The Project Charter

Project Title: VDI Data Center Design and Build

Project Sponsor: South Alberta Data Centers Inc. (SADC Inc.)

Project Customer: The City of Calgary

Project Manager: Moe Yousof

Document History:

Revision Number	Date of Issue	Author	Description
Version 0.9	October 27th, 2014	Moe Yousof	Initial Draft
Version 1.0	November 3rd, 2014	Moe Yousof	Executive Committee Review

1. Background

The move towards cloud computing has become prevalent in the Canadian workplace for all the benefits it provides over conventional computing. Cloud computing reduces total cost of ownership, facilitates easier access to applications and data, provides better control for administration of the IT infrastructure, and helps the environment through offering greener and more economic desktop structure. Virtual Desktop Infrastructure (VDI) is the implementation that the City is adopting to move into the cloud, and this move calls for a data center to work as the beating heart of this infrastructure.

The City of Calgary is sponsoring a project to designing and build the VDI Data Center. This data center will host more than 10'000 virtual machines and 15'000 user accounts, and will provide access to all the applications that is used by the different business units of the City.

The new VDI-DC will also allow the storage of all VM images and user data to be consolidated and re-organized from several storage islands into one physical and logical unit. This gives the IT infrastructure of the City the scalability, performance, fault tolerance, and manageability required to meet current and future needs. The storage cluster will also eliminate the need to disrupt services when hardware upgrades are required.

The directive for this initiative was provided by the IT Planning group and the City Advisory Committee and was approved by the Steering Committee and the City Council on the 15th of September, 2015.

2. Purpose and Description

The purpose of this project is to build a data center facility. It will start with the planning and design phase that is then followed by the build and construction phase.

The site of the data center will be provided by the City of Calgary. The site will fulfill all the site selection criteria that is provided in document to the City. The design and build of the VDI Data Center will be implemented by South Alberta Data Centers Inc.

After the new data center gets to be commissioned, all current virtual machines (VMs) and related data stores will be migrated to the new centralized data center. South Alberta Data Center Inc is contractually obligated to provide continuous service to it is customers. As the interruption is unavoidable, the goal of this project will be to control and to minimize the interruptions to the current services when migrated to the new data center.

3. Scope

3.1 In scope

The following items are included within the scope of the project:

- Gather and compile all the business and technical requirements that will be used to design, build, and operate the VDI-DC.
- Inspect and prepare the site that will host the VDI-DC and make sure it complies with the site selection criteria that is provided to the City.
- Prepare all the plans and designs of the VDI-DC that adheres to the business and technical requirements, provide a balance between performance, availability, stability, data protection, and costs, and that is based on a scalable hardware infrastructure to supports any expansion of the facility to meet with the future needs of all business unites of the City.

- Provide and implement the structural, electrical, mechanical, and networking components that form the physical foundations of the VDI-DC.
- Develop a disaster recovery plan for the VDI-DC. Note: Implementing the disaster recovery plan will be a separate project.
- Test and commission the VDI-DC.
- Migrate systems, applications and other services (physical and virtual) running on equipment on other data centers to the VDI-DC.

3.2 Out of scope:

The following items are specifically excluded from the scope of the project:

- Relocating or moving any equipment or furniture provided by the City to the site of the VDI-DC.
- Planning, designing, and building a data center that will be used for any other purpose besides the Virtual Desktop Infrastructure needs of the business unites of the City.
- Training for staff that will be operating the facility.
- Developing operational processes that will be used by the facility.

4. Deliverables and Milestones

The following is a list of the project deliverables and milestones:

- Planning and Communication

- Prepare and Prioritize Facility Requirements (Business and Technical)
- Prepare Workload Assessment Document
- Develop Project Management Plan
- Develop Communications Plan
- Develop Change Management Plan
- Develop Quality Control and Assurance Plan
- Develop Risk Mitigation Plan
- Develop Migration Strategy Plan

- Develop Disaster Recovery Plan
- Prepare Project Budget Outline and Details

- Quality Control and Assurance

- Assign Members of Quality Control and Assurance Team

- Contractor and Vendor Selection

- Prepare Selection Criteria
- Initiate Request for Proposals
- Review and Evaluate Request for Proposals
- Select Contractors and Vendors

- Site Preparation

- Complete Site Inspection
- Plan and Design Floor and Layout
- Build and Install Floor and Layout

- Facility Requirements

- Estimate and Design Electrical Wiring and Cabling Requirements
- Build and Install Electrical Wiring and Cabling
- Estimate and Design Power Requirements
- Build and Install Power Equipment
- Estimate and Design Standby Power Requirements
- Build and Install Standby Power Equipment
- Estimate and Design Cooling Requirements
- Build and Install Cooling Equipment
- Estimate and Design Fire Protection and Suppression Requirements
- Build and Install Fire Protection and Suppression Equipment

- Estimate and Design Networking Requirements
- Build and Install Networking Cables and Equipment

- Servers Requirements

- Determine Data Center Capacity, Tire Level, and Servers Requirements
- Plan and Design Scalable Structure of the Facility
- Procure Servers and Racks
- Install Racks and Servers

- Facility Commissioning

- Commission a Fully Operational Data Center that Meets and Exceeds the VDI Needs of the City of Calgary
- Benchmark Report to Validate Successful Operation

- VMs and Data Store Migration

- Execute Migration Plan
- Benchmark Report to Validate Successful Migration

- Closing Project

- Prepare Project Closing Report

5. Funding and Budget

The project is totally funded by the City of Calgary. Total budget approved for the project is $4 Million. Budget outline and details will be prepared and approved in a separate document.

6. Timeframe and Schedule

The project official start date is November 1st, 2015. The project is estimated to be completed in 5 months and the end date of the project is designated on March 31st, 2015. Detailed schedule will be develop separately.

7. Approach

The approach used for this project includes the following:

- South Alberta Data Center Inc. (SADC Inc.) will be in charge of the management and coordination of all activities, tasks, and sub-project across the process of designing and implementing the VDI-DC. SADC Inc. will be responsible for:

  o Developing and maintaining the overall project plan and schedule.
  o Documenting and managing issues and risks across all teams.
  o Establishing project management templates and repeatable processes to manage the VDI-DC project.
  o Establishing standard migration strategies, templates, and repeatable processes

  o Make the migration process as efficient and low risk as possible.

- SADC Inc. will be in charge of designing the VDI-DC and overseeing its implementation through selected contractors and vendors.
- SADC Inc. will be in charge of developing the the VDI-CD disaster recovery plan.
- SADC Inc. alongside with contractors and contractors will be responsible for planning the VDI-DC sub-projects.
- SADC Inc. will be coordinating with the IT Services from the City of Calgary to monitor schedules and budgets, assist with resolving issues and risks, and plan and execution migration of existing VMs and data stores.
- Migration to the VDI-DC must use low risk and thoughtful approaches to avoid unplanned outages.

8. Assumptions

Assumptions for this project include:

- Project site will be provided by the City of Calgary and will meet the site criteria specified in the site selection document
- Current network infrastructure will be sufficient to meet the needs of the centralized VDI data center
- The City of Calgary IT Services resources and staff will be available when and as they are needed
- Planning, design, server procurement and installation, and management consultancy of the project will be provided directly by SADC Inc.
- Vendors will be contracted to implement structural, electrical, mechanical, and networking requirements of the project
- Budget will be available on time and as scheduled and approved
- The Scope of the project is limited to that described in this charter

9. Dependencies

Dependencies for this project include:

- The City of Calgary IT Services
- The City of Calgary Corporate Security
- The City of Calgary Corporate Assets

10. Constraints

Constraints for this project include:

- Project site provided by the city needs to be handed over to the project team before December 1st, 2014

11. Risks

The project will have a Management Consultant team that will provide quality control and be in charge of quality assurance. This team will continually evaluate and assess project risks and make sure all project requirements are met as defined in the project plan.

Initial risks to this project include:

Risk	Probability	Impact	Mitigation Strategy
Project cost exceeds assigned budget	4. Very Low	1. Severe	Management Reserve will be used to avoid major impact. Initial capacity of servers will be reduced if Management Reserve did not cover extra cost, provided that structural and technical design will be kept fully scalable.
Design faults due to capacity or reliability of power, cooling, or fire suppression systems	4. Very Low	1. Severe	Power, cooling, and fire suppression designs and implementation will be contracted to vendors with solid business record. A management consultant team will be closely monitoring quality of external vendors and assure they all meeting or exceed project minimum requirements.
CoC Corporate Security delay in tasks require their approval or interference	1. High	2. Significant	Work closely with CoC Corporate Security to keep them updated about tasks that require their interference. Get their approval about these tasks beforehand to prevent any delay of project implementation.
CoC ITServices resources and staff not available according to schedule	2. Medium	2. Significant	Work closely with CoC ITServices to keep updated about their recourses and staff availability. Add external recourses when CoC ITServices are not available for tasks on critical path.

Migration of critical business units interrupt their critical operations	2. Medium	2. Significant	Implement the Migration Strategy plan and closely monitor the migration process until completed and tested successfully both by the technical team and the business unit personnel.
Project site is not handed over on scheduled time	3. Low	2. Significant	Inform CoC that delay in handing over project site will impact overall schedule. Fast Track project schedule when possible to reduce impact and Crash project schedule if resources are available to meet deadline.
Delay in RFP process	3. Low	2. Significant	Closely monitor RFP process to prevent any major delay in reviewing and selecting vendors and contractors.
Present network infrastructure does not meet minimum requirement for operation of the VDI-DC	3. Low	2. Significant	Fully inspect CoC network infrastructure connect to the VDI-DC site and assess its capacity. Immediately report any shortage of capacity and request crash upgrade of short segments.
Flood	4. Very Low	2. Significant	Implementation will be significantly impacted by flood and there is very little that can be done about that. However, structural and technical implementation of the VDI-DC is going to based on flood resistant designs as the operation of the data center is require to continue in case of flood hits the city for critical business unit to efficiently work and operate at such times. The management consultant team will monitor implementation of designs to assure they meet requirements for flood resistance.

CoC delay in moving equipment provided by them to be used at the VDI-DC	3. Low	3. Moderate	Inform CoC Corporate Assets about equipment move tasks that are required to be completed by them. Follow up with them to make sure tasks are completed according to schedule agreed upon.
CoC delay in moving furniture provided by them to be used at the VDI-DC	3. Low	4. Minor	Inform CoC Corporate Assets about furniture move tasks that are required to be completed by them. Follow up with them to make sure tasks are completed according to schedule agreed upon.

12. Acceptance Criteria

There are 7 criteria that are required for the project to be accepted at handover:

1. Design and implementation of the VDI-DC adheres to the business and technical requirements collected from all business units of the City of Calgary.
2. Structural implementation of power, cooling, and fire suppression of the VDI-DC adheres to Tire 3 of data center designs.
3. Structural implementation of the VDI-DC adheres to ASCE/SEI 24-05 standards of flood resistant designs.
4. Structural and Technical implementation of the VDI-DC is scalable to supports expansion of the facility to double of the initial required workload.
5. All VMs and data stores currently in operation are migrated to the VDI-DC.
6. The functionality of services offered by the current VMs and data stores after being moved to the VDI-DC are retained as they were before the move.
7. Outages of services caused by the migration are kept to a minimum.

13. Stakeholders

A registry of all internal and external stakeholders will be prepared as a separate document and will include contractors and vendors selected through the RFP process.

14. Communication Plan

A meeting will be held on the first business day of every week throughout the project lifecycle to discuss project progress and any issues related to it that require a stakeholder attention. These meetings will be attended by the members of the executive committee and a representative from each contractor or vendor. Any other stakeholder will be invited to attend the meetings as needed or required.

An email will be sent out biweekly to all stakeholders to inform about the progress of the project. Details communication plan will be prepared as a separate document.

15. Governance and Decision Rights

Project leadership expects project level decisions to be made and project activities to be completed at the lowest possible level within the project structure. Issues, regardless of where they come from or how they surface, will be reported to the appropriate team lead to be logged and managed.

Risks affecting the project can be suggested and reported by anyone but require the project manager approval to officially open a project level risk.

Issue, risk, and change management will follow a standard process that will be described in separate project documents. However these items will be escalated to the executive committee or the the executive sponsor for action by the project manager depending on their severity and time sensitivity.

Any email or voice message sent to the executive committee chairman or the project executive sponsor that requires a decision to be made will specify a decision date or time within reasonable limits. If the project manager received no answer from the executive committee chairman or the project executive sponsor by the specified date or time this will imply approval on decision and the project may continue. If the executive committee chairman or the project executive sponsor does not approve the decision or requires further clarification they must contact the project manager within the specified timeline to avoid any delay in schedule.

17. Approval

The project charter has been reviewed and accepted as written. Approval is given to move forward with the project as outlined in this document.

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Celine Dion   Date

Project Executive Sponsor

South Alberta Data Centers Inc.

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Moe Yousof   Date

Project Manager

South Alberta Data Centers Inc.