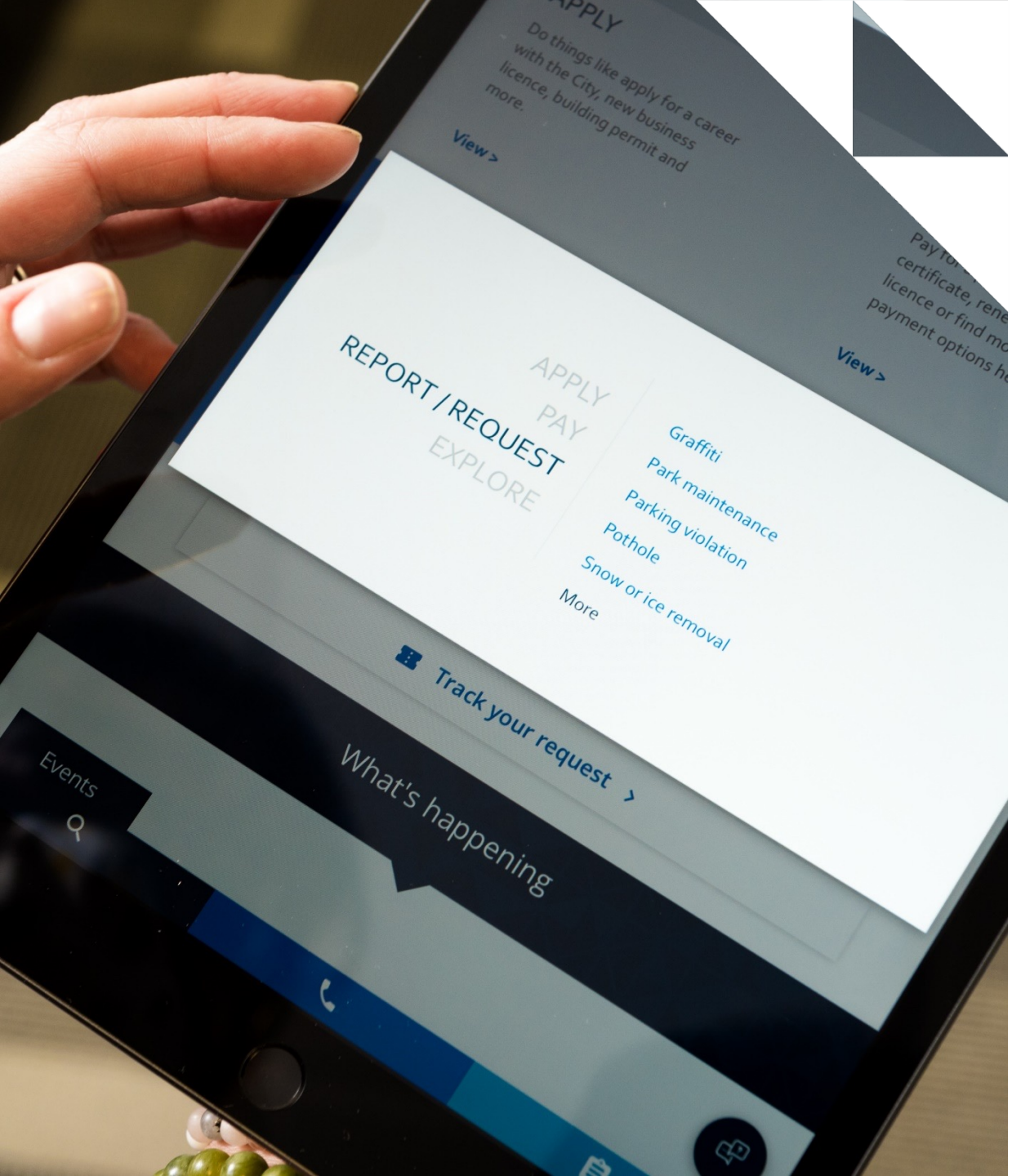
Art of the Possible:
AI Digital Transformations

Art of the possible: AI Digital Transformations

Union of BC Municipalities 2023



Panelists

Doug Gilchrist
CAO | City of Kelowna

Jazz Pabla
Director of Information Services | City of Kelowna

Mike Palmer
Chief Information Officer | City of Victoria

John Weigelt
National Technology Officer AI Ethics | Microsoft

Sonia Hobbs
Director of Business Solutions | Land Title and Survey Authority

Bryan Sawers
Manager of Business Solutions | Land Title and Survey Authority

Agenda

City of Kelowna

- *Digital transformation and AI*
- *Permitting*
- *Development applications*
- *Data quality and why it's vital*

City of Victoria

- *People and Process*

Microsoft

- *Ethics and AI*

Land Title and Survey Authority

- *Innovation in real property market*

Kelowna
A City of the Future

Embracing innovation

Digital transformations in local governments

- Why Transform?

  - The "business case“
  - Quality and efficiency in public service

City of Kelowna

Embracing innovation

Digital transformations in local governments

- Innovation vs. Transformation

  - Jump in with both feet

Embracing innovation

Digital transformations in local governments

- Set the standard
  - Leadership … not just "Municipal" Leadership

Let’s get thinking!

What comes to mind when you think of digital transformation and AI?

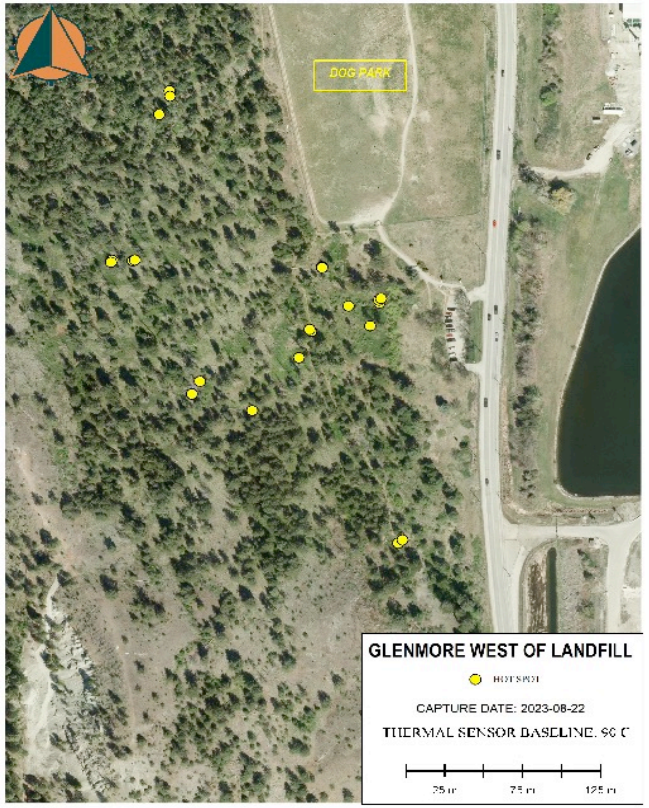
- We have a plan
- Started, but not done
- I think we know what we want?

City of Kelowna

Wildfires & technology

Images in real time

How does this help?



City of Kelowna

Vision and Strategy - Kelowna's Digital Transformation Journey

- Set a secure foundation
- Gained trust of the organization

CYBER SECURITY STRATEGY

- Defined strategic direction
- Optimized IS organizational structure

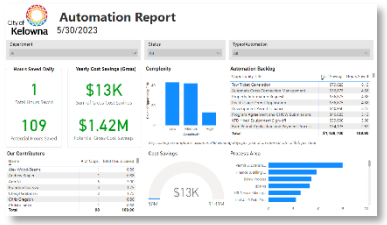
IS STRATEGY

DATA STRATEGY

- Improved data governance
- Redefined **Data as an Asset**
- Focused on building capabilities

DIGITAL STRATEGY

CITY OF THE FUTURE

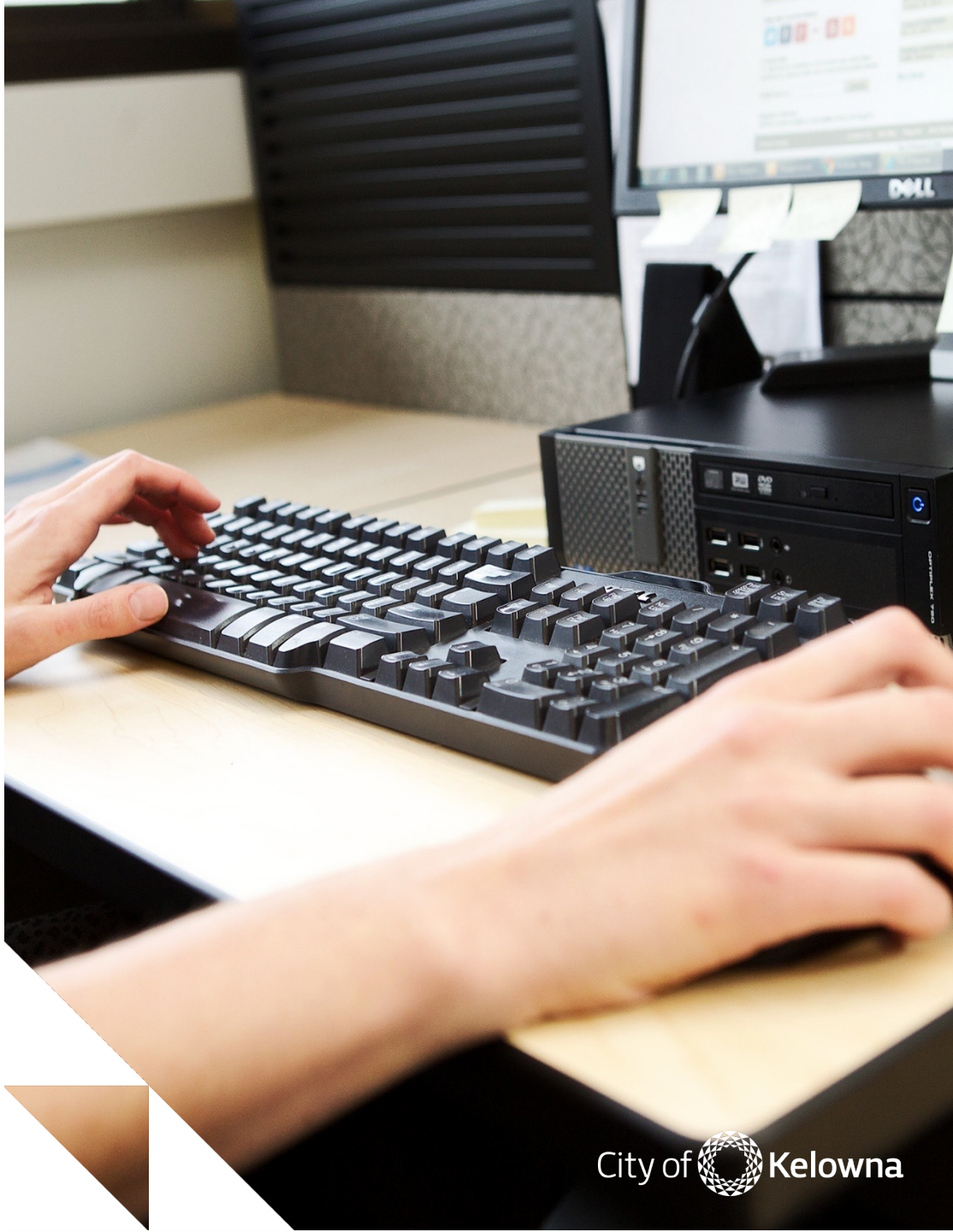


- Identified **$1.4M in automation savings**
- Building an automation centre of excellence and corresponding governance body
- Built BI dashboard to monitor and track automation opportunities

City of Kelowna

Citizens want change

- Digital services then and now
- Citizen expectations
- Beyond an online presence

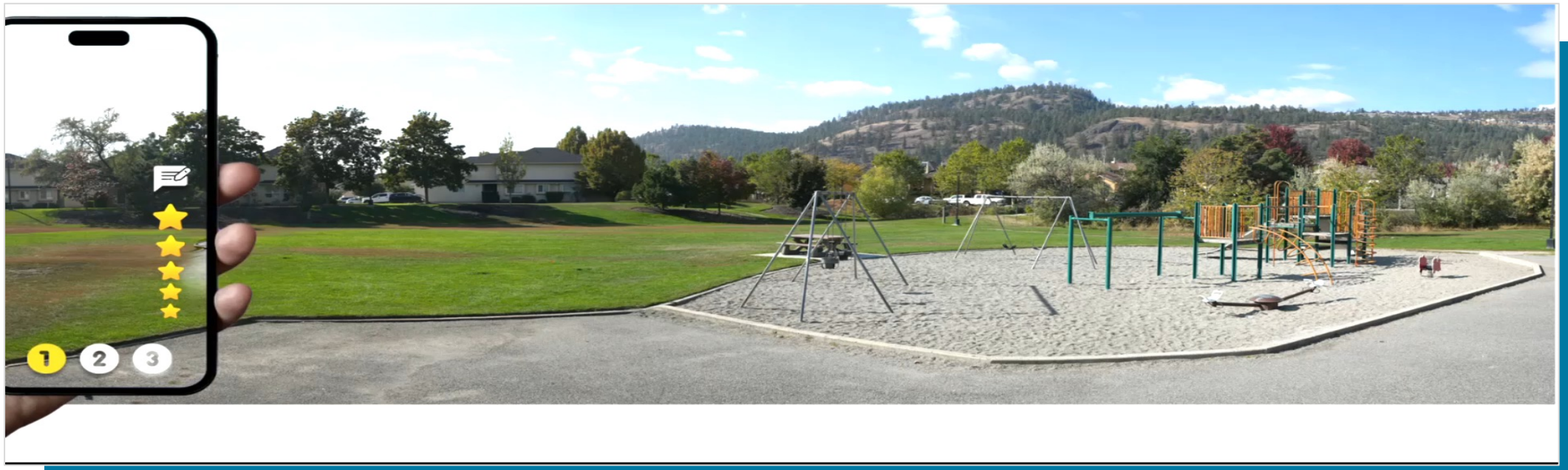


City of Kelowna

Meeting and engaging with users where they are on their terms

Augmented Reality Use Case

University of British Columbia School of Immersive Technologies Partnership

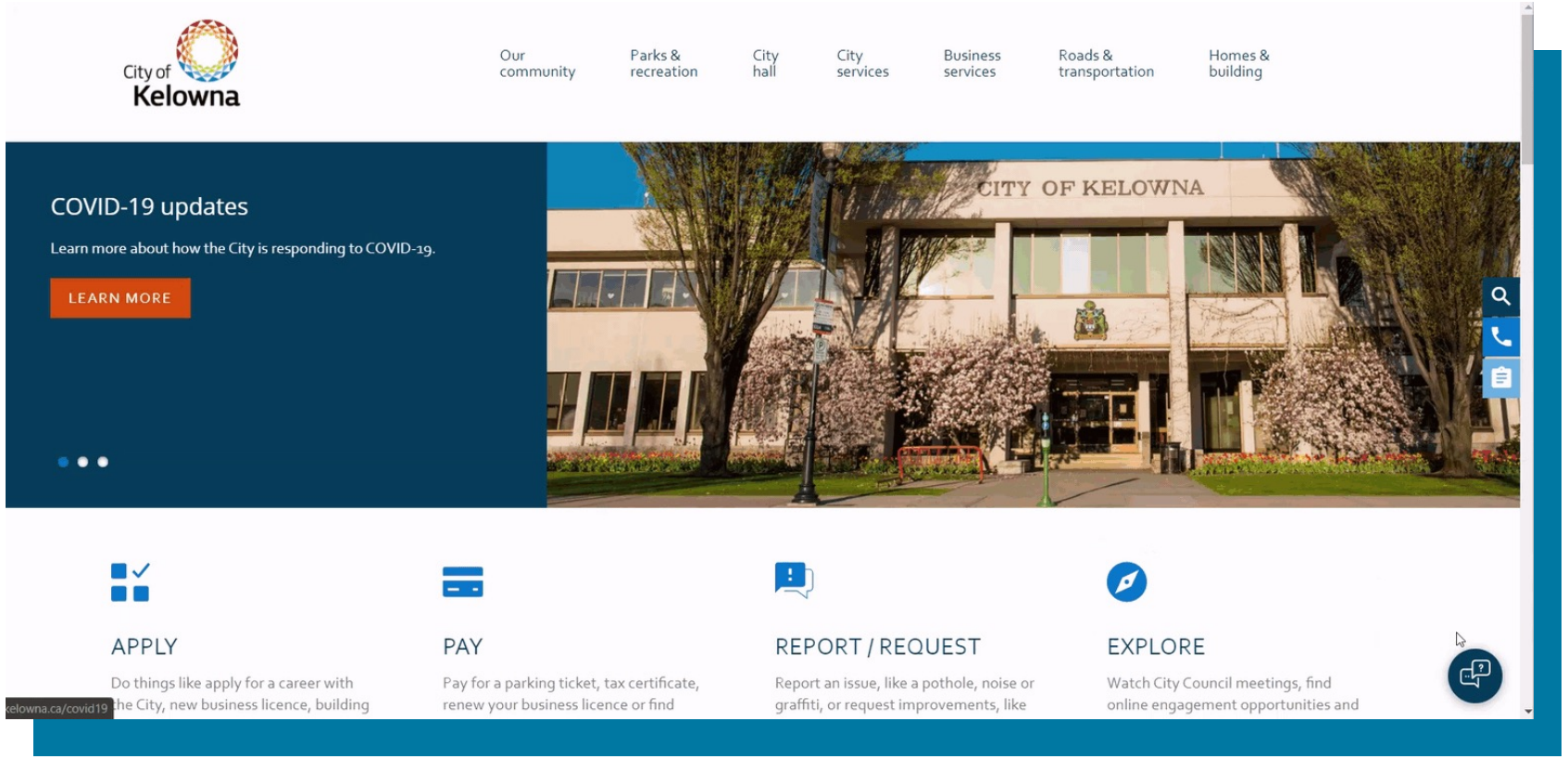


City of Kelowna

Omni channel AI interactions for City Services

OMNI Channel Use Case

All city departments have a vested interested in offering more services online. In doing this you offer 24/7 customer support and also free up staff time (not answering those common questions – focusing on real issues).



City of Kelowna

Digital Assistants

Digital Assistants Use Case

By the Numbers

12K
Unique Users

15,674
Unique Conversations

0.98
Avg Interactions per User

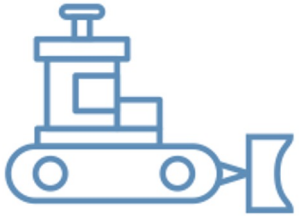
14,488
Questions Asked

Facility Requests

Garbage Schedules

General Requests

Development


Winter Maintenance

Airport Wait times

City of Kelowna

Voice Assistants

Voice Assistants Use Case

Winter Maintenance voice assistant

Total Voice Conversations	Asked to speak to an agent	Asked a question then asked to speak to an agent	Never asked for an agent	Percentage of calls diverted from staff
137	35	23	102	76%

Revenue voice assistant

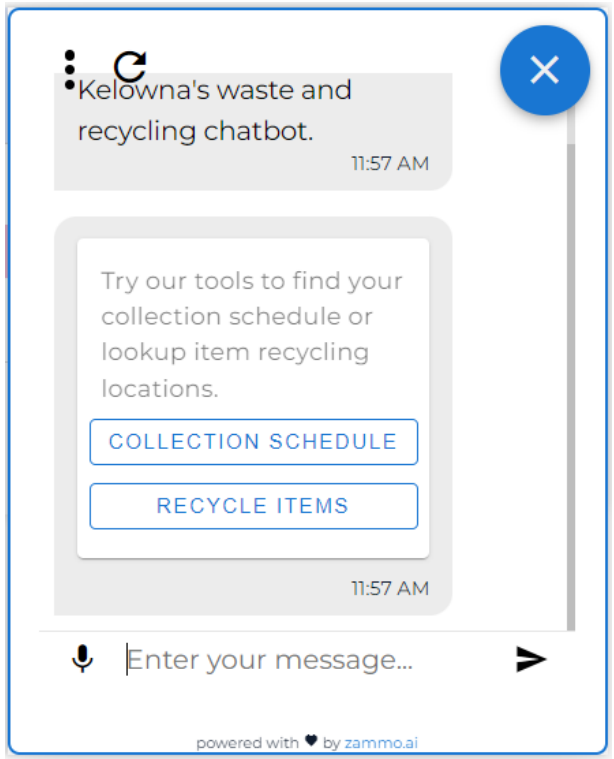
Total Voice Conversations	Asked to speak to an agent	Asked a question then asked to speak to an agent	Never asked for an agent	Percentage of calls diverted from staff
1159	946	542	213	18%

City of Kelowna

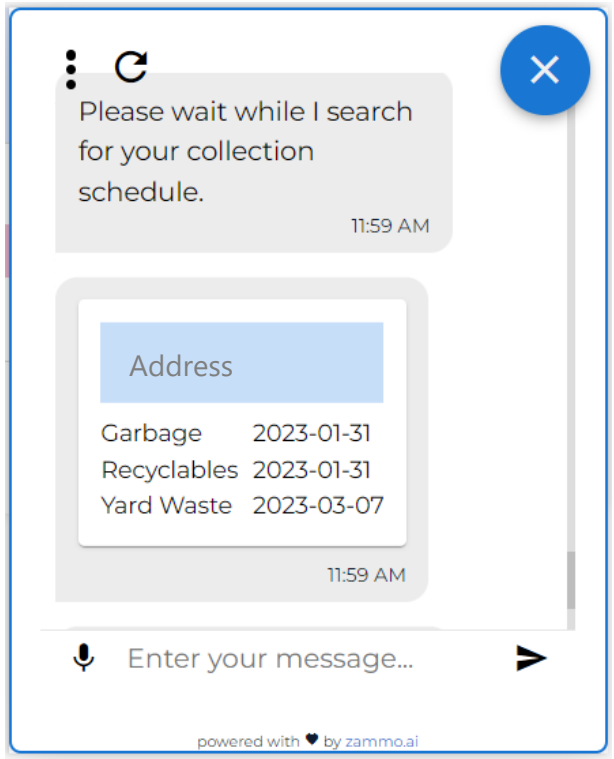
Landfill Chatbot

Chatbot Use Case

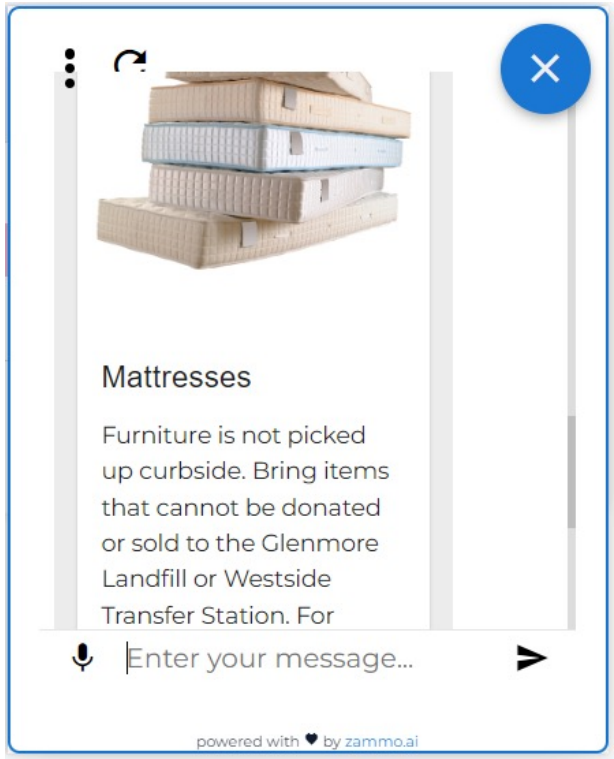
Chatbot welcome



Collection schedule



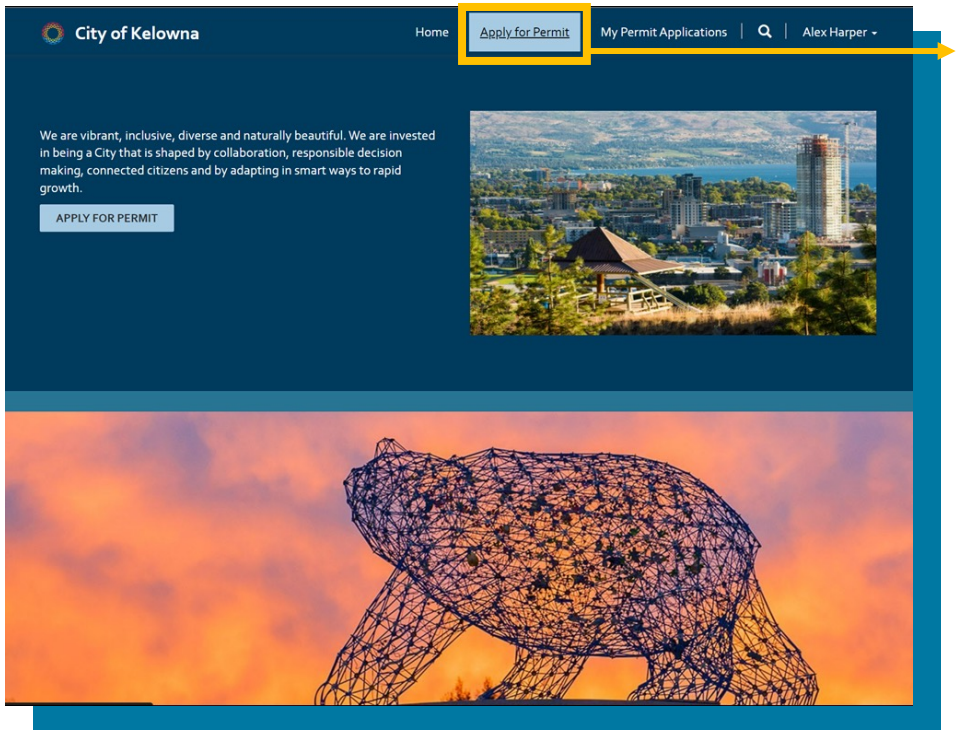
What goes where?

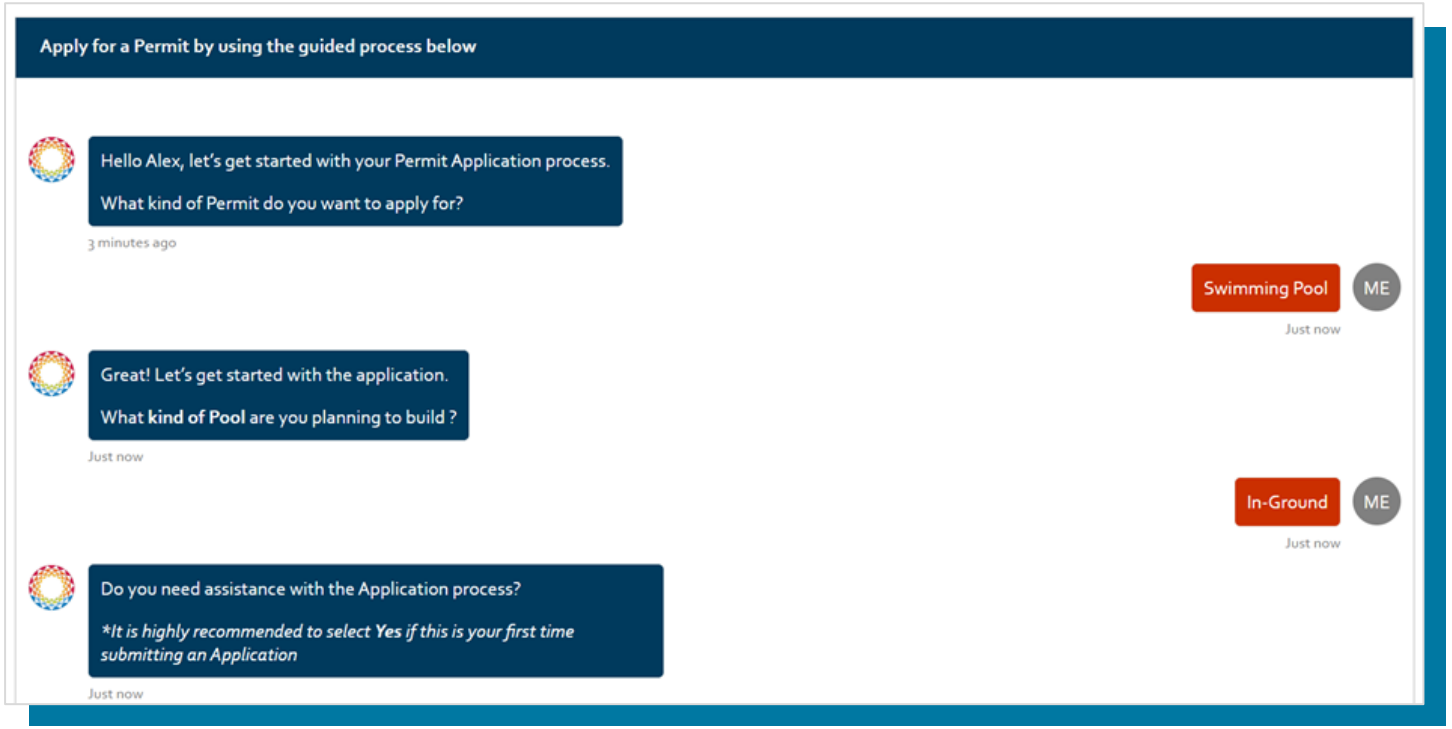


City of Kelowna

OpenAI – Permitting Use Cases

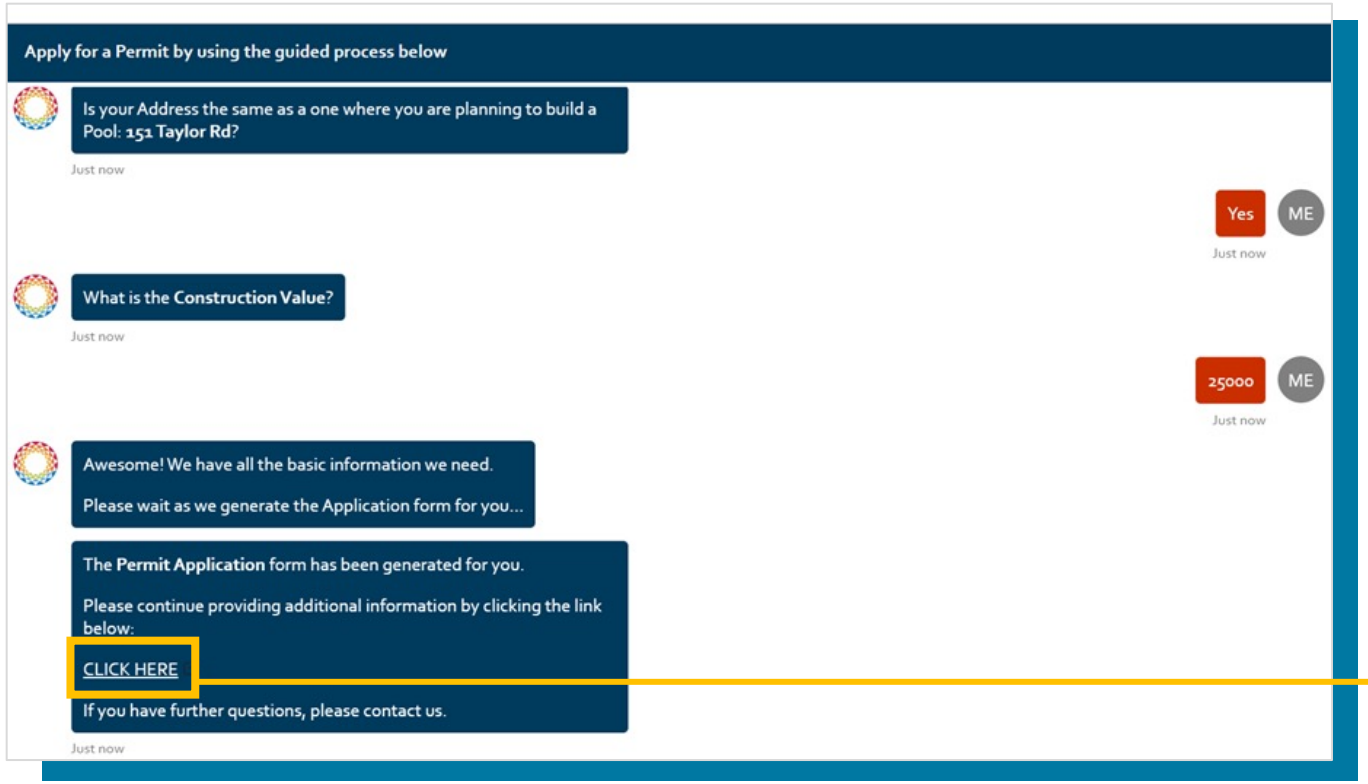
OpenAI Permitting Use Case

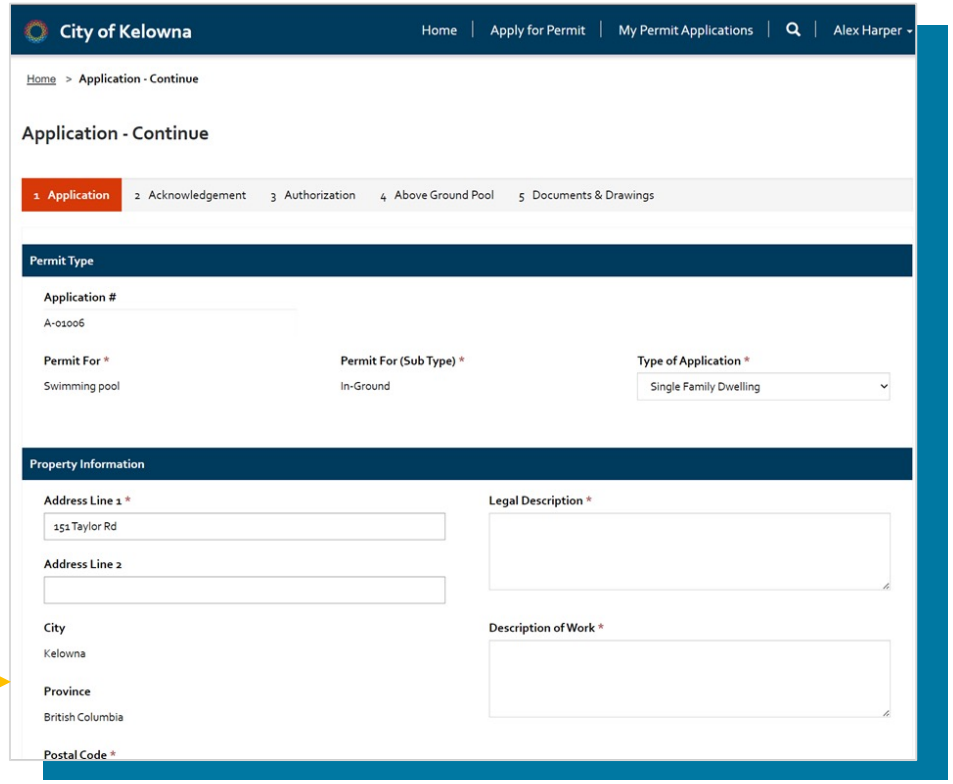




OpenAI – Permitting Use Cases

OpenAI Permitting Use Case

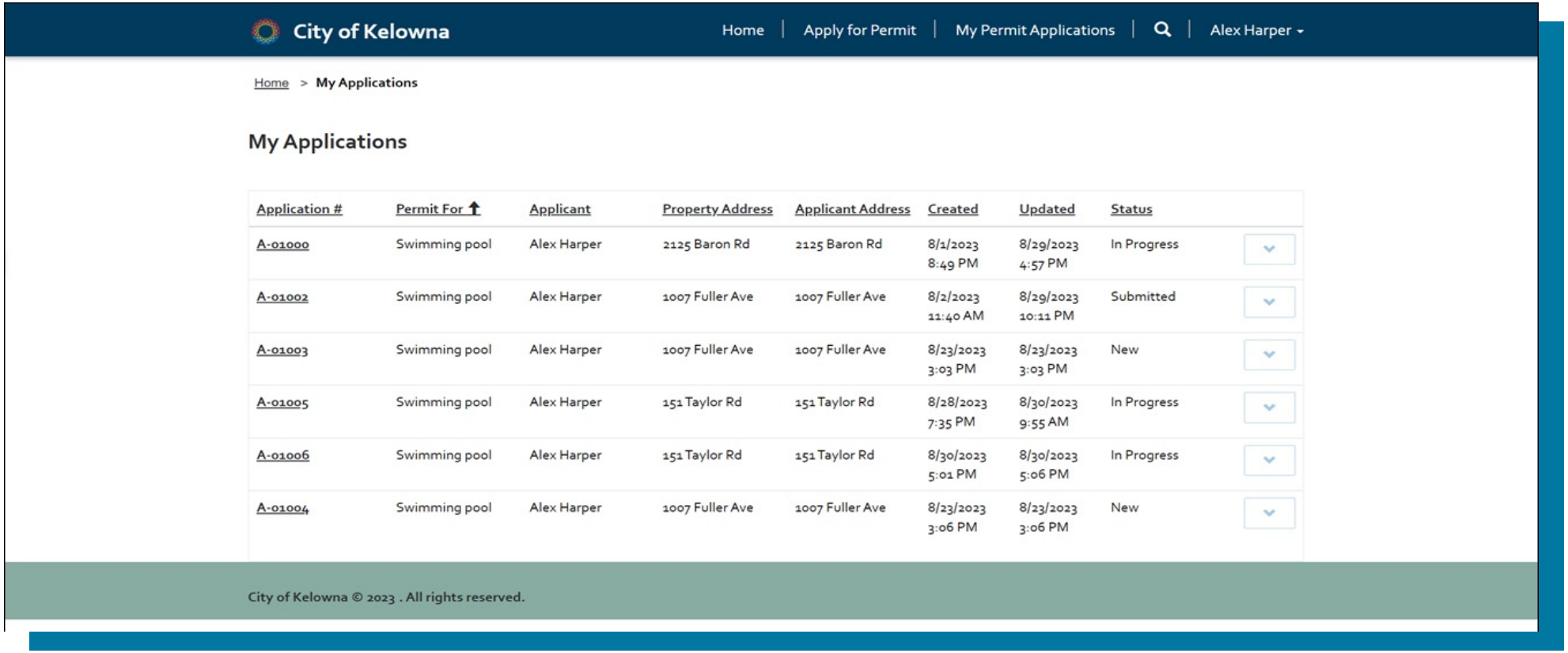




City of Kelowna

OpenAI – Permitting Use Cases

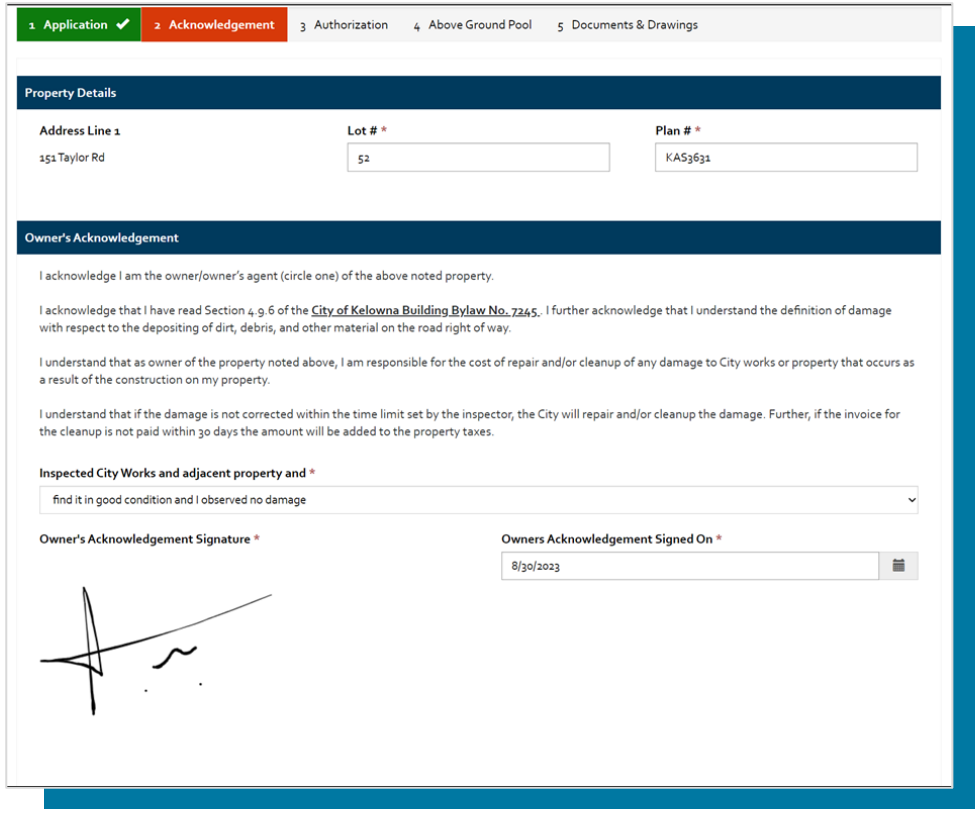
OpenAI Permitting Use Case

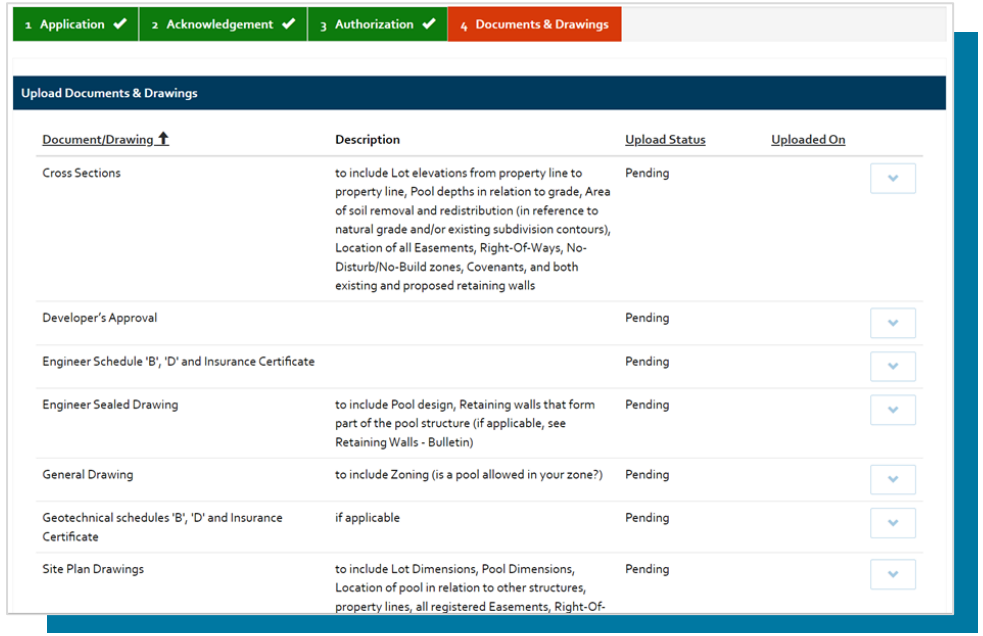


City of Kelowna

OpenAI – Permitting Use Cases

OpenAI Permitting Use Case





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What do you think?

What are some questions you would want to ask?

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How can I start?

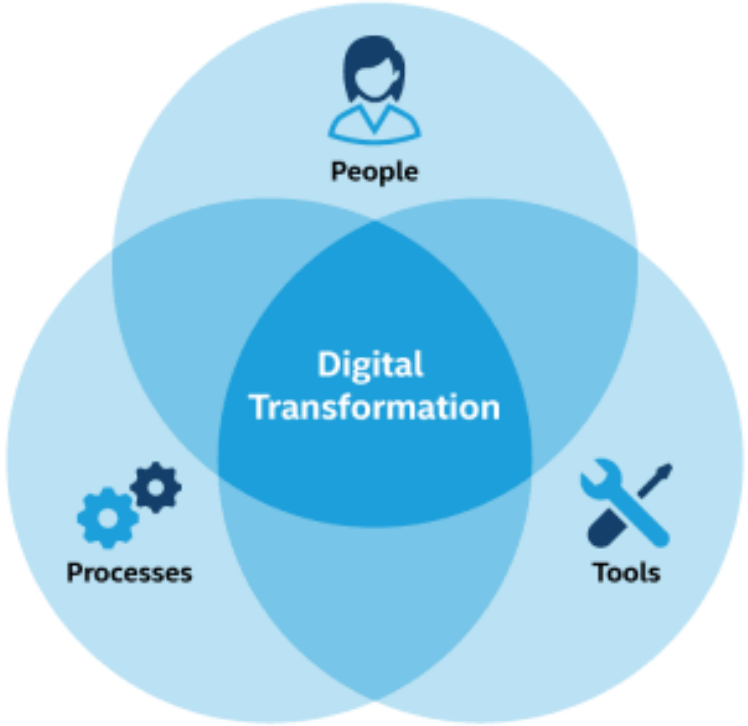
Making it work

- Build your strategy and know your why
- Invest in technology
- Understand your processes

Pioneering AI in Local Government

Q. How can we bring this innovation to our own communities?

- 3 foundational but equally important elements to successful AI:
    - **Technology**
    - **People**
    - **Process**
- Without strong foundational elements, even the most promising technology initiatives can fail
- IT leaders need to align technology with the business



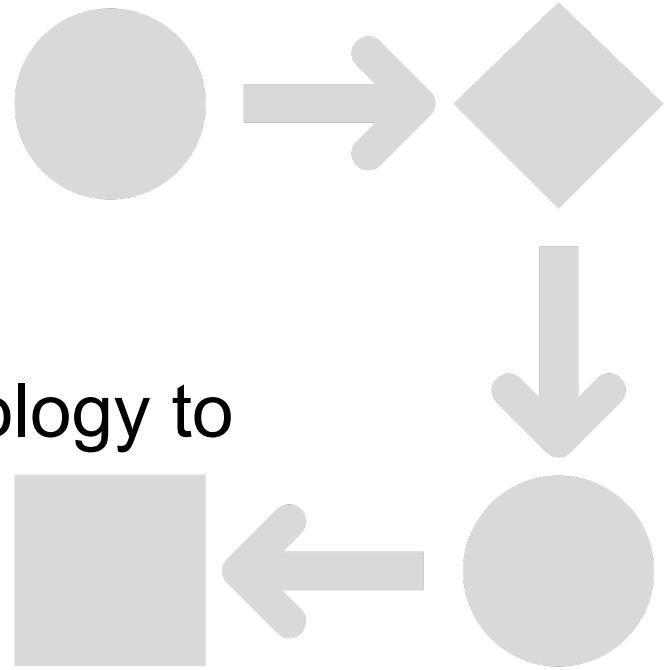
CITY OF VICTORIA

People – What is the culture and conditions we need for success?

- Strong Leadership and **clear** Vision
- IT Department who is a **trusted** Business Partner
- Training and upskilling of staff is ongoing
- Build relationships outside the organization

CITY OF VICTORIA

Process – How do we prepare for the technology to be successful?



Understanding the limitations

- Technology can't fix poor processes
- Overcome the myths that you need new technology to make improvements and solve problems

The Path Forward

- Start small - streamlining and improving processes
- Enhance what you have!
- Digital transformation is business transformation

Development Process Review Project: A Case Study

- Housing crisis is a pressing issue in our province. To speed up development, we must address complexities in land development.
- In Victoria, a comprehensive review project is underway, involving multiple departments.
- The focus is on modernizing processes, updating bylaws, and leveraging technology.

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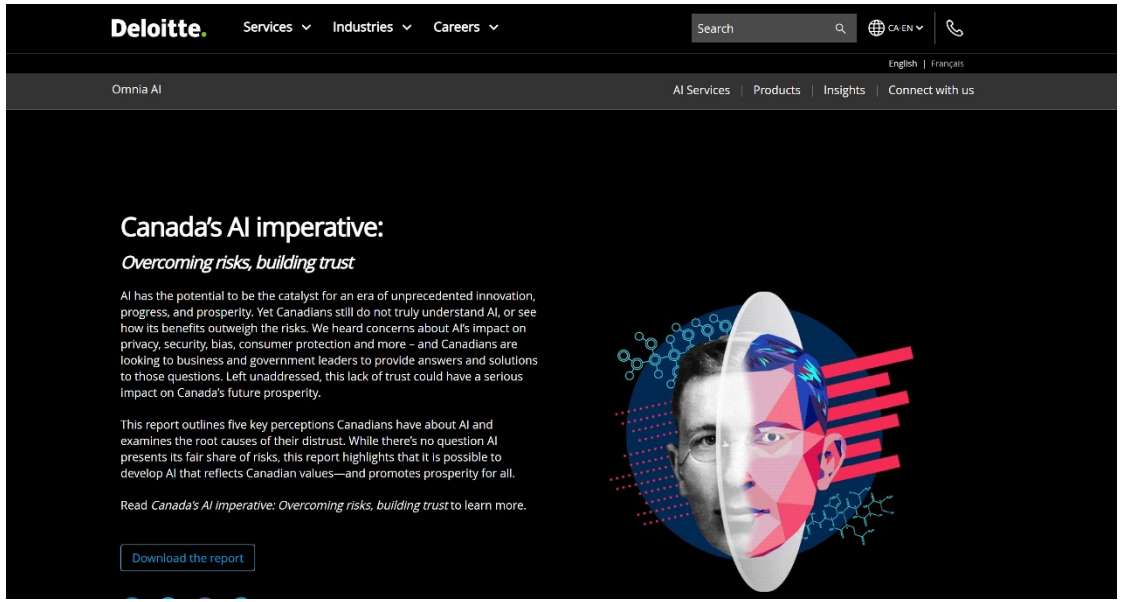
Responsible AI

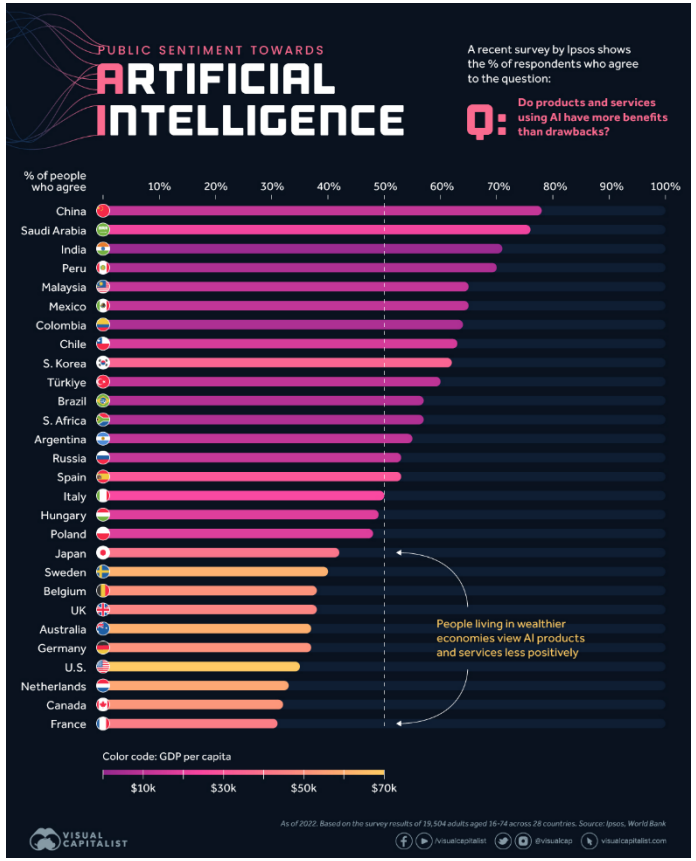
Thoughtfully innovating to realize the full potential of AI

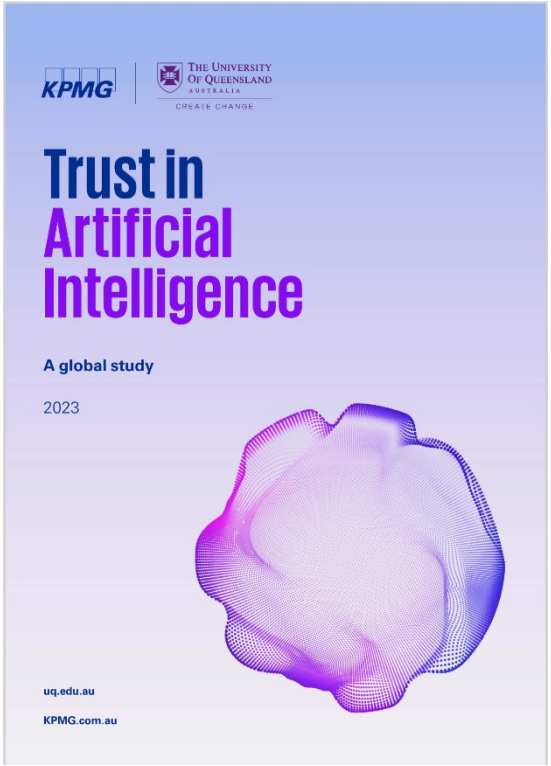
Microsoft

John Weigelt
CTO Microsoft Canada

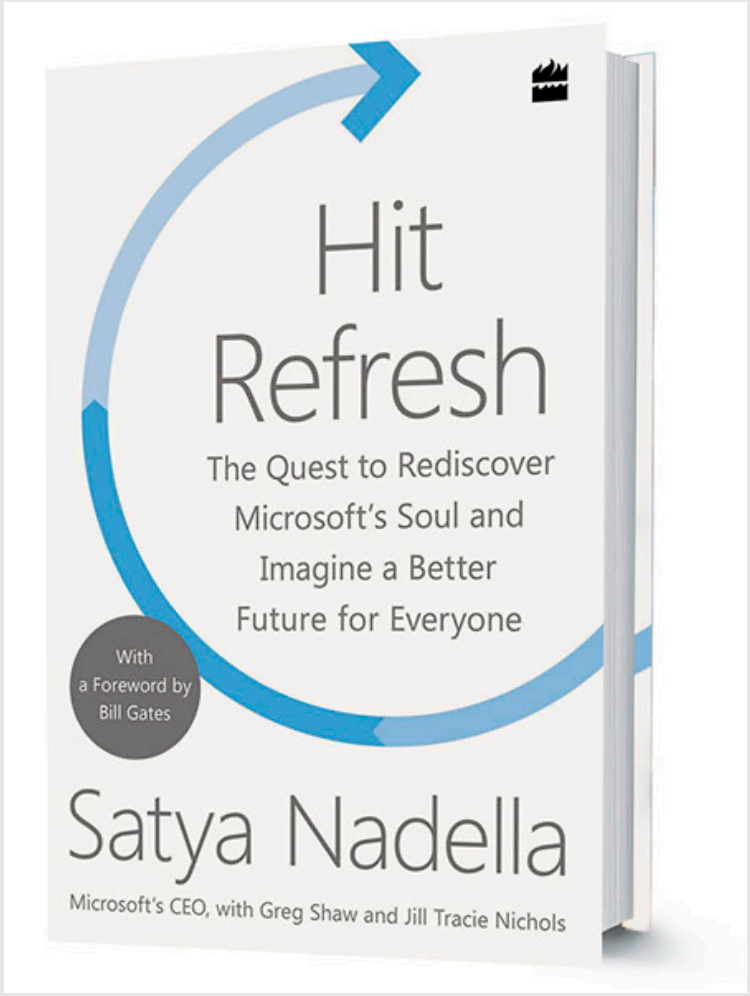
Canada Lags in Trust in AI







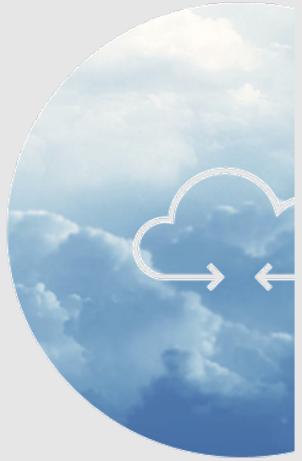
Microsoft is optimistic about the future of AI systems **empowering and augmenting individuals' and organizations' abilities** to address broad societal issues such as poverty, security, justice, education and healthcare.



on the planet to achieve more

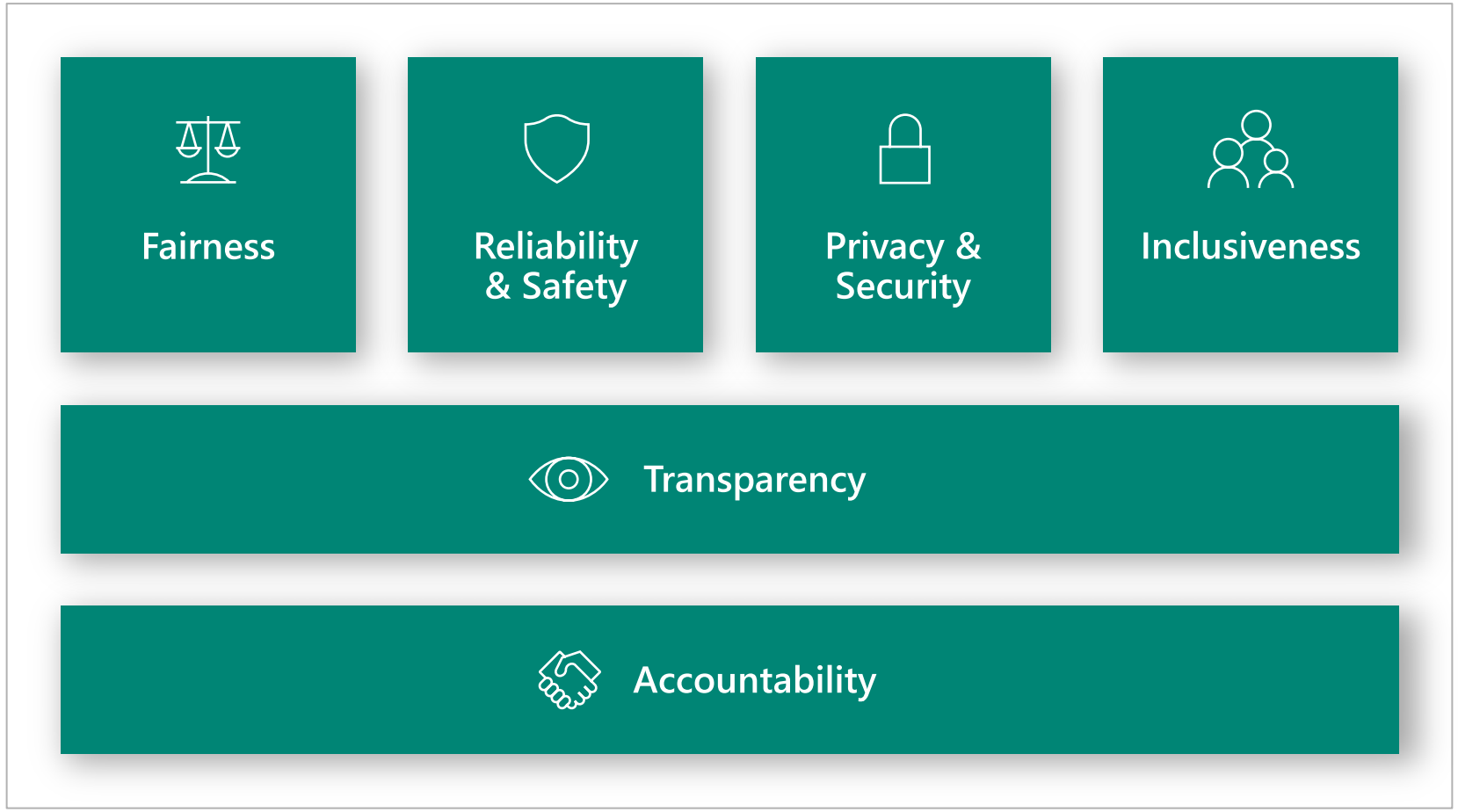
eate more

Reinvent productivity



Build tl

Microsoft's AI principles



Our Approach to Responsible AI

Advanced research

Practice and tooling innovations

Company-wide governance

AI Business School

Industry case studies

Practical tools and guidance

Industry working groups

Shaping public policy

AI for Good grants

Microsoft Cloud
Runs on trust

Your data is your data	Data is stored encrypted in your Azure subscription
Your data from any fine-tuning is not used to train the foundation AI models	Azure OpenAI Service provisioned in your Azure subscription Model fine tuning stays in your Azure subscription and never moves into the foundation AI models
Your data is protected by the most comprehensive enterprise compliance and security controls	Encrypted with Customer Managed Keys Private Virtual Networks, Role Based Access Control Soc2, ISO, HIPPA, CSA STAR Compliant

Responsible AI built into Azure AI

Fairness

Assess fairness and mitigate fairness issues to build models for everyone.

Explainability

Understand model predictions by generating feature importance values for your model.

Counterfactuals

Observe feature perturbations and find the closest datapoints with different model predictions.

Causal analysis

Estimate the effect of a feature on real-world outcomes.

Error analysis

Identify dataset cohorts with high error rates and visualize error distribution in your model.

Responsible AI scorecard

Get a PDF summary of your Responsible AI insights to share with your technical and non-technical stakeholders to aid in compliance reviews.

Tools:

Transparency Documents

Microsoft

The basics of the new Bing

Introduction

In February 2023, Microsoft launched the new Bing, an AI-enhanced web search experience. It supports users by summarizing web search results and providing a chat experience. Users can also generate creative content, such as poems, jokes, and letters. The new Bing runs on a next-generation model from OpenAI that is more powerful than ChatGPT. We worked with this OpenAI model to develop a customized set of capabilities and techniques to join cutting-edge AI technology and web search.

At Microsoft, we take our commitment to responsible AI seriously. The new Bing experience has been developed in line with Microsoft's AI Principles, Microsoft's Responsible AI Standard, and in partnership with responsible AI experts across the company, including Microsoft's Office of Responsible AI, our engineering teams, Microsoft Research, and Aether.

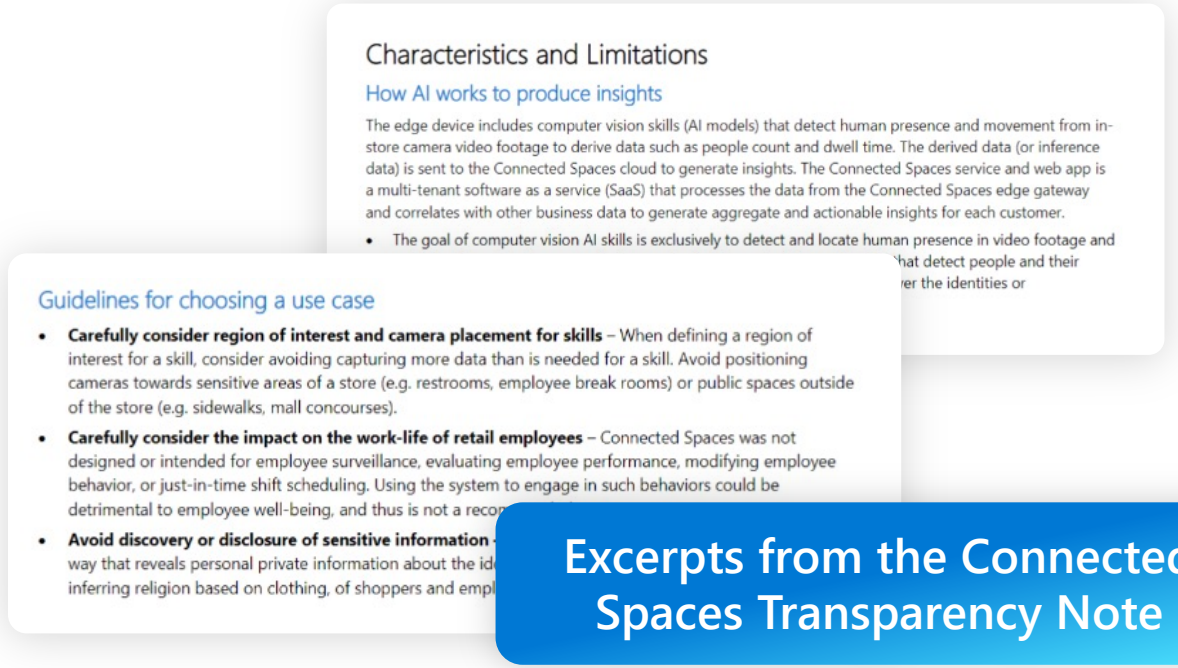
In this document, we describe our approach to responsible AI for the new Bing. Ahead of release, we have adopted state-of-the-art methods to identify, measure, and mitigate potential harms and misuse of the system and to secure its benefits for users. As the new Bing becomes available to users, we know we will continue to learn and evolve our approach. This document will be updated periodically to communicate our evolving processes and methods.

Key terms

The new Bing is an AI-enhanced web search experience. As this is a powerful, new technology, we start by defining some key terms.

Term	Definition
Classifiers	Machine learning models that help to sort data into labeled classes or categories of information. In the new Bing, we use classifiers to help detect potentially harmful content submitted by users or generated by the system in order to mitigate generation of that content and misuse or abuse of the system.
Grounding, Grounded responses	The new Bing is grounded in web search results. This means that we center the response provided to a user's query on high-ranking content from the web, and we provide links to websites so that users can learn more. Bing ranks web search content by heavily weighting features such as relevance, quality and credibility, and freshness. We describe these features in more detail in Bing's Webmaster Guidelines (see "Quality and Credibility" in "How Bing ranks your content").

https://aka.ms/ResponsibleAI-NewBing



Characteristics and Limitations

How AI works to produce insights

The edge device includes computer vision skills (AI models) that detect human presence and movement from in-store camera video footage to derive data such as people count and dwell time. The derived data (or inference data) is sent to the Connected Spaces cloud to generate insights. The Connected Spaces service and web app is a multi-tenant software as a service (SaaS) that processes the data from the Connected Spaces edge gateway and correlates with other business data to generate aggregate and actionable insights for each customer.

- The goal of computer vision AI skills is exclusively to detect and locate human presence in video footage and
  hat detect people and their
  er the identities or

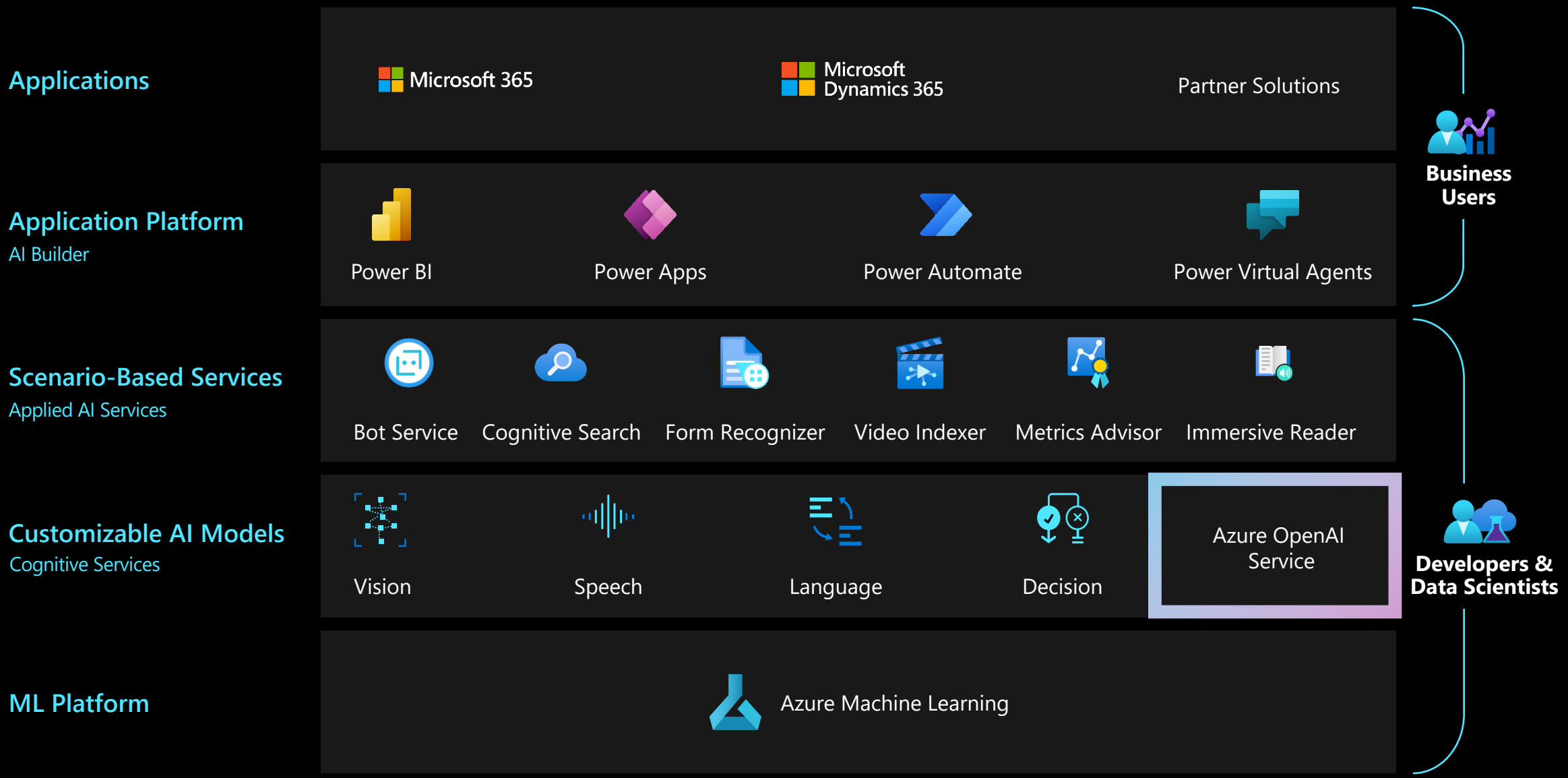
Guidelines for choosing a use case

- **Carefully consider region of interest and camera placement for skills** – When defining a region of interest for a skill, consider avoiding capturing more data than is needed for a skill. Avoid positioning cameras towards sensitive areas of a store (e.g. restrooms, employee break rooms) or public spaces outside of the store (e.g. sidewalks, mall concourses).
- **Carefully consider the impact on the work-life of retail employees** – Connected Spaces was not designed or intended for employee surveillance, evaluating employee performance, modifying employee behavior, or just-in-time shift scheduling. Using the system to engage in such behaviors could be detrimental to employee well-being, and thus is not a recom
- **Avoid discovery or disclosure of sensitive information**
  way that reveals personal private information about the id
  inferring religion based on clothing, of shoppers and empl

Excerpts from the Connected Spaces Transparency Note

Microsoft's Transparency Notes are intended to help you understand how our AI technology platform services works, the choices system owners can make that influence system performance and behavior, and the importance of thinking about the whole system, including the technology, the people, and the environment.

Azure AI


Applications
Microsoft 365
Microsoft Dynamics 365
Partner Solutions
Application Platform
AI Builder
Power BI
Power Apps
Power Automate
Power Virtual Agents
Business Users
Scenario-Based Services
Applied AI Services
Bot Service
Cognitive Search
Form Recognizer
Video Indexer
Metrics Advisor
Immersive Reader
Customizable AI Models
Cognitive Services
Vision
Speech
Language
Decision
Azure OpenAI Service
Developers & Data Scientists
ML Platform
Azure Machine Learning

Ensure that artificial general intelligence (AGI) benefits humanity.

+

Empower every person and organization on the planet to achieve more

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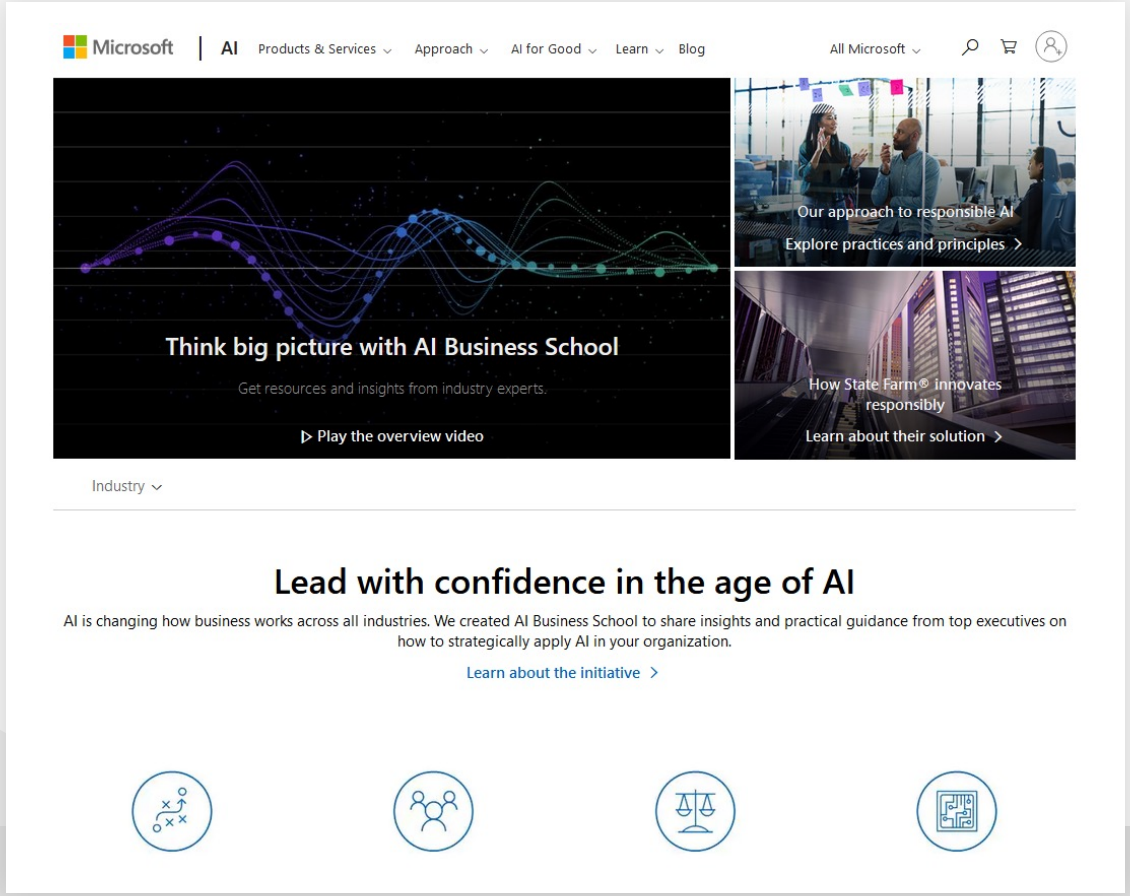
GPT-4
Generate and Understand Text

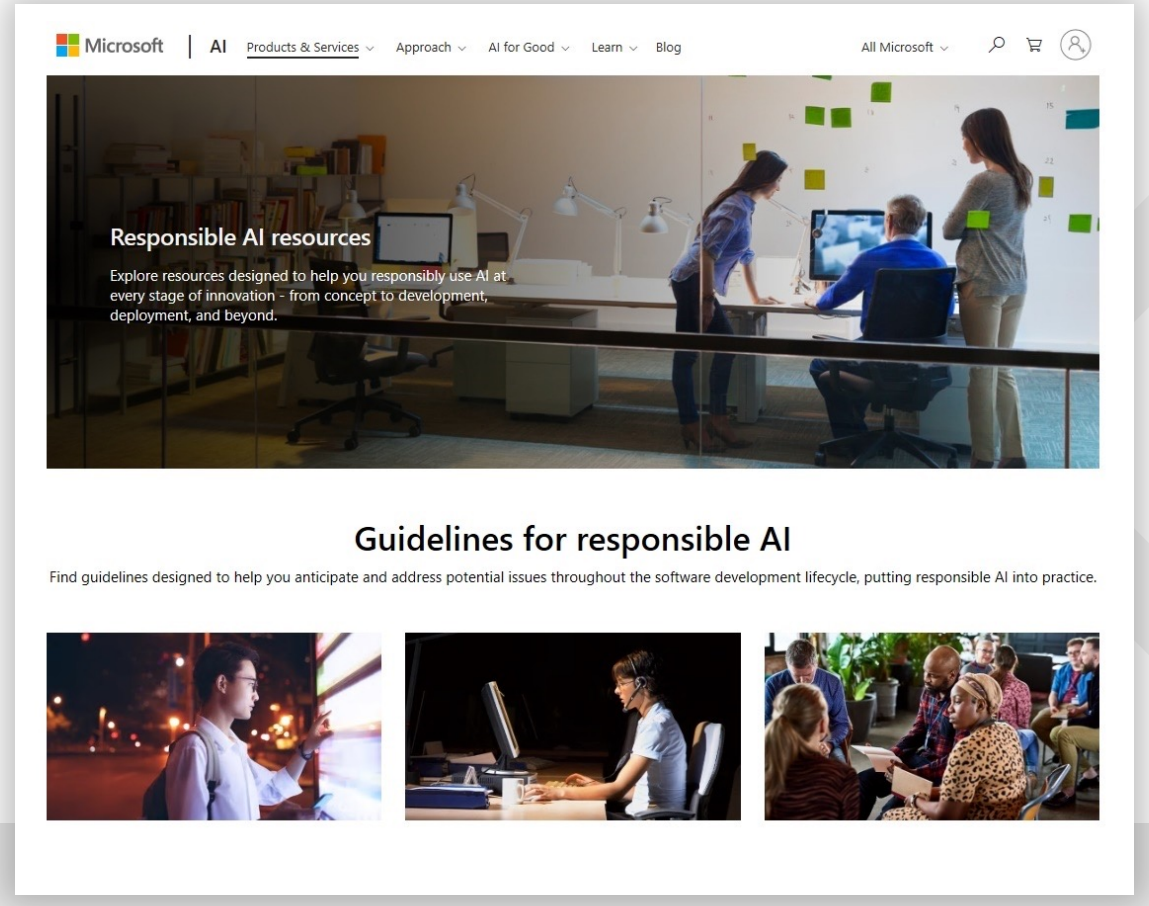
Codex
Generate and Understand Code

DALL·E *preview*
Generate images from text prompts

ChatGPT *public preview*
Chat Bot, Avatar, Contact Center Reply

Empowering Responsible AI



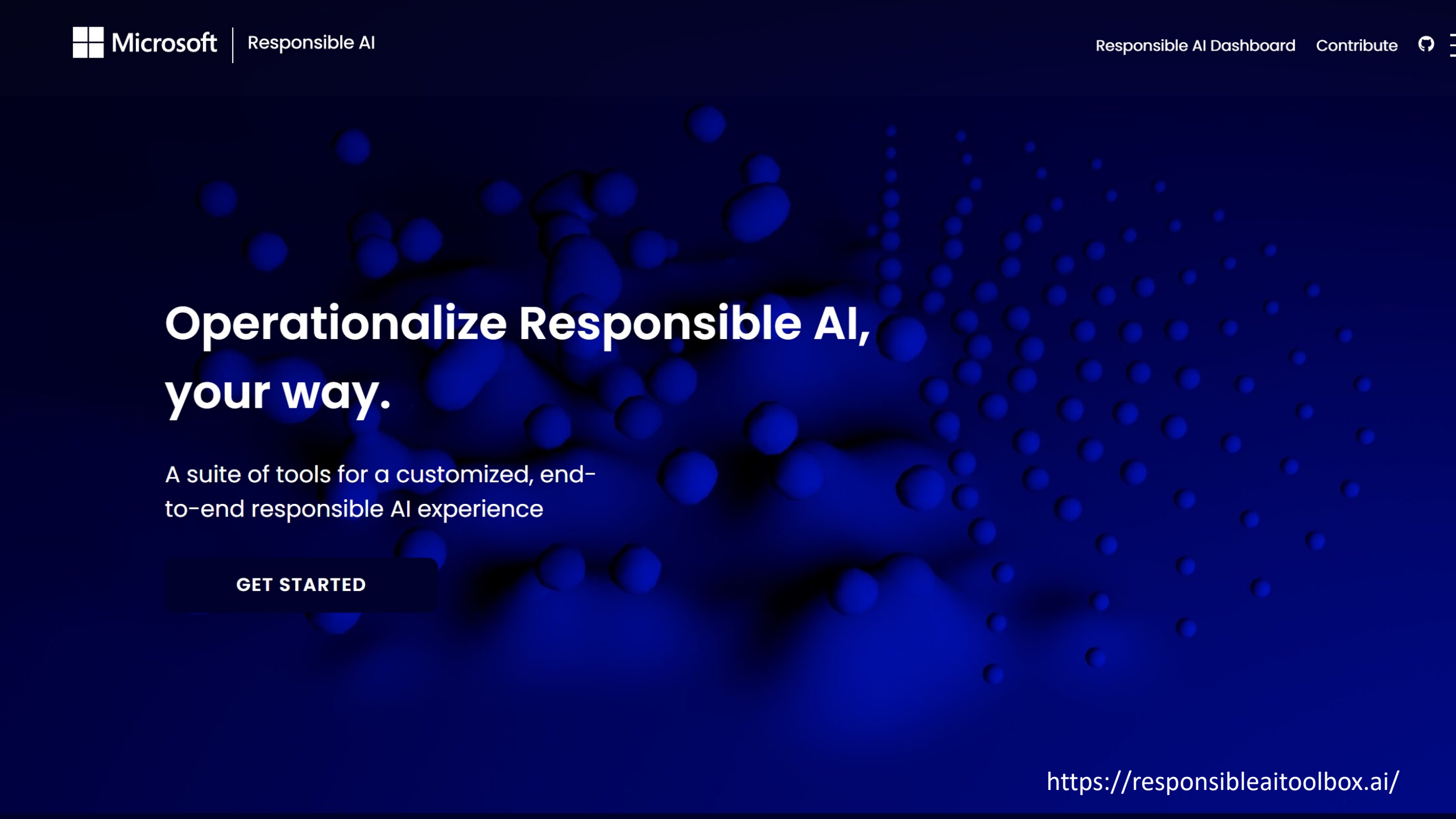


Establish a responsible AI strategy

Aka.ms/AIBS >

Design, build, and manage your AI solution

Aka.ms/RAIresources>


Microsoft
Responsible AI
Responsible AI Dashboard
Contribute
Operationalize Responsible AI, your way.
A suite of tools for a customized, end-to-end responsible AI experience
GET STARTED
https://responsibleaitoolbox.ai/

AI Customer Commitments

Sharing our learnings about developing and deploying AI responsibly

Creating an AI Assurance Program

Supporting you as you implement your own AI systems responsibly

A five-point blueprint for governing AI

1. Implement and build upon new government-led safety frameworks
2. Require safety brakes for AI systems that control critical infrastructure
3. Develop a broader legal and regulatory framework based upon a technology architecture for AI
4. Promote transparency and ensure academic and public access to AI
5. Pursue new public-private partnerships to use AI as an effective tool to address the inevitable social challenges that come with new technology

https://blogs.microsoft.com/on-the-issues/2023/05/25/how-do-we-best-govern-ai/

Innovation in the Real Property Market

Sonia Hobbs – Director of Business Solutions
Bryan Sawers – Manager of Business Solutions
September 21st, 2023

Innovation. | Integrity. | Trust.

bc Land Title & Survey

© Land Title and Survey Authority of British Columbia

Challenges Connecting the Land Base

- Multiple areas of public concern are affecting the land base in BC including:
  - housing affordability
  - population growth
  - economic growth
  - emergency management
  - climate change adaptation

- These areas would benefit from interconnected sources of information to inform decisions and speed up coordination.

bc Land Title & Survey

© Land Title and Survey Authority of British Columbia

Current State and Challenges

Information along the development process is **not** always **transparent**.

Information is **siloed** but **improving** between local governments and other agencies.

Information quality varies and is **not** presented in a **standard format** across different jurisdictions.

Usually **too much paper**!

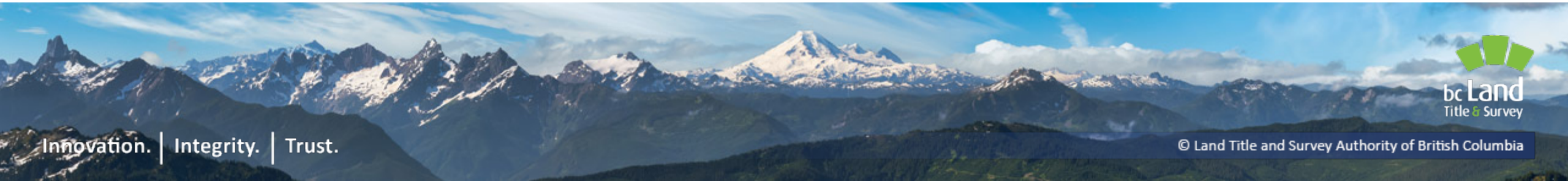
A lack of coordination and planning between participants leads to outcomes that are **reactive and complaints** based.

Lack of coordination between participants in the development process flow creates **delays** in development completion / **drives up costs**.

© Land Title and Survey Authority of British Columbia

LTSA and the Real Property Market

- With BC real estate valued at $2.72 trillion, land ownership represents the highest valued asset for many British Columbians.
- Real property is a fundamental element of the economy which links people, business, and government.
- That activity relies on trust, proof of ownership, and the establishment of precise boundaries that define the location of real property within the land base.
- LTSA's systems provide the foundation for real property ownership and land information in the Province and rely on accurate & reliable data.



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A Proposed Future State: Integrated Information

***Future State*:**

Data Aligned & Integrated

Proposed Parcels, Survey Site Data

All Interests on Title, Zoning and OCPs

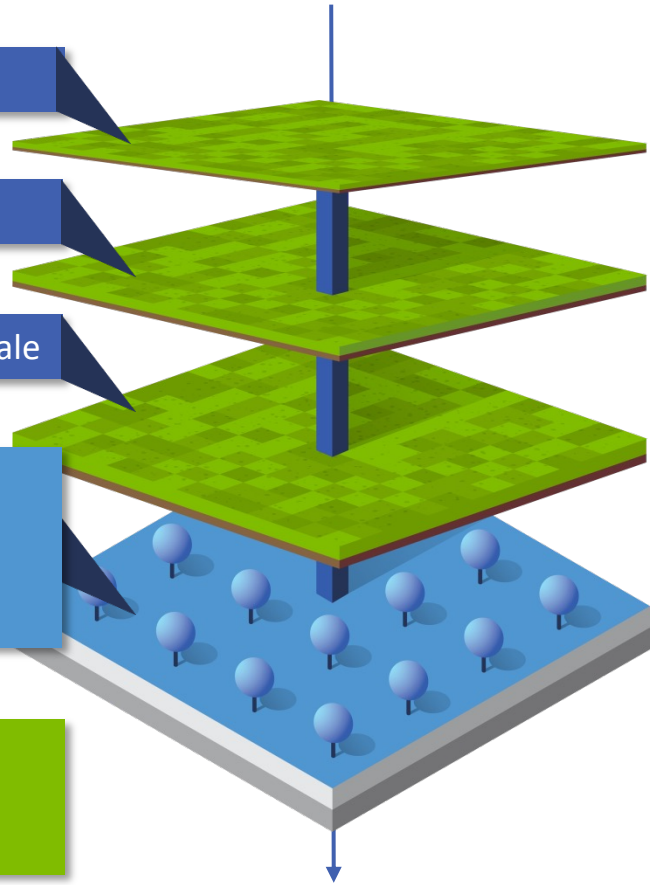
Other Land Related Data: e.g. Rental Property, Strata Pre-Sale

***Currently*:**

Available to all LGs

ParcelMap BC:
All Active Titled Parcels, Crown Land Parcels.
Many of the Interests, Highways and Roads.
Other data: ALRs & LG boundaries

Land Title Register,
Land Owner Transparency Registry &
Survey System of British Columbia



Integrated Land Information

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Key Themes and Benefits

✓Information is collected and shared earlier in the process to improve planning and coordination.

✓Data sources can be added incrementally: no “big bang” required.

✓Save time and improve decision making for developers and other stakeholders by accessing a single trusted source of information.

✓Visually enables regional and municipal cross-boundary land use analysis and issues management.

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Who is the LTSA: Our Products & Services

Statutory Services

- Land Registry
- Surveyor General Services
- Land Owner Transparency Registry (LOTR)
- Condo Strata Assignment Register (CSAIR)
- Digitization / Preservation of Historic Records

Data Aggregation Services

- ParcelMap BC
- AUTOPROP

Service Aggregation

- For the Province (PTT, Crown Grants, etc.)
- For Legal / Real Estate Professionals (Tax Certificates Online, eStrataHub, etc.)

Innovation. | Integrity. | Trust.

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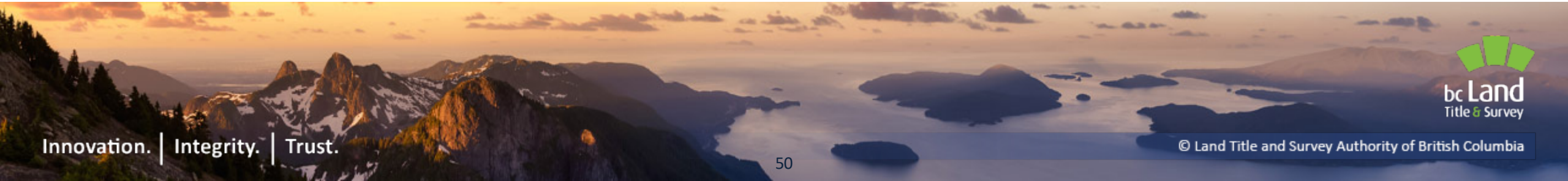
About the LTSA

Our **Vision**: A real property market that is trusted and transparent.

Our **Mission**: We deliver innovative trusted expertise and reliable land-related solutions to support the economy in the public interest.

- LTSA provides **land title information data** to the Province, local governments, BC Assessment and other authorized organizations with an interest in real property information.
- LTSA has established systems at scale for all parcels in BC in support of Local, First Nations, Regional, Provincial, & Federal governments.
- Publicly accountable, statutory corporation formed in 2005 responsible for administering the land title and survey systems of British Columbia.



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Land Development Process and the LTSA

High Level Process Step	Development Concept "the Idea"	Site Acquisition	Financing	Approvals at the Local Government	Development Approval	Sales / Build Cycle	Development Complete
Key Activities for the Developer	Research	Purchase	Debt /Bridge Financing	Preliminary Survey / Proposed Parcels	Final Survey Plan Approved	Marketing / Construction	Final Conveyance of Subdivided or Strata Lots
LTSA Involvement	AUTOPROP, ParcelMap BC	Title Search Title Transfer Property Transfer Tax (PTT)	Mortgage Filing	Title Search	Plan Filing Survey Plan Data Set Submission for ParcelMap BC	Condo Strata Assignment Integrity Register (CSAIR) Contract Assignment Declarations	Title Search Title Transfer / Filing LOTR Filing PIDs Registered Property Transfer Tax (PTT) ParcelMap BC Updates
LTSA Updates (Province, Local Governments, BC Assessment, Utilities)		Title Ownership Updates PTT			Pending Title Ownership / Subdivision Updates	Contract Assignment Data	Title Ownership Updates PTT ParcelMap BC Spatial Fabric distribution

The Kelowna Pilot – A collaboration with the LTSA

Journey map the entire land development application process from the context of the applicant.

Identify opportunities to lever LTSA systems to create province-wide information sources that benefit the public through a shorter, and more streamlined approval process.

Ensure that all local governments can take advantage of LTSA systems and land information across jurisdictional boundaries.

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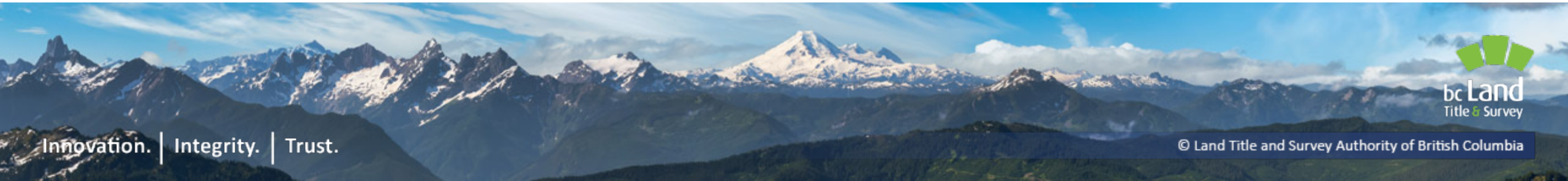
What's Next?

Get involved! Reach Out! Ask Questions!
We're here to help.

Sonia Hobbs – Director of Business Solutions
Sonia.Hobbs@landsure.ca

Bryan Sawers – Manager of Business Solutions
Bryan.Sawers@landsure.ca



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Questions and Comments

Let's connect:

We'll be available after the session, share your name and organization to stay in touch.

Salal Sexual Violence Support Centre

In appreciation of our speakers today and with thanks for your contribution, UBCM has made a donation to the Salal Sexual Violence Support Centre. The Salal Support Centre was founded 40 years ago, and is the largest sexual assault centre in British Columbia. They provide free-of-charge support services to survivors of sexualized violence