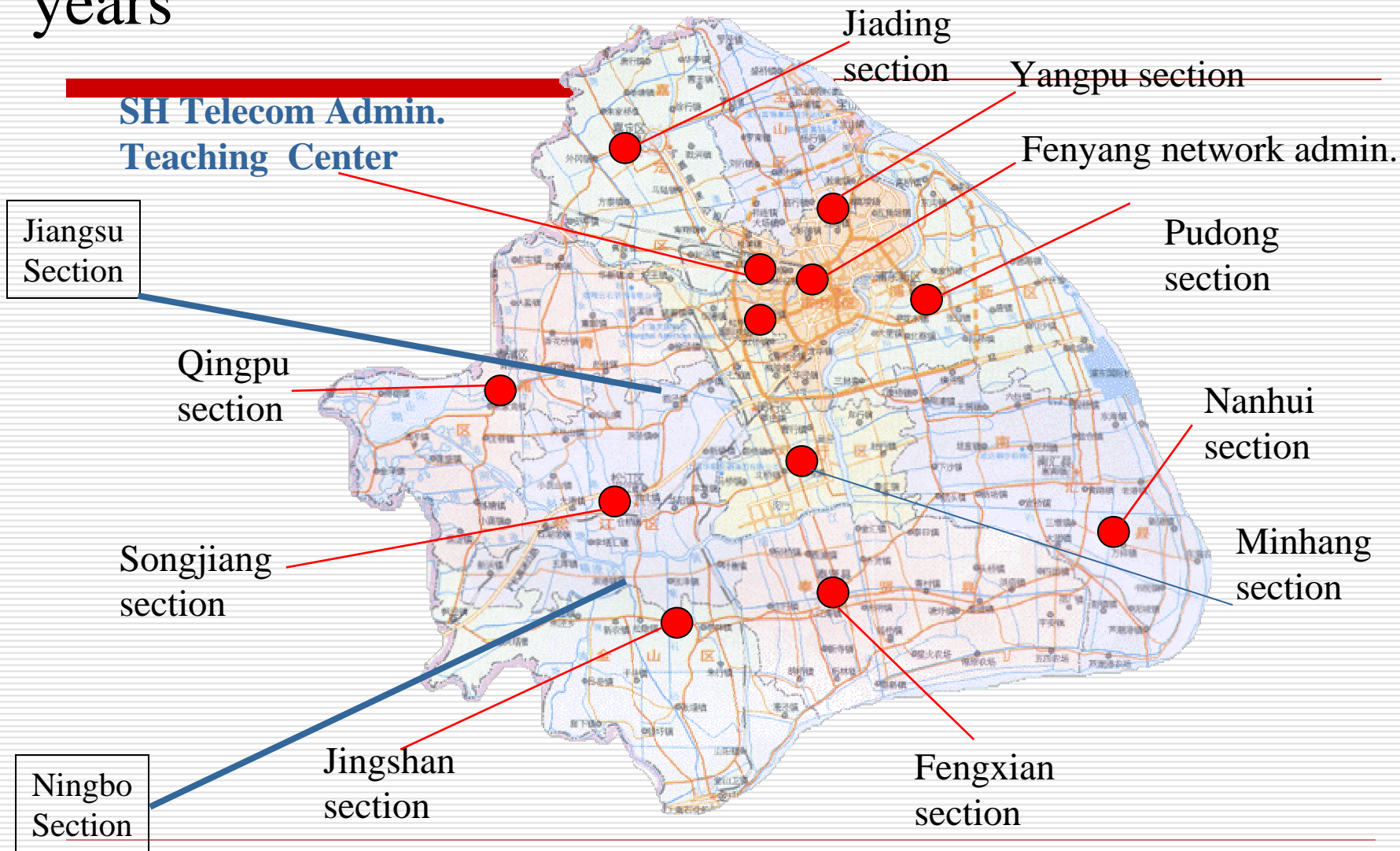
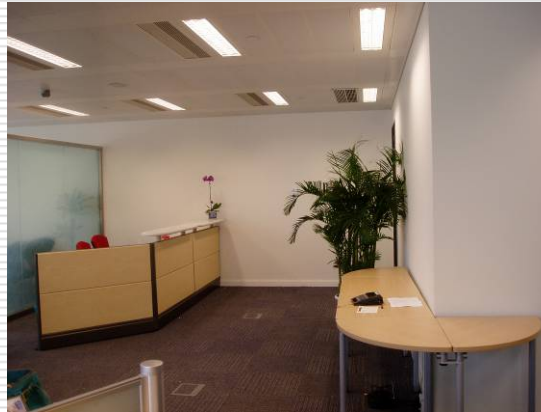Auto-track According to the Input from the Micro-Array

Driver

Micro-Array

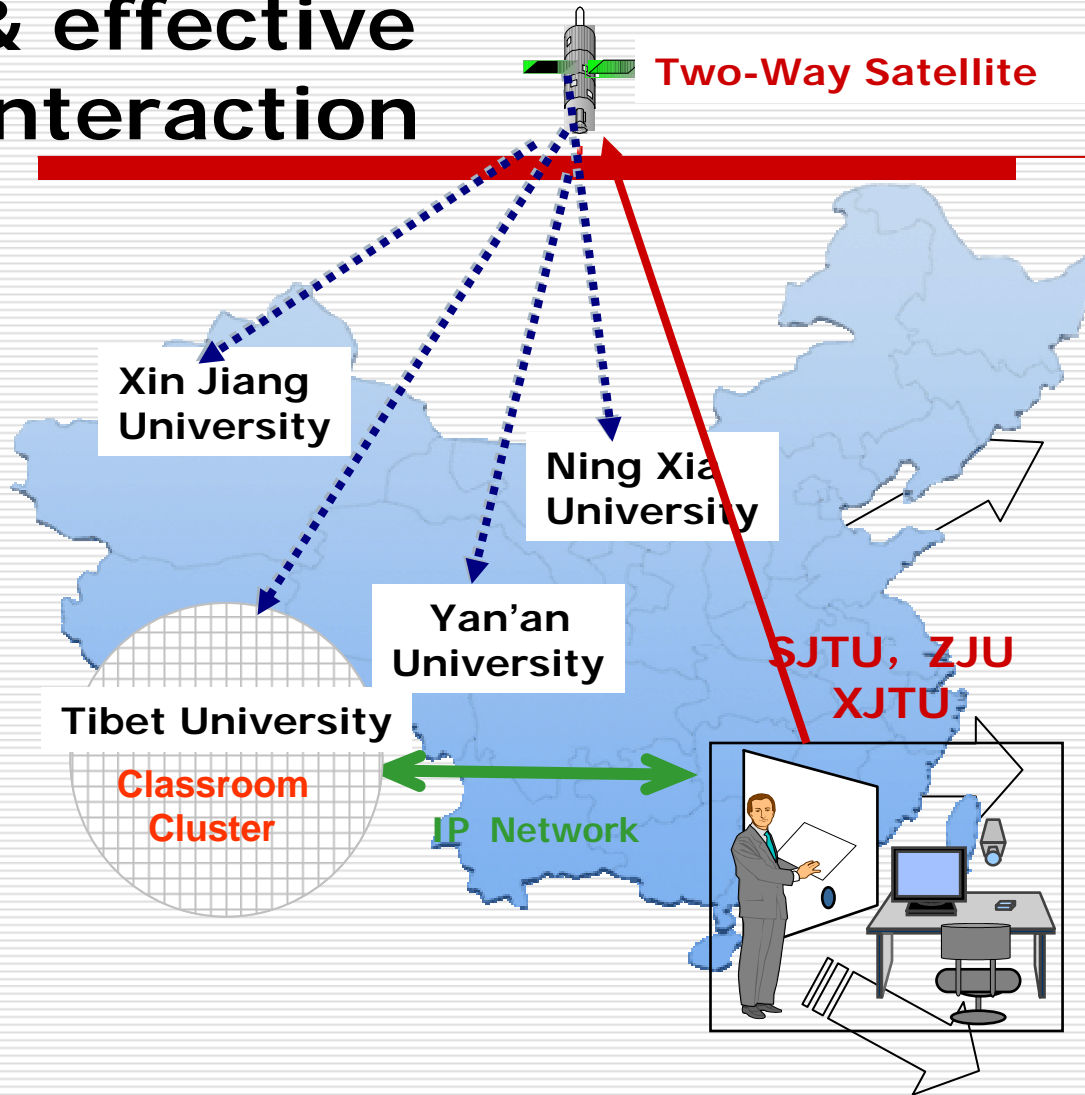# Our Development of E-Learning in the past several years

SH Telecom Admin. Teaching Center

Jiading section

Yangpu section

Fenyang network admin.

Jiangsu Section

Pudong section

Qingpu section

Nanhui section

Songjiang section

Minhang section

Jingshan section

Fengxian section

Ningbo Section

Ganghui E-Learning Center

Standardized Facilities Supporting natural teaching and learning

Pervasive delivery & effective interaction

Two-Way Satellite

Shanghai Telecom ADSL

Xin Jiang University

Ning Xia University

Yan'an University

SJTU，ZJU XJTU

Tibet University

Classroom Cluster

IP Network

2.5G/3G Mobile Users

IP TV broadcasting

Our Mission

Creating a Testbed for Mobile and Broadband-based Large-scale Learning

Mobile Learning Systems

- ☐ Functions
  - ■ Plug & Play
  - ■ M-Learning Behavior Monitor
  - ■ Online Exercises

- ☐ Impact
  - ■ English Class
  - ■ Computer Class

1, Plug & Play

A Data Structure Class

A Math Class

Courseware download station

2, M-Learning Behavior Monitoring

- **Real-time Screen Monitoring**

- **SMS Notification**

- **Full Control of the Mobile Phone**

3, Online Exercises

Teaching in classroom →
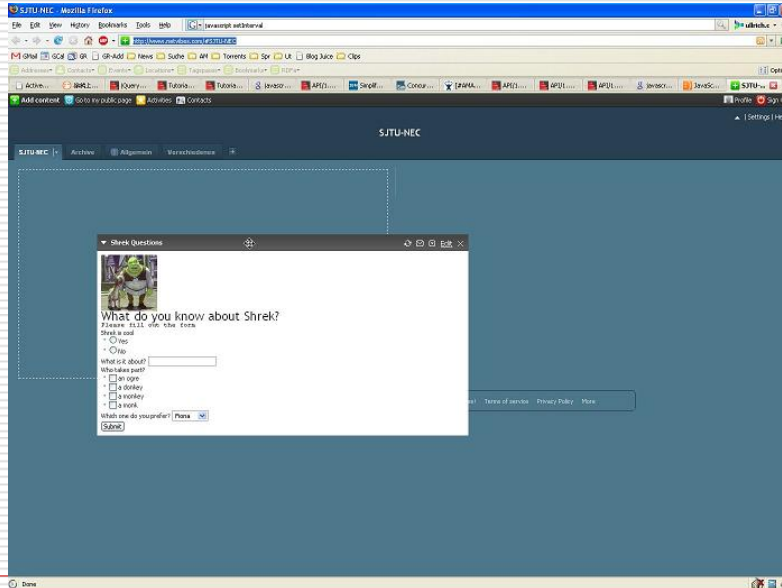
Teacher's Screen (Drag & Drop)

Student's Phone Screen

Forum Nokia OpenC Global Challenge 2nd Runner up
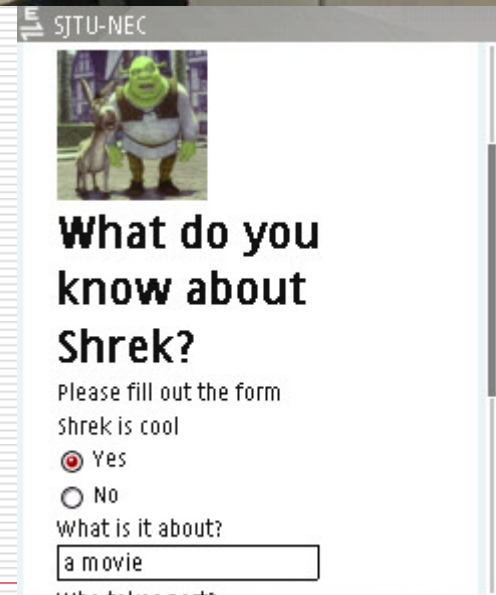

On stage -- Nokia World 2007 with Lee Epting (Forum Nokia Vice President)

Supported Phones

Impact of mLearning: English Class

□ Totally 1000 Students, about 400 participated, and 128 participated continuously

type	num	Mean Score
Regular	128	83
Seldom	271	71
Never	601	64

《Building Learning Communities in Blended Classrooms
Through a Cutting-Edge Mobile Learning System》
Published in British Journal of Educational Technology

Impact of mLearning Computer Science Class (Total 550)

Grades by Groups	n	Mean of Final Grades	Standard Deviation
Non-participants	298	71.185	10.5526
Participants	252	75.429	8.0288

mLearning participants performed better in this class

《Mobile Learning in a Large Blended Computer Science Classroom:
System Function, Pedagogies, and Their Impact on Learning》

Accepted by IEEE Transaction on Education

Class forum Interaction

- ☐ They formed a supportive community
- ☐ They continued the class interaction on the class forum.
  - ■ About 2000 posts
 - ■ Much higher than regular classes (without using mLearning)

	Before MLearning	After MLearning
time	Sept 2005 -- Jan 2006	Feb 2006 -- Aug 2006
posts	3570	6378

《The impact of mobile learning on students' learning behaviors and performance: Report from a large blended classroom.》
British Journal of Educational Technology (2008)

Mobile Learning Conclusion

☐ Mobile Learning will help students perform better in the class

☐ Mobile phone as an interaction tool encourages students to go to the class forum for more details
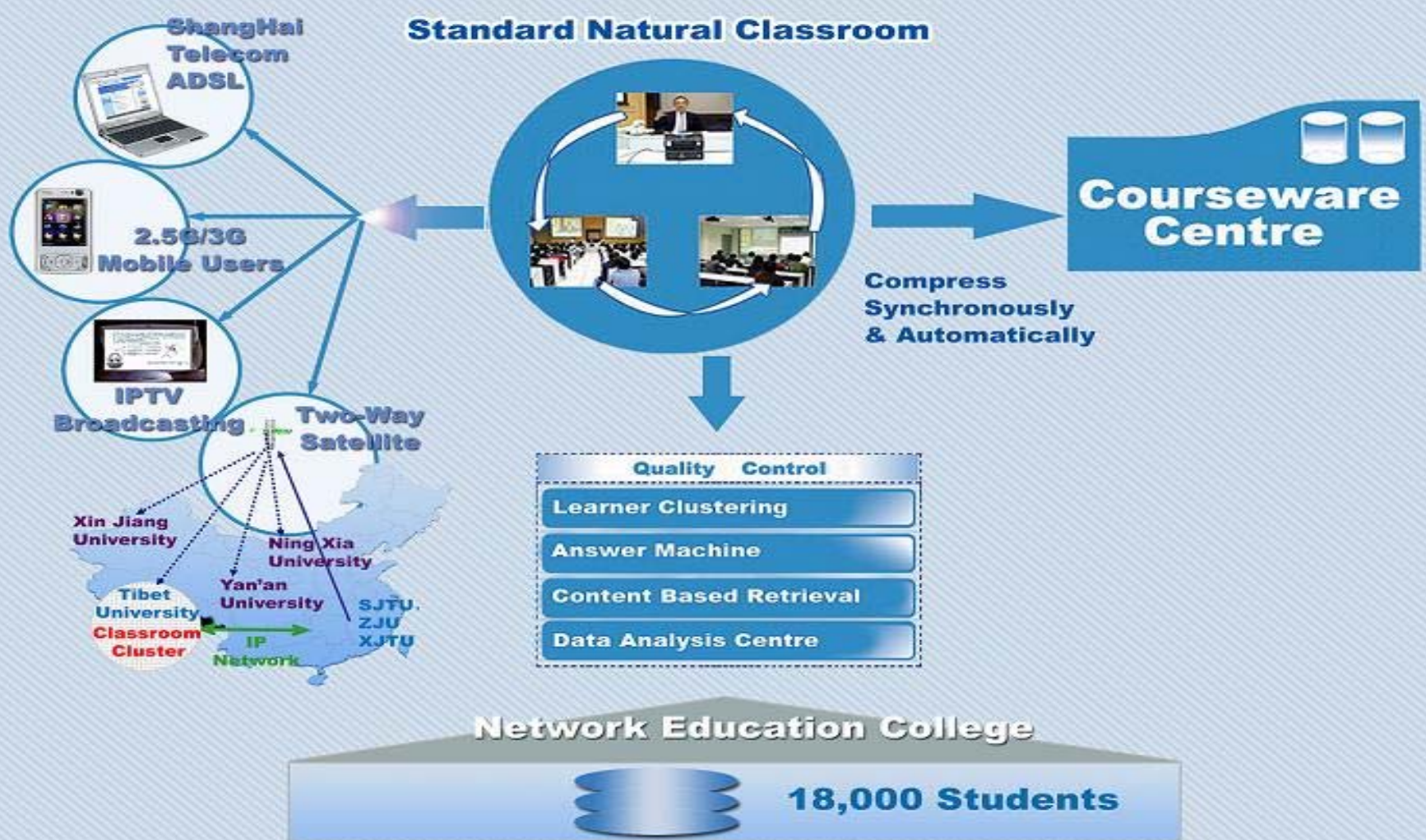
E-Learning Lab: Emerging technology

Shanghai Telecom: Broadband & Wireless Network Provider

Network Education College: Testbed

Thank you!

Welcome

Shanghai JiaoTong University