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Topic (ii): Challenges and opportunities for statistical offices working in a network environment

**THE TECHNOLOGICAL EVOLUTION IN STATISTICS INSTITUTES:
RISKS AND OPPORTUNITIES BASED ON THE ISTAT EXPERIENCE**

Submitted by ISTAT, Italy¹

CONTRIBUTED PAPER

SUMMARY

I. INTRODUCTION

1. While the changes that the new network technologies have brought to the production process make it possible to benefit from new opportunities and take on new challenges to improve services, they represent elements of risk that, if not assessed in advance, can seriously damage the quality of the production process.

2. This document analyses the risks and opportunities consequent to the technological evolution which

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affect the information-production process in the main phases of collection, processing and dissemination. During the collection process, network technologies lead to streamlined operating procedures, an increase in timeliness and a greater flexibility of applications.

3. During the processing phase, the changeover from a centralized model to a distributed architecture offers advantages in terms of processing power and the optimization of resources. One of the main advantages of distributed architectures is the use of relational databases: these permit data to be shared by different corporate information technology systems. Another benefit is the creation of the data warehouse: this is the set of data structures and instruments required to obtain summarized information.

4. During the dissemination phase, the network becomes a tool capable of transport information, data and analyses of statistics institutes to the desk of each individual, regardless of whether he is an ordinary citizen or an expert researcher. This reduces the time and cost involved in publishing results and means that a larger amount of information is available directly.

5. The enormous opportunities offered through the use of open networks and represented by e-publishing and e-commerce should not be underestimated. However, it is important to avoid the risk of proceeding superficially in order to speed up innovation, while overlooking critical aspects such as the careful design of the systems, their security and the standardization of development instruments.

6. ISTAT represents a context in which an adaptation process is under way that is characterized by the already completed changeover from centralized to distributed systems. This document describes some of the systems implemented at ISTAT, highlighting the risks and opportunities the use of these technologies can involve.