

## INTISARI

### PERANCANGAN *HIGH FIDELITY PROTOTYPE* PLN MOBILE DENGAN PENDEKATAN *USER-CENTERED DESIGN* MENGGUNAKAN METODE AHP DAN TOPSIS

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*Prototype* adalah model dari produk yang digunakan untuk memberikan konsep atau gambaran dari ide yang akan dibuat. Proses perancangan *prototype* perlu mempertimbangkan kebutuhan dari calon pengguna. Aplikasi PLN Mobile merupakan salah satu aplikasi yang para penggunanya memiliki beberapa masalah saat menggunakannya. Untuk memecahkan masalah yang ada, penelitian ini menggunakan pendekatan *user centered design*, metode *Analytic Hierarchy Process* (AHP), dan metode *Technique for Order Performance of Similarity to Ideal Solution* (TOPSIS) .

Pada penelitian ini menggunakan metode *google design sprint* sebagai langkah langkah yang digunakan dalam merancang *prototype* PLN Mobile. Hasil analisis terhadap aplikasi PLN Mobile versi lama didapatkan dari pelaksanaan *usability testing*. Hasil *usability testing* menjadi acuan dalam membuat tiga rancangan *prototype* PLN Mobile versi baru. Pemilihan rancangan terbaik dibantu oleh sistem pendukung keputusan yakni menggunakan *Analytic Hierarchy Process* (AHP) dan *Technique for Order Performance of Similarity to Ideal Solution* (TOPSIS). Proses *usability testing* melibatkan lima partisipan. Hasil *usability testing* antara PLN Mobile versi baru dan PLN Mobile versi lama akan dibandingkan.

Hasil perhitungan AHP dan TOPSIS menunjukkan bahwa rancangan terbaik memperoleh rata rata *usability score* sebesar 7.933 dengan nilai prioritas sebesar 0.93636. Jumlah *tap* minimum pada PLN Mobile versi baru lebih sedikit 19.23% dari PLN Mobile versi lama. *Usability score* PLN Mobile versi baru mengalami peningkatan sebesar 53,43% dari PLN Mobile versi lama. Berdasarkan data yang diperoleh dari perbandingan *usability testing* dan penilaian *user* melalui *usability score*, dapat diambil kesimpulan bahawa perancangan dan pemilihan *prototype* dengan pendekatan terhadap pengguna dapat menghasilkan rancangan yang lebih baik.

Kata kunci : PLN Mobile, *user-centered design*, *usability testing*, AHP, *prototyping*

## **ABSTRACT**

### **DESIGNING HIGH FIDELITY PROTOTYPE OF PLN MOBILE USING USER-CENTERED DESIGN APPROACH WITH AHP METHOD AND TOPSIS METHOD**

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Prototype is a model of the product used to provide the concept or description of the design to be made. Prototype design process needs to consider the user needs. PLN Mobile one of application that its users have some problem when using it. To solve the existing problem, this research uses user-centered design approach, Analytic Hierarchy Process (AHP) method, and Technique for Order Performance of Similarity to Ideal Solution (TOPSIS) method.

In this study using google design sprint method as a step that is used in designing prototype PLN Mobile. The results of the analysis of the old version of PLN Mobile application obtained from the implementation of usability testing. The results of usability testing become the reference in making three new PLN Mobile prototype designs. The best design selection is assisted by a decision support system that uses Analytic Hierarchy Process (AHP) and Technique for Order Performance of Similarity to Ideal Solution (TOPSIS). The usability testing process involved five participants. The result of usability testing between the old and PLN Mobile versions of the new version will be compared.

The results of AHP and TOPSIS calculation shows that the best design obtained an average usability score of 7.933 with a priority value of 0.93636. The number of minimum taps on PLN Mobile of the new version is 19.23% less than the old version of the PLN Mobile. the usability score of the new version of PLN Mobile has increased by 53.43% from the old version of the Technique for Order Performance of Similarity to Ideal Solution (TOPSIS) PLN Mobile. Based on the data obtained from the comparison of usability testing and user assessment through usability score, it can be concluded that the design and selection of prototype with approach to the user can produce a better design.

**Keywords:** PLN Mobile, user-centered design, usability testing, AHP, prototype