

Model implementasi smart logistic transport: analisis ekonomi teknik pada penerapan Internet of Things (IoT) = The implementation model of smart logistic transport: engineering economic analysis of Internet of Things (IoT)

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Abstrak

AEC (Asean Economic Community) 2015 menimbulkan beberapa tantangan dalam industri logistik. Oleh karenanya diperlukan peranan dan penerapan layanan IoT (Internet of Things) untuk meningkatkan daya saing, yaitu berupa implementasi layanan smart logistic transport. Tesis ini mengusulkan model implementasi smart logistic transport di Indonesia yang berfokus pada sistem cold supply chain.

Tesis ini bertujuan melakukan analisis ekonomi teknik dalam bentuk analisis komparatif layanan smart logistic transport terkait pemilihan teknologi jaringan 2G/3G/4G dan fitur MDVR yang dibedakan menjadi Skenario 1-2-3. Sedangkan pengembangan model implementasi didapatkan setelah melakukan wawancara dengan application customers, technological vendors, regulator & network provider.

Berdasarkan trial implementasi smart logistic transport bulan September – Oktober 2015 dengan analisis ekonomi teknik, didapatkan layanan not feasible hanya pada skenario 3 untuk unit "CD6", di jaringan 4G. Hal ini terkait masih mahal dan belum banyak tersedianya modul m2m gateway dan MDVR teknologi jaringan 4G. Sehingga diperlukan jumlah minimum truk "CD6" dan "Fuso" pada tiap skenario agar implementasi menjadi feasible. Untuk model implementasi layanan terdiri atas 11 fitur, yaitu 2 fitur basic dan 9 fitur advanced. Dikarenakan bisnis proses yang dinamis maka konsumen membutuhkan fitur advanced yang lebih spesifik di masa akan datang. Dengan melihat peluang tersebut maka local content developer dapat menciptakan dan mengembangkan fitur yang relevan.

.....Asean Economic Community 2015 has been creating more challenges in logistics industries in Indonesia. The implementation of IoT in logistic services is needed for increasing competitiveness leading to the establishment of so-called "smart logistic transport". We propose the implementation model of the Indonesian Smart Logistic Transport, by focusing on cold supply chain system.

We have conducted an engineering economic analysis of the smart logistics transport, in relation with the mobile network platform of 2G, 3G, 4G. Development of the implementation model is completed by conducting in-depth interviews with the application customers, technological vendors, regulator and network provider.

Based on implementation trial in September-October 2015 and engineering economic analysis, we have found that Smart Logistic Transport is not feasible only on scenario 3 for "CD6" at 4G network. Such condition is caused by the expensive price of 4G's M2M gateway module and MDVR. Therefore, it requires the minimum amount of implemented truck to make implementation feasible. Our proposed model has signified 11 features, i.e. 2 basic feature and 9 advanced features, formulating the Indonesian smart logistics transport system. Due to the dynamic business process, customers may need specific advanced features in the future. By taking such opportunity, Indonesian local content developer can work to develop any relevant application features, which is needed by the logistic companies in the near future.