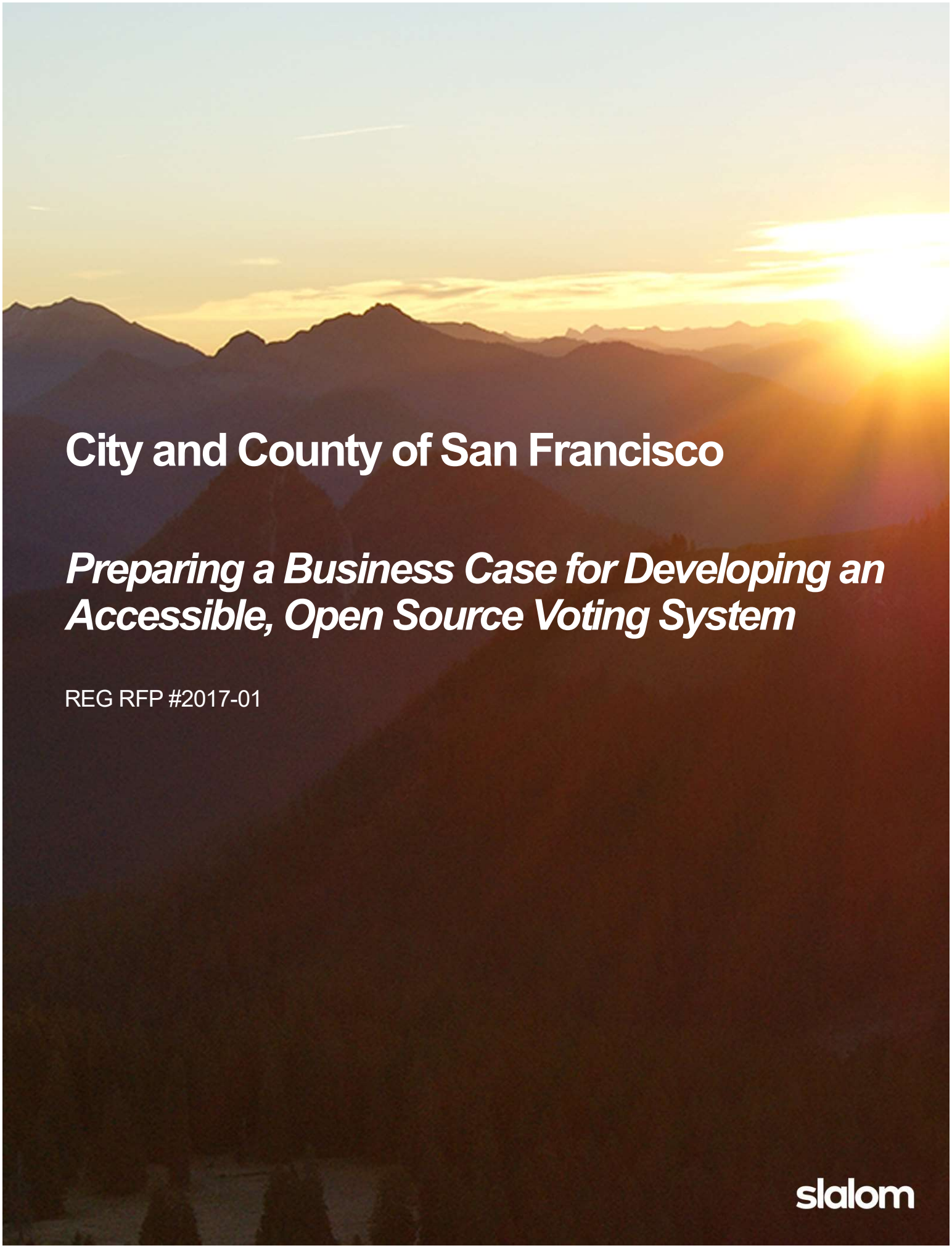


City and County of San Francisco

Preparing a Business Case for Developing an Accessible, Open Source Voting System

REG RFP #2017-01

slalom

Contents

1. Introduction and Executive Summary

Dear City and County of San Francisco Team,

On behalf of all of us at Slalom, we want to thank you for the opportunity to share our proposal for supporting your Open Source Voting Business Case efforts. Your vision for the potential future of voting platforms is truly exceptional and it is something that has created a "buzz" within our office – you would not believe the number of Slalom resources who would like to work on this program. Slalom is uniquely positioned to partner with you on this journey, and we are excited and passionate about our future together.

Who is Slalom and How are we Different?

Our company is headquartered in Seattle, WA and has been operating as a full consulting services provider for 15 years. We have offices in 25 cities across the United States, United Kingdom, and Canada. Over this time and through the openings of each market, Slalom has organically grown to over 4,000 employees. We have the scale, the experience, and the approach to best support your goals. Our vision and our culture are strong as demonstrated by our top ratings in employee and client rankings by nearly every major publication.

We are passionate about our clients and the work we do. We're different – and that's a good thing. Slalom was founded in 2001 to create a new kind of consultancy – one with the scope and scale to tackle our client's largest, most complex challenges, and with a culture that measures our success by our client's success. We are driven to do whatever it takes to make our clients successful.

Slalom is also a local model consultancy comprised of leading, experienced professionals in every market. This means the Slalom team working with you is from the Bay Area. We live in the same neighborhoods, our kids go to the same schools, and odds are members of our team already have friends working at the City and County of San Francisco. Unlike the team tensions that can emerge with many of the traditional consultancies, Slalom will promote a positive culture that raises everyone's game.

Our values are simple, but meaningful. Do what is right, always. Take ownership, and get it done. Focus on outcomes. Fuel growth and innovation.

The traits that we believe differentiate Slalom are:

- We understand how the technical build will be completed, and thus knows the questions to ask to build out the detailed options
- We will be there. Our local resources will be onsite 5 days a week, with no travel-time.

- Our local model allows real-time access to local subject matter experts: Strategy & Planning, Security, custom Software development, project cost and workforce estimations, etc.
- We are focusing on the Public Sector. Slalom became a Federal Government GSA compliant vendor in 2016, followed by a State of California CMAS approved vendor this year. We have multiple Public Sector projects ongoing in the Bay Area today.

What does Slalom Bring to the City and County of San Francisco's Business Case Efforts?

We are responding with a fully compliant proposal within which you will find:

- A track record of success in carrying out business case assessments for complex business and technology projects
- Customers that have been delighted, not only through excellent delivery, but through the dedication and passion of our teams
- A tailored and structured project plan that aligns to your program goals that shows the step-by-step approach to executing the project
- A description of each phase including its purpose, the deliverables that are produced, and the time commitment required from the City and County of San Francisco team
- A transparent approach to providing status and measuring progress
- A focused team of well qualified resources and subject matter experts

We look forward to discussing our proposal with you at greater length during the next phases of this RFP. Please do not hesitate to reach out should you have any questions or require further clarification.

John Pavel

Managing Director
Public Sector

Sarah Duffy

Managing Director
Strategy & Operations

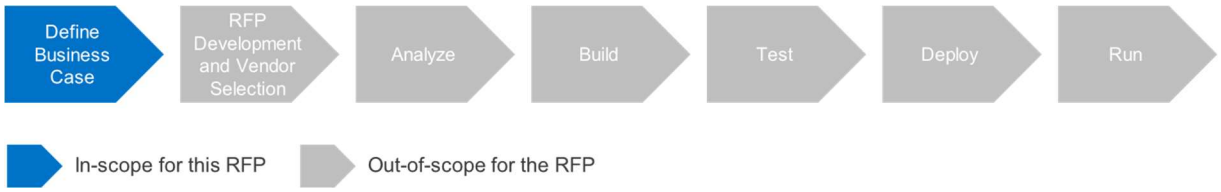
2. Project Plan

2.1. Project Overview

The City and County of San Francisco is embarking on a journey to transform the management of elections with an open-source electronic voting system. Although electronic voting systems have been around for many years, they have been developed by independent vendors whereby the operating model for using them requires that you lease these systems from the vendor. This means the vendor controls the software development but provides inadequate transparency or auditability.

The question at hand for the City and County of San Francisco is the feasibility to develop an accessible, open source voting system which addresses development and post-development matters as well. In other words, whether it's worth developing a platform, most likely utilizing open-source coding, that could replace the need to the current vendor leasing model. We are aware that this could set the standard for elections outside of the City, but to start with, the question focuses on the needs of the local population.

The diagram below depicts the end-to-end journey the City and County of San Francisco is planning to embark on, to build an accessible open source voting system. The first step of this stage gate approach is to deliver a detailed business case to inform the City of its options and the associated costs and timelines.



As you move through the journey, there will be a more detailed analysis of system requirements and the design of a specific solution. The current 'define business case' phase needs to get in to enough detail to adequately answer the go/no-go decision. This means that attention will be paid to the regulations, the organization, as well as the technology.

2.2. Business Drivers

You described in your RFP the principles that you are looking for the solution to deliver on and these all speak to having a robust, cost-efficient solution that can deliver value to voters as well

as those that will be responsible for running the solution. This business case will evaluate the decisions from the perspectives of:

- the overall total cost of ownership over an agreed period of time (e.g. 10 years)
- the relative quality of the outcomes that the solution will deliver
- the difference in risk associated with the option

2.3. Unique Challenges and Critical Success Factors

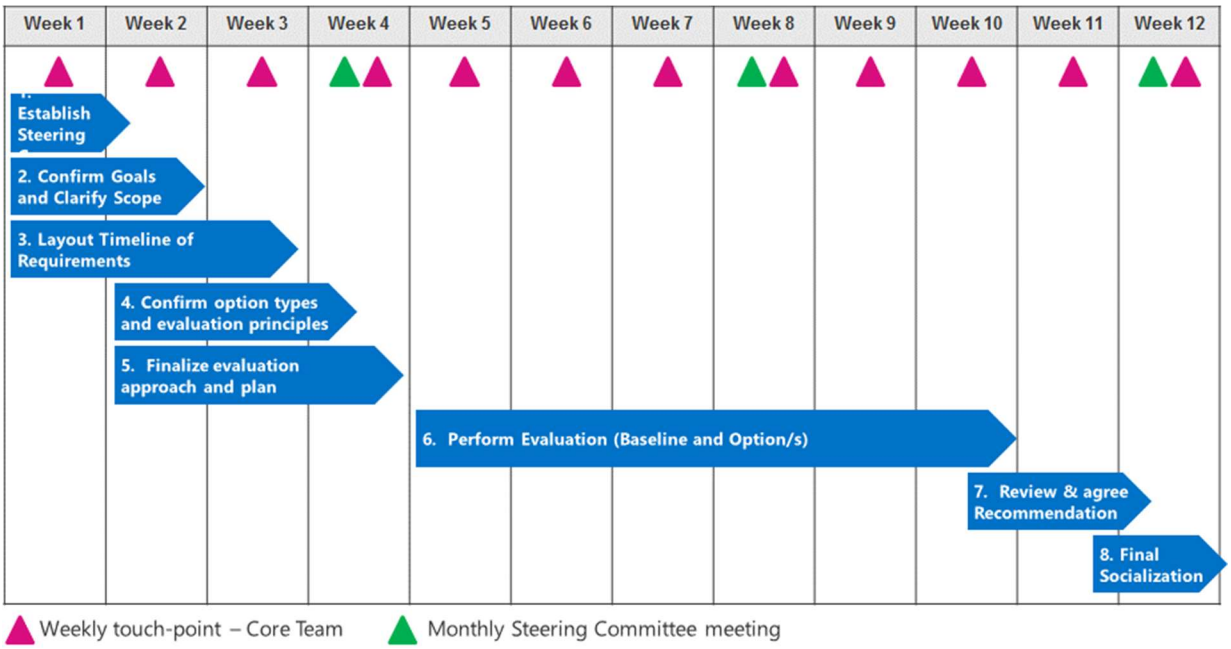
Leading the development of solutions that are at the edge of innovation, the City and County of San Francisco will experience unique challenges. Slalom will bring experience and expertise with Open Source Solutions and innovative Public Sector projects to help drive the vision of a widely adopted, scalable and secure Open Source Voting System.

Area	Factor	Critical Success Factors
Open Source Solution	Open Source Strategy	Account for legal and business considerations, and expectations on Return on Investment in the planning stage. Identify the model of Open Source that will support the goals of the project. For example: 1) Build solution yourself 2) Build solution with new Open Source Software 3) Build solution with existing Open Source Software
	Open Source Governance	Identify best practices for building an open source community, and developing policies, and processes, and specifications to support the solution. Develop Product Management capabilities for open source maintenance, fixes, and enhancements. Often in these projects an *open source specification* is developed and the open source software is an implementation of that specification. This is especially prudent when multiple partners are involved and there needs to be a sync point on what is being built; and, you want community involvement on how it should be designed and function. Developing the spec is the first step before developing an open source version of the software. The benefits of maintaining an open spec follow the same as when utilizing open source software.
	Software Development	Keep solution focused on outcomes by incorporating product development methodologies and agile development.
	Security & Evolving Technology	Consider unique challenges around security and the fast pace of technical evolution, and the opportunity for public-private partnership to build proactive defenses and a resilient solution.
Public Sector Experience	Partnerships & Collaborations	Identify and nurture key public and private partnerships to assist with sustainability and scalability of an Open Source solution.
	Regulatory and Compliance	The ability to realize the solution will be based on proactive planning for regulatory and compliance needs, and identifying key stakeholders to engage early in the project.

2.4. High-Level Business Case Assessment Approach

This project will start with several concurrent activities focused on stakeholder engagement and assessment structuring, before we get into the main evaluation price, and then we wrap up and socialize the decision and plan at the end.

The high-level approach that follows describes the major milestones and timeline to deliver the business case assessment and how each step delivers on the goals for City and County of San Francisco. To ensure transparency, Slalom will meet with the Core Client Team (project sponsor and key stakeholders) on a weekly basis to make key decisions, review deliverables, escalate arising risk and issues. Slalom will provide executive read outs and provide overall project update to the Steering committee on a monthly basis.



For each of the steps noted in the timeline, we describe below what each step means and how it delivers on your goals. Further details are provided in section 2.7.

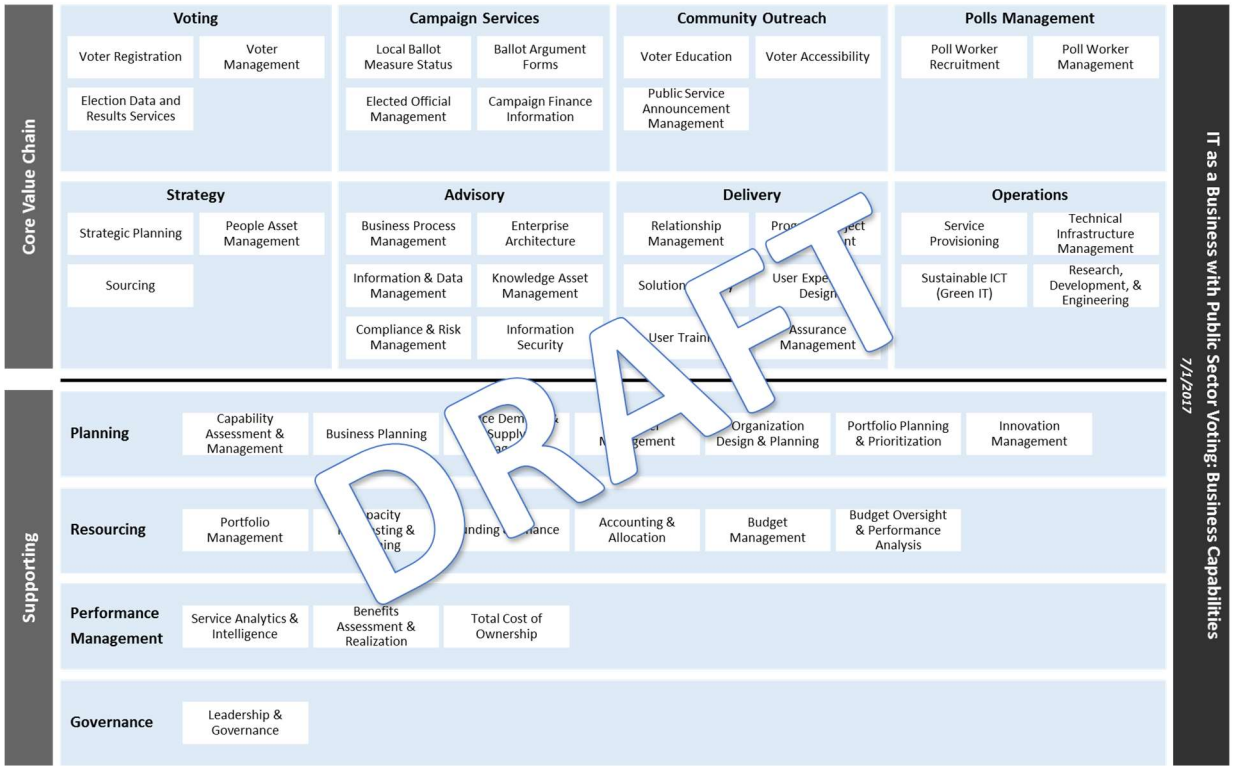
Step	What this means	Why it is important and how it delivers on your goals
1. Establish Steering Committee and Core Team	We identify a core group of stakeholders who have influence over the project's outcome. We will meet with them every week to provide status, share findings, and seek direction for the ongoing evaluation	This governance model has been proven to provide efficient and effective decision making as well as provide clear transparency of progress throughout the assessment

Step	What this means	Why it is important and how it delivers on your goals
2. Confirm Goals and Scope	We make sure that the outcomes that City and County of San Francisco is trying to achieve are well understood and communicated. This could include prioritizing certain outcomes so that we know what matters most. The RFP does lay these out well. It has been our experience that it is a worthwhile exercise to confirm their description as well as what they mean to all parties as different parties often have differing interpretations.	Projects like this tend to have many stakeholders and, possibly competing, goals. By clearly articulating and communicating these, we establish a basis upon which to build out the assessment framework. Clarifying the scope of the question being answered improves the efficiency of the assessment.
3. Layout timeline of requirements	The evaluation of the Baseline *and* the Option will both need to take into account the 'volume' of work that is expected over the next, for example, 10+yrs. This will involve laying out the expected schedule of voting, the known changes to government regulations, the known constraints of existing technology, etc. so that we have a view of the business need over time.	Having a common understanding of what either solution has to deliver on makes a much cleaner and fairer comparative assessment. This is typically the most crucial and sometime most challenging part of the project to complete.
4. Confirm option types and evaluation principles	To make sure that we are on the same page of the baseline option vs. the build option – this involves preparing a description of the option in terms of how it would work, and what City and County of San Francisco's responsibilities would be to develop and maintain these option	This means that the project can accurately and efficiently answer the question at hand, and that we do not get extra/additional options brought into scope late in the project. Also, getting buy in on the actual metrics and scoring approach to compare the options helps hugely with the stakeholder management or the steering committee.
5. Finalize evaluation approach & plan	Once we are aligned on the way we will be comparing the options, we need to agree on the 'how' and the 'who'	This ensures that all the right people are included and we've ensured that we have time scheduled with them.

Step	What this means	Why it is important and how it delivers on your goals
6. Perform Evaluation	Here we use the agreed-upon evaluation framework to compare the choice of: a) maintaining the status quo versus b) the option to create an open source solution. Both options are assessed against achieving the requirements laid out in section 3 above. Both options will require the creation of a high-level project plan to confirm how each will be delivered and maintained over time. This is then used to estimate/forecast a cost for the baseline and build option. Each option is also evaluated for the relative benefit and risk.	This really is the exam question. We get an 'apples-to-apples' comparison of two different strategies across total-cost-of-ownership, benefit, and risk.
7. Review and agree on recommendation	Once the comparison is done, we will create a summary of the two options that lays out the critical differences and the decisions points	This is the opportunity to step back from the detailed assessment and check that the steering committee understands the conclusion. They will have been informed throughout the project, so this will be more focused on: "how do we move forward from here?"
8. Final socialization	To get the decision communicated out more widely, we typically look to establish a change-network with our clients early on, so now we would start using those structures to kick-start the next phase of the journey	Our experience has taught us that control of the messaging surrounding a decision has a big influence on the success of the project. So we want to be transparency and pro-active in communicating the go-forward plan.

2.5. Development of a Capability Model

As part of our approach, Slalom advocates the use of a capability model to anchor the analysis and future state needs. We have found these particularly effective at driving consensus of the business capabilities that a client needs and also focusing where the biggest areas of challenge exist. The below draft will be customized to the City and County of San Francisco as part of the evaluation framework and will form one of our deliverables.



2.6. Engagement Assumptions

Slalom assumes the following items for the successful execution of this project.

Functional Representation:

- The City and County of San Francisco will conduct initial introductions to the necessary business and IT stakeholders required to accomplish this project.
- The City and County of San Francisco will make personnel including subject matter experts available for interviews, meetings, knowledge transfer, documentation and analysis review as necessary.

Active Partnership:

- The City and County of San Francisco will be involved in regular team activities and decisions, help coordinate introductions, meetings, as well as provide influence to encourage cooperation of internal resources.
- The City and County of San Francisco will provide all relevant documents, information, and line of sight to other ongoing efforts to ensure the most efficient, holistic, and quality deliverables.

Stakeholders Meeting:

- Slalom will conduct and facilitate several stakeholder meetings as outlined in section 2.7 Detailed Business Case Assessment Approach. The City and County of San Francisco will provide access to the following necessary stakeholders.

2.7. Detailed Business Case Assessment Approach

The below plan expands on each of the phases detailed above:

1. Establish Steering Committee (week 1)	
Objective:	To secure project sponsorship, identify and engage key stakeholders
Deliverables:	Steering Committee Terms of Reference, Stakeholders List, Communications Plan
City and County of San Francisco Commitment:	1 hour meeting - Project Sponsor and Executives
Slalom SME Time:	n/a
Tasks	
1.1. Identify and confirm key stakeholders (core team as well as steering committee)	
1.2. Organize meetings with stakeholders	
1.3. Define steering committee structure, meeting cadence etc.	
1.4. Determine business case ownership	
1.5. Establish communications structure and cadence within core team and with organization	

2. Confirm Goals and Clarify Scope (week 1)	
Objective:	To gain a clear understanding and agreement of the rationale for the Business Case
Deliverables:	Product Vision**,** Scope Statement, Briefing Pack/s
City and County of San Francisco Commitment:	2 x 1 hour meeting – Project Sponsor and Core Team
Slalom SME Time:	Software Development, Security, Technology Enablement and IT Delivery Leadership SMEs
Tasks	
2.1. Facilitate visioning workshop	
2.2. Confirm and document business case rational	
2.3. Summarize strategic intent	
2.4. Draft briefing pack	
2.5. Perform initial stakeholder interviews	
2.6. Summarize interviews data	

2. Confirm Goals and Clarify Scope (week 1)	
2.7. Review business case principles	
2.8. Draft and socialize scope statement	
2.9. Seek scope agreement with Steering Committee	

3. Layout Timeline of Business Requirements (weeks 1-3)	
Objective:	To understand the true scope of work that either approach/option will have to satisfy over the next 10 years
Deliverables:	Functional and business requirements
City and County of San Francisco Commitment:	4 x 90 min workshops – Project Sponsor, Core Team, IT and Business Stakeholders
Slalom SME Time:	Software Development, Security, Technology Enablement and IT Delivery Leadership SMEs
Tasks:	
3.1. Understand expected changes to State and Federal voting regulations	
3.2. Understand voting populations: • Types • Volume • Needs	
3.3. Review and agree on voting timeline/schedules over next 10 years	
3.4. Understand existing technical constraints • System Architecture • Product Timeline • Integration	
3.5. Review organizational structure and understand workforce growth plans • Roles and responsibilities • Processes impact	
3.6. Seek Steering Committee endorsement on the requirements document	

4. Confirm option types and evaluation Principles (weeks 2-3)	
Objective:	To define and confirm the main evaluation options and the overall evaluation framework
Deliverables:	Business Case and Financial Model Templates, Evaluation Framework
City and County of San Francisco Commitment:	1 hour meeting – Steering Committee
Slalom SME Time:	n/a
Tasks:	
4.1. Define the specific metrics associated with the evaluation principles (e.g. accessibility, security, transparency)	
4.2. Describe and document business options and what it means across people, process, and technology	
4.3. Present and validate the options for assessment to steering committee	
4.4. Define and validate evaluation frameworks (i.e. capability model, business benefits, weighting criteria etc.)	
4.5. Secure business benefits ownership with business owners	
4.6. Define business case structure	
4.7. Agree on financial decision criteria and basic financial assumptions (e.g. NPV, IRR, evaluation period)	
4.8. Review business case structure and evaluation framework with Steering Committee	

5. Finalize evaluation approach/plan (weeks 2-4)	
Objective:	To validate the final evaluation approach, timeline, and data gathering needs
Deliverables:	Business Case evaluation plan
City and County of San Francisco Commitment:	3 to 4 preparation meetings - project sponsor and core team; 1 hour read out meeting – Steering Committee
Slalom SME Time:	Software Development, Security, Technology Enablement and IT Delivery Leadership SMEs
Tasks:	
5.1. Enhance the standard evaluation plan with the framework finalized in prior phase	
5.2. Identify where to find data	
5.3. Confirm personnel to involve in the gathering process	
5.4. Schedule out the various meetings and workshops for evaluating options	
5.5. Present Delivery evaluation approach and plan to with Steering Committee	

6. Perform Evaluation – Baseline vs. Build option (weeks 5-10)	
Objective:	To assess and document the baseline and the build option based on the agreed business case structure and evaluation framework
Deliverables:	Business Case Baseline Assessment, High-Level business requirements

City and County of San Francisco Commitment:	User Stories
	• 1-2 x 90 min workshops with business process owner
	Baseline:
	• 1-2 x 90 min workshops with business process owner
	• 2-3 x 90min workshops with technology team
	• 1 hour meeting with finance lead
	• 1 hour readout to Steering Committee
	Build Option:
	• 6 x 90 min workshops covering with the City and County of San Francisco core team:
	  ○ approach to build/test/deploy/run
	  ○ enhancement strategy
	  ○ communications approach, etc
	• 1 hour with finance lead
	• 1 hour readout to Steering Committee

Slalom SME Time:	Software Development, Security, Technology Enablement and IT Delivery Leadership SMEs
Tasks:	
6.1. Define and prioritize user stories	
6.2. Perform Baseline assessment 6.2.1.Build out project and resource plan 6.2.2.Cost out project and resource plan 6.2.3.Evaluate benefits and risks	
6.3. Perform Option assessment 6.3.1.Assess open source feasibility 6.3.1.1. Determine range of open source model 6.3.1.1.1. Trend research 6.3.1.1.2. Review of funding/partnership options 6.3.1.2. Determine capabilities required for City and County of San Francisco re: Product management 6.3.1.2.1. Standards	

6. Perform Evaluation – Baseline vs. Build option (weeks 5-10)
6.3.1.2.2. Accessibility 6.3.1.2.3. Accuracy 6.3.1.2.4. Auditability 6.3.1.2.5. COTS Compatibility 6.3.1.2.6. Cost Efficiency 6.3.1.2.7. Modular Design Suitability 6.3.1.2.8. Multiple Language Capability 6.3.1.2.9. Ranked-Choice Voting ability 6.3.1.2.10. Security 6.3.1.2.11. System Software Accessibility 6.3.1.2.12. Transparency 6.3.1.2.13. Usability 6.3.1.3. Propose high-level future conceptual design 6.3.1.4. Capture high-level technical and business requirements (Integration, Reporting, etc.) 6.3.2.Build out project and resource plan 6.3.3.Cost out project and resource plan 6.3.4.Evaluate benefits and risks
6.3. Perform business case evaluation
6.4. Draft business case
6.5. Identify risk and Critical Success factors
6.6. Develop business case presentation to communicate numerical

7. Review and Agree on Recommendation (weeks 10-11)	
Objective:	To validate and obtain final buy-in for recommendations from stakeholders
Deliverables:	Final Business Case, Executive Summary, Mobilization Roadmap
City and County of San Francisco Commitment:	3 to 4 meetings with individual stakeholders and 1 read out with Steering Committee
Slalom SME Time:	n/a
Tasks	
7.1. Conduct validation workshop with identified stakeholders to verify credibility of results and obtain buy-in	
7.2. Refine Business Case outputs based on workshop findings	
7.3. Propose benefits tracking KPIs, measurement processes, and reporting	
7.4. Obtain formal final sign-off from steering committee	
7.5. Define and document mobilization roadmap	

8. Final Socialization (weeks 11-12)	
Objective:	To socialize the business case and final recommendations with all consulted stakeholders
Deliverables:	Action Plan
City and County of San Francisco Commitment:	2-hour Roadshow - Steering Committee and key leaders for implementation
Slalom SME Time:	n/a
Tasks:	
8.1. Draft targeted communications	
8.2. Prepare business case roadshow	
8.3. Deliver business case roadshow	
8.4. Draft action plan based on roadshow inputs	
8.5. Socialize action plan with Steering Committee and stakeholders	

3. Contractor/Sub-Contractor Qualifications

3.1. Slalom Contact Details

John Pavel, Managing Director, Public Sector

Slalom Consulting, 201 Spear St #1550, San Francisco, CA 94105

Telephone Number: 925-204-7312, Email: john.pavel@slalom.com

3.2. Slalom Core Services

As a leading business and technology consulting firm, we are able to deliver solutions to clients leveraging cross-disciplinary teams with deep functional, technical, and industry experience. We provide end-to-end solutions and services to our clients.

Delivery Leadership

Project & Program Management
Agile Transformation & Delivery
Business & Technical Analysis
Quality Management

Technology Enablement

Software Engineering & DevOps
Content & Collaboration
Next Generation Infrastructure
Security & Compliance

Organizational Effectiveness

Process Excellence
Change Management
Organizational Design
Learning
Talent
Culture

Information Mgmt & Analytics

Data Visualization & Discovery
Information Strategy
Data Management
Business Intelligence & Analytics
Information Governance

Customer Engagement

Customer Insight & Strategy
Differentiated Digital Experiences
Marketing Execution
Customer Innovation Facilitation

Products & Innovation

Digital Strategy
Experience Design
Interactive Engineering
Product Incubation
User Experience & Visual Design

3.3. Slalom Recommended Team

Two full time resources for the duration of the project (12 weeks) with an additional approximate 100 hours of targeted Subject Matter Expert time for technical expertise.

3.4. Selected Technology Assessment Projects

Slalom has a deep expertise and established methodology to perform Technology Assessment. The table below includes selected Technology Assessment Projects.

Technology Assessment Selected Project # 1	
Client	Utility Client
Project	Business Case for Customer Data Warehouse and Analytics Services Migration
Status	Completed
Relevance to this RFP	Technical Assessment, Business Case Development

The client wanted to leverage more of the customer data for better marketing and operational decisions. The client engaged Slalom to assess feasibility of migrating externally hosted Customer Data Warehouse as well as analytics services around customer data to an in-house solution

Slalom conducted a rapid assessment to analyze existing processes, data analytics services and total cost of ownership (TCO). Based on the interviews with the users and impacted stakeholders, Slalom developed a vision for the future state and identified gaps in achieving the vision. Keeping vision in mind, the team developed a multi-year roadmap to plan future state technology solution and organizational structure to enable the in-house customer data analytics

Slalom developed a business case which had four major components:

1) Technical Feasibility – key questions addressed:
    a. What's the design of the technical architecture?
    b. What infrastructure investments will have to be made?
    c. Can we achieve the analytical capabilities in-house?
2) Organizational Considerations – key questions addressed:
    a. How would the in-house analytics team look like?
    b. What will be the operating procedures?
    c. How can we ensure growth of the 'data culture'?
3) Financial Viability – key questions addressed:
    a. What will be the total investments needed, and the cash flow?
    b. What are the financial metrics (e.g. NPV, ROI, pay-back period, etc.)?
    c. What are the budget/ head count constraints?
4) Overall alignment with the client's overarching strategy

The client has started working on the roadmap by initiating a Proof of Concept project on building marketing analytics in-house

Technology Assessment Selected Project # 2	
Client	Global Entertainment Business
Project	Operations and Technology Infrastructure Assessment
Status	Completed
Relevance to this RFP	Operational Assessment, Technical Infrastructure Assessment, Roadmap & Recommendations

The client sought to clearly define the scope & impact of operations and systematically identify improvement opportunities that enable the business to execute their strategy while driving revenue and productivity improvements.

Slalom partnered with the client to identify the current pain points and identify improvement areas, defined a future state based on key value drivers, performed a gap analysis, prioritized key recommendations and developed a strategic roadmap and execution plan.

Slalom identified strategic opportunities that enabled the client to leverage technology to solve business problems and drive innovation for the business.

Technology Assessment Selected Project # 3	
Client	Technology Client
Project	Implementation Process Analysis & Operational Assessment
Status	Completed
Relevance to this RFP	Technical Assessment, Roadmap & Recommendations

The client was finding it increasingly difficult to meet its client expectations for time-to-value for its Integrated Fulfillment solution. The client was seeking a partner to analyze its Integrated Fulfillment Implementation process to identify efficiency improvements which will support its goal to deliver value to its customers as quickly as possible after signing up for service with minimal errors.

Slalom performed a detailed analysis of the client Integrated Fulfilment solution, assessing people, process and technology alignment to identify and remediate pain points. Slalom provided short-term improvement recommendations enabling the client to achieve a 10-20% overall efficiency improvement by end of 2017.

Technology Assessment Selected Project # 4	
Client	eCommerce client
Project	ERP Technology Assessment
Status	Completed
Relevance to this RFP	Technology Assessment

The leadership team believed their existing ERP solution was not able to support the targeted business growth scale and was looking to identify a new ERP solution and address many key feature gaps from their current solution.

Slalom's team performed an operational assessment of the client's current ERP solution. Slalom conducted interviews with executive leaders from the CFO, VP of Marketing, VP of Sales and Product Management, VP of Warehousing, Director of IT, and other Subject Matter Experts to develop a holistic view of the client's enterprise resource planning capabilities. The team mapped these to key pain points and improvement ideas and formulated its recommendations to deliver to the Executive Team

Slalom was able to quickly identify that the client was not suffering from a technology problem but lacked ownership and accountability for its existing ERP solution. Slalom recommended making changes to the client's current direction and focusing first on defining key process requirements and role and responsibility definitions for ERP effectiveness. Using this insight, the client is now better able to assess fit for its existing ERP solution (SAP Business One) and define enhancement criteria to deliver lasting value without the expense and risk of a "rip and replace" approach.

3.5. Selected Case Studies

Case Study # 1

Project Name	California Energy System for the 21st Century
Project Timeline	January 2015 to September 2019
Project Budget	$33 million over five years (2015-2019), enabled by California Senate Bill 96 and the CA Public Utilities Commission.
Client	Pacific Gas & Electric (PG&E)
Industry	Power & Utility

Project Background

CES-21 is a cybersecurity research and development program directed by the California Public Utilities Commission (CPUC) and the California Legislature. It is a collaborative effort between three California-based investor-owned utilities (IOUs) and Lawrence Livermore National Laboratory (LLNL). The main objective of CES-21 is to explore the next generation of Industrial Control Systems (ICS) cybersecurity, in the form of machine-to-machine automated threat response (MMATR), to protect electric grid infrastructure from emerging cyberattacks. Program research, development, & demonstrations (RD&D) leverages automation methodologies, data integration, advanced modeling, simulation, and analytics, as well as virtual and physical test beds, to provide tools and approaches for enhanced grid security and flexibility.

Project Approach

Slalom has participated in CES-21 as part of PG&E's team, bringing expertise in Security, Software and System Development, and Program Management. Since the project kickoff in 2015, Slalom has contributed to the governance, strategy and direction of the program by covering PG&E roles of Security SME, Technical Manager, and Project Manager. In these positions Slalom has led two complex business case initiatives, working closely with the program's public and private sector partners to assess options, and to guide decisions and successful implementations.

1. 2016 Modeling & Simulation
    - Slalom led the development of a business case with cost-benefit analysis to articulate how the advanced modelling platform and simulation engine can be used to evaluate California's transmission system's resilience against cyber threats.
    - A key consideration in the investment of Modeling and Simulation was the contribution to open source power transmission simulation software, and the future roadmap and relevance of the platform in support of key cybersecurity efforts.
2. 2017 Physical Test Bed
    - Slalom led the development of a business case to understand the feasibility of building a physical testbed environment, including substation equipment to test for vulnerabilities and potential mitigations.

- A key consideration in the business case was the ability to contribute to open source development of Indicator and Remediation Language (IRL). IRL is a core component of a MMATR capability.
- The eight-week effort included an assessment of costs, schedule and partnership feasibility. Post-project maintenance (licensing, enhancement, support), testing and business needs were factored into option analysis and implementation design.

Results

The CES-21 program leverages automation methodologies, data integration, advanced modeling, simulation, and analytics, as well as virtual and physical test beds to provide tools and approaches for enhanced grid security. The project will extend the research on advanced threat detection and automated response for application across all CES-21 California IOU participants, and, ideally, private sector vendors who can productize such research for the wider U.S. utility community.

Case Study # 2

Project Name	Technology Assessment
Project Timeline	6 weeks – January 2017 to February 2017
Project Budget	$100k
Client	The California Corrections Peace Officers Association (CCPOA)
Industry	Public Sector

Background

The California Corrections Peace Officers Association (CCPOA) was in the process of evaluating their current ability to support their 40,000-person membership, the law practice and the business operations with the current systems they have in place.

Project Approach

Slalom conducted a review of the current CCPOA business and technical considerations to support CCPOA's desire to improve its ability to support its 40,000-person membership. This covered the law practice and the business operations while lessening the current Information Technology (IT) involvement. The goals were to:

1) Improve the data quality in its systems that support the organization and the membership

2) Improve the performance of its reporting that supports the organization

3) Determine whether to enhance their existing system and /or purchase a new system to better support its employees

Results

The results of this Technology and Business Process Assessment Roadmap enabled CCPOA to make informed decision-making about options to replace, improve and/or integrate current applications and hardware that will be robust, secure and that CCPOA can maintain to achieve its mission and goals.

Case Study # 3

Project Name	Next Generation Enterprise Collaboration Roadmap
Project Timeline	10 weeks
Project Budget	$325k
Client	One of the largest architecture firms in the world
Industry	Construction

Background

To meet evolving market needs, the client needed a collaboration and content management strategy and technology infrastructure to support its future business vison, where each and every person in their firm could draw on the wisdom and experience of their colleagues in the design of modern, sustainable, and innovative buildings.

Project

Slalom partnered with the client to develop a next-generation Enterprise Content Management & Collaboration System, unlocking technology as a competitive differentiator – now, and for years to come. The cross-practice team including experience design, technology enablement, delivery leadership, organizational effectiveness and infrastructure SMEs, delivered a comprehensive Enterprise Content Management Roadmap & Vision, aligning people, process and technology.

Results

Slalom delivered a comprehensive Enterprise Content Management Roadmap & Vision including:

- Research findings
- Conceptual interfaces
- A proposed technology framework and implementation strategy
- An adoption strategy, coupled with a future state operating model

3.6. Minimum Qualifications Worksheet – APPENDIX D

SECTION IV. A.	REQUIREMENT	RESPONSE
1	Experience in three or more large projects within the last ten years for which the proposer evaluated options for developing or implementing technologies or software to meet specific operational requirements	Number of Projects: >100 Year began such projects: 2007
2	Experience within the last ten years in preparing three or more written assessments of development models for large technical and/or software development projects, which included costs and time lines.	Number of Projects: >100 Year began such projects: 2007

4. References

Case Study #1: California Energy System for the 21st Century

Client Contact Details

Name: Joe Sagona

Title: Senior Director, Cybersecurity

Address: 77 Beale Street, San Francisco CA, 94105

Telephone Number: 415-973-8099

Email Address: jc12@pge.com

Case Study #2: CCPOA Technology Assessment

Client Contact Details

Name: David Sanders

Title: Chief Operating Officer and General Counsel

Address: California Correctional Peace Officers Association, 755 Riverpoint Drive, West Sacramento, CA 95695

Telephone Number: 916-372-6060

Email Address: david.sanders@ccpoa.org

Case Study #3: Next Generation Enterprise Collaboration Roadmap

Client Contact Details

Client contact details to be provided upon request

5. Disclosures

5.A. Disclose any pending investigation, enforcement, or disciplinary actions of the Contractor or subcontractors by any regulatory body:

To the best of the Company's knowledge, there is no pending investigation, enforcement, or disciplinary actions against Slalom, LLC or its subcontractors by any regulatory body

5.B. Describe any client relationship that could be viewed as a potential conflict of interest relevant to this project. Please interpret this question broadly.

To the best of the Company's knowledge, there are no client relationships that could be viewed as a potential conflict of interest relevant to this project

6. Fee Proposal

ITEM	QUALIFICATION	RESPONSE
E.1	Provide one-time cost for Phase 1, Preparing Business Case	$175,000 All local resources, no travel expenses