

Tbilisi 2022 Abstract Submission

Title

THE INVESTMENT OPPORTUNITIES OF DIGITAL TECHNOLOGIES IN ARMENIAN WINE PRODUCTION

I want to submit an abstract for:

Conference Presentation

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Keywords

viticulture and winemaking, wine production, digitalization, e-labeling, Internet of things, robotics.

Research Question

The investment opportunities of digital technologies in Armenian wine production.

Methods

There were used analytical and statistical methods

Results

As a result we suggest to invest new more effective digital technologies in wine production stages such as Internet of Things , e-labeling, intelligent wine, smart storing.

Abstract

The XXI century is characterized by the continuous development of technologies, the emergence of digitalization and the definitive take-off of the internet. All these factors have created a new socio-economic and business context—the digital revolution.

Digitalisation has been identified as one of the major trends that will reshape society and the global economic system in the near and long-term future. Today, economic growth goes hand-in-hand with the exploitation of technologies and information, while digitalization is increasingly covering more and more fields of business activities and creating new opportunities for the social and economic development of organizations.

Over the last ten years, agricultural technology has witnessed a dramatic rise in investment, with 6.7 billion dollars

invested in the last 5 years and 1.9 billion in the last year alone. Today's agriculture is continuously increasing the standardization of more sophisticated technologies which include satellite imagery, GPS technology, robots, and temperature, moisture and other sensors. All these advances are helping agriculture to be more efficient, safer and more environmentally friendly.

Some of the main objectives behind the drive for digitalisation are increased efficiency, transparency, productivity, new business models / value propositions and sustainability. The vine and wine sector as a whole can benefit from advances in technology, but these require significant investments in time, money and new capabilities. This is often the main reason behind its slow uptake.

The main objectives of digitalization are:

1. efficiency,
2. productivity,
3. transparency,
4. value proposition and new business models,
5. sustainability.

Main digital trends in the vine & wine Sector are:

1. Internet of Things (IoT) / Sensorisation
2. Artificial Intelligence
3. Robotics
4. Satellite Imagery / Geographical Information Systems (GIS)
5. LIDAR (Laser Imaging Detection And Ranging)
6. Blockchain
7. E-Label
8. E-Certificate
9. Smart Storing.

Viticulture and winemaking are one of the ancient branches of agriculture in the Republic of Armenia. The cultivation of grapes has a history of six thousand years, which is evidenced by historical facts as well as archeological excavations, water management structures, ancient grape processing facilities, preserved seeds, etc. Grape cultivation in Armenia is facilitated by the high potential of solar heat (up to 4800m), mountainous terrain, and significantly higher relief above sea level. The grape cultivation has a rather large vertical area, the orchards are located at an altitude of 800-1600 m above sea level, which affects the grapes, the taste and structure of the wine. Cultivation of grapes in rocky & volcanic soils increases its value. During irrigation, water penetrates deeper into the soil, so in order to provide food, the roots of the vine grow even deeper, eventually reaching the pure natural soil. It also enriches the taste of wine.

It is considered that there are more than 400 local grape varieties in Armenia, of which only 55 are cultivated today. In the 1980s, Armenia supplied 3% of the wine produced in the Soviet Union and 25% of brandy. Despite this, some local grape varieties were lost during the Soviet era, when the planned economy forced Armenian viticulturists to prioritize varieties suitable for brandy production. Viticulture and wine production was negatively affected by the Soviet Reconstruction policy of the 1980s.

In addition, the economic and social conditions created during the first years of Armenia's independence, as well as the factories due to the blockade, reduced the volumes and prices of procurement, as a result of which the farms began to destroy the vineyards. it decreased by 2/3, making about 12 thousand hectares. At the same time, the change in market demand for sparkling wines led to a more than 25-times reduction in wine production.

Later, as a result of large-scale investments in the wine industry and the restoration of former markets, the demand for grapes gradually increased, which was followed by the establishment of new vineyards.

According to the RA NSC data of 2021, about 16,524 hectares of cultivated agricultural areas are used for viticulture purposes mainly in five regions: Armavir (7,186 hectares), Ararat (4,856 hectares), Aragatsotn (1,509 hectares), Tavush (1,346 hectares) & Vayots Dzor (1,205 hectares).

Most of the vineyards in Armenia belong to small rural households. These are fragmented vineyards with an area of up to 1 hectare, in average 0.5-0.8 hectares (in Ararat and Armavir marzes), and in Vayots Dzor marz (which is the cradle of Areni endemic vineyards) the average size of vineyards is even smaller: 0.1-0.3 hectares.

In small viticultural farms, traditional farming technologies are mainly used. They are mostly not subject to quality inspections and often do not meet accepted international standards. This practice often leads to low yields and low quality grapes.

Among of the agricultural products, grape production has the highest level, approximately 91%, of which 97.0% in Armavir marz and 94.2% in Ararat marz. Grape is mainly realised by processing companies.

In Armenia wine production has several millennia of history and is now core of Armenian economy. According to the data of Union of winemakers there are 50 grape processing companies in Armenia, which total production capacity is 265,000 tons per year. Due to investments in winemaking and viticulture, wine production has increased significantly in recent years.

The introduction of digital technologies, which are one of the strategic directions of the economic development of the RA agricultural sector in 2020-2030, can play a great role in improving the competitiveness and stability of viticulture and winemaking.

The digitalization of viticulture and winemaking will lead to higher productivity, resilience to climate change and related risks, access to high quality markets, new market opportunities, improved wine quality, value chain resource utilization and cost-effectiveness.

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THE INVESTMENT OPPORTUNITIES OF DIGITAL TECHNOLOGIES IN ARMENIAN WINE PRODUCTION

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Key words: viticulture and winemaking, wine production, digitalization, e-labeling, Internet of things, robotics.

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