Certify Intel: Delivery Options Comparison

Solution Requirements (Reference)

> Develop an AI-driven, automated system that:
>
> 1. Monitors competitors' solutions, websites, and online presence
> 2. Autonomously scrapes and extracts targeted raw data
> 3. Stores, organizes, and cleanses extracted data
> 4. Transforms raw data into actionable insights, metrics, and KPIs
> 5. Displays high-fidelity visualization with charts, graphs, and heatmaps
> 6. Deploys automated, event-driven alerts with GenAI executive summaries

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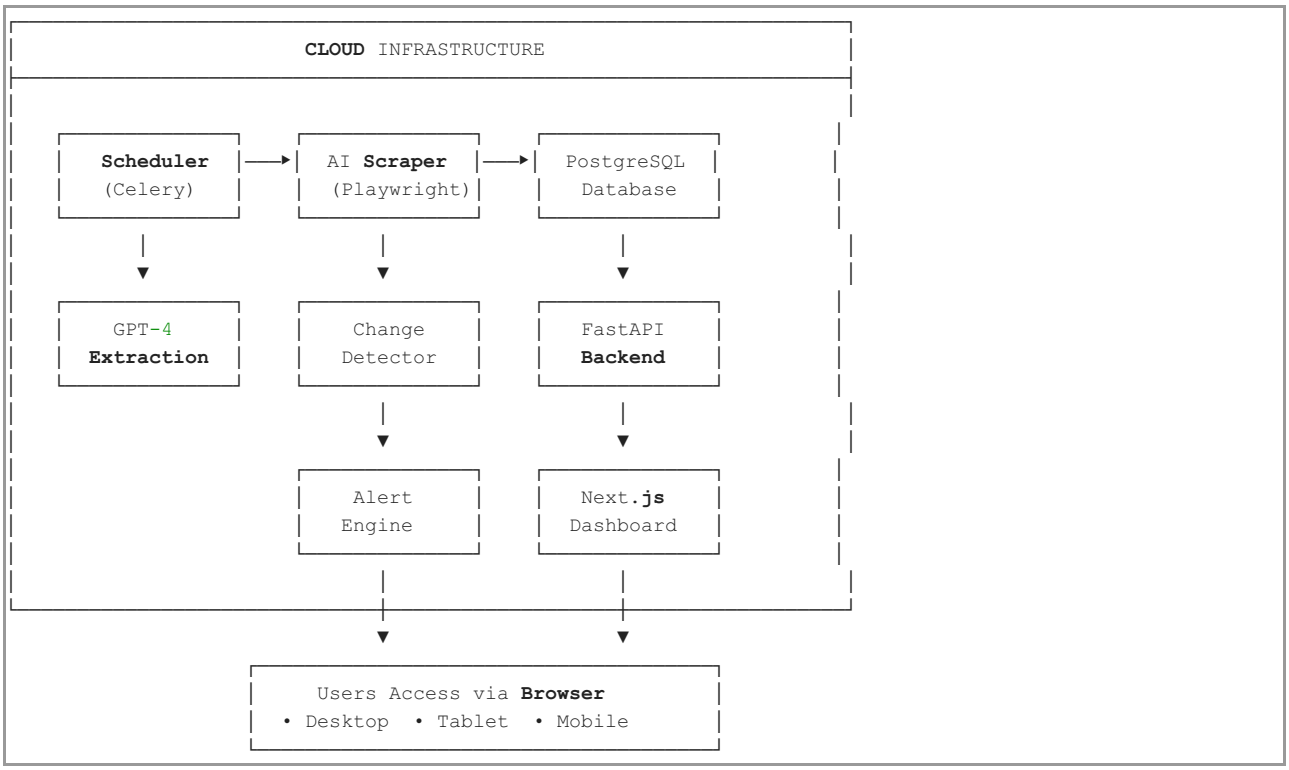
Option A: Full Web Application

How It Works



Components

Component	Technology	Function
Scheduler	Celery + Redis	Runs scraping jobs on schedule (hourly/daily)
Scraper	Playwright	Fetches competitor pages, handles JavaScript
AI Engine	GPT-4 via API	Extracts structured data, generates insights
Database	PostgreSQL + pgvector	Stores all data, enables semantic search
Backend API	FastAPI (Python)	Business logic, data processing, API endpoints
Dashboard	Next.js (React)	Interactive visualizations, user interface
Alerts	Email/Slack webhooks	Push notifications on changes

User Experience

1. **Login** to web dashboard from any browser
2. **Dashboard home** shows: threat heatmap, recent alerts, top competitors
3. **Competitor profiles** with drill-down: pricing history, feature matrix, positioning

4. **Insights feed** with AI-generated analysis of market movements
5. **Weekly briefing** auto-generated and emailed every Monday
6. **Alert center** for real-time notifications

Option A: Requirements Satisfaction

Requirement	How Web App Satisfies It	Rating
1. Monitor competitors	Scheduler runs 24/7 in cloud, checks all competitor URLs automatically	☑ Fully met
2. Autonomous scraping	Playwright scraper runs on schedule without human intervention	☑ Fully met
3. Store & cleanse data	PostgreSQL with structured schema, deduplication, validation	☑ Fully met
4. Transform to insights	GPT-4 generates insights, Python computes KPIs and metrics	☑ Fully met
5. High-fidelity visualizations	Recharts/D3.js for interactive charts, heatmaps, drill-downs	☑ Fully met
6. Automated alerts + GenAI summaries	Event-driven alerts via email/Slack with AI-written summaries	☑ Fully met

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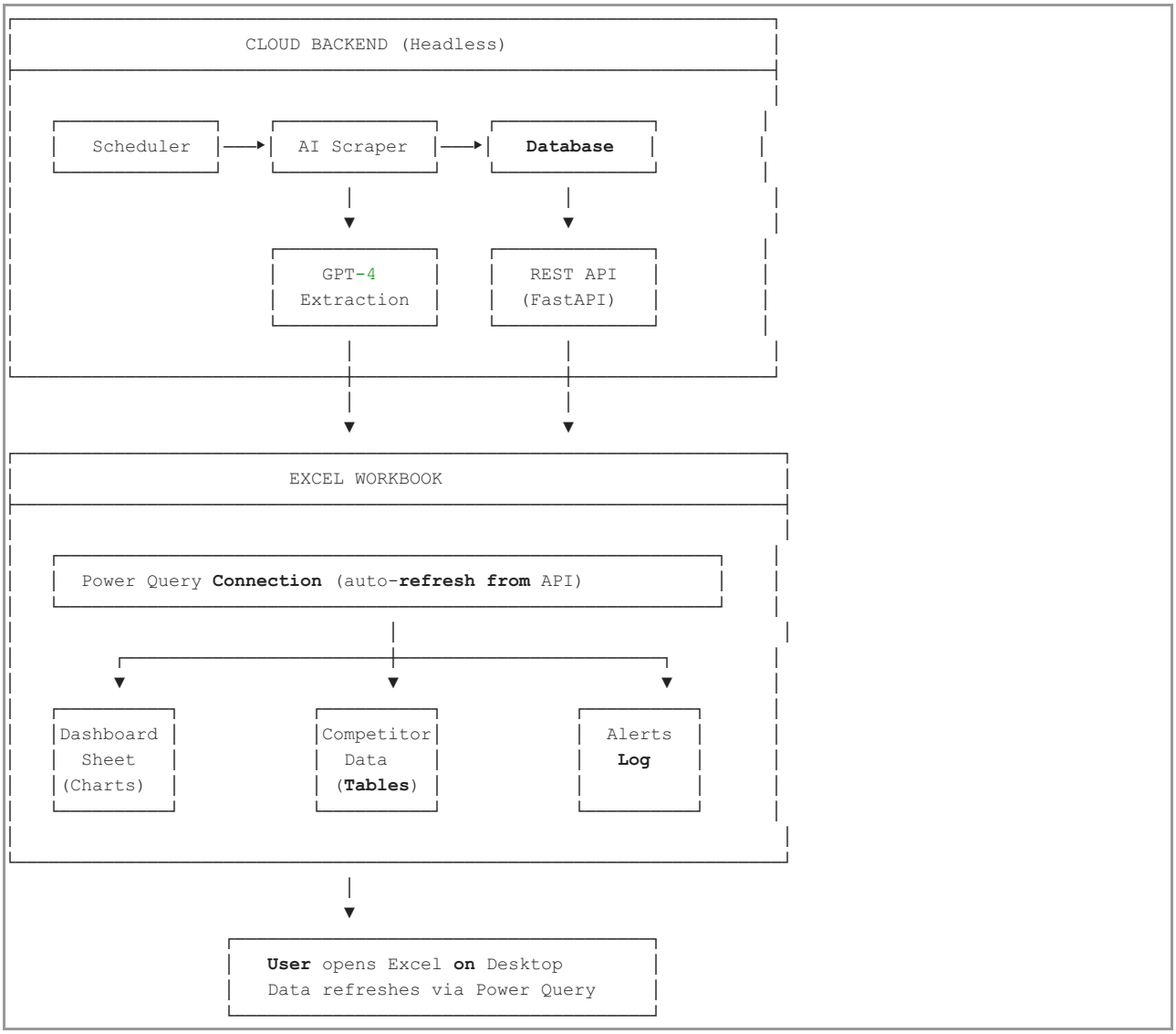
Option A: Pros & Cons

Pros	Cons
☑ Fully automated, runs 24/7 without intervention	❌ Requires cloud hosting ($50-200/month)
☑ Multi-user with role-based permissions	❌ 8-12 weeks to build fully
☑ Real-time alerts pushed to users	❌ More complex to maintain
☑ Rich interactive visualizations	❌ Requires internet access
☑ Mobile-friendly	❌ Learning curve for new interface
☑ Scales to 1000s of competitors	❌ Vendor lock-in to hosting platform
☑ Audit trail built into database	
☑ Easy to extend with new features	

Option B: Excel-Powered with Cloud Backend

How It Works



Components

Component	Technology	Function
Cloud Backend	Same as Option A	Scraping, AI, storage (runs headlessly)
API	FastAPI	Exposes data as JSON/OData for Excel
Excel Workbook	Excel + Power Query	User interface, charts, tables
VBA Macros	VBA (optional)	Custom buttons, formatting
Email Alerts	Cloud-triggered	Sends alerts + AI summaries

User Experience

1. **Open Excel workbook** (stored locally or in SharePoint)
2. **Click "Refresh All"** or enable auto-refresh to pull latest data
3. **Dashboard sheet** shows: pivot charts, KPI cards, conditional formatting
4. **Data tables** with filters: competitors, claims, alerts
5. **Weekly briefing** arrives via email (generated by cloud backend)
6. **Alerts** arrive via email; alert log visible in Excel

Option B: Requirements Satisfaction

Requirement	How Excel Satisfies It	Rating
1. Monitor competitors	Cloud backend monitors; Excel displays results	☑ Fully met
2. Autonomous scraping	Cloud backend handles scraping autonomously	☑ Fully met
3. Store & cleanse data	Cloud database stores; Excel shows cleansed view	☑ Fully met

4. Transform to insights	Cloud computes KPIs; Excel displays via pivot tables	☑ Fully met
5. High-fidelity visualizations	Excel charts, conditional formatting, sparklines	⚠ Partially met*
6. Automated alerts + GenAI summaries	Email alerts with AI summaries	☑ Fully met

*Excel charts are good but less interactive than web-based D3.js/Recharts. No true heatmaps without workarounds.

Option B: Pros & Cons

Pros	Cons
☑ Familiar Excel interface	⚠ Limited interactivity (no drill-down clicks)
☑ Works offline after refresh	⚠ Heatmaps require workarounds
☑ Easy to customize (formulas, pivots)	⚠ File can be accidentally corrupted
☑ Faster to build (6-8 weeks)	⚠ Multi-user editing conflicts
☑ No new interface to learn	⚠ Mobile experience is poor
☑ Native Excel charting	⚠ Still requires cloud backend running
☑ Easy ad-hoc analysis	⚠ Manual refresh or scheduled task
☑ Lower perceived complexity	⚠ Version control is manual

Side-by-Side Comparison

Criterion	Option A: Web App	Option B: Excel + Cloud
Automation	100% hands-free	Requires manual refresh or scheduled task
Visualization Quality	★★★★★ Interactive, heatmaps, drill-down	★★★☆☆ Good charts, limited interactivity
User Familiarity	★★★☆☆ New interface	★★★★★ Everyone knows Excel
Multi-user	★★★★★ Built-in, role-based	★★☆☆☆ Conflicts, need SharePoint
Mobile Access	★★★★★ Responsive design	★★☆☆☆ Clunky mobile Excel
Offline Use	★☆☆☆☆ Requires internet	★★★★☆ Works after refresh
Build Time	8-12 weeks	6-8 weeks
Monthly Cost	$100-300 (hosting + API)	$50-150 (lighter hosting)
Maintenance	Medium (server updates)	Lower (mostly Excel file)
Scalability	Handles 1000+ competitors	~200 competitors before slowdown
Audit Trail	★★★★★ Automatic database logs	★★☆☆☆ Manual version saves

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Recommendation

If you prioritize...	Choose...
Rich visualizations + heatmaps	Web App
User familiarity + low learning curve	Excel
Multi-user collaboration	Web App
Fast time-to-value	Excel
Mobile access	Web App
Offline capability	Excel
Long-term scalability	Web App

My Recommendation

Start with Excel + Cloud Backend (Option B), then migrate to full Web App later:

1. **Phase 1 (Weeks 1-6):** Build cloud backend + Excel workbook
    - Get value quickly with familiar interface
    - Validate data collection and AI extraction
2. **Phase 2 (Weeks 7-12):** Build web dashboard
    - Add interactive heatmaps and drill-downs
    - Enable multi-user with permissions

This "crawl, walk, run" approach delivers value faster while building toward the full vision.

Decision Needed

Which option do you prefer?

- **Option A:** Full Web App (richer, but longer to build)
- **Option B:** Excel + Cloud (faster, familiar, good enough)
- **Hybrid:** Start with Excel, add web dashboard later