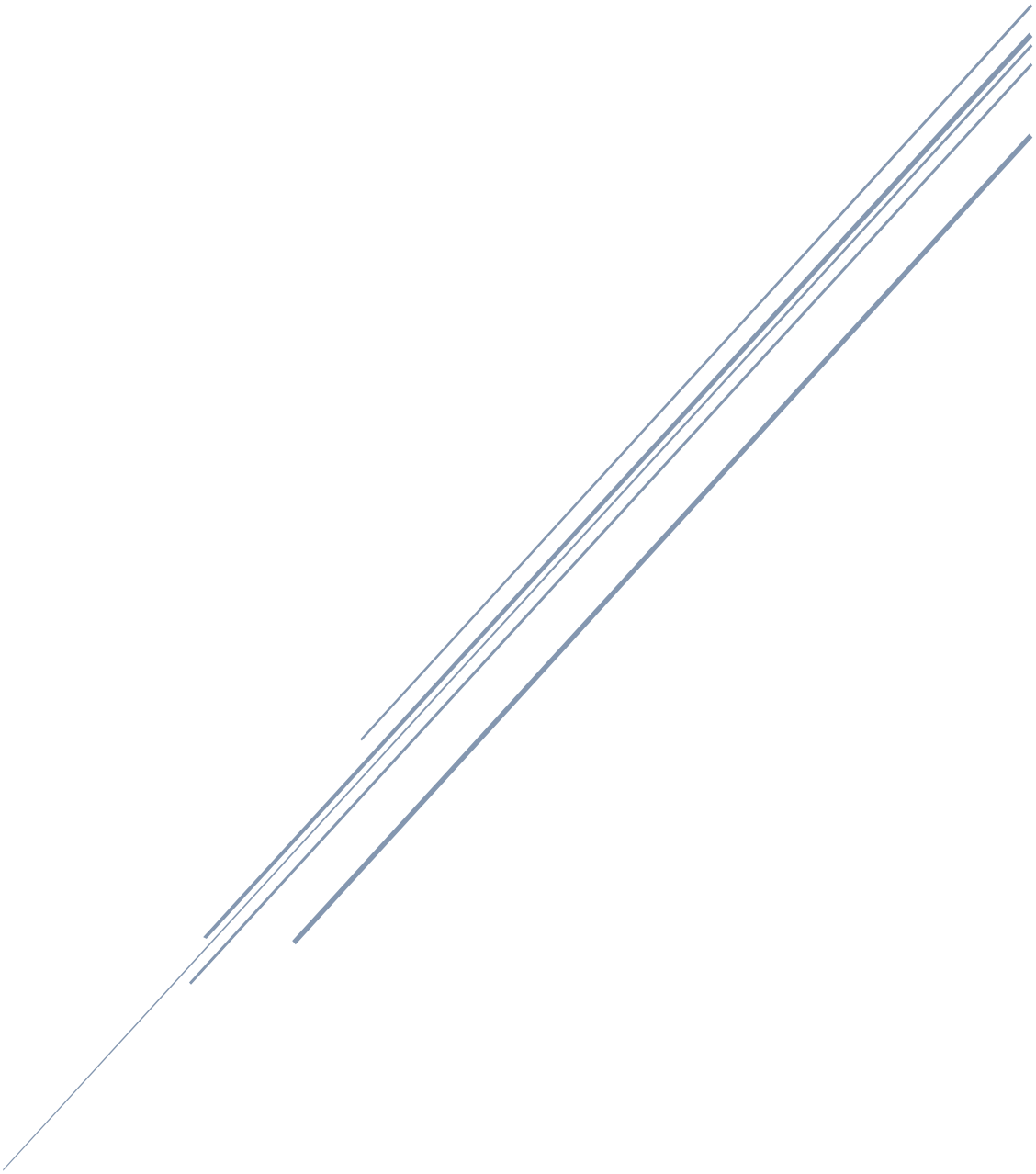
USING TECHNOLOGY TO MEDIATE PARTICIPATORY GOVERNANCE



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Introduction

Citizens are demanding more transparency, competence, and accountability from bureaucracies they frequently perceive as delivering public services on institutional terms. Governments are increasingly criticized for preferring their own at the expense of the general polity. Increasing public scrutiny of government operations aided by the internet is exposing shortcomings everywhere.[1]

The 'New Public Management' paradigm was introduced to western government in the 1980s, and continues to dominate governance models throughout the world today.[2] It attempts to apply commercial governance and service delivery best practice to the public sector, but its focus is on efficiency and effectiveness, not on trust. Even corrupt and predatory governments can operate effectively.

Leaders in democratic republics typically respond to rising Citizen expectations by visibly promoting improvement initiatives that 1) incrementally optimize business processes, 2) provide enhanced citizen access to information via the internet (e-Government), 3) grant more access to legislative action (e-Democracy), and 4) generally better exploit information technology efficiencies.[3] While these are necessary steps, they are not sufficient to address a crisis of trust, and frequently fail to empower Citizens.[4] True enough; cycle times can be reduced, duplication eliminated, and accuracy improved. Nevertheless, the basic relationship between citizen and government remains unchanged so long as the individual feels no ownership in the controlling institutions, and institutional leaders are rewarded for maintaining the status quo.

Governments do not address trust in the Government-Citizen relationship by simply offering web portal alternatives to in-person transactions. People trust what they can see and influence. Citizens should be invited into the execution of daily governance and business processes in ways that offer them an active role in designing and fulfilling their own public service participation. This would be akin to extending the e-Democracy Citizen vote beyond selecting a representative to directly informing and approving policies that then give effect to legislation that supports the policy. This is expensive to do in person, both in time and resources, but technology allows governments to easily engage (on a need-to-know, right-to-know basis) both Citizens and Government staff in shared policy development and business process design and delivery.

Citizens are motivated to meet their own needs, and this energy can be directed to participation in public service delivery. Once comfortable with this type of interaction, the Citizen is more likely to take an interest in participative policy-making and engage in issues like sustainability & the MDGs. Population engagement in the 'vital few' issues most associated with building trust in government becomes important when unpopular mandates become necessary. Citizens are more likely to comply if they see government as being staffed by citizen-peers with shared values.

Building trust ultimately requires a) revisiting the basic social contract under which citizens grant power to government in exchange for specific benefits, and then b) redesigning how governance in the technology age best fulfills that contract. Estonia ('e-Estonia')[5] and Finland ('humble government')[6] are two examples of countries acting on this question at a national level, with different outcomes appropriately reflecting their different cultures and legacies. A new language is even emerging to characterize such efforts including

[1] The Economist; "The people's panopticon", 2013-11-16 [https://www.economist.com/briefing/2013/11/14/the-peoples-panopticon], accessed 2021-11-14
[2] Islam, Fakhrul; "New Public Management (NPM): A dominating paradigm in public sectors", AJPSIR2015.0775, Vol.9(4), April 2015pp. 141-151
[3] See for example, Smart Nation Digital Government Group; "Digital Government Blueprint", June 2018
[4] See for example, World Bank Group, World Development Report 2016; "Digital Dividends". 2016, p.171-177
[5] E-Governance Academy; "E-Estonia. E-Governance in Practice"; 3rd Edition ,2019; ISBN 978-9949-88-917-4
[6] Demos Helsinki; "Humble Government: How to Realize Ambitious Reforms Prudently"; Steering2020 Project, 2020

'seamless state', 'open government', 'democracy as technology', and 'government as a platform'. These governments are leveraging digital identification, AI-driven semi-automated processes, and advanced Information and Communications Technology (ICT) infrastructure to engage their citizenry in a new technology-mediated social contract. They are improving positive perceptions in areas such as:

- Respectfulness via Citizen control and permissioned sharing of identity & personal data
- Accountability via visibility into the policy-making process and leader behavior
- Responsiveness via Citizen participation / engagement in public service delivery

For many (if not most) governments integration of such technologies and related practices is a big leap, so they need to settle for incremental, concrete changes that will still catalyze positive citizen perception. There are two approaches that reinforce each other.

The first is to offer greater visibility and input to the process of policy-making as the primary input to law-making. Web 2.0 technologies optimized to the task facilitate large-scale citizen collaboration. This addresses the public's persistent desire for both social change, and empowerment. It improves perceptions of the credibility of legislative action. It also upsets established practices of influence peddling.[7]

The second is to better engage the public in the daily activities of business process execution. This is harder because it exposes internal government business operations to substantial potential re-engineering disruption. The benefit is a public that can transparently monitor who is working on what, see the status of every public request, and directly contribute to the satisfaction or frustration of the work itself. The willingness of a government to provide this level of public visibility and control positively impacts citizen perceptions of public sector trustworthiness and credibility.

This paper suggests an approach for implementing citizen-centered democracy via shared responsibility for execution of government-sponsored workflows. It proposes implementing specialized collaboration software that imposes minimal disruption on existing government applications. It shows how to incorporate citizen participation in government workflow design in an incremental way. The approach offers public institutions a compelling middle alternative between e-Government portals and wholesale social change.

Intervention – Digitize Public Service Delivery

Governments may have a variety of motivations for improving electronic service delivery and participatory business processes.[8] Not all are explicitly tied to the issue of trust, but trust is always an implicit attribute of good governance. Among the motivations that justify such initiatives are:

1. The Government may be building on past successes transitioning the national culture to e-Democracy. Alternatively, it may wish to address a crisis of confidence among the Citizenry that is impeding the implementation of policies, delivery of services, or compliance with laws. Either way, it desires to build trust by demonstrating a commitment to engaging Citizens directly in transparent and accountable business processes.

2. Remote Communities may be resistant to central government authority. Engaging them on their terms with a trusted relationship will increase government credibility.

3. Government leaders may wish to address issues of entrenched bureaucratic corruption or inefficiency by exposing its internal operations to the public. This is particularly helpful where the Government is seeking to improve its standing in the international Community, or to avoid attracting oversight from

[7] See for example; Medium; "Estonia: time to increase transparency in policy-making", 2020-02-03, [https://voices.transparency.org/estonia-time-to-increase-transparency-in-policy-making-f302f25402b3], accessed 2022-01-06

[8] Stoltzfus, Kimberly; "Motivations for implementing e-government: an investigation of the global phenomenon", Proceedings of the 2005 National Conference on Digital Government Research, DG.O 2005, Atlanta, Georgia, USA, May 15-18, 2005

such entities as the Financial Action Task Force. Employees will immediately feel the consequences of being accountable to their peers and neighbors, which is a powerful motivator for change.

4. Donors, NGOs, and other international institutions may be demanding greater accountability and transparency as pre-conditions for further financial support or provision of critical services. More responsive and inclusive government operations can directly impact Sustainable Development Goals and other indicators used to assess the quality of governance.

5. Local economic development progress directly follows from governance choices. Requirements for starting a business, regulatory regimes, tax policy, property protection, and other factors create or remove private sector financial and operational friction. Community-led public service delivery catalyzes the formation of entire local supply chains. The commercial sector is every bit as important to the social fabric as other customers in Government transactions, and equally benefits from trust in Government.

6. Governments seek to allocate employee time to high value-added activities and proactive policy support analysis. Studies have shown compelling cost savings from transitioning business process execution to self-service models supported by artificial intelligence. Increased Citizen participation often lessens the cost of delivering public-facing services.

7. Finally, Government leaders may have caught the vision of a new social contract in which governance is a seamless part of the holistic social interaction experience and not a separate institutional practice. It desires to empower the Citizenry to take responsibility for its own services, with roles in policy, planning, execution, and participation as a customer.

Citizens worldwide have integrated internet-based applications and content into their lives. Most of the world's population now has at least a basic mobile phone with SMS texting capable of accessing key web-based services like online banking and payment. Ubiquitous information exchange is forcing the issue of both civic and commercial transparency. Citizens expect every institutional entity to keep up with digitization trends that more efficiently deliver products and services. To that end, they expect Government to provide the same digital experience they are getting from innovative commercial firms.[9]

Bureaucracies generally are not very adaptive, and weak governing institutions are often least so because change disrupts generational systems of patronage. Nevertheless, governing Elites have sometimes been willing to sponsor technology projects that provide an appealing public veneer over unchanged internal processes and power structures. Many are these are finding that over time digitization of institutional operations inevitably expands its footprint and eventually puts pressure on poor Governance practices.

Where governance reform is welcomed, digitization both enables and provides the justification for changing processes and policies. Depending on scope, this affords an opportunity to a) revisit why Governance may be weak in the first place, b) convene a social partnership to address the issues, and c) revise the social contract.[10] Digital tools allow social partnerships to be formed quickly and facilitated remotely across time and space. These allow work on the Social Contract to be inclusive, transparent, and collaborative.

Citizen trust is being enhanced or destroyed based on how institutional entities and governing Elites respond, particularly to Citizen expectations for more participative government.

ERP projects are not enabling participative government

There are thousands of commercial governmental software systems reflecting the highly differentiated policies and organization of each sovereign's specialized programs. Virtually no government uses one integrated system since procurements tend to follow Legislative mandates that yield bolt-on best-of-breed solutions. Huge expense is incurred integrating current and new systems so they stay in synch with one another. Many government programs in the developing world are not supported by any specialized software at all; they are

[9] UN DESA; "E-Government Survey 2020"; 11th Edition, 2020
[10] Coke, J. and Linch, F; "Restoring Trust in Government", [https://governance-consortium.com/]; 2021

administered with paper files and pirated office automation software, or depend on locally coded systems. Automation is expensive to keep current, and abstracted automation complexities drive up personnel costs.

Enterprise Resource Planning (ERP) software vendors like SAP and Microsoft (Dynamics) that serve commercial companies have made efforts to adapt their infrastructure to governance. There are few success stories. The reason is simple on all accounts. When you build a siloed system for one department, it needs to be rebuilt for each successive. Companies like Salesforce use software 'building blocks' to construct customized solutions, but this does not follow the sub-typing model that defines government. The reality is a federated environment dependent on extensive integration.[11]

An opportunity gap exists to supply governments with automation that looks and feels consistent across the enterprise, smoothly engages both Citizen and civil service staff, and requires minimal effort to sub-type for additional programs and policies. If this can be achieved, costs drop significantly and automation becomes feasible where it was not previously. Since most government offices have computers with browsers and internet access, Software delivered As A Service (SAAS) is most easily deployed and supported.

The 'Program-Relationship-Participant' Pattern

The activities of sovereign governments are defined by their enabling legislative mandate. These activities typically define programs/projects, eligibility/membership under each, and the obligations of all parties to the relationship - including both government staff and subscribers/citizens (individuals and companies). This Program-Relationship-Member pattern is found throughout government:

Program	Relationship	Participant
Licensure	Owned assets	Govt., Citizen, Company
Environment	Mining royalty contract	Govt., Company
Health & Social Services	Benefit / service enrollment	Govt., Citizen
Taxation	Taxable property, income, purchases	Govt., Citizen, Company
Protection	Legal enforcement obligations	Govt., Citizen, Company
Legislative/Judicial	Law-making, lawsuits	Govt., Citizen, Company
Vital Statistics	Births/deaths, marriage/divorce, education, residency	Govt., Citizen

Automating the Pattern

Each of the participants has one or more roles. A government staff person employed in one ministry is also a citizen when interacting as a customer of another government ministry's programs. For this reason, every person or legal entity is uniquely identified and then assigned roles contextual to their enrollment/subscription/membership in programs.

Conceptually, administration of a Program's relationships follow defined business processes that specify sequenced workflow tasks/decisions, inputs and outputs, responsible parties, and supporting data/documents and other resources. Participants share visibility of the entire workflow, and each has access to specific on-line task capabilities that depend on their task types and assignments. When a dependent task completes, the owner of the subsequent task is notified and requested to take action.

Business processes are defined at a high level and sub-typed based on their various alternative configurations. For example, "e-File Taxes" may be a high-level process which decomposes to lower-level processes for each of "Personal Income", "Business VAT", "Property Excise", and other taxation families. Each may further decompose to transactional processes such as "Initial filing" and "Adjustment". Lower-level processes can optionally inherit and re-use the attributes of higher-level processes.

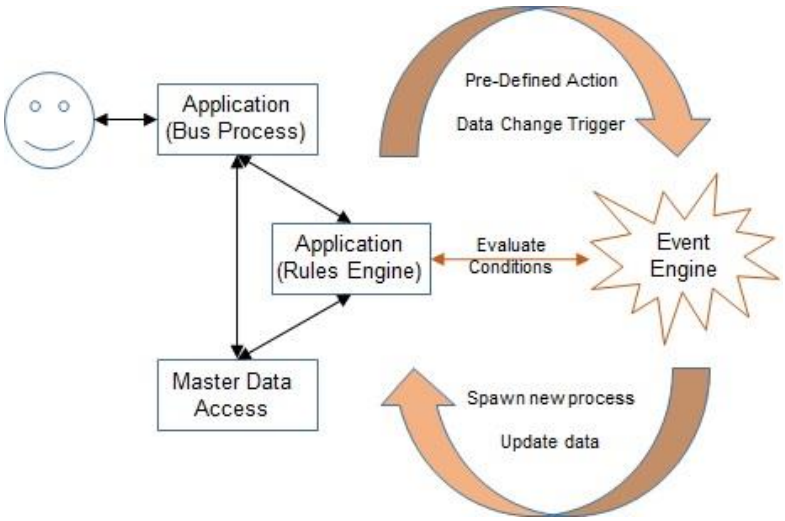
Tasks may be performed manually by participants, or automatically by an artificially intelligent system. Ideal system design lets AI make decisions when the rules and data are clear, and escalates to human intervention

[11] Deloitte; "Welcome to the postmodern era for public sector ERP", White paper, 2017

when the analysis outcome is fuzzy. Good system design parameterizes the configuration of all automated behavior so business staff can maintain and extend it without having to engage costly programmers.

From an end-user perspective, the individual (whether citizen or program staff) is presented with a dashboard showing his service requests and required action items. She can navigate to the detailed workflows and see every task and responsibility, along with start and end dates/times, and estimated duration for future activities leading to completion. It is a simple matter to visually determine where one is within the overall process. It may also be desirable to give participants messaging access to other participants when waiting for tasks to complete.

The tasks are supported by automated systems. For example, the completion of a manual task (eg., supply of requested data) or change in the state of data may serve as an event trigger which starts an automated task (eg., adjudication). This calls a business rules engine that compares pre-defined calculations with underlying data to make a decision that is returned to the task list. The result may spawn activity down one of several alternative workflow pathways. At any point the task or business rule can make an application programming interface (API) call to one of the enterprise government systems already in place which performs various task activities. Most modern systems now provide some method of making remote application to application method calls and receiving a data response. APIs allow independent systems to integrate with the larger application ecosystem without significant modification.



To maximize flexibility, a master data dictionary identifies the source database, column/label, and attribute of record for all required task data. Views can be constructed in advance or at run-time that access the underlying data based on a query from the task or business rule. This way the data access layer is abstracted from the data itself, which avoids having to modify the databases, some of which may be embedded in other enterprise applications rather than being simple digital registries.

In this conceptual architecture, the workflows are managed by a standalone browser-based application having its own configuration tools. It relies on a business rules engine that processes queries and compares data against pre-defined criteria to generate a data response. A data access application processes the requests for data and returns query results. All API calls are transmitted on a secure messaging backbone (eg., e-Estonia X-Road). Tasks may also call on a document management application that obtains digitally-signed documents from participants, a payment gateway that facilitates money transfers, and other standalone applications administering government business. An event listener operates independently of the workflows to identify action triggers by monitoring data state, presence of files in designated repositories, status of digital documents, and so on. It spawns pre-defined workflow tasks or updates data in repositories.

Benefits and Impacts

Significant benefits result from engaging Citizens in this way:

1. The Citizen and government employee are peers who share responsibility for getting work done. The Citizen, having been involved in the design, is more likely to engage with the process and this engagement eliminates any notion of the government program being a monolithic 'black box'. It enables any government to immediately introduce 'participatory governance', where a big part of governance can be achieved through operational service delivery.

2. The government can add these applications without disabling or significantly modifying its existing systems. Some additional infrastructure is required, including messaging and master data capabilities, but these can also be incrementally implemented.

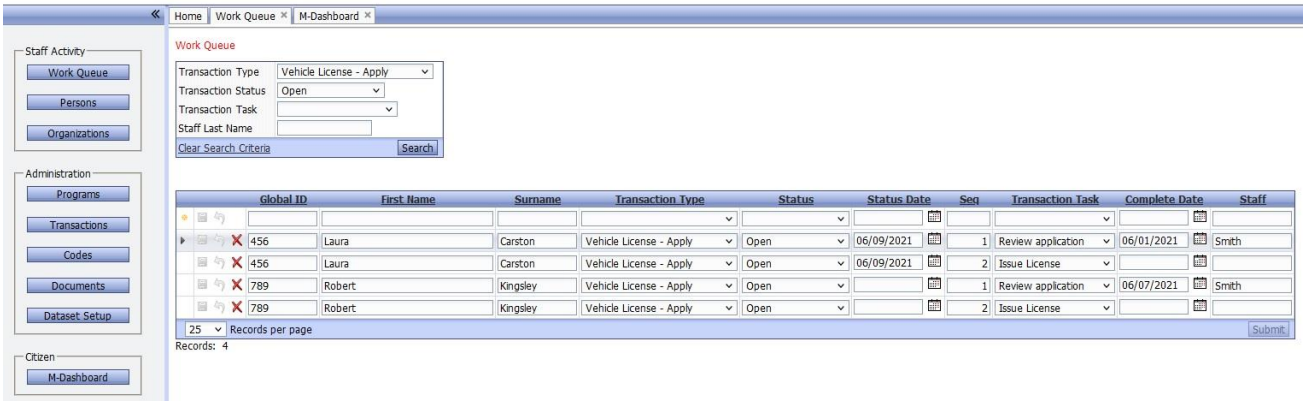
3. Automation supports existing government efforts toward general process improvement by requiring that all scoped services and processes be explicitly defined. It lends rigor to efforts that can otherwise leave some actions implicit.

4. Configurable, parameter-driven systems facilitate the rapid reconfiguration and scoping of programs that are constantly subjected to legislated change and budget priorities. The proposed architecture does not 'lock in' the government to any particular way of doing business, yet upholds the policy that was agreed upon by government and Citizens.

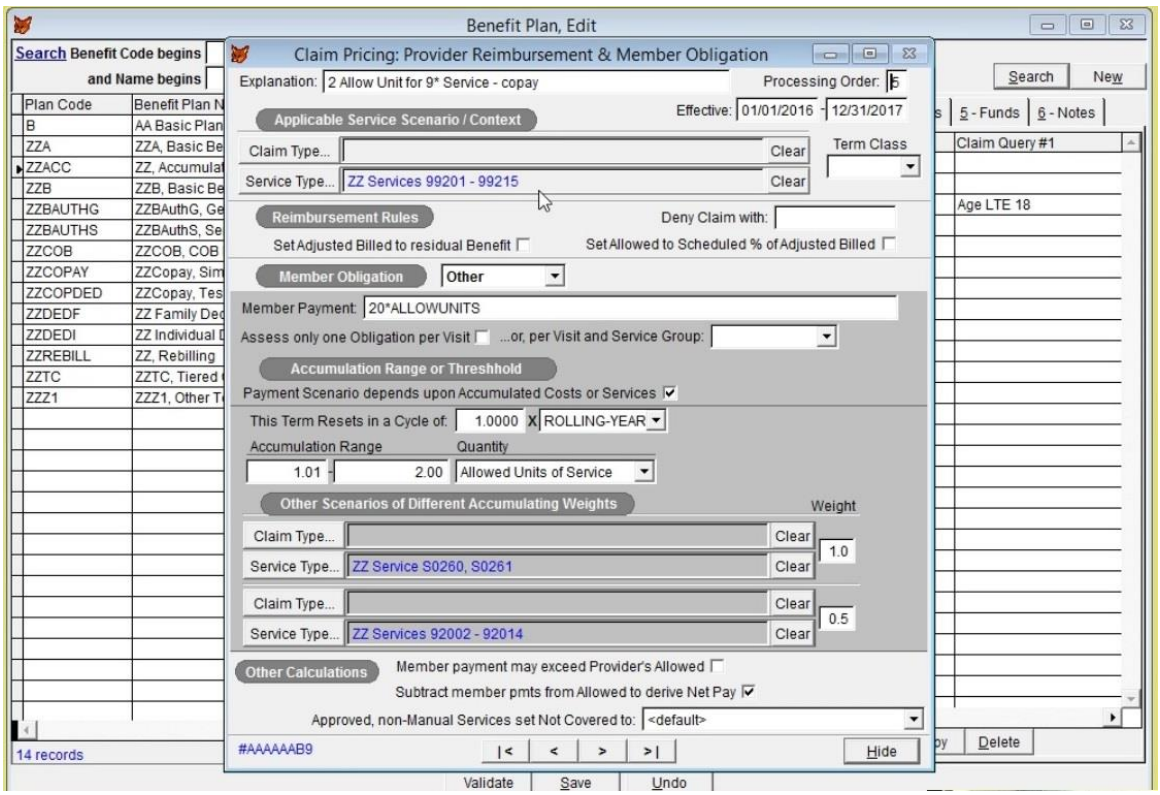
5. Technology implementations catalyze real-world behavior change that public policy and appropriated budgets alone cannot.

Appendix 1 – Collaboration Portal Software

The screenshot below is from an application prototype developed in support of the approach described herein. It shows a real-time work queue for a government staff person listing all open tasks of a defined type. A parallel dashboard showing the same data is provided to the citizen's mobile phone presented in simpler form using, for example, an iOS interface. Among other actions, changing the status of a task can spawn one of several underlying activities as described above.



The screenshot below is from a commercial healthcare management system that tracks cases and adjudicates benefits. It illustrates how business rules are defined within a rules engine for a large health insurance plan. The window in the foreground configures service type, reimbursement rules, member obligation, accumulators, and custom calculations for each of the rules listed in the background window. The rules are triggered sequentially when a claim for payment is received. A violation of any rule results in a claim denial. No human intervention is required in daily processing unless an exception condition occurs for which there is no rule.



Appendix 2- Change Management

The major impact on government operations of such participatory governance is that it forces culture change among government staff whose work was previously invisible to the public. They suddenly become partners with Citizens in design, and peers in workflows that are fully transparent. Their performance is evaluated based on real-world and real-time customer satisfaction rather than indirect data based managerial metrics. Supervisors must switch from controlling and measuring processes, to adaptively reviewing and optimizing them to ensure employees are as well supported as possible. It forces governments to refocus their culture on becoming learning organizations. This is a difficult change, and few governments are capable of imposing it without outside facilitation.

Change requires that governments do the following:

- Articulate a Customer-centric philosophy that puts serving the Public back at the heart of the institution's purpose.
- Establish metrics and reward mechanisms that reinforce this philosophy.
- Hire, train, and reward Public Servants according to the competencies (knowledge, skills, behaviors) needed to build a Customer-Centric culture.
- Reform business processes so they support delivering on the service philosophy.
- Educate Citizens regarding their role in supporting a service charter (or similar mechanism), provide them with the opportunity to give ongoing feedback on service, and publicly expose how that feedback has been applied.

Service must be the focal point for all individual, team, and organizational activity. It is a cultural mindset.