

CYBER THREATS OPTIMIZATION FOR E-GOVERNMENT SERVICES

STEMO Ltd.

Veselin Politov

Problem description.

The innovative role of e-government services is a part of nowadays technological progress in the digital society. STEMO Ltd. is also working in this field since 2008 with a number of successful stories.

Thanks to our experience, one of the key problems, concerning the topic, is the unforeseen emerging set of cyber threats. As these threats are related to both technologies and users, the uncertainties, concerning even short-time forecasts and resulting preventive measures, are quite demanding.

Being rather complex, the problem, at hand, requires experts' data combination with real observations of practically implemented e-government services.

As "optimization in general", concerning multiple risks, originating from future cyber threats is quite unreasonable, a multi-criteria risk matrix for "implemented technologies" and "digital society components of influence" could be defined.

Further on, the defined matrix is studied and optimized, regarding different risk parameters. The resulting multifaceted practical implementation is producing multiple risks' prognosis for future cyber threats severity.

Five key steps for solving the problem could be implemented:

1. Defining "implemented technologies" and "digital society components of influence" multiple cyber risks database.
2. Formulation of optimization models, concerning multiple cyber risks database.
3. Formulation of discrete optimization problems, taking into account the particular forecasting period.
4. Choosing a software environment for solving the formulated problems.
5. Numerical experiments and discussion of results.