# Software Platform for Municipal Operations

Mission:  Offer Affordable, Effective Digital Interoperability, Interdepartmental Planning, Predictive Analytics, Citizen Engagement Functionality

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# Mission: Platform for Muncipalities

- The proliferation of cheap and powerful software platforms for operating ecommerce businesses over the last 15 years offers a model for introducing digital competence to the management of municipal governments.  Most municipal governments in the USA, and the world, still rely on paper processing for key health and safety requirements of their citizens.

- Municipalities are responsible for clean water, safe roadways, crime prevention, parks and recreation, acquisition and maintenance of capital facilities to serve the citizens' needs, licensing, zoning and regulation of housing, commercial development, food service establishments, the maintenance of public health, operations of libraries, protection against fire, provision of emergency rescue services, regulation of parking, noise abatement, animal control, etc.  In a digital world where people can expect to order pizza on line and have it delivered the same day, municipal officials are stuck in a pre-digital status without an affordable and effective software platform to maintain and coordinate these responsibilities.  Good software, well used, as a multiplier effect on the city's ability to manage facilities and services more efficiently; saving resources, being more transparent and responsive with the same costs.  Finally it would generate data that, in time, will enable the municipalities to enhance their services at lower cost.

- Municipalities with populations under 200,000 are in need of an effective, powerful, affordable, versatile and user friendly software platform.  This kind of software exists for selling shoes, but not for running our cities.

# Benefit

New [evidence shows](#) citizen engagement increases tax revenues for cities:
- Increased public participation in the process of public decision making
- Increased local tax revenue collection
- Channeled larger fractions of public budgets to services stated as top priorities by citizens
- Increased satisfaction levels with public services

But only if these preconditions are met:
- Administratively mature local government structure
- Politically decentralized local governments

Less predictive of success:
- "Bottom up" organization is less important than external actors for successful participatory experiences.
- "Strong civil society" and "political will" are not particularly significant

Bottom Line:  The structure and effectiveness of institutional government matters

# Market Size:

- There are over 470,000 municipal government entities in the world and 19,492 in the USA. 99.5% of them have populations under 200,000 (19,394). That is a lot of municipal government operations that do not currently have access to good software systems. While the largest cities are pursued by companies like Socrata, SAP or IBM to provide software services, smaller cities have no generally accepted platform from which to build a digital infrastructure for their operations. As smaller cities seek to alleviate the pain of paper processing and come into the digital age, they often purchase the first proprietary software package that promises to relieve the greatest source of pain. This software may not play well with other software the city may eventually need. It also may be unnecessarily complicated and overpriced.

- Programs like 18F, the digital services agency in the US's General Services Administration is beginning to model the development of government software that meets good standards. The DATA Act of 2014 mandates greater transparency for federal level information. Sooner or later these standards and practices will filter down to smaller cities. But unless action is taken soon, it will happen after cities have wasted millions of dollars on ineffective, special purpose proprietary software packages.

# Broken Market:

- From the perspective of a city trying to move operations into the digital age, software often seems overpriced, inflexible, and more complicated than flying a jet, with no clear measurable return on investment either in cost savings or improved service delivery.

- From the perspective of the software provider who is big enough and smart enough to jump the hoops of public procurement, the cost needs to be high because the city wants a <u>unique</u> solution and there's little chance of selling that software to other cities.  Not a well functioning marketplace.

- These are problems typical of early days in the digital evolution of cities.  They will be overcome.  Four procurement options: traditional bid, problem-based procurement,  pay-for-performance and prizes.  All could work.  What are the strengths, the weaknesses of each?  And for whom?

# New Software Platform Fixes Market

- As ecommerce evolved from 1997, software designers moved from a one of a kind website developed for a specific client to a basic platform that contained all the key components needed for ecommerce (shopping cart, navigation, site search, CRM, reporting, etc.)

- Magento OS, is a clear example of a free, open source software platform widely used around the world to establish ecommerce sites. Wordpress is another example of an internationally used platform.

- Each of these platforms have basic characteristics needed for any website and attract software coders from a broad international market to write special purpose code, "widgets" or "apps" or "extensions", to enhance the sites, making them a better match for the users' needs.

- Site design, navigation and content, in addition to the mix of added software, make these sites uniquely suited to the owner's needs.

# Specifications

- Smaller cities are already beginning to buy overpriced, aggressively marketed limited purpose software to address their specific pain points. The software platform envisioned here would be "open standard", setting a platform for municipalities to use as they acquire more specific software, such as software for inspections, police dispatch, facilities maintenance, etc. The software platform would also encourage more specialized software providers to write code to fit this platform. This software would pull key elements from other special purpose software, as long as all software acquisitions meet the standard of guaranteeing interoperability, interconnectivity, fairness, flexibility and choice for the municipality.

- The software would provide basic functionality for the following key municipal departments:
  - Police, Fire, Public Works, Management, Planning, Library, Inspections, Health & Human Services, Schools, Veteran's Services, Elder Services, Administration (including Human Resources, Legal, Finance & Accounting, Property Management, Boards & Elected Officials, Clerk, Assessors, etc.)

- It would track and link the transfer of funds between departments, provide planning and predictive analysis data for the municipality and enable better interface with citizens.

- It would provide a public facing user interface for a digital version of the "311" program to allow citizens to easily report problems, have them date stamped and recorded, if appropriate, with GPS coordinates. It would allow citizens to pay fines and parking tickets, to register to vote, to learn about the elected and appointed municipal officials and to easily find services they may need based on a likely citizen definition of the need, not the municipality's name for the providing department.

# Interdepartmental Coordination: Street Light Example

- When a city's Department of Public Works goes out to bid for new street lights, the DPW is concerned about lighting, durability and cost.

- But when other city departments learn about the bid, if they have an opportunity to reflect, they realize about 18 additional specifications for these street lights that would improve city operations and citizen quality of life and safety.
  - ➢ Antennas, GPS, WIFI, traffic and parking monitors, sound detectors, meter reading and more.

- "Measure TWICE, cut once", the old adage about planning ahead is particularly important as cities enter the digital age.
  - ➢ Think across all departments about information needs and digital tools
  - ➢ Add these tools as procurement opportunities arise anywhere in the city
  - ➢ Plan procurements through a 5 year Capital Budget
  - ➢ Review each capital request for how it can meet broader ICT (Information, Communication, Technology) goals in the city

# Related Articles

- http://assetstewardship.com/2015/10/02/antiquated-procurement-process-blocks-cities-from-digital-age/

- http://assetstewardship.com/2015/09/09/open-data-standards-affect-city-spending-decisions/

- http://assetstewardship.com/2015/01/16/software-for-cities-know-your-problems-before-purchasing/

- http://assetstewardship.com/2014/09/08/build-a-city-it-master-plan/

- http://assetstewardship.com/2014/08/03/top-10-tasks-for-cities-acquiring-software/

- http://assetstewardship.com/2014/06/27/open-governments-open-data-a-new-lever-for-transparency/

# Software Requirements:

- Much information has already been gathered about the need for this platform and the specifications it should meet.  Using an 'agile' model of software development, a municipal expert will need to develop a more complete set of specifications for this software, build iterations of the software working closely with a skilled software developer and test the software with a selection of municipalities.

- AGILE software development requires the creation of a "project backlog", a prioritized list of features and capabilities needed to develop a successful product.

# Priority Feature Requirements

# Data Repository

- Land use, zoning
- Property tax records
- Land and facilities by ownership (public/private)
  - If public, named agency, acquisition date, value
- Calls for assistance
- Tagging system for referencing across departments
  - By GPS
- Sources of data to be stored and updated
  - APIs

# CRM (Customer Relationship Management)

- ## City government users
  - Department, function type

- ## Baseline data
  - Population, census tract, City SDK census records

- ## City Management "best practices" data
  - Open.gov, other sources
  - Selection criteria: income, tax base, population size, population age profile, geographic location, form of government, etc.

- ## Citizen engagement
  - Sources of data to be stored and updated
  - APIs

# Financial & Report Modeling

- Planning templates

- Reporting templates
  - Predictive analysis
  - ROI

- Interoperability with other software sources
  - Dispatch systems
  - State payments systems
  - Proprietary municipal money management systems

# Transactions

- Collections
  - Taxes, Tickets, Development subsidies,
- Revenues & Expenditures
  - Federal, State, Regional, Special District, Utilities
  - Health insurance, Trash collection, Pensions,
- Planned Actions (5 year time horizon)
  - By department, by tag category, by $ size, by funding source
- Fiscal Year Budgeted Tasks (1 year time horizon)
- Work Orders (3 month planned time horizon)
- Unplanned Emergency Transactions

# Nested Search "Nav Bar"

## for Municipal Officials

Department or Municipality

Reports

       Predictive Analysis
       Information
       Comparative Data
       Trends
       Calendar

Plans

       Zoning plan
       Master plan
       Financial plan (by Department and by
              Municipality)
       Development plan
       Capital plan

Locations

       GPS coordinates

Calls for Assistance

Sort by:   Budget, Revenue, Tech, Capital, GPS,
         Date

## for Citizen Engagement

Transactions

       Licenses, permits, traffic tickets, tax &
            utility payments

Officials

       Names, locations, hours

Events

Committees

       Mission, membership & vacancies

School Calendar

Reports

       Minutes, video links of public meetings
       Police reports
       Budget, capital & special
       Comparative Data & link to all current
          & former FY data

Apps

       Library of downloadable apps for
       citizens in municipality

# User Stories

As a < *parent* >

I want to < *have more parks* >

so that < *my kids have a safe place to play* >

As a < *user* >

I want to < *goal* >

so that < *benefits* >

As a < *budget director* >

I want to < *know what city departments need in the next few years* >

so that < *we can manage our municipal bonding program to pay for it* >

As a < *user* >

I want to < *goal* >

so that < *benefits* >