



Technology Summit Report

Goal 1 – Improve Internal City Technology

Presented by:

The Task Force on Technology Advancement

January 8, 2015

Summit Vision:

Foster partnerships in Phoenix and the region to create a technology ecosystem that attracts businesses and entrepreneurs, and creates an internal and external culture that cultivates innovation.

Overview

On November 12, 2014 the City of Phoenix held a Technology Summit to address the use of technology by the City, and its potential for economic development. The Summit was a result of a recommendation from the City Council Finance, Efficiency, Economy and Sustainability Subcommittee, and was authorized by the full City Council in April, 2014. The Summit was planned by the Task Force on Technology Advancement. This Task Force was created by the City Manager in 2013, and in 2014 it was expanded to include a member recommended by each City Council member and the Mayor. The new Task Force met every few weeks from June to November, 2014 to plan the Summit and determine its vision and focus areas to address the dual goals of the City Council:

- Determine best practices for technology use within the City of Phoenix
- Advance community-wide technology infrastructure to promote economic development

The Task Force first developed the vision for the Summit:

Foster partnerships in Phoenix and the region to create a technology ecosystem that attracts businesses and entrepreneurs, and creates an internal and external culture that cultivates innovation.

The Task Force then developed six focus areas to address the Summit goals:

- Summit Goal 1 - Improve Internal City Technology
 - Common Infrastructure
 - Non-technology Changes
 - Internal City Workforce Planning and Sourcing
- Summit Goal 2 – Advance Technology for Economic Development
 - Data: Responsive and Available
 - Partner with Private Sector
 - Partner with Public Sector to Compete for Technology Companies

Task Force members created panels of subject matter experts to lead each focus area. Panels included entrepreneurs and leaders from technology companies, small businesses, and government entities. The panels held focused discussions which led to preliminary recommendations from each area (Attachment A). The Task Force then met to develop recommendations for the strategy and approach to address the City Council's goals for the Summit.

This report communicates the Task Force on Technology Advancement's recommendations to City Council regarding the attainment of the Technology Summit Goal 1, Improve Internal City Technology. Recommendations regarding Goal 2, Advance Technology for Economic Development, are not addressed in this report.

Executive Summary

The quality of life and economic stability of the City of Phoenix is reliant on the successful use of technology to improve the operation of government, provide services to residents, and enable economic development. Achieving this goal requires answering the question: What does Phoenix, as a world-class city, look like in the future? While the speed of technology advancement makes even a five-year forecast unclear, this rapid technical innovation and change is itself definite. Therefore, the City must become agile and innovative, while still remaining a good steward of the public's funds and trust. This requires a change in culture, a breaking down of siloes, and an increased partnering with the private sector. The City's customer is a digital public, which expects services from the City to integrate into their high-tech lives. At a minimum, this involves mobile-enabled services, one front-door to the City, and reliable data for transparency. Protecting the public's funds and trust requires using technology for efficient operations, appropriately partnering with the private sector for hosted solutions, and maintaining and sharing data to enable data-driven decisions by leaders.

The first, crucial step towards becoming a world-class digital city is to commit to achievable, short-term goals. The Task Force recommends that in the next three years the City focus on fundamental projects that make up the foundation for future innovations, and projects with a high return on investment. Additionally, during this time the City must address its technology workforce and the way in which it governs technology planning, costs, and project implementation. These steps will lay the foundation required for the City to embark on truly transformational projects that will make it a leader among digital cities.

Recommendations

In order to become a world-class digital city, the City must focus the next three years on building a solid and secure technology foundation. This involves making an investment in fundamental technologies and taking actions to build a consolidated, streamlined approach towards staffing, budgeting, and managing technology. Given the current state of the City's technology infrastructure and delivery model, this goal is aggressive, yet achievable with an appropriate level of commitment. The following basic principles should be part of the implementation of all of the Task Force's recommendations:

- Stewardship – be good stewards of the public's funds and trust
- Partnership – look to the private sector for appropriate rightsourcing and hosting opportunities
- Sustainability – invest in scalable technologies and utilize savings to reinvest in technology

1. Implement Fundamental Projects

a. Telephone Replacement

The City's telephone system is over twenty-five years old, and manufacturer support is ending. It is critical that this be replaced. Current telephony technology is scalable, multi-modal and application-based.

b. Network Upgrade

A large percentage of the City's data network is end-of-life. This is both a risk to the City, and a serious limitation on future innovation. The data network is the backbone of the City's technology infrastructure, and an upgrade is necessary no matter what technology delivery models the City chooses in the future.

c. Data Center Strategy

An organization's data center is the brains of its technology operations. Maintaining multiple data centers is costly in terms of equipment, space, energy, and staff resources. A strategy of consolidation and an analysis of the potential for a hosted solution must be developed to support the City's future technology environment, and realize potential savings.

d. Enterprise Software

The City currently uses multiple versions of basic office productivity software, purchased individually by departments. This creates inefficiencies between departments, and outdated software negatively affects some departments' interactions with the public and private

sector partners. Outdated software can also be a security risk to the City. The City should leverage consolidated buying power to standardize on current office productivity software for the enterprise.

2. Implement Projects with a High Return on Investment

While the bulk of the City's technology resources and funding will be required to maintain operations and implement fundamental projects, the City should also invest in projects that have a high return on investment (ROI). This will keep the City moving ahead with some innovative initiatives, and provide savings for future investment in technology projects. Examples of projects with a high ROI include Business Intelligence and eProcurement.

3. Develop a Workforce Strategy

Attracting and retaining technology talent is a challenge throughout the technology industry. As technologies change quickly, the pool of professionals with the right skills lessens, and competition increases. The City must develop a workforce strategy which addresses:

a. In-house

Some technology services, such as security, should remain in-house. These service areas should be identified, and strategies for hiring and maintaining qualified staff should be developed.

b. Partnership with Private Sector

Some technology services should be a hybrid of in-house staff and private-sector contract staff. This model can allow for consistency, while also addressing occasional increased demand, specialized tasks, and unexpected staff turn-over.

c. Rightsourcing

Rightsourcing services and utilizing hosted solutions will be an appropriate solution for some technologies. This strategy can help the City focus on innovation rather than simply supporting operations, and can allow the organization to remain agile as new technologies are developed.

Because technology talent is scarce, the City should utilize the committed professionals that it currently has to address critical in-house needs, as well as resident-facing technology services. The City must develop a strategy to align staff to the greatest needs, and retool their skills as necessary.

4. Mature Technology Governance Practices

a. Develop an Investment Plan for 3-year Goals

The City must develop an investment plan for the fundamental projects outlined in recommendation 1. Opportunities for savings from consolidation of systems and maintenance should be considered.

b. Institute Refresh Budget

Like any core infrastructure, technology must be refreshed regularly to remain functional and, importantly, secure. The cost of any technical innovation becomes prohibitive when the underlying infrastructure must be overhauled to support it. This leads to stagnation and, ultimately, proves very expensive as resources are used to support antiquated technology rather than to innovate.

c. Utilize Appropriate Project Management

Building on the groundwork laid by the fundamental projects, and projects with high ROI, requires that these projects be successful and on schedule. Project Management is necessary for these, and future projects, to control project costs, determine the City's risk tolerance, measure projects' success, and measure project impact on decision-making.

Conclusion

Technology not only changed the world, but the break-neck speed of its innovation has created a constantly changing world. The City's previously-successful model of delivering specialized services from distinct departments no longer works for technology today. A true change in culture is needed, and is on its way, as demonstrated by the Technology Summit. City leaders solicited input from partners and subject matter experts, which was provided through the Summit and its planning. We respectfully urge leadership to adopt these recommendations.

Task Force on Technology Advancement Members

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Attachment A – Preliminary Recommendations from Technology Summit Panels



City of Phoenix
Task Force on Technology Advancement

Technology Summit

Break-Out Panel 1

Panel Information

Panel Title:	Common Infrastructure
Moderator:	Chris Parsons, ViaWest
Panel Members:	Michael Guggemos, Insight Doug Baer, VMware Scott Wold, Microsoft

Objectives Outlined by Moderator

1. Needs to attract more IT customers outsource
2. Consolidating infrastructure
3. Upgrade technology
4. Make tech more assessable enhance city business partners

Recommendations to the Full Summit Panel

1. Universal language

- 2.Common domain
- 3.Standardized data
- 4.Implement ideas
- 5.Using analytics to gather information
- 6.Building future state system
- 7.City to get to an end state
- 8.Budget restraints

Attendees' Clarifying Notes on Recommendations

- Create a single user platform.
 - Implement a single user platform with an active directory. This in turn will have an “identity forest” associated with it. All city employees can then utilize this to sign into other 3rd party applications through permissions and take advantage of the email consolidation and collaboration benefits associated with it. It will provide common definitions and get the City’s Directory in order. The Directory must be in order to have any single sign on system.
 - The active Directory will tell who is who, where they work, who they work for etc.
 - It will synch to the identity directory which then synchs to domains which will enable delegation of authority and it must have an identity management solutions
- Consolidate Platforms
 - Allows you to share data seamlessly with other departments and entities
 - i.e. 311 and “who’s in jail”, who has outstanding warrants, who hasn’t paid for their library card, who **just ordered a new trash can** etc.
 - This will create a database of information on every citizen so they can be treated as ‘a single customer’ of the city that will be recognized as such regardless of the city’s services they are trying to consume.
- Enterprise Architecture
 - Need internal standard for communication – citywide. This can be accomplished by defining what that needs to look like and agreeing on the various means. Hosted VOIP, MS Exchange, Jabber etc.
 - Additionally, citizens need a user friendly interface when communicating and purchasing services. A single user interface where each resident can

order all city services is needed. This should be seamless regardless of whether the customer is accessing it from a TV, smart phone, tablet or PC. This will ensure a common experience across all communication mediums.

- Transition to new platform
 - Suggest building a “landing pad” to move employees and departments off old software. Theory was if you build a great IT solution and enhance it while allowing old systems to stay in place (but unsupported) they will come.
 - Additionally, the benefits of the increased functionality of a landing pad or new front end layer are that employees will want to utilize the new systems rather than put up with old technology. De-commissioning old systems at predefined points in time and providing plenty of communication and training round the new system has worked in the past and can likely work here.



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Break-Out Panel 2

Panel Information

Panel Title:	Non-Technology Changes
Moderator:	Robert Hall, Orenda International
Panel Members:	James Scarboro, City of Phoenix Mike Hawksworth, MSS Technologies M.D. Dbeis, CS&S Computer Systems

Objectives Outlined by Moderator

1. Discuss cultural and business issues
2. Discuss streamlining procurement process
3. How do we be more nimble/flexible with IT implementation
4. How to budget for rapidly changing IT environment

Recommendations to the Full Summit Panel

1. Simplify the certification process to increase percentage of contracts to small/local businesses to beyond 30% and expand beyond the current limitations of goods and services.
2. Encourage more use of Mohave or other cooperative contracts because they are most up to date with technology.
3. Encourage teaming of multiple vendors and inclusion of local companies for larger RFPs.
4. Move from highly specific budgeting to “areas” of budget requirements to maximize flexibility and response time to implement new technology.

5. Create a more reasonable set of contractual indemnity requirements to avoid having highly qualified vendors withdraw from the bidding process with the goal of saving time, money and quality of goods and services.



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Technology Summit

Break-Out Panel 3

Panel Information

Panel Title:	Internal City Workforce Planning and Sourcing
Moderator:	David Stevens, Maricopa County
Panel Members:	Cathleen Barton, Intel Matt Nixon, 29th Drive Jerrod Bailey, Tallwave Bryan Duarte, Arizona State University (student)

Objectives Outlined by Moderator

1. Adopt New Hiring Practices: Strategies for recruiting talent in both private and public sectors in ways that are relevant to the industry.
2. Reform Current Recruitment Practices: How do we encourage existing top talent to remain in the City and engage them in the work more effectively.
3. Create a Culture of Innovation: remove obstacles and advertise the significance of public service and its impact to business, economy, and the citizens.
4. Develop a Social Enterprise: find new ways of creating an atmosphere of collaboration and innovation. Foster ways to ensure employee engagements and productivity.

Recommendations to the Full Summit Panel

1. Branding the City is key to recruiting IT top talent. Use this brand to recruit and

connect with the future workforce. Where you “show up” to recruit is critical.

2. Know your target audience – tap into the targeted talent pool and do outreach to the “new generation of talent” to obtain their input.

3. Government employers should be proactive in their recruitment efforts.

4. Listen to the younger staff/companies to get input as to what the new workforce talent pool is looking for in finding employment.

5. Get the “what does government do” message out– educate and look at assets the community possesses to the new talent pool.

6. Environment of workspace – invest in creating a “new environment” that appeals to the IT workforce is important.

7. Identify what makes Phoenix attractive to the younger talent pool.

8. The City should identify an area that can serve as a “pilot” area before rolling out a “new workspace” environment.

9. The City should “buy-in” to investing in creating a culture and workspace that attracts the best talent.

10. Seek input from the younger talent within the organization for their thoughts.

11. Create an application process for staff who can serve/participate in creating the culture (and incentivize staff to participate).

12. Foster entrepreneurial programs and collaborations i.e.: ASU “Edson Grant” and UA program.

13. Highlight entrepreneurship “entrepreneurship month” .

14. Arizona needs to work on creating a friendly investment environment for financial investors who want to assist entrepreneurs get off the ground.

15. Find a way to get into the high-school levels to build a talent pipeline – introduction to local opportunities. Educate them what Phoenix has to offer in terms of their future.

16. Be intentional about creating a strategic direction to move in this new direction. “the tiger team process” - cut the bureaucratic hurdles so they can work directly with the City Council or City Manager, “give them a great deal of responsibility to make a difference”.

17. Create a working team across the public and private businesses to work together.



City of Phoenix
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Break-Out Panel 4

Panel Information

Panel Title:	Data: Responsive and Available
Moderator:	Brent McCarthy, Microsoft
Panel Members:	David Gollob, Microsoft Brian Secrest, Wells Fargo Dean Iacovelli, Microsoft

Recommendations to Final Panel

Create a culture of data sharing internally and externally

- Establish a Chief Data Officer that will be an overall data steward for the City
 - Evangelizes the value of data sharing within the city
 - Demonstrates to Departments the value of their data in a visualized fashion, combined with other department data
- Appoint a technical and a business data steward for each department
 - Works with Chief Data Officer to provide department data examples to see how their data can be visualized in a valuable way

Create a central internal and external City data repository

- Build internal and external data repositories in Cloud Services for rapid

implementation that provides on-demand scalability, and reduced time to market

- Begin with an initial proof of concept with 3 participating departments
- Departments contribute meaningful sets of data about their business for internal repository
- Departments contribute meaningful (and sanitized if necessary" sets of data about their business for external repository
- Conduct an internal "Data Hackathon" event within the city to find the meaningful insights in the data in the POC. Create a competition (gamification), and award prizes for employees that find the best/most valuable insights. Perhaps make this a team-based event with teams comprised of representatives of different departments. The top insights should be sanitized, and put into visualizations and datasets that are published as Open Data.
- Implement sample visualizations for both internal and external data repositories based on the "Data Hackathon" results in a portal, as well as access to the underlying datasets through the portal.
- Evangelize and market the public data visualizations and data sets to the public

Expand the central internal and external City data repository

- Continue to iterate through introducing more departments, bringing important department data into the central repository.
- Continue to iterate through existing departments participating in the central repository to bring additional data sets
- Continue to foster culture of data sharing by conducting frequent "data hacking" events.



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Break-Out Panel 5

Panel Information

Panel Title:	Partner with Private Sector
Moderator:	Susan Anable, Cox Communications
Panel Members:	Jerry Fuentes, AT&T Wireless Mike DiMaria, CenturyLink Jason Morris, Withey Morris PLC Mark Goldstein, International Research Center Dr. Francis Sisti, Systemic Leadership Institute

Objectives Outlined by Moderator

1. Fast-track and streamline City processes
2. Partner with providers for high-speed internet, Wi-Fi, broadband
3. Partner with other state and local government to leverage existing infrastructure
4. Outsourcing

Recommendations to Final Panel

1. Establish a single point of contact for permit applications for projects that cross municipal lines; perhaps through MAGTAG or League of Cities and Towns.
2. Adopt a similar “self-certification” procedure already used in planning for telecom projects

3. Bulk/blanket permits with one-time review for large-scale projects
4. Contract with outside firm to coordinate larger projects, at the cost of the developer/provider
5. Offer additional fees for expedited plan review
6. Establish a digital application where design changes and inspections can be submitted electronically, including images and plans
7. Better education for city staff about telecom technology and regulatory changes, so as to minimize unnecessary conflict
8. Create a technology ombudsman position within the economic development office that specializes in technology projects working alongside permitting and zoning staff
9. Add a technology master plan as part of the general plan update
10. Support entrepreneurial incubators, by providing virtual capabilities as well as nearby amenities that appeal to the millennial workforce, such as coffee shops, nightlife, and safe community
11. Utilize private IT management services and reduce capital expenditures to upgrade existing outdated technology
12. Remove or reduce barriers that generate unnecessary costs or delays and otherwise inhibit expansion of privately funded, high-speed digital infrastructure
13. Support policies that ensure a level playing field for all broadband providers



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Break-Out Panel 6

Panel Information

Panel Title:	Partner with Public Sector Organizations to Attract Technology Professionals
Moderator:	Jeffrey Dorf, Rosendin Electric
Panel Members:	Jeff O'Toole, Blackbaud, Inc. Dean Howard, Howard Partners Public Affairs Christine Mackay, City of Phoenix Mark Bauer, Jones Lang LaSalle Michelle De Blasi, Gammage & Burnham Todd Sanders, Phoenix Chamber of Commerce Darrell Black, Intel

Objectives Outlined by Moderator

1. Recap – how to capture state land issue
2. Workforce
3. Reinvent Phoenix with CIP
4. Council needs small lean versatile private etc. Technical Advisory Committee. Subject matter experts who do this anyway.

Final Recommendations to Full Panel

1. Create a small task force of subject matter experts who will support the City in advising and giving input on individual projects/site selection. (Not

competing with GPEC, a smaller advisory group.)

- a. Team should include those who speak the same language as the young, “geek” tech professionals.
 - b. Need help from them on getting rid of low hanging fruit. Need to be agile.
 - c. Want to be able work direct with staff.
 - d. Have someone from private sector technology or HR companies who are there without a stake, just advisory.
 - e. Need to keep it broad. Right people won’t come if they feel there is a conflict.
 - f. Put together a “Welcoming Committee” from different industries who could meet with companies the City wants to attract. Not ED person selling committee, but someone who went through it.
2. Need to better sell our story. Take tangible steps to take this seriously.
 - a. Need website to be more flexible than current
 - b. Exploit strategic electronic branding tools, including print and social media, to further the City’s brand and message that is consistent with audience we are trying to attract.
3. Development of Comprehensive plan to facilitate development on State Land within its bounds.
4. Take a focused look at opportunities to support educational initiatives to support future workforce. Leverage public/private partnerships for science, engineering, and skilled labor.