

Group 20

INTEGRATION OF AI CAPABILITIES INTO REAL-TIME IOT DATA PLATFORM

in collaboration with M. Noushi, CEO de Zen Network

OUR TEAM

BENSLIMANE SALMA

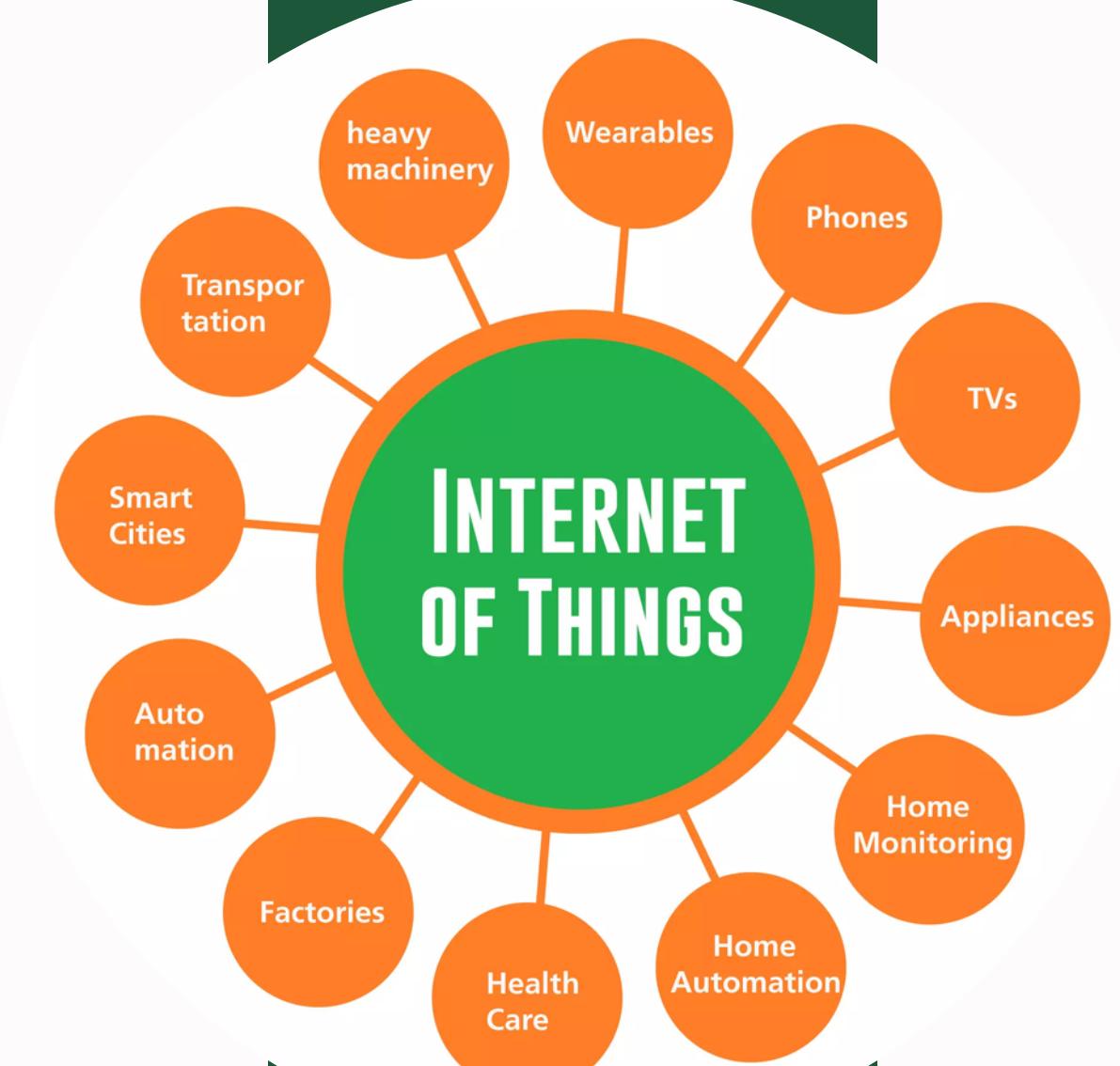
NAHLI GHITA

SALEHI ABDERRAHMANE

SELLAKH JAAFAR

SAADIOUI BADREDDINE

TUTOR : SIBARI ANAS



QUI EST ZEN NETWORKS ?



Monitoring & Security

Tailored solutions where no threat or issue is missed



Mobile networks Solutions

Private and public cloud solutions leveraged by our DevOps experts



Cloud Services

Private and public cloud solutions leveraged by our DevOps experts



IT Infrastructure

IT professional services leveraging latest technologies



Software Development

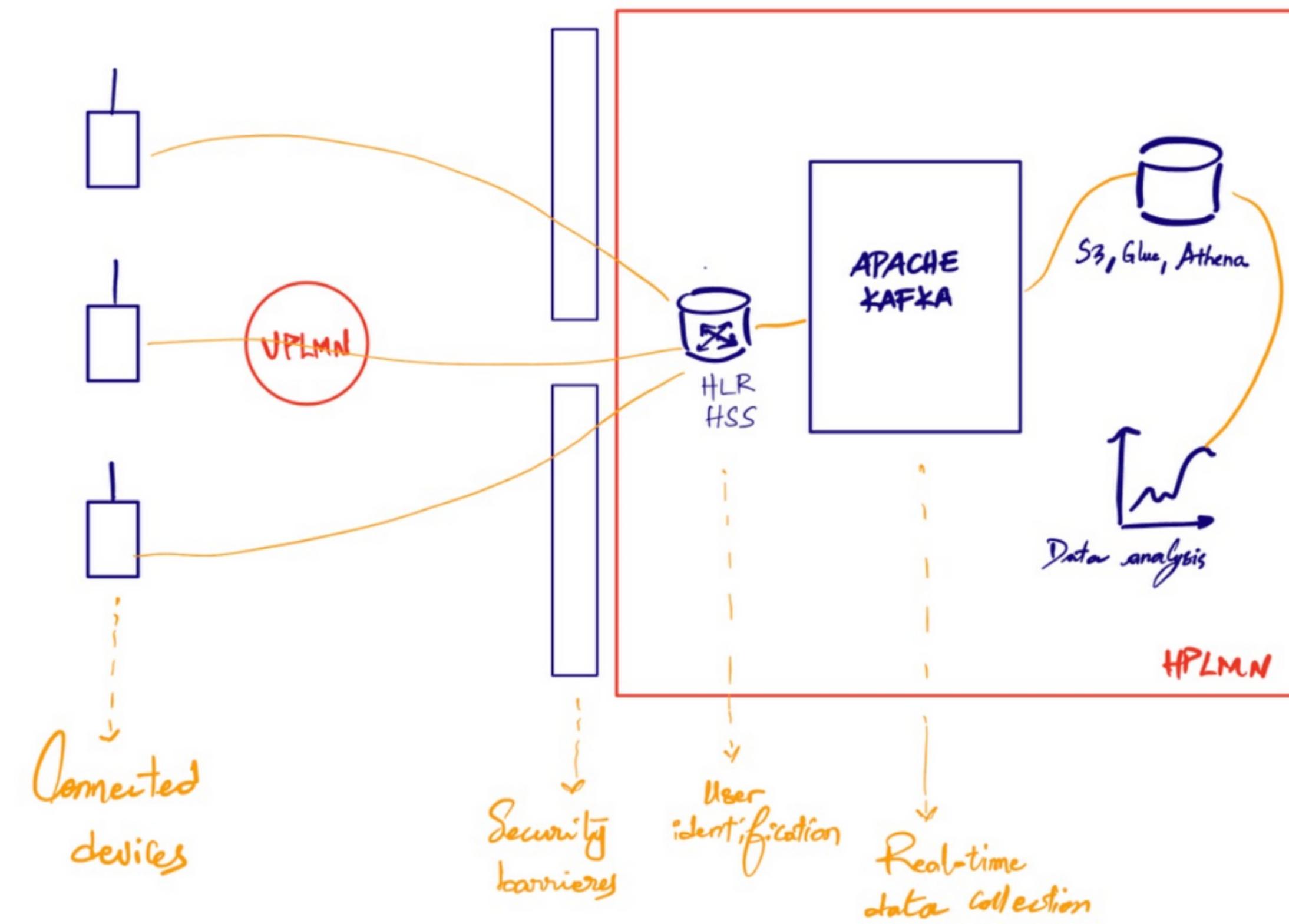
One stop service provider for all your development stages



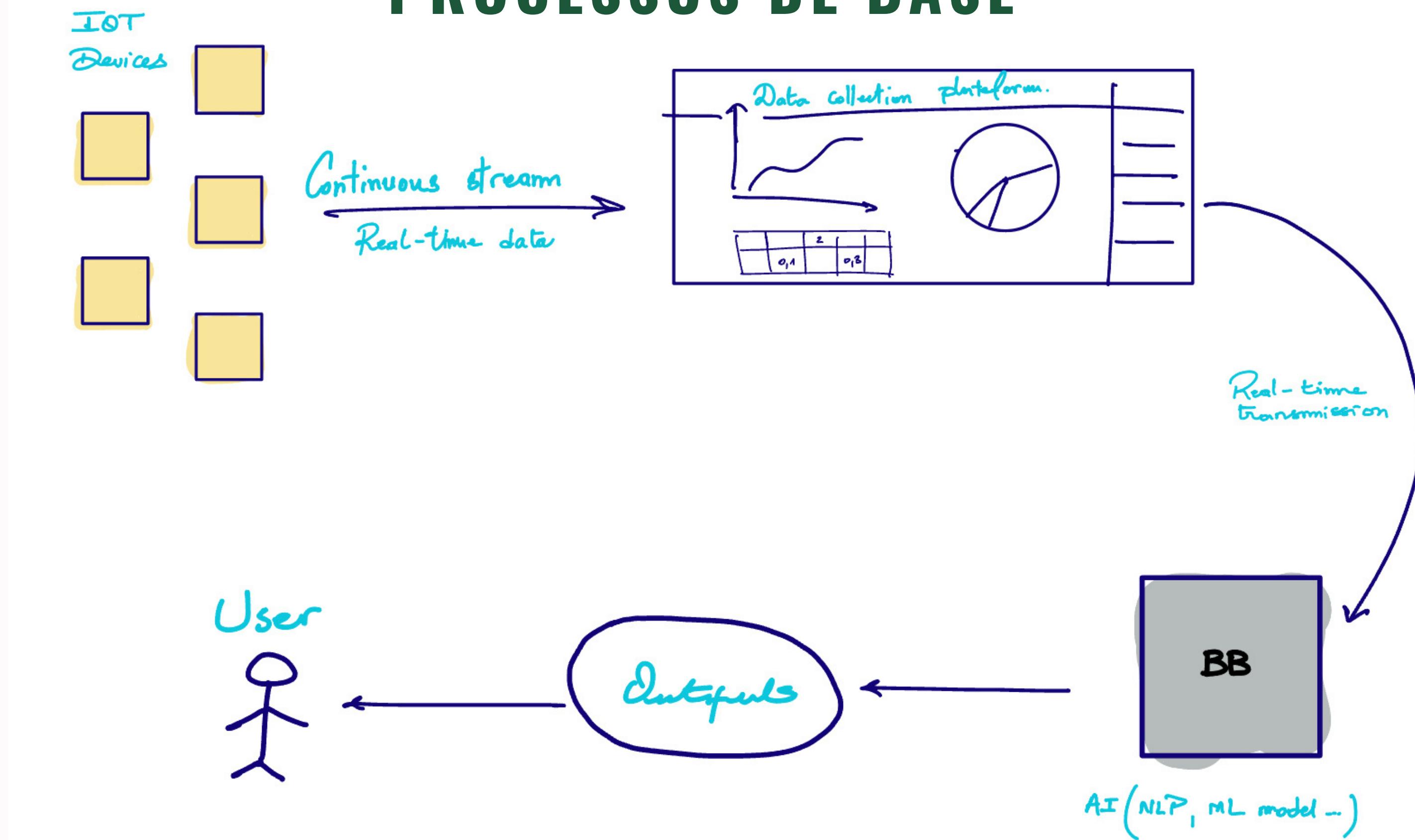
Training

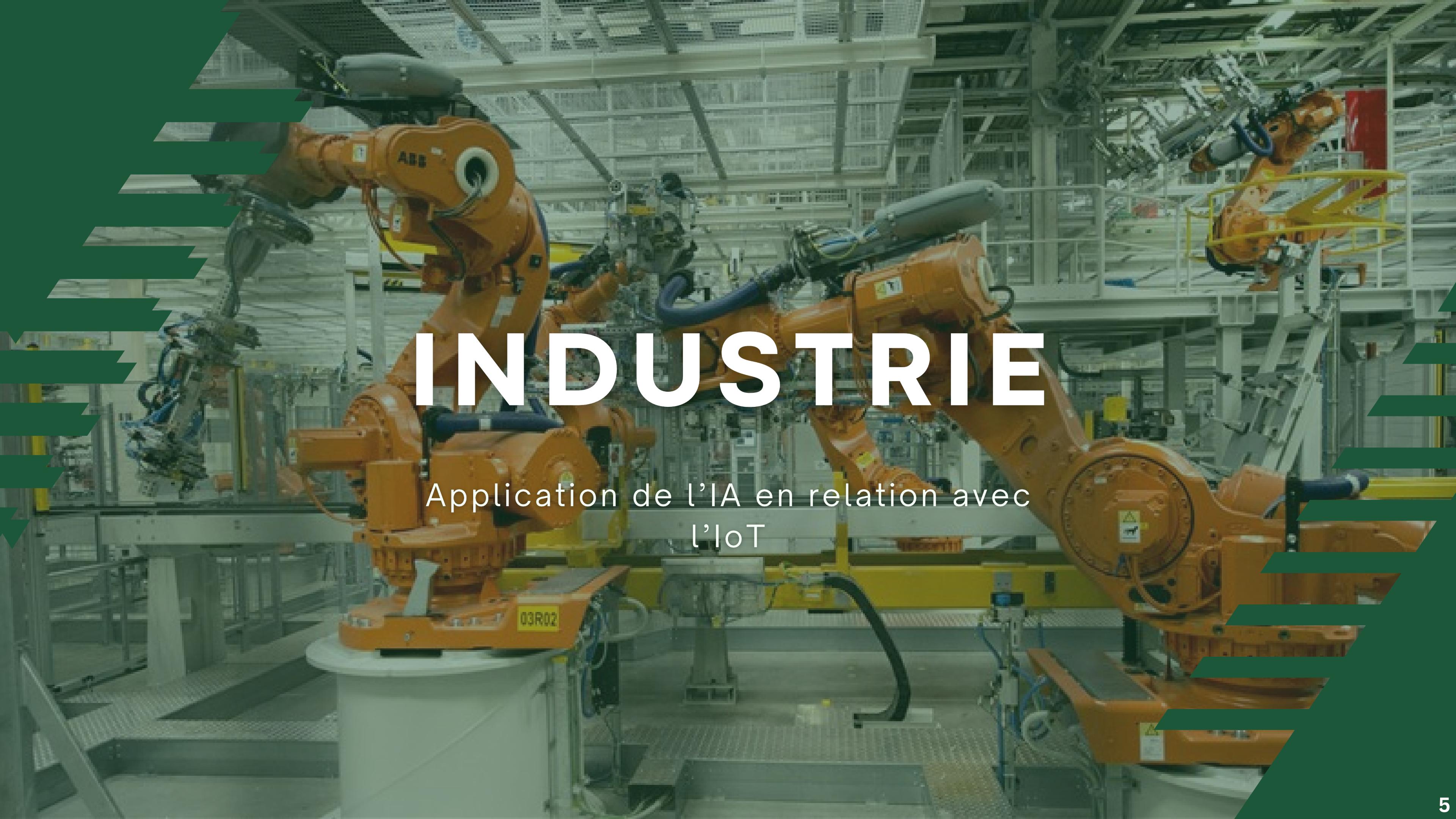
Take your team to the next level with the help of our experts

DIAGRAMME BESOIN



PROCESSUS DE BASE

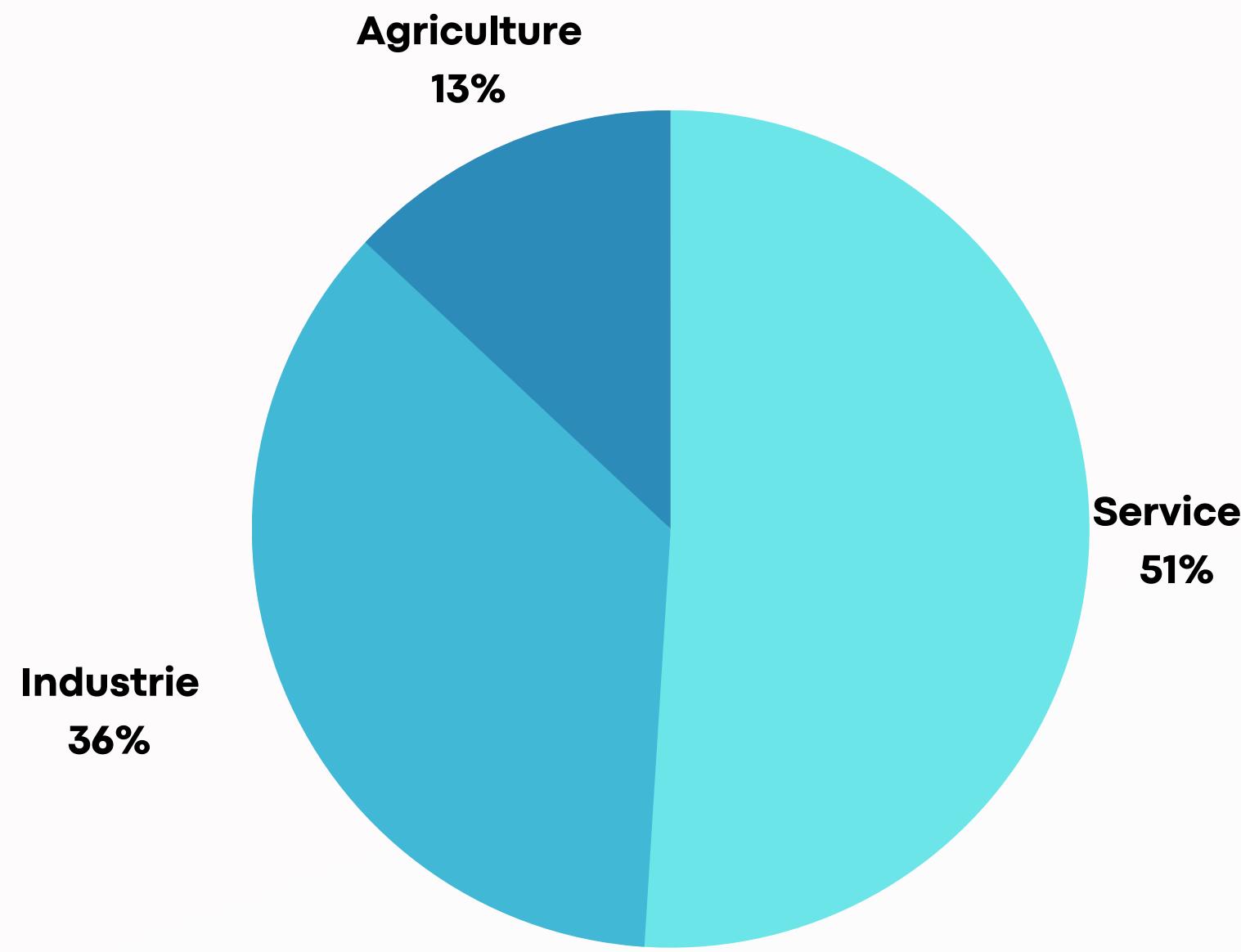


The background image shows a modern industrial facility with multiple orange ABB robotic arms mounted on a white metal frame. The robots are positioned at various heights, working on a conveyor belt system. The ceiling is made of white metal beams and panels. In the foreground, there are green decorative bars on the left and right sides.

INDUSTRIE

Application de l'IA en relation avec
l'IoT

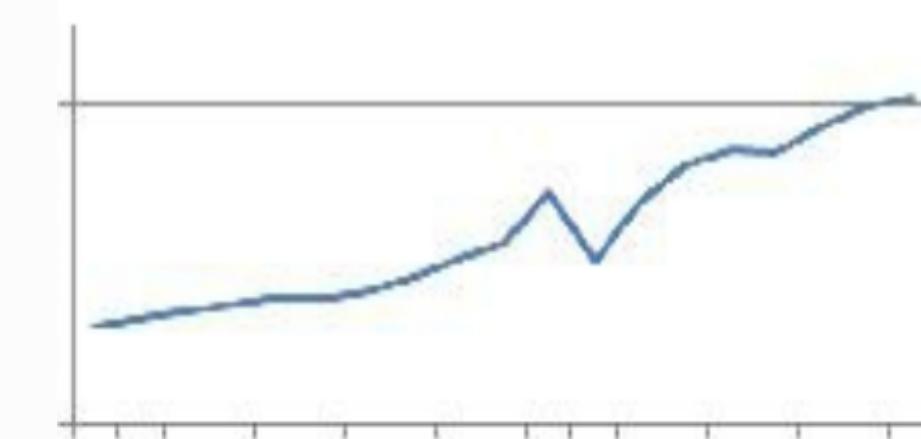
Industrie au Maroc....



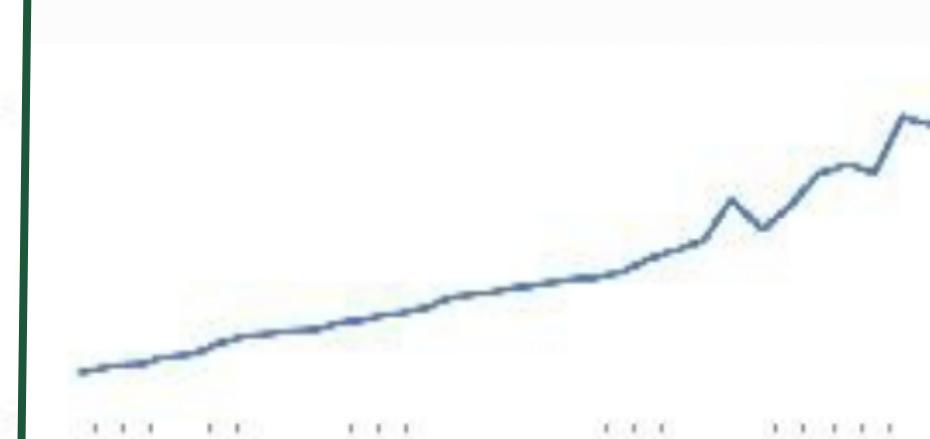
Répartition du PIB Marocain

- Le taux d'investissement du secteur de l'industrie : **un taux d'investissement annuel moyen de 63%.**

Exportations industrielles



Production industrielle



source : *Haut Commissariat du Plan (HCP)*

- L'industrie de réparation d'automobiles et motocycles»: **37% du chiffre d'affaires global, 644,1 milliards de dirhams.**
- L'industrie manufacturière: **20,8% du chiffre d'affaires global, soit 362,2 milliards de dirhams.**

MAIS



Le plan d'accélération industrielle à l'horizon 2020 : faire passer la part de l'industrie dans le PIB de 14% à 23% et créer 500 000 emplois.



L'industrie est toujours artisanal et “seul 30% des usines marocaines sont transformés en 4.0” affirme Moulay Hafid ElAlami



Dans un monde de digitalisation, l'industrie au Maroc en est toujours loin



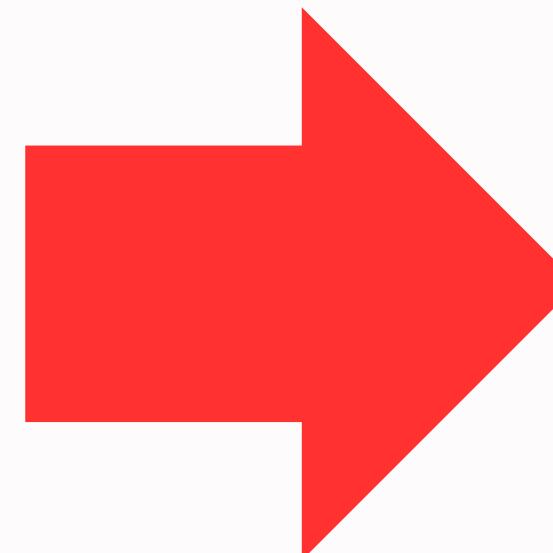
L'industrie au Maroc est basé généralement sur les transactions B2B
(Business to Business)



Le marché marocain bénéficie d'une stabilité politique, d'avancées économiques et sociales ainsi que de ressources humaines qualifiées .



Plan Maroc/Industrie 4.0 :réaliser un chiffre d'affaires dépassant les 30 milliards de dirhams en 2025



INDUSTRIE 4.0



NOS SOLUTIONS

Quelques business canvas pour détailler



QUALITY CONTROL ALERTING WITH AI

Application de l'IA en relation avec
l'IoT

CETTE APPLICATION PERMET D'IDENTIFIER LES PROBLÈMES POTENTIELS SUSCEPTIBLES DE PERTURBER LE FLUX DE PRODUCTION ET DE METTRE UN TERME AUX OPÉRATIONS DE MAINTENANCE NON NÉCESSAIRES AINSI QU'AUX DÉFAILLANCES DES COMPOSANTS, SYSTÈMES OU MACHINES.

QUALITY CONTROL ALERTING WITH AI

PROBLEM

Variations in the quality of incoming raw materials and potential defects in the final textile products are critical challenges affecting product quality and customer satisfaction.

SOLUTION

Utilize IoT sensors to monitor real-time parameters during production. Implement anomaly detection models to identify deviations in the manufacturing process, both in raw materials and final products.

CUSTOMER SEGMENTS

Moroccan Textile Industry: Main target, including weaving and clothing companies.

UNIQUE VALUE PROPOSITIONS

- Quality Assurance: Ensure high-quality textile products through continuous monitoring and early detection of anomalies
- Waste Reduction: Minimize production defects to reduce raw material wastage.

KEY METRICS

- **Key Resources:** Engage experts to develop, implement, and continually enhance anomaly detection models.
- **Key Activities:** Design, deploy, and maintain IoT systems and AI models.
- **Key Partnerships:** IoT Sensor Suppliers: Ensure a constant supply of reliable sensors.

COMPETITORS

There are no companies in Morocco that specialize in the integration of anomaly detection models for the textile niche production of clothes. However, there are a number of companies that offer anomaly detection solutions for other industries, such as manufacturing, healthcare, and finance.

Datawiz : data analytics, ML and AI, **AI Factory** : anomaly detection and fraud detection, **Outmind** : web development, mobile application development, and custom software development.

CHANNELS

- B to B
- Major manufacturers
- Partnerships with industrial companies



PREDICTIVE MAITENANCE IN THE INDUSTRIAL SECTOR

Application de l'IA en relation avec
l'IoT

EN UTILISANT L'IA, NOUS POUVONS IDENTIFIER LES PROBLÈMES QUI MENACENT LE BON FONCTIONNEMENT DE L'ENSEMBLE DE LA CHAÎNE DE PRODUCTION ET METTRE FIN AUX MAINTENANCES INUTILES ET DÉFAILLANCES DE COMPOSANTS, SYSTÈMES OU MACHINES.

PREDICTIVE MAINTENANCE & INDUSTRIAL EQUIPMENT MONITORING

PROBLEM

Downtime within manufacturing facilities and potential defects of systems are significant challenges affecting production efficiency, operational expenses and customer satisfaction.

SOLUTION

Utilize IoT sensors to monitor real-time parameters during production. Implement anomaly detection models to identify deviations in the production process, using predictive maintenance.

CUSTOMER SEGMENTS

Moroccan industry:

- Manufacturing companies
- Transportation and logistics companies

UNIQUE VALUE PROPOSITIONS

- Efficiency enhancements.
- 10 to 40% reduction in maintenance costs
- \$630 billion savings for companies by 2025.
- Minimize downtime through predictive maintenance
- Extend equipment lifespan

KEY METRICS

- **Key Resources:** Engage experts to develop, implement, and continually enhance anomaly detection models.
- **Key Activities:** Collect real-time data, maintain IoT systems and AI models.
- **Key Partnerships:** IoT Sensor Suppliers: Ensure a constant supply of reliable sensors.

COMPETITORS

The predictive maintenance market in Morocco is still in its early stages of development, but there are a number of companies that use predictive maintenance solutions. Some of these companies include:

- Groupe OCP
- Stellantis Morocco
- Siemens Gamesa Renewable Energy
- Schneider Electric Morocco

CHANNELS

- B to B
- Major manufacturers
- Partnerships with industrial companies



INDUSTRIAL AI CHATBOT VIRTUAL ASSISTANT / VIRTUAL MANAGER

Application of AI in IOT devices
(optionelle)

CHATBOT NLP ASSURANT LE SUIVI EN TEMPS RÉEL DU PROCESSUS DE PRODUCTION, RÉPONDANT AUX QUESTIONS, FOURNISANT DES PRÉDICTIONS ET DES APPROXIMATIONS, TOUT EN OFFRANT DES RECOMMANDATIONS D'AMÉLIORATION

INDUSTRIAL AI CHATBOT VIRTUAL ASSISTANT / VIRTUAL MANAGER

PROBLEM

Production managers lack real-time visibility into production processes, hindering their ability to predict timelines, coordinate new orders efficiently, and make informed decisions.

SOLUTION

AI NLP chatbot, offers real-time monitoring of production processes by accessing sensor data. It provides instant responses to inquiries, predicts production timelines, seamlessly integrates new orders into the schedule, optimizing production management.

CUSTOMER SEGMENTS

- Manufacturing Enterprises, Industrial Businesses and production managers - Needing immediate access to production status and predictions.

COMPETITORS

No competitors for now.

CHANNELS

- B to B
- Major manufacturers
- Partnerships with industrial companies

KEY METRICS

- **Efficiency:** Measure production efficiency and resource usage.
- **Response Time:** Measure AI chatbot's inquiry response speed.
- **Prediction Accuracy:** Assess the precision of production timeline forecasts.

UNIQUE VALUE PROPOSITIONS

- **Real-Time Insights:** Obtain immediate, data-driven visibility into production processes and receive actionable recommendations for optimization.
- **Voice Interaction:** Engage in natural language conversations with our AI chatbot for intuitive and efficient communication.
- **Proactive Alerts:** Stay informed about production issues with automated alerts, enabling swift responses to potential bottlenecks or failures.