ABSTRACT

Abstract — The Association of Indonesian Drinking Water Companies (PERPAMSI) provides a digitalization solution, namely smart water metering from the existence of water monitoring problems, but its implementation has not been comprehensive and evenly distributed so that some areas still experience the same problem. This smart water meter planning utilizes Internet of Things (IoT) technology, and uses Low Power Wide Area (LPWA) technology, namely LoRaWAN, because LoRaWAN has characteristics that include wide coverage, low power usage and also long usage resistance. This research examines the comparison of smart water metering implementation planning using new planning (demand) and also if using a third party or third company as a vendor of smart water meter implementation. Based on the technical planning results, LoRaWAN Planning requires at least 66 gateways with an average signal level of -75.78 and SNR value of 9.91 dB. While the Antares Service produces a signal level of -122.24 dBm, and SNR of 7.58 dB. In economic aspects, based on Net Present Value (NPV) both produce values ≥0, Internal Rate of Return (IRR) LoRaWAN Planning 8% while Antares Services 2%, Payback Period (PP) LoRaWAN Planning 1 years 6 months while Antares Services 2 years 4 months and Profitability Index 2.5 and 3.2 respectively. Based on economic aspects, both are feasible to implemented.

Keyword : *smart water meter, IoT, LoRaWAN, Techno-economic.*