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# IT Integration and Cloud-Based Analytics for Managing Unclaimed Property and Public Revenue

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## Abstract

The management of unclaimed property constitutes a challenge for many countries. Unclaimed property is defined as a financial asset for which an institution has had no activity or contact from its owner for a certain period of time and which has not been made payable or distributable. As unclaimed property becomes dormant it should be reported to a government and transferred there, to become unclaimed cash or unclaimed shares, bonds or other physically-held property. This leaves significant assets on local authorities that constitute a low-return investment or liability when held for its owners. While the technology for automation exists, a hub is needed to aggregate this data and to rank through a public cloud the claimants in accordance to their claim but also to identify the data owners. Here we introduce a cloud-based solution that will support this, integrating heterogeneous unclaimed property and public revenue data from multiple local authorities in one location, and though it will provide a consistent set of IT services it will still remain easy and cheap to operate for smaller villages.

This system is designed to handle two halves of a data set. First the unclaimed property that can comprise a single investment fund and its possible owners can be handled. A cache with a marking of data ownership will be created with initial data input via APIs with data exchanging and EDI implementations or by sending files. This mechanism also allows for the exchange of data with authorities that already have a running software in place. This stamped cache will cast a fingerprint that will be decrypted on a public cloud for the continuous enrichment of public properties' knowledge, and hence, generating public revenue. With referring to a hash of the data a periodic update of the local cache will be provided. The alternate half of the data will comprise claimants that self-submitted documents about their claims. This data will be strictly controlled for privacy reasons, and just some encrypted attributes will be uploaded in a compatibility format onto the cloud for decreasing accessibility.

**Keywords:** Fiscal policy ,Government financial planning ,AI in public finance ,Big data analytics ,Economic simulation ,Budget forecasting ,Machine learning in economics ,Policy modeling ,Predictive analytics ,Public sector innovation ,Data-driven policymaking ,Tax revenue prediction, AI-powered fiscal tools ,Real-time economic monitoring, Government budget optimization.

## 1. Introduction

Every year, billions of dollars in unclaimed property go unreported to the states, creating an ever increasing backlog of abandoned assets needing to be processed and returned to the rightful owners. These assets range from personal items, such as bank accounts, stocks, and insurance policies, to public revenue that is often inadvertently or fraudulently unreported across multiple jurisdictions. The competition for these unclaimed assets is intensifying and continues to evolve in complexity, however, most states are limited by legacy processes, antiquated technology, and a shortage of financial, information technology, and human capital funding. In response, states should implement a fundamental change in the manner in which they process unclaimed property and public revenue by adopting cloud computing technology as an integral component of a new shared service model for public sector IT operations and service delivery.

Cloud-based systems provide states with a new and innovative solution to improving the efficiency and effectiveness of their unclaimed property and revenue operations and delivering better economic, environmental, and social outcomes. In terms of public sector operations and service delivery, cloud-based systems provide states with a secure and scalable source of IT infrastructure that is capable of streamlining the management of large volumes of complex data and increasing processing capacity. Furthermore, cloud-based systems are self-service in nature, allowing states to adopt them, as needed, without incurring up-front capital costs or a shift in culture and skills.

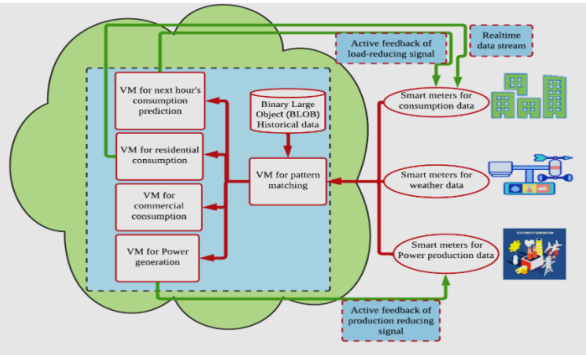


**Fig 1: Big Data Analytics Using Cloud Computing Based Frameworks for Power Management Systems**

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Nevertheless, important information security, data integrity, and operational continuity issues must be effectively addressed in order to realize a secure and functional IT operating environment for the electronic management of unclaimed property and public revenue. Although these significant challenges to automation exist, cloud computing technology nevertheless promises a radical transformation of the public sector capabilities in the oversight and management of revenue. States need to begin the process of moving their public sector IT operations to the cloud.

### 1.1. Background and significance

While several application domains are exploiting the added-value of analytics over various datasets to obtain actionable insights and drive decision making, the public policy management domain has not yet taken advantage of the full potential of analytics and data models. To this end, we present an overall architecture of a cloud-based environment that facilitates data retrieval and analytics, as well as policy modelling, creation and optimisation. The environment enables data collection from heterogeneous sources, linking and aggregation, complemented with data cleaning and interoperability techniques in order to make the data ready for use. An innovative approach for analytics as a service is introduced and linked with a policy development toolkit, which is an integrated environment to fulfil the requirements of the public policy ecosystem stakeholders.

The ICT advances as well as the increasing use of devices and networks, and the digitalisation of several processes is leading to the generation of vast quantities of data. These technological advances have made it possible to store, transmit and process large amounts of data more effectively than before in several domains of public interest. This rich data environment affects decision and policy making: cloud environments, big data and other innovative data-driven approaches for policy making create opportunities for evidence-based policies, modernization of public sectors and assistance of local governance. During the traditional policy cycle, data is a valuable tool for allowing policy choices to become more evidence-based and analytical.

The proliferation of web and mobile services, coupled with growing public interest in the open data movement, has led to a fundamental acceleration in the publication and re-use of quantitative public sector information and data. The number of open datasets provided by public authorities and institutions increases dramatically, leading to the development of various applications that use open datasets in order to derive added value information and services. However, while many datasets are open and publicly available, only a few of them are discovered and used by other stakeholders. In order to allow full access of such datasets by various stakeholders, it is essential to create a web of open and published datasets. However, in most of them, the datasets are published by heterogeneous sources, while these data are stored in various formats and platforms with no common standard. Additionally, many of them are not cleaned, and outliers, duplicates and invalid values in the datasets might exist. Given such a data environment, the linked data principles give the opportunity for heterogeneous data to connect and link together.

**Equ 1: Revenue Enhancement via Predictive Analytics**

$$\Delta R = f(P, A, C)$$

Where:

- $\Delta R$ = change in public revenue,
- $P$ = prediction accuracy of compliance and collection
- $A$ = automation level of revenue workflows,
- $C$ = cloud analytics maturity.

## 2. Understanding Unclaimed Property

Unclaimed property is a form of property held or owing in the ordinary course of business that has not been claimed or acknowledged by the owner within the time period of dormancy specified in the statute. Sources of unclaimed property can take many forms, with some of the more common being savings and checking accounts, uncashed checks, traveler's checks, gift certificates, insurance policies, and more. Examples of more exotic sources of unclaimed property can include investments in a co-op deemed too small to keep track of, security deposits on loans, and assets held by the courts or banks. A uniform system for the identification, location, seizure, and redistribution of unclaimed property has been developed. This system has led states to seize huge amounts of unclaimed property. States are coming to the conclusion, however, that escheatment is not a solution to all fiscal ills. In particular, the growth of unclaimed property revenues must be balanced by transparency and accountability, so that the public can see tangible results.

Governments and communities throughout the United States have long sought new and imaginative ways to provide for public welfare. Among these efforts has been the traditional technique of raising revenue through taxation. To obtain an advantage over competing jurisdictions, governments, particularly smaller and less-affluent ones, have developed alternative revenue sources that would not impose an increased burden on a particular class of taxpayers. Unfortunately, many of the viable candidates have been

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widely adopted, leading to increased competition, and disappointment over anticipated revenues. Sales of public land, loan trusts, and gambling, for example, are now used throughout the country as sources of public revenue. Ideas and creativity in this realm of financing the public treasury have, with these exceptions, become scarce. This will demonstrate how states can raise a significant amount of new revenue from an existing, but often ignored, source of wealth—the unclaimed financial assets of the nation's banks.

**2.1. Definition and Scope** Cloud computing has changed the way data is managed, exchanged, processed, and analysed by organizations and citizens. As a result, cloud-based environments processing various types of big data of public interest have been deployed by national or local authorities along with data analytics tools. Nevertheless, the public policy management domain has not yet taken advantage of the full potential of analytics over heterogeneous datasets to realize effective management of data-driven public policy.

Several application domains are exploiting the added-value of analytics over various datasets to obtain actionable insights and drive decision making. Yet, there have not been well-established practices for the public policy management domain. Indeed, behind a policy, there are several agents involved in the policy development cycle: analysts prepare information for policy owners; public, social, economic, and environmental models are constructed by modelling experts and scientists; models are employed for the analysis of policy options by analysts; messages and possible scenarios are formulated by policy communication experts; and all these are packaged for policy owners. In addition, often the human factors involved in the public policy management cycle are disregarded. This chain can include a wide range of activities; for instance, discussions need to take place as a starting point for new policies.

It may be concluded that relevant data are available for nearly all parts of the procedure that a public authority has to go through in public policy cycles. Yet, there seem to be limitations in taking actions based on such models and data. In particular, there are no known attempts worldwide using the capabilities of cloud computing, data integration and analytics, or modelling and simulation in order to operate a comprehensive infrastructure for policy, budget and forecasting evaluation.

**2.2. Historical Context** Public revenue of budgetary beneficiaries includes fiscal and non-fiscal revenue. There are three legal grounds for non-fiscal revenue: specific laws, specific provisions in the Law on Public Debt, Borrowing in Public Property and the Law on Property and other Rights. This paper investigates the functioning of the information system in the performance of capital properties selling revenue as a specific non-fiscal resource of public revenue. Capital properties exist in the sense of various legal forms, but regardless of such forms, the profit from their capital resale represents a public revenue. Basic legislation of public revenue explains that a public revenue is an in-flow of money, material goods or services amounting to property increase due to which the increase of public property is recorded. The heritage of nationalized property is very diverse in terms of its economic purpose, present ownership right and a way of acquisition. The State and its local self-government units are, among other things, owners of property previously owned by physical and legal persons for whose adjustment the responsibility is vested by the Constitution of the Republic of Croatia. The Constitution guarantees property rights and defines the Republic of Croatia as a Welfare State. The information system in function of non-fiscal public revenues provides information support to the operating functions and ensures prompt and accurate recording of resources of public revenue. Transparency and sufficiency of that information are required no less. Such an information system is a component of the information system of a budgetary beneficiary. The attainment of a purpose of any sort of action is enabled by an information device, complete information system, an information system based on data and algorithms for data processing. The paper investigated the information system in the function of performance of a specific revenue resource of budgetary beneficiaries, capital properties selling revenue as a sort of public revenue.

**2.3. Legal Framework** Today, the rights and obligations of carriers of duties and authorities are mostly derived from procedures defined in normative documents, such as laws and bylaws. Activities of the carriers of duties and authorities regarding their own duties and authorities are defined by laws and by-laws, while operative procedures regarding the rendering of services to clients are defined in procedures, directive acts, work instructions, etc. Those normative documents must comply with the laws and bylaws. Legal provisions must be precisely transposed into other normative documents, at lower hierarchical levels. The carrier of a duty or authority cannot undertake any action outside the boundaries defined by normative documents. Legal interpretation of the documents is the task of the persons without expertise, lawyers. Lawyers participate in the process of drafting normative documents as auditors before an expert and control body. The competence would entail activities related to preparation of utterly legal documents, new services provision, participation in the modification of the structure and legislative system, and decisions about documentation use. In most cases, standard forms of decisions

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or documents are used that are drawn and regularly adapted. Public services operations must be rendered within the foundations stipulated in documents of a lower hierarchical level. Those documents must accurately stipulate the entire procedures required for rendering public services, accompanying sub-documents, responsibility of agents, deadlines, contacts, and database use. During automation, activities of the personal information system and knowledge engineering operations are undertaken at a lower level after a client-subjected document or services are selected at a higher level. Such documents must be user- and agent-friendly; all the necessary documents should be clear and accessible through one window. Filling in examples of all document types within the procedures should be also made accessible.

## 3. Public Revenue Management

Financing of public needs on state and local government levels is impossible to ensure without a corresponding information system. The information system enables promptness and accuracy during the registering of all resources of the public revenue, as well as transparency of that information. The analysis focuses on the non-fiscal resource of the public revenue – capital properties selling revenue. Some forms of capital properties exist under a different legal regime. The Constitution of the Republic of Croatia guarantees property rights and defines the Republic of Croatia as a Welfare State. In economic literature, public revenues are divided according to different bases: according to the way of realization, according to the time of collection, according to the accomplished tariff, according to the status of the person being charged, according to the object of revenue, and according to territorial principles.

Capital properties are properties of public legal persons and enable performance of public needs. Capital properties arise from the foundation of a public legal person and through the transaction in spite of their ownership. They can be land properties, constructions, stocks and shares, the status which is evidenced in the corresponding registers. Capital properties generate revenue by their sale and leasing (sale revenue in long-term leasing, and leasing revenue being considered income from rent). Public revenues are resources of public financial funds which are the fund of ownership of public legal persons. Public revenues financing of public needs are paid by legal and physical persons in accordance with laws and other regulations, and are capital and fiscal.

When researching capital properties there exist many inconsistencies. Some forms exist under a different legal regime. Therefore, this type of capital property does not exist or is not used in the law. Some capital properties are not covered by the information system of capital properties of the City of Rijeka, which bases its transactions on the recommendations of the Government of the Republic of Croatia. It is necessary to have a software solution that would enable their integration of using the information system of capital properties for the City of Rijeka. Only then can the revenue realization of public revenue under this category be treated in the same manner as the generated revenue, decreasing of their use being possible only by the lease agreement and the assignment of temporary use in public use interest. The structure of public revenue of the City of Rijeka would be based on data triangulation which is essential for the greater transformation of the territories of the City of Rijeka and the method of realizing public revenues would not damage other data, thus generating revenue from public assets.


**Fig 2: Revenue Management**

### 3.1. Overview of Public Revenue

Public revenue represents all cash in- and outflows of collection and allocation of public needs of a state and local government level. General government income consists of fiscal (taxes, contributions for public revenue, fees) and non-fiscal revenue (proceeds from sales of capital properties, revenue from rentals and interests). Public revenues (PR) are divided by territorial principles into state and local government PR. Information systems in function of public revenue are presented in this paper. It is imperative for accurate data collection and analysis in real time.

Regular and accurate collecting of public revenue at all levels of the state is a basic precondition for the implementation of the state functions (economical, security, educational) and ensuring equality of all citizens. Non-compliance with these preconditions can have unacceptable consequences for the economy and for citizens. Aggressive tax policies, with

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limited resources, lead to a catastrophe in the state economy, but failure to ensure any revenue for the public needs (non-fiscal) also leads to a collapse.

Public revenue represents all cash in- and outflows (informs, switches, transfers) related to collection and allocation of public needs. Financing of public needs on state and local government levels is impossible to ensure without a corresponding information system. The information system enables promptness and accuracy during the registering of all resources of the public revenue, as well as transparency of that information. The authors analyze the non-fiscal resource of public revenue – capital properties selling revenue. Some forms of capital properties today exist under a different legal regime. The Constitution of the Republic of Croatia guarantees property rights and defines the Republic of Croatia as a Welfare State. In economic literature public revenues can be divided according to different bases, including the way of realization, time of collecting, accomplished tariff, status of person being charged, object of revenue, territorial principles, and legal basis of accomplishment.

### 3.2. Challenges in Revenue Management

The security of public revenue against its leakage and disappearance has been enhanced. Governments around the world work hard to see all taxes, levies and other public dues paid or remitted to them, and fixed periods of time are set for taxpayers to submit their accounts and pay their dues. After that period of time lapses, an amnesty begins, and these outstanding public dues become unclaimed property, being liable to escheat to the government. It is a great challenge for government entities and bodies to efficiently manage the ever increasing number of potentially unclaimed properties as a result of the exaggerated digital economy. There are a number of important and inherent difficulties with proper private or public resources. These include: (1) fragmented sources of information about public revenue, leading to difficulties in verification of paid public dues (2) the ever increasing number and variety of environments and jurisdictions of potential unclaimed properties (3) reluctance of public bodies to disclose substantial data on public revenue for the fear of malicious use of such paramount information and unregulated communication of it (4) possible vicious conflicts of interest and disputes among board members of large private information repositories about which laws and regulations should govern the agency practices of service and product selling (5) difficulties in establishing the accountability of public revenue management by relying heavily on private information sources.

**Equ 2: Compliance Risk Score (CRS)**

$$\mathrm{CRS} = \sum_{i=1}^{m} \left( \frac{R_i \times D_i}{T_i} \right)$$

Where:

- $R_i$ = risk factor for entity $i$,
- $D_i$ = data discrepancy score,
- $T_i$ = transaction volume or frequency.

Governments throughout the world have been charged with the custodianship of vast amounts of unclaimed property over a lengthy period of time due to various reasons. As a result of the plight of the COVID-19 pandemic, revenue management has become a more pressing issue for government bodies that need funds for their fiscal policies as well as the hospitals and the state-oiled economies. Large technology corporations have skimmed and monopolized a substantial portion of taxes to be collected and accounted for by states, which remains unclaimed by them. This newly erased or retreating tax number is augmented by unnoticed, mistyped or wrongly accounted sums of money in the past leading to outstanding and unclaimed taxes on contractual excises.

### 3.3. Importance of Transparency

Transparency is universally accepted as one of the cardinal pillars of good governance and regarded as a solution to many governance and developmental challenges. It is at the heart of virtually all aspects of governance, widely recognised for its importance in the management of public affairs and resources, as well as in ensuring accountability. Transparency enables internal accountability by facilitating control of discretionary powers of government officials or bureaucrats by their peers and superiors, holding them accountable for their actions and decisions. In addition to internal accountability, transparency is vital for ensuring external accountability by enabling the public to scrutinise state actions, rights abuses, and deficiencies. Transparency promotes democracy, trust in public institutions, or market efficiency. Corruption is successfully reduced in large measure due to a free press and a population vigilant in its demand for accountability. Furthermore, transparency in the extractive sector is shown to have considerable impact on lower inefficiencies and greater potential output. In the context of managing revenues from high-value natural resources, transparency is the principal means of avoiding or mitigating the resource curse in developing countries, providing the platform for the better management of natural resources and the associated revenues.

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Transparency entails the availability of policymakers' decisions and actions, as well as the motivations and justifications for such decisions and actions, in a form and manner that are accessible and usable by actors who are affected by, or are interested in, those policies. The theoretical bases for the debate on the governance construct of transparency hinge largely on information's contribution to desirable outcomes.

## 4. IT Integration in Public Sector

When government units collect taxes and fees for the citizens, the corresponding debt records are maintained. Once any of these debts are out of date (e.g., not paid for three years), they turn into unclaimed properties, the responsibility for which lies with government treasuries. With big data analysis, they can proactively detect and manage such credits, thus minimizing financial losses for government units. In the course of such projects, a few observations were made: unclaimed taxes and fees systems automatically complying with several UN recommendations, even with little to no effort, high integration potential of public systems with a few architects involved, and hardware being significantly more than ready for cloud-based analytics.

Unclaimed taxes and fees are credits that arise when properties of a public revenue are out of date for a period defined by regulation. They were named as such because municipal authorities are responsible for returning them to their owners. If this is not done within another defined period, the corresponding entry is systematically detected and can be converted into revenue for the public community authority governed by law. Despite having automated processes in place for years, entry detection is a challenge for smaller municipalities due to many limitations.

### 4.1. Role of IT in Government Operations

Since election outcomes jeopardize public budgets, municipalities should adjust revenue systems to the new outcome. Information technology (IT) should be used, as it enables efficient revenue management for government organizations. Information technology (IT) can be used to match cash-ins with subsequent payments, analyze behavioral data, harvest social network data, and pilot an experiment as public input for a public hearing. IT has a major role in government organizations, whether in managing operations, delivering services, or enforcing regulation.

The role of IT in operations is expressed by keywords such as process management, workflow management, process support, and back office improvement. Workflow management systems (WfMS) are all-purpose software systems designed to model, execute, and control oriented business processes. Their best-known implementation in local governments is the introduction of tax archives that support the automated processing of permits and settlement processes. In municipalities, management systems are also implemented in the Operations Department to mechanize the input of purchase orders, expense claims, and so on.

In public service delivery, the role of information technology (IT) is said to improve public services via portals (front office systems) that offer citizens and enterprises a uniform interface for applying and reporting for several services. Portals can either resemble an electronic counter with reference to all services and links to information authorities or operate in interactive work processes between applicants and authorities. The latter type of information technology (IT) applications mainly concerns applications that automate the public service process. Portals outside the enterprise (intra-organization portals) mainly enable within-inter department and intra-department communication by integrating databases and functions via information technology (IT). They can act as market places that allow communication between departments.

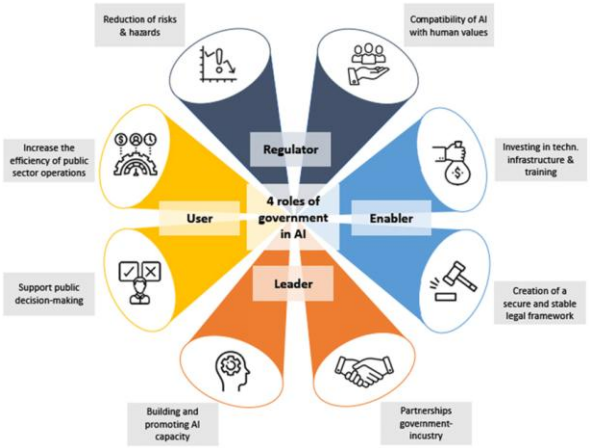


**Fig 3: The four roles of government in the AI context**

### 4.2. Integration Challenges

An overwhelming proportion of data that could have been used to derive more detailed insights into state operations on unclaimed property remains unaccounted for. In order to conduct cloud-based comprehensive analyses and modelling of unclaimed property transactions, rules, and claims processes more data from states need to be integrated into one platform. Such integration of datasets is explicitly allowed and defined as exempt from public records act requests; however considerable investments in information technology (IT) infrastructure in some states has left them with long lead

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times for out-of-state unclaimed property analyses, the first step in more thorough and accurate modeling. Enclosing more states into the data integration model can improve statewide analyses and tier allocation, and can provide a tighter coupling between statewide analyses and out-of-state ones which are reliant on organizations and rules of many states. Effectively enabling this more rigorous modelling currently requires re-defining and rebuilding of cloud infrastructure which would not be feasible to employ more states. Efforts to investigate ways to explore states whose IT integration was not feasible to attempt in a scalable way are ongoing.

Examining methods to inquire regulatory authorities about the modelling unprocessed data from their states that are desired to be integrated into the model are being looked into. Interfaces for states with less advanced IT integrations or without IT integrations at all could be designed to allow for efficient collection and parsing of strictly desired data through rigid designs and reporting protocol. Aggregate reporting could lessen the burden on states' IT infrastructure by simply matching results of queries to already aggregated transactions. More simple computer accords might also be designed to allow for ingesting the raw transaction files of preferred format similar to the existing methods employed for handling data feeding back into the states.

**4.3. Case Studies of Successful Integration** Over the last few years, several teams at the Enterprise Technology Services unit of the Office of the Chief Operating Officer in New York City have been working to implement an Analytics Tool for NYC departments. All data scientists and analysts who wish to use the tool must first register to access the cloud environment. This is done via a designated page and is relatively straightforward; however, there are certain organizational issues, procurement steps, and compliance/security concerns that can lead to frustration. Once registered, cities may log in with minimal effort. Within a few clicks, a data scientist can create a project, upload data, visualize it with charts, run a notebook, and even set automatic alerts and reports. Existing tools include Boolean search expressions, natural language search, and a high degree of customizability. Already a staggering array of pre-existing models, advanced tools, and public APIs are available and a platform to create new ones used in production. Companies are developing millions of high-quality measuring and simulation models based on the tool.

However, there are also caveats, especially regarding compliance and reputational risk. Working with citizen data means that confidentiality has to be a priority. Since the start of the pandemic, upticks have been reported across all areas - important to address after COVID-19 has passed, meaning that care may be needed to avoid predictive policing, racial profiling, etc. Furthermore, there is always a risk of creating tools that sit dormant and unused across the city, wasting public funds. Other groups might be able to recover them, yet civilian analysts have to be high-level trained, create complex code, and download anything for use outside the platform. So far only three teams have been fully on-boarded, and there has not yet been a whole-on, whole-off ramp. This entails a single city-wide user account, erasing the need for multiple log-ins, sharing needs, and the chance of mistakes. This could be an opportunity in many ways, and it might not be a good idea to waste the chance for one city, one product, and one user account. It is possible to treat individual agencies as sub-groups with different specialties and authorities within the group.

## 5. Cloud-Based Analytics

Recent advancements have led to the development of a Household Identifying Code in North America. The AHC Code is a unique ten-character code assigned to approximately 3 million North American utility meters to collect consumption data. Public utilities usually coordinate billing with local governments, which sends poorly structured files detailing the utility accounts of properties. These files have been shown to be inaccurate, often containing unmatched account IDs and properties. The goal is to improve public owners' ability to collect data by providing a supportive portal to upload files, execute a task, and publish reports assessing data quality and probable associations. While several application domains exploit the added value of analytics over various datasets to obtain actionable insights and drive decision-making, the public policy management domain has not yet taken advantage of the full potential of analytics and data models. An overall architecture of a cloud-based environment is presented that facilitates data retrieval and analytics, as well as policy modeling, creation, and optimization. The environment enables data collection from heterogeneous sources, linking and aggregation, complemented with data cleaning and interoperability techniques. An innovative approach for analytics as a service is introduced and linked with a policy development toolkit, which is an integrated web-based environment to fulfill the requirements of the public policy ecosystem stakeholders. Local governments often lack the internal technology and capacity to assess and analyze property-level tax data. However, it is generally feasible and efficient to report the highest classifications of real estate as well as sales indicators. Cloud-based tools that compile these statewide data sources and provide analytics fit-for-purpose have broader application across states and localities. The parametric results assess the ability of each state's revenue system to achieve a range of desirable outcomes such as holding rates and efficiency. The

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outputs are all selectable by tax and revenue type and indicator type.

**5.1. Definition and Benefits** IT Integration and Cloud-Based Analytics for Managing Unclaimed Property and Public Revenue

Information Technology (IT) integration and cloud-based analytics represent two key pillars for the design of effective and efficient solutions in enterprises. An integration system is proposed that will collect public revenue, unclaimed property, and other heterogeneous datasets of secondary structure. These will be linked and cleaned with the use of cloud-based data warehouse and interoperability technologies. Advanced cloud-based analytics will be applied on the integrated data and modeling of collection initiatives with the objective to increase their efficiency. The solution will initially focus on the revenue data of municipalities and regions and will be adapted for the needs of organizations and other stakeholders managing unclaimed properties. Depending on the topic of study, the objectives of a data integration and analytics solution may vary accordingly. In what follows, the benefits of cloud-based integration technologies are analyzed, followed by an overview of the cloud-based modeling and analytics capabilities conceived.

The cloud environment has made it possible to store, transmit, and process large amounts of data much more effectively. As a result, this rich data environment affects decision and policy making. Cloud environments, big data, and other innovative data-driven approaches create opportunities for public authorities to exploit their data for more evidence-based policies and the modernization of their public sector. However, so far, the public policy management domain has not taken advantage of the full potential of analytics and data models for the realization of efficient policy management. Manual data-driven model building by the usage of a variety of packages in excel is a tedious, error-prone, and time-consuming activity. Therefore, there is significant time and investment inefficiency in the policy life cycle since manually building data-driven models is a step that policymakers regularly miss or that introduces errors, leading to penalty decisions not taking into consideration relevant data, so less effective policies are submitted.

**5.2. Key Technologies** High volumes of public revenue data are collected, analyzed, and stored by public authorities. Public authorities in the government control public revenues that have to be managed properly as they serve the common good. The Cloud is revolutionizing Information Technology (IT) across various application domains with cheaper computing resources made available to organizations. Several organizations are migrating toward Cloud-based environments to exploit these combined effects of Big Data and the Cloud. However, several application domains, including the public domain, are still lagging in this trend. Specifically, the operational area of unclaimed property and taxable revenues is examined. More generally, the public policy management domain is analyzed. Proper management of unclaimed property and public revenue is critical for public authorities to tackle potential cash flow problems. On the contrary, data over surplus cash and taxable entities is often overlooked. The latter data, if analyzed properly, can deliver significant value to public authorities.

**Equ 3: Integration Index for IT Systems**

$$\text{Integration Index} = \frac{\sum_{i=1}^{n} C_i \times W_i}{\sum_{i=1}^{n} W_i}$$

Where:

- $C_i$ = compatibility score of system $i$,
- $W_i$ = weight based on the criticality of system

Several use cases involving publicly available data and data from governmental public authorities are analyzed. This data, if combined and analyzed properly, can identify surplus cash locations that may accumulate into unclaimed properties as well as taxpayers not declaring their business activity or reporting lower-than-expected revenue. Such insights are crucial for public authorities to design measures toward safeguarding public revenue. In those cases, alerts are given to the authorities to analyze further complaints rather than performing automatic actions. The cluster of them can handle a nationwide footprint and assist authorities to focus on specific areas or taxpayers. The proposed framework is effective and can minimize the duration of identifying entities matching specific criteria or searching updates over a dataset. It can easily analyze larger datasets by taking advantage of the inherent computing resources of the Cloud. Also, it is based on modules that can be easily scaled, parallelized, or replaced. It can too receive or produce prediction or clustering models, or analytics results, from various analytics tools. Hence, it can exploit the rapidly evolving ecosystem of Big Data and Cloud Analytics.

**5.3. Data Security and Compliance** A cloud-based Analytics Platform (CAP) shall be developed for integration with state Unclaimed Property (UP) management systems. The CAP shall be designed based on specifications and shall be implemented in a private cloud with a fixed set

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of control services. The CAP includes architectural components capable of ingesting data from multiple sources and different formats, keeping track of data stewardship under governance rules defined by agency administrators, managing data quality compliant to data quality laws, translating and transforming data, normalizing incoming data for consistent and standardized reporting, and publishing information for state-hosted analytics, report development, and visualizations. The project leverages state UP management system integrations that are funded through grants for CAP funding and contract bid mechanisms for public and state analytics hosting.

The cloud-based CAP provides for a technology-enabled, secure, efficient, and cost-effective solution for the advancement of state UP management systems, enabling better decisions in UP compliance assurance systems, guarantees improved public transparency and trust, evolving engaged citizens who exercise their rights, result in better decision making and governance practice under well-functioning free markets, and captures the benefits from lid UPs in economic development and growth in states. The CAP API specification-based architecture can be leveraged to extract state integrated UP management systems, while efficiently supporting horizontal and vertical system scalability. Self-hosting of data-added analyses including data quality assessment demonstrates the feasibility and potential public value of CAP-run applications or analytics tools. Cloud hosting ensures a secure and compliant hosting environment dedicated to public and state analytics. Analytics capabilities can be delivered as a cloud-enabled service.

## 6. Data Management Strategies

The Smart Unclaimed Property and Public Revenue Analytics System (SUPRAS) is an IT integration and cloud analytics project of the General Secretariat for Public Revenue of the Greek Finance Ministry, in collaboration with the General Secretariat for Information Systems of the Greek Finance Ministry. SUPRAS aims to mitigate the unclaimed properties challenge that comes from the misalignment of unclaimed properties with their legitimate holders due to the current economic and crisis-based environment. Due to many citizens' low income, properties such as bank accounts, red bonds, estates, values of unexchanged low denomination banknotes, and shares, remain out of sight of the owners and thus are accommodated in the liabilities of the public sector (the state). The goal of SUPRAS is to devise and implement a set of IT integration and cloud-based analytical tools for managing this public revenue area, thus facilitating the match between unclaimed properties (on the public side) with their holders (on the citizen side) to alleviate the problem.

Conceptually, SUPRAS consists of two main components: (1) a Cloud-based descriptive and predictive analyzation platform for the large volume and various types of structured/unstructured datasets; and (2) a Data Integration Suite for combining and publishing information from diverse databases, enabling their further analysis through modeling and decision support for finding optimal and efficient matches against unclaimed properties by them directly or through appropriate public services.

Although SUPRAS is in early stages of implementation, its architecture and design drive the functional aspects and the key analytical tasks of the whole system. Likewise, they define the necessary integration and methods for linking heterogeneous sources to facilitate data sharing. The analytics infrastructure is envisioned as a group of connected modular cloud services providing analytics capabilities on data in disparate sources for directly serving and managing real-time analytics-based applications. Integration of data from external sources not controlled by the analytics service takes place through the Data Integration Suite. The present limitations, challenges, and research opportunities in cloud-based analytics, data-driven models, and open-source tools in academia and industry are also discussed.

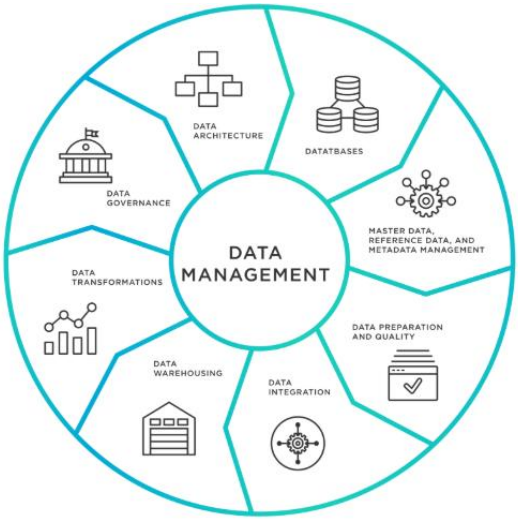


**Fig 4: Data Management Strategy**

**6.1. Data Collection Techniques** Several techniques may be employed to collect data on unclaimed property and public revenue. These techniques may be classified into four broad categories: (1) data collection already performed by different government entities, (2) surveys conducted in a specific jurisdiction, (3) user-generated data collection, and (4) data sharing between jurisdictions. The focus of this section will be on existing data. The section will also include additional issues related to

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administrative data that require consideration to maximize the usefulness of any existing data on unclaimed property or public revenue, which include auditing standards.

Field inventory methods are one of the most common approaches for collecting and recording highway inventory data. The state inventory data collected through these methods are typically stored in centralized databases that can be maintained and updated easily, despite a considerable amount of human resources, cost, and time involved. During this study, a questionnaire was developed and sent to all state DOTs in the USA to gather information on the methods, techniques, and equipment currently used for collecting highway inventory data. This study aimed to determine the most popular method in each category, and future trends of the collected data suggesting adopting database systems, web-based applications, and geographical training systems.

Publicly available administrative data is increasingly being leveraged as a cost-effective means of understanding public policy issues and improving public services. Public institutions generate a vast amount of administrative data that is usually under-utilized. Wide-ranging improvements to the quality of public services could occur by better using existing data, creating the potential to change dramatically how program evaluation is approached. Adoption of non-traditional data sources to augment or completely replace traditional survey vehicles has the potential to reduce respondent burden and the cost of data collection while also providing timeliness that is often impossible to generate with traditional data sources. Implementing the use of non-traditional data sources typically imposes a number of technological issues in the areas of the volume, velocity, and quality of the data. For example, non-traditional data sources tend to be massively larger than traditional data sources, which can impose challenges for data storage and computing requirements. Additionally, many non-traditional data sources are generated or collected at high volumes that may outpace the ingestion capabilities of traditional processing pipelines. Finally, the quality of non-traditional data sources may also be much more variable than traditional data sources due to both the different contexts in which they are generated or collected as well as the different processes that are typically stringent for traditional data sources.

**6.2. Data Storage Solutions** One of the main factors when deciding which vendor to go with is cost. AWS gives Montgomery County's Department of Health and Human Services the most "bang for their buck." With a pay as you go payment plan, low latency and superior uptime, AWS is the right choice to store Montgomery County's data. AWS would be the best vendor for the Department of Health and Human Services because it offers significant savings over other vendors while still maintaining accessibility and security. AWS plays well with others as well offering compatibility with more products and software than its competitors. Each storage component used in AWS creates a unique delivery model that custom-tailors cloud storage to meet specific needs. Major parts of AWS include S3 storage, EBS storage, EFS storage, Glacier storage, and several others.

AWS S3 storage operates by grouping data into "buckets." The buckets keep track of the stored objects they contain. A bucket provides a flat namespace that separates a specific user's data from other users. Montgomery County's data will need to be spread across several buckets depending on client specifications. Some clients may prefer to have all their data put in one bucket, which is possible. However, some clients may want certain data to be more secure than others. In this case, two buckets, one for public data and another for more secure health data, would need to be created. Buckets contain all of the data a client wants to upload on AWS, but they need to be kept in mind when deciding what data goes where.

AWS S3 was created for good reason. It all started back in 2006 when Amazon decided to create an online storage service for everyone in the world, much like how Amazon.com sells books to everyone around the world. AWS S3 allows any kind of data to be put online with one of the most secure systems in the world. AWS stores the data in a data center in several different data formats, automatically scaling storage as it accommodates new data. As data is pulled down from AWS, it is automatically deleted from storage if desired. AWS is very inexpensive and charges on a per-use basis.

**6.3. Data Analysis Methods** Objective analysis of the unclaimed property portfolio with data and/or models as inputs generates coherent results such as short- and long-term forecasts. The data is historical claims, warrants, death records, relevant company/agency information, and there are multiple forecasting methods: non-parametric and parametric time series, multi-state status result, and applied models from fields such as operations research and health time series analysis. All are customized to be applicable for generic data that satisfies assumed conditions.

To produce a lower and a higher bound of the point estimate, two methods apply. The input of the lower bound is a particular set of lower assumptions. The point estimates are compared for capability-view validation, sanity check, and moderation. Additional lower and higher bounds can be introduced by simply refining the inputs without altering the underlying method. In one case where point estimates had preventive arbitrage potential, this capability could have been more easily identified through the application of the bounds.

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As unclaimed property and public revenue balance amounts increase year on year, it can be expected that enough knowledge and understanding would soon be available to collect enough taxes more effectively at comparatively lower costs.

Powerful cloud computing and processing capabilities facilitate running the analytic methods with big data sets. As a companion to the new platform of IT integration, cloud analytic services will enable solvency predictive modeling as a model-mining method. In those services, chosen real financial parameters of state collections can be freely analyzed. The results of applied models are model neutral. The sourcing, know-how, and software from a private company would be lower in risk, costs, and implementation efforts. Analysis as a new area of additional research would provide agencies with additional collaboration and revenue generation opportunities.

## 7. Implementing Cloud-Based Solutions

Governments throughout the United States are responsible for managing revenue from many sources. The management of public revenue is closely regulated by state laws and policies. Streamlining and automation of many of these processes would help to improve efficiency and transparency. The following outlines a strategy to accomplish streamlining of some of these processes, improvement in service delivery, and provide for the capability to develop and implement analytic methodologies to improve program management and performance through the use of cloud-based solutions that leverage information technology capabilities and personnel.

Agencies tasked with managing public revenue are often understaffed and rely on manual and labor-intensive processes in order to comply with regulations. Primarily, processes for managing monumental state revenues such as unclaimed property are usually siloed in antiquated systems that are typically both off the shelf and custom built. For many agency processes, modernization requires change to legislation and policy, formal requirements gathering, long development timelines, and implementation of costly and resource-intensive Data Processing IT solutions. Finally, the staff who often sit behind the desk and execute processes often have little formal training on the systems they use. Developing cloud-based solutions that connect existing agency systems and automate processes using current technologies would allow for a gradual modernization of agency processes as well as greater capability to analyze processes and program performance. APIs can be utilized to connect existing systems. Such APIs could live in either on-prem servers or cloud-based platforms.

Automation should leverage currently available technology. Analysis of system logs and ticket logs provides for mapping systems and processes. Information technology staff are already familiar with these tools to accomplish other internal tasks. Once processes have been utilized to develop procedures, cloud-based automation applications can be used to rapidly automate processes at no cost or minimal cost. Finally, manual processes can also be automated using current technology. These may be purchased or developed in house. If developed in house, sharing of the code base and/or partnership with a vendor may be developed.

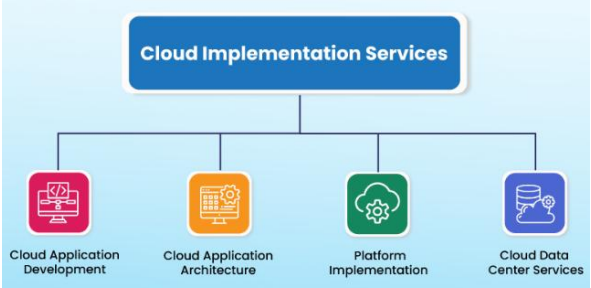


**Fig 5: Cloud Implementation Services**

### 7.1. Steps for Implementation

Identifying strategic objectives and vision is the first step of the implementation process. Engaging stakeholders is critical to accurately reviewing the status of all properties, how they are being maintained, and potential new strategies in using those properties. This can be done with business names at the state or provincial level and with public trust officers, investment teams, legislative representatives, and eBoard executives and directors. By analyzing stakeholders' objectives, organizations can look for gaps that may represent analytical opportunities. For example, if an organization has properties that "have been here forever," are they generating the public vision that is intended? On the other hand, if an organization is aggressive and finds new properties frequently, do those properties fit the portfolio? Or, if the properties are being attacked in court, is there an analytical strategy in place to take the properties back.

Analyzing the data systems and formats is the next step. This involves publishing all the unclaimed property and public revenue information the organization has about properties and looking into several properties it does not have information about. This information should include the property owner, initial property value, date properties became unclaimed, and ETC. Financial, operational, transaction, and market data are typically available; however, additional information may be needed, for example, specific details on peripheral properties (a detailed description and analysis of the property's current status).

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Once the gap analysis is performed, the contents of the database, such as unclaimed property data, abandoned real estate data from GIS systems, and all public revenue from budget statements, will be pulled. The data description should also be reviewed by the data owners. Different entities carry out similar property transactions, so analyzing these transactions can help better understand other entities. During analysis, trends will be created to see which data should be extracted; users should also define other property descriptions if possible.

**7.2. Cost-Benefit Analysis**

Calculation of costs and benefits evaluating the integration of the existing IT systems of UPD and treasury, implementation of cloud-based systems for the management of public revenue and UPD (including costs incurred for the development of the system), and implementation of a software solution for the analytical processing and hosting of the systems in the cloud will allow to receive a total discounted incremental cash flow of UAH 814.9 million (the net present value or NPV 814.9 million). It is estimated that NPV makes USD 29.9 million at an exchange rate of UAH/ USD equal to 27.3. The calculations also reveal that the integration of the IT systems and implementation of the new systems and their hosting in the cloud will result in savings of UAH 124.66 million on an annual basis, on average.

The required investment for the integration of existing IT systems of UPD and treasury and implementation of both cloud-based systems for the management of public revenue and UPD PLUS software solution for the analytical processing of public revenue data is UAH 227.04 million. Sixty-six percent of the costs account for the cost of the cloud-based system for public revenue management implementation, accounting for nearly 87 percent of the total investment on costs, including cloud costs, hardware acquisition, and personnel retraining. It is assumed that without profound management and business process changes the above mentioned costs of the cloud-based treasury system implementation will be reduced by 28 percent, and the total investment on costs will be UAH 164.38 million, allowing to receive NPV totaling UAH 780.48 million and savings of UAH 568.38 million over the first ten years.

The present efficient system of public revenue management is feasible based on the cloud approach of a multitenant architecture with user-friendly functionality for end users, including big data infrastructure integration. The implementation of a cloud-based UPD PLUS software solution for the use of analytical processing will be beneficial for the new integrated system, allowing to effectively use data for analytical processing. Cost-benefit analysis for the public revenue management system implementation is elaborated, along with recommendations. The management approach to the analysis implementation is modeled based on the knowledge-intensive approach and key-edit criterion.

**7.3. Monitoring and Evaluation** A detailed M&E framework will be implemented for tracking progress comprising quantitative and qualitative indicators covering inputs, outputs, outcomes, and impacts with associated reporting methodologies. In designing the M&E framework, a thorough review of existing plans and frameworks will be done to identify the strengths and weaknesses of the plans and develop broader strategic options for strengthening M&E and implementation preparedness. It is required to involve as many stakeholders as possible. The M&E framework is key to providing the link between the requirements to track progress, the intended level of effort, indicators to track activities and specific components, main outputs, immediate outcomes, and impacts. Properly articulated logic models and a matching performance measurement framework are pivotal in tracking progress made against targets over time. The need for a comprehensive set of monitoring and evaluation systems well before implementation starts is drawn by the upper-level activities in an analysis of indicative examples of M&E frameworks that link to more general and comprehensive plans. It is essential to note that the objectives, programs, and indicators cover a major component of the initiative. However, further refinement and completion are required. The officers that will be assigned to take charge of the monitoring role are familiar with influencing factors on the water sector planning and investment environment of the relevant aspects.

Furthermore, it needs to be ensured that direct and evident reasons are well-represented in the design of the M&E framework. It is equally important to properly articulate monitoring tools design, relevant challenges, and possible capacity-building options on the relevant tasks. The importance of identifying proper capacity-building measures and designing the M&E toolkit is also highlighted. Critically reviewing existing monitoring and evaluation practices and assessing the strengths and weaknesses of the practices and what larger lessons could be drawn by using cases from within and/or outside as comparative or indicative examples is of paramount importance. Assessing the significance of present observation means under the existing planning, investment and expenditure reporting systems, general IT systems and networks, downstream management and budget-realization tracking, expenditure certification and allocation complaint status will also be considered. Assessment on the significance and operational scope of the observatory role, general design options, both for inter-institutional M&E and for rapid audit and spot assessment with proper sampling were also included.

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## 8. Stakeholder Engagement

While technological solutions such as ITP and cloud-integration offer exciting opportunities for participation and awareness, there are considerations and local conditions requiring further discussion and engagement. A fundamental question is how the role of private providers is framed. The first governance challenge is quality assurance: how to ensure veracity and reliability of data on the platform as well as services offered (improper valuations, wrong identification of unclaimed properties)? A second challenge is social inclusion and the role of public services: while data and social media may offer new styles of interaction (e.g. ideas crowdsourcing), expert problem analysis, reporting and mediation are still essential to drive effective responses by governments . A third crucial issue is whether governments' formal rights to unclaimed properties should be enforced more aggressively or if federalism and local discretion should be expounded. Differing positions toward this question highlight different, sometimes conflicting needs among citizens. For example, awareness, enforcement, and participation are highly relevant for owners, less so for businesses (opportunities vs costs). Local governments may want to 'grow' revenue more aggressively, on a subnational level there exists a tension between data openness and trust. Before further promising policies are implemented founded on these technologies, these issues should be further articulated and venues for deliberation be established. Policymakers and technology designers/specialists will also benefit from alternative perspectives on technology and wider rather than narrow pre-occupations with "reachable" targets. To facilitate such necessary deliberations, attention needs to be trained on present problems. The public sector has a long history of frustrations with data. In spite of guarantees on access in laws, the availability of basic data – e.g. about registered companies, properties, and fines – is poor and exasperated by file-based, misshapen and mismanaged formats. Data is usually not maintained long-term to provide memory, it's not useful then due to combinatorial impossibilities. That which is obtainable is often so complex that time and skills are lacking. Perceptions differ significantly on situations, targets, and possible solutions, indicating conflicting ideals of government. Emphasis needs to be laid on existing frustrations with data. Engaging a whole cycle of diverse people on defining and illustrating frustrations from general contexts, and rebuilding from there a vision regarding the data and actions necessary for effective sense-making such as interoperability and data ownership is a first step.

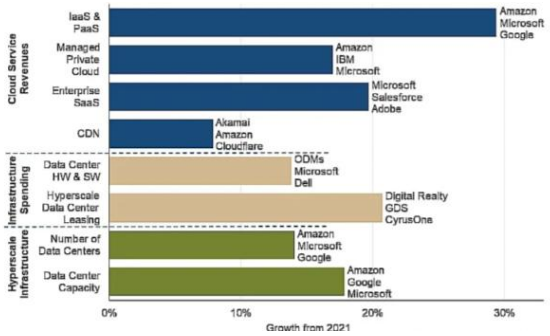


**Fig 6: Shocking Cloud Computing Statistics**

### 8.1. Identifying Key Stakeholders

Stakeholder analysis – the identification of individuals, groups and organizations that could affect, or be affected by, a given project is one of the first steps in the planning and executing of public finance management reform strategies. Key stakeholders must be identified prior to conducting a comprehensive public finance review. By conducting an initial stakeholder analysis, ownership of the public finance management reform strategy can be ensured from the outset, which will facilitate a wider acceptance of and stronger political commitment for the reform process. The decentralization strategy for LA public finance management stipulates a new framework with clear responsibility and accountability for public resource usage. In order to implement the new framework, key stakeholders must be identified and consulted. The initial phase consists of designing a comprehensive stakeholder analysis, formulating the stakeholder information order, identifying key actors within the categories of stakeholders that meet the criteria established for the selection, and soliciting from these actors the needed information as well as their commitment to the proposed reforms. In parallel, discussions with some other stakeholders including the Minister of Development, the Minister of Interior, and the NC to obtain their comments on the proposed strategy and inputs to the Public Finance Information System are also planned. Based on the gathered stakeholders' opinions, a list of the prospective Public Finance Reform Corps will be drafted, who will work on specifying/revising the proposed reforms and coordinating the preparation of implementation roadmap/schedule.

### 8.2. Strategies for Engagement

The strongest motivation for attracting, and thus engaging, the public comes from describing the new opportunities given by the advances in data both for better and for worse. In terms of better, opportunities mostly relate to better coordination in the delivery of public services and maintaining the public order by making predictions on future behaviors. For example, better coordination of public bank management with clearer elaboration on what constitutes unclaimed properties, early

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prediction of property being lost by collecting deeper data or market volatility forward relation with the DCEO in managing future period cash. For making better public order, the MDA with transit authorities and enforcement authorities give insight to better the annoyance of private transit advice such as Uber or shearing rides. In turn, stories about bad usages of data, now and in the pulp fiction, give insight into the risk too. In terms of story-telling, the role of the chief publicization officer, or equivalent is crucial. Even better - it would be advisable to placate it with a chief journalist. Such a plan must refer to proof patterns with others or to case studies. Moreover, attracting the right initial team to explore the limits of opportunities and risks, prototype crucial applications, and stabilize the engines for new insights production from them, is crucial. Better to appoint an outsider, and this effort should be overseen by experts.

**8.3. Feedback Mechanisms** Formal policies and procedures to govern which entities receive requests for feedback can improve response rates and ensure that satisfaction with the procurement process is assessed. This is easily managed with a central-based tool by creating industry distribution lists containing all organizations associated with each state agency and all potential record vendors. Managing the feedback solicitation process centrally can add a layer of consistency and accountability. Accordingly, administrative approval might be needed before inquiries targeting specific organizations are made. Surveys should be anonymous unless more detailed follow-up is warranted, and they should automatically open and close on specified dates. Justifications for changes to these settings should be carefully assessed. A simple online form could manage requests to extend these timeframes or request surveys other than the standard ones. In such cases, all responses should then be submitted to a Steering Committee for review and determination of whether the level of concern warrants individual follow-up. Non-anonymous responses should also be queried and reported to the Steering Committee for consideration of whether these reports warrant more detailed follow-up. Reduction of low response rates for the additional short surveys requires caution with addressing organizations before sending individual responses. The system should present these requests with a standardized format describing their purpose, encouraging vendors to be forthright with the scores and to target any necessary follow-up. Whether to provide a response score and/or the option to target for a specific procurement could be referenced manually in some way . Partial reporting of responses might recognize strengths and weaknesses, but this also gets complicated and labor-intensive. All of these steps would require a great deal of programming effort, and determining implementation priorities will depend on available resources and the current condition of the various processes (in which the individual responses quoted previously might be an example of one with a great deal of attention needed). Surveys should be carefully considered before any content changes to avoid both unintended consequences and major programming effort for ongoing changes. An example of this might be the reporting of scores, which was widely requested to be changed to simple averages but might lead to inability to target individual follow-up. In terms of additional surveys, careful thought should also be given to what would actually be helpful and to the time necessary for vendors to prioritize the feedback (it should be expected similar concerns would need to be managed with follow-up). However, templates or vendors could allow low-input short survey additions to be made, so they probably should be implemented wherever possible. In particular, continuing follow-up with large numbers of organizations that may require months of implementation time should probably be avoided. While other processes would inevitably lead to management concerns and complaints over the pool of eligible organizations and contracts, scalability and a simple list of implications would be significant.

## 9. Conclusion

Unclaimed property is an asset that has not been claimed by its rightful owner or anyone entitled to take possession of the property. Unclaimed property can be bank accounts, stocks, bonds, life insurance, checks, payments, etc. Public revenue refers to revenue from tax receipts, standard dues, administrative fees, etc. In addition to land and properties, unwarranted public properties will also be lost due to careless recordings, incompetency, etc. Unrecorded properties are one of the principal sources of corruption in many countries. Unclaimed properties must be deposited in the treasury of the government or municipality. This paper proposes cloud-based analytics incorporated with database management systems for managing unclaimed property and public revenue. Four techniques associated with agent-based integration, commercial agents, open-source agents, and cloud-based analytics have been integrated and demonstrated through a case study. The issues of trust and the cloud have been addressed due to its complexity.

Government agencies managing unclaimed properties and lost revenues have to cope with various unstructured public submissions. Allocating lost property to its claimant and vice versa is mostly done manually by registering data. The key of an entity is frequently lost due to careless tracking and changes in data formats. Consequently, a good solution is urgently needed to combat the wasted time in claims and administration. The proposed system enables government agencies to leverage cloud-based analytics for efficient

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management of unclaimed properties or revenues. The approach can also serve as a prototype for solving other similar government systems.

An innovative architecture and integration techniques for managing unclaimed property and lost revenues are proposed. Innovations are required to build a bilingual agent providing retrieval and cleaning functionalities for the initial submission of lost items. The study contains a comprehensive analysis of public revenue management covering public properties not being claimed for a long time. Manually matching lost item submissions of agents and municipalities can cause wasted time. Due to the potential complexity, this topic should be addressed by computer scientists.

**9.1. Future Trends** In this paper we provide initial findings of the investigation on harnessing other initiatives' datasets, related insights and best practices in order to develop a conceptual framework for the public revenue management domain. At a global level, unclaimed property management, reporting, and revenue distribution are still not properly tackled. No query system exists for property claims or lost contact information. Each state operates on an individual basis, and few best practices retard progress. In addition, many states are in the process of modernizing state systems and processes. Conclusively, at this stage of the investigation it is evident that a technological platform/framework that joins governmental, financial, property holder/indicator, and otherwise private/public data could mitigate a number of concerns in loss of revenue and property holder/s intent.

It proposes such a framework deeply describing its components, methodology, and supplementary mechanisms that it is anticipated to exert its optimal value. The proposed technological and funding framework can support public awareness initiatives and accelerate asserted public revenues. Safeguarding of initiated sectorial frameworks and data sourcing are anticipated benefits, in addition to effective management of queries, claims, state opportunity assessments, tendering, bidding, property holder reconciliation, and insight extraction on demographics and property behavior. Such data should support design of tailored communication schemes that will facilitate the public redistribution of property holder/s wealth. Countries that retain receipts but fail to act accordingly are likely to establish unclaimed property management schemes along the lines described in this paper. The aforementioned exists great prospects of future work on the development and implementation of such systems.

## 10. References

[1] Challa, S. R., Malempati, M., Sriram, H. K., & Dodda, A. (2024). Leveraging Artificial Intelligence for Secure and Efficient Payment Systems: Transforming Financial Transactions, Regulatory Compliance, and Wealth Optimization. Leveraging Artificial Intelligence for Secure and Efficient Payment Systems: Transforming Financial Transactions, Regulatory Compliance, and Wealth Optimization (December 22, 2024).

[2] Revolutionizing Automotive Manufacturing with AI-Driven Data Engineering: Enhancing Production Efficiency through Advanced Data Analytics and Cloud Integration . (2024). MSW Management Journal, 34(2), 900-923.

[2] Pamisetty, A. (2024). Application of agentic artificial intelligence in autonomous decision making across food supply chains. European Data Science Journal (EDSJ) p-ISSN 3050-9572 en e-ISSN 3050-9580, 1(1).

[3] Paleti, S., Mashetty, S., Challa, S. R., ADUSUPALLI, B., & Singireddy, J. (2024). Intelligent Technologies for Modern Financial Ecosystems: Transforming Housing Finance, Risk Management, and Advisory Services Through Advanced Analytics and Secure Cloud Solutions. Risk Management, and Advisory Services Through Advanced Analytics and Secure Cloud Solutions (July 02, 2024).

[4] Chakilam, C. (2024). Leveraging AI, ML, and Big Data for Precision Patient Care in Modern Healthcare Systems. European Journal of Analytics and Artificial Intelligence (EJAAI) p-ISSN 3050-9556 en e-ISSN 3050-9564, 1(1).

[5] Kummari, D. N. (2023). Energy Consumption Optimization in Smart Factories Using AI-Based Analytics: Evidence from Automotive Plants. Journal for Reattach Therapy and Development Diversities. https://doi.org/10.53555/jrtdd.v6i10s(2).3572

[6] Federated Edge Intelligence: Enabling Privacy-Preserving AI for Smart Cities and IoT

MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 34 Issue 2, July-Dec 2024, Pages: 1228-1248

Systems. (2024). MSW Management Journal, 34(2), 1175-1190.

[7] Koppolu, H. K. R. (2024). The Impact of Data Engineering on Service Quality in 5G-Enabled Cable and Media Networks. European Advanced Journal for Science & Engineering (EAJSE)-p-ISSN 3050-9696 en e-ISSN 3050-970X, 1(1).

[8] Sriram, H. K. (2024). A comparative study of identity theft protection frameworks enhanced by machine learning algorithms. Available at SSRN 5236625.

[9] Paleti, S., Singireddy, J., Dodda, A., Burugulla, J. K. R., & Challa, K. (2021). Innovative Financial Technologies: Strengthening Compliance, Secure Transactions, and Intelligent Advisory Systems Through AI-Driven Automation and Scalable Data Architectures. Secure Transactions, and Intelligent Advisory Systems Through AI-Driven Automation and Scalable Data Architectures (December 27, 2021).

[10] Singireddy, J. (2024). AI-Driven Payroll Systems: Ensuring Compliance and Reducing Human Error. American Data Science Journal for Advanced Computations (ADSJAC) ISSN: 3067-4166, 1(1).

[11] Chava, K. (2023). Integrating AI and Big Data in Healthcare: A Scalable Approach to Personalized Medicine. Journal of Survey in Fisheries Sciences. https://doi.org/10.53555/sfs.v10i3.3576

[12] Challa, K. (2024). Enhancing credit risk assessment using AI and big data in modern finance. American Data Science Journal for Advanced Computations (ADSJAC) ISSN: 3067-4166, 1(1).

[13] Pandiri, L. (2024). Integrating AI/ML Models for Cross-Domain Insurance Solutions: Auto, Home, and Life. American Journal of Analytics and Artificial Intelligence (ajaai) with ISSN 3067-283X, 1(1).

[14] Malempati, M. (2024). Leveraging cloud computing architectures to enhance scalability and security in modern financial services and payment infrastructure. European Advanced Journal for Science & Engineering (EAJSE)-p-ISSN 3050-9696 en e-ISSN 3050-970X, 1(1).

[15] Recharla, M. (2023). Next-Generation Medicines for Neurological and Neurodegenerative Disorders: From Discovery to Commercialization. Journal of Survey in Fisheries Sciences. https://doi.org/10.53555/sfs.v10i3.3564

[16] Kaulwar, P. K., Pamisetty, A., Mashetty, S., Adusupalli, B., & Pandiri, L. (2023). Harnessing Intelligent Systems and Secure Digital Infrastructure for Optimizing Housing Finance, Risk Mitigation, and Enterprise Supply Networks. International Journal of Finance (IJFIN)-ABDC Journal Quality List, 36(6), 372-402.

[17] Kalisetty, S., & Lakkarasu, P. (2024). Deep Learning Frameworks for Multi-Modal Data Fusion in Retail Supply Chains: Enhancing Forecast Accuracy and Agility. American Journal of Analytics and Artificial Intelligence (ajaai) with ISSN 3067-283X, 1(1).

[18] Chava, K., Chakilam, C., Suura, S. R., & Recharla, M. (2021). Advancing Healthcare Innovation in 2021: Integrating AI, Digital Health Technologies, and Precision Medicine for Improved Patient Outcomes. Global Journal of Medical Case Reports, 1(1), 29-41.

[19] Annapareddy, V. N., Preethish Nanan, B., Kommaragiri, V. B., Gadi, A. L., & Kalisetty, S. (2022). Emerging Technologies in Smart Computing, Sustainable Energy, and Next-Generation Mobility: Enhancing Digital Infrastructure, Secure Networks, and Intelligent Manufacturing. Venkata Bhardwaj and Gadi, Anil Lokesh and Kalisetty, Srinivas, Emerging Technologies in Smart Computing, Sustainable Energy, and Next-Generation Mobility: Enhancing Digital Infrastructure, Secure Networks, and Intelligent Manufacturing (December 15, 2022).

[20] Meda, R. (2024). Enhancing Paint Formula Innovation Using Generative AI and Historical Data Analytics. American Advanced Journal for Emerging Disciplinaries (AAJED) ISSN: 3067-4190, 1(1).

MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 34 Issue 2, July-Dec 2024, Pages: 1228-1248

[21] Sai Teja Nuka (2023) A Novel Hybrid Algorithm Combining Neural Networks And Genetic Programming For Cloud Resource Management. Frontiers in HealthInforma 6953-6971

[22] Suura, S. R. (2024). The role of neural networks in predicting genetic risks and enhancing preventive health strategies. European Advanced Journal for Emerging Technologies (EAJET)-p-ISSN 3050-9734 en e-ISSN 3050-9742, 2(1).

[23] Kannan, S. (2024). Revolutionizing Agricultural Efficiency: Leveraging AI Neural Networks and Generative AI for Precision Farming and Sustainable Resource Management. Available at SSRN 5203726.

[24] Transforming Customer Experience in Telecom: Agentic AI-Driven BSS Solutions for Hyper-Personalized Service Delivery. (2024). MSW Management Journal, 34(2), 1161-1174.

[25] Singireddy, S. (2024). Applying Deep Learning to Mobile Home and Flood Insurance Risk Evaluation. American Advanced Journal for Emerging Disciplinaries (AAJED) ISSN: 3067-4190, 1(1).

[26] Leveraging Deep Learning, Neural Networks, and Data Engineering for Intelligent Mortgage Loan Validation: A Data-Driven Approach to Automating Borrower Income, Employment, and Asset Verification. (2024). MSW Management Journal, 34(2), 924-945.

[27] Srinivas Kalyan Yellanki. (2024). Building Adaptive Networking Protocols with AI-Powered Anomaly Detection for Autonomous Infrastructure Management . Journal of Computational Analysis and Applications (JoCAAA), 33(08), 3116–3130. Retrieved from https://eudoxuspress.com/index.php/pub/article/view/2423

[28] Transforming Customer Experience in Telecom: Agentic AI-Driven BSS Solutions for Hyper-Personalized Service Delivery. (2024). MSW Management Journal, 34(2), 1161-1174.

[29] Sriram, H. K., Challa, S. R., Challa, K., & ADUSUPALLI, B. (2024). Strategic Financial Growth: Strengthening Investment Management, Secure Transactions, and Risk Protection in the Digital Era. Secure Transactions, and Risk Protection in the Digital Era (November 10, 2024).

[30] Paleti, S. (2024). Neural Compliance: Designing AI-Driven Risk Protocols for Real-Time Governance in Digital Banking Systems. Available at SSRN 5233099.

[31] Sriram, H. K., Challa, S. R., Challa, K., & ADUSUPALLI, B. (2024). Strategic Financial Growth: Strengthening Investment Management, Secure Transactions, and Risk Protection in the Digital Era. Secure Transactions, and Risk Protection in the Digital Era (November 10, 2024).

[32] Pamisetty, V. (2023). Leveraging AI, Big Data, and Cloud Computing for Enhanced Tax Compliance, Fraud Detection, and Fiscal Impact Analysis in Government Financial Management. International Journal of Science and Research (IJSR), 12(12), 2216–2229. https://doi.org/10.21275/sr23122164932

[33] Komaragiri, V. B. Harnessing AI Neural Networks and Generative AI for the Evolution of Digital Inclusion: Transformative Approaches to Bridging the Global Connectivity Divide.

[34] Annapareddy, V. N. (2024). Leveraging Artificial Intelligence, Machine Learning, and Cloud-Based IT Integrations to Optimize Solar Power Systems and Renewable Energy Management. Machine Learning, and Cloud-Based IT Integrations to Optimize Solar Power Systems and Renewable Energy Management (December 06, 2024).

[35] Pamisetty, A. (2024). Leveraging Big Data Engineering for Predictive Analytics in Wholesale Product Logistics. Available at SSRN 5231473.

[36] Dodda, A. (2024). Integrating Advanced and Agentic AI in Fintech: Transforming Payments and Credit Card Transactions. European Advanced Journal for Emerging Technologies (EAJET)-p-ISSN 3050-9734 en e-ISSN 3050-9742, 1(1).

MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 34 Issue 2, July-Dec 2024, Pages: 1228-1248

[37] Gadi, A. L., Kannan, S., Nanan, B. P., Komaragiri, V. B., & Singireddy, S. (2021). Advanced Computational Technologies in Vehicle Production, Digital Connectivity, and Sustainable Transportation: Innovations in Intelligent Systems, Eco-Friendly Manufacturing, and Financial Optimization. Universal Journal of Finance and Economics, 1(1), 87-100.

[38] Adusupalli, B., & Insurity-Lead, A. C. E. The Role of Internal Audit in Enhancing Corporate Governance: A Comparative Analysis of Risk Management and Compliance Strategies. Outcomes. Journal for ReAttach Therapy and Developmental Diversities, 6, 1921-1937.

[39] Suura, S. R., Chava, K., Recharla, M., & Chakilam, C. (2023). Evaluating Drug Efficacy and Patient Outcomes in Personalized Medicine: The Role of AI-Enhanced Neuroimaging and Digital Transformation in Biopharmaceutical Services. Journal for ReAttach Therapy and Developmental Diversities, 6, 1892-1904.

[40] Kummari, D. N. (2023). AI-Powered Demand Forecasting for Automotive Components: A Multi-Supplier Data Fusion Approach. European Advanced Journal for Emerging Technologies (EAJET)-p-ISSN 3050-9734 en e-ISSN 3050-9742, 1(1).

[41] Sheelam, G. K. (2024). Deep Learning-Based Protocol Stack Optimization in High-Density 5G Environments. European Advanced Journal for Science & Engineering (EAJSE)-p-ISSN 3050-9696 en e-ISSN 3050-970X, 1(1).

[42] AI-Powered Revenue Management and Monetization: A Data Engineering Framework for Scalable Billing Systems in the Digital Economy . (2024). MSW Management Journal, 34(2), 776-787.

[43] Sriram, H. K. (2023). The Role Of Cloud Computing And Big Data In Real-Time Payment Processing And Financial Fraud Detection. Available at SSRN 5236657.

[44] Paleti, S., Burugulla, J. K. R., Pandiri, L., Pamisetty, V., & Challa, K. (2022). Optimizing Digital Payment Ecosystems: Ai-Enabled Risk Management, Regulatory Compliance, And Innovation In Financial Services. Regulatory Compliance, And Innovation In Financial Services (June 15, 2022).

[45] Singireddy, J. (2024). AI-Enhanced Tax Preparation and Filing: Automating Complex Regulatory Compliance. European Data Science Journal (EDSJ) p-ISSN 3050-9572 en e-ISSN 3050-9580, 2(1).

[46] Karthik Chava. (2022). Harnessing Artificial Intelligence and Big Data for Transformative Healthcare Delivery. International Journal on Recent and Innovation Trends in Computing and Communication, 10(12), 502–520. Retrieved from https://ijritcc.org/index.php/ijritcc/article/view/11583

[47] Challa, K. Dynamic Neural Network Architectures for Real-Time Fraud Detection in Digital Payment Systems Using Machine Learning and Generative AI.

[48] Lahari Pandiri. (2023). Specialty Insurance Analytics: AI Techniques for Niche Market Predictions. International Journal of Finance (IJFIN) - ABDC Journal Quality List, 36(6), 464-492.

[49] Recharla, M., & Chitta, S. AI-Enhanced Neuroimaging and Deep Learning-Based Early Diagnosis of Multiple Sclerosis and Alzheimer's.

[50] Malempati, M. (2023). A Data-Driven Framework For Real-Time Fraud Detection In Financial Transactions Using Machine Learning And Big Data Analytics. Available at SSRN 5230220.

[51] Pandiri, L., Paleti, S., Kaulwar, P. K., Malempati, M., & Singireddy, J. (2023). Transforming Financial And Insurance Ecosystems Through Intelligent Automation, Secure Digital Infrastructure, And Advanced Risk Management Strategies. Educational Administration: Theory and Practice, 29 (4), 4777–4793.

[52] Lakkarasu, P. (2024). Advancing Explainable AI for AI-Driven Security and Compliance in Financial Transactions. Journal of

MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 34 Issue 2, July-Dec 2024, Pages: 1228-1248

Artificial Intelligence and Big Data Disciplines, 1(1), 86-96.

[53] Gadi, A. L., Kannan, S., Nanan, B. P., Komaragiri, V. B., & Singireddy, S. (2021). Advanced Computational Technologies in Vehicle Production, Digital Connectivity, and Sustainable Transportation: Innovations in Intelligent Systems, Eco-Friendly Manufacturing, and Financial Optimization. Universal Journal of Finance and Economics, 1(1), 87-100.

[54] Meda, R. (2023). Developing AI-Powered Virtual Color Consultation Tools for Retail and Professional Customers. Journal for ReAttach Therapy and Developmental Diversities. https://doi.org/10.53555/jrtdd.v6i10s(2).3577

[55] Nuka, S. T., Annapareddy, V. N., Koppolu, H. K. R., & Kannan, S. (2021). Advancements in Smart Medical and Industrial Devices: Enhancing Efficiency and Connectivity with High-Speed Telecom Networks. Open Journal of Medical Sciences, 1(1), 55-72.

[55] Suura, S. R. Artificial Intelligence and Machine Learning in Genomic Medicine: Redefining the Future of Precision Diagnostics.

[56] Kannan, S., & Seenu, A. (2024). Advancing Sustainability Goals with AI Neural Networks: A Study on Machine Learning Integration for Resource Optimization and Environmental Impact Reduction. management, 32(2).

[57] Motamary, S. (2022). Enabling Zero-Touch Operations in Telecom: The Convergence of Agentic AI and Advanced DevOps for OSS/BSS Ecosystems. Kurdish Studies. https://doi.org/10.53555/ks.v10i2.3833

[58] Singireddy, S. (2024). Predictive Modeling for Auto Insurance Risk Assessment Using Machine Learning Algorithms. European Advanced Journal for Emerging Technologies (EAJET)-p-ISSN 3050-9734 en e-ISSN 3050-9742, 1(1).

[59] Mashetty, S. (2024). The role of US patents and trademarks in advancing mortgage financing technologies. European Advanced Journal for Science & Engineering (EAJSE)-p-ISSN 3050-9696 en e-ISSN 3050-970X, 1(1).

[60] Yellanki, S. K. (2024). Leveraging Deep Learning and Neural Networks for Real-Time Crop Monitoring in Smart Agricultural Systems. American Data Science Journal for Advanced Computations (ADSJAC) ISSN: 3067-4166, 1(1).

[61] Challa, S. R. (2024). Behavioral Finance in Financial Advisory Services: Analyzing Investor DecisionMaking and Risk Management in Wealth Accumulation. Available at SSRN 5135949.

[62] Paleti, S. (2023). Data-First Finance: Architecting Scalable Data Engineering Pipelines for AI-Powered Risk Intelligence in Banking. Available at SSRN 5221847.

[63] Pamisetty, V., Dodda, A., Singireddy, J., & Challa, K. (2022). Optimizing Digital Finance and Regulatory Systems Through Intelligent Automation, Secure Data Architectures, and Advanced Analytical Technologies. Jeevani and Challa, Kishore, Optimizing Digital Finance and Regulatory Systems Through Intelligent Automation, Secure Data Architectures, and Advanced Analytical Technologies (December 10, 2022).

[64] Komaragiri, V. B., Edward, A., & Surabhi, S. N. R. D. Enhancing Ethernet Log Interpretation And Visualization.

[65] Kannan, S., Annapareddy, V. N., Gadi, A. L., Kommaragiri, V. B., & Koppolu, H. K. R. (2023). AI-Driven Optimization of Renewable Energy Systems: Enhancing Grid Efficiency and Smart Mobility Through 5G and 6G Network Integration. Available at SSRN 5205158.

[66] Kommaragiri, V. B., Preethish Nanan, B., Annapareddy, V. N., Gadi, A. L., & Kalisetty, S. (2022). Emerging Technologies in Smart Computing, Sustainable Energy, and Next-Generation Mobility: Enhancing Digital Infrastructure, Secure Networks, and Intelligent Manufacturing. Venkata Narasareddy and Gadi, Anil Lokesh and Kalisetty, Srinivas.

MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 34 Issue 2, July-Dec 2024, Pages: 1228-1248

[67] Pamisetty, V. (2022). Transforming Fiscal Impact Analysis with AI, Big Data, and Cloud Computing: A Framework for Modern Public Sector Finance. Big Data, and Cloud Computing: A Framework for Modern Public Sector Finance (November 30, 2022).

[68] Paleti, S. (2023). Trust Layers: AI-Augmented Multi-Layer Risk Compliance Engines for Next-Gen Banking Infrastructure. Available at SSRN 5221895.

[69] Rao Challa, S. (2023). Revolutionizing Wealth Management: The Role Of AI, Machine Learning, And Big Data In Personalized Financial Services. Educational Administration: Theory and Practice. https://doi.org/10.53555/kuey.v29i4.9966

[70] Machine Learning Applications in Retail Price Optimization: Balancing Profitability with Customer Engagement. (2024). MSW Management Journal, 34(2), 1132-1144.

[71] Someshwar Mashetty. (2024). Research insights into the intersection of mortgage analytics, community investment, and affordable housing policy. Journal of Computational Analysis and Applications (JoCAAA), 33(08), 3377–3393. Retrieved from https://www.eudoxuspress.com/index.php/pub/article/view/2496

[72] Lakkarasu, P., Kaulwar, P. K., Dodda, A., Singireddy, S., & Burugulla, J. K. R. (2023). Innovative Computational Frameworks for Secure Financial Ecosystems: Integrating Intelligent Automation, Risk Analytics, and Digital Infrastructure. International Journal of Finance (IJFIN)-ABDC Journal Quality List, 36(6), 334-371.

[72] Implementing Infrastructure-as-Code for Telecom Networks: Challenges and Best Practices for Scalable Service Orchestration. (2021). International Journal of Engineering and Computer Science, 10(12), 25631-25650. https://doi.org/10.18535/ijecs.v10i12.4671

[73] Kannan, S. The Convergence of AI, Machine Learning, and Neural Networks in Precision Agriculture: Generative AI as a Catalyst for Future Food Systems.

[74] Suura, S. R. (2024). Agentic artificial intelligence systems for dynamic health management and real-time genomic data analysis. European Journal of Analytics and Artificial Intelligence (EJAAI) p-ISSN 3050-9556 en e-ISSN 3050-9564, 1(1).

[75] Meda, R. (2022). Integrating IoT and Big Data Analytics for Smart Paint Manufacturing Facilities. Kurdish Studies. https://doi.org/10.53555/ks.v10i2.3842

[76] Nandan, B. P., & Chitta, S. (2022). Advanced Optical Proximity Correction (OPC) Techniques in Computational Lithography: Addressing the Challenges of Pattern Fidelity and Edge Placement Error. Global Journal of Medical Case Reports, 2(1), 58-75.

[77] Lakkarasu, P. (2023). Designing Cloud-Native AI Infrastructure: A Framework for High-Performance, Fault-Tolerant, and Compliant Machine Learning Pipelines. Journal for ReAttach Therapy and Developmental Diversities. https://doi.org/10.53555/jrtdd.v6i10s(2).3566

[78] Kaulwar, P. K. (2022). Securing The Neural Ledger: Deep Learning Approaches For Fraud Detection And Data Integrity In Tax Advisory Systems. Migration Letters, 19, 1987-2008.

[79] Pandiri, L., Paleti, S., Kaulwar, P. K., Malempati, M., & Singireddy, J. (2023). Transforming Financial And Insurance Ecosystems Through Intelligent Automation, Secure Digital Infrastructure, And Advanced Risk MaRecharla, M., & Chitta, S. (2022). Cloud-Based Data Integration and Machine Learning Applications in Biopharmaceutical Supply Chain Optimization.nagement Strategies. Educational Administration: Theory and Practice, 29 (4), 4777–4793.

[80] Pandiri, L., Paleti, S., Kaulwar, P. K., Malempati, M., & Singireddy, J. (2023). Transforming Financial And Insurance Ecosystems Through Intelligent Automation, Secure Digital Infrastructure, And Advanced Risk Management Strategies. Educational Administration: Theory and Practice, 29 (4), 4777–4793.

MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal
ISSN: 1053-7899
Vol. 34 Issue 2, July-Dec 2024, Pages: 1228-1248

[81] Challa, K. (2023). Optimizing Financial Forecasting Using Cloud Based Machine Learning Models. Journal for ReAttach Therapy and Developmental Diversities. https://doi.org/10.53555/jrtdd.v6i10s(2).3565

[82] Chava, K. (2020). Machine Learning in Modern Healthcare: Leveraging Big Data for Early Disease Detection and Patient Monitoring. International Journal of Science and Research (IJSR), 9(12), 1899–1910. https://doi.org/10.21275/sr201212164722

[83] Kalisetty, S., & Singireddy, J. (2023). Optimizing Tax Preparation and Filing Services: A Comparative Study of Traditional Methods and AI Augmented Tax Compliance Frameworks. Available at SSRN 5206185.

[84] Sriram, H. K. (2022). Integrating generative AI into financial reporting systems for automated insights and decision support. Available at SSRN 5232395.

[85] Koppolu, H. K. R. Deep Learning and Agentic AI for Automated Payment Fraud Detection: Enhancing Merchant Services Through Predictive Intelligence.

[86] Sheelam, G. K. (2023). Adaptive AI Workflows for Edge-to-Cloud Processing in Decentralized Mobile Infrastructure. Journal for Reattach Therapy and Development Diversities. https://doi.org/10.53555/jrtdd.v6i10s(2).3570ugh Predictive Intelligence.

[87] End-to-End Traceability and Defect Prediction in Automotive Production Using Blockchain and Machine Learning. (2022). International Journal of Engineering and Computer Science, 11(12), 25711-25732. https://doi.org/10.18535/ijecs.v11i12.4746

[88] Chakilam, C. (2022). Integrating Machine Learning and Big Data Analytics to Transform Patient Outcomes in Chronic Disease Management. Journal of Survey in Fisheries Sciences. https://doi.org/10.53555/sfs.v9i3.3568

[89] Pamisetty, A. (2024). Leveraging Big Data Engineering for Predictive Analytics in Wholesale Product Logistics. Available at SSRN 5231473.

[90] Gadi, A. L. (2022). Connected Financial Services in the Automotive Industry: AI-Powered Risk Assessment and Fraud Prevention. Journal of International Crisis and Risk Communication Research, 11-28.

[91] Dodda, A. (2023). AI Governance and Security in Fintech: Ensuring Trust in Generative and Agentic AI Systems. American Advanced Journal for Emerging Disciplinaries (AAJED) ISSN: 3067-4190, 1(1).

[92] Pamisetty, A. Optimizing National Food Service Supply Chains through Big Data Engineering and Cloud-Native Infrastructure.

[93] Challa, K. (2022). The Future of Cashless Economies Through Big Data Analytics in Payment Systems. International Journal of Scientific Research and Modern Technology, 60–70. https://doi.org/10.38124/ijsrmt.v1i12.467

[94] Pamisetty, A. (2023). Cloud-Driven Transformation Of Banking Supply Chain Analytics Using Big Data Frameworks. Available at SSRN 5237927..