

MINISTER'S INNOVATION AWARD

Land Transport Authority
We Keep Your World *Moving*

MERIT AWARD

DRIVING ROBOTIC PROCESS AUTOMATION VIA INNOVATIVE COE



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IMPETUS FOR PROJECT

1. Growing Operational Pressures Were Stretching Our People

As LTA's responsibilities expanded to better serve the public, staff faced a rising tide of manual, repetitive and resource-intensive tasks— from processing applications to reconciling revenues and resource intensive. These tasks, while essential, often had to be balance with higher-priority operational duties, leading to delays, and significant after-hours work. This was unsustainable for both productivity and staff well-being, and simply hiring more staff was not a sustainable or cost-effective option.

2. RPA Pilots Delivered Wins — But Effective and Sustained Scaling is a Challenge

To address this, LTA piloted Robotic Process Automation (RPA) with some use cases in Human Resources, Finance, and Public Transport — areas rich in rule-based, repetitive processes. The results were clear: over 900 man-days saved annually through automations such as fare revenue reconciliation, AI-powered recruitment screening, and vocational license processing.

However, the pilots also surfaced a bigger challenge: how do we sustain and scale RPA across diverse work functions in a 7,000-strong organisation without escalating vendor/system costs, long development lead times, or divested attention from real operational duties?

3. A Feasible Pathway Based on a People-Centred Rethink

The traditional vendor-led approach to implement automation is costly, often slow and less effective, as external developers lack the deep process familiarity to our staff possess. Automations implemented by individual staff are unlikely to be sustained as they would be driven by individual interests depending on the emphasis, motivation and support provided at their immediate workplaces. Thus, without a new approach, RPA could risked plateauing in scale very quickly as a niche tool rather than transforming the way LTA works.

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We needed an effective model for delivering automation that could be scaled without proportionally increasing resources, remain financially sustainable, and keep solutions relevant by putting process ownership in the hands of those closest to the work. **With just five RPA engineers in our Centre of Excellence supporting over 7,000 staff, we have achieved an effective and sustainable adoption of RPA through a model of empowering and fuelling the employees themselves with the skills and motivations to build and manage automations – our novel Citizen Developer model.**

Statement of Need:

LTA needed to expand its operational capacity to address its expanding tasks to meet public expectations. Leveraging automation via Robotic Process Automation (RPA) is a key strategy to improve productivity in work processes. But we needed an effective model for delivering RPA that could scale without proportionally increasing resources, remain financially sustainable, and keep solutions relevant by putting process ownership in the hands of those closest to the work. With a given team of just five RPA engineers in our Centre of Excellence to support over 7,000 staff, we needed to confront the challenge in moving the inertia of empowering and motivating employees themselves to build and manage automations on a sustained basis – setting the stage for our novel Citizen Developer model.

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More Than a Framework – An Innovative Movement that Lasts

The idea was conceived in-house to solve a critical challenge: how to scale RPA adoption across LTA's 7,000-strong workforce with only a lean central team (five RPA engineers) – while keeping delivery agile, relevant, and cost-effective.

Traditionally, RPA is delivered through a vendor-led model. While familiar, this approach is slow, costly, and detached from day-to-day realities. Many organisations have turned to Citizen Developer (CD)-led models to address these challenges, training staff to build their own automations. However, these approaches often stop after initial training and a few early automations. Without continuous support, governance or engagement and recognition, momentum fades, adoption becomes uneven, and the benefits plateau.

Our Novel Solution - The Hybrid Citizen Developer Model

We reimagined the CD-led approach by **making support as the centrepiece** – ensuring RPA empowers and motivates staff rather than adding to their workload. CDs are not left to “walk alone”; they are backed by a lean but powerful Centre of Excellence (CoE) underpinned by a structured **Systems–Processes–People framework**:

- **Systems** – A centrally managed, scalable and easily accessible RPA platform that ensures cost efficiency and prevents duplication.
- **Processes** – Governance, development standards and support framework to maintain quality while allowing flexibility for innovation.
- **People** – Continuous enablement, engagement, and recognition so CDs are supported and motivated long after training.

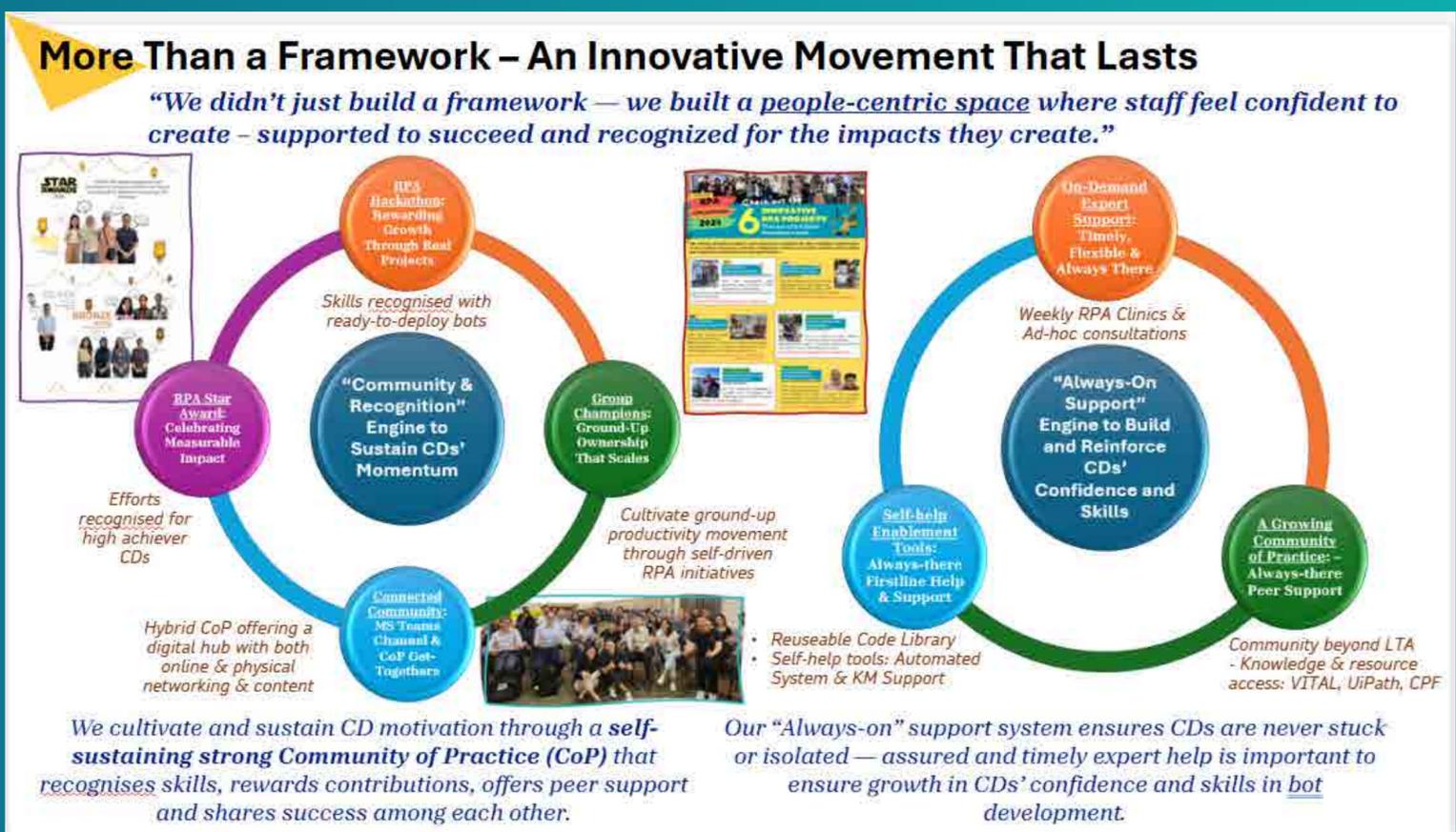
This framework is the engine behind our model – enabling five RPA engineers to support 7,000 staff, maintain quality, and keep adoption growing year after year.

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What Makes This Different



- **Structured onboarding and experiential learning** – In-house experiential workshops demystify RPA through hands-on activities, helping staff see RPA as a helpful tool, not extra work. Sessions are consistently oversubscribed (~50 participants per run), showing strong and sustained interest. For Groups with specific needs, dedicated experiential workshops are conducted on request, combining hands-on learning with real use case assessments to fast-track implementation. Under centralised training coordination, the goRPA course by Republic Polytechnic equips CDs with foundational skills using real LTA use cases. To date, over 300 staff have been trained.

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Figure 1: In-house experiential workshop – hands-on session to demystify RPA and build staff interest

Figure 2: Dedicated experiential workshop (with North-South Corridor Group) – on-request session combining hands-on learning with real use case assessment to accelerate implementation.

Figure 3: goRPA training session – centrally coordinated by the RPA Office to equip Citizen Developers with foundational automation skills using real LTA use cases.

- **Always-on support** – Weekly RPA Clinics, ad-hoc consultations (attended by over 1,700 unique visitors and resolving more than 2,700 issues since 2022), and self-help tools ensure CDs never “walk alone.” Support is available at every stage – from feasibility checks to post-deployment troubleshooting – so RPA becomes an enabler, not an add-on.



Figure 4: Weekly RPA Clinic – open-door, on-demand support with over 1,700 unique visitors and 2,700 issues resolved since 2022.

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- **Structured governance and cost-efficiency** – Central RPA platform management, bot development standards, and an in-house License Optimisation Bot ensure quality automation and optimal control costs as adoption scales.
- **Recognition and rewards to sustain CDs' interests** – Recognition, acknowledgement and rewarding CDs' skills and efforts are keys to keep them engaged and self-motivated. Hackathons bring together CDs from across divisions to pitch their skills to solve real business challenges and learn from each other in the process. In the most recent edition, nine cross-division teams participated; even non-winning entries had their use cases implemented, ensuring tangible impact beyond the competition. The RPA Star Awards celebrate high-impact automations that save hundreds of manhours annually. This year, the introduction of a monthly leaderboard has driven friendly competition, motivating CDs to deliver more automations year-round as they pitch their efforts with more productivity achievements.

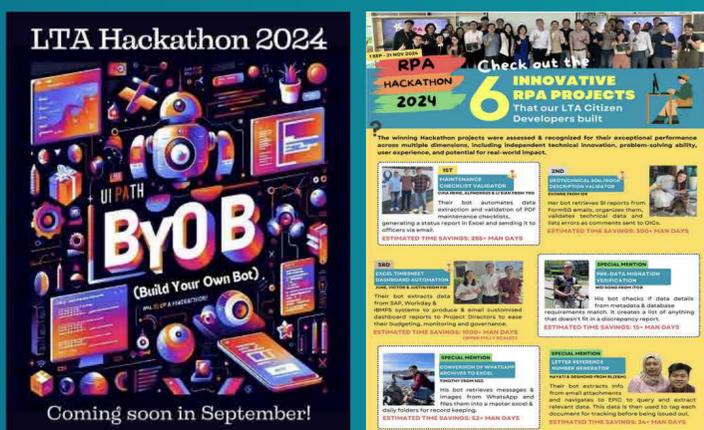


Figure 5: RPA Hackathon – bringing together Citizen Developers from across divisions to solve real business challenges. In the most recent edition, nine teams participated, with all viable use cases implemented – even those that did not win.



Figure 6: RPA Star Awards – recognising high-impact automations that save hundreds of hours annually. This year, a monthly leaderboard update has fostered friendly competition, motivating Citizen Developers to deliver more automations year-round.



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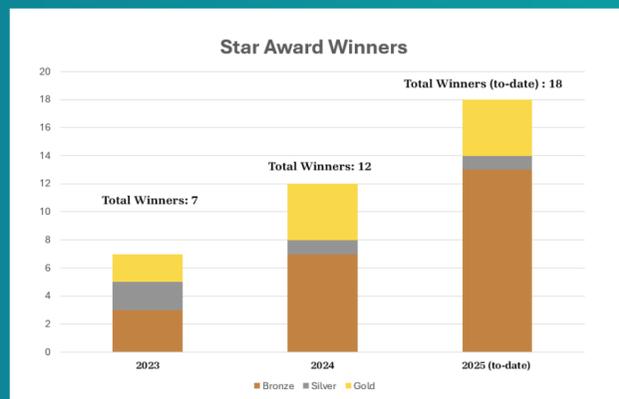


Figure 7: Growth of Star Award Winners

- **A community that inspires** – Our Community of Practice fosters voluntary, interest-driven participation. Through bi-annual sharing sessions and an active MS Teams channel, CDs share ideas, showcase their work, and learn from peers. This open, peer-led network turns RPA into an opportunity to collaborate and create – not a top-down directive – making participation organic, enthusiastic, and self-sustaining.



Figure 8: Bi-annual Community of Practice – a peer-led platform where Citizen Developers voluntarily share experiences, showcase automations, and exchange ideas, fostering collaboration and sustaining interest in RPA across the organisation.

Why It's Innovative

This model redefines both the vendor-led and typical CD-led delivery approaches:

- Unlike vendor-led models, it empowers those closest to the work to drive automation.
- Unlike typical CD-led models, it embeds continuous support, governance, and cultural engagement so automation feels enabling, not burdensome.

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The result is more than a framework –it's a people-driven movement that embeds automation into LTA's culture, making it scalable, cost-effective, and built to last.

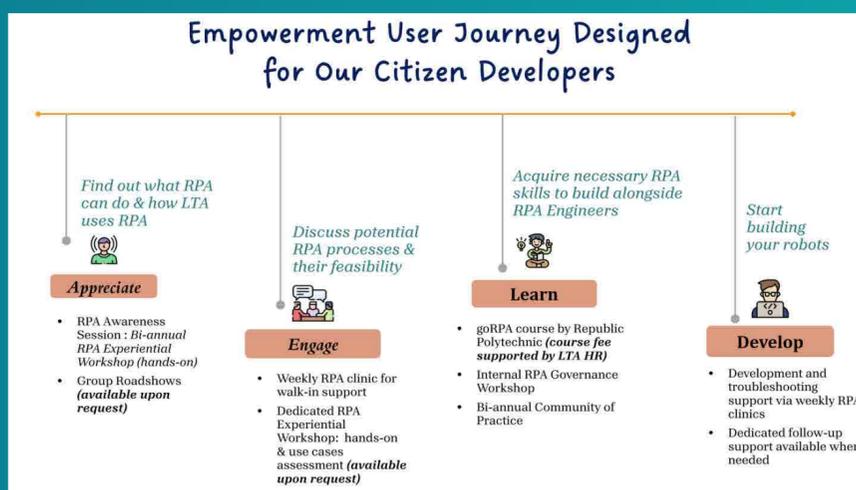


Figure 9: Our structured Empowerment User Journey ensures Citizen Developers are supported from initial awareness to hands-on development. By combining awareness sessions, experiential workshops, targeted training, and ongoing support, we sustain interest, build

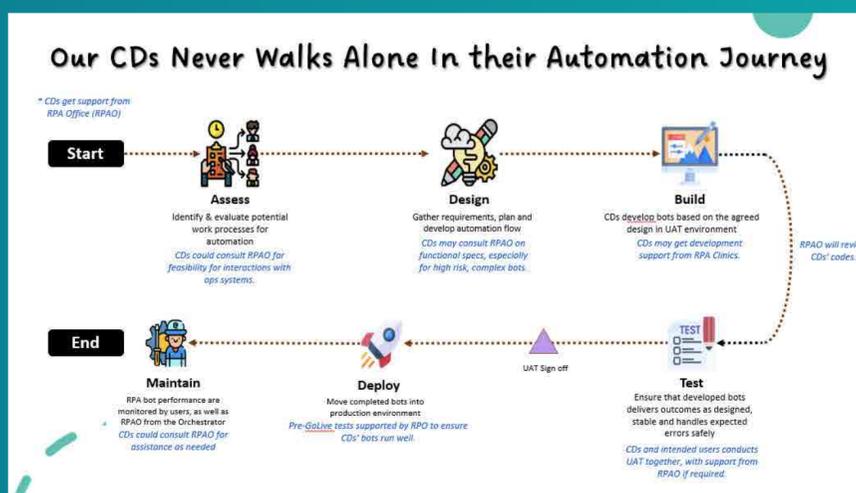


Figure 10: The RPA Office supports Citizen Developers through every step of their automation journey – from assessing opportunities to maintaining live bots. This structured, end-to-end support ensures CD's are never left on their own in their automation journey

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Innovation Highlights:

LTA's hybrid Citizen Developer–Centre of Excellence model **redefines** traditional RPA delivery by combining staff-led automation with a lean central team and a structured **Systems–Processes–People** framework. Unlike typical CD-led initiatives that taper off after training, our model is “**support-first**” – embedding continuous enablement, governance, and recognition so automation empowers staff rather than adding to their workload.

Five RPA engineers enable 7,000 staff through initiatives like experiential workshops, on-request use case assessments, the goRPA training programme, weekly RPA Clinics, Hackathons, Star Awards with monthly leaderboards, and a vibrant Community of Practice. Participation is **voluntary, interest-driven, and sustained**, turning RPA into an organic, people-driven movement. This approach makes automation scalable, cost-effective, and culturally embedded – delivering lasting change in how LTA works.

The model has proven with tangible results, both in sustained productivity gains (~77,500 man-hours savings annually, or ~44 FTE-equivalent) and an increasing population of RPA CDs (> 300 LTA staff).

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IMPACT AND VALUE-CREATION

1. Tangible Outcomes & Value

To date, LTA has empowered over **300 Citizen Developers (CDs)**, resulting in **412 automated use cases** and an estimated annual productivity gain of **~77,500 man-hours saved** (~44 FTE equivalent). These automations streamline critical internal and public-facing services. For example:

- **EFMS Feedback Routing** (~987 hours saved/year): Automates routing of public feedback to the correct officer, reducing delays and improving service responsiveness.
- **Braintree Refund Processing** (~620 hours saved/year): Automates refunds for unsuccessful Autopass applications, cutting turnaround time and enhancing user experience.

These automations are not just efficiency gains benefiting only LTA – they translate into better services for citizens and faster turnaround for public queries and transactions.

2. Cost Efficiency & Optimisation

LTA's lean, CD-led operating model enables organisation-wide automation with just a five-person RPA Office (reduced from six). Strategic initiatives like platform migration achieved **~80% cost reduction**, while **centralised license optimisation** improved utilisation and reduced wastage.

Collectively, these initiatives have improved the **Benefit-to-Cost Ratio (BCR)** from 1.0 in FY22 to **~1.87 in FY2024**. This operating model demonstrates both self-reinforcing cost-effectiveness and long-term sustainability of our RPA adoption approach.

3. Human-Centric Value Creation

This model is designed around **empowering staff**, not burdening them. Through **experiential workshops**, the formal **RPA training course**, and ongoing **clinics and consultations**, CDs are continuously supported with the skills and confidence to automate real pain points. Automation becomes a form of enablement – not additional work.

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To sustain interest and motivation, initiatives such as **Hackathons** and the **RPA Star Awards** offer both meaningful recognition of their skills and efforts and also friendly competition to outperform each other with greater productivity achievements – reinforcing purpose and ownership across teams.

More importantly, this model has driven a **shift in mindset** – from passive task execution to proactive innovation. Staff are no longer just users of automation; they are co-creators, continually exploring new ways to improve work through RPA. This people-centric approach not only drives adoption but cultivates a culture of innovation and empowerment – encouraging staff to think beyond day-to-day tasks and contribute creative, scalable solutions to persistent challenges.

This is further reinforced through our **Community of Practice**, where CDs actively exchange ideas, showcase automations, and learn from one another. Participation is driven by genuine enthusiasm and interest – not obligation – creating an organic, peer-led network that helps embed RPA into the workplace culture.

4. Contributing Value Beyond LTA

Beyond internal outcomes, LTA's model has influenced a broader ecosystem:

- Shared our CONOPS at **VITAL's WOG webinar** and contributed **common bot modules** to the WOG platform.
- Presented at **UiPath's regional event** and was featured at **PSD's Public Service Week** in 2024 to showcase our concept of operations (CONOPs).
- Engaged agencies such as **MOT, SFA, HSA, MSF, CPIB, JTC, NPARKS** and others, offering insights into our approach.

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Figure 11: VITAL's Webinar Series: LTA's Approach for RPA Adoption



Figure 12: 2024 UiPath's Regional Event: Sharing on LTA's Approach on Adopting Process Automation



Figure 13: 2024 PSD's Public Service Week featuring LTA's RPA

These engagements reflect strong validation — showing how LTA's model drives cross-agency inspiration and contributes to a wider movement of staff-led innovation. seamless transboundary ATM ConOps.

Outcome:

In just over three years, through a lean team of five engineers (reduced from six), LTA's RPA CONOPS has enabled > 300 Citizen Developers who are now skilled to develop RPA bots, delivered 412 automations, and saved ~77,500 man-hours annually. Through cost optimisation and scaled productivity, we've achieved a **BCR of ~1.87**.

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More importantly, we've cultivated a cultural shift – empowering staff not just to use automation, but to lead innovation. Through hands-on support, peer communities, and structured recognition, RPA has become a self-sustaining, people-driven capability that continues to deliver lasting impact across the organisation and beyond.

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FEASIBILITY AND SCALABILITY

Feasibility

LTA's RPA model is highly realistic and practical to implement with current technology and resources. It is built on commercially available RPA tools (e.g. UiPath), widely accessible learning platforms, and existing organisational infrastructure – requiring no proprietary systems or complex IT overhauls.

The model has also proven its feasibility within LTA's context: a complex organisation of 7,000 staff with only a lean five-person RPA Office. Through structured onboarding, central platform governance, and ongoing support channels, LTA has been able to maintain quality, scale automation, and sustain momentum without expanding headcount or introducing heavy costs.

Furthermore, the flexible and modular nature of the model – including reusable bot templates, standardised governance, and self-service tools – enables smooth implementation and adoption across diverse business functions.

Scalability

The model is designed to be scalable, adaptable, and replicable across domains and sectors – whether in large organisations or smaller ones with different operating needs.

- **Large organisations** benefit from the full structure: central governance, CD enablement, clinics, recognition mechanisms, and community-building.
- **Smaller organisations** may adopt a simplified version – e.g., with fewer enablement layers – while still leveraging the same principles: staff empowerment, lean support, and scalable standards.

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FEASIBILITY AND SCALABILITY

This adaptability has already been validated through cross-agency engagements. LTA's model has been shared with various public sector bodies (e.g., MOT, SFA, MSF, CPIB, JTC, NPARKS), and featured by VITAL and UiPath at WOG and regional platforms. Its core principles – enablement, support, governance, and culture – are sector-agnostic and well-suited for other public service domains. We also have representatives from across agencies sitting in to our events and RPA Clinics to observe our CONOPS at work.

As more organisations look to scale automation without inflating headcount or cost, LTA's model offers a ready blueprint/playbook for sustainable and contextualised RPA delivery.

Potential of Project:

LTA's RPA model is not only proven and achievable with today's tools and resources – it is also highly adaptable. From large government agencies to smaller teams, the model's modular, lean, and human-centric design makes it a practical and scalable solution across domains. Its successful replication potential across the wider public sector reinforces its long-term growth value and transformative power.