Optimalisasi Ekosistem Pelanggan Advanced Metering Infrastructure (AMI) Dengan Menggunakan Metode Analytic Hierarchy Process (AHP) = Optimization of Advanced Metering Infrastructure (AMI) Customer Ecosystem by Using Analytic Hierarchy Process Method

Soleh Ashari, author

Abstrak

Revolusi industri 4.0 ditandai dengan dimulainya era digitalisasi dunia usaha. Kondisi ini menuntut semua sektor industri bertransformasi melalui digitalisasi proses bisnis. Advanced Metering Infrastructure (AMI) adalah representasi dari transformasi digital teknologi peralatan dan layanan pelanggan yang disampaikan oleh perusahaan utilitas di industri kelistrikan dan sekaligus merupakan inti dari sistem Smart Grid. Dengan dimulainya tahap komersialisasi infrastruktur AMI ke pelanggan di Jakarta, Perusahaan Listrik Negara atau PT PLN (Persero) selaku perusahaan pengelola usaha penyediaan tenaga listrik di Indonesia telah berhasil membangun ekosistem infrastruktur AMI pada tahun 2021. Komersialisasi pembangunan infrastruktur AMI dilakukan secara bertahap sesuai dengan target dan kemampuan pendanaan perusahaan. Diperlukan metode yang tepat dalam fase pengembangan ekosistem AMI agar PT PLN dan pelanggan dapat memaksimalkan fitur dan manfaat teknologi AMI di masa mendatang. Oleh karena itu, perlu dilakukan pembuatan skala prioritas dalam hal pemilihan lokasi pembangunan ekosistem pelanggan AMI. Dengan menggunakan metode Analytic Hierarchy Process (AHP), ditemukan metode pemilihan lokasi pembangunan ekosistem AMI dengan memprioritaskan beberapa hal. Berdasarkan expert judgement dengan total rasio inkonsistensi gabungan sebesar 0,01 diketahui bahwa PLN dapat memprioritaskan lima kriteria penentuan lokasi yaitu permasalahan penyalahgunaan energi listrik (C12) sebesar 10,3%, permasalahan piutang (Bad Debt) (C13) dengan 9,7%, Ketepatan GIS Mapping Pelanggan (C44) sebesar 8,9%, jumlah pelanggan per gardu (C42) sebesar 5,9%, dan kondisi dan aksesibilitas infrastruktur komunikasi (C46) sebesar 5,9% untuk mengoptimalkan ekosistem pelanggan Advanced Metering Infrastructure (AMI).
.....The industrial revolution 4.0 is marked by the commencement of the digitalization era of the business sector. This condition requires all industrial sectors to transform through the digitalization of business processes. Advanced Metering Infrastructure (AMI) is a representation of the digital transformation of equipment technology and customer service delivered by utility companies in the electricity industry and is at the same time the core of the Smart Grid system. With the start of the commercialization phase of AMI infrastructure to customers in Jakarta, the State Electricity Company or PT PLN (a limited liability company) as the company managing the electricity supply business in Indonesia has successfully built an AMI infrastructure ecosystem in 2021. The commercialization of AMI infrastructures takes place in stages in accordance with the company's targets and funding capabilities. The right method is needed in the development phase of the AMI ecosystem so that PT PLN and customers can maximize the features and benefits of AMI technology in the future Therefore, it is necessary to make a priority scale in terms of choosing the location for the development of the AMI ecosystem. By using Analytic Hierarchy Process (AHP) method, a method for selecting AMI ecosystem development location was found by prioritizing several things. Based on expert judgment with a total overall inconsistency value of 0.01 it is known that Jakarta's PLN must prioritize five subcategories are theft loss’s chance (C12) with 10,3%, corporation's bad

debt problems (C13) with 9.7%, Customer GIS Mapping Accuracy (C44) by 8.9%, the number of customers per substation (C42) by 5.9%, and the Condition-Accessibility of Communication Infrastructure (C46) of 5.9% to optimize the Advanced Metering Infrastructure (AMI) customer ecosystem