

THE MUSLIM WORLD: THEORETICAL AND PHILOSOPHICAL PROBLEMS

NINA TSVETKOVA. MIDDLE EAST AND DIGITAL
TECHNOLOGIES

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Abstract. The countries of the Middle East have not started using digital technologies from scratch; in the 12th century, knowledge of astronomy and mathematics, agronomy and medicine, philosophy, as well as astrology and alchemy came to Western Europe through translations from Arabic. By 2021 many countries of the Middle East had achieved a fairly high level of mobile coverage and Internet connection. The UAE can be considered the leader among the Middle East countries in terms of ICT sector development. The article discusses the expansion of digital services with Türkiye as an example, and shows the features of startup development and the use of digital technologies in Türkiye.

Countries of the Muslim East and the History of Mathematics

The countries of the Middle East have not started using digital technologies all of a sudden; this was preceded by a long development of mathematics, physics, and astronomy. In the 12th century, knowledge of astronomy and mathematics, agronomy and medicine, astrology and alchemy, as well as philosophy arrived in Western Europe from the countries of the Middle East on the “wave of translations” from Arabic into Latin. Moreover, even the works of ancient Greek scientists, such as Pythagoras and Euclid, came to Western Europe through translations from Arabic.

People of medieval Europe were able to learn about the decimal system thanks to the translation of Al-Khwarizmi’s treatise on arithmetic made by Gérard de Crémone in 1140. The Arabic treatise and the Latin translation by Gérard have been lost, but a 12th-century paraphrase of it known as “Dixit Algorizmi” (“Thus spake Al-Khwarizmi”) has survived. In the Middle Ages, this new system of numeration became widespread thanks to two works: “Carmen de Algorismo – the Poem about Arithmetic” (1202) by Alexandre de Villedieu (d. c. 1225) and “Algorismus Vulgaris” (“The Ordinary Algorithm”) by Jean de Halifax (or Joannes de Sacrobosco) (c. 1200–1244 or 1256); both works were inspired by al-Khwarizmi’s treatise. “In the 12th century, the wave of translations, which introduced people of Western Europe to new knowledge, brought them the famous “Euclid’s Elements”, which was previously known only by a few fragments” [1, p. 891–892].

The translators of the so-called Toledo School of Translators in Al-Andalus are very well known. They translated the works of Muslim philosophers not only on mathematics and astronomy, but also on medicine and chemistry (or rather its predecessor, alchemy). In addition to the treatise by Al-Khwarizmi, Gérard de Crémone (1114–1187) translated 71 texts, including such works as “Breviarium” (‘Breviary’) by Johannes Serapion (Yahya ibn Sarafyun); “Chirurgie” (‘Surgery’) by Albucasis (Abu al-Qasim al-Zahrawi, early 11th century); “The Canon of Medicine” by