INFC Smart Cities Communities Support Program Proposal & COMP 695 Final Assessment

Computer Science 695: Research Methods in Information Systems
M.Sc.(IS) Program, Athabasca University
Professor: Dr. Vive Kumar
Submitted on: July 24, 2018
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Contents

REQUIREMENTS ➔ WHO CAN APPLY? Notes & Responses

To be eligible, an organization must be not-for-profit and have experience working across multiple sectors (private, public, and civil society).

- **Notes: Organization must be not-for-profit, experience with multiple sectors** [1]
    - The main applicant, Mickael Yusufidis, is approaching the Infrastructure Canada Smart Cities Communities Support Program (and team) as a student of Athabasca University MASTER OF SCIENCE IN INFORMATION SYSTEMS [2]
    - The main applicant, Mickael Yusufidis, has 18 years of experience in the banking/finance domain working for TD Bank Group – Technology through (1998-2016)
        - (CV) LinkedIn Profile: Mickael Yusufidis [3]
    - The main applicant, Mickael Yusufidis, is being supported by Alex Gedala (CEO of Redlizard Studioz) [4], formerly peers at TD Bank Group.
        - Alex Gedala has experience working with the public and civil society, please refer to the ACCESSING ESTABLISHED NETWORKS section for more details.
        - (CV) LinkedIn Profile: Alex Gedala [5]
        - Redlizard Studioz and Alex Gedala are to be considered as a primary source of technology subject matter expertise and staff augmentation as required.
    - The main applicant, Mickael Yusufidis, proposes that any of the following options be considered, should INFC agree that any of the proposed streams of eligible activities be of value add to the Smart Cities Communities Support Program, in order of preference
        - Mickael Yusufidis will pursue working through the logistics and invest in establishing an NPO
        - Explore opportunities to work with Athabasca University and affiliated NPOs
        - Align with and or collaborate/partner with NPOs per INFC's direction/guidance

An organization must also either have the following characteristics or must appropriately demonstrate in its application its plan to acquire them:
Notes: [1]

1. *Have established networks and expertise at the local community level and/or with Indigenous populations;*
    - Please refer to the ACCESSING ESTABLISHED NETWORKS section for details
    - Important: It is highly recommended to explore collaborating / partnering with Athabasca University with the express purpose of identifying member of the Indigenous community who are alumni and or students seeking opportunities for employment

2. *Be capable of operating at a pan-Canadian level and in both official languages;*
    - Mickael Yusufidis resides in Ontario, Canada (Central through East Coast), prepared to travel
    - Alex Gedala resides in Vancouver, British Columbia (Central through West Coast), prepared to travel

- The main applicant, Mickael Yusufidis, is tri-lingual (English, French & Greek)
- Mickael attended French Immersion from Kindergarten through Junior High
    - Grades K-5: North Agincourt P.S., Agincourt ON / Grades 6-8: Dickson Hill P.S., Markham ON

3. *Have infrastructure in place to deliver on the required outputs;*
    - Recommending setting up a central and dedicated space at the Markham ventureLAB: IBM Innovation Space – Markham Convergence Centre
    - Collaborating with Athabasca University, especially the Centre for World Indigenous Knowledge and Research, posits Pan-Canadian access to the Indigenous community and Indigenous alumni (or student) talent in ICT
        - The main applicant, Mickael Yusufidis, is prepared to work with his project supervisor and the University for staff augmentation, with a focus on Indigenous (alumni or students) with **IT unicorn** skill set and experience, to deliver on the eligible activities described here-in
        - Alex Gedala has experience with established and successful framework for partnering with Universities to source graduate talent in Chandigarh (Mohali) India for Redlizard Studioz; the intent is to apply similar practices and identify Canadian Indigenous talent from Athabasca University
        - Redlizard Studioz and Alex Gedala are to be considered as a primary source of technology subject matter expertise and staff augmentation as required.
4. *Have a mandate that aligns with advancing smart cities approaches in Canada's communities.*
    - The proposed (eligible) activities here-in are representative of the main applicant's personal (academic) investment and developing passion for exploring and advancing smart cities approaches in Canada's.
    - Appendix B through G are representative of the main applicant's (academic) activities over 2017 and 2018 in developing smart cities subject matter expertise.
    - Per direction and guidance from Dr. Vive Kumar, the professor for COMP 695 - Research Methods in Information Systems, this proposal is being handed in as the course Final Assessment.

A personal note from Mickael:

The GovTech domain and specifically, Smart Cities, has been the core theme of my studies, activities and passion for the past year. My hope is that proposed eligible activities detailed below and the information contained within the appendices will result in the possibility to discuss an opportunity to partner with the INFC as a smart city advisor. Please advise if you believe there's value in connecting, having a discussion and exploring opportunities to collaborate, at your convenience.

Sincerely,

Mickael Yusufidis – July 24, 2018

[PROPOSED] ELIGIBLE ACITIVITIES

ADVISORY SERVICES

Service Area	Description
Smart Cities Technology Integration Playbook **&** **Digital Strategies Playbook**	The following areas of technology expertise are relevant to the applicant's capabilities for sharing and consulting. The recommendation is to develop and communicate/socialite a (Smart Cities) Technology Integration Playbook with a particular focus on providing guidance about technology architecture / design and infrastructure integration. **Refer to Appendix D for more details.** A sample of (technology) advisory services that can be packaged and disseminated/shared into a playbook: ○ **Mobile Applications** ➔ Addressing the many applications to 1 user/citizen ratio problem ○ Ask yourself the question: How many civic oriented applications would you download onto your phone? ○ In designing the architecture and infrastructure of smart city solutions, especially for mobile applications, a key constraint and limitation is the majority of users (citizens) mobile phone are limited in storage space ○ It is critically important to consolidate and integrate functionality as much as possible to limit the number of mobile applications, where service areas and related functionality should be designed as to function through a centralized / streamlined portal of functionality, minimizing the number of (mobile) applications per city/community **Scope of Subject Matter Expertise** ○ **Core Technologies [Platforms]:** ○ ***Mobile:*** Androis, iOS (Swift 4 + Objective C), Phonegap, React-Native, Ionic, Cordova ○ ***Web Technologies:*** Javascript (JS Frameworks), NodeJS, AngularJS, ReactJS, HTML5, CSS, Microservices (i.e. Rabbit MQ) ○ ***Database:*** MS SQL, MySQL, NoSQL (i.e. MongoDB) ○ ***Java, Python & Microsoft Eco-System:*** Core Java, Spring, Kotlin, VSTS(ALM), C++, C#, ASP.NET, SharePoint ○ ***CMS, PHP & Plugins:*** WordPress, Drupal, Concrete5, Joomla, Wix, Codeigniter, CakePHP, Yii2, Zend Framework ○ ***eCommerce:*** Magento, Woo Commerce, Shopify, Custom Development ○ **Emerging Technologies:** ○ ***Augmented Reality:*** Vuforia, AR-Toolkit, Revealio ○ ***Geospatial:*** Location based services, matching engines ○ ***Distributed Ledger Technology:*** Blockchain, Smart Contracts, Decentralized Apps (Dapps), Crypto et al. ○ ***Internet of Things****:* Proximity sensors, OBDII, etc.

	Scope/Deliverables (Design Thinking / Design Research Approach) [6] • **Understand the problem:** Understand the problem being solved before searching for solutions • **Involve Users:** Immersion into the problem and opportunity areas • **(Open) Brainstorming & Citizen Focus Groups:** No holdback brainstorming with (community) stakeholders and citizens • **Prototype and test. Repeat:** Model, wireframe, prototype and test solutions. • **Implementation** • **Continuous Improvement & scale (Think Big)**
Data Management	The recommended approach for Data Management is to develop and make accessible a tailorable high-level standard of tool agnostic data management patterns that are clearly aligned to relevant (i.e. INFC, Gov of Canada or civic/community) data principles and policies. This insinuates a Principles ➔ Policies ➔ Patterns approach. Pattern variants can be created as extensions to account for unique needs (small community/community vs. large city) while maintaining alignment to a high-level golden standard maintained by INFC. Likewise, and audit trail of any tailoring or extensions conducted at the city/community level, can be maintained as well. This effort would involve the following scope as well as proposed deliverables, leveraging the applicant(s) prior experience with developing and implementing data management frameworks. **Scope/Deliverables** ○ ***Data Principles and Policies:*** Collect and identify relevant and or existing principles and policies for reuse, alignment and tailoring. Don't reinvent the wheel, what can be re-used and tailored for the smart city domain. ○ ***Data Principles:*** Repository of (accessible) data principles including ➔ Title, Definition, Rationale, Implications ○ ***Data Policies:*** Repository of (accessible) data policies ensuring alignment to data principles and policies ○ ***Data Management Patterns:*** Modular, visual pattern maps and detailed activity descriptions using industry standards such as BPM notation. Note, there is ample opportunity to streamline and integrate patterns. ○ **Core Life Cycle Patterns (~8):** Discover data (requirements), Create data bed, synchronize data, retire data, modify data content, create data content, modify data structure, create data objects ○ **Maintain Test Data (~6):** Change data content, delete data content, change data objects, delete data objects, synchronize data (for maintenance), restore data from a copy ○ **Common, Utility Patterns (~10}:** Extract data content, remove data content, transport data, load data, create a copy of data, archive data, request for data fulfillment, data quality, data audit, open data guidelines ○ ***Regulatory & compliance alignment*** ○ ***Open Data Guidelines*** ○ ***Variants & Tailoring Guidelines*** ○ ***Workshops:*** Communications, Training and Mentoring (Bi-Monthly) - Train the Trainer model

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Sample Data Management Pattern Visual ➔ Discover Data Requirements:
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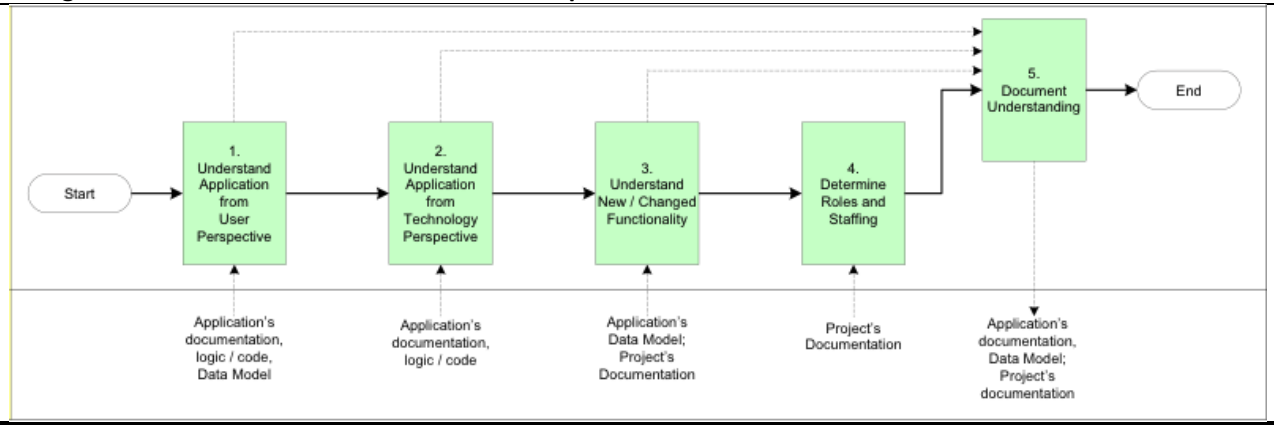
<tr><td>Data Keeper or Steward</td><td rowspan="2"> 
</td></tr>
<tr><td>Inputs/ Outputs</td></tr>
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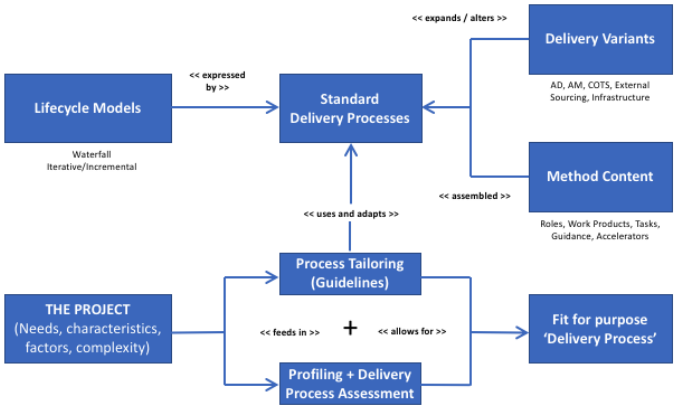
<tr><td>Outcomes-based project planning</td><td>
The applicant(s) have a significant amount of experience with outcomes-based project planning and process engineering in an organizational setting, especially in the technology domain. Similar to data management, developing a high-level technology delivery standard for smart city initiatives is the recommended approach. This can take the form of reusable learning objects (RLO) leveraging open framework standards such as the Eclipse Process Framework [7] which offers a significant amount of assets to spring from, including ready and tailorable Practice Libraries. Refer to Appendix F for more details.


Note: This figure is derived from a picture used to promote process tailoring in an organizational setting
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	Scope/Deliverables ○ ***Delivery Lifecycle(s):*** Definition of required process lifecycles such as Agile, Waterfall, etc. and capability patterns ○ ***Discipline / Practice Capability Patterns (Process) Methods Authoring:*** Authoring of the process assets for each discipline / practice capability pattern. ○ ***Recommended Discipline / Practice Capability Patterns***: ▪ *Project Management, Change Management and Communications, Requirements, Analysis and Design (Architecture), Development, Test, Deployment / Implementation, Infrastructure / Environment* ○ ***Work Product Templates:*** Standard templates for project documentation and deliverables. ○ ***Roles:*** Standard functional role descriptions. ○ ***Tasks:*** Standard tasks and work breakdown structure(s) for each discipline / practice capability pattern. ○ ***Guidance Materials*** ○ ***Standard Delivery Process Variants Definition and Integration:*** *Integrated capability patterns into standard delivery process variants* ○ ***Tailoring Guidelines*** ○ ***Communications, Training and Mentoring:*** Train the Trainer model ○ ***Project Gating, Governance & Metrics Framework:*** A self-gating framework seamlessly integrated with the delivery lifecycles and variants. ○ ***Continuous Process Improvement Framework***

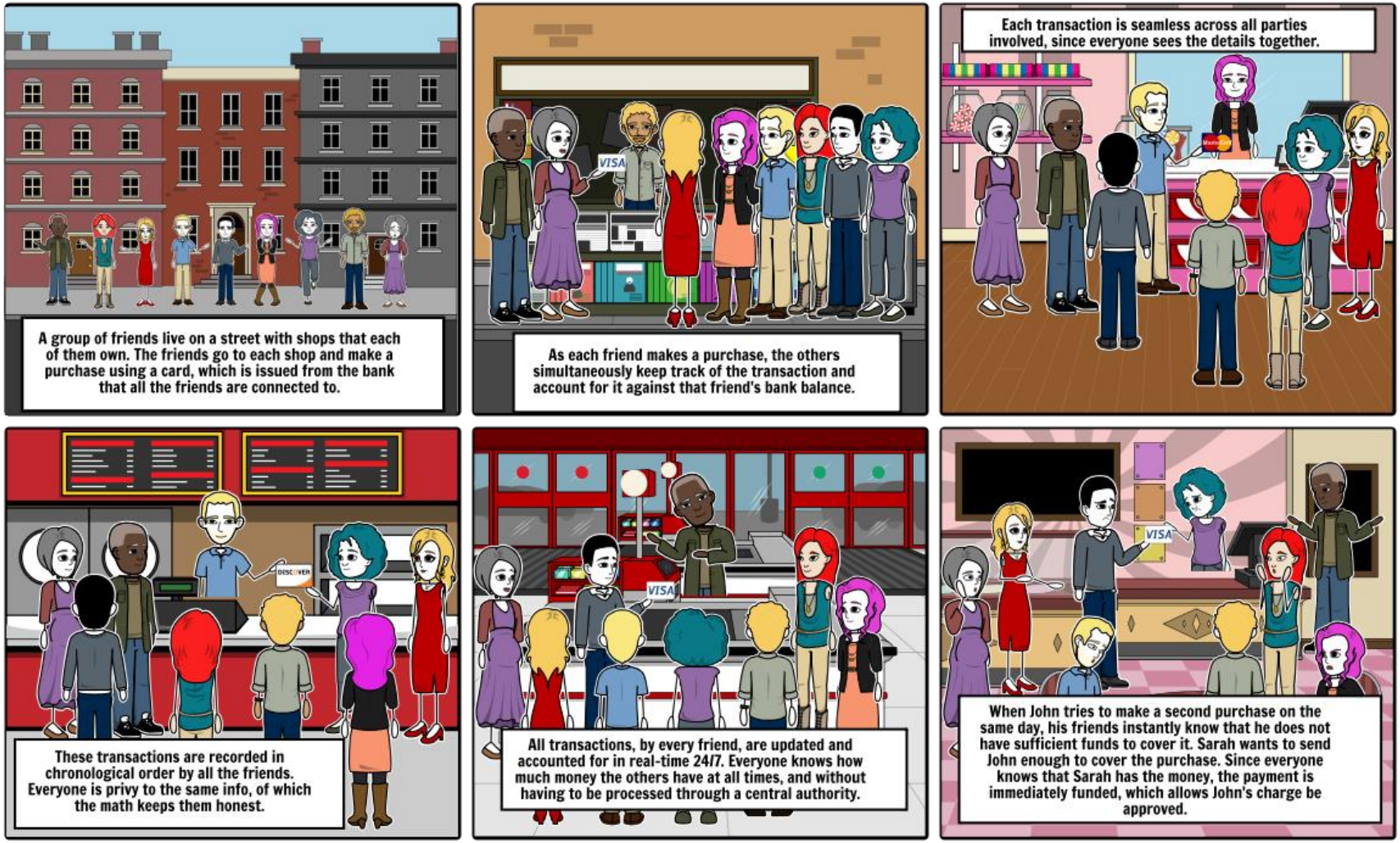
ACTIVE MATCHMAKING

Service Area	Description
Civic Park (DAO / Dapp)	The primary applicant for this program, Mickael Yusufidis, is a Masters of Science in Information System (mature) student at Athabasca University (Tracking @ 3.95 GPA). The MSc IS project currently being proposed is a Civic Park DAO (Decentralized Autonomous Organization or Dapp – Decentralized App). Envision this. Proposed (smart city) projects/campaigns are recorded onto a Blockhain as smart contracts. The primary focus of the Civic Park DAO is driving active matchmaking between city/community desires both domestically and globally via algorithms carried by Blockchain Oracles (AI/ML/DL driven – i.e. correlation, social network analysis, etc.). **Refer to Appendix B & G for more details.** The hypotheses that the Civic Park DAO addresses are: • A high degree of correlation (confluence) in shared desires between projects results in opportunities for pooling objectives and resources, thus reducing (CapEx and OpEx) costs. • A high degree of socialness in civic projects and civic process suggests a higher degree of potential for technology collaboration. • Economic twinning of cities may be evolving. What about, technology twinning? That sounds priceless, moreover, a feasible, and progressive alternative to building a global interaction eco-system. • Opportunity **[Know]**: Small to medium sized organizations (i.e. civic entities or businesses) may not have the resources required to implement technology solutions and thus are not imminently and fully taking advantage of technological benefits for their cities or communities. They may only have a fraction of the assets and resources required. ○ Assumption **[Feel]**: Other small to medium sized organizations, locally (domestically) or globally may find themselves in a similar situation. Desires are shared with common ground in business and technology design requirements. They may have also additional fraction(s) of the assets and resources required to realize the opportunity. By enabling Artificial Intelligence and tech such as Blockchain, smart contracts and Decentralized Autonomous Organizations to systematize capabilities and processes, we will be championing a faster pace of realizing opportunities and shared desires. **[Do]:** The vision is to elaborate prototypes into a final product/service for use by Infrastructure Canada, cities and communities, to facilitate matchmaking. Ideally, the platform would also delivery APIs and micro-services capabilities, making service integration with another platform possible. See table below for a more detailed concept and attached document which outlines the research plan and high-level requirements for a **Prototype A**, to be made available for review and focus groups by **mid-August 2018**. Prototype A will leverage the Smart Cities Challenge open data for proof of concept and architecture. • Infrastructure Canada has prepared, open data, consolidating the entries of the 200 Smart Cities Challenge proposals here as an interactive map, here as well as a csv. [8] ○ Data attributes are categorized by geography, problem/opportunity description strings, service areas and relevant technology areas. These will be the driving attributes behind the prototype social network analysis algorithm intended for Prototype A of the Civic Park DAO.

	• A Research Action Plan is complete, and an Athabasca University project supervisor is currently being identified, targeting to be established by week of August 10th, 2018.
	  ○ Proposed project supervisor is Dr. Qing (Ching) Tan – Associate Professor – School of Computing and Information Systems. Of particular note, is Dr. Tan's domain experience with cybernetics engineering and awards/achievements in the area of Government Grants; an ideal supervisor for this particular project. [9]
	  ○ Noted the opportunity exists to collaborate with the AU Centre for World Indigenous Knowledge and Research [10]
	  ▪ http://indigenous.athabascau.ca
	  ○ Before proceeding, the proposed project (Civic Park DAO) is subject to review by the Athabasca University Ethics Review Board, targeting August 2018 for ethics review submission.
	
	Scope/Deliverables
	• ***Prototype A (Ideation):*** Research to identify solution options and platforms for consideration. Identify existing services that can be leveraged for ideation inspiration (i.e. Ethereum, Hyperledger Fabric, R3 Corda) and develop an initial prototype
	• ***Focus Groups and Requirements/Design Elaboration:*** Analysis and definition.
	• ***Prototype B (Proof of Concept):***
	  ○ Elaborate matchmaking artificial and business intelligence algorithms
	  ○ Prove a multi-domain architecture and micro-services capabilities for integration
	• ***Focus Groups:*** Secure early adopters and conduct focus groups sessions to elaborate and finalize requirements/design.
	• ***Build, test, deploy:*** Core platform and microservices / APIs
	• ***Communications, marketing & training kit*** *(Reusable Learning Objects)*
	• ***Pilot(s)*** *with early adopters*

Civic Park DAO Storyboard: Aligned to a typical Blockchain Storyboard for context.

The Blockchain Storyboard [11]	**Civic Park DAO Storyboard**
A group of friends live on the street with shops that each of them own. The friends go to each shop and make a purchase using a card, which is issues from the bank that all the friends are connected to.	A group of cities / communities which offer common services exist in the same vicinity, domestically, and or collaborate virtually with similar entities globally. The entities list their products, services, or projects / initiatives as a campaign in a register (ledger) as smart contracts via a private Blockchain (network) service that all the organizations are connected to.
As each friend makes a purchase, the others simultaneously keep track of the transaction and account for it against that friend's bank balance.	As each entity adds new or modifies smart contracts on their register(s), the others are simultaneously informed of the campaign (smart contract / transaction) and its attributes, especially if it matches with the nature of their own desires or goals.
Each transaction is seamless across all parties involved, since everyone sees the details together.	Each campaign (smart contract) is seamless across all parties involved, since everyone sees the details together.
These transactions are recorded in chronological order by all the friends. Everyone is privy to the same info, of which the math keeps them honest.	These campaigns are recorded in chronological order by all the entities. Everyone is privy to the same info, of which the Blockchain keeps them honest. Blockchain (oracles) are leveraged to manage access control (public, private, restricted) to specified attributes within every campaign (smart contract).
All transactions, by every friend, are updated and accounted for in real time 24/7. Everyone knows how much money the others have at all times, and without having to be processed through a central authority.	All campaigns, by every entity, are updated and accounted for in real time 24/7. Every entity knows about how essential attributes of a campaign change or evolve at all times, and without having to be processed through a central authority.
When John tries to make a second purchase on the same day, his friends instantly know that he does not have sufficient funds to cover it. Sarah wants to send John enough to cover the purchase. Since everyone knows that Sarah has the money, the payment is immediately funded, which allows John's charge to be approved.	As new campaigns are added, friendly entities instantly know if there are shared desires, goals or obstacles and have the option to join campaigns, assuming desires and goals are shared, in order to pool objectives and resources as a means of realizing the campaign goals, effectively reducing effort and cost given the match is an incentive for friendly entities to collaborate on an initiative where there are common objectives.



Create your own at Storyboard That

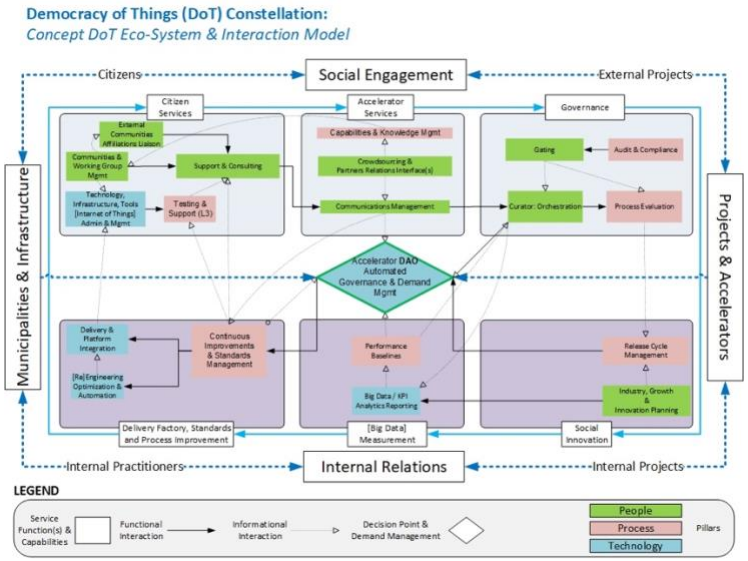
https://www.storyboardthat.com/storyboards/shareconomy/blockchain [11]

KNOWLEDGE-SHARING & BUILDING AWARENESS

Service Area	Description
Knowledge Sharing & Public engagement via Crowdsourcing & Hackathons	The proposed approach for knowledge-sharing builds on the applicant's (Mickael Yusufidis) investment in immersed field research studying the impact of Crowdsourcing & Hackathons. The suggested route is to identify successful activities that have been conducted domestically and even more so globally, to potentially lift, shift and tailor successful applications of Crowdsourcing activities, specifically Hackathons as a means of knowledge-sharing. The objective would be to not reinvent the wheel, but to build relationships with existing organizations who have proven frameworks and assets and tailor them accordingly for reuse in Canada. **Note:** The applicant recently attended the 2nd Innovation Marathon City Challenge Crowdhackathon #smartcity2 , [12] June 28th to July 1st at Stavros Niarchos Foundational Cultural Centre, as an acting mentor to the Dogsvoice.gr [13] team, which placed fourth in the competition, the prize of which is a paid trip (for the entire team) to the (Cisco) MI-IDEA Incubator/Accelerator [14] based out of Manchester, UK in September 2018. Furthermore, Chris Zacharapoulos, [15] the acting technical lead for the Dogsvoice.gr team during the Hackathon is collaborating with the applicant (Mickael Yusufidis) to develop Prototype A of the Civic Park DAO, where a fork will be created in the research, and Prototype A will be taken to MI-IDEA in September 2018 for requirements and design elaboration. **Refer to Appendix B for more details.** A recommended archetype to study and be inspired by for reuse would be the model developed and recently orchestrated/executed (for a second time) by CrowdPolicy, [15] based out of Athens Greece, on behalf of the Central Union of Municipalities of Greece (ΚΕΔΕ) [16]. Given the significant investment made in developing and successfully executing the model, consideration of developing an active consulting relationship with CrowdPolicy could be considered as well. • **CrowdPolicy & KEDE Recent Accomplishments (of note)** ○ **CrowdApps:** Crowdapps is a complete application suite offered by Crowdpolicy. The CrowdApps suite supports the management of customers' participation, facilitates the customers' and citizens' communication, the management of donations through crowdfunding tools & techniques, the imprinting of the social profit of the Private and the Public Bodies and the local wireless infrastructures. [17] ○ **Citylabs**: Conducted local citylabs in a number of key communities/cities (i.e. 16) from where teams from each region present their ideas. The best teams represent communities/cities participate in the hackathon and the costs are covered by the Municipalities. [18] ○ **Open Smartcity Days**: Discuss the hackathon process with municipalities, citizens, representative of civic society and companies in the cities of choice where the hackathon(s) will be held. [12] ○ **Conduct Hackathons:** Teams made up of developers, professionals, students and anyone with ideas to be implemented, are welcome to participate. [12] ▪ Consideration can be given to conduct a series of hackathons across Canada by key regions, i.e. • West (BC or Alberta), Central (Winnipeg or Ontario), East (Quebec, Maritime provinces) ▪ Note the outcomes of the 2nd Innovation Marathon City Challenge Crowdhackathon #smartcity2 here [19]:

	• https://medium.com/the-crowdpolicy-collection-en/the-ideas-for-smart-cities-developed-by-the-smartcity2-teams-47a13224e9f2 ▪ Note additional information and blog content in English developed by CrowdPolicy here [20]: • https://medium.com/the-crowdpolicy-collection-en • **KEDE Recent Accomplishments (of note)** ○ govHUB: Interoperability of Electronic Services of Municipalities in Greece – A centralized shared services portal and back office for Greek municipalities [21] **Scope/Deliverables** • ***Discovery, Research & Planning:*** Research existing success stories in the domain of Crowdsourcing and Hackathons, identify opportunities to lift, shift and tailor existing assets. Engage subject matter experts in the field for ongoing support, for example CrowdPolicy. • ***Knowledge & Intellectual Property Sharing - Partnership(s)*** • ***Citylabs: Crowdsourcing and awareness activities:*** Conduct Citylabs and identify candidates/teams • ***Conduct Hackathons*** **Additional Thoughts and Notes:** • CrowdPolicy and KEDE are also collaborating very closely with France as well. Such an approach would be in alignment with recent developments by the Government of Canada to encourage diversification of trade (i.e. CETA). • Here-in lies an opportunity for the Federation of Canadian Municipalities [22] and the Central Union of Municipalities of Greece (ΚΕΔΕ) to develop relations and collaboration partnerships.

CREATION OF ACCESSIBLE PAN-CANADIAN NETWORKS

Service Area	Description
Pan-Canadian Smart Cities Eco-System	The recommendation for this stream is to develop a (standard) Pan-Canadian Smart Cities Eco-System and Interaction Model. And through this experience, identify and develop shared services models that can be considered for adoption by stakeholders and communities as a means of consistent engagement, interaction and communication about everything smart cities. **Refer to Appendix C for more details.** A conceptual eco-system and interaction model follows (zoom in for details):  • The left side of the constellation is representative of municipalities functions and capabilities/services (process areas) • The right side is representative of projects that may be initiated either by a municipality, accelerator and or both • The top side is representative of elements that are closest to social or citizen engagement • The bottom side being is representative of the more intimate operations of a municipality or accelerator(s) • Central to all of the service/process/function areas is a proposed Decentralized Autonomous Organization, to automate streamline and optimize, where possible, the structure of portfolios, programs and project activities. • The proposed flow is simply a take on what feels natural and organic for typical interactions, whether direct or bi-directional, nothing's written in stone; the assumption is that if one service area needs to interact with another, it simply can engage and proceed to do so, functionally and or by sharing of information/knowledge. • Ideally, this level of operational consistency between cities and communities will facilitate both intra and inter community interaction.

	Description of the (potential) Service Areas. Social Innovation The placement of this service area is aligned with internal aspects of a municipality and project/accelerators, assuming desire for social innovation occurs via intrapreneurial activities at the municipal level and is then, where appropriate, incubated by the capabilities of the Accelerator Services. Big Data & Measurement From social innovation to big data and measurement, the idea is that cross reference should occur with the data that backs up the needs, where any effort or innovation should go through the process of being measurable as to ensure ROI benefits and a positive business case for society, considering both any initial investment and ensuring sustainable benefits over time. Delivery Factory, Standards and Process Improvement Assuming a positive business case, project/initiatives would then flow through continuous process improvement for definition and alignment with standards, before being engineered and designed for technology capabilities. Citizen Services The services themselves, upon delivery, are assumed to live closest to the citizen, after all, municipal services are all about keeping the lights on for the citizen and are now evolving into actively improving lifestyle and living standards for the citizen by way of smart services. This where shared desires are identified and validated before consideration for acceleration and cross pollination. Accelerator Services The keystone to cross pollination and re-use of assets, essentially their transformation into accessible currency, are 'Accelerator Services'; meant to manage the propagation of capabilities and knowledge management through effective communication(s), crowdsourcing methodologies and partnership(s), resulting in the realization of shared desires via the pooling of objectives and resources. Governance Ensuring effective gating and orchestration is a function of governance, including audit and process evaluation. While this conceptualized eco-system envisions capabilities such as BlockChain and Decentralised Autonomous Organizations being leveraged as core opportunities, it is expected that curator or orchestrator type roles will steer and manage the nuanced configuration of the smart tech that will complement and support efficient use of artificial intelligence to crunch the details and numbers in ways that no single human can.

	An idea would be to review and tailor the Ontario service design playbook [23] approach described here as a delivery approach for the eco-system.
	
	Scope/Deliverables (Ontario Service Design Playbook) [23]
	• **Discovery**
	  ○ Research to identify needs and end users
	  ○ Identify existing content for re-use and tailoring
	  ○ Identify policies and regulatory/compliance requirements
	  ○ Document findings and define KPIs
	• **Alpha**
	  ○ Collaborate with end users and stakeholders to co-create solutions
	  ○ Build and test multiple prototypes with users
	  ○ Define solutions options, estimates and business case
	  ○ Identify impacted processes or policies
	• **Beta**
	  ○ Prioritize user stories and build live minimum viable solution
	  ○ Test design for accessibility and collect feedback for insights
	  ○ Measure against key performance indicators
	  ○ Resolve challenges and release updates/improvements
	• **Live (& Continuous Improvement)**
	  ○ Go Live / Launch
	  ○ Monitor status/stability and KPIs
	  ○ Conduct ongoing user research and usability testing
	  ○ Continue building features (backlog, improvements)
	• **Change Management:** Prosci ADKAR Model / Framework

ACCESSING ESTABLISHED NETWORKS

The following is a summary of the applicant's developing affinity network and resources that can be approached and leveraged as appropriate/required. A Prosci ADKAR [24] change management methodology is recommended in developing and fostering relationships with such organizations and or individuals as a means of accessing established networks.

Scope/Deliverables

- **Change Management:** Prosci ADKAR Model / Framework

Name / Organization	Description, Notes & Recommended Opportunities

Municipal Information Network (MIN) [25]	• The Municipal Information Network is a highly subscribed network of information for Canadian municipalities
	  ○ It is highly recommended that a relationship be built and fostered to channel as much information as possible regarding Canadian Smart City initiatives via MIN.
	  ○ The applicant, Mickael Yusufidis, is in the process of initiating and fostering a relationship with Rita Szathmary (Account Executive)

Athabasca University (AU) [26]	• Civic Park DAO Project Supervision
	  ○ Proposed project supervisor is Dr. Qing (Ching) Tan – Associate Professor – School of Computing and Information Systems.
	• Access to the AU Centre for World Indigenous Knowledge and Research
	  ○ http://indigenous.athabascau.ca
	  ○ Proposing staff augmentation via AU Indigenous students and or AU Indigenous alumni
	  ○ Proposing awareness and smart city marketing activities with a focus on targeting Indigenous Communities and alumni

Alex Gedala [CEO, Redlizard Studioz] [4]	Alex Gedala is the CEO of Redlizard Studioz. Redlizard Studioz is a Canadian digital workshop with a global footprint.
	• Alex has significant experience working with crown corporations
	  ○ BCLC: British Columbia Lottery Corporation
	  ○ BCLDB – BC Liquor Distribution Board
	  ○ Winnipeg Lottery Corp
	  ○ BC Gaming Commission
	Redlizard Studioz and Alex Gedala are to be considered as a primary source of technology subject matter expertise and staff augmentation as required. Also, the main applicant, Mickael Yusufidis, is representing Alex in developing a Redizard Studioz presence in Europe, starting with Greece and the Balkans. European activities include:
	• Developing a talent pool of unicorns in Europe (starting with Greece) to represent Redlizard Studioz and secure European accounts, i.e.
	  ○ Harry Toloupas [28] (Greek Canadian citizen based out of Patras, GR)
	  ○ Chris Zacharopoulos (based out of Athens, GR) [15]
	  ○ Armin Razic (Bosnian-Canadian citizen currently residing in Bosnia)

	• Fostering a relationship with the Global Affairs - Canadian Trade Commissioner's Service , see below. i.e.
	  ○ George Dimitriou, Athens GR, David Mallette, Athens GR.
	  ○ Yaa-Heema Obiri, Vancouver BC.
	• European business and market development for services such as 1slap.com
	• Developing a pipeline for reciprocal trade of Canadian/European technology services
	  ○ i.e. In the spirit of CETA, consider the opportunity for smart city technology developed in Canada to be implemented in Europe (and vice versa)

Global Affairs – Trade Commissioner Service [29]	• George Dimitriou, Athens GR • David Mallette, Athens GR. • Yaa-Heema Obiri, Vancouver BC.

Federation of Canadian Municipalities (FCM) [23]	• Build on the Global Affairs and FCM partnership to explore international opportunities, including sharing/trade of knowledge, intellectual property and global cooperation, i.e.:
	  ○ (ICT) Technology Twinning of Cities
	  ○ Increase Smart City awareness activities via FCM events (such as at the Annual Conference)

City of Laval & CIAMIL [30]	• Director and CIO: City of Laval – Christian Robidoux • CIAMIL Smart Mobility Incubator – Jacques Fortin (New Director)

ventureLAB (Markham, ON) [31]	• Supporters of the Markham, ON Smart City proposal
	• Applicant attended ventureLAB orientation in May 2018
	• Recommendation:
	  ○ Dedicated desk or Office space at IBM Innovation Space – Markham Convergence Centre
	  ▪ ~$4,300 / Desk / Year [32]

CrowdPolicy [16] **& The Central Union of Municipalities in Greece (KEDE)** [17]	• See Knowledge Sharing & Building Awareness section above. • The applicant, Mickael Yusufidis, is in the process of initiating and fostering a relationship with CrowdPolicy and KEDE
IUC EU International Urban Cooperation [33]	• Explore development of Technology (City) Twinning program(s) with the European Union
Tom Manimanakis [CEO, Ethos Assets] [34]	• Tom Manimanakis has extensive experience working with not for profit and charitable organizations in the domain of resource and product management for social good, including experience with Indigenous communities and culture and is an ideal advisor to the applicant re: Indigenous affairs ○ It is the applicant's intent to collaborate with Trish on navigating the Indigenous culture and community

Trish Scott **(ReConnect Counselling)** [35]	• Trish Scott has extensive experience working with Indigenous communities, charities and culture including knowledge of and broad access to the community ○ It is the applicant's intent to collaborate with Trish on navigating the Indigenous culture and community

Appendix A: Smart Cities Communities Support Program CUP Workbook, Roadmap and Estimates

Appendix B: Civic Park DAO Research Action Plan

Appendix C: DoT Vol 1 - A progressive cybernetics eco-system & interaction model concept

Appendix D: DoT Vol 2 – Citizen Engagement and IS Applications

DoT_Vol2_Yusufidis
_2210970_Citizen En

Appendix E: DoT Vol 3 – The Future of Gaming as a Civic Service

DoT_Vol3_Yusufidis
_2210970_DoT_Vol_3

Appendix F: DoT Vol 4 – Reusable Learning Object – Process Tailoring – Creation Unified Process

DoT_Vol4_2210970_
Yusufidis_RLO_Proce

Appendix G: DoT Vol 5 – Progressive Cybernetics – Smart Contracts (& The Blockchain)

DoT_Vol5_Yusufidis
_2210970_Blockchai

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