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Agenix Studio: Client Centralization and Website/Funnel Builder Platform

Shobha K[1] and Rajashekhara S[2]
[1]Siddaganga Institute of Technology/Department of Computer Science & Engineering, Tumakuru, India
Email: shobhak@sit.ac.in
[2]Siddaganga Institute of Technology /Department of Chemical Engineering, Tumakuru, India
Email: rs@sit.ac.in

***Abstract*—Agenix Studio is a SaaS platform providing capabilities for the success of digital agencies and businesses in areas including website development, project management, and multitenant dashboard solutions. With bleeding-edge technologies like Next.js, Prisma, Stripe, and Tailwind CSS at its core, it ensures a smooth and seamless experience for users. The application has dynamic subdomain management for project agencies to host and manage multiple accounts of clients under one infrastructure. With a very robust role-based access control feature, users can securely collaborate within a team, manage permissions, and get the workflow right. Stripe got integrated into the platform to handle subscriptions, one-time payments, and splits for recurring revenues, making Agenix Studio a revenue-generation powerhouse. Agenix Studio actively hosts a slew of project-management features, all of them focused on enhancing efficiency in the workforces of agencies: Kanban boards, pipelines, automation for the completion of repetitive tasks- you name it. The custom templates enable users to set up websites with gorgeous looks, freeing them from any technical burden of building a responsive design in an easy-to-use drag- and-drop interface. The platform's instincts for security and accessibility are powered by Clerk and middleware that puts secure routes with intuitive navigation. It also houses global themes, media management systems, and notification systems that might play an important role in the engagement of users. Prisma ORM takes care of database management like no one's business and supports future scalability. Agenix Studio strives to be a one-stop solution for digital transformation, enabling businesses to concentrate on their core competencies while taking care of the intricacies of the modern digital domain.**

***Index Terms*— Authentication, Keystroke Dynamics, Behavioral Biometrics, Continuous Authentication, Banking Security.**

I. INTRODUCTION

Today with the rapid rate of digitalization, it is evidence that businesses and creative agencies are imposed with higher responsibility in terms of how much productivity can be done, how to optimize that operation, and how much they can offer their clients. However, it is rarely straightforward to combine these features because of the piecemeal tools and infrastructure they are affected by. Ordinarily, however, agencies have separate areas for website design, project management, billing, and analytics. Nevertheless, these tools may be able to be used independently, and they frequently are used only separately, causing inefficiency, increased operational costs,

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and finding the point of convergence in the workflow. Having the above significant gap, Agenix Studio was created as a new way to combine such features together in a single, integrated platform.

Agenix Studio is a leading-edge Software as a Service (SaaS) software that is targeted to digital agencies and enterprises that want to streamline operations. By combining tools required for website creation, project planning, and performance metrics, Agenix Studio offers a unified- suite solution that enables complex operations. Its intuitive interface ensures ease of use, enabling users to perform a wide range of tasks—from building websites and tracking projects to analyzing business performance—without the need for extensive technical expertise. In contrast to conventional applications that are typically fixed, and have restricted functionality, Agenix Studio is designed to scale and expand with users—and so is capable of catering to the idiosyncratic and growing needs of today's businesses. Multi-tenancy is a feature that distinguishes the Agenix Studio. With this functionality, agencies can maintain separate client accounts under distinct subdomains so as to fully segregate client data yet have a central console available to administrators for managing the business.

For digital agencies, who are working at the same time, on a significant number of clients and tasks, this feature has the effect of greatly simplifying complexity, increasing efficiency and reducing workload. In addition, multi-tenancy not only provides a clear resource isolation but also ensures the privacy of data and restricted access of each client account. To better organise workflow in an agency, Agenix Studio provides secure payment facilities (Stripe) by way of a global payment provider. This integration simplifies subscription management, invoicing, and revenue tracking, offering transparency and ease of use for both agencies and their clients.

The safe payment workflow and multi-tenancy model of Agenix Studio provides an impossible-to-break-tool for agencies that plan to deliver their clients an unbreakable experience. Scaling with business growth is one of the key benefits of Agenix Studio. The most used solutions available today are not satisfactory to satisfy the increasing demands of the agencies because their client base and project portfolio are increasing. In contrast, Agenix Studio is built to handle this expansion with ease. Because of its modular architecture, the system can be easily extended to include new functionalities and the capability to process bigger data loads, guaranteeing reliability and efficiency even as the number of users increases.

Customization is another area where Agenix Studio shines. Businesses generally employ specific workflows, branding requirements and business operations, which are not necessarily addressed by standard off-the-shelf applications. By offering flexible templates, dashboards, and workflows that users can adapt to individual requirements, Agenix Studio overcomes this limitation. This flexibility ensures that the platform aligns with the individual needs of each agency and reinforces the ability to serve specific clients with bespoke experience. Besides the practical advantages, Agenix Studio also elaborates security and usability, which are the two most important success factors of SaaS. Security, encompassing encrypted communications, authentication and integrity data measures, safeguards sensitive data from a variety of threats. Meanwhile, thanks to its easy-to-use interface, non-technical users can work the platform fairly easy. This security vs. ease-of-use tradeoff makes Agenix Studio accessible to a broad range of users, companies from the startup level to large industrial firms. In a society still forming around the world of digital media, companies are in the hunt for innovations that facilitate, in real time, as well as provide data-driven decisions. Agenix Studio addresses this demand with standard dashboards, real- time project status reports and granular performance statistics. These functionalities enable collaboration among distributed teams, natural discovery of/and access to/and trusting of information, and companies to perform educated choices based on useable knowledge.

This work addresses in particular detail the birth and the advent of Agenix Studio and its main features, its structure and its strength. This begins with an understanding of the driver of the platform's creation, which in turn lights the way for the practical challenges that existed for agencies and businesses. In addition, it highlights the new methods applied to overcome these challenges, and, offering an example, it identifies a pattern and potential expansions for future designs and thematics, delivering exceptional value to their clients. This paper serves as a detailed log of the odyssey of the platform along with a roadmap for its future evolution which exemplifies the capacity to change the game for agencies and businesses operating in the internet age.

II. Background Study

Z. Li, F. Liu, W. Yang, S. Peng, and J. Zhou presented a general survey on Convolutional Neural Networks (CNNs) and explained the importance of CNNs in deep learning. The paper is mainly concerned with the broad application of CNN, including computer vision, natural language processing, autonomous vehicles and intelligent medical systems. Unlike existing reviews, this study adopts a general perspective, covering novel ideas and multidimensional convolutions beyond the standard 2-D convolution. The paper first gives a history of CNNs and then makes an in-depth discussion on the different kinds of convolutions. It describes both classical

and deep CNN models and points out the most important factors that make it possible to achieve state-of-the-art performance. Using experimental analysis, the authors obtain rules of thumb for hyperparameter and function selection. CNN applications are broadly classified into 1-D, 2-D and multidimensional use cases, covering their general applicability across fields [1].

Z. Zhang et al. Proposed a Scalable Resource Provisioning Scheme for multitenant SaaS systems based on cloud functions (CFT). The design accounts for the weaknesses of conventional resource provisioning strategies by using a stateless, distributed approach. Significant components are an API gateway for forwarding requests, resource load balancing and a scheduler to control resource allocation as per the custom protocols (SNSP), a function repository to hold and change the business logic, and distributed nodes where the tenant-specific operations are executed. The revolution of this method lies in its effective management of dynamic workloads. Key features are, for example, dynamic hot update, which allows smooth services updates in the cloud without any service interruption, and load-aware scheduling algorithm optimizing the SLA. Using these mechanisms, the system can attain high-speed communications and best use of resources [2].

IM. SK et al. Proposed a No-Code Web Program- ming Platform to address twice the contributive delicacies of traditional web development (e.g., high counts, long time to delevel, low accessibility to non-technical workers) . The system offers non-coder functionalities to the end users, intelli- gence to design functional and aesthetically pleasing websites through the intuitive, graphically understandable, offer of drag- and-drop templates as well as the point-and-click interface, which makes designing of website simpler. In this environment the entry barrier is lowered for private and small businesses, enabling them to design webpages by themselves, directly, and without having to employ professional engineers [3].

B. Bhattacharjee, K. Unni, and M. Pratap developed an ad hoc Bayesian Optimized Extreme Gradient Boosting (XGBoost) Model to handle large e-commerce product returns (returns consist of shipping cost with associated loss), which result in a high logistical cost and profit loss. This study examined an e-commerce data set containing categorical attributes and conducted feature selection through chi-square tests. A battery of classifiers, ranging from individual models through ensemble frameworks to deep neural networks were trained and tested, with their performance being evaluated using a 75:25 train-test split and 10-fold cross-validation. For better prediction accuracy, the best-performing classifier, XGBoost, was fine-tuned using hyperparameter tuning methods such as random search, grid search, Bayesian optimization, and evolutionary algorithms. The experimental results proved that Bayesian-Optimized XGBoost model has the best performance as it achieved about 77.80% accuracy for the hold-out method and 70.35% for 10-fold cross-validation, where a large F-score proved efficacy in returning product predictions accurately [4].

Shimada et al. (2024) proposed a novel binary classification method in the online domain, progressively for pairs of dissimilar and similar data, to bridge a clear gap in weakly supervised learning. Traditional binary classification algorithms need labeled data, which is usually not available because of privacy or logistic limitations. The similarity- dissimilarity (SD) classification framework, as described, allows us to train a binary classifier even with a small number of similar (same class) or dissimilar (different class) annotated pairs by minimizing the dependence on annotations (i.e., multiple annotators/multiple matches) when annotations are present. The authors also restate the unbiased risk estimator for SD classification in an online learning framework and subsequently propose a conservative regularization factor. In a second step, they refined the process by extending the method with two variant versions, featuring linearly and quadratically weighted classifier update costs and thus enabling fine control of the tradeoff between cost and efficacy. These modifications permit the classifier to run in-line as new data becomes available, which in turn permits us to implement real-time applications. The comparative studies between the designed methods also showed that the methods are performing, energy consuming and generalizing highly in single sequence and sequence data, respectively [5].

Errousso et al. Specifically, (2024) introduced a third step in parking space allocation algorithm for Intelligent Parking System (IPS) which is a routine parking space prediction problem addressed by means of artificial intelligence (e.g., binary classification). This special system is based on a novel algorithm which integrates a binary variable and traditional parking database, which converts traditional parking history data in tables to a form which could be classified. Authors used logistic regression models with regularization tools to optimize the classification as much as possible. They achieved an evident improvement in accuracy (e.g., 92.52% accuracy on Log-log with L1 L2 regularization, and 96.90% & 94.42% specificity on Probit with L1 L2 regularization, respectively). Performance metrics describe the performance (the model is better than the traditional model, which is often employed in car parking) and are used for describing the efficiency of a model [6].

Ma et al. (2024) proposed a novel intelligent advertising recognition system with the purpose to enhance the accuracy and speed of WWW browsing and WWW advertising. This system is made up of an intelligent

advertisement recommendation algorithm for better user experience, that is to recognize and tag web advertisements. Feature extraction techniques are all employed in the analysis to build a model, which not only can classify the advertisements, but also can make these models responsive to the user's browsing preferences. Based on this research, it can be shown that the system significantly reduces advertising perception time while keeping the high accuracy, this allows it to provide a more human customized browsing experience. Model performance changes in favor of or against the advertisements and has the maximum processing time (6 s) in the advertisements that the subject has seen and the minimum (3 s) when no advertisement is seen. The results of this work show the scalability and range of the model in terms of traffic flow or content load. In this innovation, the most efficient utilization of advertising resources is achieved in the form of advertisers using the interest targeting functions of the platform and the enhanced promotion value of the intelligent recommendation systems in sales and marketing is realized [7].

Zomorodi et al. (2024) defined a systematic pharmacy guideline framework (RECOMED) and show how to use it for the optimal formulation of drug prescriptions through data fusion and algorithms. This platform is a hybrid technology formed by the integration of three approaches, namely, co-operative filtering (CF), content-based filtering (CB) and knowledge-based algorithm, as well as analyzing sentiment, to provide context intelligence to the user review. Based on clinical information such as the patient's background, clinical history and drug interactions, the model is able to offer personalized safer drug recommendation. Authors show that RECOMED significantly outperforms the popular matrix factorization models in terms of accuracy, sensitivity, and hit rate (respectively, 26%, 34% and 40%improvement). In addition, the model can offer, on average, 31%, 29% and 28% higher accuracy respectively. This platform enabled novel devices to use that could be used by clinicians and patients that will make it safer and easier to use and a portable version could be used to prescribe the correct medication to the correct patient and could be applied to optimize a user's outcome [8].

A recommendation system was introduced that optimized educational content delivery. In this system, a hybrid approach, based on the combination of collaborative filtering (CF) and content-based filtering (CB) with the incorporation of knowledge graphs, is used to better the quality and relevance of the proposed recommendations. Through analysis of student characteristics, learning styles, course performance, and real time engagement with education content, EduAdapt adapts its recommendations to the needs of the learner. In the same way, the system also utilizes natural language processing (NLP) for textual data (e.g., student's comments, course descriptions) that the context of recommendation can be provided and thus, the context matching among its suggestions can be ensured. Reinforcement learning is applied to iteratively refine the flow of recommendations, based on the user engagement and performance [9].

Feng et al. (2023) proposed a new hybrid recommendation system for solving the revisit problem in the conventional content-based and collaborative filtering techniques. Matrix factorization methods and deep neural networks are combined in the herein described system in order to increase the accuracy and robustness of an adaptive recommendation and environment. For the hybrid model, matrix factorization is learned from user-item interactions and the content data are learned to contain temporal features and item preference by deep learning. In this paper two of the most common issues, cold-start and sparsity, of single-recipe recommendation, have been managed [10].

III. Proposed Method

In the proposed work, the aim is to develop Agenix Studio, a flexible Software as a Service (SaaS) environment that specifically is developed to respond to the operational demands of digital agencies and organizations. A single unified platform provides all these functionalities (website creation, project management, payment, analytics) from a wide range of functions. The goal is to deploy a scalable multi-tenant design in order that the agencies can control the variety of client accounts on the different subdomains. This secures the data segregation of everybody but enables admins to have a single overview for management ease.

In Agenix Studio, a drag-and-drop, web building tool will be provided so that users with technical or non-technical skill can design and build websites as the proposed platform includes responsive design, existing templates and configurable blocks. These templates are scalable to the business requirements, so they require less effort and time for their design. In other parts of the platform there will be further technical features available as well, such as Kanban boards and pipelines - to help agencies optimize workflows, automate parts of the process and provide visibility into the state of the work - to further enhance work efficiency.

To ensure the fluidity of financial management, the system will be equipped with its corresponding Stripe to secure the payment towards platform usage, subscription, one- time payment, and in pipe payment technologies. Additionally, companies will be in the position to use the features underlying the customization of dashboards

and AI based analytics enables actionable intelligence on key performance indicators as well as conversion rate forecasts. These analytics will determine which aspects of the workflow are paused and will also show how to optimize the marketing funnels.

Scalability and modularity are central to the platform's design. The server-side, using Node.js and Express.js, will be able to process more than one user request at the same time in a parallel fashion in an efficient manner thanks to Prisma ORM, managing the schema of the multi-tenant database in order to provide scalable and reliable data management. Security will be maintained by robust authentication (i.e., JWT tokens) for session management and role-based access control (RBAC) to restrict access based on the user roles.

Moreover, Agenix Studio will not just use machine learning (ML) algorithms but also provide the ability for predictive analytics (e.g., conversion rate prediction and marketing strategy optimization) on historical data. In contrast, the frontend, by using the framework Next.js with a styled presentation allows to guarantee a user-friendly/responsive, interactive interface which can be tested by using different devices, thanks to Tailwind CSS.

The implementation plan will follow a phased approach. The initial phase will specify the foundation architecture and multi-tenancy, the underlying database design and major functions for website construction and project management. Subsequent steps will include the addition of Stripe integration, RBAC, and the artificial intelligence analytics module, and then a verifications process of scalability and approachability with respect to multi-tenant environments. Last, the system can be implemented in a production environment with monitoring capabilities, with the performance and compliance with service-level agreements (SLAs) can be guaranteed.

Due to the same architecture concept, Agenix Studio will be able to give digital agencies and companies a clearer view of their management, a decrease in their running costs, a greater effectiveness while the quality is maintained by the tool and offer security scalability at the same time a user-friendly environment.

IV. Experimental Results

The development of the Agenix Studio client consolidation platform has demonstrated its ability to enhance client management and operational efficiency. By aggregating client- specific information and key performance metrics into a centralized dashboard, the platform empowers businesses to make data-driven decisions, optimize user engagement, and improve conversion rates.

One of the core strengths of the platform lies in its ability to visualize and track essential indicators such as net profit, potential profit, pipeline amount, and conversion rates. These insights allow businesses to evaluate financial performance, identify potential areas for growth, and implement strategic optimizations. The integration of real-time analytics ensures that decision-making remains dynamic and responsive to market trends.

Client Data and Predictions Dashboard: The Client Data and Predictions Dashboard centralizes client behavior data and employs AI-driven insights to enhance decision-making. It features key performance metrics such as accuracy (0.7488), AUC (0.7211), conversion rate (0.9185), F1 score (0.8483), and mean squared error (0.1710). These indicators provide a holistic view of predictive model performance, balancing precision and recall optimizing accuracy.

A bar chart compares bounce rate and cart abandonment rate, highlighting areas where user drop-offs occur. Additionally, a line chart tracks loyalty scores, enabling businesses to monitor client engagement trends over time. These visualizations help identify friction points in the user journey and guide improvements in retention strategies.

Conversion and Traffic Source Distribution: The second segment of the dashboard focuses on conversion analysis and traffic sources to refine marketing and acquisition strategies.

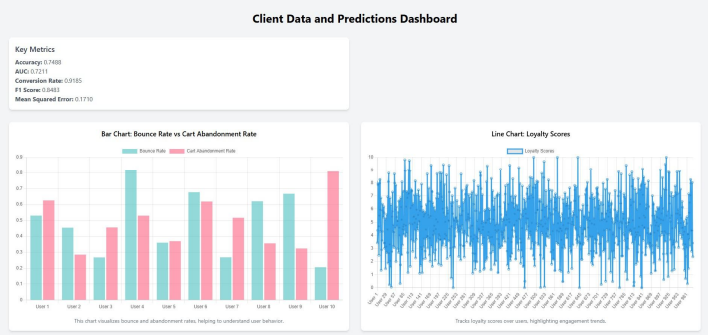

Fig. 1. Client Data and Predictions Dashboard

Pie Chart Conversion Distribution: This visualization displays the proportion of users who converted versus those who did not. Businesses can assess the effectiveness of conversion strategies and identify gaps in client engagement.
Doughnut Chart Traffic Source Distribution: This chart categorizes user traffic based on origin, such as organic search, social media, paid ads, and direct visits. It allows businesses to evaluate which acquisition channels drive the most engagement and optimize marketing budget allocations accordingly.

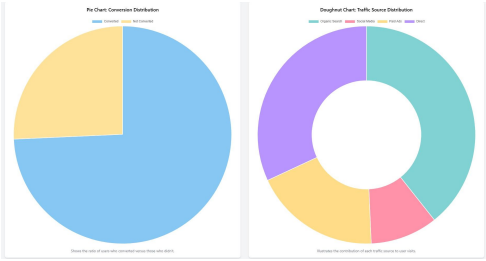

Fig. 2. Conversion Distribution and Traffic Source Analysis

User Engagement and Loyalty Analysis: The final section of the dashboard introduces advanced visualizations to gain deeper insights into user behavior patterns.
Polar Area Chart Bounce Rates: This visualization presents bounce rates in a radial format, making it easy to spot engagement outliers. Businesses can use these insights to address usability or content-related issues affecting retention.
Bubble Chart Interactions and Loyalty: This visualization maps user interactions against loyalty scores, with bubble size indicating interaction intensity. It helps businesses pinpoint highly engaged, loyal customers and identify those requiring targeted reengagement efforts.
The findings illustrate that Agenix Studio is more than just a client data portal—it is a dynamic analytics and automation platform. Real-time insights, AI-powered predictions, and automated workflows enhance business efficiency while visualizations facilitate intuitive decision-making. The incorporation of conversion tracking, traffic source analytics, and loyalty metrics enables businesses to refine engagement strategies and drive sustainable growth.
These results confirm that Agenix Studio is a one-stop platform for modern businesses, providing actionable intelligence to optimize sales, strengthen client relationships, and maintain a competitive edge in a data-driven environment.

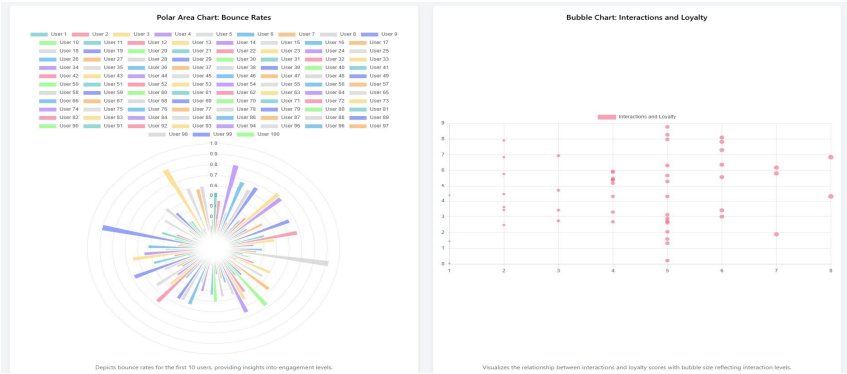

Fig. 3. Bounce Rates and Interaction-Loyalty Analysis

V. Conclusion and Future Scope

Agenix Studio has been developed as a comprehensive platform tailored to the needs of digital agencies, integrating advanced technologies like AI-powered analytics, project management tools, and scalable, modular architecture. Built with React.js, Next.js, Node.js, TensorFlow, and Stripe, it supports real-time data processing, multi-tenancy, and robust security through encryption, RBAC, and audits.

Future enhancements aim to expand mobile accessibility, AI-driven content and design recommendations, and support for dynamic, data-rich applications such as e-commerce and CRM systems. Adding real-time collaborative tools, microservices via Docker/Kubernetes, and plug-and-play modules will further boost scalability and customization. Global localization and eco-friendly resource management are also key goals. These advancements position Agenix Studio to evolve into a feature-rich, scalable, and globally accessible SaaS platform for modern digital workflows.

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