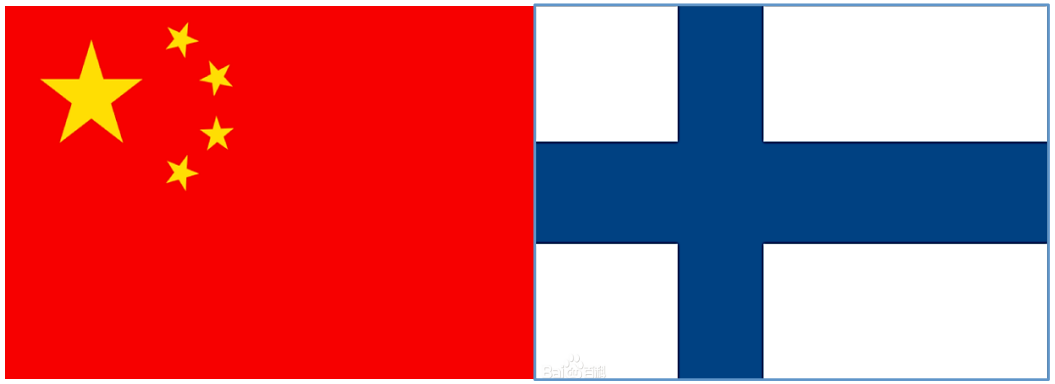
The Sino-**Finnish Education ICT** Centre

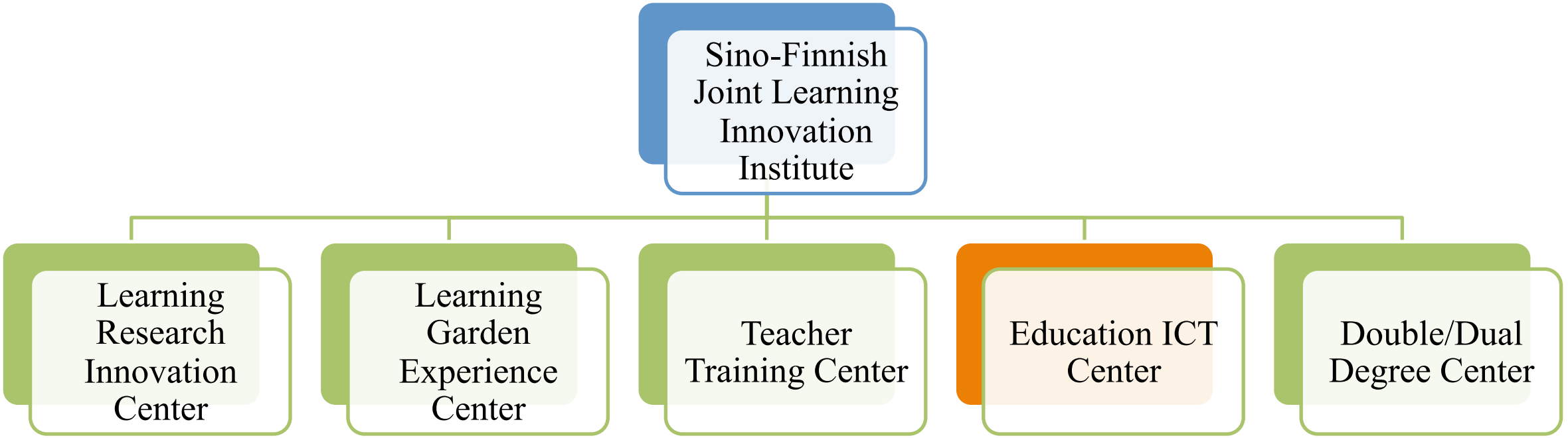


Dr. Baoping Li

School of Educational Technology

Advanced Innovation Center for Future Education

libp@bnu.edu.cn



Working For Innovative digital solutions in Education

Beijing Normal University is the first and top Normal University in Chinese history.

Research centers related to ICT in Education

National Center for Computer Education in Primary and Secondary Schools

(Ministry of Education, 1994 -)

Joint Laboratory of Mobile Learning

(Ministry of Education & China Mobile Co., 2012 -)

National Innovation Centre for Assessment of Basic Educational Quality

(Ministry of Education, 2014 -)

Smart Learning Institute

(Beijing Normal University & Huayu Co.,2014 -)

Beijing Advanced Innovation Center for Future Education

(Beijing Municipal Government, 2015 -)

Central China Normal University is located in Wuhan, one of the 211 university.

Chinese Universities in Sino-Finnish Education ICT Centre

北京師範大學
BEIJING NORMAL UNIVERSITY

北京师范大学未来教育高精尖创新中心
Beijing Advanced Innovation Center For Future Education

+

華中師範大學
CENTRAL CHINA NORMAL UNIVERSITY

Collaborative & Innovative Center for Educational Technology

Advanced Innovation Center for Future Education

The Advanced Innovation Center for Future Education of Beijing Normal University is **a high level international innovation platform** supported by Beijing municipal government.

The core mission of the center is to research and develop **a smart education platform for public service based on big data in the field of basic education** in Beijing.

Problems to Be Solved

教育大师 Education Master

智慧学伴 Smart Learning Partner

Learning Cell 学习元

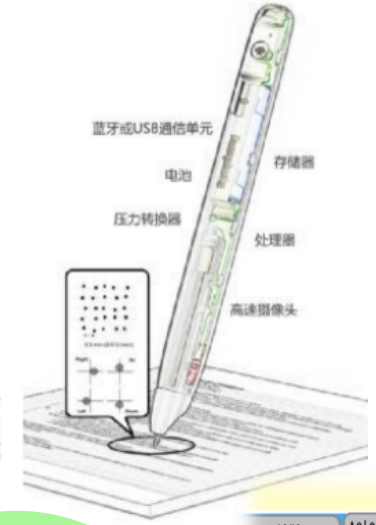
Collecting big data during learning process

Diagnosing and solving learning problems

Using ICT

Visualizing knowledge and ability structures

Finding and strengthening advantage subjects



Using Kinect in Science Education

Augmented reality (AR) 3D technique in science courses.

ICT Supported School Learning Improvement

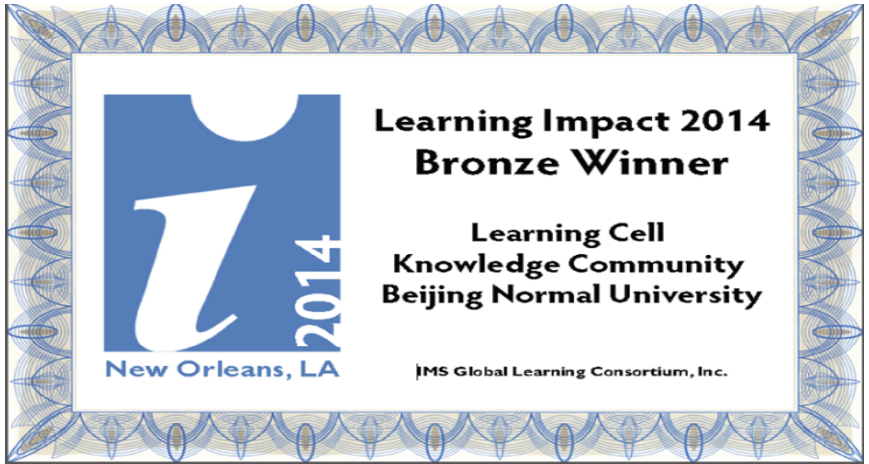
- A series of programs:

Thinking; Subject abilities;

Learning strategies; Peer coaching;

Teacher teaching skills;… …

- 500 schools, more than 100 thousand students



View of the Conferences

International Publications

Journal of Computer in Education

A Series of Smart Learning Books Publication

COOPERATION RESEARCHES WITH FINNISH UNIVERSITIES

1.The “Future Schools in 2030” Project

Prof. Shengquan Yu

Purposes:

To study the possibility and form of future education in the late 21st century

To analyze the new form of education process reform from the perspective of a bi-directional integration of technology and education

Expected outcome:

A White Paper on Future Schools will be published to the world after several sympuisms with participants.

Research Topics

The environment of future schools

The curriculum of future schools

The teaching of future schools

The learning in future schools

The evaluation of future schools

The management of future schools

The teachers of future schools

The organizations of future schools

Organization

Sponsors:

Advanced Innovation Center for Future Education of Beijing Normal University
Each grant provides up to US$10,000-20,000 for applicants who are currently working on or would like to start research projects that are aligned with the project of ***Future Schools in 2030.***

Important Dates:

Proposal submission deadline:	June 30, 2016
Future Schools in 2030 Symposium (1):	August 31, 2016
Future Schools in 2030 Symposium (2):	January 15, 2017
Future Schools in 2030 Symposium (3):	May 25, 2017
White Paper for Future Schools release :	August 20, 2017

2.Future Classroom Project

Dr. Feng-Kuang Chiang

Purposes:

To study the shape and structure of the future classroom.
To lead the reform of learning environments in Chinese schools

Expected outcome:

The white paper for "future learning environment : different forms of classroom in the future"

Research Topics

1. Future learning environment and the design of learning space.

2. Perception of the students and teachers in the future classroom.

3. Effect of future classroom on student's learning quality.

The Experience Center for Future Learning of BNU

The experience center for future learning was built in September 2014.

Consists of seven different new form classrooms

Integrated into the concept of learning space design

Can carry on different experiments of innovative teaching.

Interactive Discussion Room
(Best for small classes with 15 to 20 students)

Teacher Education Training Classroom

(Applied to practical teaching and trial teaching for 30-40 people)

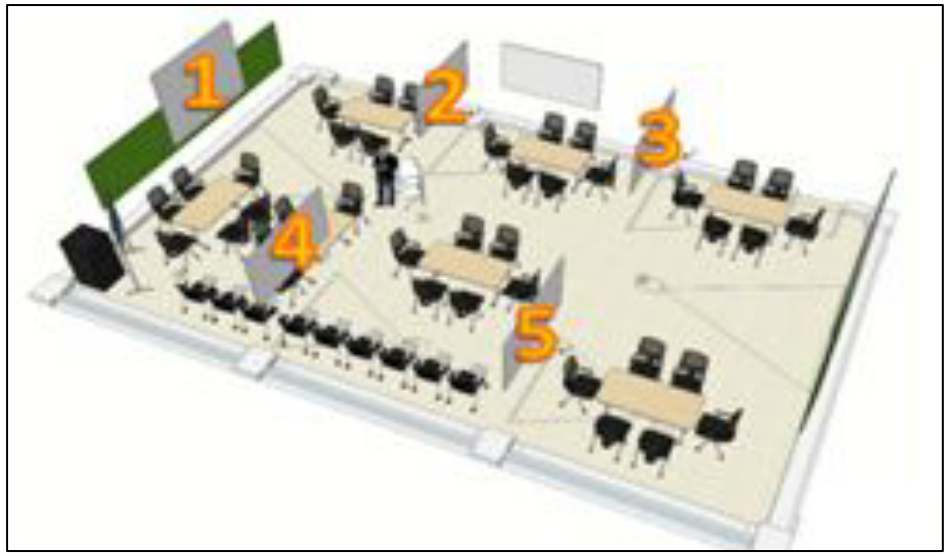
Group Interactive Learning Classroom
(Suitable for 30-40 students to take an interactive learning)

International Remote Cooperation Room

(Best for remote class in three parties with 40-60 attendants, remote lesson observation and evaluation, web-based teaching and researching activities)

Teacher training classroom

The classroom is adopted the model of “banquet hall+cinema” to layout the space. All tables and chairs with wheels are separated into 5 groups. The Curved screen divided into two parts supports multi screen show during training, which makes it possible to show primary PPT on Main screen and secondary PPT or student's learning content on auxiliary screen.



Group interaction classroom

There are 5 groups, and students in these groups can discuss independly， interact with other groups and report results which can be casted to the large screen or be organized by the teacher to speak group by group.

3. Learning Resource Organizing Model in Mobile Learning Environment

Purposes:

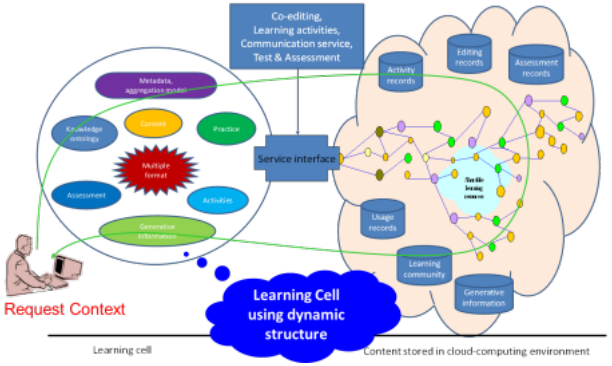
- Try to proposal a new kind of learning resource organizing model for Mobile Learning——Learning Cell
- Learning Cell：Evolvable、Social、Contextual、Cohesive、Open、Dynamic Resource

Expected outcome:

- Make the Learning Cell become international standard

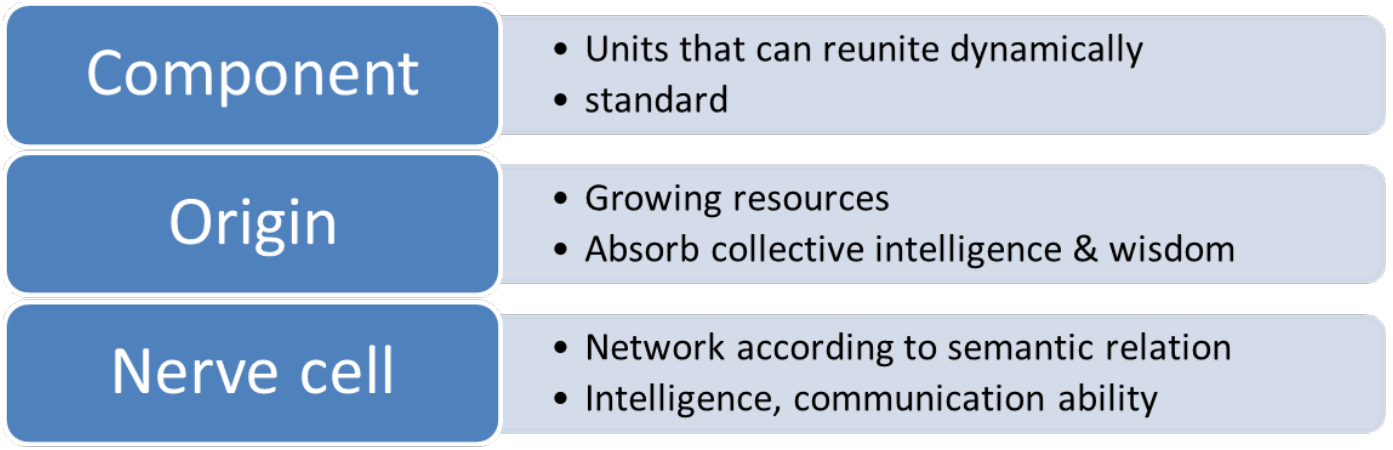
Learning Cell
学习元

ISO IEC
JTC1 SC36



The meaning of “cell”

- **Component**: learning cells can compose higher-level learning resources, like a cell
- **Origin** : learning cells grow from small to big, from weak to strong , like a cell
- **Nerve cell**: unite to get intelligence, like cells



Learning Cell
学习元

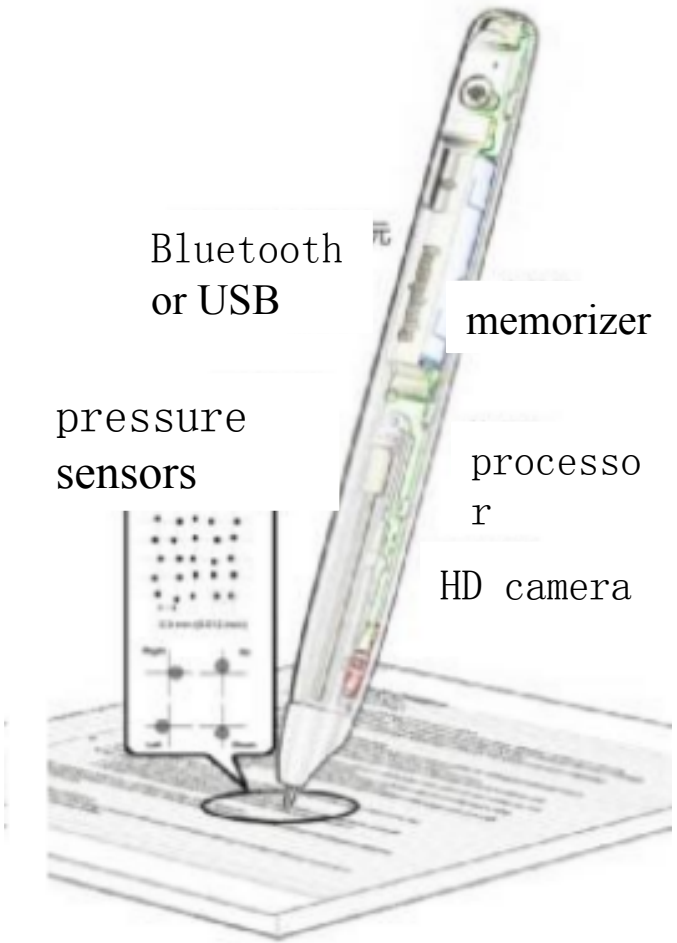
4.Research on Students Assessment Base on ICT

Dr. Baoping Li

1. Technology solutions for students' learning data collection.

2. The analytics and visualizing of big data of learning

3. Analytics and diagnosis for student's learning ability in different subjects based on the big data.



Paper for Dot matrix digital **technology**

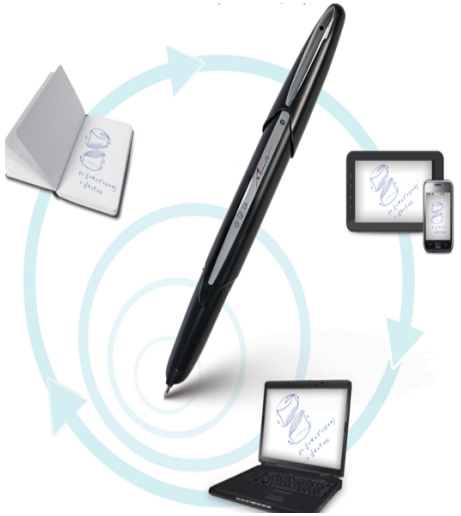
"Dot matrix" is formed with a number of small points which are in accordance with the rules of the special algorithm. It makes sure that all handwriting could be recorded according to the parameter informatio.

Printing "Dot matrix" could make the paper become intelligent.

Dot matrix digital pen

As the tip of the pen is pressed, pressure sensor is touched off and make the HD camera to take 100 photos per second. Then，the information of dot matrix co-ordinate, order of handwriting, pressure data and speed is transferred to processor inside. Finally, all information can be outputted by Bluetooth or USB.

An Example in Chinese Classroom: What Did It Records?



Name: Sicong Wang

Subject: Chinese class

Length of time: About 30 minutes

Task: Learning classical Chinese

Learning Records

Finish reading the first paragraph

1'50"

3'30"

Repeat reading and sign the doubtful points

It shows that Sicong has the consciousness of getting the general idea.

Turn to next page and finish the first piece

4'49"

4'49"

Finish the second piece and repeat

7'25"

Back to the first page and has no action until the teacher orders to read the text

16'59"

Start to draw a picture of a aperson

18'50"

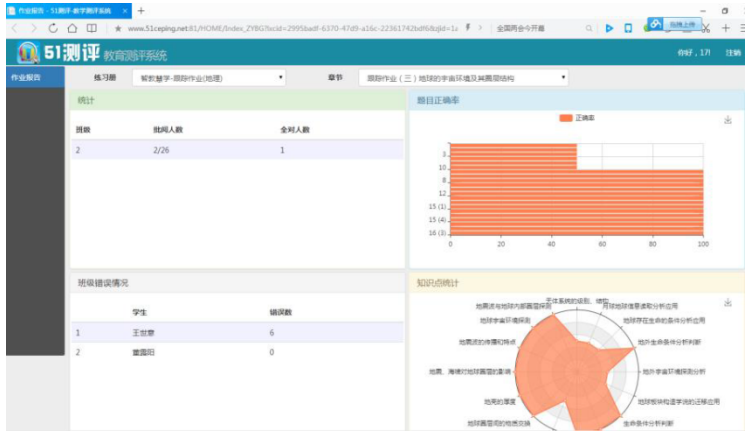
Finish drawing the picture

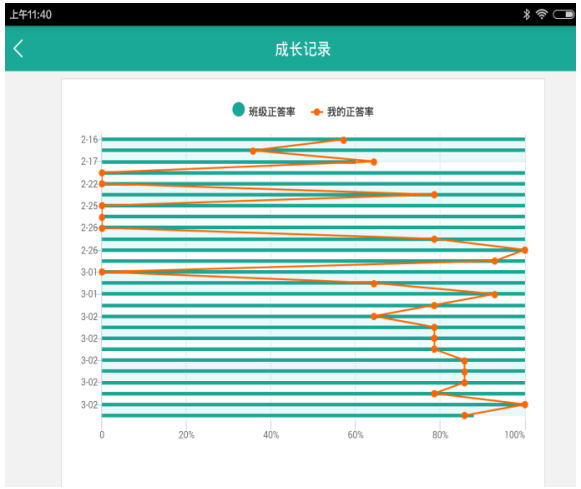
It shows that the student's attention wonders.

22'20"

Start to interpret

How Dose the Teacher Use it?





5.Research on Knowledge Building and Mobile Learning

Expected outcomes:

Two edited books including

Educational Innovations for Sustained Knowledge Building -Pedagogical and Technological Advances

and

The International Handbook of Mobile and Ubiquitous Learning

The Sino-Finnish Education ICT Center Cooperative Modes

Build the team for international cooperation;

Share research data and resources;

Co-publish papers and books;

As a cooperative unit to hold international conferences;

Academic exchange of visiting scholar and students;

To invite professors in Sino-Finnish Universities to have academic visits and guidance;

STEM

- October 2016

STEM in Education 2016 Executive Committee

Dr. Maija Aksela

北京師範大學

Thank You for Attention !