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**SISTEM INFORMASI LAPORAN *ACTIVITY SALES* DI PT TELKOM INDONESIA TELEKOMUNIKASI DAERAH SLAWI BERBASIS *WEBSITE* DENGAN METODE ANALISIS *PIECES***, dibawah bimbingan Bambang Ismanto, M.Kom. dan Tri Agus Setiawan, M.Kom. 218 + XXVI Halaman / 229 Gambar / 36 Tabel / 4 lampiran / 30 Pustaka

### **ABSTRAK**

PT Telkom Indonesia Telekomunikasi Daerah Slawi merupakan unit layanan konektivitas milik negara yang beroperasi di bawah naungan Badan Usaha Milik Negara (BUMN). Unit ini memiliki tim *sales* yang terdiri atas *Sales Agency* dan *Account Representative*, yang berperan penting dalam pencapaian target penjualan dan perluasan jangkauan layanan kepada pelanggan. Dalam pelaksanaannya, proses pelaporan *activity sales* masih mengandalkan aplikasi *Telegram* sebagai media pelaporan manual kepada kepala kantor. Kondisi ini menimbulkan berbagai permasalahan operasional, antara lain: data aktivitas tidak tersaji secara *real-time*, riwayat laporan mudah tertimbun oleh pesan yang tidak berkaitan, kesulitan dalam merekap data untuk evaluasi bulanan, serta ketidakmampuan sistem untuk menyimpan informasi pelanggan secara lengkap seperti nomor telepon, alamat, dan riwayat kunjungan. Selain itu, sistem pelaporan berbasis web yang telah tersedia secara terpusat di Jakarta pun memiliki keterbatasan, yakni kepala kantor tidak dapat memantau laporan secara langsung dan *real-time*.

Penelitian ini bertujuan untuk merancang dan membangun Sistem Informasi Laporan *Activity Sales* berbasis *website* di PT Telkom Indonesia Telekomunikasi Daerah Slawi menggunakan metode analisis *PIECES* (*Performance, Information, Economy, Control, Efficiency, and Services*). Metode ini digunakan untuk menganalisis secara komprehensif kelemahan sistem yang sedang berjalan dari enam dimensi, sehingga sistem pengganti yang dirancang mampu memberikan solusi yang efektif dan terukur. Pendekatan penelitian yang digunakan adalah

kualitatif deskriptif, dengan metode pengumpulan data melalui wawancara tidak terstruktur kepada *Head of Office*, kuesioner kepada kepala kantor dan tim *sales*, serta observasi langsung terhadap proses *activity sales* di lapangan.

Secara teknis, sistem dikembangkan menggunakan model pengembangan perangkat lunak *Waterfall* (SDLC) yang bersifat linear dan berurutan, mencakup tahapan: analisa kebutuhan, desain sistem, implementasi, pengujian, dan *support*. Sistem dibangun menggunakan bahasa pemrograman PHP dengan *framework* Laravel Jetstream sebagai fondasi arsitektur MVC (*Model-View-Controller*). Manajemen hak akses dan *role* pengguna dikelola menggunakan paket Spatie Laravel Permission, yang mendukung tiga level hak akses: *Superadmin*, *Admin*, dan *User* (tim *sales*). Basis data yang digunakan adalah MySQL, dengan desain skema relasional yang mencakup tabel *activities*, *targets*, *sectors*, *subsectors*, *ecosystems*, *datausers*, dan *users*. Sistem mendukung fitur unggah foto lokasi dengan validasi format JPEG, PNG, JPG, dan WebP dengan kapasitas maksimal 5 MB, serta status persetujuan laporan (*pending*, *approved*, *rejected*).

Fitur utama sistem mencakup: (1) *Dashboard* yang menampilkan rekap *activity sales*, target, dan data pengguna secara *real-time*; (2) manajemen *activity* meliputi pencatatan nama usaha, alamat, sektor, subsektor, ekosistem, jenis bangunan, data PIC, nomor HP, tagihan layanan, dan keterangan tambahan; (3) manajemen target bulanan per tim *sales*; (4) pengelolaan data pelanggan beserta riwayat kunjungan; (5) fitur ekspor laporan; serta (6) antarmuka yang responsif dan *mobile-friendly* agar mudah diakses kapan pun dan di mana pun oleh tim *sales*. Desain sistem menggunakan UML yang terdiri dari diagram *Use Case*, *Activity Diagram*, *Class Diagram*, dan *Sequence Diagram*.

Pengujian sistem dilakukan menggunakan tiga metode: (1) *White Box Testing* dengan analisis alur logika pemrograman menggunakan *flowgraph* dan Cyclomatic Complexity McCabe yang menghasilkan nilai  $CC = 4$  (risiko rendah); (2) *Black Box Testing* terhadap seluruh fungsi sistem yang mencakup login, manajemen *activity*, target, sektor, subsektor, ekosistem, dan pengelolaan pengguna; serta (3) *User Acceptance Test* (UAT) yang melibatkan pengguna akhir

secara langsung. Hasil pengujian menunjukkan bahwa seluruh fungsi sistem berjalan dengan baik tanpa kesalahan dan mendapatkan penerimaan yang positif dari pengguna akhir. Dengan demikian, sistem *Activity Sales* berbasis web ini dinyatakan berhasil dan memberikan kontribusi positif terhadap efisiensi pelaporan aktivitas penjualan di PT Telkom Indonesia Telekomunikasi Daerah Slawi.

**Kata Kunci:** *Sistem Informasi, Activity Sales, PT Telkom Indonesia, Website, Metode PIECES, Laravel Jetstream, Spatie, MySQL, Waterfall, Black Box, White Box, UAT*

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### **ABSTRACT**

PT Telkom Indonesia Telekomunikasi Daerah Slawi is a state-owned connectivity service unit operating under Indonesia's state-owned enterprise (BUMN) framework. The unit's sales team — comprising a *Sales Agency* and an *Account Representative* — plays a critical role in meeting sales targets and expanding service coverage. In current practice, the sales activity reporting process relies entirely on the *Telegram* application as a manual reporting medium to the branch head. This approach has led to several operational issues: activity data is not presented in real-time, historical reports are easily buried under unrelated messages, monthly data compilation for evaluation purposes is cumbersome, and the system cannot store complete customer information such as phone numbers, addresses, and visit history. Furthermore, the existing centralized web-based reporting system hosted in Jakarta has its own limitations — the branch head cannot directly monitor sales team reports in real-time.

This study aims to design and develop a web-based Sales Activity Report Information System at PT Telkom Indonesia Telekomunikasi Daerah Slawi using the *PIECES* analysis method (*Performance, Information, Economy, Control, Efficiency, and Services*). The *PIECES* framework was applied to comprehensively evaluate the weaknesses of the existing system across six dimensions, enabling the design of a replacement system that provides effective and measurable solutions. A descriptive qualitative research approach was employed, with data collected through unstructured interviews with the Head of Office, questionnaires distributed

to the branch head and sales team members, and direct field observation of the sales activity workflow.

Technically, the system was built using the *Waterfall* Software Development Life Cycle (SDLC) model — a linear, sequential methodology encompassing the stages of requirements analysis, system design, implementation, testing, and support. The system was developed using the PHP programming language with the Laravel Jetstream framework as the architectural foundation, following the MVC (*Model-View-Controller*) pattern. User role and access management is handled by the Spatie Laravel Permission package, which supports three access levels: *Superadmin*, *Admin*, and *User* (sales team). The database engine used is MySQL, featuring a relational schema encompassing tables for *activities*, *targets*, *sectors*, *subsectors*, *ecosystems*, *datausers*, and *users*. The system supports location photo uploads with format validation (JPEG, PNG, JPG, WebP, up to 5 MB) and a multi-status report approval workflow (*pending*, *approved*, *rejected*).

The key features of the system include: (1) a *Dashboard* displaying a real-time summary of sales activities, targets, and user data; (2) activity management covering business name, address, sector, subsector, ecosystem, building type, PIC contact details, phone number, service billing, and additional notes; (3) monthly target management per sales team member; (4) customer data management with visit history tracking; (5) report export functionality; and (6) a responsive and mobile-friendly interface allowing the sales team to access the system anytime and anywhere. The system design was modeled using UML diagrams, including Use Case Diagrams, Activity Diagrams, Class Diagrams, and Sequence Diagrams.

System testing was conducted using three methods: (1) *White Box Testing*, which analyzed the programming logic flow through flowgraph construction and McCabe's Cyclomatic Complexity calculation, yielding a CC value of 4 (low risk); (2) *Black Box Testing*, covering all system functions including login, activity management, target setting, sector, subsector, and ecosystem management, as well as user administration; and (3) *User Acceptance Testing* (UAT) conducted directly with end users. All testing results confirmed that the system functions correctly

without errors and received positive acceptance from end users. Accordingly, the web-based Sales Activity System was declared successfully implemented and demonstrated a positive contribution to the efficiency and accuracy of sales activity reporting at PT Telkom Indonesia Telekomunikasi Daerah Slawi.

**Keywords:** *Information System, Sales Activity, PT Telkom Indonesia, Website, PIECES Method, Laravel Jetstream, Spatie, MySQL, Waterfall, Black Box Testing, White Box Testing, UAT*