Annual Progress

ICT – TRG 2015~16

Team Lead: Dr Sajjad Mohsin

Presented by Dr Sajjad A. Madani

Flow of Presentation

1. Research Theme
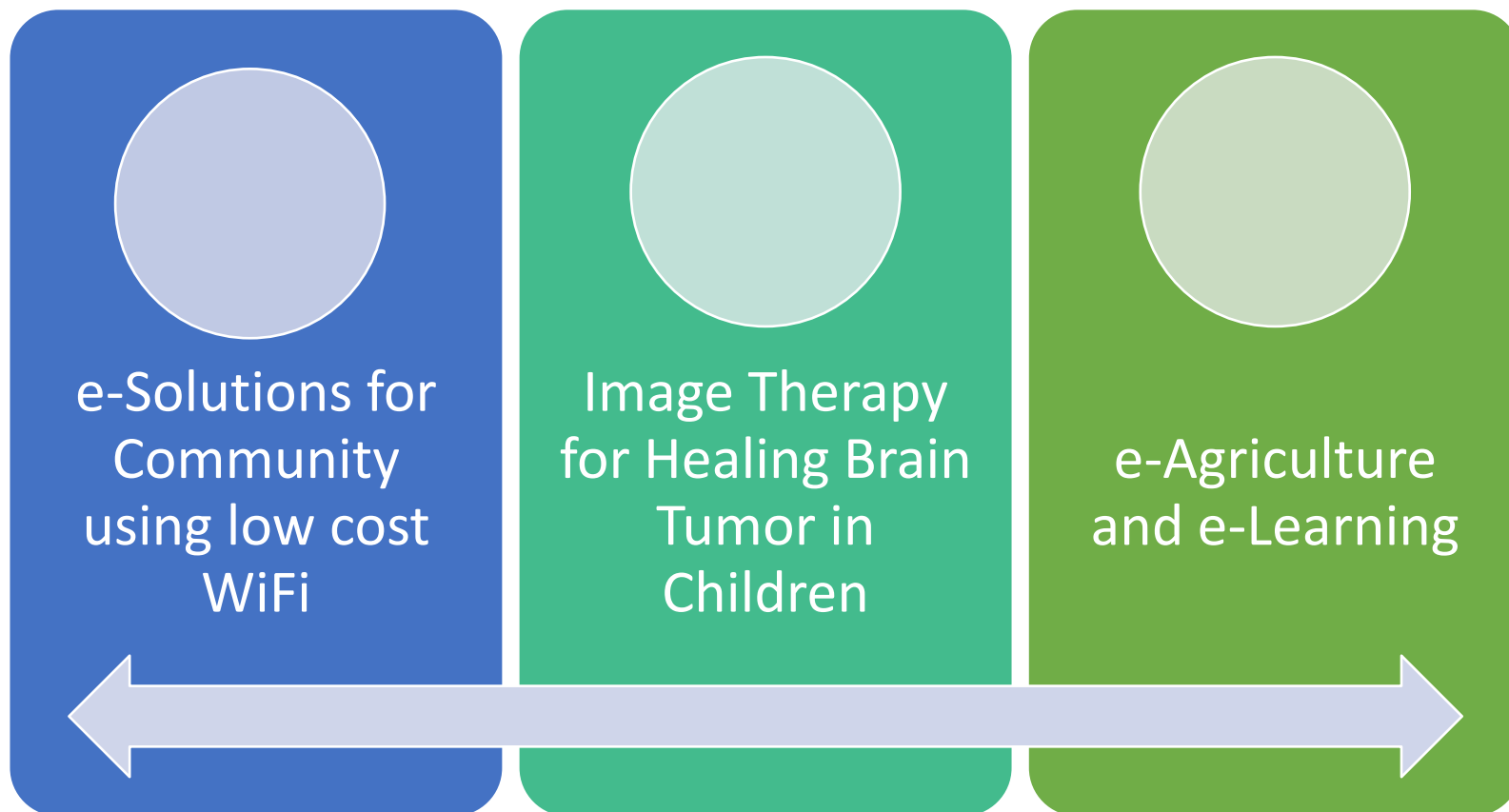2. Projects and Progress
3. Way Forward

Research Theme

- Participants selected to continue the main research theme titled 'e-Solutions for Community using Low-cost Wi-Fi'.

- Under the theme group has targeted establishment off Wi-Fi connectivity and e-Health solutions.

- Whereas the group also agree to work on e-Learning and e-Agriculture

Projects under the Theme

e-Solutions for Community using low cost WiFi

Image Therapy for Healing Brain Tumor in Children

e-Agriculture and e-Learning

Wi-Fi Connectivity Enabling ICT Applications Using Long Distance Wi-Fi Networks

- **Focal Person:** Dr Majid Iqbal, CIIT

- The idea is to provide cheap connectivity between developed and remote areas to enable ICT applications; illiteracy, health problems and poverty can be alleviated.

- Wi-Fi is the most suitable option:

  - Affordable costs
  - Desirable data rates
  - Easier reach to far flung rural areas
  - Less maintenance overheads

Progress

- Testing and performance evaluation of the system already carried out.

- Deployment in certain rural area yet to be done.

- Some site are already identified, e.g., Gokina (35000 residents), COMSATS Telehealth clinic Golra Sharif (12000 residents), and BHU Dagai (37000 residents)

Imagery Therapy for treating Brain Humor in Children

- **Focal Person:** Dr Sadaf Sajjad, CIIT

- The idea is to cure brain tumor in children by image therapy/psychological therapy through video games.

- The game provides the explanation of - how the tumors can be attacked by the immune system within their bodies.

- Immune cells are used as the weapons against tumors.

Progress

- 3D Graphical Imagery Therapy game was to visualize the battle scenes against tumours.

- PC and android version available on Google Play by the name "MANAY".

- Project was successfully completed

- Project funded by National ICTR&D, for Rs.**11,558,112**/- for period of **18** months

Image Based Scientific Evaluations

- **Focal Person:** Dr Zafar Iqbal, CIIT

- The idea is to use consumer technologies such as smart phones in place of dedicated lab instruments like spectrophotometers for evaluations, e.g., examining and evaluating quality of seeds to enhance crop yield
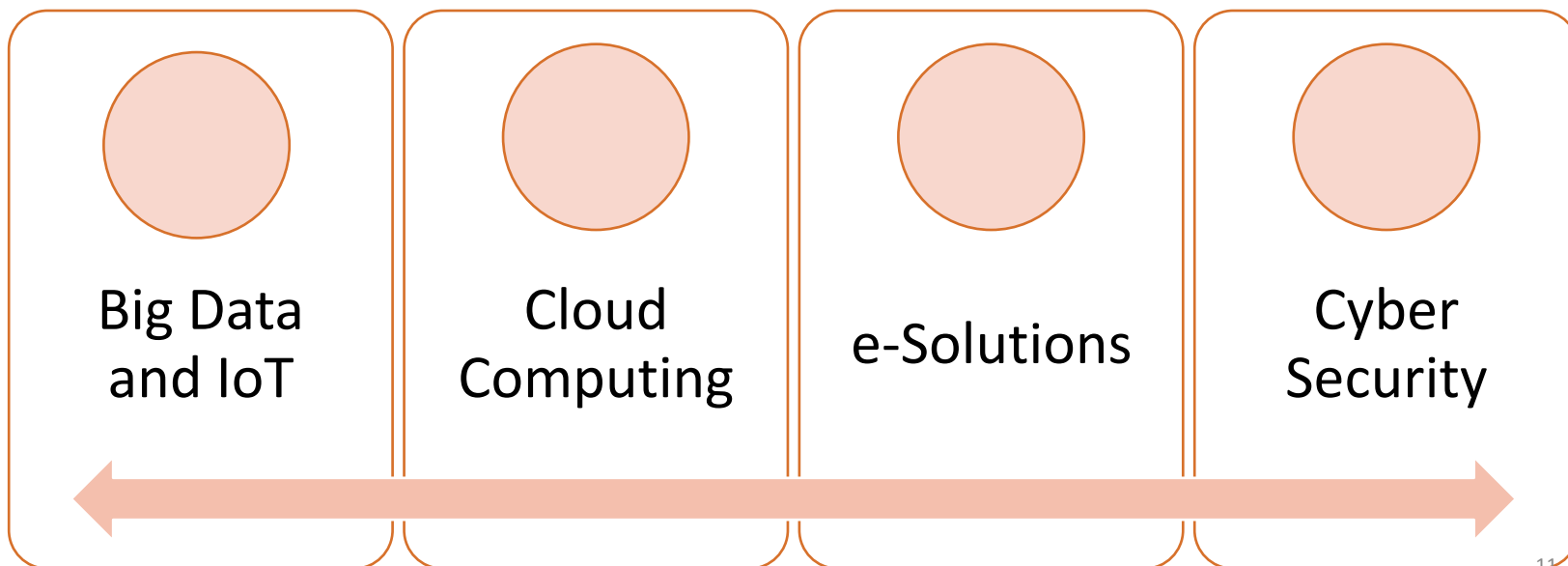
- The idea is based on image evaluations

Progress

- Basic proof-of-concept application already developed.

- 5 research articles with a total impact factor 18 (1 in the previous year)

- More application areas to be explored in the pipeline

- Funding proposals submitted to HEC and ICT R&D

Way Forward 1

- Realignment of the projects inline with the current trends and technology foresight

- Some identified as priority areas by commission on science and technology for development , UN

| Big Data and IoT | Cloud Computing | e-Solutions | Cyber Security |

Cloud Computing with Focus on energy efficiency

- Focal Point: Dr. Majid Iqbal

2% ➡ 12%

2007   **2020**

IT Energy Consumption

– **Accounts for 2% of CO_2 production**

– **Roughly equivalent to aviation industry**

– **IT energy usage doubles every 4 years**

Data source: Green IT: A New Industry Shock Wave, Gartner Symposium/ITxpo,

Big Data

Focal Points: Dr. Sohail Asghar and Dr. Khalid Latif

SOURCE:

Social Media
(sentiment analysis)

Mobile devices
(tracking all objects all the time)

BOTTLENECK: Technology, New architecture, algorithms, techniques required

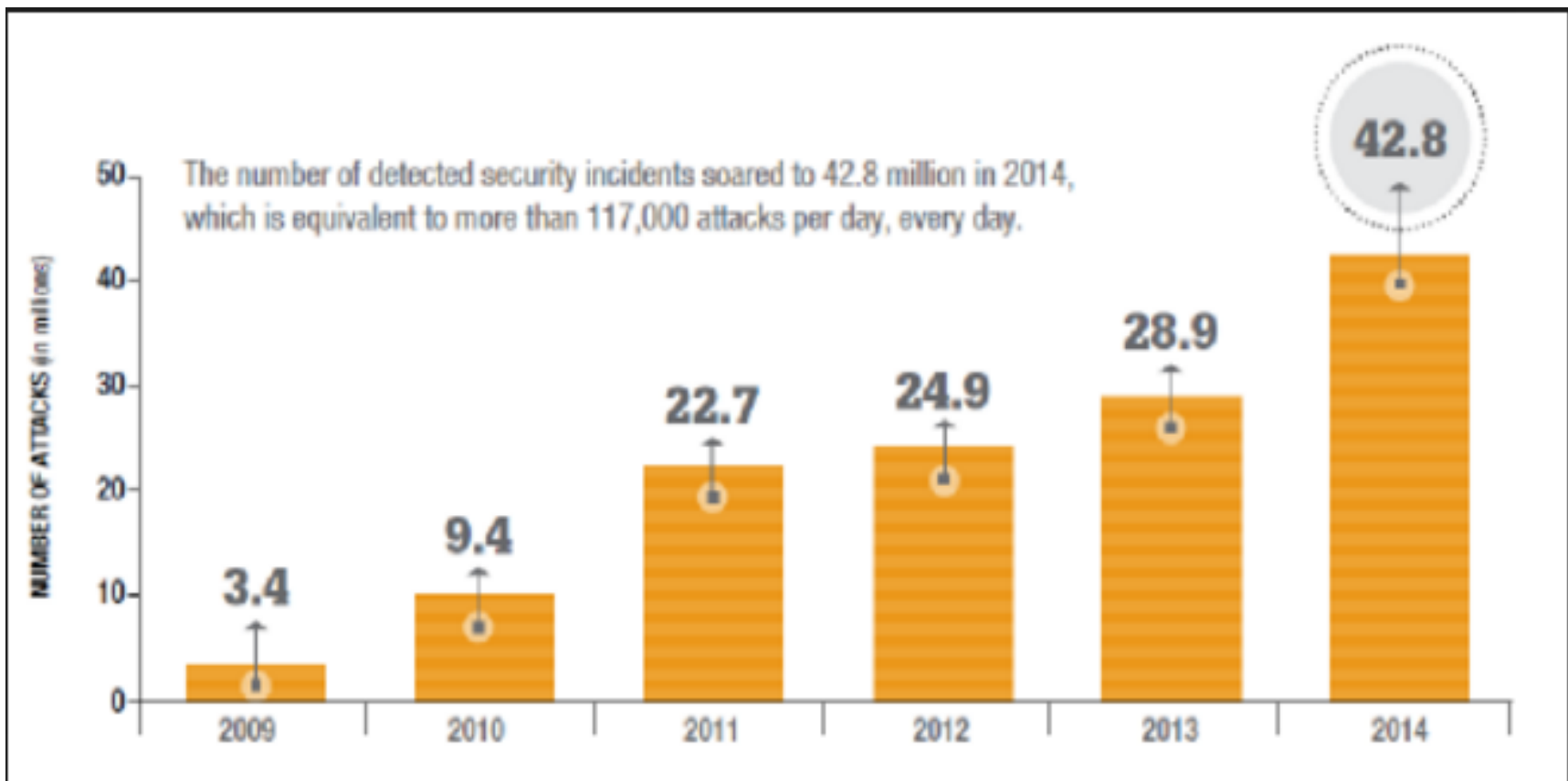**CHALLENGE:** Find, visualize, understand all big data to improve decision making

Information and Network Security

Focal Point: Dr Masoom Alam

Way Forward 2

- Invitations to take onboard researchers from the member countries in the aforementioned areas

- International Conference on **Frontiers of Information Technology** scheduled on December 19~21, 2016.

- Tens of experts from around the world participate in the conference

- Meeting of the **thematic area on ICT** is proposed on the sidelines of FIT to finalize the future agenda

Thank you for your attention!

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