INFORMATION SYSTEM SECURITY: SOME CONCERNS

By

Dr. C.Rangarajan
Former Chairman
Economic Advisory Council to the Prime Minister

10TH International Conference on Information System Security – ICISS
IDRBT, Hyderabad - India December 2014

December 18, 2014

INFORMATION SYSTEM SECURITY: SOME CONCERNS

Dr. C.Rangarajan
Former Chairman
Economic Advisory Council to the Prime Minister

I am happy to be in your midst this morning on the occasion of the 10th International Conference on Information System Security. I congratulate ICISS on the successful completion of a decade of fruitful service. I also congratulate IDRBT for hosting this Conference and doing it in a highly professional way. Hyderabad is second home to me having spent five eventful years here as Governor of the State between 1997 and 2002. It was during that period the seeds for a major IT Hub were sown. Hyderabad has emerged as a major IT centre today with almost all multinational companies having their research and development centres here.

IDRBT is a research and development institute for banking technology established by Reserve Bank of India. I was associated with its inauguration. The Institute brings together three stakeholders – academicians, IT industries and banks. It has played a leadership role in the adoption of technology by the banking industry. I do hope IDRBT will continue to remain as an academic institute with a practical bias.

Technology by changing the production techniques results in improvement in productivity. History has shown that modern economic growth has been inspired by the rapid and persistent upgradation of technology and scientific knowledge. It is estimated that one-third to one-half of the growth experienced by the industrially advanced countries has come from technological progress. Thus technology has emerged as the

principal driving force for long term economic growth. Economic growth results both from slow and steady improvements in technology as well as from "break through" innovations. Break through innovations are, however, unpredictable and such innovations when they come up change the direction of the entire industrial structure.

The world is witnessing a revolution which in its scope and significance may be as far reaching as the first industrial revolution. Some describe this phenomenon as the 'Second Industrial Revolution', others like Alvin Toffler describe it as the "third wave", the first wave having occurred thousands of years ago when men and women settled down to pastoral life. While the first Industrial Revolution ushered in an era of mass production based upon scientific inventions which were basically electromechanical in character, the second Industrial Revolution is rooted in advances in the areas of electronics, computers and communication technology. As a consequence production activities are becoming increasingly 'knowledge intensive' rather than 'resource intensive'. The present state-of-art information technology (IT) has enabled organisations to eliminate completely the differences in time as well as distances. Communications through satellites are fast and effective. Some even call this as 'the end of geography'. Meanwhile computers have shunk in size but grown in potential. They have moved from the desolate computer rooms in the basements to executive desks. 'Network', 'stand alone', 'debugging' and 'Information highway' – all these have become words of common usage. Wherever information is required to be gathered, stored, retrieved and transmitted, information technology comes into place. That means almost every aspect of human activity.

Far reaching changes in computers and communications technology have fundamentally altered the way in which banking is being performed. The basic functions of banking have remained the same but the way in which banking services are provided has altered. The days of 'virtual banking' have arrived. Today one can get most of the banking services without having to visit a bank.

The introduction of the various technology products has had a beneficial impact on both banks and customers. For the customers, the important benefits are Anywhere banking, Internet banking, ATM banking and Mobile banking. It has also facilitated the use of secured debit and credit cards. For the banks, the major benefits are centralization of customer information, centralized transaction process, centralized accounting process, basic MIS reporting and real-time information availability.

IT has had a positive impact on the payment and settlement systems of the country. With some path-breaking initiatives having been implemented in this area, the "electronification" of payment system has become the hall mark of the decade that has goneby. Electronics based payments are superior to paper system in terms of traceability, efficiency, speed and safety. Today, data move on high speed networks enabling banks to provide services to their customers from anywhere in the world. With over 500 million bank accounts, it is estimated that the Indian banking system produces over one billion transactions per day. These are mind-boggling numbers. Storing and processing this humongous data would have been almost impossible without the help of electronic products which use nanotechnology.

With the huge expansion of Banking and other services, the bells of caution have also begun to ring. The perpetual tug of war between convenience and safety assumes critical importance in information systems. The network has to be secure. In fact, security is at the root of technology centric banking. The advent of low cost and pervasive communication channels such as internet has made communication more efficient but not necessarily safe and secure. Today the world is grappling with issues such as computer virus, hacking etc. It is important that these issues are addressed effectively. The need for a secured network for transmission of information becomes essential. Proper identification and authorization of person and transactions is the most essential feature of financial deals but now it is also critical in all communication and information sharing systems which carry critical data. However, we need to go beyond this and ensure that the entire network is safe and secure.

Cyber security is a wider term than information security. As the fabric of interconnectivity has grown, the dangers to the system by criminally manipulating the system have also grown. Cyber security thus implies safeguarding the confidentiality, integrity and availability of data. It in effect assures protection of assets which include data as well as transmission networks. The goal of cyber security is to protect data both in transit and at rest. Cyber attacks aim at a wide spectrum of targets ranging from mere web site defacements to criminal activities such as service disruptions that impact business revenues to e-banking frauds. Although different types of threats such as earthquakes, floods and electrical breakdown may harm a system or an organization what is of importance are intentional threats. Well structured cyber crime can be a threat to a nation's security and economy. In the olden days to destroy an economy,

one of the standard methods adopted by enemy countries is to inject fake currency into the economy. Once the credibility of the currency is destroyed, the economy becomes more vulnerable. Modern day cyber crimes are in fact even more dangerous. They can destroy the banking systems or the communications systems in the country. That is why we need to take appropriate action (a) to make our systems safe, (b) adopt appropriate early warning systems and (c) evolve measures to respond quickly to cyber attacks. These three elements must constitute an appropriate strategy to combat cyber crimes. I am not an expert on information or cyber security, even though I am conscious of the damage that cyber crime can cause. We have an impressive list of experts to speak on the subject at this conference. As the saying goes "to be forewarned is to be forearmed". In countries like India the internet penetration rate is low. Making internet access more affordable is a key issue. Thus the scope for expanding internet activity is high. However, as we expand the cyber and information space, we must take adequate action to keep it safe and secure from attacks.

I wish the Conference all success.