Proposed Advanced Organization Process Automation and Analytics Platform (AOPAAP) for AfriChild

AfriChild Uganda

The AfriChild Centre generates research that contributes to the evidence base to improve the lives and wellbeing of the African child. It does this in collaboration with the public and private sectors, academia and civil society. Africhild's vision is to create a world where society invests well in children as a key element of sustainable development.

HD-Resources LTD

HD-Resources LTD is a custom software development company with over 10 years of proven experience located in Ntinda Opposite UNEB Plot 5, Kasumba Circular Road, Kampala, Uganda that specializes in providing complete software design and development services.

HD-Resources LTD delivers the best-in-class custom software solutions, elite software development teams and innovative cloud software to enterprise businesses and organizations across numerous industries. HD-Resources Ltd was established in March 2010 with diverse ventures such as software development, procurement & supply.

HD-Resources LTD Clientele

- East Central and Southern Africa Health Community (ECSAHC)
- National TB Reference Laboratory (NTRL)
- Supranational Laboratory (SRL)
- Ministry of Defense and Veteran Affairs, Uganda
- Ministry of Water and Environment of Uganda (MWE)
- East African Community, among others (EAC)
- East Africa Public Health Laboratory Networking Project (EAPHLN)
- Trans-Boundary Water Affairs Department (MWE)
- Nile Basin Initiative (NBI)
- Neogenesis Fertility Center
- Health Systems Development Group
- Bridge Consult (Uganda), among others

Software Solutions Developed by HD Resources LTD

- Agency banking software
- Large Scale Hospital Management Software
- Enterprise on Premise data warehousing solutions
- Aviation (UAVs) software
- Artificial Intelligence based data analytics platforms
- Enterprise Resource Planning Solutions
- Human Resource Management Systems
- Finance and Accounting Solutions
- Disease Surveillance Platforms
- Project Planning and Management Solutions
- Project Monitoring and Evaluation Solutions
- Team Collaborations Platforms
- Video conferencing systems
- E-learning and Organizational Capacity Building Platforms
- Digital Marketing and Social-Media Management Tools
- Customer Relationship Management Systems and many others.

A few of the projects undertaken by HD-Resources LTD

https://www.ecsascportal.org/index.php/en/, **Supply Chain Cloud Platform:** ECSAHC TB Supply Chain Portal is an electronic platform that is used to capture, collate, and create reports to disseminate TB commodities supply chain information including stock status, pipeline monitoring and selected supply chain key performance indicators (KPIs). The portal offers countries and regional bodies' access to synthesized and summarized data with simple analysis for managers and decision makers to act. Supply chain information such as quantification, procurement, storage, inventory management and quality assurance is gathered from existing LMIS systems without creating any new data collection system. The data available on this platform will be used to inform decision-making and assist identify solutions to mitigate risks in the short-, medium- and long-term.

https://www.satbhss.org/, **Cloud based platform:** The Southern Africa Tuberculosis and Health Systems Support Project is a World Bank (WB) funded regional project launched in 2016 with the aim of strengthening the health sector's response to Tuberculosis and occupational lung diseases. It is implemented in four (4) Southern African Development Community (SADC) Member States: Lesotho, Malawi, Mozambique and Zambia.

http://162.144.223.52/login/index.php, **Disease Surveillance platform for EAPHLN :** East Africa Public Health Laboratory Network Project (EAPHLNP)" is a regional World Bank funded East Africa Public Health Laboratory Networking Project, which is being implemented in five countries; Burundi, Kenya, Rwanda, Tanzania and Uganda in collaboration between the East, Central and Southern Africa Health Community Secretariat (ECSA-HC), the East African Community (EAC) is collaborating, the World Health Organization (WHO), the US Centers for Disease Control and Prevention (US CDC) and other partners.

http://ec2-18-117-151-229.us-east-2.compute.amazonaws.com:9000, **E-learning Platform for EAPHLN:** The EAPHLN e-learning system is intended to be utilized as a training tool to build the capacity of the laboratories professionals within the region. The EAPHLNP is a World Bank-funded project that is being implemented by the East African Community (EAC) Partner States namely; Burundi Kenya, Rwanda, Tanzania and Uganda in collaboration with the East African Community Secretariat and the East Central and Southern African Health Community (ECSA-HC). The objective of the project is "to establish a network of efficient, high quality, accessible public health laboratories for the diagnosis and surveillance of Tuberculosis (TB) and other communicable diseases".

Advanced Data Analytics and Visualization Platform for NBI: The Nile Basin Initiative (NBI) is an intergovernmental partnership of 10 Nile Basin countries, namely Burundi, DR Congo, Egypt, Ethiopia, Kenya, Rwanda, South Sudan, The Sudan, Tanzania and Uganda. Eritrea participates as an observer. For the first time in the Basin's history, an all-inclusive basin-wide institution was established, on 22nd February, 1999, to provide a forum for consultation and coordination among the Basin States for the sustainable management and development of the shared Nile Basin water and related resources for win-win benefits.

Enterprise Project Management System For ITWAD/MWE: The Ministry of Water and Environment (MWE) was established in 2007, from the then Ministry of Water, Lands and Environment. It has the overall responsibility of the development, managing, and regulating water and Environment resources in Uganda.

What is AOPAAP?

AOPAAP stands for Advanced Organization Process Automation and Analytics Platform (Software)

What is Organization Process Automation?

Organization process automation is **t**he use of software to automate repeatable, multistep organization processes and the software is tailored specifically to the needs of an organization.

Benefits of organization process automation

It saves employees' time: Saving time is the main benefit of process automation. A study revealed that office workers spend 2.12 hours per day on administrative tasks such as searching for information, approving paperwork, and processing documents. Process automation software can complete these tasks much faster and error-free. Ultimately, process automation means employees can use their work time more efficiently.

Cost Reduction: Alongside the cost of labor (millions in total annual wages), there's the cost of lost profit. Organizations lose 20 to 30% of revenue every year due to inefficient processes. Switching from manual to automated organization workflows allow for error minimization. That way, no time and money need to be wasted in fixing issues. The reduction of operational costs is demonstrated by the fact that businesses that automated their processes drove down overall costs by over 20%.

Increased productivity: When cumbersome tasks are delegated to a digital solution, multiple processes can be handled simultaneously. This leads to higher productivity. On top of that, it also improves employee experience by allowing your staff to focus on engaging tasks .

Creates Process Efficiency: A process is efficient when the best outcome is achieved with minimal effort. When a series of predefined steps are performed consistently, there's no room for deviations. Plus, automation translates into improved quality and communication, greater visibility, and more efficient task management. When the team has a dashboard to check the tasks' progress, it gets easier to manage deadlines and improve collaboration. Furthermore, no details can get lost in translation.

Error Reduction: It's not a matter of how capable and skilled your employees are. Erring is human; mistakes happen. Manual slip-ups, inefficiency points, and delays are inevitable. Removing the risk of errors makes the process smoother and helps avoid redundant operations. This being said, the likelihood of errors dramatically decreases when processes are automated.

Processes Standardization: A manual process involving many employees and stakeholders can be quite messy. Everyone has their own habits, filing methods, and multiple tasks to be on top of. For the process to be effective, it needs to be properly designed in the initial phase.

Efficient Auditable Records: Alongside standardization, each phase of an automated process is always recorded in an audit trail. That makes it possible to do the following

1. **track the documents involved**
2. **map their course**
3. **oversee who did what**
4. **check when each action happened**

Such control not only improves accuracy and reliability. It also provides the organization with auditable records of each specific workflow. These records are easily retrievable might the need arise.

Enforces Compliance: Automation is not just about defining a set of rules for routing documents. It also includes setting up:

1. security measures
2. confidentiality protection
3. retention methods for personal data

As everything is traceable and under control, automation ultimately ensures better compliance with relevant regulations.

Increased Scalability: As the client portfolio expands and the number of employees increases, the scope of work also intensifies. Manually issuing 10 invoices is not the same as issuing 1000. The same goes for all other business processes - from hiring new team members to onboarding new clients and more. Shifting business needs and changing regulatory requirements can be effortlessly addressed thanks to automation. As a result, automation helps improve scalability performance.

What Organizational Sectors does **AOPAAP** Automate

Data analytics Engine (Smart reports for the senior management)

Human Resource and Finance

Project Management

AOPAAP System Module Functionality Assignment

Data analytics Engine (Smart reports for the senior management):
Provides data analytics and smart reports for all the departments of
the organization.

Human Resource Module: Provides Human Resource Management
Tools

Project Management Module: Provides Project Management Tools

Features of the Human Resource Module In AOPAAP

● Recruitment & Hiring

● Employee Portal

● Payroll and Workflows

● Time Tracking and Leave Entitlement

● Performance Evaluation

● Employee Training

● Employee Benefits Administration

● Talent retention, Data Management and Finance Management

Features of the Project Management Module In AOPAAP

- Project scheduling and task management
- Budgeting and cost control
- Risk management
- Developing team coordination and collaboration
- Project report creation
- Dependencies, milestones, critical path and Effective time tracking

Features of the Data Analytics Module in AOPAAP (All departments)

- Intuitive Interface
- Data Blending Capabilities
- Ready to Consume Insights
- Easy to Share
- Scalable Analytics
- Integration Support and Smart Reports
- Advanced data visualization and Predictive Reports (Forecasts)

How Does AOPAAP Work?

AOPAAP is a web application, simply put it is a computer program that works in a browser and is deployed either on the organization's LAN or is deployed on the internet for global **authorized-only access by stake holders.**

Databases supported by AOPAAP?

- MySQL
- MSSQL
- MariaDB
- Db2,
- MongoDB
- Oracle
- PostgreSQL and SQLite

What programming languages will be used to develop AOPAAP?

- PHP (Laravel)
- JS (ReactJS and Nodejs for micro services)
- Python (Scripting for micro services)
- HTML/CSS (Front end UI)

What Infrastructure is required to run AOPAAP?

- Cloud hosting resources (For internet deployments, not recommended)
- A computer with MS Windows or Linux Server
- 4GB RAM and 5GB HDD/SSD
- NIC or WIFI interface
- Apache2 and MySQL and SQLite3 (Default Setups) recommended
- PHP8 and Python 3,
- Nodejs 14 LTS, NPM/Yarn, PHP Composer, Docker and Docker Compose

AOPAAP Development and Customization Timeframe

Activity	In charge	Timeframe
Gathering user requirements from AfriChild	AfriChild Staff HD-Resources Team	2 Days
Delivery of first Prototype	HD-Resources Team	4 weeks
Deployment and configuration of final system	HD-Resources Team	3 days
Conducting Training of Trainees	AfriChild Staff HD-Resources Team	3-5 Days

AOPAAP Cost of development and deployment

Item	Cost
● Data analytics Engine (Smart reports for the senior management) Module	**1300 USD**
● Human Resource and Finance Module **(Optional)**	**1300 USD**
● Project Management Module **(Optional)**	**830 USD**
● 6 Months 24/7 User Support	Free
● Installation and Configuration	free

AOPAAP Longterm Feasibility Costs (Annual Recurring Fees)

Item	Description	Cost Per Year **(Optional)**
System Updates, Maintenance User support and **Critical database backups**	Deploying critical version, security and functionality updates	700 USD