Formed by the Council of Ministers of Ukraine in November of 1918, the National Symphony Orchestra of Ukraine is considered to be one of the finest symphony orchestras in Eastern Europe. Its first conductor was Oleksander Horilyj. Natan Rachlin was the Artistic Director of the Orchestra from 1937 until 1962. Stefan Turchak, Volodymyr Kozhuchar, Fedir Hlushchenko, Igor Blazhkov and Theodore Kuchar consequently conducted the Orchestra as its Principal Conductors. Other conductors who worked with the NSOU include Leopold Stokowski, Igor Markevitch, Kurt Sanderling, Evgeny Mravinsky, Kiril Kondrashin, Evgeny Svetlanov, and Gennady Rozhdestvensky. Soloists who performed with the NSOU include Artur Rubinstein, Yehudi Menuhin, Isaac Stern, David Oistrakh, Sviatoslav Richter, Mstislav Rostropovich, Emil Gilels, Leonid Kogan, Gidon Kremer, Oleh Krysa, Monserrat Caballe, Jose Carreras, Placido Domingo, Andrea Bocelli and Juan Diego Flores.

The NSOU was entrusted with the premier performances of the works of the following composers: Sergei Prokofiev, Dmitri Shostakovich, Aram Khatchaturian, Boris Lyatoshynsky, Valentyn Silvestrov, Myroslav Skoryk, and Evgen Stankovych.

The Orchestra has gained international recognition over a remarkably short period of time. After an appearance in Moscow, Dmitri Shostakovich commented: «This orchestra has as distinguished a group of performers as one would be likely to find anywhere. The ensemble of the orchestra is of the highest level. In addition, the various soloists and instrumental groups within the Orchestra play exceptionally and complement each other beautifully – as would the greatest of the world's symphony orchestras.»

Since 1993, the NSOU has released more than 100 sound recordings which include both Ukrainian and international repertoires. Most of these recordings have received the highest international acclaim. In 1994, the Australian Broadcasting Company (ABC) rated NSOU's recording of Boris Lyatoshynsky's Symphonies No. 2 and No. 3 as «The Best Recording of the Year.» The CD of Silvestrov's «Requiem for Larissa» was nominated for a Grammy Award in 2005. The CD of Bloch and Lees' Violin Concertos was nominated for a Grammy Award four years later.

The NSOU has performed in successful concert tours throughout Australia, Austria, Bahrain, Belgium, Belarus, Canada, China, the Czech Republic, Denmark, France, Germany, England, Hong Kong, Iran, Italy, Japan, Kazakhstan, Lebanon, the Netherlands, Oman, Poland, Portugal, Russia, Slovakia, Spain, Switzerland, United Arab Emirates and the United States of America.