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Report – Webinar

"Big Data for National Security: A Case of Pakistan"

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The Arms Control & Disarmament Centre (ACDC) at the Institute of Strategic Studies Islamabad (ISSI) organised a webinar on "Big Data for National Security: A Case of Pakistan" on May 11, 2022. Speakers included Dr Muhammad Ali Ismail, Principle Investigator, National Center of Big Data & Cloud Computing (NCBC), Karachi, and Dr Hussain Nadim, Executive Director (C &R), Islamabad Policy Research Institute (IPRI) and Ms Aamna Rafiq, Research Associate ACDC-ISSI.

In his welcome remarks, Ambassador Aizaz Ahmad Chaudhry, Director-General ISSI said that big data refers to a collection of data that is enormous and comes at you with great speed and continues to grow. Big data needs to be managed and analysed for it to be useful. This data explosion is touching every aspect of life human security, finance, stock exchange, banking, social media and the agricultural sector. The government, private sector as well as individuals are keen to use big data to their benefit. Big data is also playing a big part in the technological race between the US and China. The statistics are mindboggling where China is manufacturing 250 million computers annually, 25 million automobiles and 1.5 billion smartphones. China continues to focus on producing world consumer goods. Thus, there is a huge technological race going on that will be powered and fuelled by big data. Pakistan needs to be aware of how it can help or undermine our national security.

Earlier in his introductory remarks, Malik Qasim Mustafa, Director ACDC, said that big data means a larger volume of a complex data set, which is received at a fast velocity rate and contains greater variety. According to experts, it can influence every aspect of individual human life and society and the global landscape. It enables everything from access to knowledge and global communication to the delivery of services and infrastructure. Big data analytics is positively transforming the ways of doing business, trade, governance, politics, communications and social services. However, its misuse can equally exacerbate existing national security threats and can create new and unpredictable ones.

Pakistan recognises the potential and reaches of big data for socio-economic development and national security challenges. Big data is an unexplored and uncharted territory in Pakistan. There is a need to identify the potential spectrum for designing the normative and legal framework at the national level for big data.

Dr Muhammad Ali Ismail spoke on "Big Data for Human Security in Pakistan." He said that "Big Data" is a big challenge and it becomes an emerging hot topic. The term was coined around 2014. At the time Pakistani government and HEC also took up the initiative to stay on top of it and create centres like NCBC. In 2018 the Center started working and the idea was to tackle national-level problems. "Big data" is a huge data coming with a huge philosophy and has different types of varieties. It started with three Vs – velocity, variety and volume. Managing big data is a complete echo system, which means that people and systems are continually executing data. In an echo system, one has to store the data, evaluate it, execute it and analyse it. Thus, Big Data also needs the change of complete infrastructure. The use of cloud computing emerged for storing data. Data mining is the new gold. Then it needs to be analysed for which special computers and software are needed.

He said that National Center in Big data and cloud computing's objective was to provide a platform for the development and deployment of cutting-edge solutions related to big data using open-source tools. The Center is working on astrophysics, genomics, tsunami modelling and traffic modelling. Genomics will help understand the biology behind genetic abnormalities to train human resources for the processing of next-generation sequencing data. The astrophysics lab is working on the classification of celestial objects and simulation of the observable universe using data from SUPARCO and international sources. Tsunami modelling is working on a digital elevation model for major cities along with coastal areas. Traffic modelling is working on traffic flow modelling and simulation. All these projects are working and contributing toward human and national security.

Dr Hussain Nadim presented his views on "Big Data Analytics and Information Warfare in Pakistan." He talked about how data can be used to decipher patterns of suicide bombing and identify what people are at risk of radicalisation. He said that compared to 30 years ago now we have the data but not the ability to process it. There are over 40 million social media users alone in Pakistan and are projected to have 80 million social media users in the coming years. These people are creating narratives as opposed to the state. The state does not have the ability to be in the fifth generation of warfare.

The information warfare domain has become more complicated. There may be billions of users tweeting in India or elsewhere about Pakistan. He said that information warfare is defined as actions taken to achieve information superiority by affecting adversary information and information-based processes. He elaborated that the term information warfare is widely used in the contemporary discourse but it is often misunderstood. The goal of information warfare is to destroy the enemy's warfighting capability without firing a single bullet. He highlighted that information warfare does not use tanks, fighter planes, missiles, or nukes to wage war. The weapons in information warfare are computer viruses, malware and Trojan horses. It does not result in mass causalities but the damage it can do to one's critical infrastructure, such as nuclear power plants in the case of a country or critical data in the case of others is a matter of concern. Information warfare is not new but what has changed is the speed of data. The huge data available can be used to map the behaviour of a nation, leaders and individuals. It can also be misused. One can easily build a narrative to manipulate the people and disseminate fake information among the targeted audience based on behaviour and trends. State institutions are fighting fifth-generation warfare with 3rd generation tools. Pakistan needs to invest in managing and regulating big data.

While expressing her views on "Building National Framework for Big Data: The Way Forward for Pakistan," Ms Aamna Rafiq, Research Associate ACDC-ISSI, said that Pakistan is facing a major challenge of insufficient and fragmented legislative, policy and technical frameworks on the big data. The national data ecosystem is suffering due to the absence of effective institutional and technical coordination on data partnerships between the government and other relevant stakeholders. Other challenges include data fragmentation, data silos, limited financial and human resource, insufficient ICT infrastructure and indigenisation. "Pakistan should work on fast data, privacy laws, data partnerships, data diplomacy and new data service models," she said.

The remarks by speakers were followed by a robust discussion and question-answer session. Questions included since the failure of "Big Data" in National Security lies in the human ability to embrace the par and mitigate the limits of algorithms. How can we policymakers at the missions develop this ability in the era of post-truth and what normative and legal framework is available in Pakistan at the national level to regulate "Big Data"?

Speaker responded by saying algorithm development is all about the vision that you are having in your mind and what you want to execute. If we have the right policies and pre-defined objectives with us, these developments accordingly will lead to success. Algorithm designing and failure are all about a thing that you are processing. More importantly, you have clear objectives in your mind and the right policies.

Speakers also responded that at the national level, the normative framework is provided within the policy on a particular issue or area. As we do not have the "Big Data" policy right now. Thus, it is difficult to say what exactly the norms the Government of Pakistan is trying to achieve in this area. Overall, Transparency, accountability and inclusiveness: these values exist in Pakistan. However, regarding the legal framework, we do not have any specific legal document or act that deals with the "Big Data" issue and Data Protection Privacy (DPP). The one proposal or the bill which is currently in the pipeline that is quite controversial and various drops are being discussed, is the personal data protection bill.

In his concluding remarks, Ambassador Khalid Mahmood, Chairman BoG ISSI, stated that the world has been seeing the march of technology. Big data is also part of that technology march. All activities generate data. So far data has been kept in physical form but now it is stored and used in virtual space. This data is helping tackle challenges in many fields like national security, health, communication, education, industry and disaster management. While there are advantages to utilising big data, there is potential for misuse like cyber-attacks on sensitive installations. There is also potential for misuse by the state as well as non-state actors. He said that there is a need to manage and eliminate and regulate the malicious use of data in Pakistan and at the international level. Efforts are afoot at the national, international and regional levels but much more needs to be done. Pakistan is the first country in the SAARC region, which adopted the e-government policy. Pakistan is also trying to make use of it under the CPEC to create a digital corridor. He emphasised the need for a public-private partnership to maximize the benefits of big data.

PICTURES OF THE EVENT