Smart Universities are the basis for the development of sustainable cities

Rapporteur: Vadym Kaptur
Ph.D., Senior Researcher
Vice-Rector on Scientific work O.S. Popov ONAT
Vice-Chairman of CWG on COP
Vice-Chairman ITU-D Study Group 1
co-Rapporteur on Question 1/1 of ITU-D SG 1
**Smart University** is a university in which the combination of technology innovations and the Internet by trained people leads to a new quality of the processes and results of an educational, research, commercial, social and other activity of the university (*SMART RUSSIA 2015*).
Smart processes at the heart of Smart University

- **Education**
- **Science**
- **Management**

**Trained people**
- Digital literacy
- Innovative approaches
- Continuous update
- Active use of ICT
- Dynamic interaction
- High level of motivation
Smart-education – the main «smart» process of Smart University

**Innovative educational materials**
- Motivating students to work
- Multimedia content
- Interactive Learning Events
- Use of cloud technologies

**Dynamic interaction channel**
- Dividing teacher’s functions between tutor and student
- Students are the co-authors of training courses
- Involvement in the scientific work of the University

**Updating**
- Continuous updating of educational courses
- Accounting personal characteristics
- Individualization of the learning path
- Application of knowledge in practice
Smart infrastructure at the heart of Smart University

**Smart infrastructure**

- **Corporate network**
- **IoT and smartLearning**
- **Management system**

Modern technical solutions

- Reliable core and communication channels
- Support 24/7
- WiFi coverage
- Structured Cabling System
- Software
- Cloud technologies
- Equipping classrooms
- Access Control System
Smart Infrastructure: Corporate Network

Corporate network

Structured Cabling System
- Reliability
- Ease of maintenance
- Margin and flexibility
- Lower total cost of ownership
- Building up new systems

Reliable core and communication channels
- Stable power supply
- Statutory operating conditions
- Automatic backup
- Security

WiFi coverage
- Mobility
- The possibility of implementing the concept of BYOD
- New educational opportunities
- Connection to Eduroam
Smart Infrastructure: Internet of Things and Smart Learning

Internet of Things and Smart Learning

Equipping classrooms
- Interactive learning environment
- Equipment for presentations
- Smart Classrooms
- Inclusive Education

Virtualization and cloud technologies
- Laboratory Cycle Virtualization
- Effective system of access to resources
- The transition to paperless learning
- Distance learning

Access Control System
- RFID access to classrooms
- Development of video surveillance system
- Active use of sensors
- Energy Saving
Smart Infrastructure: Management system

Management system

Learning process
- Planning educational process
- Scheduling
- Admission Committee
- Pre-university tutorial
- Management of student body

Scientific work
- Planning and Reporting
- Contracts
- Registration of scientific research works
- Contests and Olympiads
- Conferences and Workshops
- Printed editions

Management and Finance
- University structure
- Management of teaching staff
- Management of dormitory check-in
- Contracts
- Scholarships
- Control over the execution of orders
Options for building a Smart University management system

**Unified system**
- Using ready-made solution
- Low requirements for the local support
- Support and updates
- Stereotypeness of the solution
- Common/known Vulnerabilities
- Low adaptability

**Patchwork approach**
- Duration of implementation
- Dependence on the staff
- Aging Technology
- Choosing own development trajectory
- High level of security
- Public image and commercialization

VS
Example of the Roadmap to create a Smart University

- SCS
- Core
- WiFi

- Science
- Finance
- Education

- Cloud
- Audience
- Access

- Digital literacy
- Using ICT
- Innovations

- Motivation
- Actualization
- Dynamics

Corporate network
Management system
Internet of Things u Smart Learning
Smart processes
THANK YOU FOR ATTENTION