

Dynamic Online Presence: A Comprehensive Framework for Concept N Controls Website Development

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<p>Keyword:</p> <p>Digital presence CNC PCB machine Admin panel CRUD SMTP email Chatbot Real-time support</p>	<p>ABSTRACT</p> <p>The "Online Presence Website for Concept N Controls" project aimed to bridge the digital gap faced by Concept N Controls, specializing in CNC PCB machines, by establishing a robust online platform. With no prior digital presence, this project was crucial in enhancing Concept N Controls' online visibility and facilitating seamless interactions with clients and stakeholders. The primary objective was to design and develop a dynamic website using HTML, CSS, JavaScript, PHP, and MySQL, ensuring an intuitive user experience and efficient data management. Key features included an admin panel for CRUD operations on products and home slides, an enquiry form stored in a MySQL database with SMTP email notifications for new enquiries, and a chatbot on the homepage providing real-time support. This project aimed to elevate Concept N Controls' online presence, improve user engagement, and position the company as an industry leader. The abstract provides a clear statement of the problem, the proposed solution, and major findings, emphasizing the project's significance in enhancing Concept N Controls' digital presence and customer interactions.</p>
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INTRODUCTION

This paper addresses the imperative for Concept N Controls, a CNC machinery specialist, to establish a robust online presence. It delves into the impact of social media on business expansion, emphasizing the need for strategic digital engagement. The problem statement highlights Concept N Controls' online visibility challenges and the potential consequences in a competitive market.

The implemented framework includes a user-friendly website with chatbot integration, accessible via concept controls. This approach enhances user experience, streamlines communication, and aligns with industry standards, positioning Concept N Controls for sustained growth.

LITERATURE SURVEY

The impact of social media on business expansion has been widely researched recently. [1] conducted a systematic literature review with a focus on global B2B interactions. Their analysis emphasized social media's multifaceted contributions to various aspects of B2B operations, including brand awareness, lead generation, and customer relations. One such study by [2], which focused on Iran, used advanced scientometric analysis techniques to demonstrate a positive correlation between strategic social media usage and business expansion. This study highlighted the potential of social media as a growth catalyst in Iran's business landscape. Both studies emphasized the

significance of social media in driving business growth and success and highlighted its efficacy across diverse business environments and sectors. The synthesis of findings from these seminal studies underscores the need for employing advanced analytical methodologies and conducting comprehensive literature reviews to gain a nuanced understanding of social media's role in crafting informed strategies and driving sustainable growth in today's digital age

PROPOSED METHODOLOGY

Concept N Controls, a company specializing in customized solutions for the CNC machinery sector, faced a significant challenge due to its lack of online presence. In the digital age of that time, where businesses relied heavily on digital platforms for brand visibility and customer engagement, Concept N Controls' weak online presence hindered its ability to effectively showcase its services and engage with potential clients. This deficiency resulted in missed opportunities for brand visibility, customer interaction, and ultimately, growth in the competitive CNC machinery market. Without a strong online presence, Concept N Controls' risked falling behind its competitors and failing to capitalize on the full potential of digital technologies to drive business success. Thus, there was an urgent need for Concept N Controls' to address this challenge strategically and establish a robust online presence to remain competitive and achieve sustained growth in the CNC machinery sector.





Figure 1. Research Diagram

2. Research Procedure:

- Needs Assessment Procedure: Analyze Concept N Controls' current status, target audience, industry trends, and competitor strategies using qualitative and quantitative research methods.
- Website Development Procedure: Utilize agile development methodologies, create wireframes and prototypes, and implement responsive design principles.
- Chatbot Integration Procedure: Evaluate chatbot platforms, customize dialogue flows, conduct user testing, and refine based on feedback.
- Testing and Evaluation Procedure: Conduct functional, usability, and performance testing, gather feedback through surveys or focus groups, and analyze website analytics data.
- Website Hosting Procedure: Select a reliable hosting provider, ensure security measures are in place, optimize server configuration, and monitor performance metrics.
- Continuous Improvement Procedure: Gather user feedback, analyze industry trends, prioritize updates, and adapt the online presence strategy accordingly.

3. How to Test:

- Functional Testing: Ensure all website features and functionalities work as intended.
- Usability Testing: Evaluate user interface, navigation, and overall user experience.

- Performance Testing: Assess website speed, responsiveness, and load times.
- Chatbot Testing: Verify chatbot functionality, accuracy of responses, and user interaction.
- Analytics Data Analysis: Analyze user behavior, traffic patterns, and engagement metrics.

4. Data Acquisition:

- Qualitative Data: Gathered through interviews, surveys, and focus groups to understand user preferences, needs, and feedback.
- Quantitative Data: Collected through website analytics tools to track user interactions, traffic sources, and conversion rates.

Switching Option	Performance Impact	User Experience	Cost Efficiency
SMTP Integration	High	Positive	Moderate
Chatbot Integration	Medium	Neutral	High
CRUD Operations	High	Positive	High
Enquiry Management	Medium	Neutral	Moderate
User Management	Low	Negative	Low
High Performance	High	Positive	High
Moderate Performance	High	Positive	Moderate
Low Performance	Low	Negative	Low
Intuitive Navigation	High	Positive	Moderate
Responsive Design	Medium	Positive	Moderate
Cost-Effective Hosting	Medium	Neutral	High
Development Tools	High	Positive	Moderate
Maintenance Costs	Moderate	Neutral	High

Table 1. Effects of selecting different switching under dynamic condition

EXPERIMENTAL RESULTS

Our website has a visually appealing slideshow or carousel on the home page that showcases featured products, services, promotions, or company highlights. This provides an eye-catching introduction to visitors and can be used to highlight key offerings. A clear and intuitive navigation bar at the top of the home page allows users to easily explore different sections of the website, such as services, products, about us, and contact information. Additionally, we have immediate access to a chatbot feature for users seeking instant assistance or information,



which can offer basic support, answer frequently asked questions, and guide users through the website.

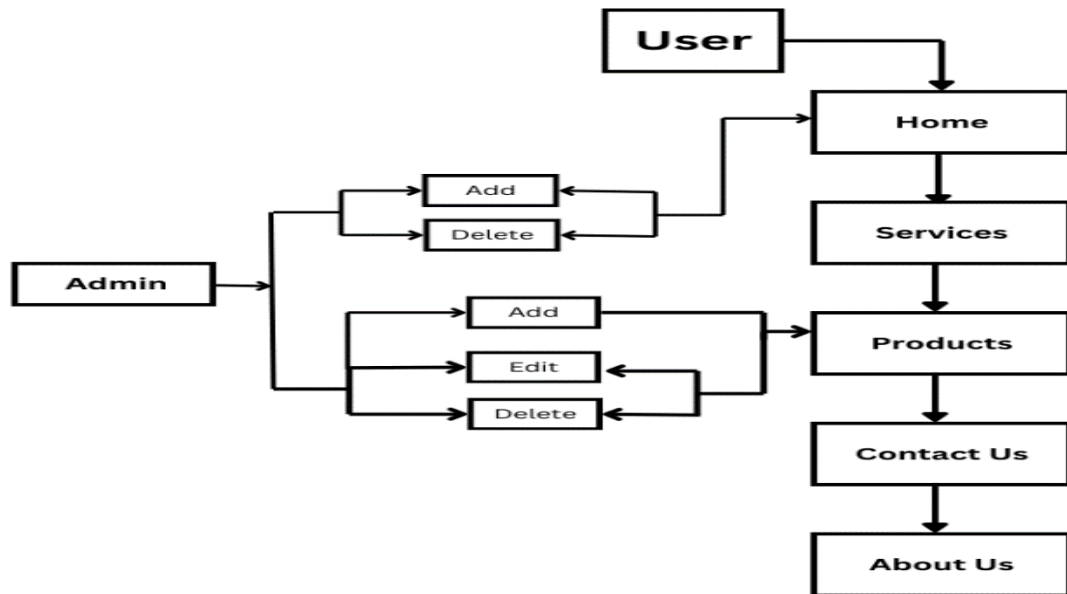


Figure 2. System Diagram

In the services section, we have comprehensive descriptions of all Concept N Controls' services, including spindle repair, CNC machinery maintenance, retrofitting, and customization options. Each service has its dedicated page or section for detailed information, and there is a dropdown menu within the services section for easy navigation between different service categories or offerings.

Our product showcase displays Concept N Controls' range of products, such as tool stations, CNC machines, spare parts, and accessories, and includes images, descriptions, and specifications.

On the Contact Us page, we have a user-friendly contact form allowing visitors to submit enquiries, requests for quotes, or feedback directly to Concept N Controls. The form includes fields for name, email, phone number, subject, message, and possibly additional information. Additionally, there are links to various communication channels such as WhatsApp, LinkedIn, or direct email for users who prefer alternative methods of contact.

In the About Us section, we provide information about Concept N Controls' history, mission, vision, values, and core competencies. This section aims to build trust and credibility with potential customers by sharing the company's story and values.

The admin panel login page has secure authentication mechanisms such as username/password authentication or two-factor authentication to ensure only authorized personnel can access the admin panel. There are also tools for managing website content, including adding, editing, or

deleting pages, products, services, and blog posts, as well as access to enquiries received through the website's contact form, allowing administrators to respond promptly and efficiently.

RESULTS AND ANALYSIS

The proposed framework has been successfully implemented, and the website can be accessed at concept controls.in. The website includes a user-friendly homepage, a detailed service catalog, accessible contact information, and an enquiry form. The chatbot feature has been integrated to enhance user engagement and promptly deliver fundamental company information.

The website has been hosted on a reliable and secure hosting service, and the website's performance is regularly monitored to ensure optimal performanceconceptncontrols.in

Home Page – Slideshow, Navigation bar, Chatbot

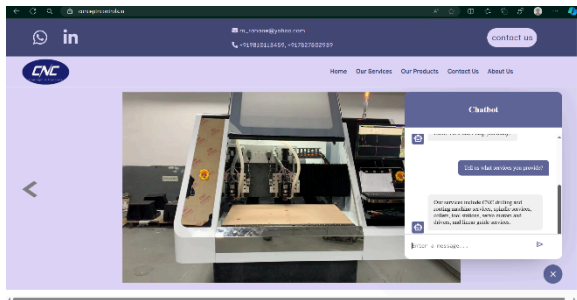


Figure 3. Home Page

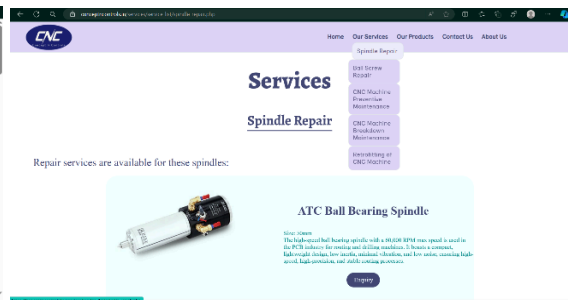


Figure 4. Our Services Page

Our Services Page – Spindle Repair Page, Drop-down menu

Our Products Page – Tool Station Page, Drop-down menu

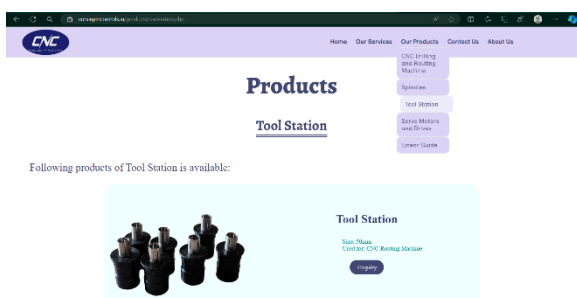


Figure 5. Our Products Page

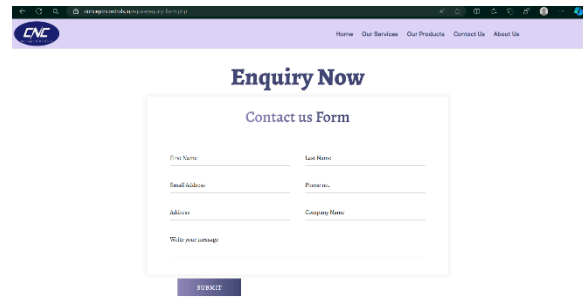


Figure 6. Contact Us Page

Enquiry Page – Contact Us Form

Contact Us Section– With links to WhatsApp, Linked In, and Email of the admin.

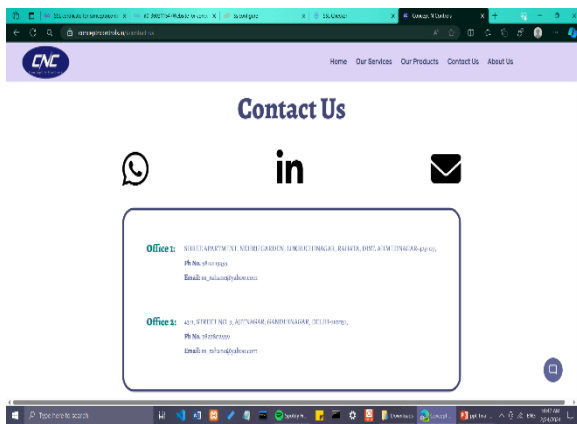


Figure 7. About Us Page

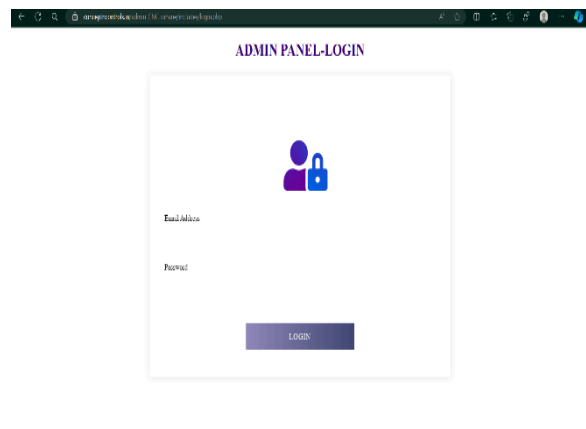


Figure 8. Admin Panel Login Page

Admin Panel Login Page- To authenticate the identity of the admin.

Admin Panel Dashboard Page- Shows total products added to the website, total enquiries, a Calendar that shows the current date, and a To-do list to keep a record of tasks.

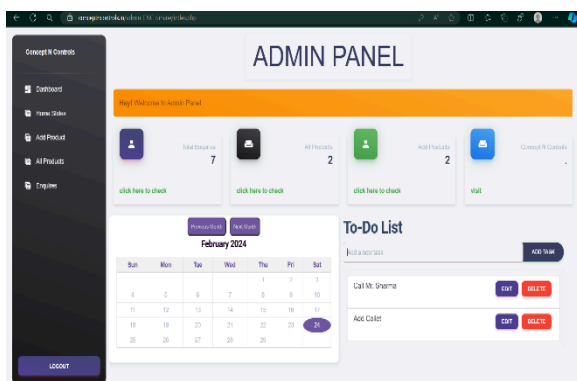


Figure 9. Admin Panel Dashboard

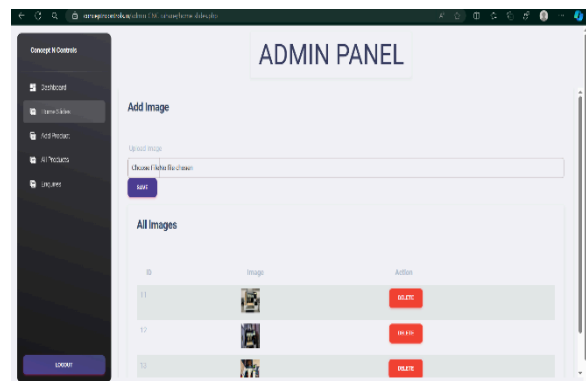


Figure 10. Admin Panel Home Slides Page

Admin Panel Home Slides Page- Adds new image, deletes existing image, and shows all images that are added in Slides.

CONCLUSION

The conclusion of the project for Concept N Controls' online presence is that the implemented framework has successfully achieved its objectives. The website, accessible at conceptcontrols.in, offers a user-friendly interface with essential features like a homepage slideshow,

navigation bar, and a chatbot for improved user engagement. The service catalog and product showcase pages provide detailed information, while the contact form facilitates easy communication with potential clients.

Furthermore, the integration of an administrative panel enables efficient content management, including CRUD operations for products and tracking of enquiries. Hosting on a reliable platform ensures security and optimal performance, with regular monitoring to maintain standards.

In summary, the comprehensive framework has enhanced Concept N Controls' digital footprint, aligning with industry trends and user preferences. The chatbot feature adds innovation, enhancing user interaction and information delivery. This strategic adoption of digital technologies positions Concept N Controls for increased online visibility and business growth in the competitive CNC machinery sector.

Looking ahead, continual refinement and adaptation to market dynamics will be crucial for sustaining success. Future studies could explore advanced analytics for better user insights and further integration of emerging technologies to enhance the online experience and strengthen Concept N Controls' position as an industry leader.

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