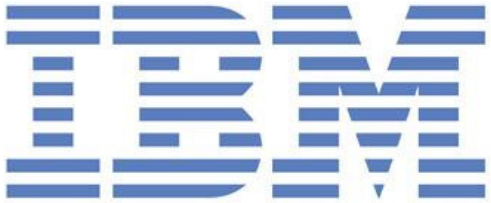
System z-Enterprise Foundation for Smarter Cities



Jointly Developed With:

1 Whiteboard Introduction & Overview

"Smarter Cities" is an important initiative for IBM. The intent of this Whiteboard is to support that initiative and to clearly outline why infrastructure (in particular System z) matters if you are going to be a "Smarter City".

The discussion supported through this Whiteboard will enable you to discuss the value of an Enterprise Class Infrastructure (Foundation) for any Smarter City solution.

Through the discussion and the use of examples (the Seller should use examples which are relevant to the audience in term of geography, type of solution, etc.) you can help the audience to understand (or better understand) - when, why & how System z is the "best/most capable/most efficient" foundation/platform for a Smarter City solution and do that from more of "overall value to the city" perspective.

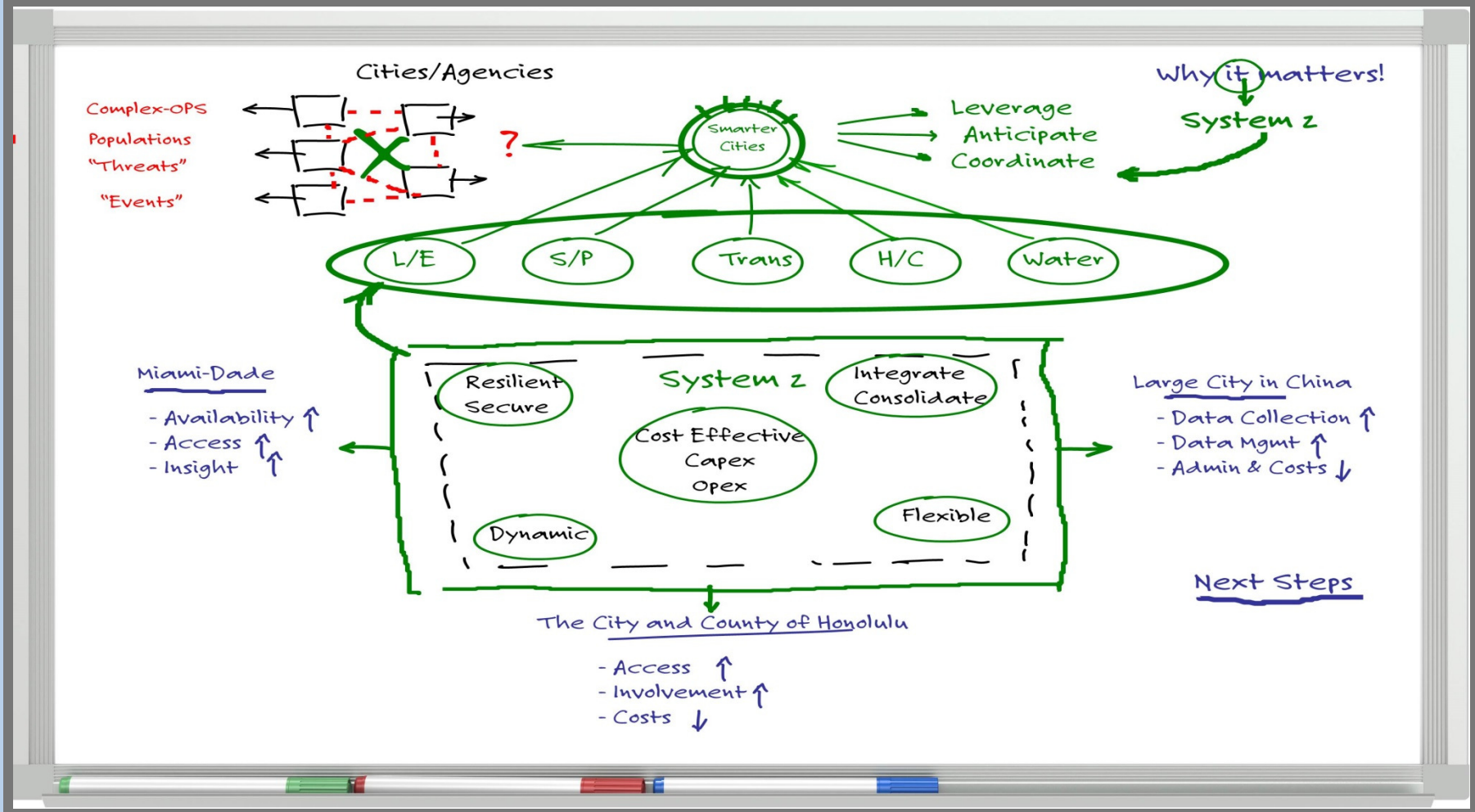
This discussion is NOT focused on technology and as such is intended for a discussion with leaders of agencies, departments, etc. To make the discussion more beneficial, however, we would encourage Sellers to have some representation from IT in the audience.

At the end of this whiteboard, we want the audience to support a more detailed discussion related to infrastructure whether this is a "Right Fit for Purpose" Workshop, a more detailed architecture or technology discussion or a TCO/ROI discussion.

One additional objective for this Whiteboard is Seller Education…
The whiteboard is intended to help get STG and SWG sellers involved earlier in the Smarter Cities sales cycle by educating SWG, SCLM Sellers and Client Reps on the business importance of having the right infrastructure when proposing a Smarter Cities Solution.

NOTE to Presenter: You should always check the Whiteboard Media Library (http://w3.tap.ibm.com/medialibrary/media_set_view?id=23980) in preparing to learn and give this whiteboard in particular to make sure that you have relevant and appropriate reference/customer stories for this audience.

1 Whiteboard Introduction & Overview



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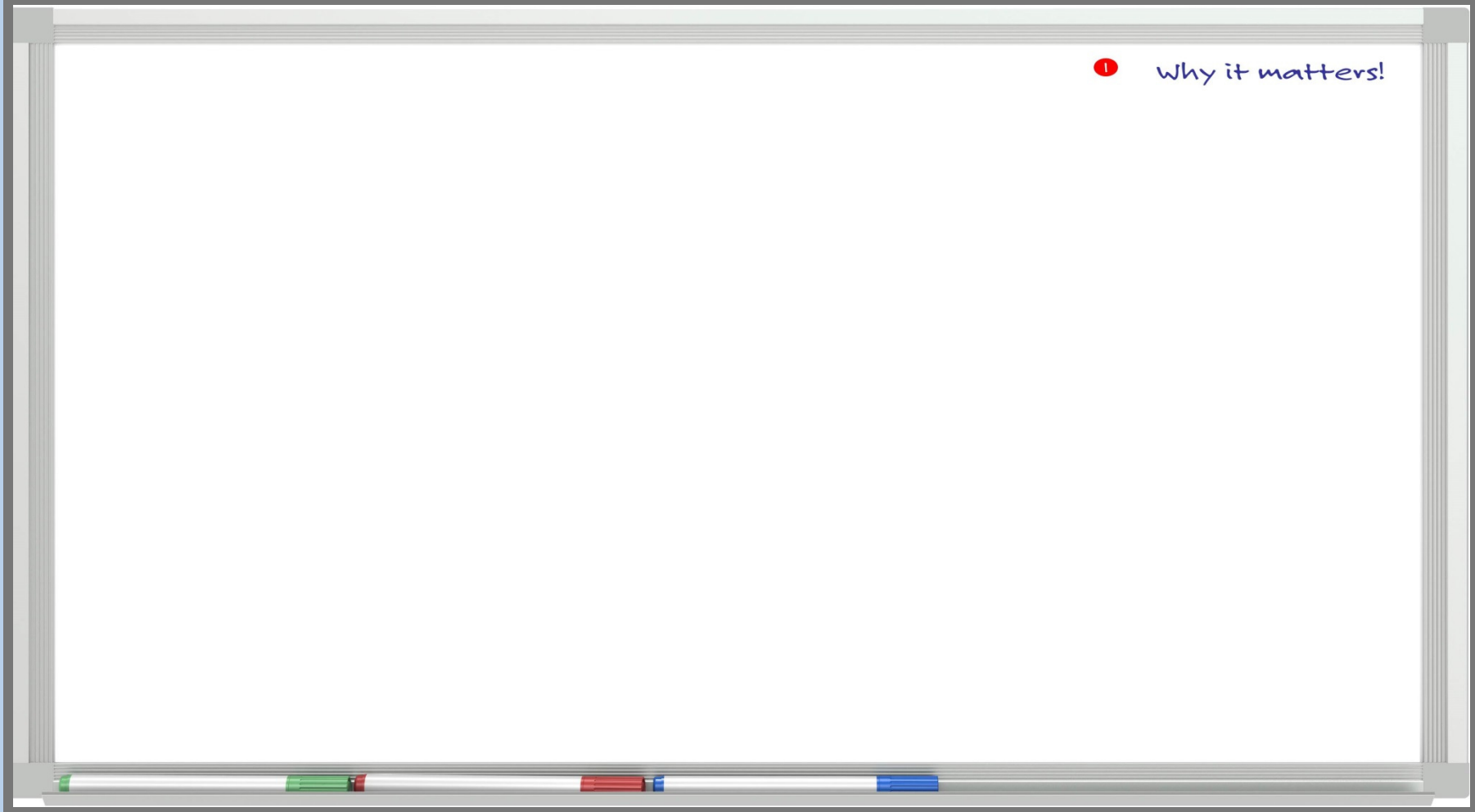
Setting the Stage

1 **[Why it matters!]** Thank you for taking the time to meet with me today. There are a few areas that I would like to make sure we cover during our time together. I want to make sure that I have a better understanding of the key challenges that you and the rest of your city government are facing and with that I want to sketch out some of the ways that IBM is helping other cities through its Smarter Cities solutions to enhance the ability of city leaders to transform, manage and operate agencies and citizen services more effectively today and in the future.

A key part of that discussion is to also give you a sense of why and how the **infrastructure** that is supporting your systems can make a significant difference to your success. In fact that without the right infrastructure, together with the right Smarter Cities solutions, you may not yet able to effectively deliver the range of services that your city requires to address the challenges you will face going forward.

Does this make sense?

2 Setting the Stage



3 Systems in Today's Cities

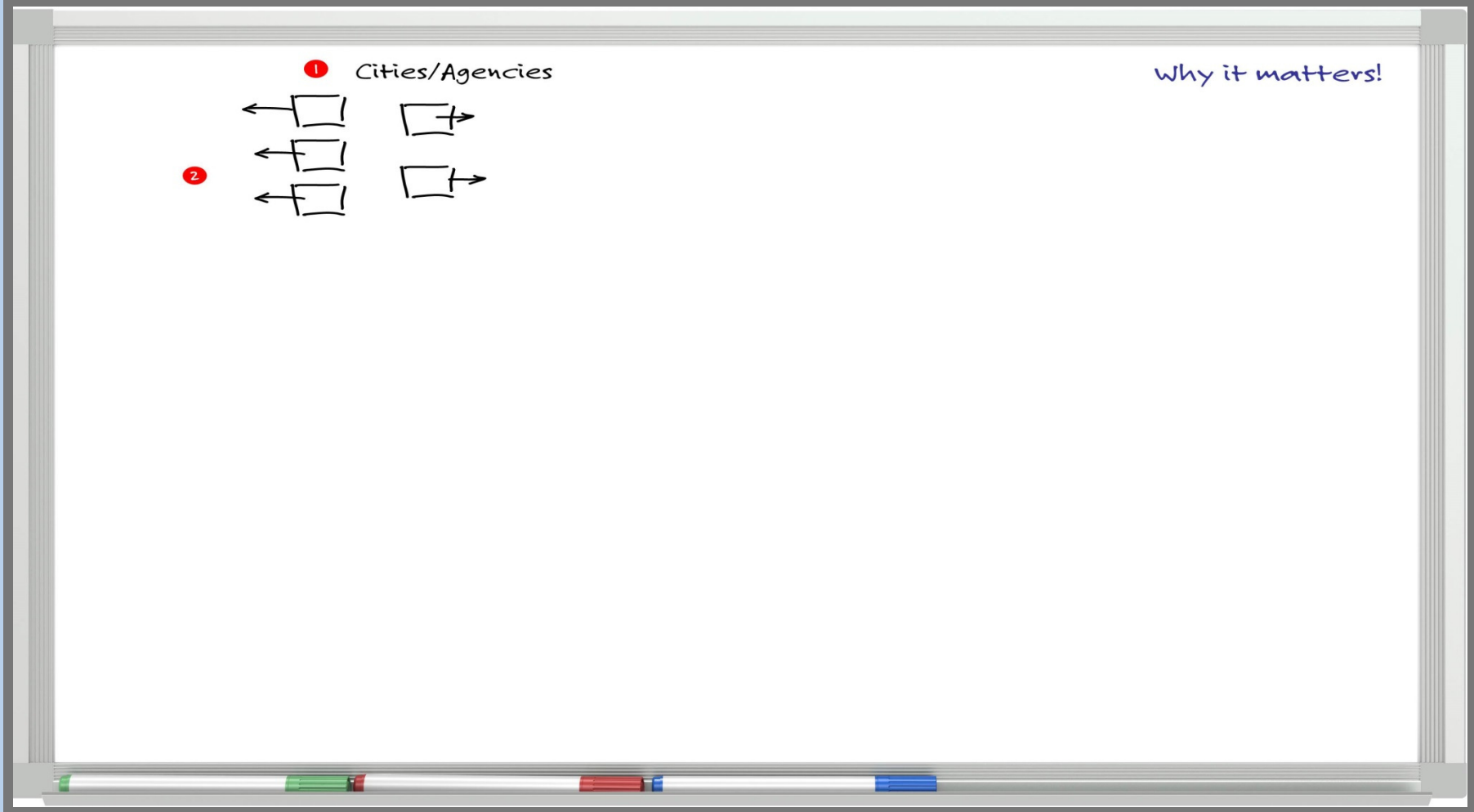
1 [Cities/Agencies] If you think about your city today many of your departments or agencies …

2 [Boxes and Arrows] … have applications or services that are running on independent systems or infrastructures. Many of these may be aging - some may have been modernized but the fact is that most of these systems were implemented to support the needs or requirements of one agency or organization. And with that they are collecting and using data that is tied to that application, to that system and to that agency or department, frequently creating multiple, often inaccurate, copies of the same data.

QUESTIONS TO ASK

What specific challenges do you face day to day? Are they related to traffic? Water and Floods? Public Safety? Is this representative of your situation today? Are your systems set up similarly? Are you looking at any projects or initiatives to do modernization or upgrades to applications (or systems)?

3 Systems in Today's Cities



4 What's Facing Today's Cities

It probably goes without saying that most cities are under new pressures that are impacting the way that they operate.

1 [Complex – Add dotted line] Today's city is a much more complex operation than when most of those original systems were put in place. If you think about it, today's city is much more of a "system of systems" where agencies and their systems need to interact more than ever before. The data that is important to one agency may add value or be critical to another. For instance, a police department may need to interact with health and services organization to resolve open cases. The transportation department may need to interact with public works. I am sure you can think of other examples. The fact is that in today's world, city agencies and departments are no longer stand-alone islands.

2 [Populations – Add dotted lines] Cities are also faced with changing and growing populations. People now expect to be able to access applications that were once ONLY used by agency personnel and access them using mobile devices, tablets, kiosks.

3 [Threats – Dotted lines] Cities like corporations and federal government agencies and others are also under cyber-attack. City systems, data and infrastructure are targets for the "bad-guys". And the cost to the city for a successful attack can be substantial.

4 [Events – More dotted lines] And finally, there are events either planned or unplanned which can have a significant impact on systems. Unplanned events like protests or demonstrations or catastrophic events like storms, or floods require that communications and access to data be available. During planned events such as visits from heads of state, celebrations or city-wide activities and events like parades or BIG events like the Olympics or World Cup – systems need to be continuously available to ensure public safety and a great consumer experience- they cannot fail.

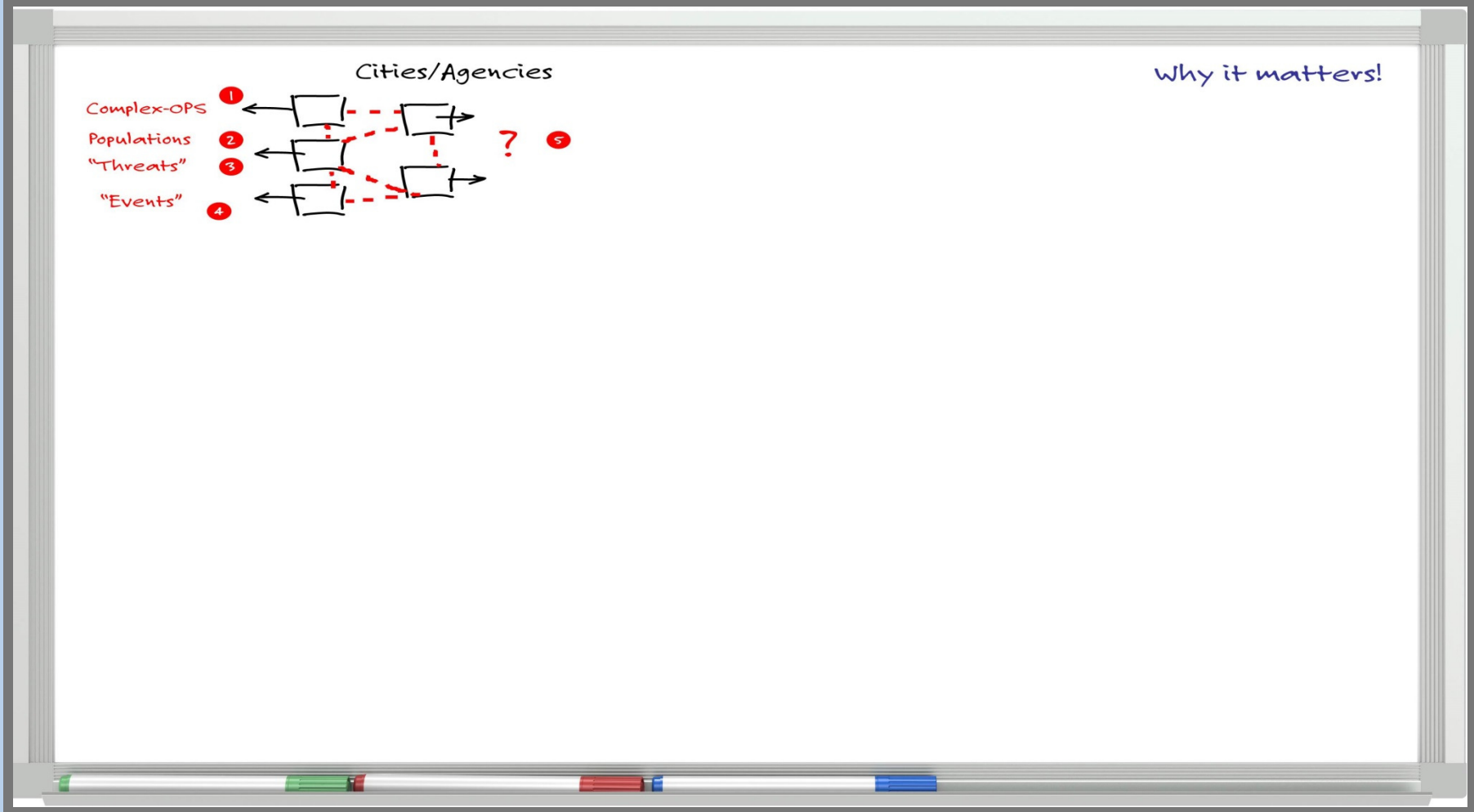
5 [?] The question that city leaders and their IT organizations face is "what do you do to ensure that the city can address all of these challenges effectively?"

QUESTIONS TO ASK

Have your systems been able to support your requirements? if not, what issues have you encountered? Ha ve you had any issues during planned or unplanned events? If they have failed – what was the impact?

What additional new or surprising requirements are you seeing in your city? What is driving the need?

4 What's Facing Today's Cities



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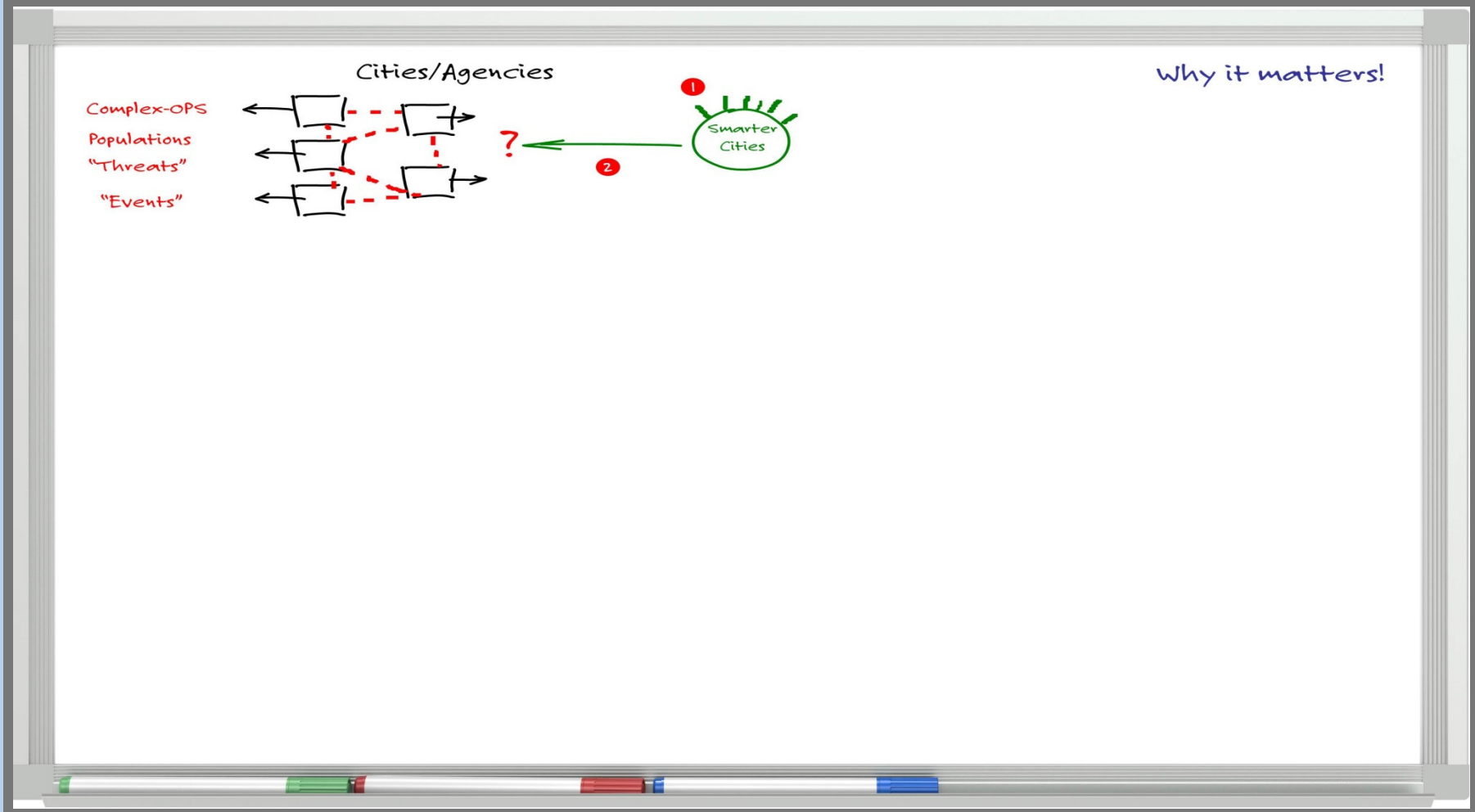
IBM Smarter Cities

1 [Smarter Cities] It is against this dramatically changing environment that IBM has not only focused a significant amount of energy but has also drawn key insights from over 2,000 engagements worldwide. These efforts resulted in an approach called IBM Smarter Cities. This approach is helping cities large and small across the globe to deal with the changing nature of their operations.

2 [Arrow]

5 IBM Smarter Cities



Smarter Cities - Bringing Value-Add to Cities

1 [Add Areas that are Relevant to Discussion] The Smarter Cities Solutions address a number of key areas, including, law-enforcement and public safety, social programs, healthcare and human services, transportation, water, building, asset management, etc.

2 [Arrows] Each of these Smarter Cities solutions provides significant value to an individual agency or department but the key benefit of IBM's Smarter Cities approach is that these solutions can be brought together …

3 [Additional Green Circle]

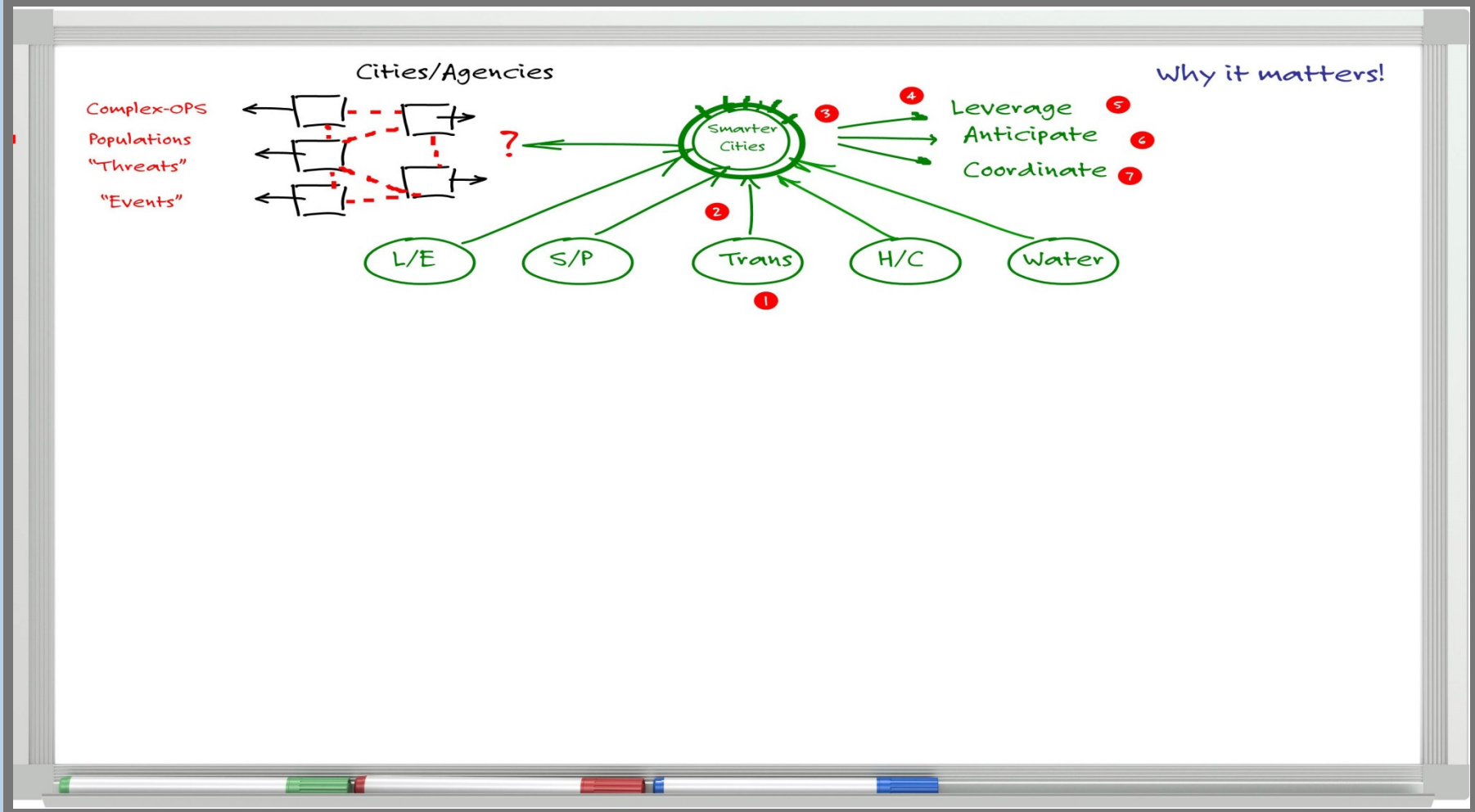
4 [Arrows]

5 [Leverage] … to enable a city to more effectively leverage the wealth of information contained across all their systems to make better decisions

6 [Anticipate] … to conduct analyses using all their data to be able to anticipate and resolve problems proactively rather than just reacting to situations; and,

7 [Coordinate] … to be able to use data and information to more effectively coordinate resources and processes to deal with immediate and long term challenges.

Smarter Cities - Bringing Value-Add to Cities



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Infrastructure - The Foundation for a Smarter City

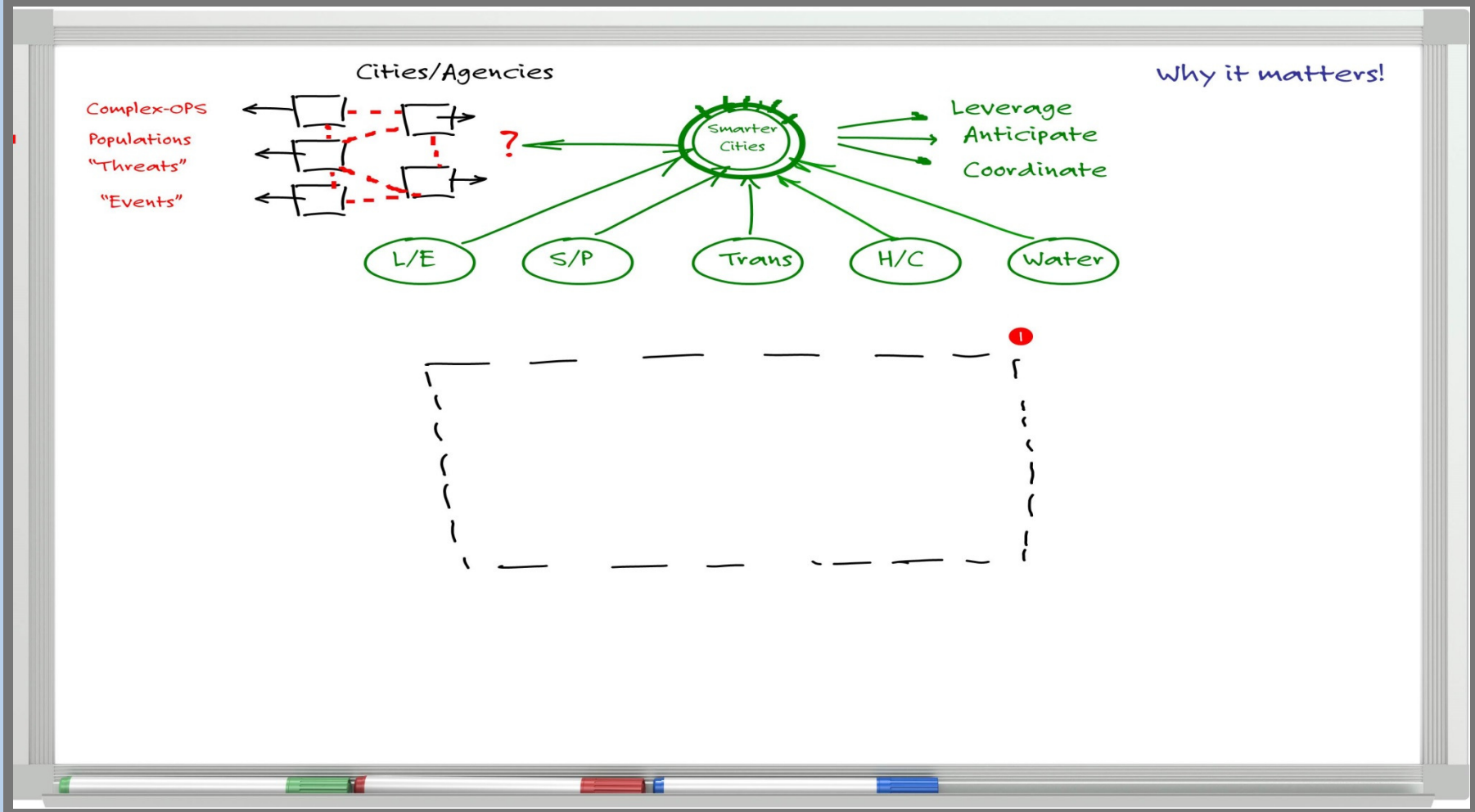
What we have seen in many situations is that cities ONLY focus on the application and look at only updating the application. What many cities forget is that their existing systems and infrastructures may not be able to support the new requirements they are trying to deal with.
There are others however that have recognized that to succeed they need to look carefully at their infrastructure because …

1 [Dotted Box] … a critical element in being able to deliver on the promise of what new solutions can do is not just having the right solutions architecture and design it's having the right systems infrastructure - an infrastructure or foundation which can ensure that meet a number of key requirements that any of those solutions have.

I'd like to outline a few.

QUESTIONS TO ASK
Are you or have you been looking at whether your infrastructure can meet your requirements going forward? What considerations are at the top of your list? Cost? Simplification? Skills? Availability? Growth or ability to respond to sudden and unpredicted situations?

Infrastructure - The Foundation for a Smarter City



The Infrastructure Requirements of a Smarter City

1 [Resilient - Secure] This infrastructure needs to be resilient and reliable. It just cannot fail. In a city where law enforcement or healthcare professionals rely on systems, a system cannot go down or if it does it could mean loss of life. With unplanned events like catastrophic weather if a system does go down, the infrastructure needs to incorporate disaster recovery capabilities which minimize any disruptions. The infrastructure needs to be secure. It needs to be capable of providing the highest levels of security for data, for users and be able to secure the delivery of that information whether it's being delivered on mobile devices, tablets, or smart phones.

2 [Dynamic] The systems need to be dynamic. In other words they need to be able to scale up and continue to perform with increases in volume whether that volume is associated with data, users or transactions. You want an infrastructure that can scale seamlessly rather than requiring you purchase more hardware just to meet the new demands. The infrastructure needs to scale to be able to handle the changing types and volumes of data, for example, digital images that may be coming from surveillance videos or digital images that are part of healthcare records.

3 [Flexible] The infrastructure needs to be flexible and agile. It needs to enable the organization to provision new services quickly without requiring rolling in new hardware systems or new software. It needs to be able to support multiple types of workloads or applications each of which may require different patterns of performance, throughput or delivery, such as, shared services (or cloud computing).

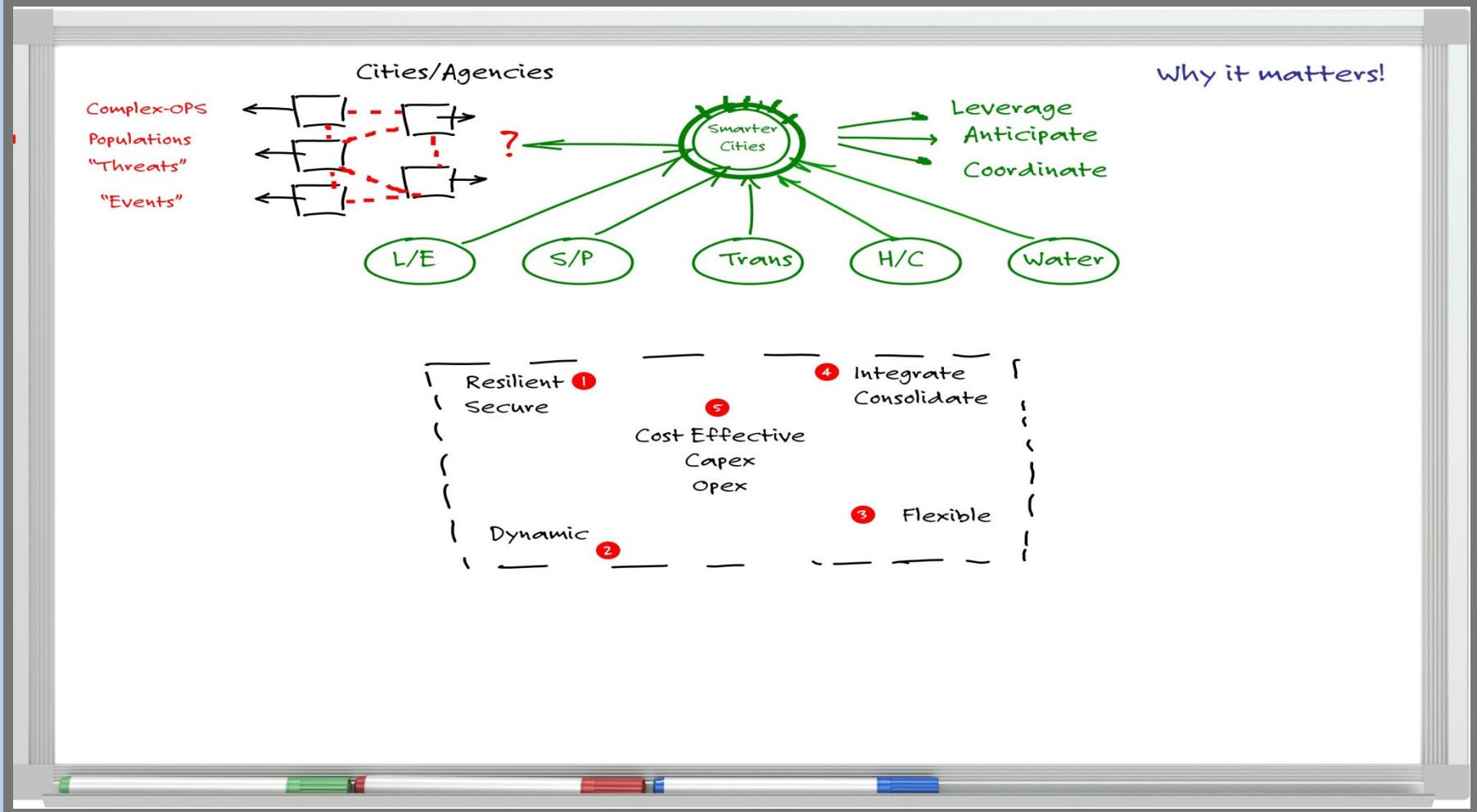
4 [Integrate - Consolidate] The infrastructure needs to enable the integration and management of data from across various applications. It also needs to enable the consolidation of that data and applications to minimize administration and management costs and to also minimize the moving data across networks.

5 [Cost Effective] And because every city is under some type of budgetary constraints the infrastructure must be cost-effective. It must allow or enable a city to be up and operational quickly in an affordable fashion. But just as important it needs to be made enable a lower cost of operations.

QUESTIONS TO ASK

Are these requirements in line with what you are considering as important? Are any more important than others? Does your current infrastructure provide adequate (good or great) support for these requirements? What issues do you have? What are other vendors telling you about support for requirements and what is or what is NOT important?

The Infrastructure Requirements of a Smarter City



Smarter Cities - Example

Let me give you a few examples cities that have addressed these challenges.

1. **[Miami-Dade County]**

2. **[Availability – Access – Insight – up arrows]**

Miami-Dade County (Florida – USA) saw an opportunity to open up government with a large-scale analytics platform that would allow city and county employees as well as citizens to access a wealth of public information via the web.

"The county never sleeps, and our services need to be available 24/7," says Adrienne Di Prima, Strategic Technologies Support Manager at Miami-Dade County. "The fire department, the police and the hospitals need their systems to be online at all times, so the ability to deliver reliable, highly available IT is vital."

With a more robust, flexible, high-performance platform, Miami-Dade has been able to build a number of innovative analytic applications for both internal departments and the county's citizens.

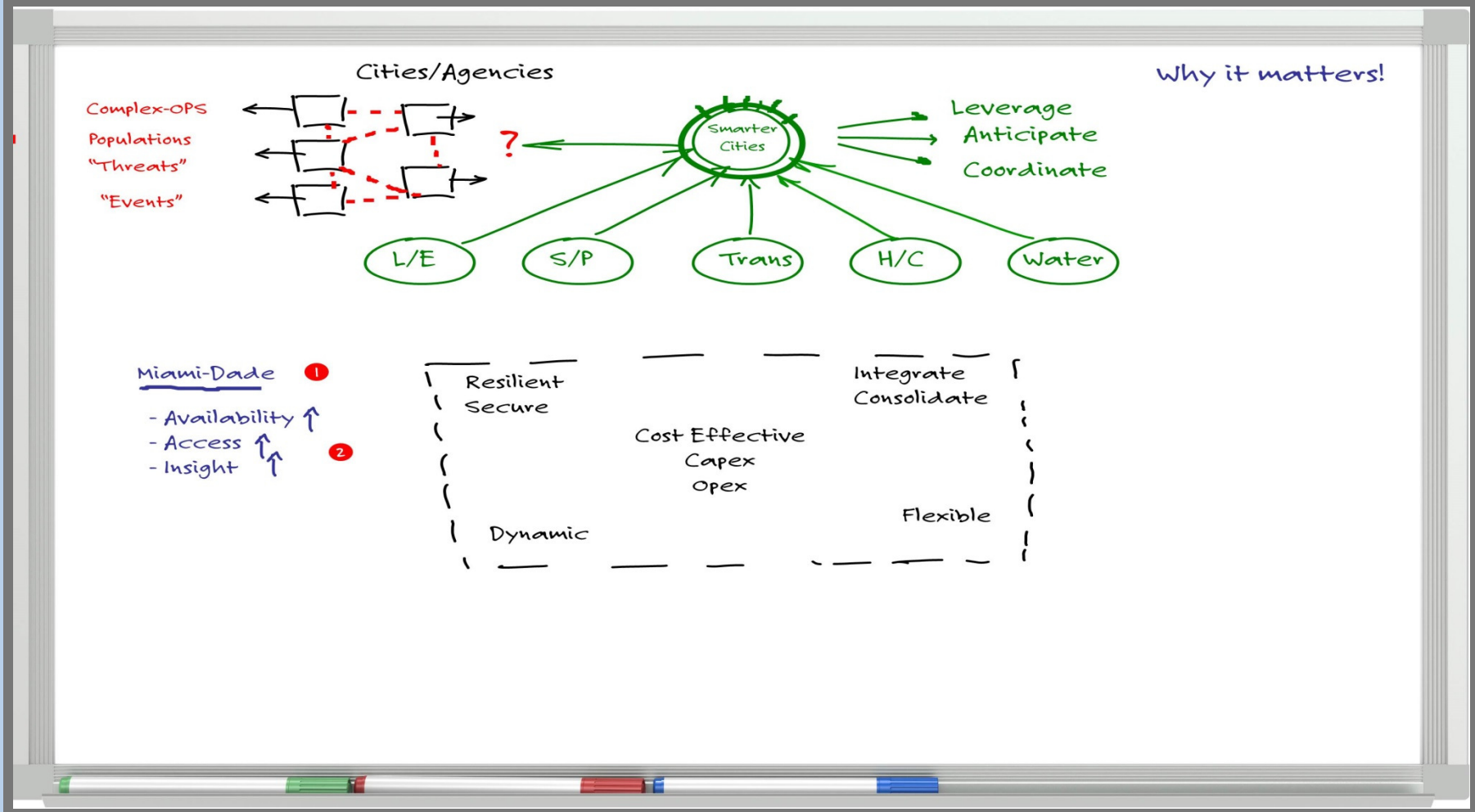
"Citizens can log into our website and view a wide range of key metrics about the county's performance in areas such as energy efficiency and service levels for the police and fire departments," says Di Prima.

"One of the big advances we've made is to provide more transparency about public spending. They can now call up every check the county has written in the last decade. They can even look up my pay-checks if they feel so inclined! Giving people more insight into where their tax money is going helps them understand more about how the county is governed, so they can make more informed decisions at election time."

QUESTIONS TO ASK

NOTE TO PRESENTER: YOU SHOULD BE USING EXAMPLES WHICH ARE RELEVANT AND APPROPRIATE FOR THE DISCUSSION IN TERMS OF GEOGRAPHY, ETC.

Smarter Cities - Example



Smarter Cities - Example

1 **[Large Chinese City]**

2 **[Data Collection – Data Management up arrows – Admin & Cost – down arrow]**

With a rapidly growing population and an associated high growth rate in the number of automobiles, the city government needed to put in place an intelligent traffic and transportation system. A key element of their approach was to put in place an infrastructure which could support all of the key elements of the solution, which included a private cloud environment, an external website, video collection, storage and management, as well as a large-scale analytics environment.

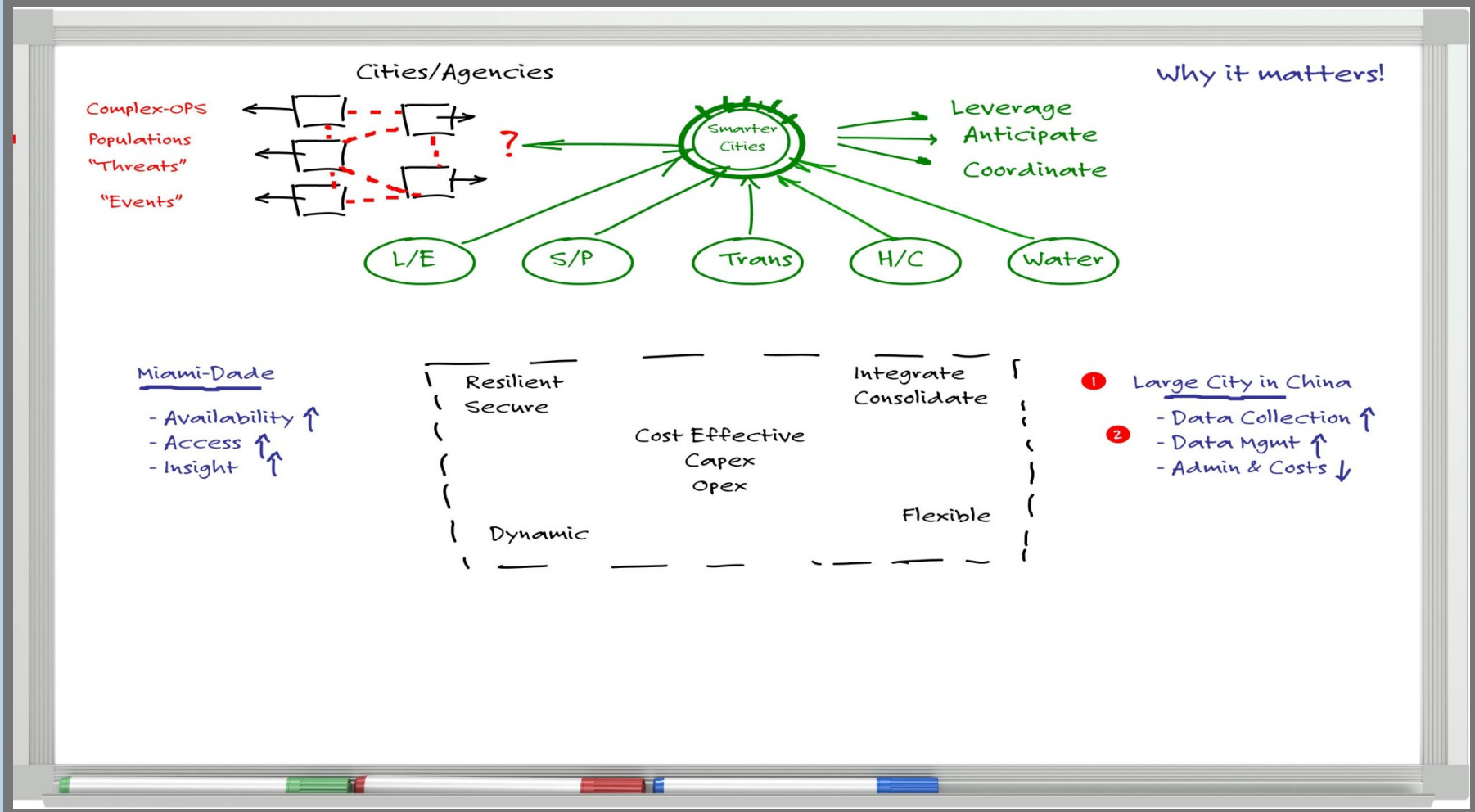
The solution they put in place has provided them with a highly resilient and secure environment that provides a workload optimized approach which ensures that each application maximizes the processing capabilities of the environment.

The solution and infrastructure monitors vehicle traffic by capturing images with surveillance cameras. The organization has 518 surveillance centers scattered across the region, each with 10 to 20 digital cameras that collect images 24 hours a day, seven days a week. This results in 30,000 images amassed each day per surveillance center and a total of 15 million images collected daily.

This massive amount of image data needs to be properly stored. During the nightly backup window, the center's system needs to archive 6.2 TB of data, moving data from storage disks onto storage tapes in a matter of six hours. This mean the system needs to be capable of an archiving speed of 2.6 million images per hour. With their new infrastructure they get the system performance and reliability they needed to handle this complex data challenge.

They gained a highly consolidated and dependable solution that it is certain will keep its mission-critical applications up and running. The flexible IT environment helps them optimize resource use, simplify administration and reduce IT costs. Further, they can use the solution to allocate and deploy virtual environments quickly and conveniently.

Smarter Cities - Example



Smarter Cities - Example

1. **[City and County of Honolulu]**

2. **[Access – Involvement – Costs]**

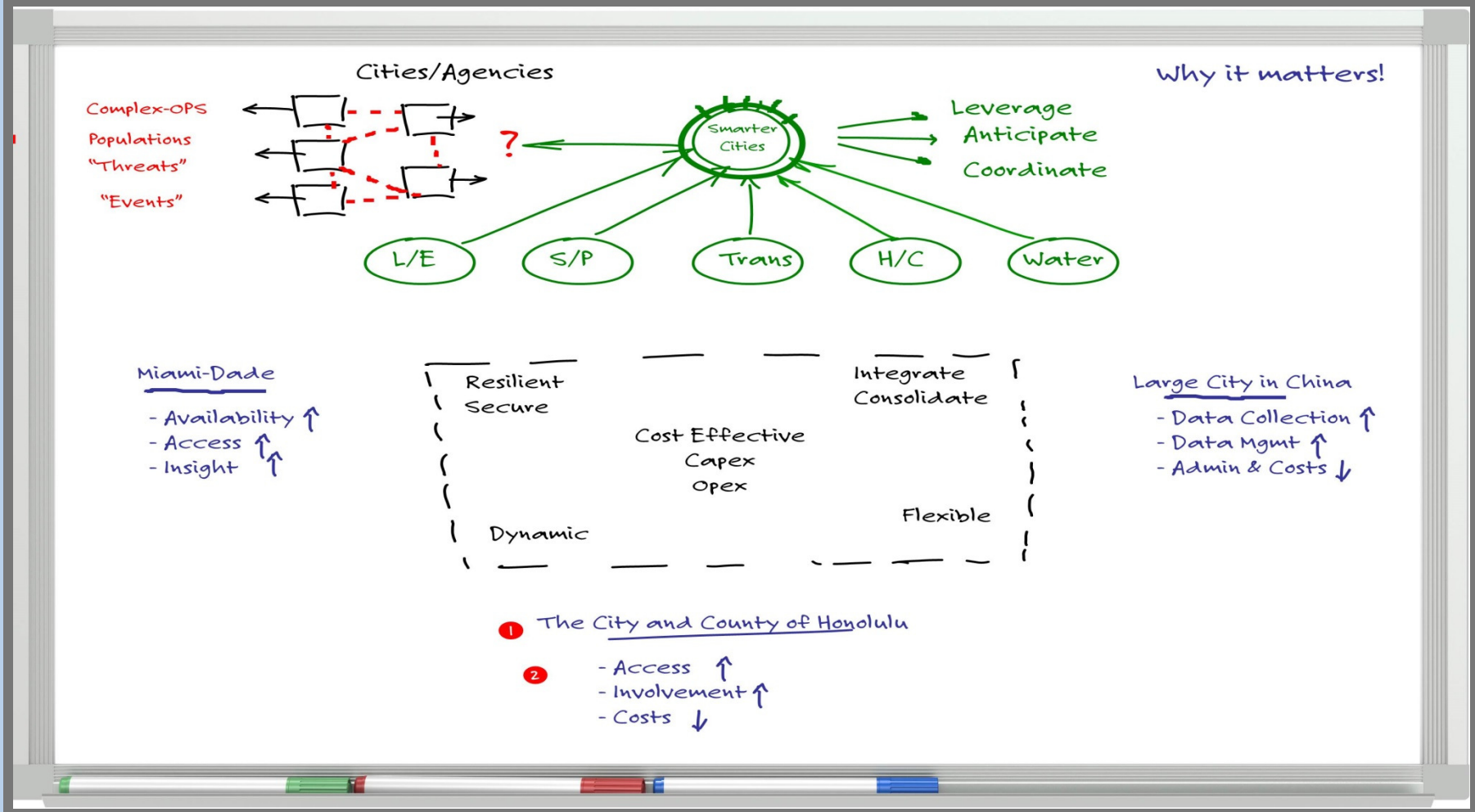
When the city underwent a change in political leadership the new mayor wanted to increase citizen participation in government, improve government transparency and improve operational efficiency. A key was to make government data, including financial data available to citizens—data they could actually use."

To begin this, the city of Honolulu needed an infrastructure which would enable them to consolidate applications and database instances from its various servers. An infrastructure which could help to reduce the time to release new services and also decrease cost. As an example, the city was able to reduce database licensing costs from USD 250,000 to USD 80,000.

The scalable self-service platform allows city employees to develop and deploy open source applications and it empowers the general public to create and deploy citizen-centric applications. One of the more innovative applications supporting citizen involvement is CitySourced Honolulu 311, an application that enables citizens to photograph and pinpoint the location of problems—such as broken street or traffic lights or abandoned cars—and report them to the city.

As a result of the city's new infrastructure, information from its financial systems became available to the general public for the first time—provided in real time in a downloadable format. This enabled new citizen insights into the city's priorities and expenditures through historical financial and budget data. This has enabled citizens—including the media—to see what was really happening within the city.

Smarter Cities - Example



System z - Meeting Key Requirements

What all of these examples had in common is that they fully leveraged …

1 [System z – box - arrows] ... a System z infrastructure. An "open" infrastructure which can support a variety of operating environments including Linux that and the wide-range of Linux-based and other workloads which may be critical to the city.

2 [Circle] … an infrastructure that has the highest levels of resiliency that can minimize service disruption and can provide simplified and thorough disaster recovery. That provides the most secure commercially available environment with built-in capabilities that far exceed any capabilities you would find in alternative platforms like x86.

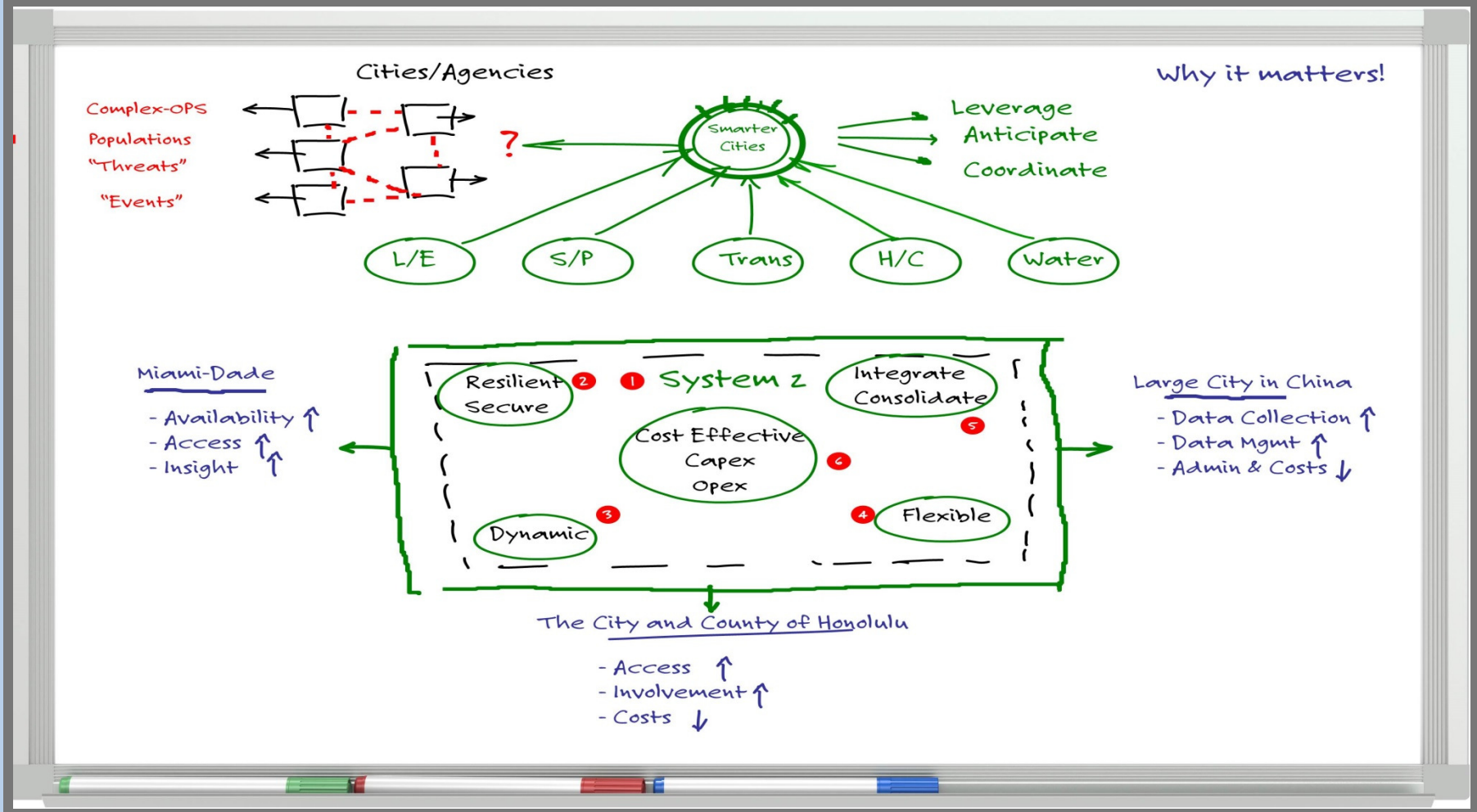
3 [Circle] … an infrastructure that can scale up and down and continue provide the levels of performance required.

4 [Circle] … an infrastructure that provides you with the ability to provision new systems with minimal effort compared to other platforms, enables you to support a Shared Services approach for as many of the workloads as you require with the built-in capability to provide the appropriate Qualities of Service required for each workload.

5 [Circle] … an infrastructure that enables you to integrate and consolidate data from multiple workloads to allow you to conduct analyses that would NOT be possible with other platforms. Analyses that can help to make your efforts even Smarter.

6 [Circle] Finally, an infrastructure that provides exceptional VALUE. You can start with System z to support a number of key workloads at an acquisition price that is very affordable to start often lower than comparable x86 configurations. As other cities have found, System z has also demonstrated a lower total cost of ownership versus x86 or even cloud-based services that can be anywhere from 50 to 80% less, including a proven track record of requiring less power and less space than alternative approaches that would deliver comparable computing capabilities.

System z - Meeting Key Requirements



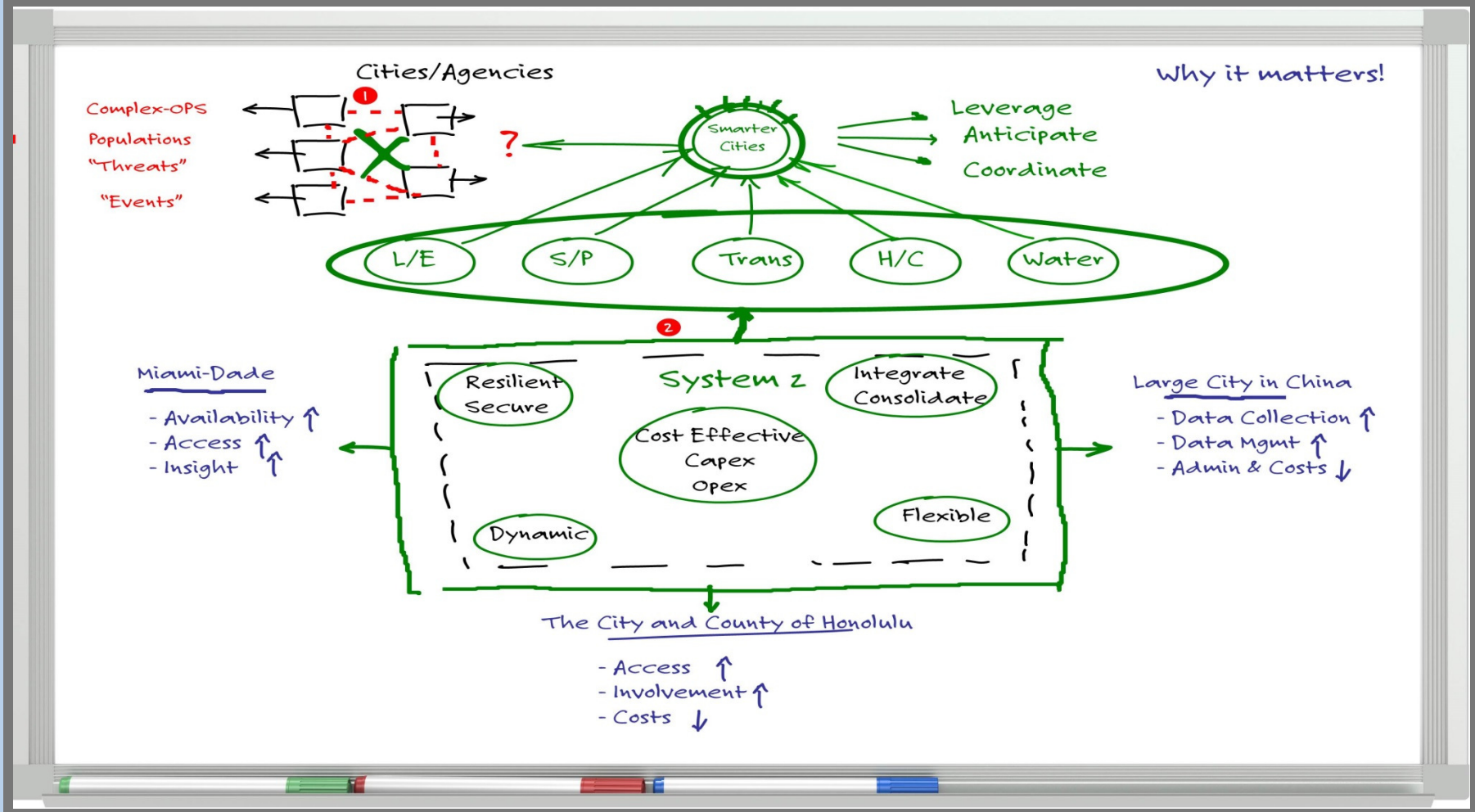
13

Smarter Cities - Bringing it ALL Together

1 ["X"] As we discussed, cities face an increasing number of challenges which are more than likely straining existing applications and systems. The reality is that changing the way you operate is no longer a nice to think about it is fast becoming an imperative. The existing approach of running separate systems that cannot share data, coordinate processes and make it easy to deliver and administer is standing in the way of cities becoming Smarter.

2 [Circle] System z enables a Smarter Cities 'system of systems 'approach. An approach where a city can deliver ALL their key services and not rely on independent environments which can strain scarce fiscal and human resources.

13 Smarter Cities - Bringing it ALL Together



14

Recap and Next Steps

1 [Circle around "it", arrow to – "System z!"] This is precisely WHY System z is so important to Smarter Cities. NO other platform infrastructure – NONE – can provide the depth and breadth of capabilities at the cost – whether it is acquisition or operational cost.

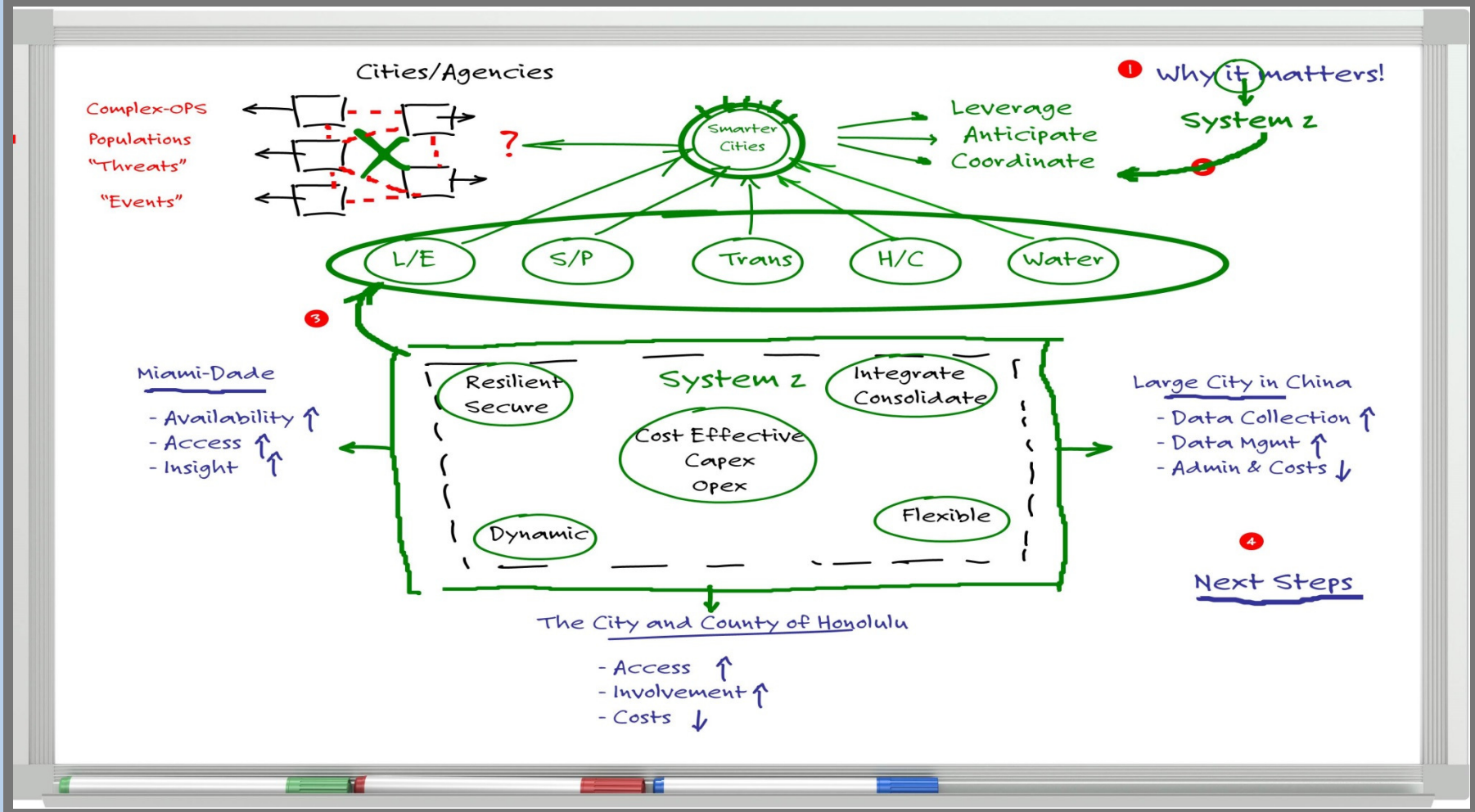
2 [Arrow] No infrastructure can enable you to leverage your data more effectively, to be able to analyze data from across the entire organization to anticipate and act, to be able to understand what is happening across the city to be able to better coordinate activities and cost of city operations.

3 [Arrow] In fact without the right infrastructure together with smarter cities solutions you may not be able to effectively deliver the range of services that your city requires to address the challenges you will face going forward.

4 [Next Steps] Based on what we've discussed I'd like to suggest that we set up a follow-up meeting to review the specific areas that are of most concern to you and your team to determine how a Smarter Cities solution can best meet your requirements.

When can we get together?

14 Recap and Next Steps



Addendum - Next Steps

For Next Steps you might select one of the following.

Smarter Cities Assessment helps customer to understand how to transformation their city to a Smarter City. Work with a Smarter City rep for this workshop.

If cost is a main concern, select one of the following workshops.

- Customer mentioned taking applications off the mainframe - Eagle Study

- Consolidate applications to the mainframe - Eagle or RACE Study

- Reduce mainframe software cost - PRA

- Study total costs of entire IT infrastructure - Scorpion

If your customer needs help with providing true IT cost transparency, aligning the elements of IT TCO to their true costs, usage and value, suggest a Financial Management Assessment (FMA) Workshop.

[NOTE: More information regarding the Studies is available in the Media Library and eLearning - You may also want to contact a member of the TCO group prior to the meeting]

Addendum - Next Steps