People Oriented Smart Towns

Barry Peter Kirby, Amanda Georgina Kirby & Jim Wilson

K Sharp Ltd

SUMMARY

The growth of interest in Smart Cities and development into Smart Towns and Smart Communities, has been driven by the technology development, however much of the data developed is not being utilised because it is not clear on its value. The People Oriented Smart Towns (POST) methodology has been developed to put user requirements at the front of Smart developments. This paper describes how that process is being applied to Kidwelly in South Wales and describes the outcomes so far.

KEYWORDS

Human Factors, User Centred Approach, Smart Towns, Smart Cities, IOT

Project Overview

Kidwelly, a small town with a rich historical background, has been actively seeking to capitalise on digital solutions to boost its local economy, streamline public services, and create a more inclusive and connected environment. The application of the POST (People-Oriented Smart Towns) methodology in the development of a Smart Town for Kidwelly has been an innovative effort aimed at transforming the town's infrastructure through digital technology while keeping the needs of the community at its heart. Unlike traditional Smart Town initiatives that often prioritise technology, POST shifts the focus to the people - residents, businesses, and visitors - ensuring that the technological enhancements are aligned with improving their day-to-day experiences.

The POST methodology applied to Kidwelly consists of two main phases: the Research Phase and the Action Phase, each of which is designed to ensure a deep understanding of the town and a structured approach to implementing technology that solves real-world problems.

Research Phase: The Research Phase is crucial to understanding the unique dynamics of Kidwelly, its population, and its infrastructure. It is structured around the following key activities:

1. ***Stakeholder Consultation***: The project began by consulting with a wide range of stakeholders. Initial meetings helped establish the project's scope, define geographical boundaries, and set goals tailored to the needs of each group.
2. ***People-Focused Discovery***: The project team segmented the local population into four key groups: residents, visitors, local businesses, and external stakeholders such as tourists and commuters. Through surveys, workshops, and informal discussions, data was gathered to create a detailed profile of how these groups interact with the town's services and infrastructure.
3. ***Systematic Investigation***: A comprehensive review of the town's existing digital infrastructure was conducted. This involved mapping mobile network coverage, analysing the use of existing public Wi-Fi services, and understanding how current Internet of Things (IoT) technologies, such as the LoRaWAN sensors, were being utilised.

4. ***Urban Dynamics***: This stage involved building a detailed picture of how people move through and interact with the town. The team examined the main routes taken by visitors and identified patterns of activity that could inform where future digital interventions would be most impactful.

Action Phase: The Action Phase focuses on implementing the insights from the Research Phase. It follows a cycle of planning, deployment, monitoring, and review to ensure the interventions meet the community's evolving needs.

1. ***Gaps and Remedies***: Based on the systematic investigation, several gaps in Kidwelly's infrastructure were identified, such as poor mobile connectivity, limited Wi-Fi coverage, and underutilisation of existing digital systems.
2. ***SMART Plan***: A clear implementation plan was developed, focusing on realistic, achievable milestones that involved all stakeholders.
3. ***Implementation and Verification***: In this step, the technological solutions are deployed and tested.
4. ***Monitor, Assess, and Evaluate***: A critical aspect of the POST methodology is its iterative nature, ensuring that the technology adapts to changing community needs.

Main Findings

Through the application of the POST methodology in Kidwelly, several important findings have been identified:

1. ***Low Awareness of Smart Town Initiatives****:* Over 60% of residents and visitors in Kidwelly were unaware of the town's Smart technologies, with only 3% regularly using the free Wi-Fi.
2. ***Poor Mobile Connectivity***: The vast majority of respondents rated mobile connectivity in Kidwelly as poor, particularly indoors.
3. ***Demand for Real-Time Information***: Both residents and visitors expressed a clear desire for real-time updates on local transport, traffic, parking, and events.
4. ***Concerns Over Data Privacy***: Data privacy emerged as a significant concern, with over half of the respondents (54%) expressing discomfort about how their data might be collected and used.
5. ***Infrastructure Improvements Needed***: While Kidwelly has some foundational digital infrastructure, such as free public Wi-Fi and limited LoRaWAN sensors, these are currently underutilised.

Future Recommendations

Recommendations for Kidwelly
1.Public Awareness Campaign
2.Enhance Digital Infrastructure
3.Develop a Kidwelly Mobile App
4.Data Privacy and Transparency
5.Data-Driven Decision Making.

Recommendations for the POST Methodology
1.Focus on Early Community Engagement
2.Tailoring Solutions to Specific Towns
3.Continuous Feedback Loops
4.Enhanced Focus on Cybersecurity

Conclusion

The application of the POST methodology in Kidwelly has highlighted the importance of a people-first approach to Smart Town development. By focusing on the real needs of residents, businesses, and visitors, the project has uncovered several key areas for improvement, from expanding digital infrastructure to addressing data privacy concerns. Moving forward, continued engagement,

infrastructure upgrades, and data-driven decision-making will be critical to realising the full potential of a Smart Kidwelly. The POST methodology, with its iterative, flexible approach, provides a valuable framework that can be adapted to other towns seeking to improve their communities through smart technology.