Pengembangan Model Penerapan Blockchain pada Layanan Logistik Indonesia = The Development of Blockchain Implementation Model for The Logistic Services in Indonesia.

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Abstrak

ABSTRAK
Blockchain ternyata memiliki potensi untuk dikembangkan di sektor lain salah satunya adalah dalam proses pengiriman barang di sektor logistik. Logistik adalah kunci penggerak perekonomian karena berkaitan erat dengan distribusi barang dan pemerataan. Infrastruktur dan kualitas layanan adalah salah satu faktor penting dalam distribusi barang. Kedua hal tersebut berpengaruh terhadap proses dan biaya logistik. Proses logistik merupakan sebuah proses kompleks yang melibatkan beberapa pihak seperti perusahaan transportasi pengangkutan, pergudangan, dan pengiriman last-mile. Sementara biaya logistik sangat berkaitan erat dengan proses logistik. Pilihan armada yang digunakan, rute perjalanan, proses bongkar muat, hingga perjanjian kerjasama pengiriman barang sangat mempengaruhi proses dan biaya logistik. Blockchain menjadi sistem yang mampu menawarkan real-time location tracking, pembagian pekerjaan, invoice, bukti pengiriman digital, dan sistem pembayaran yang terintegrasi yang mampu membantu pelaku dan penyedia jasa logistik untuk memangkas proses logistik yang tidak perlu dan menghemat biaya. Untuk mendapatkan gambaran riil dari penerapan blockchain di sektor logistik, serta manfaat yang bisa diperoleh dari penerapan tersebut, peneliti akan menggunakan metode benchmarking. Benchmarking dilakukan dengan mengumpulkan informasi mengenai perusahaan logistik yang sudah terlebih dahulu menggunakan blockchain dalam aktivitas bisnisnya. Berdasarkan hasil benchmarking, akan diperoleh gambaran mengenai fungsi, fitur, serta keuntungan dari penggunaan blockchain untuk proses logistik. Setelah itu, dilakukan analisis potensi dan pengembangan model penerapan blockchain sesuai dengan kebutuhan sektor logistik di Indonesia. Berdasarkan hasil penelitian, didapatkan beberapa kharateristik blockchain yang bisa diterapkan di Indonesia. Karakteristik pertama adalah kolaborasi antar pelaku logistik, penyedia jasa logistik, pihak-pihak lain yang dituangkan dalam sebuah konsorsium blockchain. Karakteristik kedua adalah private blockchain yang dilengkapi dengan kriptografi untuk menjamin keamanan data dan komunikasi user didalam sistem blockchain. Karakteristik terakhir adalah efisiensi logistik dan fitur smart-contract yang menjadi tujuan utama dari pembuatan model ini. Pembuatan dan negosisasi kontrak, perjanjian kerjasama, dan dokumen pembayara n dapat dilakukan dengan mudah dan cepat sehingga dapat meningkatkan transparansi dan menekan biaya pihak ketiga dalam pembuatan kontrak.
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ABSTRACT
Blockchain apparently has the potential to be developed in other sectors, one of which is in the process of shipping goods in the logistics sector. Logistics is the key driver of the economy because it is closely related to the distribution of goods and equity. Infrastructure and service quality are important factors in the distribution of goods. Both of these affect the logistics process and costs. The logistics process is a complex process involving several parties such as freight transportation, warehousing and last-mile shipping companies. While logistics costs are very closely related to the logistics process. The choice of the fleet

used, the route of travel, the process of loading and unloading, to the cooperation agreement on the shipment of goods greatly affects the process and logistics costs. Blockchain is a system that is able to offer real-time location tracking, division of work, invoices, proof of digital shipments, and an integrated payment system that is able to help actors and logistics service providers to cut unnecessary logistics processes and save costs.

To get a real picture of the application of the blockchain in the logistics sector, as well as the benefits that can be obtained from the application, researchers will use the benchmarking method. Benchmarking is done by gathering information about logistics companies that have used blockchain in their business activities. Based on the results of benchmarking, an overview will be obtained of the functions, features, and advantages of using the blockchain for the logistics process. After that, an analysis of the potential and development of a blockchain implementation model is in accordance with the needs of the logistics sector in Indonesia.

Based on the results of the study, obtained several characteristics of the blockchain that can be applied in Indonesia. The first characteristic is collaboration between logisticians, logistics service providers, other parties as outlined in a blockchain consortium. The second characteristic is the private blockchain which is equipped with cryptography to ensure data security and user communication within the blockchain system. The final characteristic is logistical efficiency and smart-contract features which are the main objectives of making this model. Making and negotiating contracts, cooperation agreements, and payment documents can be done easily and quickly so as to increase transparency and reduce the cost of third parties in making contracts.