

(d) 2. 2020-2022 Innovation and Technology Strategic Plan

Smart Cities and Service Improvements Committee

March 5, 2020

Rob Lloyd, Chief Information Officer

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When we last left our IT heroes...



Starting with a **Clear Vision**



User-Friendly
City



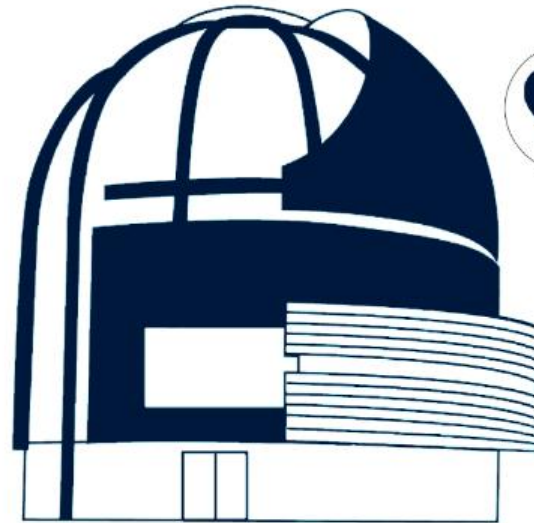
Inclusive
City



Safe
City



Demonstration
City



Sustainable
City



San José Smart City Vision

Just as the world looks to Silicon Valley to provide the most creative, impactful technologies to disrupt industries and transform lifestyles, so too can San José become a global leader for civic innovation. Becoming a “smart city” means that game-changing technologies and data-driven decision-making will drive continuous improvement in how City Hall serves our community, and to promote concrete benefits in safety, sustainability, economic opportunity, and quality of life for our constituents.

- Mayor Sam Liccardo

The Core of San Jose's Approach

CHAMPION
THE
CUSTOMER

LEARN
THROUGH
DATA

ITERATE
TO
IMPROVE

2016→2020

**Toward
Innovation
in Action**

Strategy: None → Roadmap → Iteration

**Traditional Government
Customer Experience**

**Delightful
Customer Experience**

**Inefficient
Processes**

**Agile
Processes**

**Outdated
Technologies**

**Enabling
Technologies**

**Exhausted
People**

**Engaged
People**



Smart Cities
Roadmap



IT Strategic
Plan



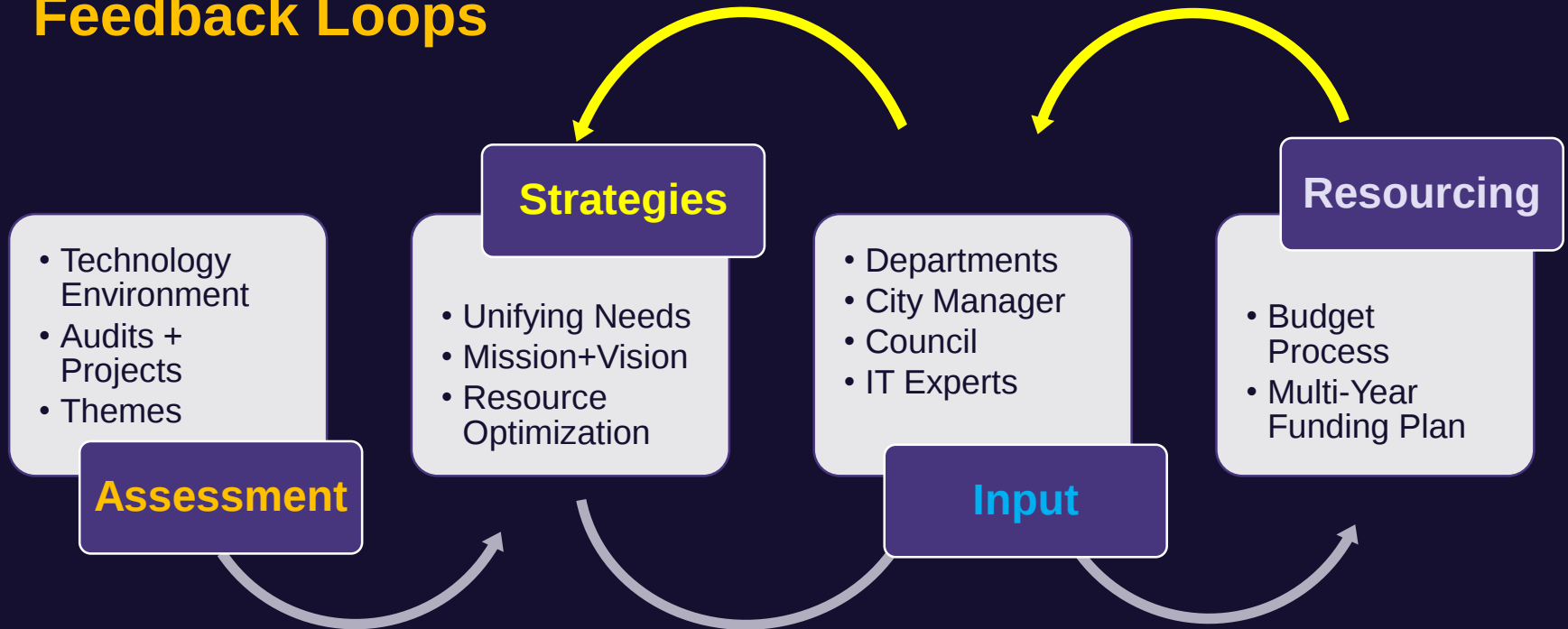
Small
Wonders

We conducted our
Analysis and Planning

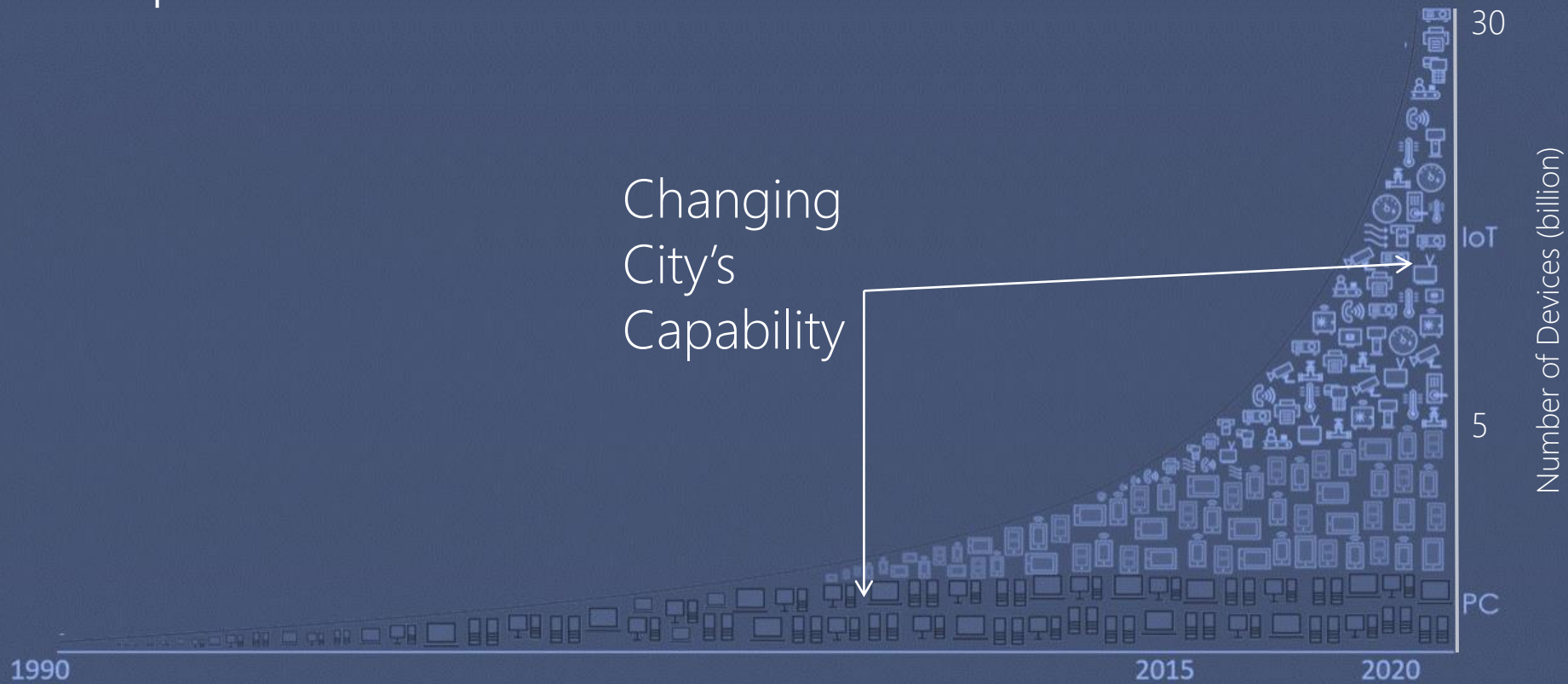


Innovation & Technology Planning

Feedback Loops



Importance of Data to Smart Cities



Innovation & Technology Assessment

Audit Findings

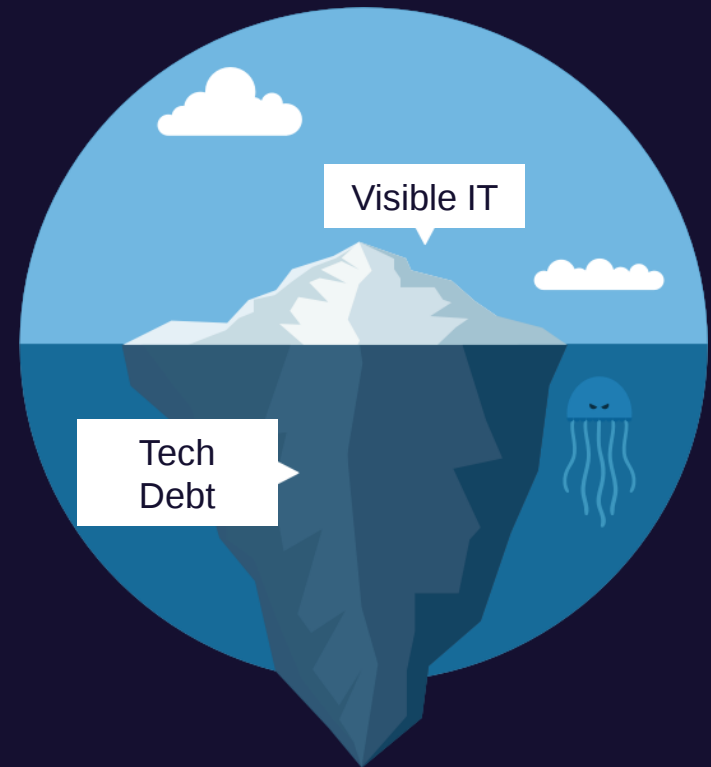
- Financial Statements
- Technology Deployments
- Call Handling
- New: Mobile Devices
- New: 911/311 Handling

Project Management

- 0 Project Management Employees
- Large Project Queue with Low Success

Resourcing

- Last 2 Departments Funded at Deficits Level



Technology Services Metrics



74%



<5%



99.1%



8th %ile



8AM-5PM



~1.2%



71%



37%

Smart City Vision & Council
Innovation Cabinet Focus
Dedicated & Diverse Team
Departmental Collaboration
Core Upgrades
Demonstration Policy

Strengths

Opportunities

Willing Partners
Silicon Valley
Stable Economy
Scalable + Efficient Technologies

Innovation & Technology Assessment

Tech Debt
Major Resource Limits
Information Security
Talent Recruitment
Project Execution
Uncoordinated IT

Weaknesses

Threats

Cybercrime &
Cyberdisasters
Economic Downturn
Compliance Demands
Talent Competition

We set our **Strategies and Direction**



IT Strategic Plan SuperEpics



Brilliant at the Basics

- Reduce Tech Debt
- IT Staffing + Training
- Cybersecurity
- Core Performance
- Data & Integration



Win Our Races

- Customer-Centric IT
- Product Execution
- Retention + Skills
- Budgeting + Purchasing
- Partnerships



Change the Game

- IT @ Scale + Speed
- Secure City
- Digital Inclusion
- Unifying IoT Platforms
- Intelligent Automation
- Powered by People + Data
- Privacy

Innovation & Technology Blueprint

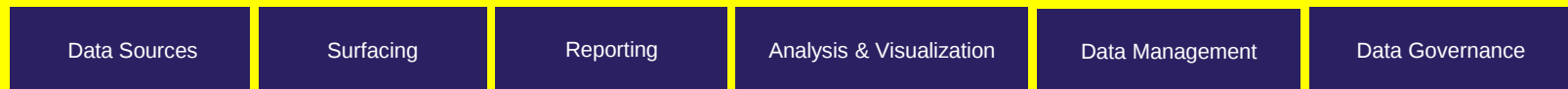
Enabled Business



Application and Data Integration



Data Ecosystem



Core Applications

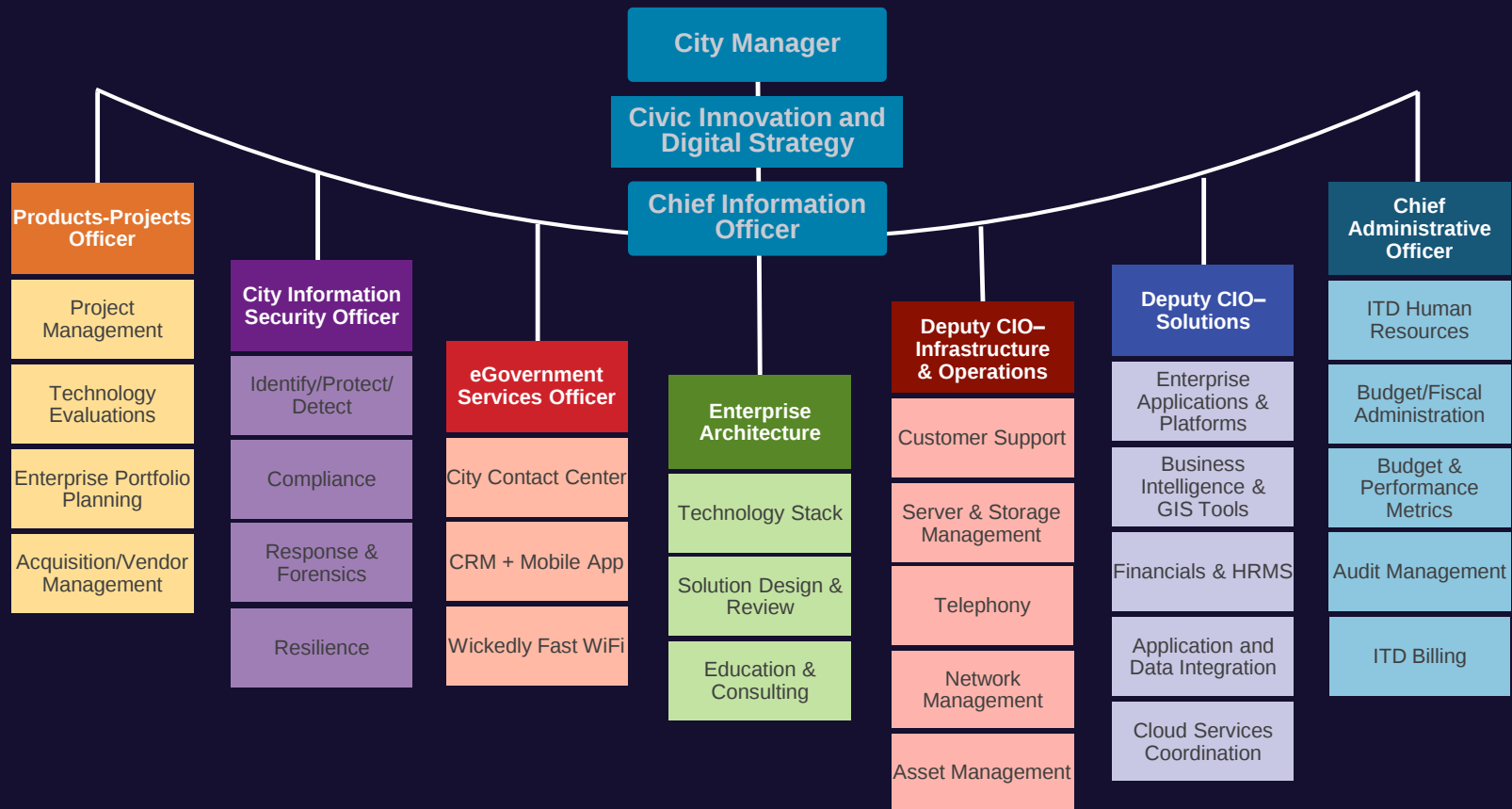


Infrastructure Layer

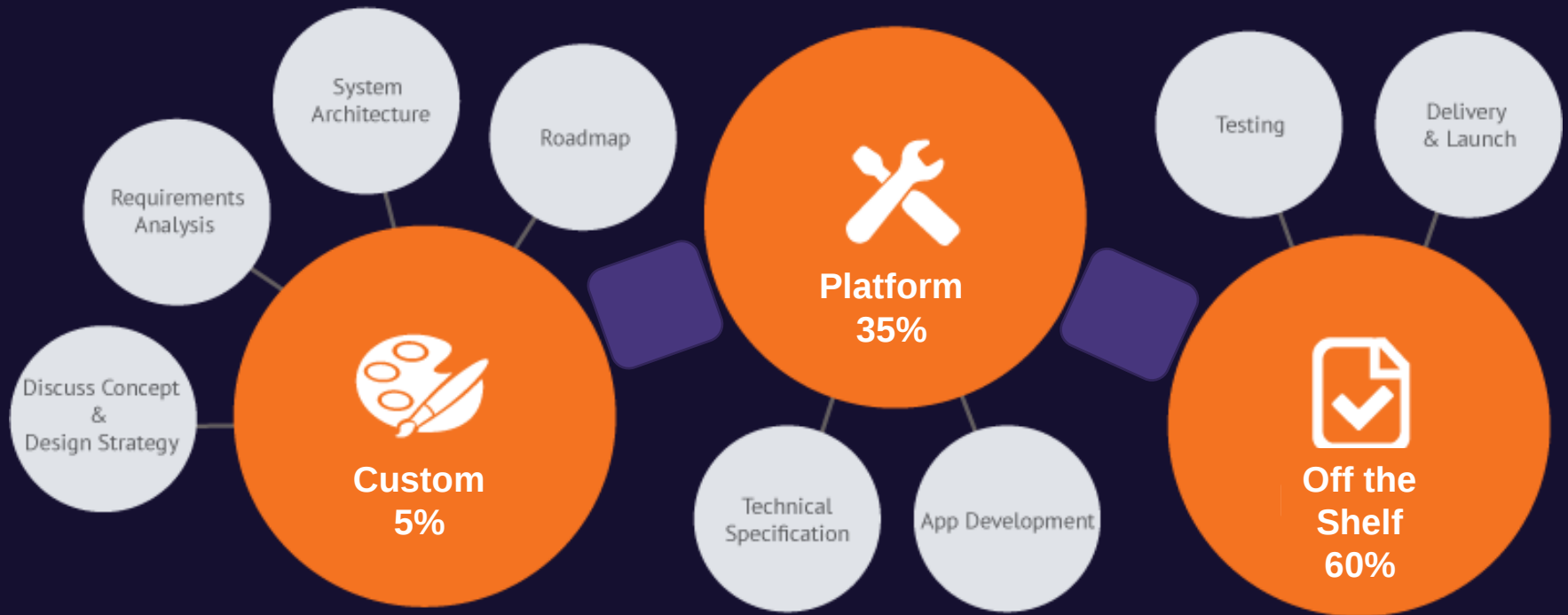


Security

Innovation & Technology Blueprint



Business Solutions Strategy



Validation through IT Advisory Board

Feedback Themes

- Excellent Assessment
- Goals Do Not Match Resources
- Cybersecurity is Essential

Advice

- Force Prioritize Core Needs
- Embrace As-a-Service
- Manage Staff Transitions/Pressures
- Emphasize Investments that Meet Multiple Needs
- Engage Groups, Employees, and Other Leaders



IT Portfolio Map– 2017-2019

(Initial)

Active							Done	
Innovation Roadmap	Business Tax System	CRM/My San Jose	Integ Permit System	IT Strategic Plan	City Data Environment			
	Facebook Terragraph	Access Eastside 1	Access Eastside 2 + 3	IT Advisory Board	Open Data Architecture			
Team	Availability 99.7%	Proj Success 5%	Engagement 8%ile	Vacancy 36%	Cust Sat 74%			
Secure	Cybersecurity Office	Privacy, Data, and Use	Cybersecurity Policy	PCI Compliance	Cyber Intel Alliance	Cyber Aware Month		
	Incident Response Plan	Continuous Education	Cybersecurity RFP	Cloud Apps Architecture	Secure Processing	Secondary Data Center		
Modernize & Execute	Prod-Project Management	HR Mgmt Upgrade	Bus. Process Automation	Workers' Comp System	3-1-1/CRM System	Business Tax Registration		
	Talent Mgmt System	Payroll Upgrade	Infrastructure Modernization	Utility Billing System	Microsoft Licensing	Server Upgrades		
	Budget System	Revenue Mgmt System	Treasury Mgmt System	Data Portal	Virtual PCs	Modernization Funding		
Audits	Technology Deployments	Mobile Devices	General Controls	External Financials	Call Handling Audit			

1-Page IT Strategic Plan

Out of a decade of disinvestment, execute, secure, and sustain the civic solutions that allow the San José community to thrive.

Strategic Direction

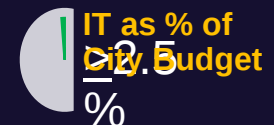
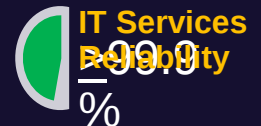
1. **Engage** an exceptional team defined by our solutions, service, & growth.
2. **Re-platform** onto current and responsive technologies and services as our foundation
3. **Secure** to manage evolving cybersecurity risks and operating requirements.
4. **Maximize Investments** through project management and user-centric approaches.
5. **Accelerate** the City's ability to execute and sustain innovation.
6. **Focus** on prioritized business needs
 - Customer Relationship Management
 - Use of Data for Decision-making
 - Business Process Automation

Underlying Assumptions

1. **Need:** Technology demands are core to operations and are increasing.
2. **Vision:** The San José Smart City Vision identifies IT as a strategic multiplier for our future.
3. **Priority:** The City aims to coordinate its increasing IT investments.
4. **Opportunity:** No city has better assets to make Smart Cities part of a successful community.



IT Metrics 2017-2019



After three years

Our Results



Innovation & Technology Blueprint



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IT Portfolio Map– 2017-2019

(Update: 2/2020)

	Active				Done					
Innovation Roadmap	Integ Permit System (N)	Open Data Environment (N)	Facebook Terragraph		Dev Services Transform A7	Business Tax Amnesty	New City Data Portal	IT Strategic Plan	My San Jose 1.X	Access East Side 1
						Youth Viol. Data Story	CEVP Data Story	Transport Data Story	IT Advisory Board	Open Data Architecture
Powerful Team	Availability 99.1% ▲ 99.6%	Full C3PO Division (N)				ERP Staffing	Proj Success 5% ▲ 81%	Engagement 8%ile ▲ 27%ile	Vacancy 36% ▲ 14%	Cust Sat 74% ▲ 86%
Secure & Reliable City	Privacy, Data, and Use (N)	Security Training Practices	Power Vuln Planning (N)			Security Scanning	Cybersecurity Team	Secondary Data Center	PCI Compliance	Cyber Intel Alliance
	Cybersecurity RFP	Citywide PC Replacem. (N)	Citywide Server Patching (N)			Mobile Mgmt	City Hall Wireless	Incident Response Funct	Cloud Apps Architecture	Secure Card Processing
						Security Training Awareness	Bus Email Compromise Sol	Priority Anti-Malware	IT Disaster Recov Exercise	Critical Sys Contin Plans
Modernize & Execute	Infrastructure Modernization	Bus Process Automation			Arcadia	eSig Policy & Ordin	Prod-Project Management	HR Mgmt Upgrade	Talent Mgmt System	Payroll Upgrade
	Productivity & Collaboration (N)					Virtual PCs	Budget System	Treasury System	Revenue Mgmt System	Work Comp Sys/Vendor
New Priorities	911 to 311 Transition (N)	Access East Side Phase 2 (N)	Access East Side Phase 3 (N)		Electronic Time Clocks	Mobile Collab Platform	Microsoft Licensing	Utility Billing System	3-1-1/CRM System	Business Tax Registration
	Modernization Fund	SJC WiFi (N)	FirstNet Pilot + Rollout (N)		2017 Flood Support	City Website Live	Data Engagmt Grant	Transp Analytics Platform	Smart Irrigation	Financials Upgrade
Audits	Tech Deploy. #2 (N)	Mobile Devices	General Controls				CAPUC Energy Audit	External Financials Audit	Cybersecurity Policy	Call Handling Audit
Queue	My San Jose 2.X (Hold)	Business Tax (Hold)	IoT Architecture (Hold)		City Intranet	ERP Direction	Records Retention	Measure T & New EOC	Modern Reprographics	(N) = New

Progress

Highlights

- ✓ Support Systems – HRIS, Payroll, Talent Upgraded; On Cloud
- ✓ My San Jose 1.x – Live; Audit closed; Digital Services now running
- ✓ Workers' Comp – System live; Resolved State Audit; Moved to Vendor
- ✓ Utility Billing – Recovery project completed; Live
- ✓ Revenue Management – System migrated; Live
- ✓ Treasury Management – System migrated; Live
- ✓ Compliance – PCI compliance updated; Scanning; Incident Response
- ✓ Budget System – System live; Supporting budget
- ✓ Financial System Upgrade – System live
- ✓ City Website – Live
- ✓ Integrated Permitting System Upgrade – System migrated, Live
- ✓ Clean Energy Customer Handling – Procured; Live with vendor
- Infrastructure Modernization – RFP Award; Active project
- Cybersecurity Advanced Services – RFP in selection; Multi-gov
- Business Process Automation – RFP in selection
- ❖ Business Tax – Project recovery; Supporting ballot and revenue goals

Updates on IT-Related Audits

Audits by Year

- ☐ 2012 General Controls
- ✓ 2014 Customer Call Handling
- ✓ 2016 Technology Deployments
- ✓ 2016 Financial Statements
- ☐ 2016 Mobile Devices
- ☐ 2019 911/311 Call Handling
- ☐ 2019 Technology Deployments 2

Council Priorities

- ✓ 12-02 #8– Develop & Test Disaster Data Recovery Plan
- ✓ 12-02 #4– Security Policy and Compliance Actions

Updates on IT-Related Audits

IT General Controls (1/2012)

11	Audit Recommendations
7	Complete/Closed
4	In Progress (Target: 6/2020)



Customer Call Handling (8/2014)

13	Audit Recommendations
13	Complete/Closed



Updates on IT-Related Audits

Technology Deployments (03/2016)

9 Audit Recommendations

9 Complete/Closed



External Audit of Financial Statement (11/2016)

13 Audit Recommendations for IT

13 Complete/Closed



Updates on IT-Related Audits

Mobile Devices (12/2016)

16	Audit Recommendations for IT
5	Complete/Closed
10	In Progress (Target: 6/2020)
1	Queued



911-311 Call Handling (2/2019)

9	Audit Recommendations for IT
5	In Progress (Target: 12/2020)
4	Complete/Closed



Updates on IT-Related Audits

Technology Deployments (11/2019)

10	Audit Recommendations
0	Complete/Closed
10	In Progress (Target: 12/2020)



Technology Services Metrics



July 2016 → February 2020

Win Our Races
Change the Game

Amazing Partners



facebook

Bloomberg
Philanthropies

Google.org



DELL EMC

ORACLE®

Microsoft

box



AT&T



NUTANIX®



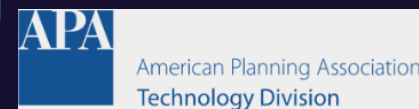
KNIGHT
FOUNDATION



verizon✓

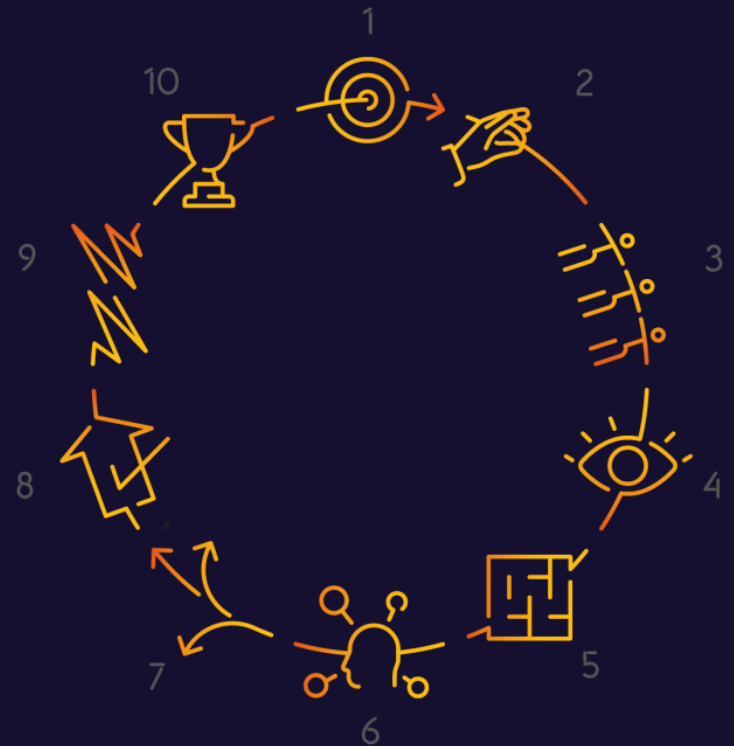
Special Honors – 2017-2019

- Center for Digital Government – 3x Top-Ten Digital Cities, #2 in 2019
- StateScoop – Top Smart Communities / Top Cybersecurity Leaders
- IDC – Smart Cities North America Awards, 2x Finalist, #1 in 2019
Smart 50 Awards, Tax Amnesty & Emergency Vehicle Preemption
- American Planning Association – 2019 Smart City Award of Merit
- Oracle – Modern Customer Experience Awards



2020

Bridging IT Strategic Plans



Completing Today's Plan...

Finishing 2017-2019 Goals

- IT Infrastructure Refresh
- Multi-Gov Advanced Cybersecurity (in Procurement)
- Business Process Automation (in Procurement)

Efforts that Emerged

- Events: Floods; Power Shutoffs; Coronavirus
- Management: Cybersecurity Risks; 911-311 Transition; San Jose Clean Energy
- New Projects: Utility Billing System; Inclusion WiFi; Integrated Permitting System; Tax Amnesty; FirstNet; Community Engagement through Data; New City Website
- Policy: Privacy

For the Next IT Strategic Plan...

Building to Support

- City Manager's Enterprise Priorities
- Community Equity
- Climate
- Innovation

Acting on 2019 Tech Deployments Audit

- Direction from City Council
- Oversight of all IT-related projects to maximize success
- Ready for the challenges of multi-department initiatives
- Optimize IT Resource Management

2017-2019

**Lessons
Learning**



What We are Learning

Transformation is Hard

- Iterative projects are most successful
- Highly transformative initiatives struggle
- Run v. Transform staffing contentions
- Process re-engineering not yet a strength

San Jose Departments Work Together

- Generally low resistance to cooperative efforts
- Success follows a few amazing people

What We are Learning

IT Resource Optimization Matters

- Whole Picture: Budget+Purchasing+Staff+Support+Projects
- Tech Debt still holds us back

A Critical Few Advances Reshape Most

- Artificial Intelligence
- Unifying Platforms (IoT, Infrastructure, Data/GIS)
- Security + Privacy
- Location-aware, Hyper-Personalized Services
- User Experience Design with Process Re-Engineering
- Flexible Work Environments
- Skills and Resources Management

For Your Support
Thank You!



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Questions And Feedback