Chapter 3
Cybersecurity: The New Challenge of the Information Society

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ABSTRACT

This chapter introduces the theme of cybersecurity, its importance in the actual scenario, and the challenges of the new Information Society, whose critical development factors are the technological revolution and innovation. The revolution that the information and communications technologies (ICTs) has already brought to modern society is, without doubt, more than visible and concrete, but the great challenge facing us is to harmonize two dimensions, the first relating to the culture of sharing, socialization, and transparency, and the second relating to the issues of security, confidentiality, and privacy. It gives a broad overview in tabular form of the national cybersecurity strategies of the developed countries, United States and United Kingdom, as well as describing a study case, Brazil, is taking its first steps on the path towards cybersecurity. The chapter ends by proposing a model, the key elements for formulating a Brazilian cybersecurity strategy.

INTRODUCTION

The revolution that the information and communications technologies (ICTs) has already brought to modern society is, without doubt, more than visible and concrete within society, with fairly satisfactory results in a number of fields, including electronic commerce, distance education, remote medical services, social networks, scientific and technological development, economic development and promotion of sustainable development. The ICTs sector is highly dynamic and demands fast-paced innovation and multi- and inter-disciplinary actions. All these activities are highly reliant on rapid interchange of information of all types, anywhere in the world, with varying levels

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of quality, integrity, confidentiality and security, information that flows across the global network that is the Internet. Doubtless, the problems raised by the digital inclusion are still with us, as well as the issues relating to privacy on the Internet, and these questions are all on multiple international agendas, together with the question of conserving regional identities and the cultural values of developing and emerging economies.

However, these issues are now part of everyday life, and have been more strongly felt since the end of the nineties. Expressions such as "information society" and "globalized economy" have become commonplace, and to some extent vulgarized by excessive use.

This is notably the territory of high technology and continuous innovation over which companies in developed countries have dominion. Convergent technologies are producing previously unimagined innovations, such as Internet access from mobile phones, enabling people to receive and send emails and even execute banking transactions, and the numerous applications, services and business features that ICTs have been providing are on the increase throughout the world. Innovation in this new economic order has made intensive use of ICTs to strengthen social networks, speed up information and knowledge interchange, forming new habits and ways of living, continuously increasing the trend towards "open innovation" as the driver for national systems of innovation, as put forward for the first time by Chesbrough (Souza & Canongia, 2007).

The virtual space reduces the distances between the people, and it allows the creation of the several networks, which contribute with the expansion of economic, financial, social and technological areas (Lastres, & Albagli, & Legey, & Lemos, 2002:61).

In this virtual space is possible to live and to participate at a "parallel world," as the example, the Second Life, a tool that connect people or enterprises, simulating a new life, one way of the entertainment (Ignácio, & Dotta, 2008). Castro (2007) said there are many motivations to use it. On the side of the individual, represents a new way of the social integration, and on the side of the enterprises, represents a new way to communication with the clients.

Social networking sites can be valuable sales and marketing tools, as well as fun diversions. Inherent in these applications are security risks that can put the individual or a company in a compromising position or at serious risk. A well-informed user will not only help to maintain security, but will also educate others on these issues and establish best practices which can be standardized and updated (Dinerman; 2010).

At this point, it is worth considering the other side of the coin, cause since these advances in the ICTs have also allowed so-called cyber attacks which, in the actual scenario, are on the increase worldwide and represent the great challenge of the century. Therefore, ensuring the availability, integrity, confidentiality and authenticity of information is essential for the social welfare and security of society. ICTs are inherently dual-use in nature, they support robust e-commerce, social networks, and public services, but, can also be used to threaten international peace and international security. Thus, it is important for the formulating strategies and for the decision-making process, especially within the scope of the government. An effort is under way aimed at ensuring the security of society and the interests of the State, the social networks are important vectors of new socio-technical constructions in the modern global society, but threats and vulnerabilities are on the increase in the Information Society. Even the most high-tech companies can't defend themselves against the most sophisticated cyber attackers. Everyone must get involved. Actions need to be done urgently, to provide a robust, collaborative response to the growing cyber threat.

The great challenge facing us is to harmonize two dimensions, the first relating to the culture of sharing, socialization, transparency and knowledge creation, and the second relating to the issues of protection, security, confidentiality and privacy.