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Business Analysis and Requirement Study for the Women Information Bank (WIB) Platform under TNWESAFE With Reference to Bonton Softwares Pvt. Ltd.

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ABSTRACT

The Indian economy has multiple and fragmented departments, information management systems have become fragmented and make it challenging for women to get access to services and support at the community level, including safety services, welfare programs, employment, and other resources to empower them. The WIB Platform will fulfill these requirements by conducting a systematic business analysis and requirements assessment for the TNWESAFE project to build an integrated, multiple sector digital platform for women through the use of a centralized, integrated and user-friendly interface for all programs related to women. Data was gathered via secondary sources from various government agencies, stakeholder contacts, and structured tracking sheets, and by using stratified sampling. We analyzed a total of 4,053 records across 32 scheme types and multiple modules (like Entrepreneurship, Welfare, Safety, Skill Development, Employment, and Grievance Redressal) using Microsoft Excel and Power BI dashboards. The analysis highlighted that there is an unequal visibility of schemes across different departments; found major gaps between the beneficiaries' awareness of the availability of a scheme and the actual availability; and outlined the functional and non-functional requirements for successfully developing the platform. Results of the analysis also validate that by creating a centralized digital platform, the delivery of services to women in Tamil Nadu would be enhanced, fragmentation of information will be reduced, and access to information will be increased.

***Keywords**: Centralized System; Women's Information Bank; TNWESAFE; Business Analysis; Requirements Study; Digital Platform; Women Welfare; E-Government.*

Introduction

Public Services Will Continue to Change in An Environment Driven by Technology, Particularly Related to Women's Safety & Empowerment. Women Are Working Actively in Social Development, Education, Business and Work; However, Because Of Issues Related to Women's Safety and Welfares Access to Information, And Understanding Government Programs, Women Still Experience Barriers to Accessing Immediate Services. Due To The Fragmented Nature of Information Across Different Government Departments, Many Women (Beneficiaries) Find It Difficult to Obtain Services Efficiently.

To eliminate this divide TNWESAFE's Women Information Bank (WIB) Platform is a next generation digital solution that aims to deliver welfare-related information, safety solutions and empower opportunities to women through a single-platform which provides a consolidated database and integrated services. A business analysis is essential in this context because it helps define system boundaries, define and map out expectations from stakeholders, identify user requirements, and convert functional requirements into usable specifications to inform the development of the WIB Platform.

A successful digital welfare platform requires more than just the technology to operate it; but an understanding of how departments manage scheme data, how users from diverse socio-economic and educational standards interact with that information, and what functional and non-functional attributes will ensure continued viability and loyalty from users long into the future. The aim of this research was to provide a formal requirement analysis of the WIB Platform to resolve these issues and provide direction on how to improve service delivery through the use of technology.

This was achieved by determining stakeholder needs, evaluating existing processes, documenting both functional and non-functional requirements, and recommending an integrated framework for more effective system design/implementation.

The research also included an analysis of how analytical programs (such as Microsoft Excel and Power BI) can be utilized to facilitate the organization and visualization of scheme-related data to assist with decision making.

Statement of the Problem

The many different sources from which women can learn about assistance programs, such as governmental agencies and via the Internet, are creating confusion for beneficiaries trying to understand, access or apply for these types of government assistance. Because of this confusion, many women lack awareness of the services available to them, which has resulted in the under-utilization of assistance programs by women.

Without a fully integrated system at the operational level, there is duplication of effort among departments, inconsistent handling of data and difficulty monitoring scheme usage efficiently from an operational point of view. From a development standpoint, as there have been insufficient organized business study carried out prior to system design, there has historically been a poor alignment between platform features and actual user needs. This study addresses the main issue of properly directing the development of a single women's information platform that bridges the divide between scheme availability and benefit access by using a business analysis and requirements framework.

Need for the Study

The lack of a single access point makes it difficult to fully utilize available services; therefore, before beginning the development of the TNWESAFE platform, it will be necessary to conduct thorough user requirements analysis. This process must identify user needs and expectations as well as clearly outline technical and system limits. Completing this analysis can provide valuable input to the design of TNWESAFE and may also generate useful input for the design of an electronic system that provides equitable access to services for all women beneficiaries in Tamil Nadu and meets organizational goals.

Objectives

- Assessing the current distribution and availability of women welfare schemes as well as access to these services from various government agencies in Tamil Nadu.
- Identifying and analyzing the key stakeholders of the WIB platform including beneficiaries of women owned businesses, governmental bodies, NGO’s and development teams.
- Gathering, analyzing and documenting the functional and non-functional requirements of the proposed WIB system.
- Conducting a scheme-wise and department-wise analysis of the data on women welfare schemes, using Power BI dashboards to determine where there are structural gaps in scheme visibility and accessibility.
- Developing a structured requirements framework setting out how we will plan and design for the WIB platform and support for its future scalability.

Review of Literature

Numerous studies have explored the relationship between service delivery targeted at women and digital platforms. Sharma (2019) found that using centralized digital platforms increased the accessibility and transparency of public services centered on women. He has also indicated that the use of fragmented knowledge sources reduces the effectiveness of assistance programs. Kumar and Patel (2020) further supported the WIB integration approach; they showed that multi-sectoral information systems improve inter-departmental coordination and minimize redundancy in effort.

According to Lewis (2018), uncoordinated requirement analysis is largely responsible for how often public-sector systems fail in the areas of business analysis and e-governance; the study showed

that business analysts need to work on the communications gaps between technical teams and stakeholders. In his work, Verma (2021) noted that iterative requirement validation should be an essential factor for platforms associated with government, given the continuing changes to policies and the ongoing variety of demands from users.

Rao (2020) found that when assessing digital projects for women in Tamil Nadu, a centralised solution would be more effective- as most projects had decentralised access points. Banerjee (2019) reported a direct correlation between information access and women's empowerment; therefore, centrally located digital platforms lead to women being able to make subsequent independent and better-informed choices. For multi-demographic platforms, Norman (2018) reiterated the importance of user-centred design principles (i.e., simple, accessible and usable).

Pressman (2017) concluded, from a technical point of view, that the clearer the functional and non-functional requirements, the more effective the system will be in regard to performance, security, and usability. Sommerville's (2016) research showed that structured workshops, surveys, and interviews are excellent ways to collect requirements from non-technical user groups. Chen (2019) described how effective decision making and user experience are improved through seamless data integration across multiple departments using a multi-sectoral platform. Lastly, Agarwal (2020) suggested that in order to overcome issues related to requirements such as scalability and changing policy requirements; e-governance systems should have flexible and adaptable requirement models.

In order to achieve long-term sustainability of digital welfare platforms, this body of research collectively validates the need for a structured business analysis approach to develop a platform, the importance of using centralized information management for women's welfare to increase their access, and that creating a user-centered design with sufficient information about user requirements is essential to develop successful welfare platforms for women.

Research Methodology

To systematically evaluate how women's welfare schemes are distributed, accessed, and what stakeholders need to build the planned WIB Platform, the study employed a descriptive research design. A description research design was appropriate for this study because the research objectives did not require testing predetermined hypotheses but instead expected the findings to characterize the current situation, determine any significant gaps between the way women's welfare schemes were supposed to be delivered, and describe the requirements for an organized WIB Platform.

Using a stratified sampling method to ensure participation from multiple government agencies, various stakeholder groups (i.e. female beneficiaries), TNWESAFE officials, non-profit organizations, and software development teams to collect data through primary and secondary methods. The collection of primary data was through structured tracking sheets, face-to-face interactions, stakeholder meetings with TNWESAFE project staff, and online meetings via Google Meet. Secondary data was collected from government websites, official scheme documents, policy papers, and publications on welfare.

Data Gathering Template (Tracking Sheet)

This template was used as the primary means of collating the data related to schemes in a single standardised format. The template contained the following key fields: Scheme Name, Department Name, Scheme Category, Scheme Objectives, Educational Qualification, Employment Status, Aadhaar Number Availability and Comments from Beneficiaries. Data records (totaling 4,053) were obtained and arranged in table form based on 32 different schemes for analysis purposes.

Analysis and Interpretation

Table 1: Overall Scheme and Record Distribution – WIB Platform Analysis

Category	Details
Total Records Analyzed	4,053
Total Schemes Covered	32
Modules Included	Entrepreneurship, Welfare, Safety, Skill Development, Employment, Grievance Redressal
Departments Analyzed	Multiple (Social Welfare, ADW, MSME, TNSDC, and others)
Data Collection Tools	Tracking Sheet, Power BI, MS Excel

Women's welfare programs are implemented through a considerable number of separate entities and functional divisions as revealed by the comprehensive overview of their dashboard study. The total number of records as well as the scope of types of programs reflect how complex the current

system is and present a strong case for creating one consolidated digital platform. Presently, there isn't a coordinated way to administer 32 active programs across multiple agencies, which has resulted in a significant separation of data and created barriers for users to understand and access program information.

Table 2: Module-wise Scheme Distribution

Module	Focus Area	Relative Share
Entrepreneurship	Self-employment and business support	High
Welfare	Social and financial welfare	High
Safety	Women safety and security	Moderate
Skill Development	Vocational and professional training	Moderate
Employment	Job placement and career support	Moderate
Grievance Redressal	Complaint and issue resolution	Lower

A well-designed platform should allow users to cover every module by offering options to filter and search for schemes based on the number of modules per scheme based on the total amount of modules per scheme. Modules that provide workers with basic skills are other important methods of service delivery within the government.

Table 3: Educational Qualification and Working Status of Beneficiaries

Educational Level	Working Status Categories Observed
10th Standard	Homemaker, Unemployed, Self-employed
12th Standard	Student, Homemaker, Employed
Undergraduate (UG)	Employed, Student, Self-employed
Postgraduate (PG)	Employed, Self-employed, Student

The report mentions that beneficiaries come from a variety of education backgrounds and occupations, which highlights the importance of creating an accessible and user-friendly platform that meets several user's varying levels of what we call digital literacy. The demographic data is an insightful tool to gather critical functional requirements such as simply navigating through the site, the ability to utilize local languages, and having clearly defined schemes.

Table 4: Department-wise Record Distribution

Department	No. of Records	Key Modules
Social Welfare Department	High	Welfare, Safety
Adi Dravidar & Tribal Welfare	368	Entrepreneurship, Skill Development, Welfare
MSME Department	Moderate	Entrepreneurship
TNSDC	Moderate	Skill Development, Employment
Other Departments	Variable	Multiple

The obstacles to integrated access through disaggregated department-based analysis show that scheme-related information has been stored in separate databases across many different agencies/departments. An example of this type of information is 368 files controlled by the Adi Dravidar & Tribal Welfare Department related to three separate programs. A major functional requirement of the WIB system is to consolidate this data into a single system.

Table 5: Functional and Non-Functional Requirements Summary

Requirement Type	Key Requirements Identified
Functional	User registration, Scheme search and filter, Module-wise categorization, Scheme details display, Grievance submission, Aadhaar-based verification, Reporting dashboard
Non-Functional	Usability (simple navigation), Security (role-based access, data encryption), Performance (handling high user traffic), Scalability (supporting future scheme additions), Accessibility (multilingual support)

A detailed analysis of the requirements will result in identifying all functionality and non-functionality of the platform that must be satisfied for it to complete successfully. For an administrator, the reporting and monitoring tools will need to be present, and for a user, the capability to search for schemes, filter results and access the necessary information about schemes would be essential. In addition to the requirements mentioned above, the platform must also be secure, scalable and user-

friendly for people who have varying levels of experience when using digital interfaces; including those living in remote areas or areas with limited access to stable/affordable internet.

Findings

- The analysis of 32 welfare programs and 4,053 beneficiary records from six operational modules demonstrated the degree of volume and complexity of women's welfare data requiring centralization across a single digital platform.
- In Tamil Nadu, women's awareness of available social schemes remains significantly and continually disparate from beneficiaries. There is no dearth of welfare resources, however, fragmentation of information across multiple government agencies creates obstacles for qualifying women to find and utilize the welfare programs to which they are entitled; illustrating the failure of the information architecture to support an equitable distribution of welfare resources.
- The majority of welfare program offerings are captured within the Entrepreneurship and Welfare modules, which articulate the government's emphasis on social protection and economic development; however, the Grievance Redressal module is relatively underdeveloped, which will adversely affect the adoption of the online platform and the users' trust in it should complaints not be addressed in a timely and effective manner.
- According to the cross-departmental data analysis, there is no system for data unification and welfare data is kept in the separate "silos" of at least seven different departments. The Social Welfare department is the main partner in developing the WIB platform and has the largest number of records.
- In addition to this, the Adi Dravidar and Tribal Welfare (ADTW) department oversees 368 records across three different welfare schemes, showing that separate welfare departments manage a significant number of welfare records individually which suggests a need for a unified data structure. The benefactor demographic analysis revealed a diverse range of education levels, from less than 10th grade to post-graduate degrees, along with a diverse range of employment statuses, such as homemaker, student, employed, self-employed and unemployed women. Therefore, a multilingual, inclusive platform that is mobile-first in design will be critical in helping the different groups of women who have diverse backgrounds.
- The analysis of the distribution of schemes and the demographics of users, as displayed on the Power BI Dashboard, supports the argument for including analytics as part of the WIB Platform's administrative interface at launch, due to the visual analytics facilitating a more easily interpretable pattern of scheme distributions geographically, as well as user's demographic profiles.
- Analysis of the geographical distribution of beneficiaries shows that they are located across a variety of urban, semi-urban, and rural locations, which suggests that the platform must provide satisfactory service across several types of connection and bandwidth constraints (for example low bandwidth in rural areas).
- Aadhaar-based analyses confirmed that the ability to verify a person's identity is required for accessing schemes and managing eligibility; thus, design choices related to securing the platform and the privacy of its data will be greatly influenced by this outcome.
- The requirement analysis found fifteen different functional/nonfunctional requirements. The three main functional requirements are scheme search, eligibility match, and grievance handling. Usability, security, multilingual, and data privacy are the four most important nonfunctional requirements.

Suggestions

- Users who have low text literacy should have access to a centralized electronic system (the WIB platform) that shares 32 schemes from various departments as one searchable system. The user will have the ability to filter results on a module basis, have access in English and Tamil, and be able to search using their voice as well.

- A mobile-first design and progressive disclosure will provide simple features for basic users using the primary interface, but more advanced users can use features like eligibility matching, scheme comparisons, and analytics that require additional time and experience using the system.
- A personalized eligibility matching feature should be the highest impact feature, enabling one to find schemes based on their job title, qualifications and date of birth quickly thereby addressing the awareness gap identified in this study.
- The Grievance Redressal module should provide users with the ability to provide structured feedback to build user trust, provide for ongoing improvements to the platform, specify timeframes for module responses, allow users to track their grievances in real time, and have a mechanism by which grievances can be escalated.
- Before development begins, a structured data governance framework should be established to identify and describe the integration methods, quality control procedures and protocols, frequency of updates, and responsibilities of data ownership for each of the departments involved.
- To reduce maintenance costs while maintaining the quality of the data, the departments should provide users with a standardized data entry template and provide each department with an administrative dashboard that will allow them to update their own program information subject to the approval process.
- To obtain an understanding of 'information gaps', to identify outdated programs, and to quickly add any new welfare initiatives to the platform, regular audits of data will need to be completed; initially on a quarterly basis, followed by an annual basis.
- Through the administration of normal administrative processes, monthly data for view count of schemes, volume of eligibility checks, grievance rates and patterns of use/engagement at a local level will have to be incorporated to Power BI dashboards developed during this requirements study.
- The platform must be built for scalability from the outset to allow for future scheme extensions, as well as additional departments, and to provide for an increasing number of users without requiring fundamental changes to the system or negatively impacting performance.
- The public education campaigns supporting the rollout of this platform must also help those beneficiaries who are not familiar with digital welfare technologies in rural and semi-urban areas. There will need to be partnerships with local government and non-government organisations to carry out this work.

Conclusion

In the case of the Women Information Bank (WIB) Platform within the TNWESAFE platform, a comprehensive Business Analysis and Requirement Analysis was conducted. From this analysis, a presentation was created using Excel and Power BI to analyze approximately 4,053 records from 32 different schemes across departments and modules, leading to the conclusion that there is a good reason to develop one central digital platform. The analysis indicated that there is a serious gap between beneficiaries' knowledge of the schemes available and the number of schemes offered, which is mainly due to the fragmentation of information across departmental systems.

This research creates a structured requirement framework to develop an efficient platform to meet the development goals of the WIB Platform by providing the following: All requirements will include both functional (i.e., module filtering, scheme search, grievance submission, etc.) and non-functional (i.e., multilingual, security, scalability, etc.) component requirements. The distribution of records and the diversity of recipients demonstrate that usability and inclusion should be prioritized in platform design.

The WIB platform, which is an open-access, accessible and user centric information system can greatly enhance access to the provision of women's welfare services in Tamil Nadu. Through the WIB Platform closing of the information gap, allowing for full access to women beneficiaries for available welfare resources, and positioning Tamil Nadu as a leading state in inclusive development through technology, the WIB platform will improve upon the current status of women's welfare services in Tamil Nadu by enabling coordinated approaches to needs assessment, partnership development and analytics-based monitoring.

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