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JURNAL PENELITIAN POS DAN INFORMATIKA (JPPI) JPPI is first issued in 2011, with two editions per year, every September and December. This journal aims to broaden and increase knowledge of and serves as a platform for exchanging ideas for researchers, academics and practitioners, especially in the fields of posts, broadcasting, telecommunications and informatics. Articles published in the journal are those of academic papers, research reports, surveys, research briefing, thesis, secondary data analysis, ideas, theoretical conceptual reviews, and methodological in the field which are original and has never been published in other media.



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FOREWORD FROM EDITOR-IN-CHIEF

It is our great pleasure to publish the second issue of the JPPI in 2020, namely Volume 10 No.2 (December 2020). All published papers have gone through rigorous reviews by qualified editors and reviewers. Even though it is still in the Covid-19 pandemic which spread is increasing and the confusion of information on the integration of all research tools into the National Agency for Research and Innovation which causes concern for all researchers in government R&D institutions in Indonesia. The editors of this journal still have a high commitment to maintaining the quality of each manuscript in the second issue. This was done to accelerate compliance with International Journal standards for JPPI. In this issue, the journal contains six articles discussing various aspects and applications of information and communications technology (ICT). The contributors to this issue come from various national institutions, including Kementerian Komunikasi dan Informatika, Institut Teknologi Telkom Purwokerto, Institut Teknologi dan Bisnis Asia Malang, and Universitas Budi Luhur.

This issue begins with a paper entitled "Synergy of Over-the-Top Services Operation and Telecommunication Operators in Indonesia." written by Amry Daulat Gultom. This paper points out that the presence of Over-the-Top (OTT) services in Indonesia threatens telecommunication operators' revenue, indicated by the decline of CAGR up to 28% in 2018. The paper further elaborates policy recommendations to ensure fair business competition and the obligation of cooperation between OTT service providers and telecommunication operators, and the strategy to increase local OTT competitiveness.

The second paper is written by Fransiska Sisilia Mukti. The paper title is "Access Point (AP) Placement Recommendation Using Cost-231 Multiwall Propagation (Case Study: Malang Institute of Asia)". This paper aims to provide recommendations of access point placements by understanding the signal distribution pattern using the Cost-231 Multi-Wall (MWM) propagation model by taking the case of the Malang Institute of Asia building. According to the analysis, the paper suggests ten optimal points for AP placements to provide excellent signal coverage for users.

The third paper is titled "Economic Value of Equalization of Access and ICT Infrastructure for Rural Communities," written by Vidyantina Heppy Anandhita. The study was conducted to identify the economic benefits of a government initiative to provide information and communication technology infrastructure, particularly in 3T villages. By utilizing Ranti Generic IS/IT Business Value Table, the study shows that in an ideal condition, the initiative can increase cost efficiency and business capacity and expand market segmentation.

The fourth paper is "SLA and Network Availability Mechanism Implementation Scheme for Customer Service Provider." This paper is written by Hillman Akhyar Damanik and Merry Anggraeni. The paper offers a modeling design and implementation of a Zabbix System-based monitoring system expected to autonomously observe and report the availability and Service Level Agreement (SLA) of a network system. It is believed that the proposed system can help service providers manage their increasingly complex networks cheaply and easily.

The fifth paper, titled "A Study on the Potential of the Development of Software Applications and Digital Content Industrial Ecosystem in Indonesia," was authored by Ahmad Budi Setiawan. In this paper, the author attempts to map the potential of Indonesia's digital content and software application industries. Furthermore, the paper also offers a few recommendations for the government concerning the local telematics industry to gain a competitive advantage. For instance, the government has to facilitate the increase of human resources' capacity, support local digital content and software application industries, help the marketing and distribution of their products, and facilitate copyright and intellectual property management.

The last paper is written by Siti Khomsah, entitled "Naive Bayes Classifier Optimization on Sentiment Analysis of Hotel Reviews." This paper proposes a mechanism to acquire optimal machine learning in the sentiment analysis process. The paper confirms that Particle Swarm Optimization (PSO) is capable of increasing Naive Bayes Classifier accuracy, indicating its ability to solve the problem in text-based sentiment analysis.

We hope that the publication of this second issue in full English will further increase this journal readership and bring us closer to our aspirations to internationalize the JPPI and we can provide a better manuscript next year

Jakarta, Desember 2020 Editor-in-Chief

Abstract Sheet
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Amry Daulat Gultom

Synergy of Over The Top Services Operation and Telecommunication Operators in Indonesia

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ABSTRACT

Across the Europe, over-the-top services had impacts on telecommunications operator revenue decrease and data traffic significant increase. Telecommunication operators have to pay more costs in terms of increasing network capacity to maintain service quality and increase revenue from the emerging data services. This has become the concern of telecommunication regulators and operators in Indonesia so that research is needed to further examine the impact of growth in OTT services on telecommunications operators in Indonesia. This study uses descriptive and benchmark analysis of interview data and literature studies. The results show that the growth of OTT services greatly affect the income of Indonesian telecommunications operators, especially on voice & SMS services, which experienced the largest CAGR decline in 2018 by 28%. There is a need for policies related to the implementation of OTT services in Indonesia, which regulate fair business competition between OTT service providers and operators, obligation to cooperate with operators and increase the competitiveness of local OTT services.

Keywords : OTT, over the top, telecommunication

model. The signal distribution pattern is used as a reference in projecting indoor Access Points (AP) placement in Malang Institute of Asia. The MWM approach estimates the actual radio wave propagation value for measurements are made by considering obstacles between APs and user devices. The study recommends 10 optimal points of AP placement for the 1st, 3rd and 4th-floors, and 7 optimal points for the 2nd-floor. Determination of these placement points was based on the estimated signal strength obtained by users, at -50dBm up to -10dBm, which is the range for good and excellent signal category.

Keywords: prediction, access point, propagation, indoor, Cost-231 Multi Wall

Vidyantina Heppy Anandhita

Economic Value of Equalization of Access and ICT Infrastructure for Rural Communities

Jurnal Penelitian Pos dan Informatika Vol. 10 No. 2, Page 113-123

ABSTRACT

The government has initiated access and telecommunication infrastructure equalization program in Indonesia by deploying BTS to provide signals in the frontier, outermost, and least developed (3T) regions and providing rural internet access services. Government investment through the provision of telecommunications and internet access in rural areas is expected to be able to provide economic benefits for improving the people's welfare. This study aims to identify the economic benefits of equitable access and infrastructure in rural areas (mainly 3T villages) with the Ranti Generic IS/IT Business Value Table. Based on the study results, it can be concluded that in ideal conditions, equitable access to the internet and telecommunications infrastructure can contribute directly to cost efficiency for rural communities by reducing distribution costs and telecommunications costs. Also, the use of telecommunications and internet access can improve the people's welfare by increasing business capacity and expanding market segmentation.

Fransiska Sisilia Mukti

Access Point Placement Recommendation Using Cost-231 Multiwall Propagation (Case Study: Malang Institute of Asia)

Jurnal Penelitian Pos dan Informatika Vol. 10 No. 2, Page 103-112

ABSTRACT

This study provides an overview of signal distribution pattern using Cost-231 Multi-Wall (MWM) propagation

<p>Keyword: Generic IS/IT Business Value, acces and infrastructure, internet</p>	<p>Keyword: Zabbix, Alert Parameter, Open Source, ICMP, Raspbian, Raspberry Pi, Availability, SLA</p>
<p>Hilman Akhyar Damanik, Merry Anggraeni</p> <p>SLA and Network Availability Mechanism Implementation Scheme for Customer Service Provider</p> <p>Jurnal Penelitian Pos dan Informatika Vol. 10 No. 2, Page 125-144</p> <p style="text-align: center;">ABSTRACT</p> <p>Increasingly complex network heterogeneity and network monitoring tasks become the management concentration of a large distributed production infrastructure with various business services requiring a centralized control monitoring system, with increasing network size, heterogeneity and complexity. The network monitoring and management solutions available are not only expensive but also difficult to use, configure and maintain. Manually routing pins to the wrong device on a large complex network is very complicated and time-consuming for Service Provider (SP). Thus, it is necessary to have an automatic system that immediately reports to the network Service Provider (SP) monitoring system regarding the type of error or alert, Network Availability and Service Level Agreement (SLA). This research presents the modeling design and implementation of Network Availability and SLA network systems for Service Provider (SP) organizations, by being based on open-source programming tools (Zabbix System) and intelligently integrating to monitor network devices, especially to get Network Availability and SLA parameters and values on a customer or customer. Monitoring Customers devices in the network in the form of a module alert parameter that will be applied so that it is seen and can be said to be a universal Plug & Play technology concept (UPnP). Monitoring system developed will provide value and quality of service (qos) output parameters in the form of measuring and taking test value parameters Network Availability and SLA modeling, which will produce an accurate Service Level Agreement (SLA) value parameter test, and become a reference for an agreement between a service provider and a customer. As a guarantee or link availability for the services provided by Service Provide (SP) to customers. With the SLA value fulfilled at 99.9% with a 99.5% agreement, Network availability is met with a percentage of 98.89% and Down time with a percentage of only 1% of the agreement 2%, and the latency value of the terrestrial transmission media obtained is 2 ms, from the 8 ms agreement and the obtained VSAT transmission media is 500-600 ms from the agreement latency value is 700 ms.</p>	<p>Ahmad Budi Setiawan</p> <p>A Study on The Potential of The Development of Software Applications and Digital Content Industrial Ecosystem in Indonesia</p> <p>Jurnal Penelitian Pos dan Informatika Vol. 10 No. 2, Page 145-156</p> <p style="text-align: center;">ABSTRACT</p> <p>The phenomenon of digitalization has changed human civilization at a very massive level in various aspects of life. In line with the advancement of ICT, so have the development of innovation and the software and digital content industry. Competition in the software industry is starting to develop. The ability to increase companies' production is changing significantly. Industry competition in the globalization process requires existing companies to be able to develop industrial capabilities with all industrial models and policies. The role of the government remains an important factor in creating an environment in which the domestic telematics industry can gain a competitive advantage. This study aims to map the potential of the digital content and software application industry in Indonesia. This study is conducted qualitatively through literature studies. The study produces a mapping of the potential for the software and digital content industry in Indonesia. This study recommends increasing the capacity of human resources in the field of ICT and further regulatory support to support the growth of the software and digital content industry in Indonesia.</p> <p>Keywords : Potential Development, Industry, Software Applications, Digital Content</p> <hr/> <p>Siti Khomsah</p> <p>Naive Bayes Classifier Optimization on Sentiment Analysis of Hotel Reviews</p> <p>Jurnal Penelitian Pos dan Informatika Vol. 10 No. 2, 157-168</p> <p style="text-align: center;">ABSTRACT</p> <p>Feature extraction plays an important role in the sentiment analysis process, especially of text data. The Naive Bayes Classifier performs well on low feature dimensions. However, the accuracy provided is not optimal. To acquire optimal machine learning model, information gain method, evolutionary algorithm, and swarm intelligent algorithm are applied. The objective of this study is to determine the performance of the Particle Swarm Optimization (PSO) to optimize the</p>
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Naive Bayes Classifier. Vectorization of words is carried out using TF-IDF. In order to produce high PSO performance, the PSO-NBC model is tested with several parameters, namely the number of particles ($k = 3$), setting of the number of iterations and inertia weight, individual intelligence coefficient ($c1 = 1$), and social intelligence coefficient ($c2 = 2$). Inert weight is calculated using the formulation ($w = 0.5 + \text{Rand}([-1,1])$). In conclusion, PSO is able to solve the problem space of text-based sentiment analysis. PSO is able to optimize the accuracy of Naive Bayes at a value of 89% to 91.76%. PSO performance is determined by the parameters used, especially the number of particles, the number of iterations, and the weight of inertia. A large number of particles accompanied by an increase in inertia weight can increase accuracy. The number of particles 20-30 has reached the optimal accuracy.

Keywords: Sentiment Analysis, Optimization, Features-selection, Naive Bayes Classifier, Particle Swarm Optimization