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Topic I: Application of Web technology to integrate statistics

USING WEB TECHNOLOGIES TO INTEGRATE STATISTICS

Supporting paper

Submitted by the Republic of Kazakhstan Statistical Agency¹

SUMMARY

1. The rapid development of the Internet and Web-based technologies has had a considerable influence on the methods and techniques used to collect and process statistical information. Web technology has made such a large number of new functionalities available recently that many methods of data processing at all stages in the statistical production process now need to be reconsidered. Web-based applications are most efficient tools affording access via the Internet or Intranet to information systems and databases. In the architecture of the Republic of Kazakhstan Statistical Agency's corporate information system it was therefore decided to maximize the implementation of Internet/Intranet strategies.

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2. The statistical information system is being developed by integrating database and text/documentary systems, Java and Web-based technologies. This allows us not only to enhance the functionalities of the major subsystems being set up, but also to integrate the disparate information resources created and supported by means of a variety of technologies. Technologies are being introduced to join various information servers, such as SQL servers and Web servers, in one or several different information components of the Statistical Agency's computer network. Staff can access the Agency's common information resources thanks to the introduction and wide use of the Web and its office applications, e-mail systems and systems for collective working.

3. As regards applied software development the Web has had an enormous impact on the design of tools for accessing information resources. The main effect here has been to obviate the need for programming user interfaces, which had represented the lion's share of the time spent by programmers. The browser has now taken over as the all-purpose user interface and onus has been placed on much less highly-skilled developers. All that is actually needed is an ability to work with standard input/output flows. Thus, using Web technology as an all-purpose means of building platform-independent networked information systems when launching statistical data processing applications has offered us a number of advantages - it has simplified the development of information applications and methods of administering the applications and workstations, the applications can run on several different platforms, and we can unify the dialogue interface and workstations and integrate office and database applications. An effective solution to the problem of ensuring "mutual understanding" between different documentary systems is to standardize exchange formats using XML (Extensible Markup Language), which has de facto become the standard for transferring structured data between disparate systems, and to automate electronic interaction between the various record-keeping systems.

4. Web technologies have served as the basis for creating an interface with the "Dynamics of statistical indicators" data repository. Remote users will work on the system using a single interface - a well-known Web browser. Virtually no training in how to work with the system is required because most users are already familiar with the Web browser.
