City and County of San Francisco

Committee on Information Technology

Regular Meeting

October 20, 2022

Agenda

- Call to Order by Chair
- Roll Call
- General Public Comment
- Approval of the Consent Agenda
    - Resolution Making Findings to Allow Teleconferenced Meetings under California Government Code Section 54953(e)
    - Meeting Minutes from September 15, 2022
- Chair Update
- CIO Update
- Surveillance Technology Policy: Airport - Location Management System - Application Based Commercial Transport (Action Item)
- Surveillance Technology Policy: Airport - Audio Recorder - Gunshot Detection Solution (Action Item)
- Updating the Information Communication Technology (ICT) Plan for FY2024-2028
- Adjournment

Item Number 3

General Public Comment

Item Number 4

Approval of the Consent Agenda

Action item

Item Number 5

Chair Update

Discussion

Item Number 6

Chief Information Officer Update

Discussion

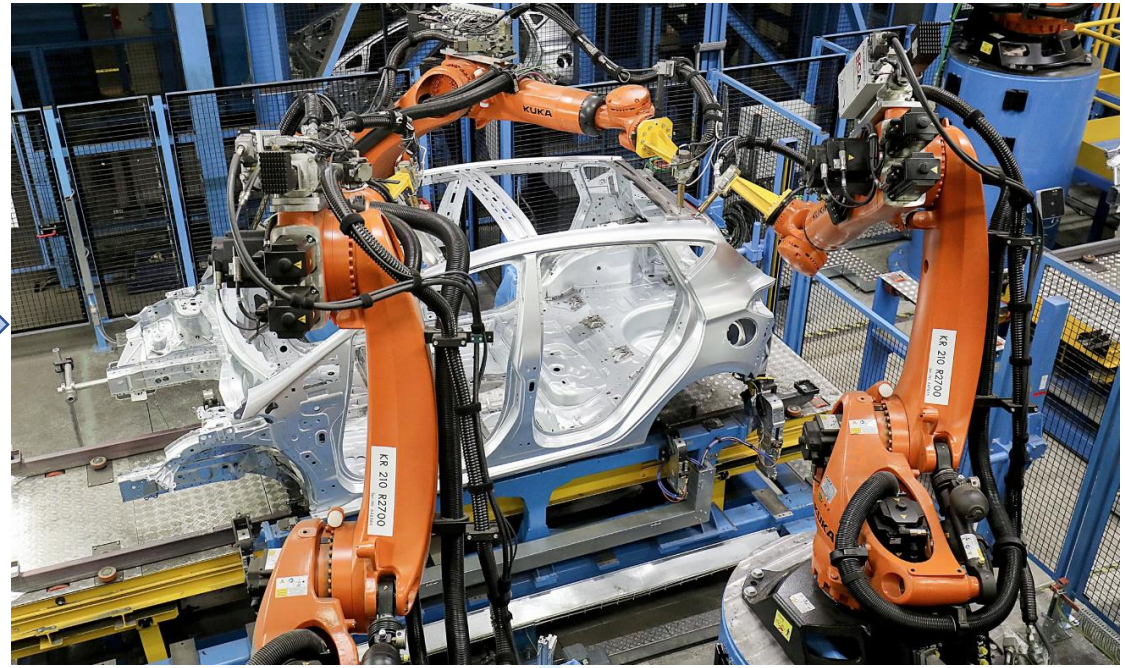
SAN FRANCISCO
DEPARTMENT OF
TECHNOLOGY

CIO Update

October 22

Automation

*The real value of **automation** is freeing up people to focus on more impactful work.*



Automation

*The real value of **automation** is freeing up people to focus on more impactful work.*

Opportunities Across Government

Streamline Administration
- Finance
- Procurement
- Payroll
- Recruitment
- HR
- IT Help Desk

Optimizing Government Processes
- Contact Center
- Application Processing
- Registration
- Case Management
- Grants Management
- Compliance Validation

gartner.com

Source: Gartner

Gartner

Robotic Process Automation: Overview of TTX PM Work

Date: 07/20/2022

TTX Goals for RPA

RPA: What is it?

- What does RPA stand for?
  - **R**obotic **P**rocess **A**utomation
- What does that mean?
  - It's a bot that replicates clicks and actions to do repetitive, consistent, and predictable machine-intelligent based work.
- Who are the main players
  - UiPath
  - Automation360
  - Microsoft Power Automate
- What products does CCSF quickly have access to utilize?
  - Microsoft Power Desktop
  - Microsoft Power Automate

RPA: Goals for automating TTX work

- TTX PM procured Microsoft RPA licenses through DT in June 2021 with the goal of automating smaller business processes to learn how to use program, and identify how RPA can be scaled
- TTX has automated:
  - Department wide workflow dashboard
  - Account Update Form Stats Report
  - Business Tax refunds under $10,000
  - Reformatting of data for efficient file transfer

Identifying RPA Use Cases

RPA: How to Identify/Select Process Candidates

When identifying next processes to automate…

- **Ideal Processes:**
  - Repetitive, routine, standardized, stable and predictable processes
  - Applications automated won't have any UI upgrades soon
  - High volume and frequency to optimize ROI
  - Rekeying data across multiple, compatible systems (ex: Excel to AUM)
  - Pulling standardized/structured electronic data sets
  - Low complexity
- **Not Ideal Processes:**
  - Business rules/processes change often
  - Automation requires significant system or business changes
  - Automation can be or is achieved other ways (scripts, schedulers, etc.)

RPA: TTX Winners

- **RPA Candidates:**
  - Adjustment processing (after review and approval)
  - HR timesheet reminders to staff
  - Repetitive, but personalized, mass email communication
  - Daily export of file from Investment Software/Clearwater
  - Non-filer email blasts
  - Notices to file/pay
- **Didn’t make the cut:**
  - Mass mailing address updates in subsystem
  - Waiver processing (free entry field makes decision trees difficult)

TTX’s RPA Journey

The Journey to RPA…

June 2021

- TTX PM attained Microsoft Power Automate licenses
- Goal: Automate small business processes to learn about the tool

Aug 2021

- Automated 2 business processes
  - Onbase Lifecycle & Queue Stats
  - Account Update COVID-19 Business Communications Stats

Dec 2021

- Automated 2 more business processes
  - Upload to OnBase of refunds that require manual processing
  - ADD HERE

Feb 2022

- Automated RG refunds
- Automated remaining Annual Business Tax Refunds

RPA: Challenges

- Even the "best documentation" is not sufficient – you really need to recreate the eyeball and mouse movement
- Troubleshooting errors without Microsoft resources
- RPA Desktop – Web Recorder often fails to record
- The bot is sensitive! Don't touch the screen or the desk
- Building in steps for a human user to check the work
- Versioning issues between subsystem and the Microsoft tools
- Fear

Pre-RPA vs. RPA: Step-by-Step

Step	Current State	RPA State
1	Power BI process generates list of surplus amounts eligible for automated refund processing.	Power BI process generates list of surplus amounts eligible for automated refund processing.
2	PM converts Power BI Automated Refunds text file to Excel file.	RPA converts Power BI Automated Refunds text file to Excel file.
3	PM sends Excel file to Cashier manager with reminder of Aumentum clicks for refund processing.	*n/a*
4	Cashier manager divides list among Cashier staff for processing.	*n/a*
5	Cashier staff process line items within Aumentum, following steps outlined in Aum manual section 18.4.4, and enters the resulting "Refund Number" from Aumentum back into the spreadsheet. 1. If Cashier encounters an item where there's a discrepancy between the file and Aumentum, Cashier skips the item. 2. If Cashier encounters error message in Aumentum, Cashier skips the item.	RPA processes line items within Aumentum, coded to follow the steps outlined in Aum manual section 18.4.4, and enters the resulting "Refund Number" from Aumentum back into the spreadsheet. 1. If RPA encounters an item where there's a discrepancy between the file and Aumentum, RPA skips the item and marks for manual review. 2. If RPA encounters error message in Aumentum, RPA skips the item and marks for manual review. 3. Any other exceptions, RPA skips the item and marks for manual review.
6	Cashier staff send finished spreadsheet to Cashier manager.	*n/a*
7	Cashier manager sends finished spreadsheet to PM.	*n/a*
8	PM checks for skipped line items and troubleshoots, routes problem lines appropriately.	PM checks for skipped line items and troubleshoots, routes problem lines appropriately.

TTX’s RPA Success!

Video of bot

Automated Business Tax Refunds

- **Prior State:** PM creates Automated Refunds file, sends to AS staff; AS staff manually processes in Aumentum; Refund Number & surplus amount from Aum into Excel; File goes to F$P to process checks to taxpayers
- **RPA State:** RPA bot automates generating Excel, pulls Refund Number & Surplus Amount from Aumentum into Excel, then final Excel emailed to IT to load to F$P to process checks to taxpayers
- **Expected count:** Initial batch of 5,000. **Ongoing:** around 1000/week during peak periods, peak period lasts around 5 weeks; around 300/week during low volume periods, low volume periods are the rest of the year.

Factors	Manual	RPA
Process Time per item	3-4 minutes	<1 minute
Total Processing Time for ~5,000 refunds	333.3 hours	<83.3 hours (If six hours/day, then ~14 business days)
If 6 hours/day, then…	~56 business days	~14 business days
Process Start	Dependent on other priorities; fit in at end of day	Can be auto-scheduled or can be manually triggered
Notes	Total time doesn't include breaks, multi-tasking, other priorities, etc.	Total time includes automated wait time steps for navigating Aumentum
Cost	$3.74 per item to process (salary + benefits)	

Tangible Rewards

- 12,000+ refunds processed via RPA = 36,000 minutes/600 hours of savings

- 1 year of automated weekly reports = 52+ hours savings

Item Number 7

Surveillance Technology Policy: Airport - Location Management System - Application Based Commercial Transport

Action item

Item Number 8

Surveillance Technology Policy: Airport - Audio Recorder - Gunshot Detection Solution

Action item

City and County of San Francisco

San Francisco International Airport

Gunshot Detection Solution Technology

October 20, 2022

Veronica Oldenburg & Guy Clarke

Technology Description – Gunshot Detection Solution

- The primary function for the gunshot detection solution (GDS) is a detection and response system designed to protect lives in an indoor active shooter, aggressive behavior, glass breaking and unusual disturbance incidents.

- By automating the emergency notification process and removing the human element, first responders arrive on scene faster, equipped with the vital information needed to contain threats and mitigate casualties. The GDS provides immediate and accurate response information, including specific location and type of sound, for Airport Commission staff and law enforcement teams.

- It shall be the policy of the Airport to properly utilize the gunshot detection system to enhance law enforcement's ability to respond to and investigate incidents involving gunfire, aggressive voices, glass breaking, and unusual disturbances.

Technology Description – How the AmberBox GDS works

1. AmberBox utilizes a patented gunshot detection sound learning algorithm to provide immediate notifications and alerts to allow immediate response following a firearm discharge, aggressive voices, glass breaking, and unusual disturbances (e.g., other high-decibel level sound disturbances, such as blasts.)
2. AmberBox detectors use acoustic and infrared data to determine the firearm signature instantly with a near-zero false alarm rate.
3. AmberBox detectors send an alert signal through a wireless MESH network to the building gateway.
4. An automatic call is made to 911 and to the Airport's 24/7 Security Operations Center (SOC) who connect via the CAD (Computer Aided Dispatch) System to share real-time incident information with first responders.

Technology Description – How the AmberBox GDS works (con't)

5. AmberBox can immediately activate building security systems, such as access control, and alert personnel with SMS, email, and other notification methods. Real-time shooter or suspect location and data tracking can be viewed through the web or mobile platform via a link to a map showing First Responders the location of where the gunshot or unusual disturbance was detected.

Authorized Use Cases – Gunshot Detection Solution

Airport Specific Use Cases:

1. Detect the sound of gun shots, aggressive voices, glass breaking, and unusual disturbances (based upon machine learned decibel level) and use of device sensors to locate the origin of the sounds.
2. Provide the date and time stamp, the type of gun used or sound detected and the geographical location (i.e., which sensor detected the sound) to law enforcement or other authorized persons in connection with the investigation of an incident, or to members of the public when the footage is subject to disclosure pursuant to a Public Records Act request.
3. Upon a GSD alarm, 9-1-1 Dispatch and the Security Operations Center (SOC) can immediately view CCTV feeds of the location identified in the alarm to provide Airport First Responders situational awareness (i.e., location) of an incident.

Data Lifecycle – Data Collected

DATA CAPTURED

Level 2 Classification = Internal Use

- Geo-Location Data
- Date & Time
- Type of Gun

- Data Retention: For any investigation or law enforcement activity – data is retained, at minimum, until the matter is closed.
- Any data no longer needed would be disposed of by deletion.

Data Lifecycle – Data Access

1. Prior to accessing or using data, authorized individuals receive training in system access and operation, and instruction regarding authorized and prohibited uses.

2. For investigative purposes, Department access to GSD information is restricted to specific trained personnel and is accessed only in response to an incident.

3. Personnel with access belong to the following groups:

- Security Ops Center
- Communications Center
- SFO Law Enforcement Partners
- TSA – SSI Assessment

Data Lifecycle – Data Security

1. Departments shall, at minimum, apply the following safeguards to protect surveillance technology information from unauthorized access and control, including misuse:
    - Encryption
    - Storage
    - Audits

2. Data is reviewed for Sensitive Security Information (SSI).

3. Systems utilizing wireless networks are required to be equipped with WPA2 security.

4. Department shall ensure proper administrative, technical, and physical safeguards are in place before sharing data with other CCSF departments, outside government entities, and third-party providers or vendors.

Other Pertinent Information – Gunshot Detection Solution

Technology includes:

- Gunshot Detectors (Sensors)
    - The gunshot detection system will use existing Wi-Fi access points owned and deployed by the Airport.
- Gateway – network devices that connect to the AmberBox Response Platform servers via a VPN and HTTPS connection.
    - Shots are detected through percussion and infrared sensors, that analyze the binodal signature of a gunshot.
    - Combined with the vendor's gunshot detection solution's sound learning algorithm, false alarm sources are virtually eradicated.
    - All analysis is conducted at the sensor (detector), with no real-time audio transmitted or recorded, ensuring privacy.

PSAB Meeting Dates

- 5/27/2022 – Initial Presentation
- 7/08/2022 – Follow-up Presentation

- PSAB recommends approval to COIT - 7/08/2022

Thank You

Item Number 9

Updating the Information Communication Technology (ICT) Plan for FY 2024-2028

Discussion

City and County of San Francisco

COIT's 5-Year Information Communication Technology Plan

COIT Director Jillian Johnson

October 20, 2022

Refresher…

What is the purpose of COIT's 5-Year ICT plan?

ICT Plan as defined in the Admin Code…

1. **Needs assessment** of the City's enterprise and general fund ICT capital and operating infrastructure
2. Estimate of **timelines and investments** required to meet these needs
3. **Recommendations to budget/finance** the investments
4. **Performance and financial reporting** on past investments

Due to the Board of Supervisors and Mayor by March 1 (odd years)

Or more succinctly…

The 5-Year ICT Plan is a chance to:

1. Define the City's needs through vision and goal-setting
2. Forecast the cost of projects meeting these needs
3. Recommend funding mechanisms
4. Reporting on our progress in achieving our goals

Vision and Goal Setting

FY 2022-2026 ICT Plan Guiding Vision

Government services that are available and universally accessible in times of crisis and beyond.

The Goals We've Set to Achieve That Vision

- Goal 1: Online and Accessible City Services Residents Can Use
- Goal 2: City Operations that are Efficient and Cost-Effective
- Goal 3: IT Infrastructure You Can Trust

Stakeholder Engagement for Plan Update

1. COIT staff to work with **central agencies** that understand the collective needs of City Departments, to review the current vision and goals and ensure the work we are undertaking still aligns.

2. Engage **Department CIOs** and **COIT Budget & Performance** to provide feedback on any proposed revisions to our guiding vision & goals.

Central Agencies Include…

- Technology
  - Dept of Technology - Enterprise & Cybersecurity
  - Digital Services & DataSF
  - Office of Civic Innovation
  - Digital Equity
- Budget & Finance
  - Controller
  - Mayor’s Budget Office
- Procurement - Office of Contract Administration
- Workforce - Dept of Human Resources

Forecasting the Cost of Projects

Stakeholder Engagement for Plan Update

1. **Departments** to submit 5-year budget estimates with their annual ICT project applications

2. **COIT Budget & Performance** to review submitted projects for alignment with guiding vision and goals and develop a forecast of investment needed

Recommend Funding Mechanisms

Stakeholder Engagement for Plan Update

1. **Controller** and **Mayor's Budget Office** to provide update to the Five Year Financial Plan and estimates for COIT allocation

2. **COIT Budget & Performance** to develop recommendations on how to fund identified need, informed by the Five Year Financial Plan

Report on our Progress

Stakeholder Engagement for Plan Update

1. Survey **Departments** for recently completed, current, and future technology projects that align with COIT's guiding vision and goals, and review that list with **COIT Budget & Performance**

2. Work with **Departments** to highlight exemplary projects in the ICT plan

ICT Plan Update Draft Calendar

October 2022	• Central agencies to workshop vision & goals • Departments to begin providing feedback on vision & goals and provide exemplary projects for highlighting in the Plan
November 2022	• COIT B&P to begin drafting funding recommendations and suggest exemplary projects to highlight in the Plan • COIT B&P/ COIT to finalize annual budget application & vision/goals
December 2022	• CON & MBO to provide financial forecasts & COIT allocation figures • COIT staff to begin collecting annual budget submissions from Depts
January 2023	• COIT B&P to review project submissions for value/goal-alignment & inclusion in budget forecast
February 2023	• COIT B&P/ COIT to review ICT Draft Plan and finalize before submission to the Board of Supervisors

Thank you!

Adjournment