

# Building Online Services

“That fit your budget”

# Hello, My Name is Stephen Russett

- Ottawa, Ontario, Canada
- Currently: OpenPlus.ca
- Previous to private sector:
  - City of Ottawa (Canada's Capital City)
- Twitter: @StephenRussett
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- Drupal: StephenOTT
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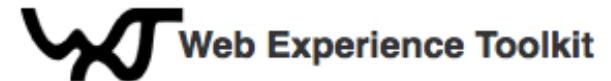
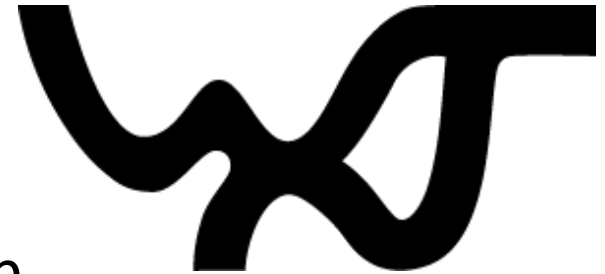
# OpenPlus

- Largest east coast Drupal shop in Canada
- Public Sector only
- Content Architecture Focused
- Worked with all 3 levels of government
- Experts in enterprise performance, multilingual, responsive, and WCAG 2.0 AA.
- Clients range from groups such as Canada Revenue Agency (equivalent to IRS), Health Canada (similar to NIH), federal departments, provinces, territories, municipalities, and agencies

# DrupalWxT Distribution

- <http://drupalwxt.org>
- Distribution that was designed to meet Government requirements.
- No owned by any one company or group
- Truly collaborative effort to solve a common government problems
- Initial goals:
  - Multilingual
  - Accessible (WCAG 2.0 AA)
  - Integration with WET JS Library
  - “Turn-key option”
  - Base architecture

[www.drupal.org/project/wetkit](http://www.drupal.org/project/wetkit)  
[www.acquia.com/downloads](http://www.acquia.com/downloads)



The Drupal WxT distribution has been tailored for organizations that need to comply with standards for accessibility and bilingualism, and integrates extensively with the WET-BOEW jQuery Framework.

Drupal 7

tar.gz (7.x-1.9) ▼

DOWNLOAD

Historical releases



# GovPlus.io

- DrupalWxT 'for Intranets' + Social + Collaboration + Accelerators
- [www.govplus.io](http://www.govplus.io)
- Accelerators built on DrupalWxT
  - Focus on intranet digital workplace
  - collaborative apps: Policy Manager, News, Events, Knowledge Base, Advanced Search....
- Built on best practice content architecture



Content Types  
[your pages]

Page

News

Events

Policies

+  
FAQ  
Wiki  
Blog  
Committee  
Forum...

Search:

Keyword

Faceted-Filters

CONTENT

Common Fields

Title (h1) + Body + Computed: Author, Date + Metadata: Token patterns below

Type-Specific Fields

Publish Date  
Featured Image  
Related Content  
Media assets  
+

Event Date  
Location / Geo  
Featured Image  
Related Content  
Media assets  
+

Related Content  
Deprecated  
+

Common Taxonomies

Topics + Audience: Department / Branch / Region + Life Cycle

Type-Specific Taxonomy  
*may be hierarchical*

Daily Digest  
Advisory  
Announcement  
+

Meeting  
Presentation  
AGM  
+

Employee  
Agency  
Marketplace  
+

One-time  
CONFIGURATION

Group Definition  
*authors, contributors,  
reviewers, approvers*

Web Team  
Managed

Region  
Governance

Region  
Governance

Branch  
Governance

Workflow type

No Workflow

Simple Approval

Simple Approval

Advanced Approval

Collaborative  
Function  
on/off

Commenting?  
Rating?  
Follow?

Commenting?  
Rating?  
Follow?

Commenting?  
Rating?  
Follow?

Commenting?  
Rating?  
Follow?

Navigation Structure

Manual Menu

Auto Landing Page

Auto Landing Page

Auto Landing Page

Path Patterns

/

/news/

/events/

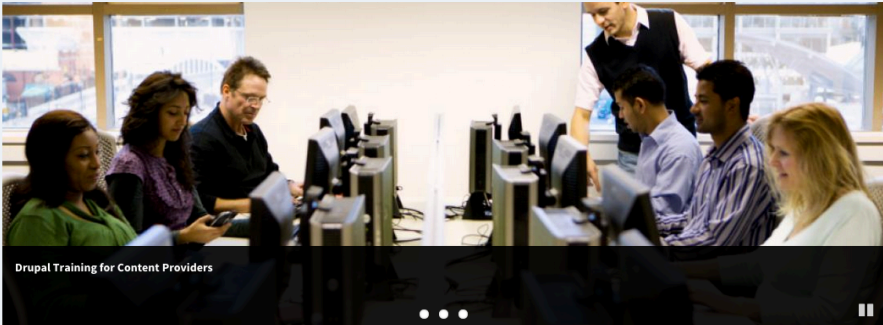
/policies/

http://domain / +[language] / +[TypePattern] / +[Audience] or [TypeTaxonomy] / +[Title -cleansed]

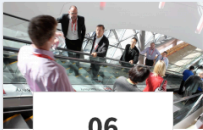
# GovPlus Events Calendar: Hyper Responsive

MenuShortcutsDevelAdd beanAdd contentJane Doe

Calendar of Events



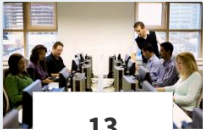
Drupal Training for Content Providers



06  
July

GTEC: Your destination for connecting technology, ideas and Canadians


Ottawa Convention Centre  
55 Colonel By Drive  
Ottawa, ON K1N 9J2  
Canada



13  
July

Drupal Training for Content Providers


Lisa boisvert  
11 Maple Grove Ave  
bristol, QC J0X1G0  
Canada



20  
July

Canada History Week

OpenPlus.ca  
1680 Vimont Court  
Ottawa, ON K1N7B7  
Canada



01  
August

Cancer Awareness Month

Aaron Armstrong  
1435 prince of wales dr.  
Ottawa, ON k2c1n5  
Canada

Search Events

Keyword

Select

-Any-

Search

Event Calendar

Wednesday, July 1

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Trending

Canada History Week

Drupal Training for Content Providers

GTEC: Your destination for connecting technology, ideas and Canadians

Canada Day in the Capital

Cancer Awareness Month

My Interests

This is content that you have followed.

Copyright Act

Copyright Act

1 comments

Cancer Awareness Month

Cancer Awareness Month

2 comments

GTEC: Your destination for connecting...

GTEC: Your destination for connecting...

2 comments

My Activity Stream

Copyright Act

Copyright Act

3 comments

Prime Minister's Volunteer Awards

Prime Minister's Volunteer Awards

1 comments

MediaSmarts launches comprehensive digital...

MediaSmarts launches comprehensive digital...

2 comments

Cancer Awareness Month

Cancer Awareness Month

4 comments

Drupal Training for Content Providers

Drupal Training for Content Providers

1 of 10

My Saved Searches

the policies

delete edit

Dragan Test Saved Search

delete edit

test content

delete edit


Search "copyright"

delete edit

Search "policy"

delete edit

1 of 2

  
openplus.ca

# Agenda

1. What it takes to build a Online Service
2. Case Study
3. Final Considerations and Takeaways

Take notes on HackPad

<https://drupalgovcon2015.hackpad.com>



# The service you are building

- Typical Service Types:
  - Individual Applications/Services
    - Pay Taxes, Animal License, Change of Address
  - Generic/Catch All Service/Application
    - Service Requests
  - Individual Forms (Typically PDF or HTML Form)
    - Enrollment Form, Signup Form, Building Permit, Health Claim

# Typical Components of a Service

1. Service Directory/Discovery
2. Service Information and Activation
3. Service Submission
4. Back-Office Processing and Fulfillment

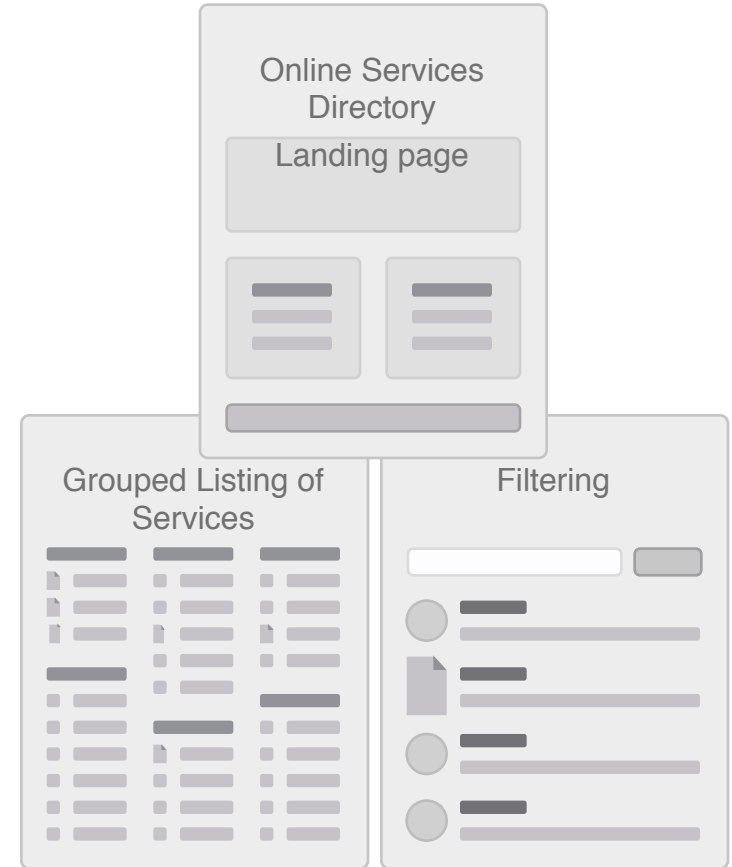
Optional:

- Payment System
- MyAccount System
- Third-Party connectivity

# Service Directory/Discovery

How do find the service

- Landing pages
- Searchable and filterable directory
- Grouped by taxonomies
- HTML link on content page



# Service Information and Activation

## Description of the service:

- When to use the service
- Service Levels and response times
- Steps and general eligibility
- FAQs
- Service Activation Link
  - Open Web Form
  - Download PDF
  - Upload PDF
  - Activate app



Web Form  
Service Description

Form fields and a 'Fill Out Form' icon.

This mockup shows a web form interface. It has a title 'Web Form Service Description'. Below the title are several input fields: a text box, a radio button, a dropdown menu, and a checkbox. To the right of these fields are several horizontal bars representing text areas. At the bottom left, there is an icon of a pencil writing on a document, with the text 'Fill Out Form' below it.



PDF Form  
Service Description

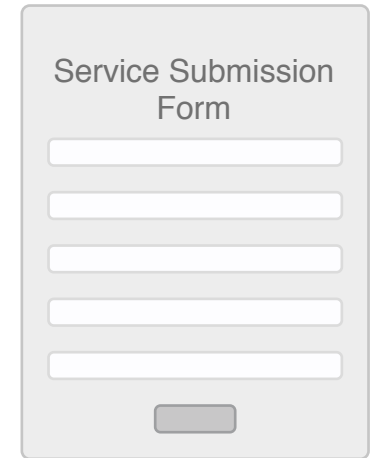
PDF Form icon and Download/Upload buttons.

This mockup shows a PDF form interface. It has a title 'PDF Form Service Description'. Below the title is a large icon of a document with the text 'PDF Form' on it. To the right of this icon are several horizontal bars representing text areas. At the bottom, there are two buttons: 'Download' with a downward arrow icon and 'Upload' with an upward arrow icon.

# Service Submission

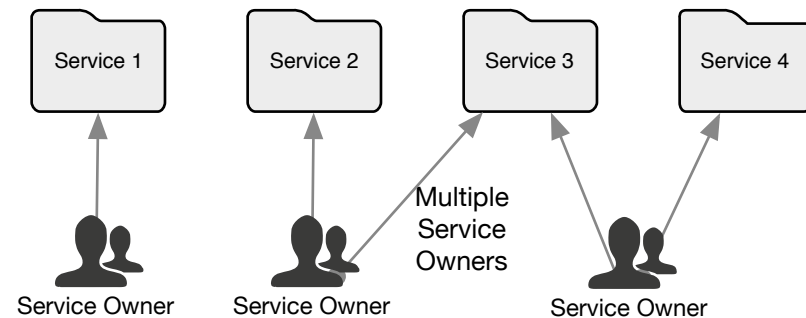
Submitting the information to complete the service:

- Some sort of variation of HTML form or PDF forms
- PDF submission is a Web Form with a upload Field
- Common Metadata
- Cost Calculation and Cost Metadata
- Submit/Upload Action

A light gray rectangular box representing a web form. At the top, it is titled "Service Submission Form". Below the title are five horizontal white input fields stacked vertically. At the bottom of the box is a small, light gray rectangular button.

# Back-Office Processing and Fulfillment

- Business Process that Fulfills the Service
- Tasks
- Notifications and Alerts
- Reporting
- Business Rules and Logic
- Recording Keeping
- The set of actions that completes the request



# Government Services are Complex

- Service Business Processes are complex!
- Building the online channel for a service can be complex, costly, and time consuming.
- But it does not have to be!
- Our responsibility is to put a service **online**.
  - Rarely is it to transform the process that runs a service
- Rule: More time will be spent on the Business work then on the Technical work when building online services

# Drupal can do that!

- We tend to say things such as:
  - We can do that in Drupal
  - We can also do that in Drupal
  - How about we move that into Drupal too
  - I can do it more efficiently in Drupal for you

The end result is you are responsible for delivering a online service and business transformation changes to the Back-office.



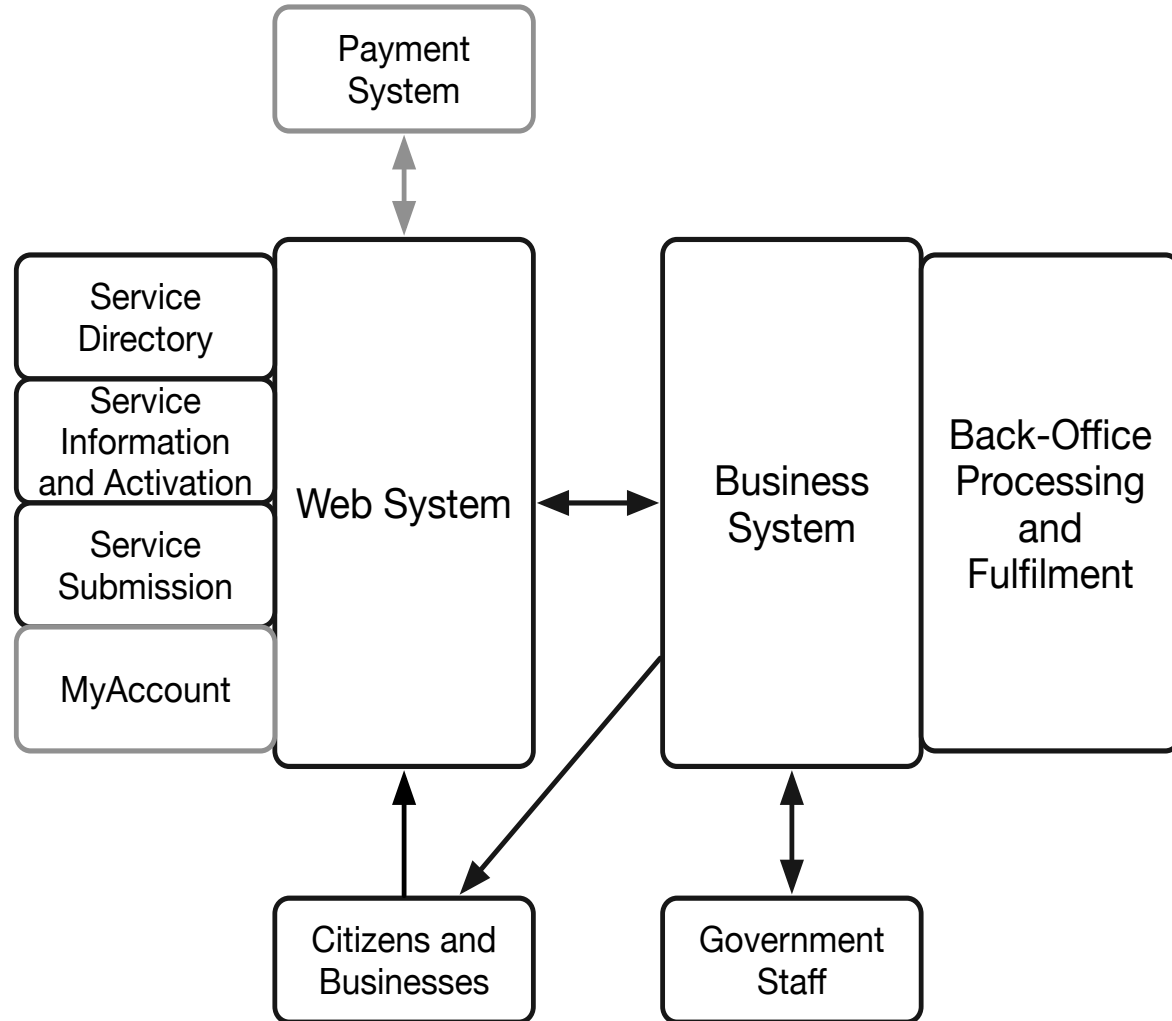
# Online without Back-office Changes

- Whenever possible, do not change the back-office process when building online services
- Do not take on a business transformation project to build an online service.
- Iterate over time to change the old business process.
- Separate Business and Web Systems

# Separation of Business and Web Systems

- First response is to build a single system – NO!
- The Business moves slower and is more complex than the Web System (The Online Service System)
- Web Moves quick and changes often!
- Business Processes are often still Paper based or email driven.
  - Especially in areas such as Records management

# Separation of Web and Business Systems



# Typical Business Processes

- Alerts and Notifications:
  - Alert X when Y occurs
  - Alert X when ABC Field has Value 123
  - Alert the Neighborhood Officer responsible for the neighborhood that the address field in the submission belongs too.
  - Alert the Police Officer based on the Type of Complaint that was selected in the dropdown menu in the HTML form.
- “Filing” and Tasks:
  - Move submission in “Space”/folder 123 when Field has value XYZ
  - Move submission in “Space”/folder 123 when Field has value XYZ and create Task A and Task B assigned to John

# Typical Business Processes

- Exception Handling
  - If Field A has Value X then Alert John, If Field A has Value Y then Alert Jane. If it's a Statutory Holiday then alert Billy
  - If Field A has Value X then Alert Group A, If Field A has Value Y then Alert Group C. If it's a Statutory Holiday then alert Billy, and Group C

# Business Process: Records Management

- There is a “process” that governs the service.
- This process includes record keeping and lifecycle management.
- Having a online service does not mean the back-office has a digital process. Back-Office may still work in paper (and/or email).
- Offer a Digital Paper equivalent to maintain current back-office business processes rather than bring back-office into new system.
  - PDF for paper File storage
  - Excel/CSV for Reporting

# Online is not the only channel

- Most services are offered in more than 1 channel (Mail, Phone, in-person, internal mail, email, Kiosk) .
- The back-office likely already has reporting capability (such as excel).
  - Adapt the online service to the current process and offer enhancements over time.
- Whenever possible, do not change the back-office process when building online services
  - Unless the business is ready for the additional training, change management, and process transformation – Not a simple commitment
- Adding business transformation to your service build is a major risk
  - You look bad for not delivering the online service, even though the delays were the business

# When you need MyAccount

- MyAccount is very expensive to implement
- Not as simple as “Turn on Drupal User Profiles” and “User Registration”
- Many Security and Business Processes to account for:
  - Identity Assurance
  - Encryption
  - Data Privacy controls depending on the type of data in the profiles
  - Multiple Identities
  - CRM-like data collection
  - Password management and recovery
  - Centralized User experience that may be owned by many business lines
  - Pre-populating Forms
  - User Activity Tracking
  - Duplicate Profiles / Accounts
  - Dusty Accounts
  - Reporting
  - Roles, groups, permissions and related security testing



# When you need MyAccount

- Ask the questions, Does MyAccount:
  - save time?
  - Make the experience easier?
  - Create one more username and password to remember?
  - Offer minimal time savings?
  - Have multiple business lines/stakeholders that will all have a opinion about the experience and features?
  - Only track users for the purpose of tracking users?
  - Provide efficiencies for services that are used repeatedly by citizens or businesses?
  - Save on Identity Assurance that is time consuming and cannot easily be completed during Service Submission?
    - Drivers license number is not time consuming, Home Address confirmation is time consuming.

# Language

- Design from the start to make your services multi-lingual
- Not all services will be multi-lingual, but not all services will be in a single language
  - English Only, French Only, Spanish Only
- Service Discovery Considerations:
  - If a service is only in Spanish, should that service appear on the English discovery page?
  - If a service is only in English, should that service appear on the Spanish discovery page?
- HTML Forms vs PDF Forms
  - Single Language and Multi-Language Forms or Language Switch
- Translation of Submissions

# Accessibility

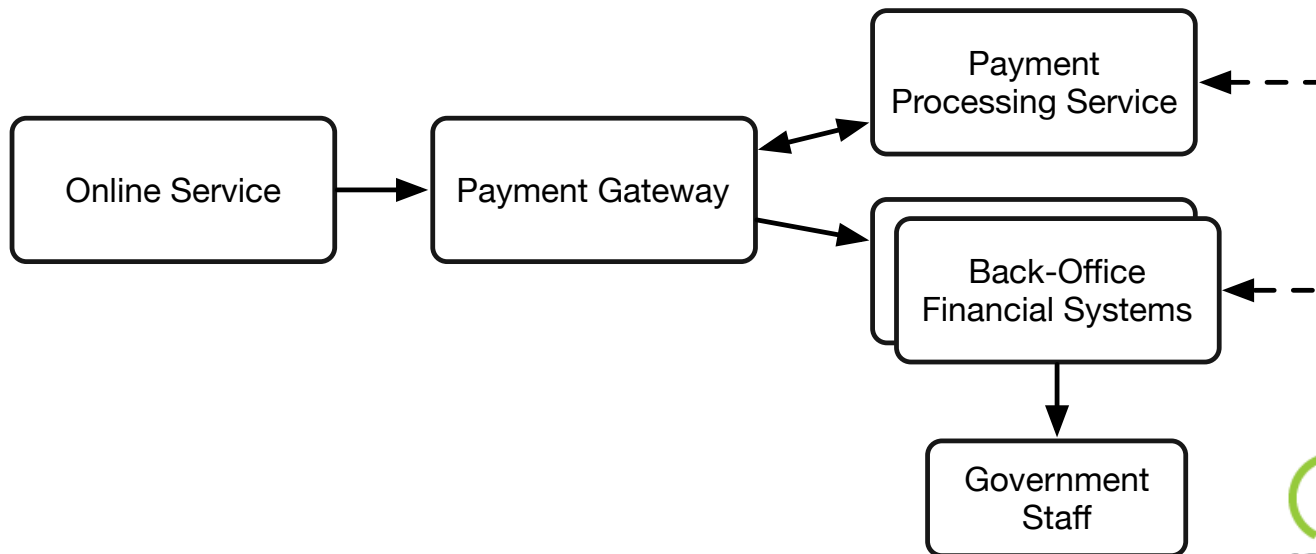
- Design from the start to make your services accessible (WCAG and 508)
- Keep designs simple and accessible. Enhance over time.
- Trying to make a service accessible from a design that did not take accessibility into consideration is very expensive
- Accessible HTML does not mean Accessible Service/Experience

# Security Considerations

- Security should be your number one priority for the service
- SSL everything
- How long are records stored in publically accessible systems
- Threat Risk Assessment and Security Audit from the beginning
- Separate Primary Website instance from Service Instance whenever possible – Simplifies user management and security
- Research shows the number one factor for channel conversion to a online service for government is Security and Trust.

# Payment Gateways

- Enterprises often integrate a payment processing service with their own middleware/Payment Gateway.
- Newer services are now providing similar experiences to a PayPal and Google Wallet where the Gateway and Payment Processing are wrapped together



# Other things to think about

- Anti-Virus
- Supported File Types
- File Sizes Limits
- Multi-File vs Multiple Single File Uploads
- File Names of individual uploaded files
  - Building Permit Diagram: 3D4-2015-ABC.pdf
- Submission ID
  - FedEx UPS, USPS Tracking Codes
- Common Metadata that is attached Submissions

# Drive the Requirements as the “Expert”

- Try not let the client drive the requirements.
- Let the client hold the map and explain what the destination looks like.
- Be the online service expert and tell the client how to implement their service to reach their destination.
- Work with the client to meet their needs.
- Do not expect the business to know how to build a online service
- Do not expect the business to know how to write requirements that translate their business process into a online service!

Canadian Provincial Government

# CASE STUDY



# Client Requirements

- A service platform that will enable as many online services as possible in a generic way.
- Accessible (WCAG 2.0 AA)
- Multiple Languages (English and French)
- Responsive/Mobile Friendly
- Implement services generically
- Chose two generic processes:
  - ‘Submit with no payment’
  - ‘Submit with payment’

# Multilingual

- All services must have ability to be bilingual
- Not all services will be bilingual
- Some will be English only
- Some will be French only

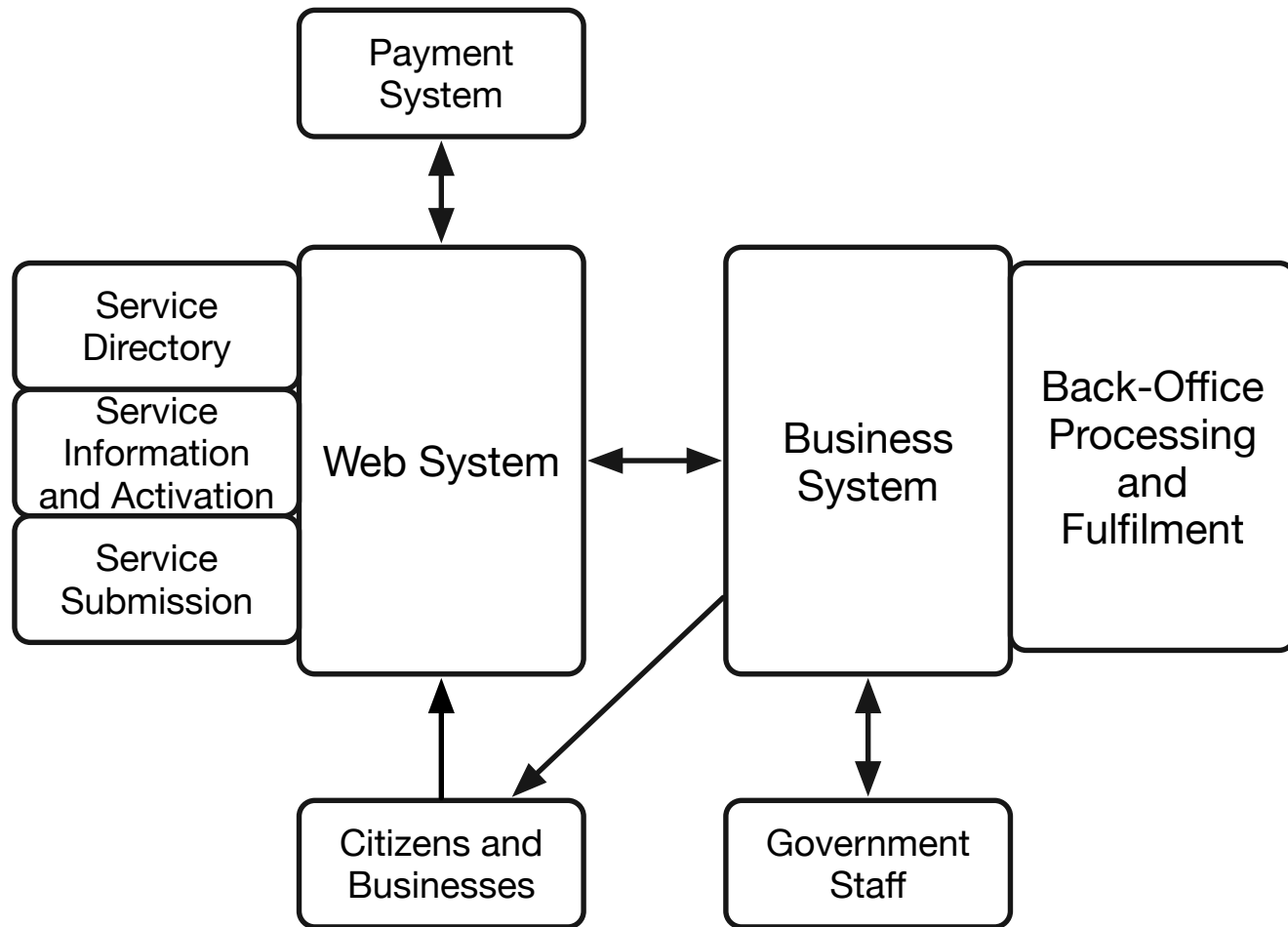
# Vendor Requirements

- Deliver on Budget.
- Keep client happy.
- Drive requirements when possible to deal with potential of the client getting excited about things they will never get.
- If you blindly ask for “What are your requirements”, you get a wish list and then you have to negotiate the requirements down to a manageable list or negotiate the increase of budgets.
  - Instead work with clients from the beginning to define their requirements **together**. Be their partner

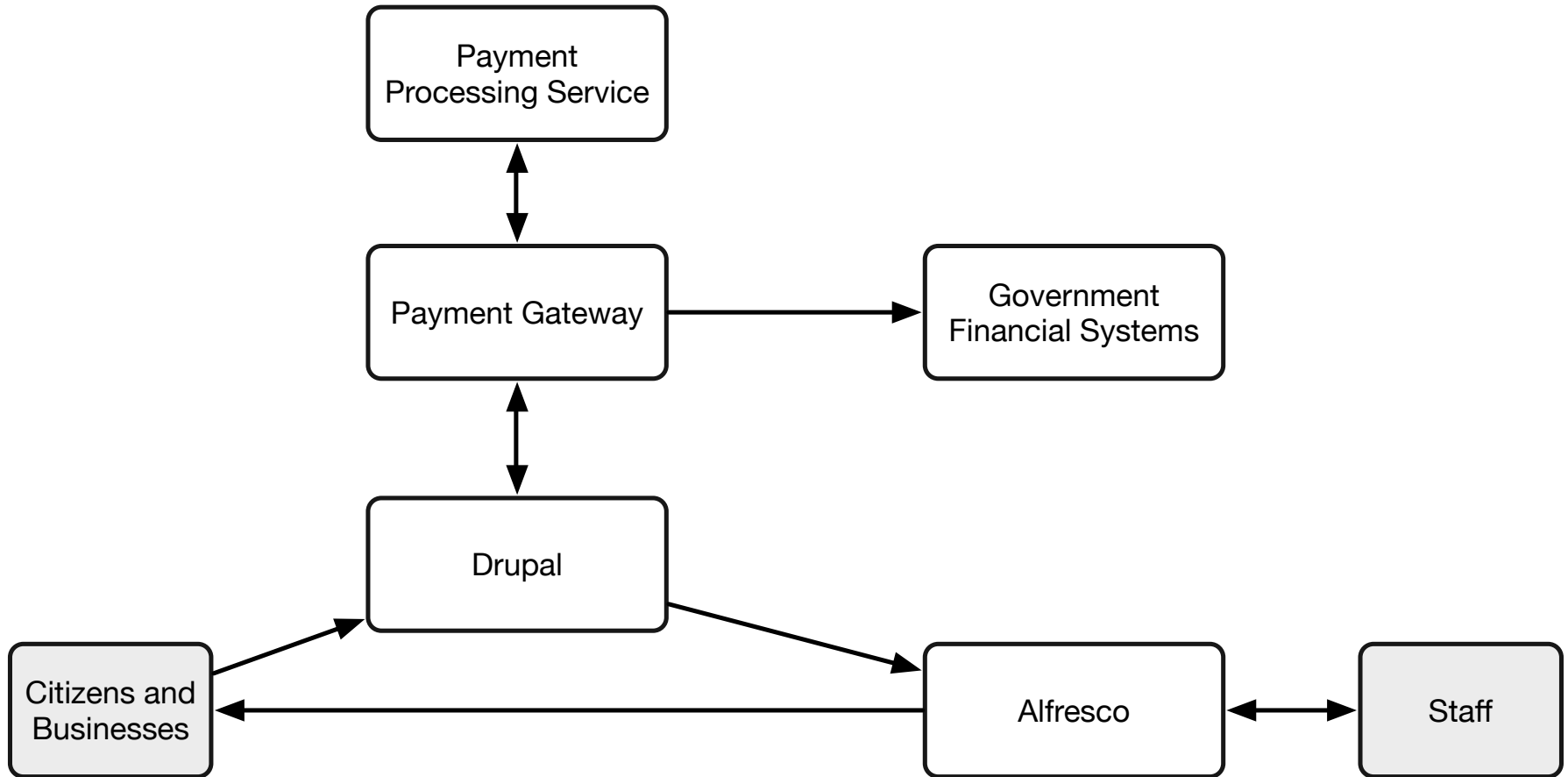
# Results

- DrupalWxT + Commerce + Web Forms
- Generic Service Process
- Isolated Risks for Web Submission Process and Business Fulfillment Process
- Ability to on-board services as fast as the business lines can support the channel
- Services' Business process is executed by Alfresco
- Service Discovery and Submission is executed by Drupal

# Architecture



# Systems



# Drupal Usage

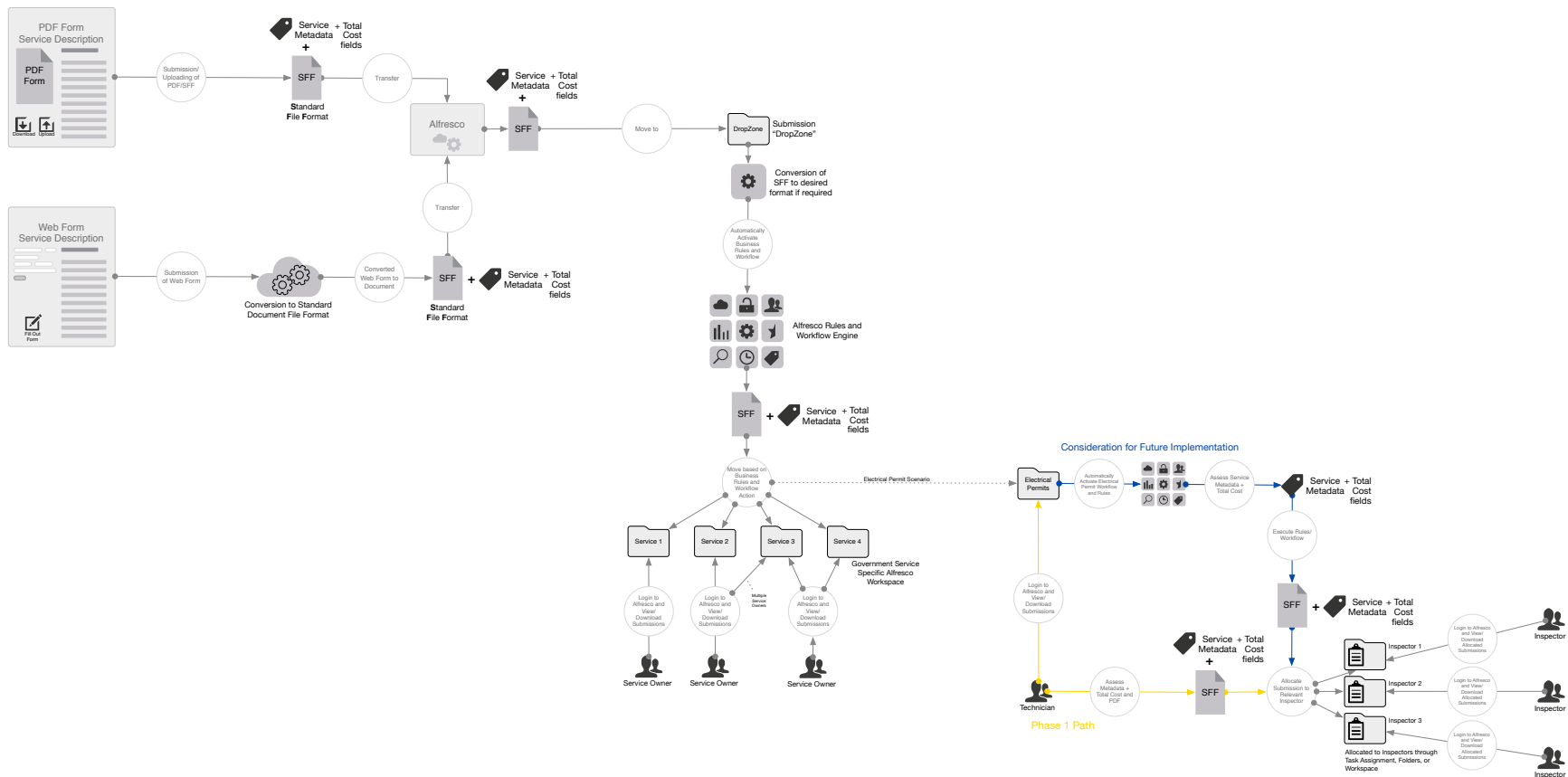
- Service Discovery
- Service Description and Activation
- Service Submission
  - Commerce + Web Forms
  - Connectivity to Payment Gateway
- No Emails or communications sent from Drupal to Staff or Citizens and Businesses
- Data deletion after transfer to Alfresco

# Alfresco Usage

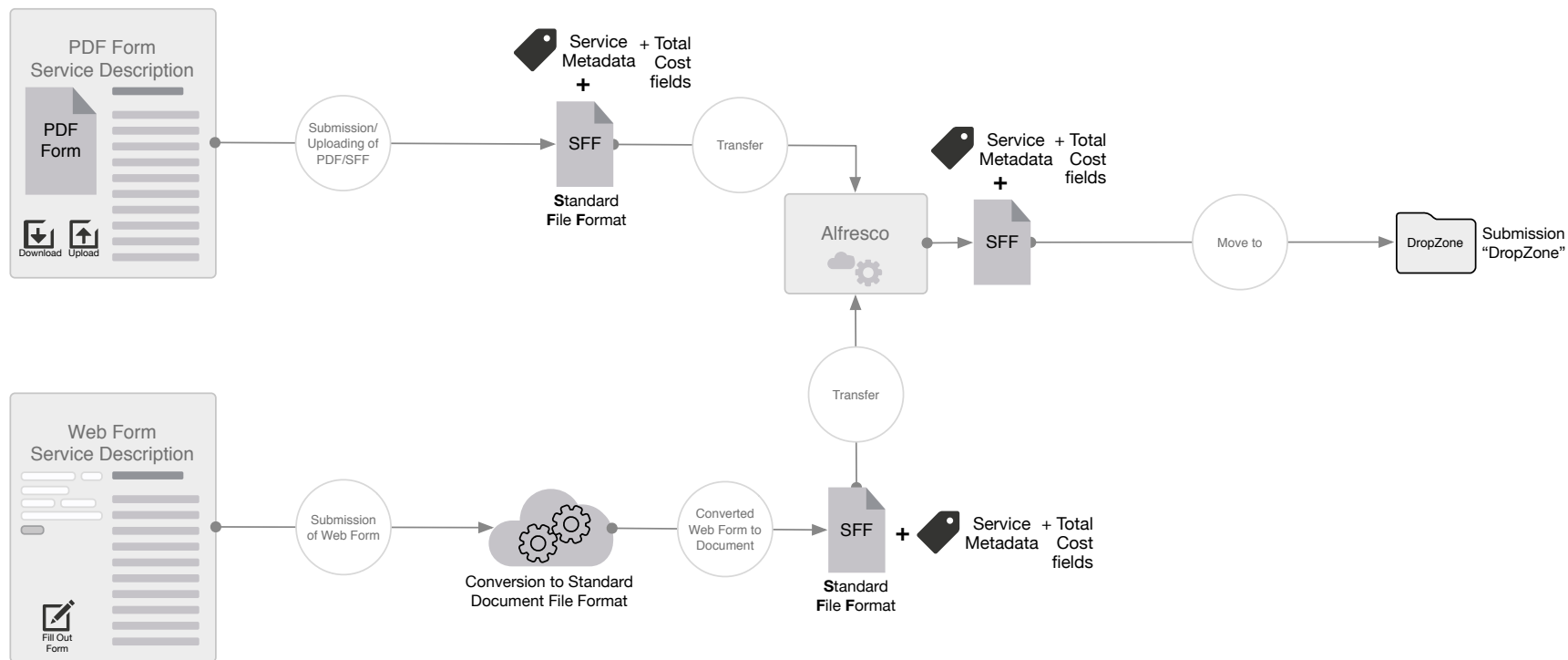
- Minimal changes to the back-office
- Services are business processes... they are not web processes.
- Let the business system manage business processes and accommodate business intricacies.
- Drupal passes off the submission to Alfresco.
- Alfresco actions the submission based on business rules and staff input.
- All Submissions from Drupal are placed in a single “Drop-Zone” location, and Alfresco business rules decide where to move the submission content.



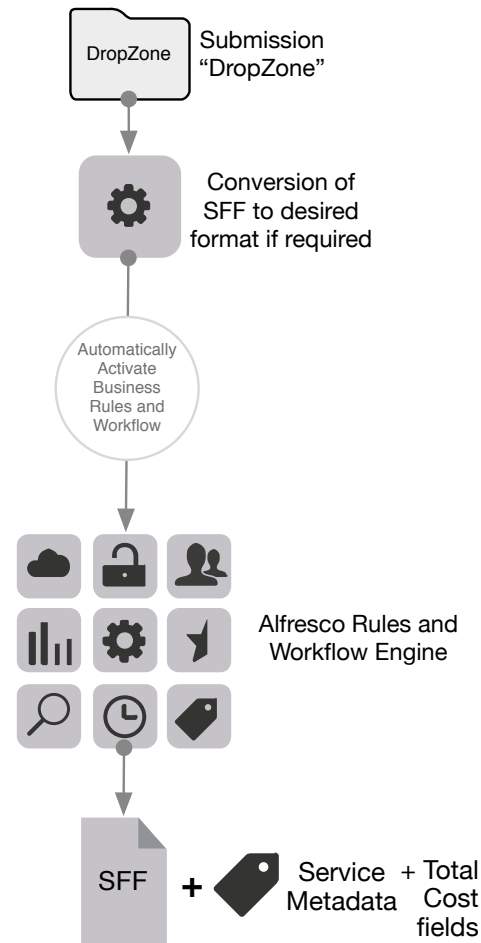
# Alfresco Setup



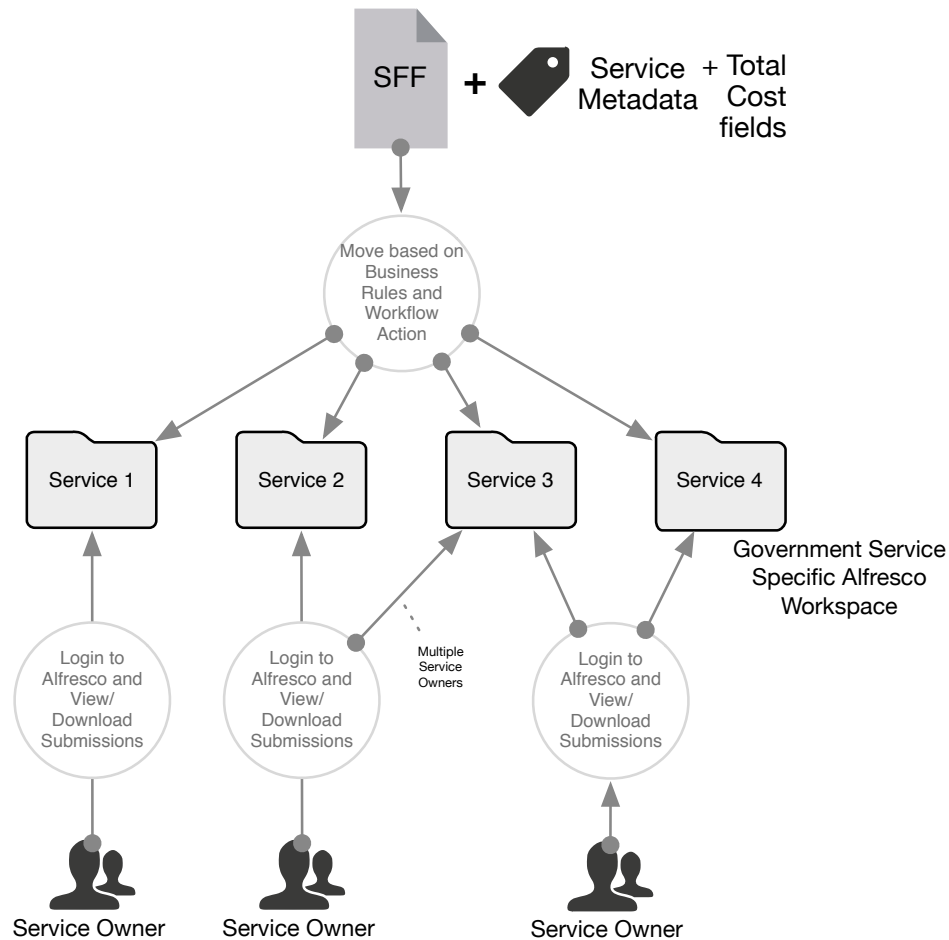
# Alfresco Setup



# Alfresco Setup

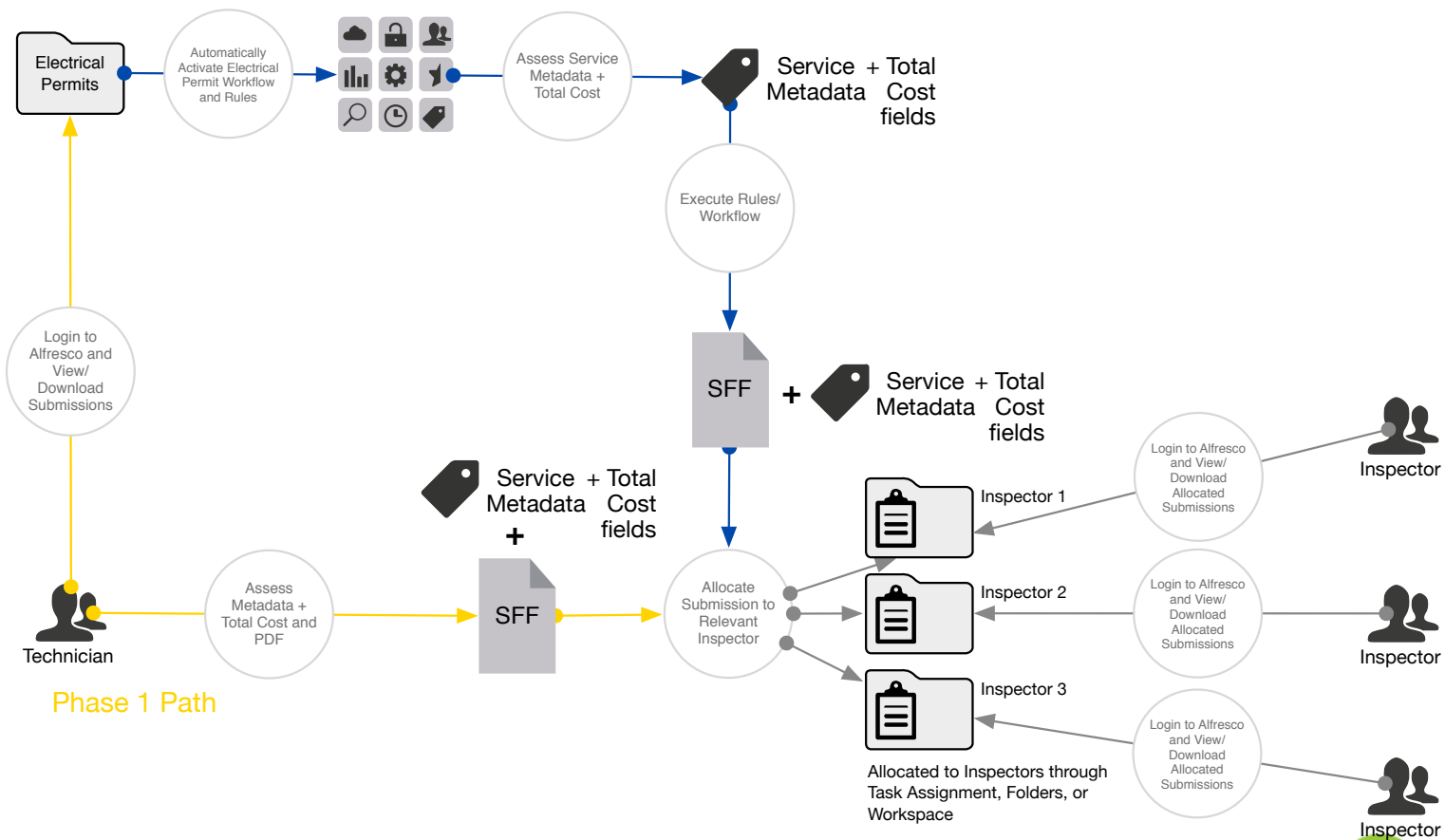


# Alfresco Setup



# Alfresco Setup

## Consideration for Future Implementation



# Common Metadata

- Metadata about the submission
  - First Name
  - Last Name
  - Email Address
  - Business Name
  - Service Identifier (ID of service)
  - Submission Identifier (ID of submission)
  - Submission Type (PDF or HTML)
  - Web Form Field Names and Values in JSON format

# Service Cost Metadata

- Total Calculated Cost
- Payment Reference ID
- Tax Percentage
- Purchase ID
- ...

# Limiting and Isolating your Development Risk

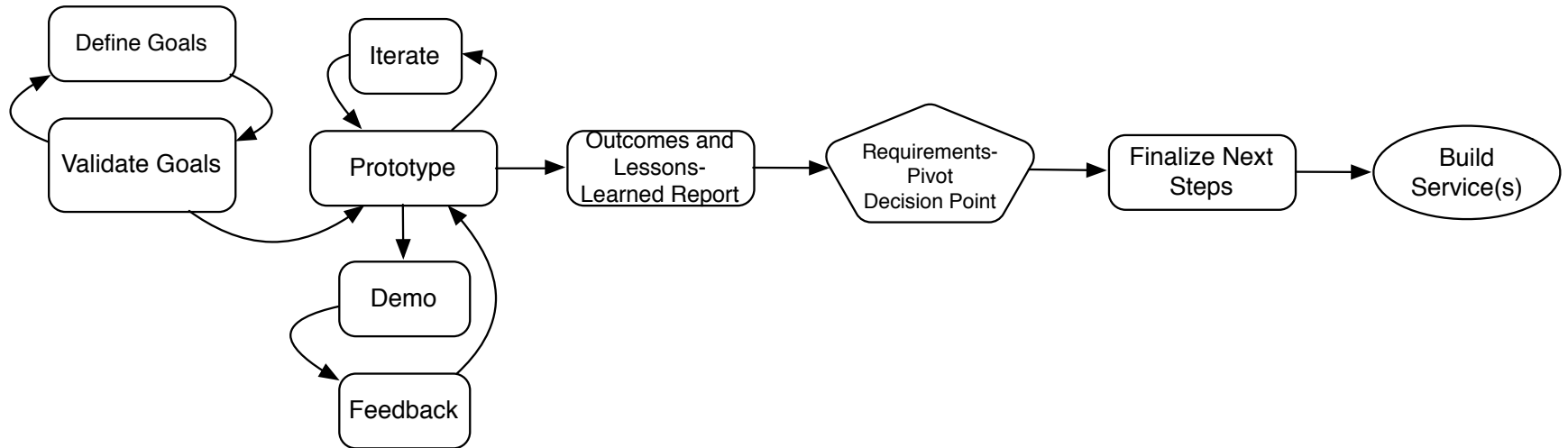
- Responsibility of Alfresco:
  - Notifications and Alerts
  - Communications/Emails to Citizens
  - Communications/Emails to Staff
  - Document Format conversion
  - Business Rules related to submission fulfillment
- Responsibility of Drupal
  - Service Discovery
  - Service Information and Activation
  - Service Submission
  - Transfer to Alfresco
  - Payment Gateway Connectivity
- Prototype High Risk deliverables



# Prototype High Risk Deliverables

- Use Goals not deliverables
- A missed/Failed goal is not a bad thing
- Prototype is to scope risks and determine mitigation plans
- A prototype has a Effort and Duration. You do not exceed this effort. If a goal is eating time and getting no where, then it is a failed goal and you identify as a risk and plan accordingly (more budget to that item) for the full build.
- Hybrid Agile

# Prototype Process



# Web Form Considerations

- Who is going to building the webforms?
- Who is going to maintaining the webforms?
  - Logic changes, field changes, etc??
- Business can create form requirements and Web can build
- Business can build entire form themselves. But you have to enable friendly building. That does not just mean drag and drop.
  - Single and Multi-page Forms
  - Form Logic and Calculations
  - Client and/or server side validations
  - QA process for Service Building

# Training

- When possible simplify the service build process to the point where Business can build new services without significant support from web/technical
- Train on a range of services that demonstrate simple, standard and complex services so business has a “template” to follow.



1

### Simple No Payment

Short, typically 1 Paper Page in length, Minimal Field Complexity, no calculations, 1 to 5 minutes to fill out

2

### Standard With Payment

Average length, typically 1-3 Paper Pages in length, some Fields with logic Complexity, no calculations, 5 to 10 minutes to fill out

3

### Complex with Payment

Long, typically more than 3 Paper Pages in length, multiple Fields with varying logic Complexity, calculations, 10+ minutes to fill out

[illegible]

Complex  
Single Page  
With Payment

Long, typically more than 3 Paper Pages in length, multiple Fields with varying logic Complexity, calculations, 10+ minutes to fill out

Simple  
Multi-Page  
No Payment

Short, typically 1 Paper Page in length, Minimal Field Complexity, no calculations, 1 to 5 minutes to fill out

Standard  
Multi-Page  
with Payment

Average length, typically 1-3 Paper Pages in length, some Fields with logic Complexity, no calculations, 5 to 10 minutes to fill out

# Choosing services to implement first

- Forms should represent a mix of scenarios from Simple, Standard and Complex
- With and without payment
- Services that do not have a PDF or webform should be deprioritized because of extra effort to get those services up to speed.

# Final Take Away

- Avoid Business Transformation of the Service unless that is your specific project
- Separate Website from Online Services
- Separate Online Services from Business systems
- Implement a simple online service and enhance over time
- Build from start to be Secure, Multi-Lingual, and Accessible
  - Even when you do not need to be multi-lingual
- Prototype High Risk deliverables



# Thank you

- Stephen Russett
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- OpenPlus.ca
- GovPlus.io