

Abstract

PT. INTI (Indonesian Telecommunication Industry). One of the service is goods distribution from warehouse in Jakarta to all minipools in Indonesia.

In Distribution process, a reference is made by NSN (Nokia Siemens Network). It called Built of Quality (BOQ). BOQ is a reference which is used as a measurement for providing goods that will be sent to the next period of time to all minipool. But, in this final project there are five city such as Bekasi, Denpasar, Jakarta, Malang and Medan. The value of BOQ less accomodate with the sum of goods which is necessary. It causing of lack efficiency of time and expense. So, we need an intelligent system that can fulfil the sum of goods and to forecast the sum of goods that will be sent and to optimize based on the parameters that is necessary.

In effort to change the static BOQ. A system is made which can forecast and optimize with computation technique based on evolution and genetics or well known as Evolutionary computation (EC). One of EC algorithm which used for looking solution in forecasting and optimization is Grammatical Evolution(GE) that able to give a better solution to forecast a linear or non-linear data patterns. By using Backous Nour Form (BNF) in mapping genotype to fenotype that make the process easier for looking the best function of forecast and optimization system. Then, find a solution properly.

Based on the observation that had done. The conclusion is that Grammatical Evolution able to give forecast function which have MAPE < 20% for each testing scenario. 20% is a limit about valid or invalid result as a solution. because Grammar that used in BNF every determininethe probability of solution patterns that are built.

Keywords :forecast,optimatation, MAPE, Evolutionary Computation (EC), Grammatical Evolution(GE)