



SISTEM CARIAN JADUAL KADAR KERJA HARGA ELEKTRIK

Transformasi Digital Pengurusan BQ & Anggaran Kos JKR

AHMAD ALIIF NAJMI BIN AZLI



The Reality of Manual BQ Preparation



The Current Process is Strained and Prone to Error



Time-Consuming: Users spend hours manually scrolling through hundreds of pages in static PDF documents or physical books to find a single code.
[Source: JKKE Source Notebookllm.txt]



High Risk of Errors: Manual data entry and calculations often lead to mistakes, creating significant audit risks and compliance issues.
[Source: JKKE User Empathy Map: Engineering Assistants and Smart Search]



Code-Centric Design: Existing systems are built around technical codes, not the way users actually think or work, forcing them to rely on memory or old project files.
[Source: JKKE AI-Assisted Smart Search System Evolution]

An Empathy Map for the JKKE System User

Visualizing the world of Electrical Contractors (G1-G7) & JKR Assistant Engineers in preparing tender documents

What do they SEE?

PRINTED BOOKS COMPLEX SPREADSHEETS STATIC PDF DOCUMENT REJECTED CLAIMS

What do they SAY?

" I hate scrolling through this 300-page PDF on my phone.
What is the code for 1.5mm PVC cable again?

What do they DO?

COPY-PASTE DATA MANUAL SCROLLING THROUGH PDFS PRECISE CALCULATION GUESSWORK IN ESTIMATIONS

What do they HEAR?

CLIENT IMMEDIATE QUOTATIONS DEMAND SUPERVISOR CALCULATION ERRORS COMPLAINT WARNINGS ABOUT COMPLIANCE HIGH RISK OF AUDITS & NON-COMPLIANCE ISSUES

PAIN What do they THINK & FEEL? **GAIN**

FEAR OF FINANCIAL LOSS
Constant anxiety about underquoting (losing money) or overquoting (losing the tender)

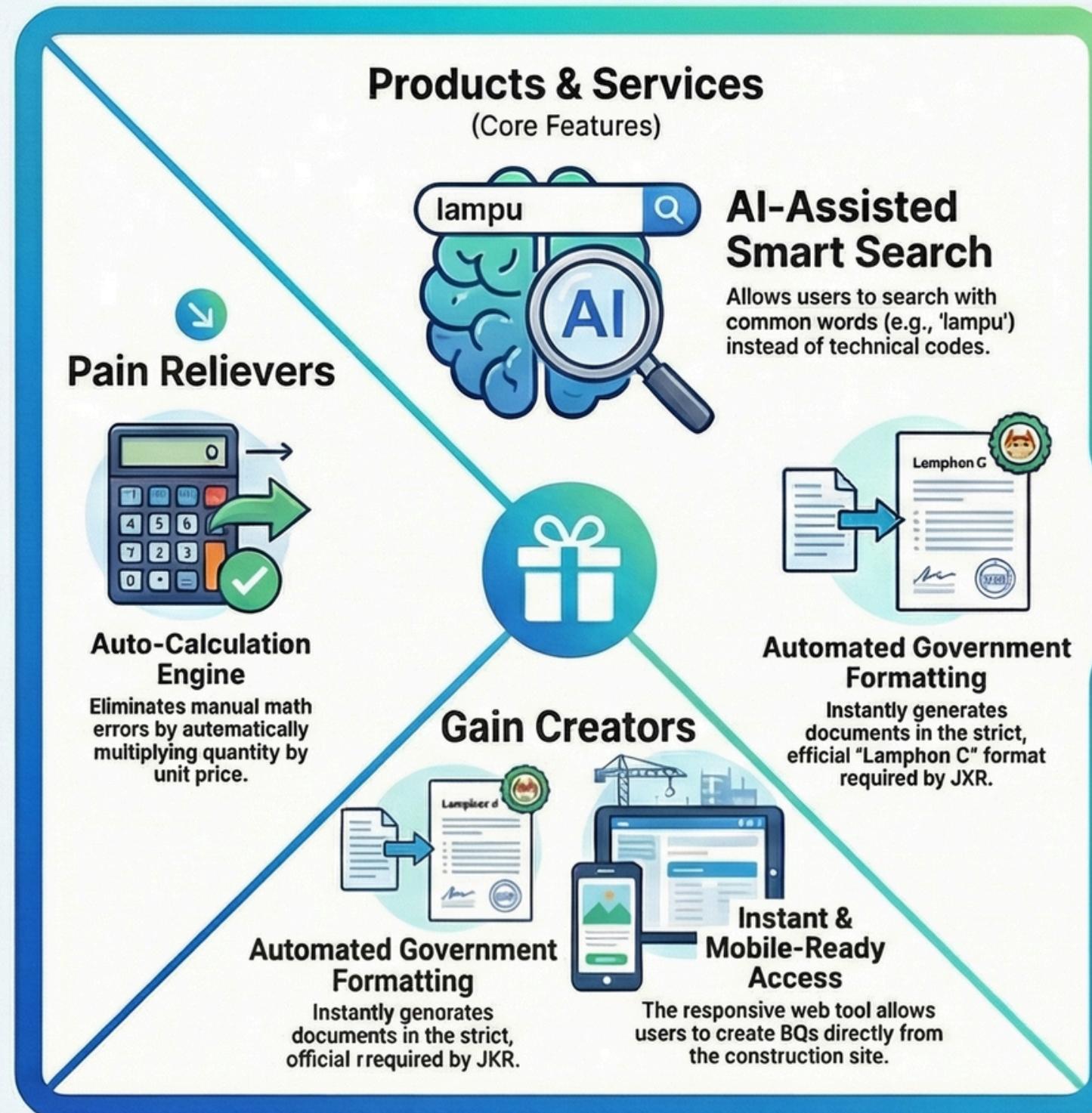
EXHAUSTION AND FRUSTRATION
Drained by repetitive data entry and anxious about mathematical errors.

DESIRE FOR PROFESSIONALISM AND SPEED
Want to look professional and finish paperwork in minutes, not hours.

NEED FOR CONFIDENCE
Want to be 100% confident their rates and codes are accurate and compliant with JKR standards.

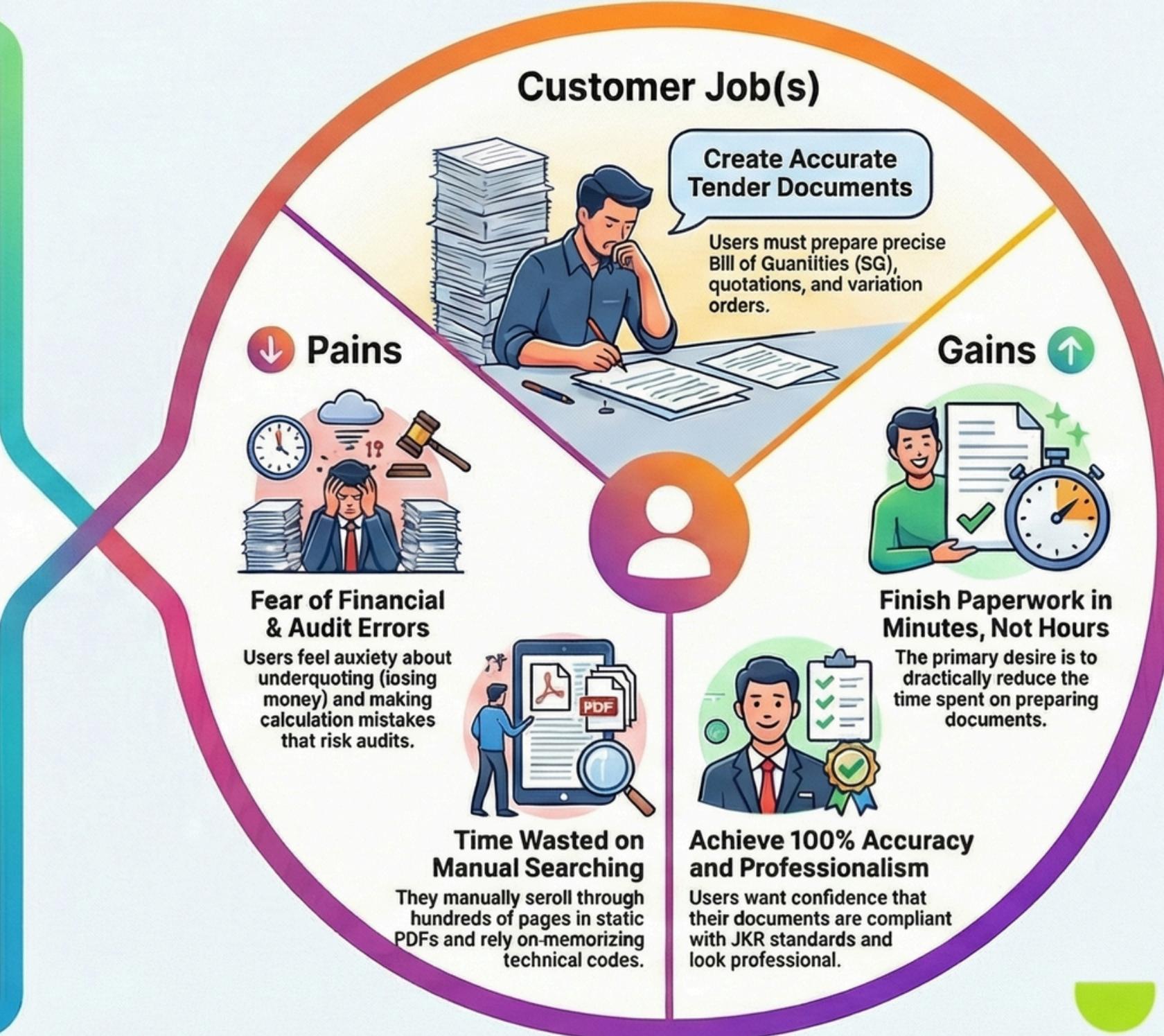
Value Proposition Canvas: JKKE Smart Search System

The Value Map (The System's Solution)



The Value Map
(The System's Solution)

The Customer Profile (The User's World)



The Customer Profile
(The User's World)

Our Value Proposition: Directly Solving Your Biggest Problems

The User's World (Pains)



Time-consuming manual searches & memorizing codes.



Fear of manual calculation errors & audit issues.



Difficulty formatting official BQ ("Lampiran C") documents.

The System's Solution (Pain Relievers)



AI-Assisted Smart Search translates "lampu pejabat" to the correct technical item.



Auto-Calculation Engine eliminates human error by multiplying Unit Price x Quantity.



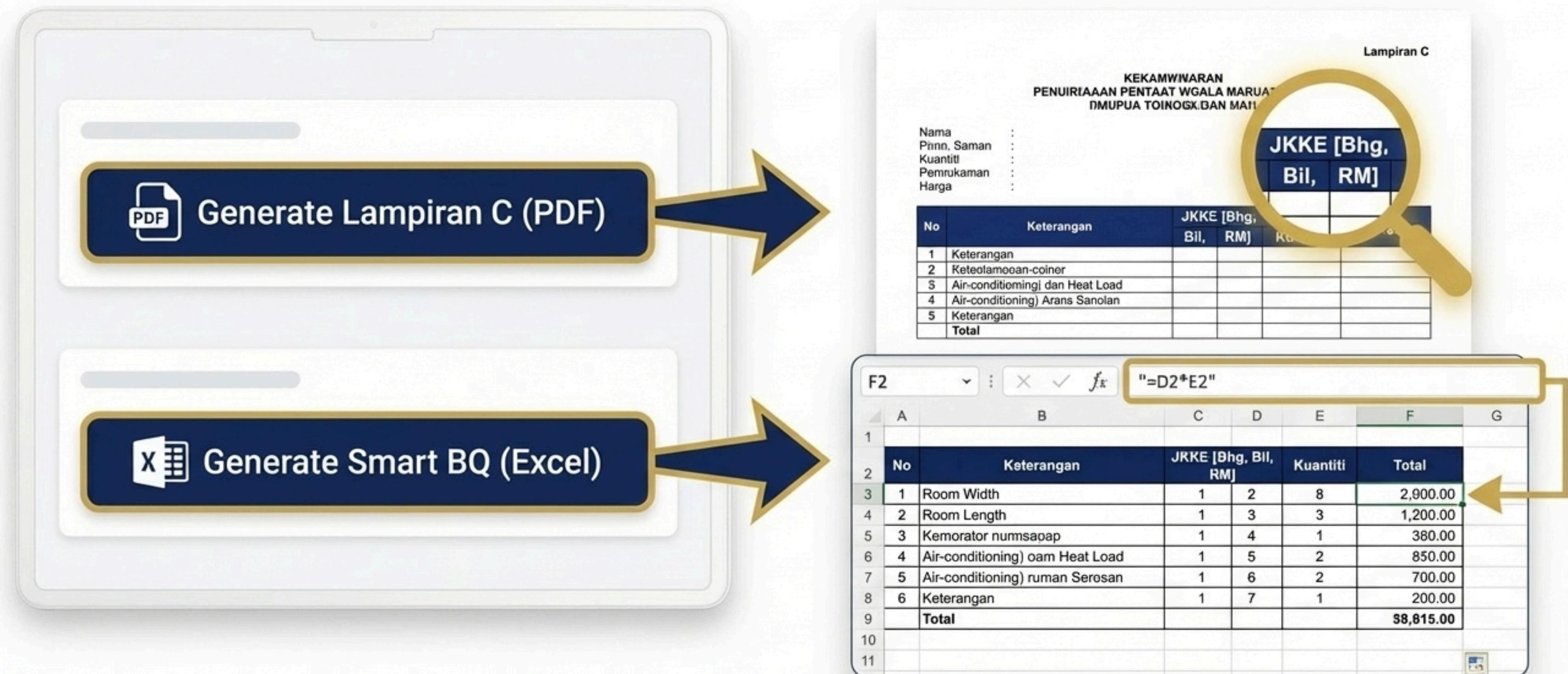
One-Click Generator creates a perfectly formatted, Nested Header PDF.

Feature Deep Dive: The Smart M&E Estimator

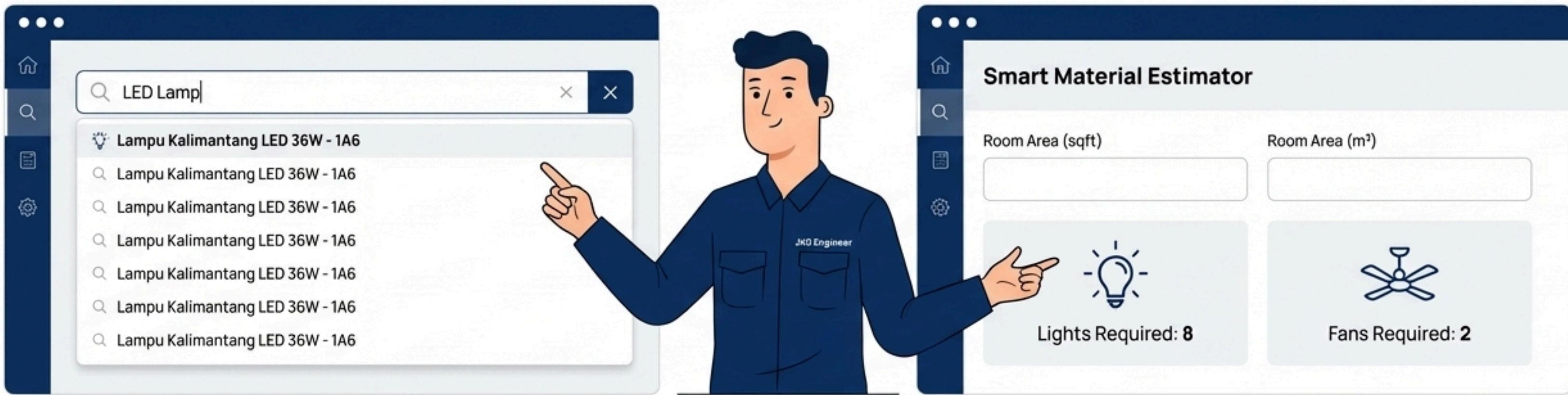
- **Goes Beyond Search:** Assists in technical decision-making, replacing guesswork with data.
- **Logic-Driven:** Converts a room's physical size into required M&E quantities.
- **Official Standards:** All calculations for Lux (lighting) and Heat Load/BTU (air-conditioning) are based on official JKR and Malaysian Standard MS1525.



Feature Deep Dive: The One-Click BQ Generator



Find What You Need Instantly, Estimate with Confidence



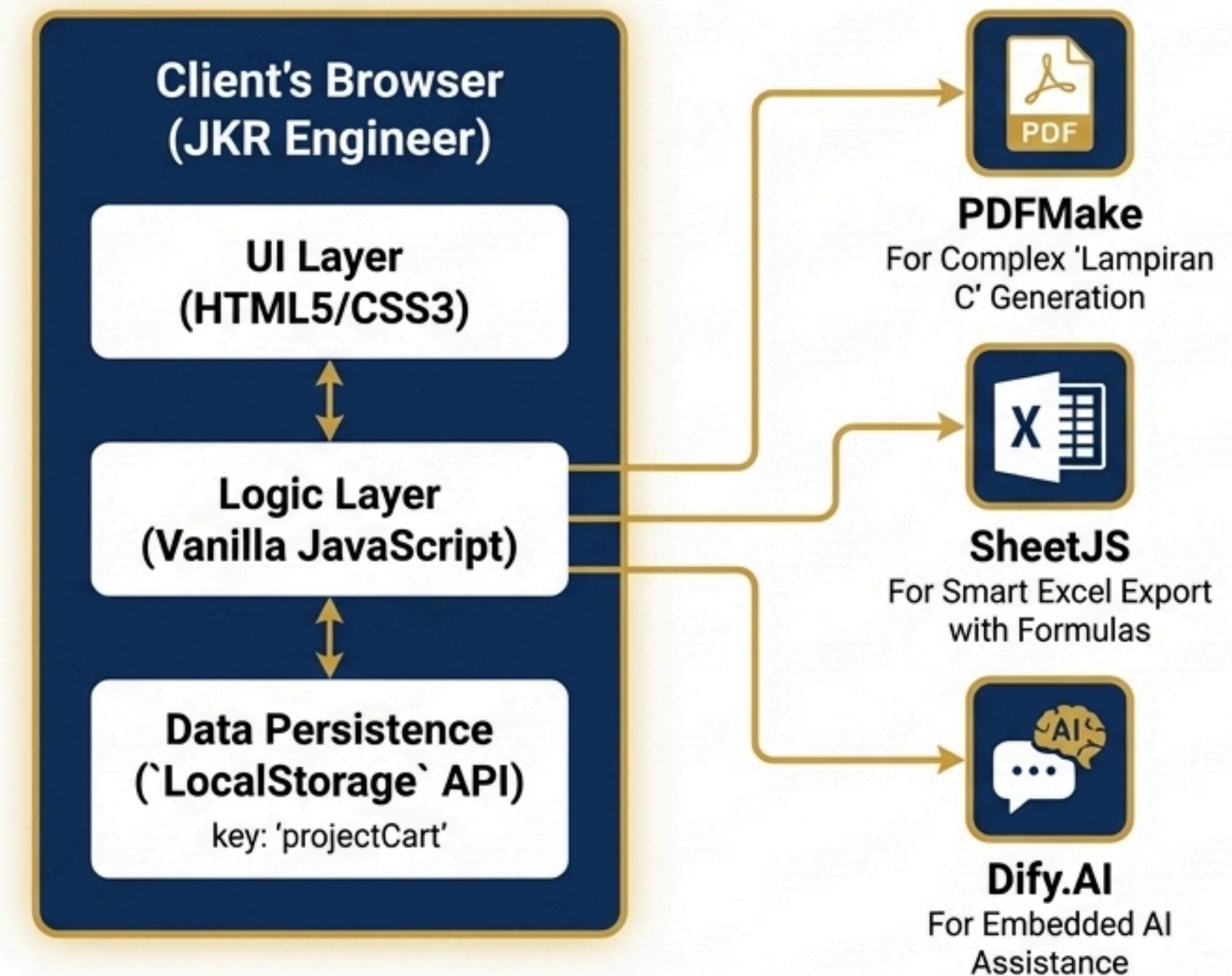
From Frustrating Searches to Intelligent Suggestions

- ✓ **Semantic Search:** The system understands user intent. Typing "lampu" will intelligently map to results for "lighting," "LED," "downlight," and "kalimantang". [Source: JKKE AI-Assisted Smart Search System Evolution]
- ✓ **Smart Ranking:** Search results are prioritized based on relevance, common usage, and category, so the most likely item appears first. [Source: JKKE AI-Assisted Smart Search System Evolution]
- ✓ **M&E Smart Estimator:** A built-in calculator automatically determines the required quantities of lights, fans, and air conditioners based on room size (ft² or m²), compliant with MS1525/JKR standards. [Source: JKKE Source NotebookIIm.txt]

Our Technical Architecture: Modern, Serverless, and AI-Ready

Talking points:

- **Core Stack:** Standard HTML5, CSS3, & Vanilla JavaScript for maximum compatibility and performance.
- **Client-Side Persistence:** Utilizes browser `LocalStorage` to save the user's `projectCart`. No work is lost on refresh, and the application runs entirely without a server, reducing cost and complexity.
- **AI Integration:** A lightweight Dify.AI chatbot is embedded to provide 24/7 technical assistance.



Modern, Efficient, and Secure Architecture



Built on a Robust, Serverless Foundation for Speed and Accessibility

- **Platform:** A fully Web-Based Application built with HTML5, CSS3, and Vanilla JavaScript for universal access. [Source: JKKE Source Notebookllm.txt]
- **Data Storage:** Utilizes client-side LocalStorage, meaning no server is required. This makes the system fast, offline-capable, and secure as project data stays on the user's device. [Source: JKKE Source Notebookllm.txt]
- **Responsive Design:** Fully mobile-responsive, allowing contractors and engineers to create and manage BQs from any device, anywhere. [Source: JKKE Source Notebookllm.txt]
- **AI Integration:** Seamlessly integrates with the Dify.AI platform to provide intelligent chatbot assistance. [Source: JKKE Source Notebookllm.txt]

The Impact: Faster, Smarter, and More Professional



SPEED

- Reduces BQ preparation from hours to minutes.
- Mobile-ready access for on-site quotations.



ACCURACY

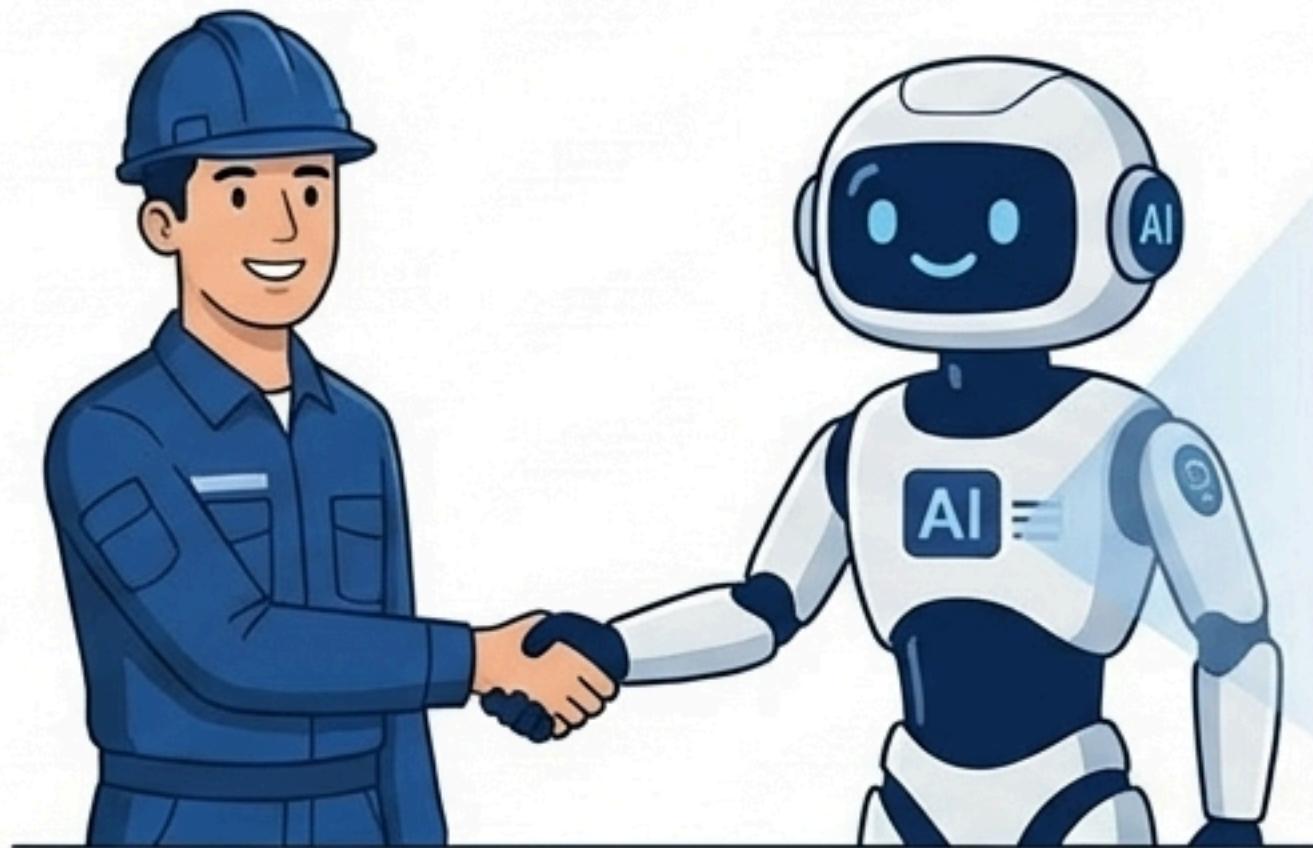
- Eliminates manual calculation errors.
- Ensures 100% compliance with JKR rates and formats.



PROFESSIONALISM

- Respond to client requests instantly.
- Present data-backed estimations, not guesswork.

Your 24/7 JKR Technical Assistant



User: What is the code for a 1.5mm PVC cable?

AI Assistant: The JKKE code for '1.5mm² PVC Cable' is typically found under Section X, Item Y. Would you like me to add it to your current BQ?

Integrating an AI Chatbot to Answer Questions and Accelerate Workflow

- ✓ **Instant Answers:** The Dify-powered AI Chatbot provides 24/7 assistance, answering technical questions about JKKE codes, specifications, and procedures. [Source: JKKE Source Notebookllm.txt]
- ✓ **Natural Language Understanding:** Users can ask questions in plain language ('bahasa biasa'), and the AI understands the context to provide accurate information. [Source: JKKE AI-Assisted Smart Search System Evolution]
- ✓ **Actionable Intelligence:** The AI doesn't just provide data; it assists in decision-making and can perform actions like adding items directly to the Bill of Quantities. This is a form of practical, government-safe 'Smart Automation'. [Source: JKKE AI-Assisted Smart Search System Evolution]

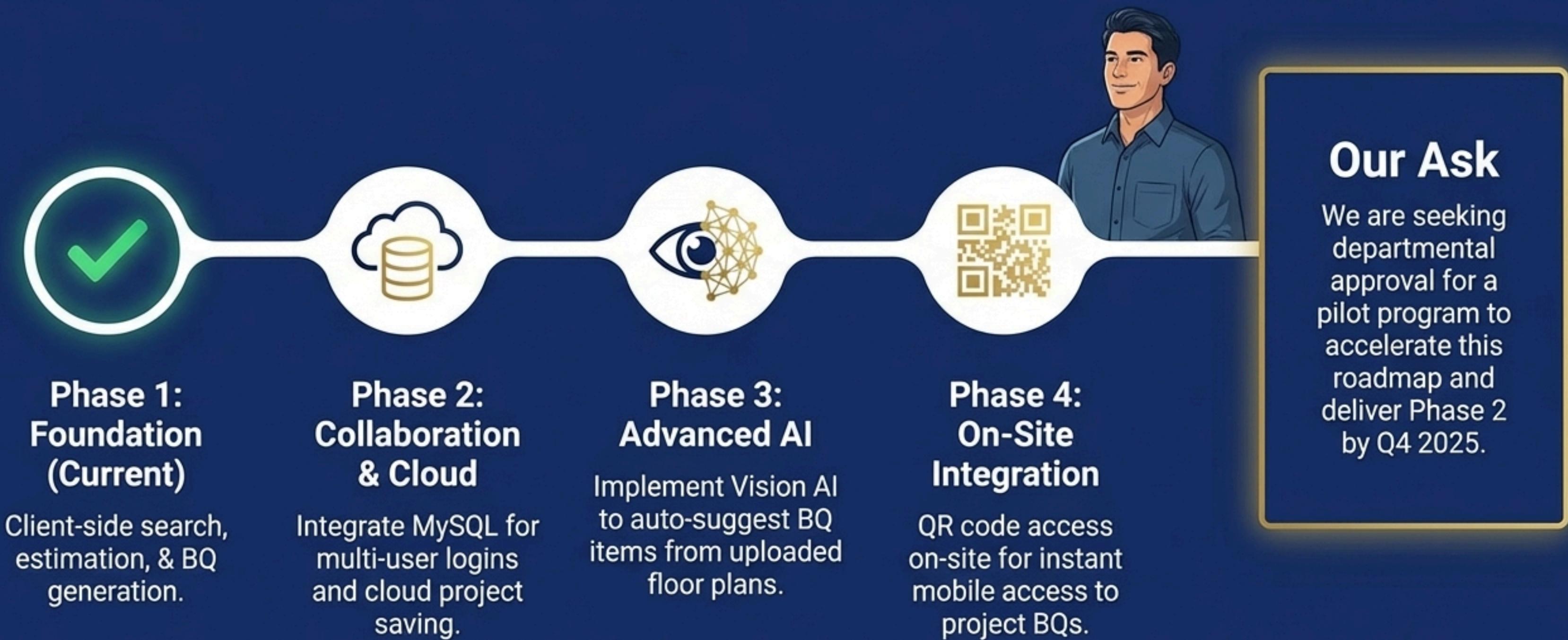
Transforming Workflows, Delivering Results



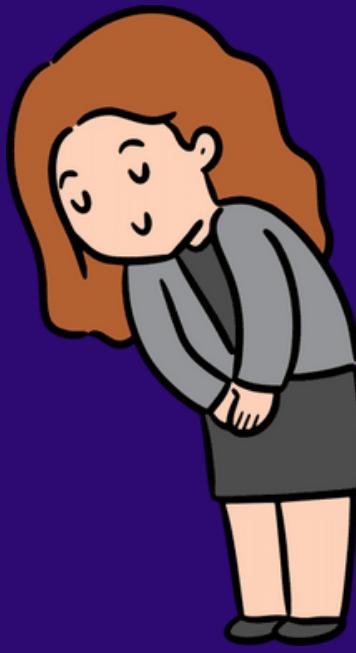
The JKKE System Delivers Measurable Improvements Across the Board

- **Drastic Time Reduction:** Reduce BQ preparation time from hours or days to mere minutes, freeing up engineers for higher-value technical tasks.
- **Enhanced Accuracy:** Automated calculations and formatting virtually eliminate human error, ensuring precision in every document.
- **Strengthened Compliance:** By using the official, up-to-date digital reference, the risk of non-compliance and audit issues is significantly minimized.
- **Increased User Confidence:** Empowering technical staff with a tool that works the way they think, leading to greater job satisfaction and confidence in their outputs. [Source: JKKE User Empathy Map: Engineering Assistants and Smart Search]

Our Roadmap: Building the Future of JKR Digital Works



The Future of JKR Project Management is Here



**DEMO SISTEM
CARIAN JKKE 2025
AI CHATBOT**

THANK YOU

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