

VISION PAPER

The Operative Republic

Building an Operating System for Dominican Government Services

By Rainier Mallo¹

The delivery of public goods and services with efficiency, transparency, and accountability is a common struggle for governments. The Dominican Republic faces a particularly relevant case in construction permitting, where service delivery is constrained by fragmented workflows, inconsistent criteria, weak traceability, and the need to coordinate multiple public institutions with different mandates, capabilities, budgets, and priorities. Some institutions have mature systems; others rely on partial tools or manual processes. The result is a service environment that is difficult to coordinate, difficult to standardize, and difficult to scale. Governments around the world are increasingly moving from isolated portals and one-off digitization projects toward Digital Public Infrastructure (DPI): shared, interoperable digital systems for identity, payments, data exchange, and service delivery at scale. Institutions such as the World Bank Group have framed DPI as a more durable model for public-sector modernization because it allows governments to build common digital rails rather than disconnected systems².

This vision paper explains why and how we are building a government service operating system: beginning with the modernization of construction permitting, but with an architecture intentionally designed for broader national use. Its proposed **Federated Bounded-Context Microservices with Centralized Orchestration** architecture allows institutions to retain ownership of their systems while interoperating through shared identity, workflow governance, audit trails, and service standards. The model is intended to improve permitting and other government services while helping institutions build operational maturity over time. In that sense, the platform is both an operational reform initiative and a blueprint for scalable Dominican digital public infrastructure.

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² <https://openknowledge.worldbank.org/server/api/core/bitstreams/bb08d389-cfbf-4417-9415-b9f65ef5c1f4/content>



Introduction: Why this platform, why now

The broader context for this paper is a global transition in public administration. Across much of the world, governments digitized forms, published websites, and isolated procedures. Far fewer digitized the state itself. The problem with isolated procedures is that they replicate, rather than resolve, the fragmentation of the pre-digital state. When each agency digitizes its own forms and workflows independently, the result is a patchwork of disconnected systems that cannot share data, coordinate decisions, or enforce consistent standards across institutional boundaries. Citizens may face the same verification requirements multiple times across different services. Errors propagate unchecked because no system has visibility beyond its own perimeter. Costs compound as each agency builds and maintains parallel technical infrastructure. And accountability becomes harder to establish precisely because responsibility is dispersed across systems that were never designed to communicate. Digitization, in this mode, improves the surface of government without touching its underlying architecture.

The next phase of modernization will be defined less by portals and more by whether institutions can build operating systems capable of coordinating agencies, enforcing rules consistently, learning from data, and safely deploying AI in the delivery of services. The emerging phase is centered on **Digital Public Infrastructure (DPI)**: reusable digital capabilities—such as identity, payments, data exchange, workflow coordination, and trusted service layers—that multiple institutions can use to deliver services more effectively. Rather than digitizing one procedure at a time, DPI seeks to strengthen the operating foundations of the state by creating shared operational layers through which institutions can coordinate workflows, enforce standards, exchange data securely, and deliver services with greater consistency at scale.

International experience illustrates the broader trend. Estonia built interoperable public systems through digital identity and secure data exchange, enabling broad cross-government services³. India demonstrated how population-scale identity and payments rails can support both public and private innovation⁴. Singapore has emphasized shared government platforms and common service components⁵. While institutional contexts differ, the broader lesson is consistent: governments that invest in reusable digital capabilities can improve service delivery, reduce duplication, and scale modernization more effectively.

³ https://www.oecd.org/content/dam/oecd/en/publications/reports/2020/12/seizing-the-productive-potential-of-digital-change-in-estonia_63752f80/999c7d5a-en.pdf

⁴ <https://niti.gov.in/sites/default/files/2025-09/india-data-imperative-the-pivot-towards-quality.pdf>

⁵ <https://www.developer.tech.gov.sg/assets/files/GovTech%20World%20Bank%20NDI%20APEX%20report.pdf>



What We Are Building: Capacity Through a Digital Operating System for Government Services

What is being built is not a website, nor a portal, nor a conventional case-management tool. It is a digital operating system: the operational layer through which government services are defined, requests are processed, workflows are coordinated, evidence is managed, and decisions are made traceable. It is focused first on construction permitting, but designed with capabilities relevant to public services in general.

Its purpose is to increase institutional capacity by improving the ability of the state to define services clearly, receive requests efficiently, coordinate reviews across units, apply rules consistently, manage evidence, process payments, monitor performance, and continuously improve execution over time.

This distinction matters. Citizens and firms interact with interfaces. Institutions operate through bureaucratic processes, compliance controls, transparency records, legal responsibilities, and strategic decisions. Better websites can improve access, but they do not by themselves solve fragmented execution. The deeper asset is the infrastructure underneath: the workflows, identities, rules, registries, and evidence trails that determine whether government can deliver reliably.

The platform is therefore being designed so that core service functions remain usable across channels. Web portals matter today. Assisted and AI-native channels may matter more tomorrow. But regardless of interface, the underlying service logic, permissions, evidence trail, and administrative controls should remain consistent.

The service problem

The Dominican Republic now faces a comparable opportunity. Construction permitting is a high-impact public service connected to investment, housing, urban development, and citizen trust. It is also an operationally demanding domain. The permitting ecosystem includes ministries, decentralized agencies, utilities, and 158 municipalities with varying legal mandates, technical capabilities, budgets, staffing levels, and institutional priorities. Some actors have capable systems; others rely on partial tools or manual processes. Internal workflows are often fragmented, criteria may be inconsistent, and interinstitutional coordination frequently depends on email or informal follow-up rather than shared system logic.

The current failure is easy to misdiagnose. From a distance, the problem can look like a weak digital channel. In practice, it is more complex. Our internal diagnostics show a set of government services with long processing times, strong territorial variation, repeated manual coordination, and weak traceability. The current platform, the “Ventanilla Única de Construcción” (or VUC) was developed by a third party that owns the code and the data; and it currently only supports



construction licenses and modifications, while other services still move through email; and it has no interoperability with other agencies. The Ministry issues 907 new licenses per year through this process. Median time of issuance per license is around 189 days nationally, with considerable territorial heterogeneity, while Punta Cana has a median of 282 days, San Francisco de Macorís is at 130. User feedback is similarly clear: delays, lack of follow-up, inconsistent technical criteria, unclear information, repeated document requests, and poor coordination across institutions.

The underlying workflow reveals why. The permitting process crosses multiple phases: intake and document review, parallel technical review across specialties, and pre-inspection and homologation. It also includes edge cases that are operationally real but not formally documented, such as situations where development begins before full licensing is complete. Meanwhile, bottlenecks extend beyond the Ministry itself. External approvals —environmental, tourism-related, municipal land-use clearances, and others—can stop cases for months. Interinstitutional coordination often happens through email rather than through shared system logic. Requirements are not always normatively grounded. Technical criteria are not always unified. Manual work persists where workflow discipline should exist.

For that reason, this paper treats the platform as a response to a broken administrative system, not as a digital facelift. Three factors make this the right moment to build.

First, **institutional timing**. The Ministry of Housing and Construction (MIVHED) is operating under a new administration with a mandate to improve execution. Leadership transitions create a narrow but valuable window in which inherited constraints can be questioned, priorities reset, and reforms that once seemed difficult could become politically possible.

Second, **economic timing**. The Dominican economy grew by 5.0 percent in 2024, yet the construction sector expanded by only 2.1 percent, below its long-run average⁶. In early 2025, the sector contracted year-over-year during the first two months of the year. Construction performance depends on many variables, but when the sector slows, the cost of administrative inefficiency becomes harder to ignore.

Third, **technological timing**. Governments no longer face a binary choice between paper processes and rigid first-generation portals. More mature approaches now exist for modular systems, interoperable APIs, workflow automation, cloud infrastructure, and AI-assisted operations. This creates a genuine opportunity to build systems that are more capable, more governable, and less dependent on single vendors.

Within this context, MIVHED launched a *Permitting Modernization Plan* composed of seven pillars. The platform discussed here is one of them. It is not the full reform, nor can it independently solve

⁶ https://cdn.bancentral.gov.do/documents/publicaciones-economicas/resultados-preliminares-de-la-economia-dominicana/documents/infeco_preliminar2024-12.pdf



legal fragmentation, staffing constraints, or municipal heterogeneity. But it is the operational layer through which many of the broader ambitions must eventually pass.

Moving now carries risk. Some implementation choices will need revision. Some systems will underperform before they mature. But waiting carries a greater risk: continued fragmentation, duplicated investments, vendor dependency, uneven service quality, and the accumulation of operational debt that becomes harder to unwind each year.

This paper is therefore a snapshot of one institution's current thinking at the time of implementation. Specific technologies will change. Some architecture will evolve. The underlying problem statements are more durable.

How are we building it? The advantages of Federated Architecture

The platform is being built through what we describe as **Federated Bounded-Context Microservices with Centralized Orchestration (FeBMO)**: a model in which institutions retain ownership of their capabilities (federated), each domain operates within clear functional domains (bounded-context), services are built as modular components that can evolve independently (microservices), and shared workflows, identity, standards, and controls coordinate them into one coherent environment (centralized orchestration).

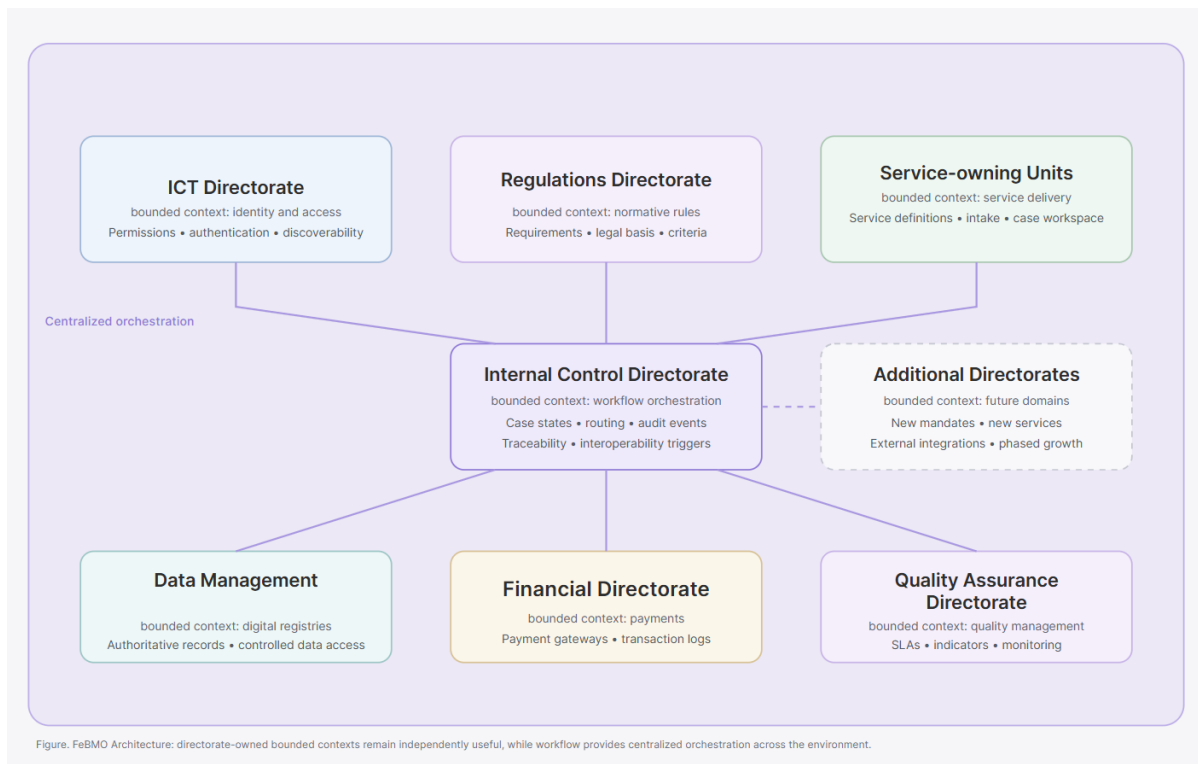
There are administrative, legal and delivery realities that favor a FeBMO design:

- First, **legal and institutional reality**. In the Dominican Republic, public institutions are organized through laws, decrees, and approved structures that assign functions to formal organizational units. Under Law No. 247-12 and related administrative frameworks, responsibilities such as finance, strategy, legal, and service management are not abstract concepts; they are offices with people and assigned mandates. Our architecture proposes that systems, therefore, need to align with real institutional ownership. For example, a payments capability naturally maps to finance departments. Workflow supervision maps to operational leadership. Service-definition management maps to service-owning units.
- Second, **independent institutional value**. Each system should be useful on its own, they should not be tightly coupled with one another for them to provide value. This reduces the risk of large modernization programs becoming underused or obsolete before delivery. The system "PAY," for example, should already create value through transaction control, logs, and reporting even without every other component being deployed.
- Third, **scaling through people and ownership, not only technology**. Large platforms often fail because too much complexity accumulates in one place. By dividing the ecosystem into smaller domain systems, teams can work in parallel, move faster with less coordination overhead, understand their problem space more clearly, and evolve at the speed appropriate to their domain.



- Fourth, **coordination without monoliths**. Federation alone can reproduce fragmentation. Central orchestration is what prevents that outcome. Shared identity, workflow states, integration contracts, audit models, and service standards allow multiple systems to operate as one coherent service environment without collapsing into a single brittle platform.

FeBMO Architecture – One public institution



Rethinking the public operative system with a FeBMO architecture allows to go beyond a mere new digital platform or system, to a new kind of digital public infrastructure that can work through the complex relationship between legal frameworks, government bureaucracy and effective service delivery, where each component is mandated to reflect on its the added value through the work stream but at the same time it needs to be integrated into a holistic output. When each system is independently useful, it forces the designers to think clearly about what that system actually does. A system with no standalone value is usually a system whose purpose is not well understood; it exists only to relay data between other systems. However, centralized orchestration is what converts parallel autonomy into a coherent public service, ensuring that a citizen interacting with the platform encounters one consistent environment, regardless of how many institutions are operating beneath the surface.



The Systems Being Built

Each system is designed to solve a real operational problem, create standalone value for its owning unit in the ministry, and become more powerful when connected to the others.

- **Government Identity System (GOB-ID):** Modern cross-institutional services require trusted identity, permissions, and discoverability. GOB-ID provides authentication, authorization, role-based access control (RBAC), attribute-based access control (ABAC), and an application catalogue that can be shared across subscribed organizations. This makes systems not only multi-tenant, but easier to access across institutions. It is intentionally designed to connect over time to official sources of truth, such as civil and commercial registries, without replacing the legal responsibilities of those agencies.
 - **Primary institutional owner:** Cybersecurity Directorates, through Identity and Access Management Departments.
- **Workflow Management System (WF):** The process today is inconsistent. Existing documentation is often inaccurate because it does not reflect how work actually moves in practice. WF makes movement explicit: routing files, assigning responsibility, enforcing stages, escalating overdue tasks, and making status visible to managers and users. It documents the process, monitors it, and helps enforce it.
 - **Primary institutional owner:** Process Documentation Departments within Quality Assurance or Internal Control Directorates.
- **Normative Rules System (NORM):** Users repeatedly report inconsistent criteria and a lack of coherent permit evaluation standards. NORM addresses this by converting regulations, manuals, and institutional criteria into a structured rules framework that governs how requirements are defined, applied, and audited. It functions as a single source of truth for checklists, forms, and evaluation logic. Every requested document, question, or compliance item must be explicitly tied to a legal or regulatory basis.
 - **Primary institutional owner:** Standards and Regulations Directorates; where absent, Legal Directorates.
- **Quality Management System (QMS):** Services cannot improve if performance is invisible. QMS tracks service levels, bottlenecks, response times, quality indicators, and operational trends so leadership can manage execution rather than react to complaints.
 - **Primary institutional owner:** Process Monitoring Departments within Quality Assurance or Internal Control Directorates.
- **Service Delivery System (SDS):** Many public services are not truly defined in systems; they are inferred from emails, in-person interactions, or the memory of individual officials. SDS



creates a governed source of truth for service definitions covering procedures, requirements, responsible units, stages, fees, and citizen guidance. It operationalizes those definitions through a single delivery layer. SDS is both front office and back office: the public face of the platform and the internal interface through which cases are received, assigned, registered, and advanced.

- **Primary institutional owners:** Units responsible for delivering each service.
- **Digital Registries System (DRS):** Some laws and mandates require specific institutions to own specific datasets. DRS addresses the tension between shared workflows and distributed data ownership. It allows institutions to provision secure CRUD endpoints connected to their own databases while preserving legal ownership of records.
 - **Primary institutional owner:** Data Management Departments within Digital Transformation Directorates, with controlled read access for registry-owning areas.
- **Payments System (PAY):** Payment is often the only part of the current experience users evaluate positively. PAY builds on that strength through a reusable financial layer for payment gateways—including SIRITE—collections, transaction logs, reconciliation, reporting, and future service payments across institutions.
 - **Primary institutional owner:** Financial Directorates.
- **Notifications System (NOTI):** Weak communication and poor follow-up are recurring complaints. NOTI manages outbound communications through deployable endpoints. Endpoints become available when a provider is configured, and a template exists for a communication type such as email, WhatsApp, or SMS.
 - **Primary institutional owner:** Digital Transformation Directorates in coordination with service-owning units.
- **Voice and AI Service Layer (VOZ):** Citizens experience government through channels. VOZ is the voice and chat AI layer designed to answer questions, guide users, retrieve approved information, and, over time, interact with transactional systems under controlled permissions. The long-term ambition is for VOZ to become a copilot for government services serving both citizens and public servants.
 - **Primary institutional owner:** Integrated User Attention Directorates.



From Operational Reform to Digital Public Infrastructure

The platform begins with construction permitting, but it is being designed for government services more broadly.

Many of the capabilities under implementation are recurring state functions rather than sector-specific ones. Once built well, these capabilities can support other ministries, agencies, and municipalities.

This is already reflected in design choices. GOB-ID enables shared identity with multi-tenant controls, allowing multiple institutions to use common systems while preserving administrative separation. Modular services can be deployed independently. Shared APIs and contracts allow systems to interoperate without requiring a single centralized application.

That changes the nature of future scale. Nationwide implementation becomes less a pure engineering challenge and more a question of governance, incentives, rollout sequencing, legal harmonization, and institutional adoption.

For that reason, the platform should be understood as an emerging form of digital public infrastructure: born from solving a real operational problem, but intentionally structured so that broader reuse becomes feasible.

Building meaningful AI

Much of today's discussion about government technology treats AI as the next frontier. That may be directionally right but often operationally shallow.

AI systems are only as capable as the tools, services, definitions, and evidence structures they can access and reliably act upon.

At the lowest level, generative AI can improve public service access by understanding natural-language requests, retrieving service information, and guiding users through procedures – chatbots with Retrieval Augmentation.

At the highest level, AI could become the co-pilot for citizens, capable of orchestrating services across systems with meaningful degrees of autonomy, always within legal and administrative constraints.

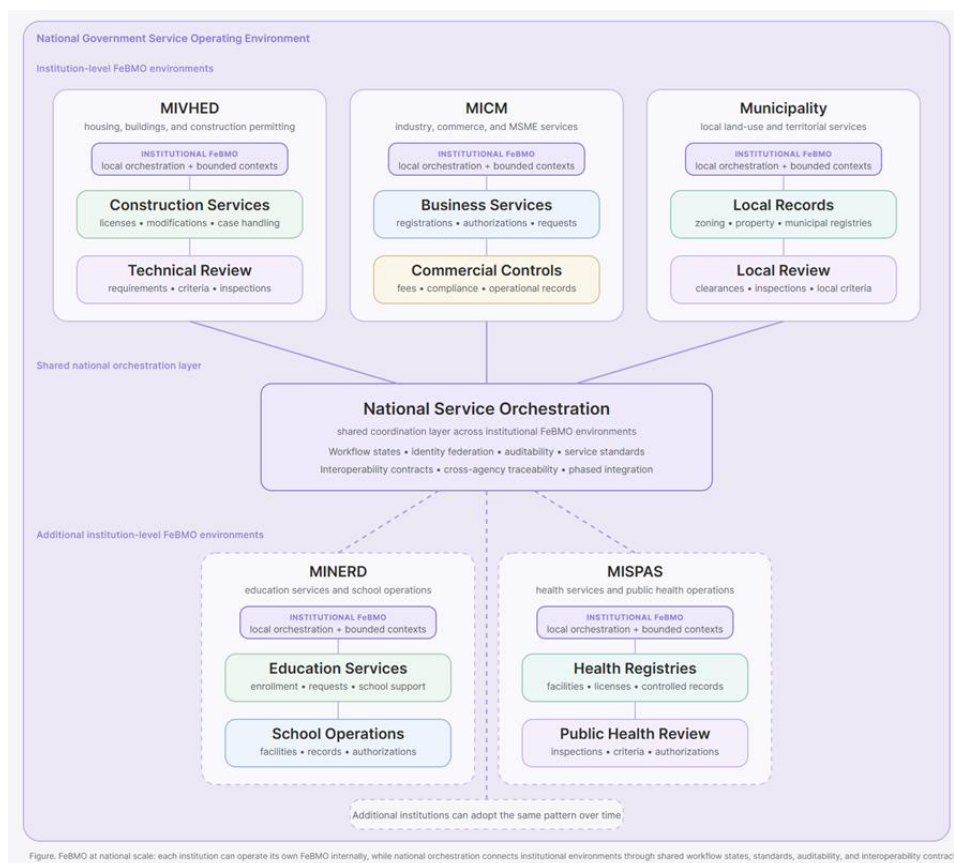
But these levels depend on systems that are structurally sound enough to support them. By making workflows explicit, defining services more rigorously, structuring requirements, strengthening traceability, and expanding interoperability, the operating system platform creates better conditions for future AI use that is administratively defensible.



In that sense, the platform is not a side project to AI. We consider it as one of the prerequisites for meaningful AI.

What nationwide implementation would require

MIVHED's objective is to progressively extend the proposed operating system platform across the Ministry's services, beginning with the Construction License, expanding through regional offices, and over time enabling broader interconnection with other permitting actors and future government services.



That path should not be understood as a conventional technology rollout. National implementation means more than installing software or training users. It requires institutions to define services clearly, document how work actually moves, assign responsibility, standardize decisions, measure performance, and improve execution continuously. In this sense, deployment is as much an administrative reform process as a technical one.



This is one of the platform's deeper ambitions: to use digitization as a path to greater operational maturity. Many public organizations still rely on informal practices, tacit knowledge, discretionary workarounds, and processes that exist more in habit than in design. A durable service depends on explicit rules, coherent workflows, accountable ownership, measurable outcomes, and the managerial capacity to improve over time. By embedding these disciplines into everyday operations, the platform can help institutions modernize while strengthening their administrative capacity.

National scale must therefore be approached pragmatically. Readiness across public institutions is uneven, and implementation must assume variation rather than deny it. Some organizations can integrate quickly; others will require process redesign, governance clarification, capability-building, or basic digital foundations before deeper adoption is realistic.

Five conditions will be especially important.

1. Political mandate. Cross-institutional implementation requires sustained executive support and clear authority to coordinate multiple actors.
2. Defined processes. Service definitions, document schemas, identity models, workflow states, and interoperability contracts must be clearly defined.
3. Institutional value. Agencies must experience the platform as strengthening their mandates and operations, not as an external imposition.
4. Phased expansion. Growth should follow readiness, service priority, and sequencing rather than a single nationwide launch date.
5. Continuous learning. Metrics, audits, and operational feedback must shape ongoing improvement.

Nationwide implementation will depend not only on whether institutions adopt the platform, but on whether they adopt the operating discipline embedded within it.



Conclusion

The point of this platform is to make permitting more legible, more timely, more consistent, and more accountable. It is meant to move government services from fragmented coordination to structured execution; from opaque case handling to traceable workflows; from vendor-dependent software to institutionally owned infrastructure; and from isolated digital channels to a service backbone that can support better interfaces, better management, and eventually better AI.

The immediate task is local and institutional. This platform is being built within MIVHED, in response to real operational needs inside the Ministry and within the construction permitting process as it exists today. That is the practical scope of what current authority, timing, and implementation conditions make possible. But it is also being designed with a wider horizon in mind. Based on the internal needs of government service delivery, and on the broader global shift toward Digital Public Infrastructure, the architecture under development is intended to be usable well beyond this initial use case and, in practice, adaptable to other public institutions and services.

Whether that broader future is realized will not depend on MIVHED alone. National adoption would require political mandate, interinstitutional coordination, and decisions that extend beyond the powers of any one ministry. Still, the present window matters. It allows this work to begin where implementation is possible now, while building in a way that keeps national applicability open tomorrow. In that sense, this platform is both a concrete reform effort and a forward-looking institutional bet: that by solving a real operational problem well, the Dominican state can begin to build the kind of public infrastructure it will need to deliver services more capably in the years ahead.

