Getting the Most Value From Your City's Technology Investment

League of California Cities Annual Conference
September 13, 2018

Introductions

Moderator

• James Lewis, City Manager, Pismo Beach

Panelists

• Tony Batalla, Head of IT, City of San Leandro
• Bryon Horn, CIO, City of Fresno
• Gaurav Garg, CIO, City of Santa Clara
What We’ll Be Discussing

• The Value Proposition of IT
• Fiber Optic Networks, Broadband, and Small Cell/5G
• Making the most of CRM & Citizen Engagement
• IT Organizations
• Smart Cities & IoT

What We’ll Be Discussing

Format
• Brief Discussions
  ▪ Issues
  ▪ Best Practices
  ▪ Take Aways
• Multiple Speakers
• Q and A
  ▪ In Person
  ▪ Send questions via Twitter to #CityITQuestions
The Value Proposition

Why YOU really need to care…

• Enhanced efficiency through technology lowers staffing costs/needs (PERS, Benefit Costs, etc.)
• Reclaims physical space
• Empowers/engages the citizenry
• Access builds trust
• Motivates and retains employees
The Value Proposition

Why YOU really can’t afford to ignore it…

• Citizens have expectations of technology and want to interact with it.
• Evolution of business processes
• Competition with other agencies
• Changing protocols and formats
• Workflow Management/Cost and Resource Controls

Fiber Optic Networks, Broadband, and Small Cell/5G

Tony Batalla
Head of IT
City of San Leandro
Strategic Planning & Transformation

The Pitch: Empower Your CIO

WE’RE SORRY
YOU WEREN’T INVITED TO THE TOD MEETING
Philosophy: Crawl, Walk, Run

San Leandro Fiber Optic Network

- City Facilities
- Lit SL Business Broadband
- Public Wi-Fi
- Traffic Signals & Cameras
- Smart Street Lights
- Total Conduit: 29.1mi
- Total Fiber: 22.7mi
Crawling, Walking, Running At Once

Building a Master Plan
San Leandro Fiber Optic Network

Small Cell Agreements & 5G

The Evolution of 5G:
- **2015**: Macro base station
- **2016**: Increasing frequency beyond 2.7 GHz to 6 GHz
- **2017**: Small cells, DA5, LTE-U
- **2018**: Densification
- **2019**: Massive MIMO and digital beamforming
- **2020**: 90 to 95 GHz, 70 to 85 GHz, 38 GHz, 28 GHz, 2.9 GHz, 10 GHz, 4 GHz, 2 GHz

Source: https://www.qorvo.com/design-hub/blog/small-cell-networks-and-the-evolution-of-5g
It’s the Speed, Stupid!

3G
384 Kbps
(2001)

4G
100 Mbps
(2009)

5G
10 Gbps
(2020)

Cities Are Ground Zero: Vertical Assets

- 5,243 Street Lights
- 2,186 Metal Poles (42%)
- 2,949 Wood Poles (PG&E)
- 87 Caltrans (State)
- 21 Misc

Prime Real Estate for 5G; Future of Mobile Will Happen in Public ROW
Federal, State, Local: Who Controls?

- CA SB649
- US Senate STEAMLINE Act
- New FCC Regs (eg, remove environmental reviews, etc)
- So it goes…

Key Terms for Master License Agreements

- Local Outreach
- Market Rate for Pole Leases
- Access to Fiber/Backhaul
- Design Guidelines for Aesthetics
- Protect Municipal Infrastructure (WiFi, etc)
- Open Access
- One MLA Term
Lessons Learned: Find Shared Goals

City Team Should Include:
Public Works, Engineering, City Attorney, Planning, City Manager’s Office/Mayor, and…

...Your CIO/IT People!
Making the most of CRM & Citizen Engagement

Bryon Horn
Chief Information Officer
City of Fresno

FresGO

- FresGO is a free, easy to use, real-time platform transforming how Fresno solves issues.
- Report infrastructure and non-emergency public safety issues with your smartphone or computer.
- Track resolutions and receive real-time updates and alerts.
CITY OF FRESNO

FresGO

Customer
Report infrastructure and non-emergency public safety issues with your smartphone or computer.

Accountable
Track resolutions and receive real-time updates and alerts. It's easy. With FresGO you don’t need to know which department does what.

Service
The multi-lingual application tracks reported items, like graffiti, broken sprinklers, street closures, and more. With the push of a button, issues are automatically routed and even escalated if not completed in a timely manner – and you’re notified the instant they’re resolved!

Introduction to FresGO
Your Front Door to City Hall

Launch
Launch to the public in June 2015
FresGO - “Fresno on the Go”

Mission
- Enhance Community Engagement
- Provide a mechanism for transparency
- Gain a better understanding of Citizen Requests
- Driven by City Manager
- Citizen Facing

Application
- Mobile Application
- Mobile Reporting
- Web Reporting
Features

- Service Order System
- Recent Requests
- Push Notifications
- Service Schedules
- Links to City Websites
- District Locators
  - Police & Council
- Frequently Asked Questions
  - Police, City & App
- City Announcements

Reporting / Analytics

- Departments are receiving useful data
  - Track incoming request from a single repository
  - Track/monitor overdue requests
  - Identifying issues/resource shortages
  - Track/audit service levels
  - Identify trends, seasonal issues, opportunities, etc.

- Reports distributed weekly to departments
  - All open service orders by month
  - All open service requests by status
  - All closed service orders by month
  - Overdue service orders by month
Completed Requests
Since June 30, 2015

- Service Requests: 305,213
- Illegal Fireworks Reported on 4th of July: 1,234
- Downloads: 21,000
- Missed Pickup: 5,083
- Potholes: 4,637
- Street Lights Repaired: 10,425
- Graffiti Requests with a 24hr Completion: 75,085
- Illegal Dumping: 10,645
- Street Trees: 9,839

Unique Service Request Types
From water, street issues, traffic, potholes, illegal dumping, street trees & more…

City Departments Involved with FresGO
Every department within the City gets updates and tasks to perform within FresGO

On average we get 8,000 to 13,000 requests per month

Initiative Efforts

- Customer Service Director
  - Reports to the City Manager
  - Customer Service
  - Workflow
  - User Enhancement
  - Overdue Analysis

- Getting the Word Out
  - Several Appearances @ Community Events
  - Being noticed on NextDoor
  - Advertising on Newscasts
Benefits

- Has been a great tool for the citizen
  - Can see what’s going on in the City
  - Can check on status of service order
  - Can give feedback on level of service
  - Community feedback on the effort has been positive

- Great tool for Operations
  - Shows our service levels
  - Helps with ensuring proper resources
  - Ensures that resources are being dispatched in the right places
  - Gives us an eye on the community and insight into our City’s needs

- We have seen an improvement in operations

Take Aways

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Has been a great tool for the citizen:

- One place to answer calls
- Instant Information
- 24x7 Operations
- Call Center Reps can enter work orders (FresGO) or check on service orders
- Can check on status of service order
- Can give feedback on level of service
- Community feedback on the effort has been positive.

Next Step
Launch 311 System

Q is Bus Rapid Transit

Q provides faster, more convenient, and more reliable service than a traditional bus line. Funded by federal and state funds, Q vehicles are modern and comfortable with off-board fare payment.

Ten–minute frequencies at peak time make for a short wait. Fewer stops mean reduced travel time. Bus priority at traffic signals also helps speed up the trip. Plus, enhanced stations make for a more pleasant wait.
MY FAX BUS

MyFaxBus is a free, easy to use, real time app for residents to track live buses, plan trips and ride the bus. It’s easy!

- Live Bus Locations
- Routes & Hours
- Plan Your Trip
- Report Issues

Video Policing
Gunshot Detection
Traffic Synchronization
Wireless Water Meters
Water Meter App
Fiber Network
Future Initiatives
IT Organizations

Benefits of Belonging

- Collaboration
- Information Sharing
- Strength in Numbers
  - MISAC Legislative Support
  - Purchasing Power
- Education
- Staff Professional Development
IT & Legal Issues

Why does this matter and how does it affect IT?
- Make sure to follow law
- Ensure that City/Organization doesn’t have unexpected costs
- Protect the security of constituent information

Notable Organizations

- Municipal Information Systems Association of California (MISAC)
- League of California Cities
- Metropolitan Information Exchange
- National Association of State Chief Information Officers (NASCIO)
- Next Century Cities
- MS-ISAC (Security Organization)
Past/Current Notable Laws

- **SB 272**: Electronic Catalogue
- **SB 649**: Telecommunications Facilities
- **SB 345**: Searchable Policies On Websites
- **AB 241**: State and Local Breach Laws
- **AB 2257**: Local Agency Meetings: agenda, online posting
- **AB 1638**: Privacy Issues
- **SB 804**: Modernization of Storage Of Public Records

Current Notable Legislation

- **SB 1186**: Law Enforcement Agencies: Surveillance: Policies [MISAC Position: Oppose]
  After 7/1/2019 – The bill requires law enforcement agencies to submit to your governing bodies at a public meeting, all surveillance technology use and policies, and mandates us to cease using within 30 days if the plan is not adopted. SB1186 also establishes separate procedures for CHP, DOJ, sheriffs and DAs (instead of submitting them through their governing body).

- **AB 1999**: Local Government: Public Broadband Services [MISAC Position: Support / Change of Position]
  Assembly Member Chau is opening possibilities for local communities to invest in their own Internet Service Provider Infrastructure (similar to any other utility & external public services), especially in rural areas. If passed, the bill will give local communities the ability to develop public broadband networks and offer services. The bill also requires that any networks developed by local agencies adhere to network neutrality rules. Infrastructure financing district can be created and retain within the local agency for financing and development of the broadband network!

  Approving and instilling trusted cloud systems with security guidelines. Requirements apply to state agencies and contracting local agencies exchanging data with the state.
The strongest Net Neutrality bill in the nation [MISAC Position: Support]

If the bills were to pass today (SB822 & SB460), which many business and technical experts indicated the Governor will sign accordingly… "This means we can continue to enjoy fast internet connections without interference and ensures that E-commerce is operating like a free market, able to connect to or do business with anyone we want"... CEO of Digital Deployment (Mac Clemens).

Privacy: Personal Information: Businesses [MISAC Position: Support / Passed]

This is California version of EU-GDPR and Federal CONSENT Act, and this measure is known & cited as "The California Consumer Privacy Act of 2018." The consolidations of all CA-Privacy Bills – AB375, AB1742, AB2435, AB2678, SB823 were written with the same objectives in mind – Consumer Privacy / Free Credit Reporting / Minimum Cost Security Freeze / Automatic Identity Theft Protection.

STREAMLINE Small Cell Deployment Act [MISAC Position: Oppose]

The NLC-National League of Cities has made it easier than ever to make sure your voice is heard... Click the link here to send a letter to your designated Congress representatives in opposition of the STREAMLINE Act. California cities are very familiar with the wireless industry’s approach to eliminate local discretion over wireless equipment installation on public facilities and the fact that this legislation, like SB 649, does not ensure that all residents have access to affordable, reliable high-speed broadband.

Benefits of Belonging

SB 822

AB 375

FED/CON S. 3157

Biggest Struggles

• Watching Relevant Laws
• Ensuring Compliance
• Open Data/Open Government
• Records Management, Retention and Public Records Act
• IT Department plays Big Role
Smart Cities

Gaurav Garg
Chief Information Officer
City of Santa Clara

Santa Clara...is undergoing an extraordinary transformation!
A Smart City connects data, technology and sensors to city services and people with the goal of improving the quality of life and strengthening the community.
Smart Cities

What Issues?

• Response to quality of life, sustainability, traffic congestion, climate change, safety and security, energy, aging infrastructure, healthcare, pollution
• Technology moving faster than the urban planning process. Where to Start?

Best Practices

• Holistic formula with interoperability between uses and collaboration across city operations for citizen centric outcomes
• Engage in public-private partnerships

Smart City Iceberg

10%
Publicly Visible

90%
City Technology Foundation
City Technology Stack

Five major strategic focus areas in support of council objectives:

• Digital Infrastructure
• Application Modernization
• Citizen Engagement
• Geographic Information System
• Cybersecurity

Silicon Valley Power

• Santa Clara’s full service electric utility
• Region’s lowest combined utility rates: 21% to 41% below PG&E
• Ranked 4th in the nation for Green Power purchases
• All residential load is met with 100% carbon free resources
Foundational Connectivity

- Dark Fiber leasing program: Economic development driver
- Over 40 data centers
- Connects City facilities and schools
- Utility poles and LED streetlights
- Small cell and distributed antenna systems
- Free Outdoor Public Wi-Fi: Backhaul for Advanced (smart) Metering

Electric Transportation

- Ready to Roll
- Over 400 Public Charging spaces and growing
- City has installed
  - 49 at Tasman Garage
  - 7 at City Hall
  - 8 at the Libraries
  - 6 at the Convention Center
  - and more coming
- Adding EVs to City Fleet
Transportation Management

- Fiber to Intersections
- Video Monitoring
- Signal Synchronization
- Digital Signage
- Public Traffic Cams
- Traffic Cam app
Live Traffic Video Feeds
santaclaraca.gov/trafficcam

MySantaClara App

Improve your community.
Report an issue and watch it get fixed.

- Street Light Repair
- Graffiti / Weeds / Blight
- Neighborhood Watch
- Tree Branches in power lines
- Street Maintenance – potholes
- Ask a question of the City
- Online at santaclaraca.gov/mySantaClara
The Low Carbon Fuel Standard (LCFS) is administered by California Air Resources Board, established in 2007.

It requires those who import or produce fuels over a certain carbon intensity to purchase credits from others to offset the associated emissions.

These carbon credits are generated by the distribution of low carbon transportation fuels such as electricity.

LCFS Credit Price August 2017: $84.26
LCFS Credit Price August 2018: $181.20

Credits traded in June 2018: 1,093,000
Total value of credits traded in June 2018: $168.322M
Approx. value of credits derived from Electricity as a fuel in June 2018: $24.29M
What is blockchain technology?

- A blockchain is a decentralized, distributed and public digital ledger that is used to record transactions across many computers so that the record cannot be altered retroactively without the alteration of all computers holding a version of the database.

- Blockchain technology enables decentralized marketplaces by representing assets in a digital form. This can lead to a more efficient and transparent method for exchanging assets, including carbon credits.

Key Elements

- CRYPTOGRAPHY
- P2P NETWORK
- CONSENSUS MECHANISM
- LEDGER
- VALIDITY RULES

Project Objectives

- Develop and implement a Proof-of-Concept (PoC) system to track low-carbon fuel pathways, LCFS credit generation/management, and LCFS credit trading

- Utilize Power Ledger’s Energy Blockchain platform to connect energy assets at the Tasman Drive municipal parking garage

- Work with CARB and other stakeholders to validate process and demonstrate potential value of a tokenized LCFS credit

- Provide the City of Santa Clara the opportunity to begin exploring the potential for blockchain technology within its ecosystem
The Roles

Power Ledger will be the technology provider, with Clean Energy Blockchain Network acting as application host and providing on the ground liaison support for Silicon Valley Power.
Smart City Challenge

- Holistic view across city operations for citizen centric outcomes
- Balance broader smart city view in phased manner with opportunistic/pragmatic view with small executable projects
- Change is hard. Top down leadership.
- Community outreach and stakeholder engagement
- Procurement to encourage innovation
- Fail fast as a means to success
- Public-private partnerships. Outcome based business model
- It’s about improving the quality of life and community!

Smart Cities- Why and How

- How “Smart” are you?
- Where do you need to be “Smarter”?
- Is working “Smarter” harder?
- What would your City look like being “Smarter”?
Smart City Assessment

Assessment and planning is key to success

• Where are you headed?
• Where is biggest benefit?
• What amount of change can you handle?
• What partners do you have?

Cities are at the core of the energy transition

Cities represent...

- 2% of the world's area
- 50% of the world's population
- 75% of all energy consumed
- 80% of all GHG emissions

...and are subject to these megatrends

- Decarbonization
- Decentralization
- Digitalization
Better Cities Today: Creating a ‘Smart City’ Roadmap for Pismo Beach

Bee Hui Yeh
August 14th, 2018

Pismo Beach is already a smart city

PROGRAM HIGHLIGHTS
- Reduced City’s utility costs by nearly 40%
- Guaranteed energy savings + hedge against rising energy costs
- Will create 96 new jobs over the life of the program
- Establish City as a regional technology leader including solar PV, battery storage, and EV charging station implementation

Saves $5.2MM for taxpayers
- 701 kW of solar PV + 120 kW battery storage
- Two dual EV charging stations
- Variable frequency drives for pumps
- Upgraded lighting with LED lamps and controls
- Modernize HVAC for improved and web-controlled thermal comfort
Where We Are Focusing

- Transportation
- Parking
- Recycled Water/Utilities
- Citizen Engagement/Web Content
Wrap-Up

• There is a Value Proposition to IT!

• As Council Members, funding, policy and therefore innovation starts with and must be supported by you!

• Provided You Opportunity to Reflect and Questions to Ask; Any Others?

Municipal Information Systems Association of California

Purpose:

• Further the understanding of beneficial impact of management information systems in municipal and special District organizations.

• Serve as an advisory body to the League of California Cities and the Government Technology Conference.

• Strive for increased utilization of management information systems.
Municipal Information Systems Association of California

• Seek the personal development and enrichment of its members by promoting and conducting conferences and seminars.
• Promote more effective and efficient municipal government through increased cooperation with other MIS professionals.

Goals:
• MISAC strives to promote leadership, education, and access to resources for local agency technology professionals in order to enhance local government services and effectiveness via its Four Pillars: education, member resources, relationships, and advocacy.

Annual Conference

IT's up to you! 2018
WESTIN MISSION HILLS GOLF RESORT & SPA
RANCHO MIRAGE, CA
SEPTEMBER 30 - OCTOBER 3, 2018