BC PST Pulse: Recent Patterns, Statistical Sampling, and GenAI

Jennifer Muirhead, Erin Jensen, Natalia Krizbai

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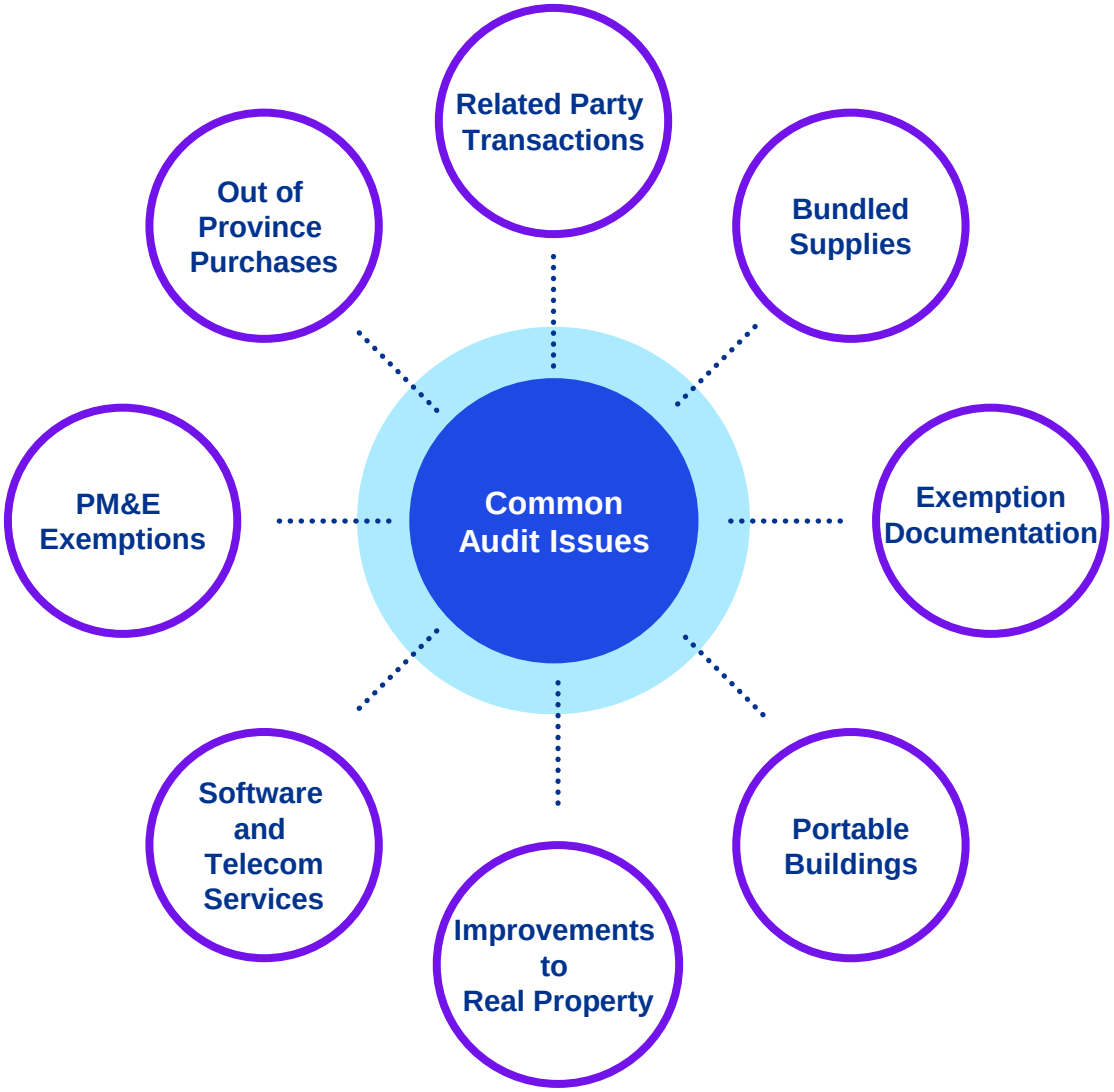
Agenda

01	BC PST Pulse: Recent Patterns	Jennifer Muirhead
02	BC PST Pulse: Statistical Sampling	Erin Jensen
03	BC PST Pulse: GenAI	Natalia Krizbai

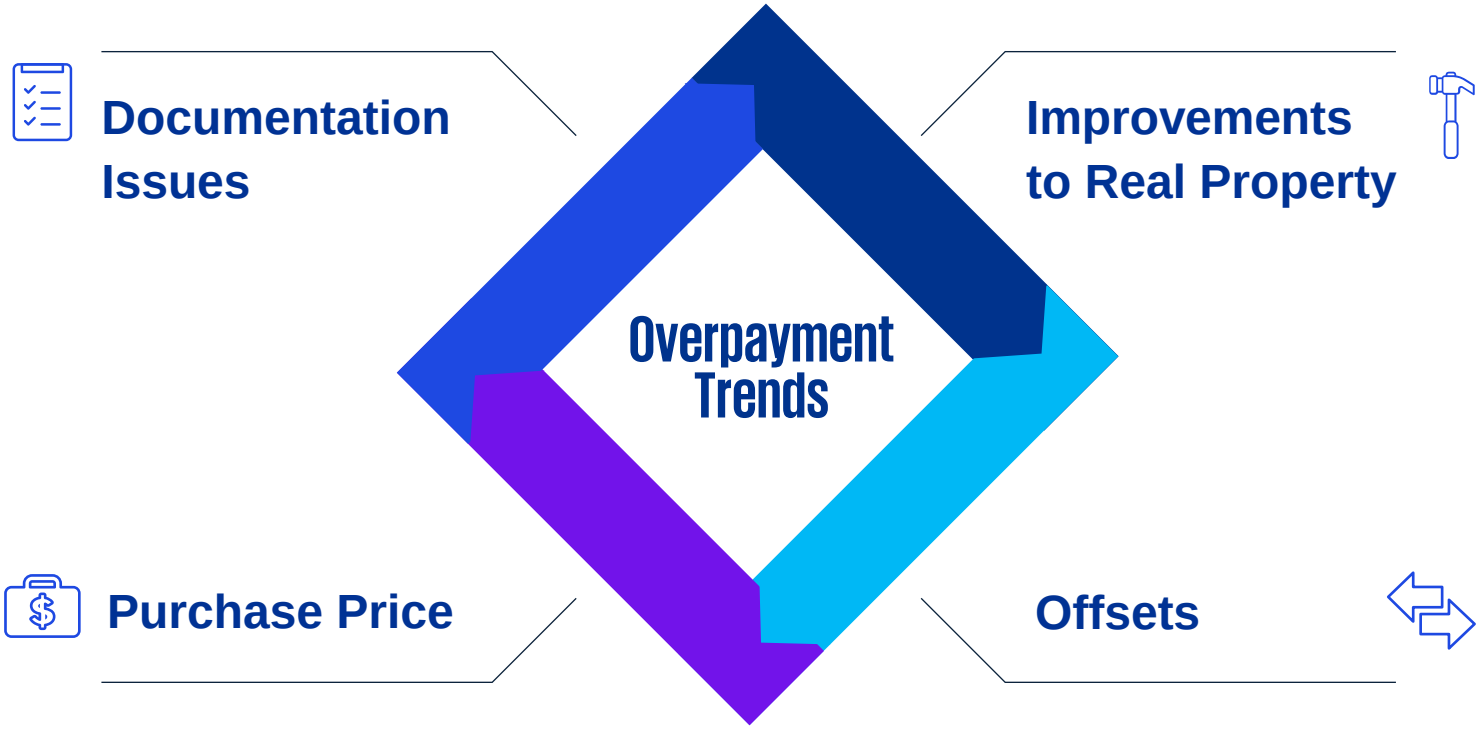
01

BC PST Pulse: Recent Patterns

BC PST Pulse: Recent Audit Patterns

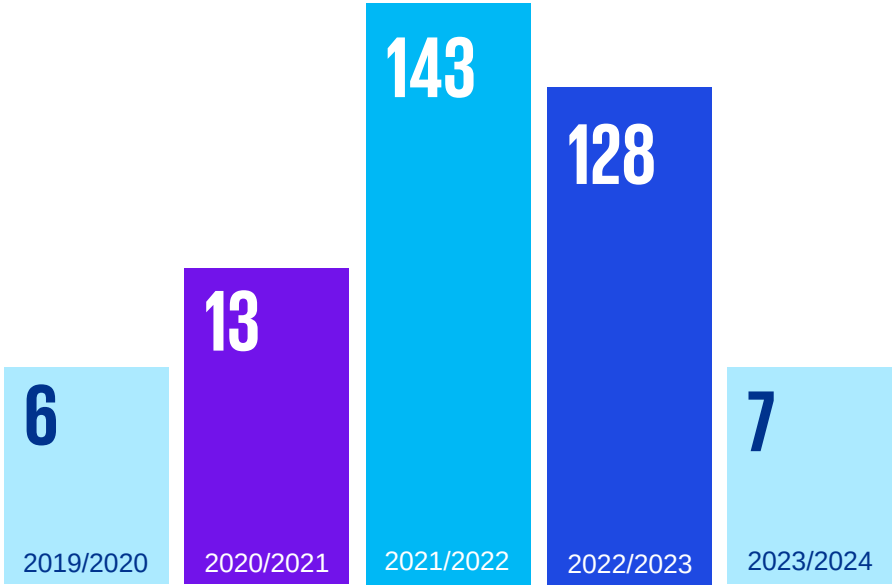


BC PST Pulse: Recent Refund Patterns



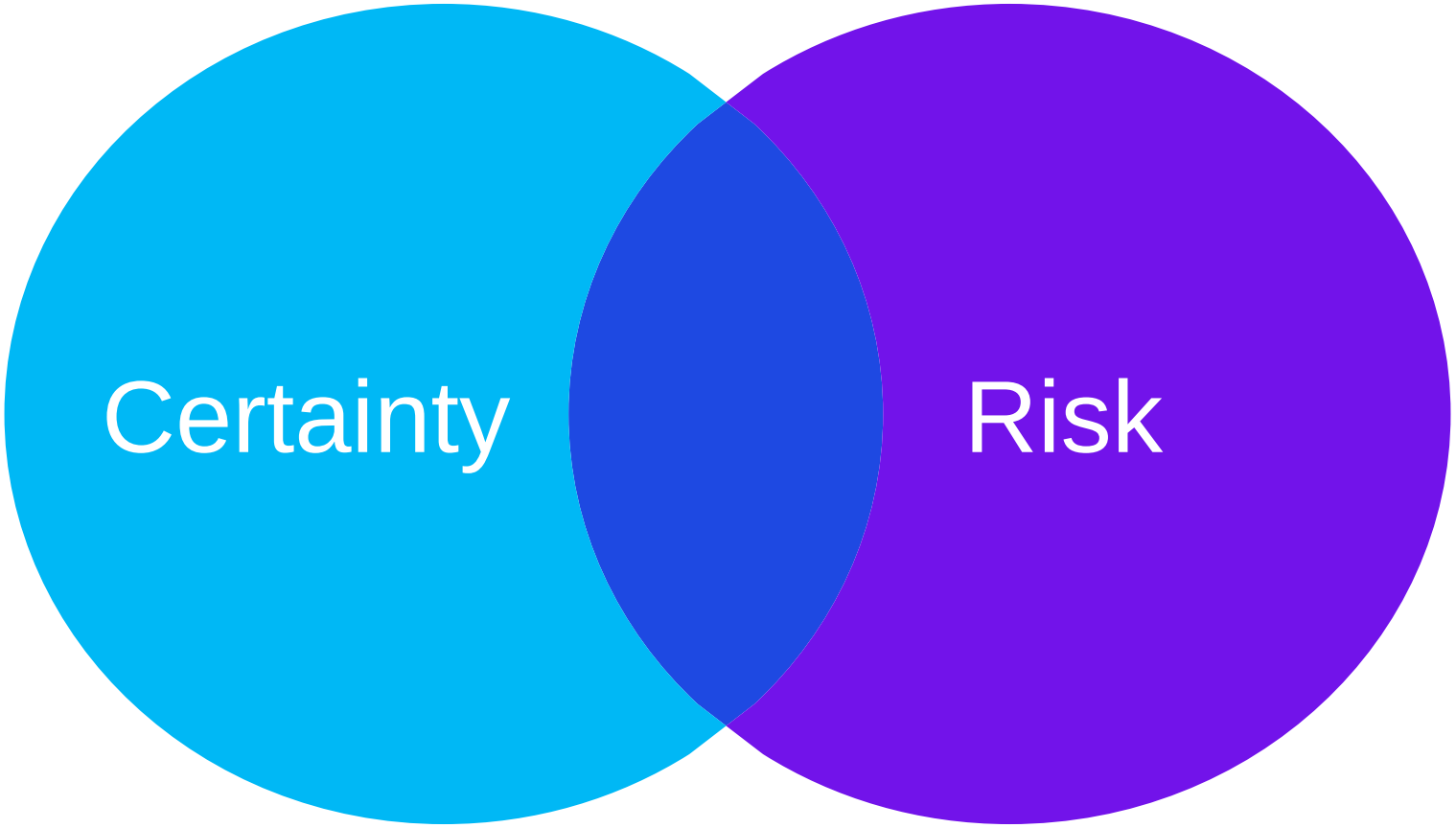
BC PST Pulse: Recent Appeals Patterns

297 appeals completed in FY2023/2024 (April 1, 2023 to March 31,2024)



Source: FOI Request FIN-2024-41534
https://www2.gov.bc.ca/enSearch/detail?id=7AFDBC16F15F42E289E9F7DDB0F80C40&recorduid=FIN-2024-41534

BC PST Pulse: The Trade-off



02

BC PST Pulse: Statistical Sampling

Today's 3 takeaways (what matters in an audit)

1. **What auditors ask for + where risk gets set**
2. **Why outcomes swing wildly**
3. **How to protect your audit: practical steps before testing begins**

BC audit methodologies — why sampling shows up

BC has typically used the following methodologies in its audits:

Substantive Review

(Capital Purchases)

- Direct examination of selected transactions to verify tax compliance without extrapolation
- Targets high-value purchases (e.g., capital assets) where transaction volume is manageable

Sample Review

(Operating Purchases)

- Used to audit high volumes of (typically) lower-value transactions (non-capital)
- Results are extrapolated to untested transactions

Block Sampling

- Transactions from a representative period (e.g., a months) are audited
- Results are extrapolated to the full audit period.

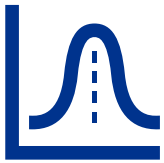
Statistical Sampling

- Selects a representative subset using computer algorithms
- Results are extrapolated across the entire audit period.

Why BC uses it (and what they'll say in the audit)

Minimizes Disruption to Taxpayers

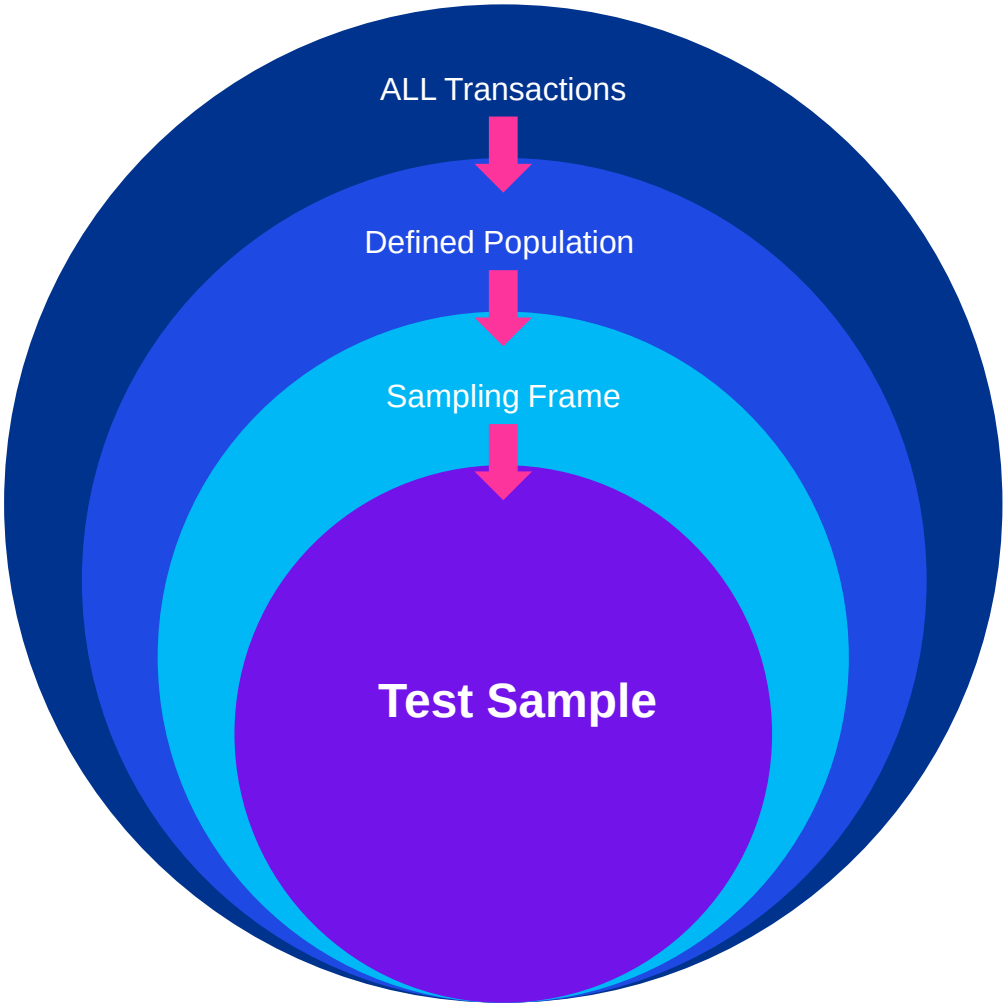
- Fewer transactions and records required
- Less operational disruption during the audit



Generates "Representative" Error Rates & Assessments

- Sample error rates are assumed to reflect the full population
- Used to calculate assessments for the entire audit period

What auditors will ask you for (and why it matters)



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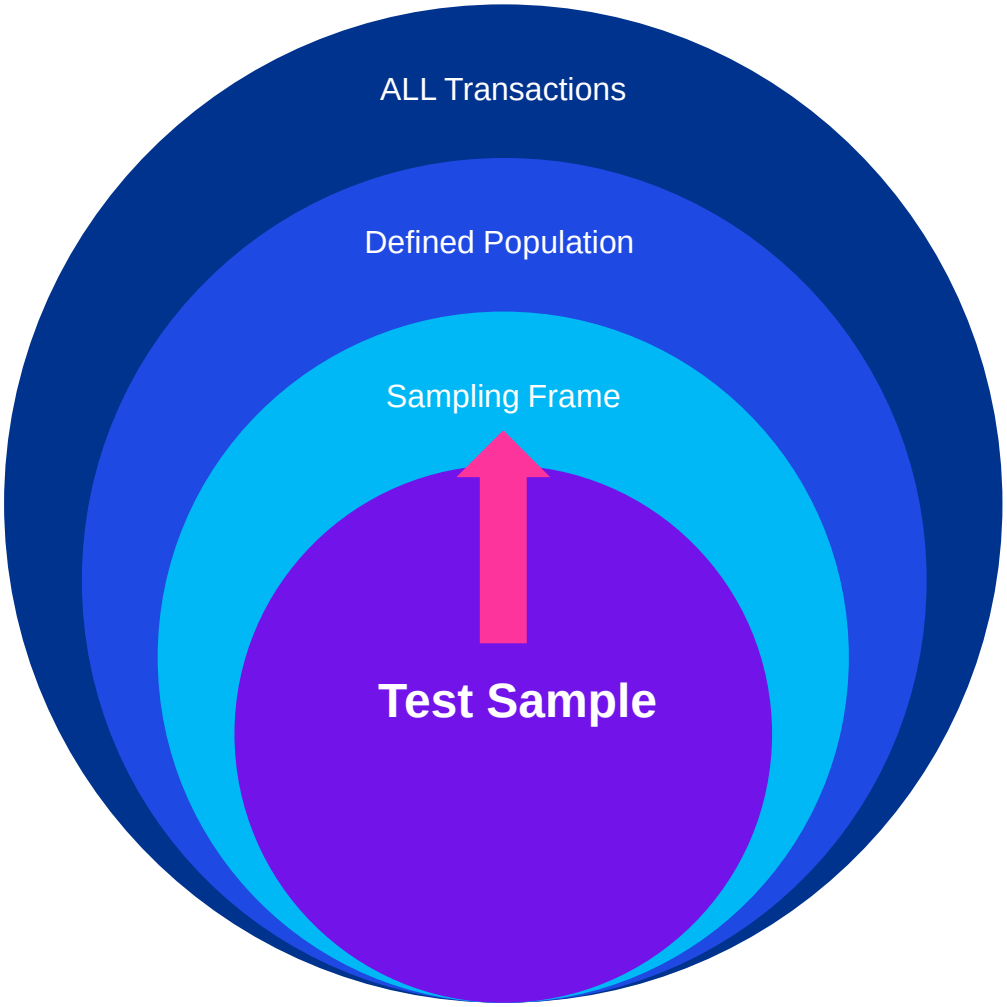


TSEP report — what to request, what it tells you

Core outputs

What it tells you: Relative size of the sample and confidence in the results

Population size • Sample size • Confidence level • Precision target

Sampling design

What it tells you: What BC will extrapolate and where risk sits

Sampling frame • Strata thresholds • Transactions per stratum • Sample size by stratum • Fully tested vs sampled

Diagnostics

What it tells you: Whether small error could scale into large dollar assessments

Variability • Coefficient of variation • Distribution shape

Confirms

What it tells you: How BC will apply the sample results — before any invoices are reviewed

Population the results will be extrapolated to • Transaction types included • How errors will scale • Sensitivity to small errors

How to navigate: controls before testing begins

Before testing begins:

- ☑ Request transactions in the sampling frame
- ☑ Review GL accounts and identify invalid accounts
- ☑ Remove invalid transactions from the frame and sample
- ☑ Request a larger sample size
- ☑ Lower the top-stratum threshold (reduce extrapolation)
- ☑ Add strata if ranges are broad

After the first request for information:

Focus on *all* transactions, including low-value items

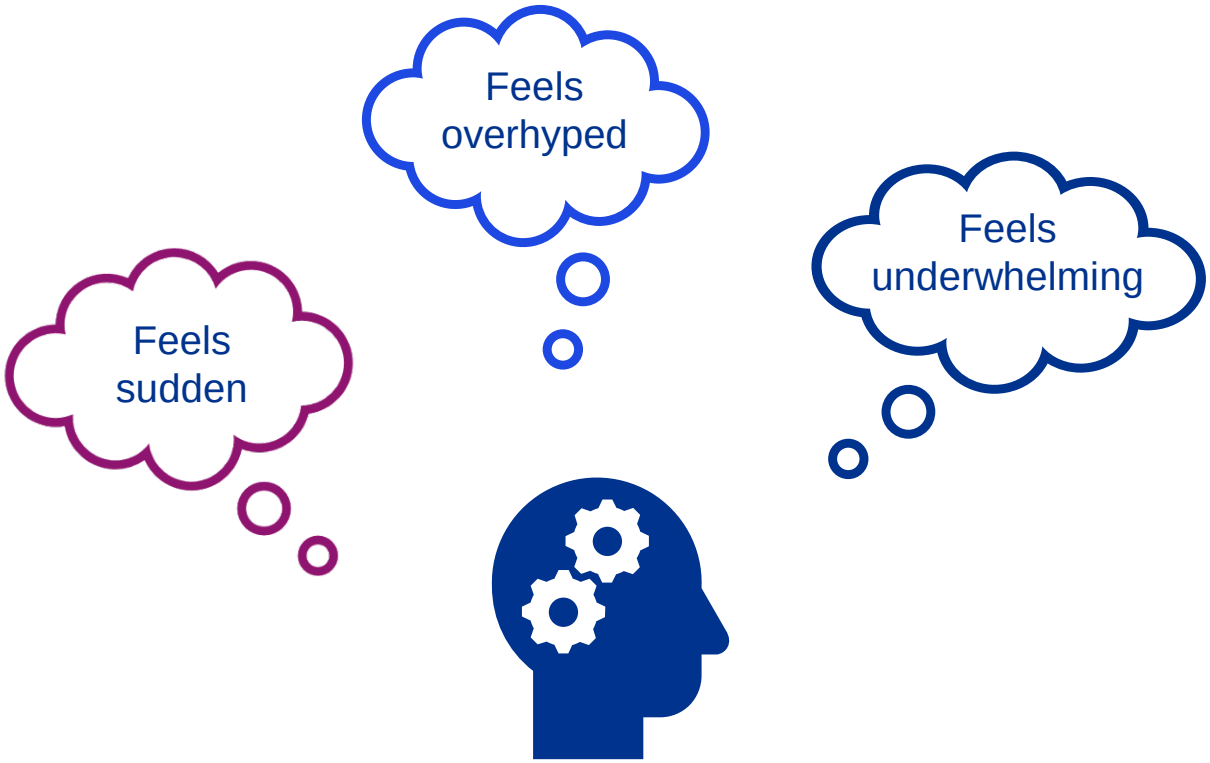
03

BC PST Pulse: GenAI

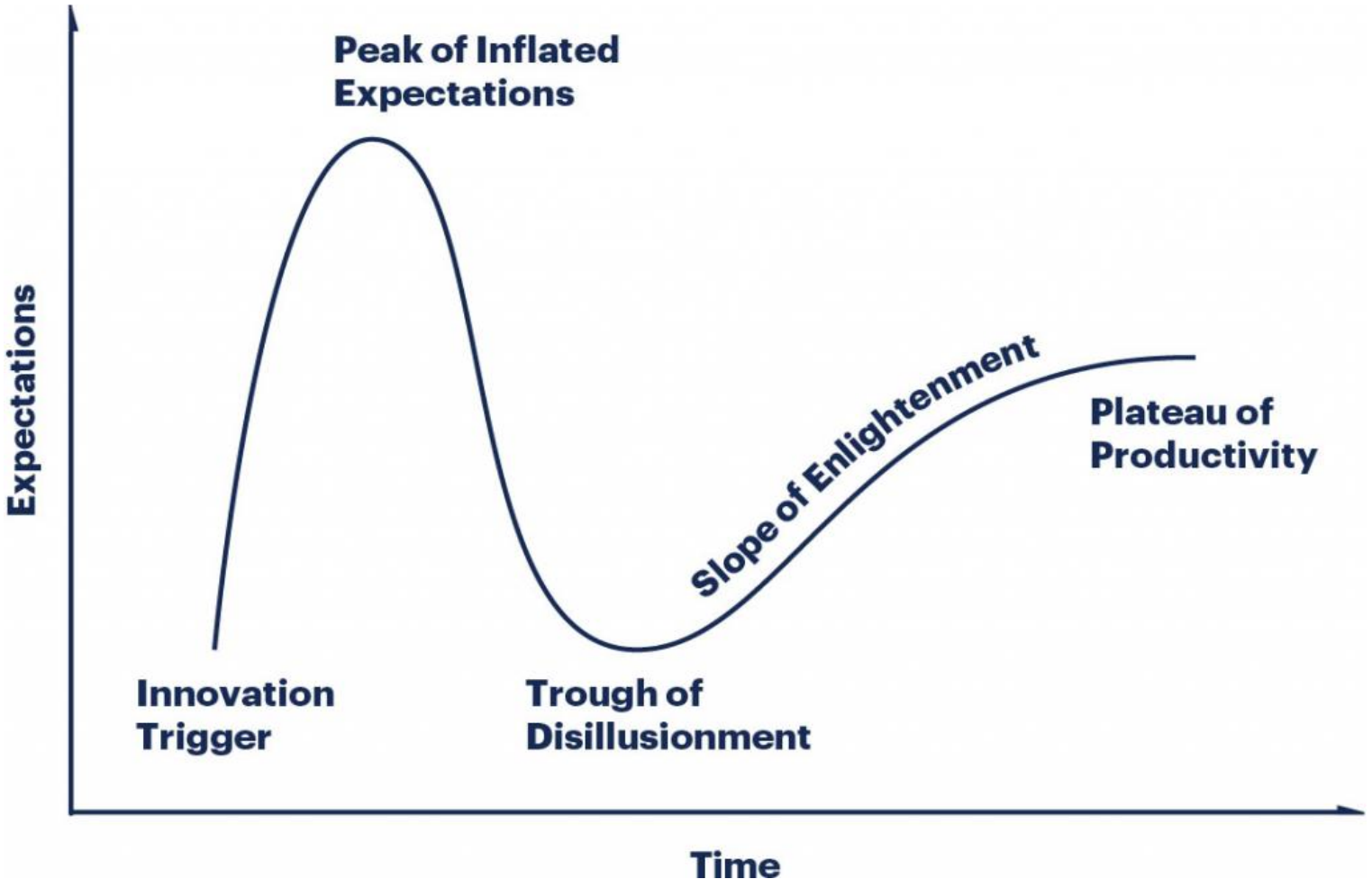
From Hype to Professional Advantage: *Why This Moment Matters*

Opportunity, not disruption

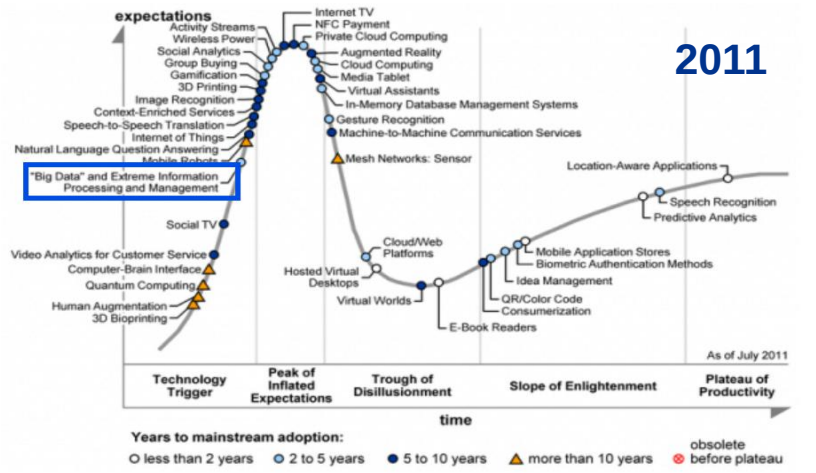
Why AI Feels Confusing Right Now

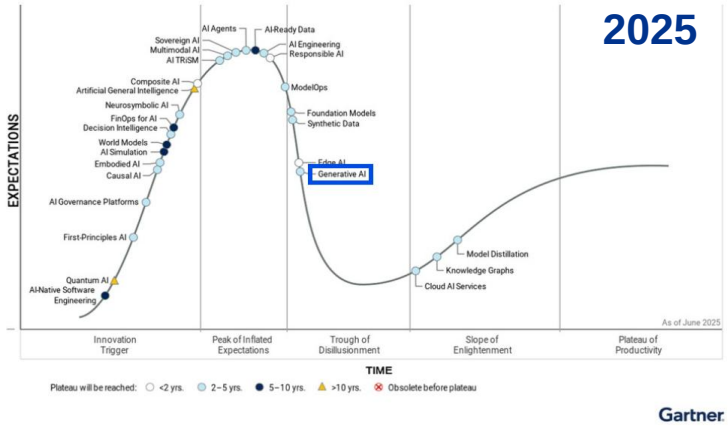


How we got here – Gartner Hype Cycle



Generative AI Didn't Appear Overnight



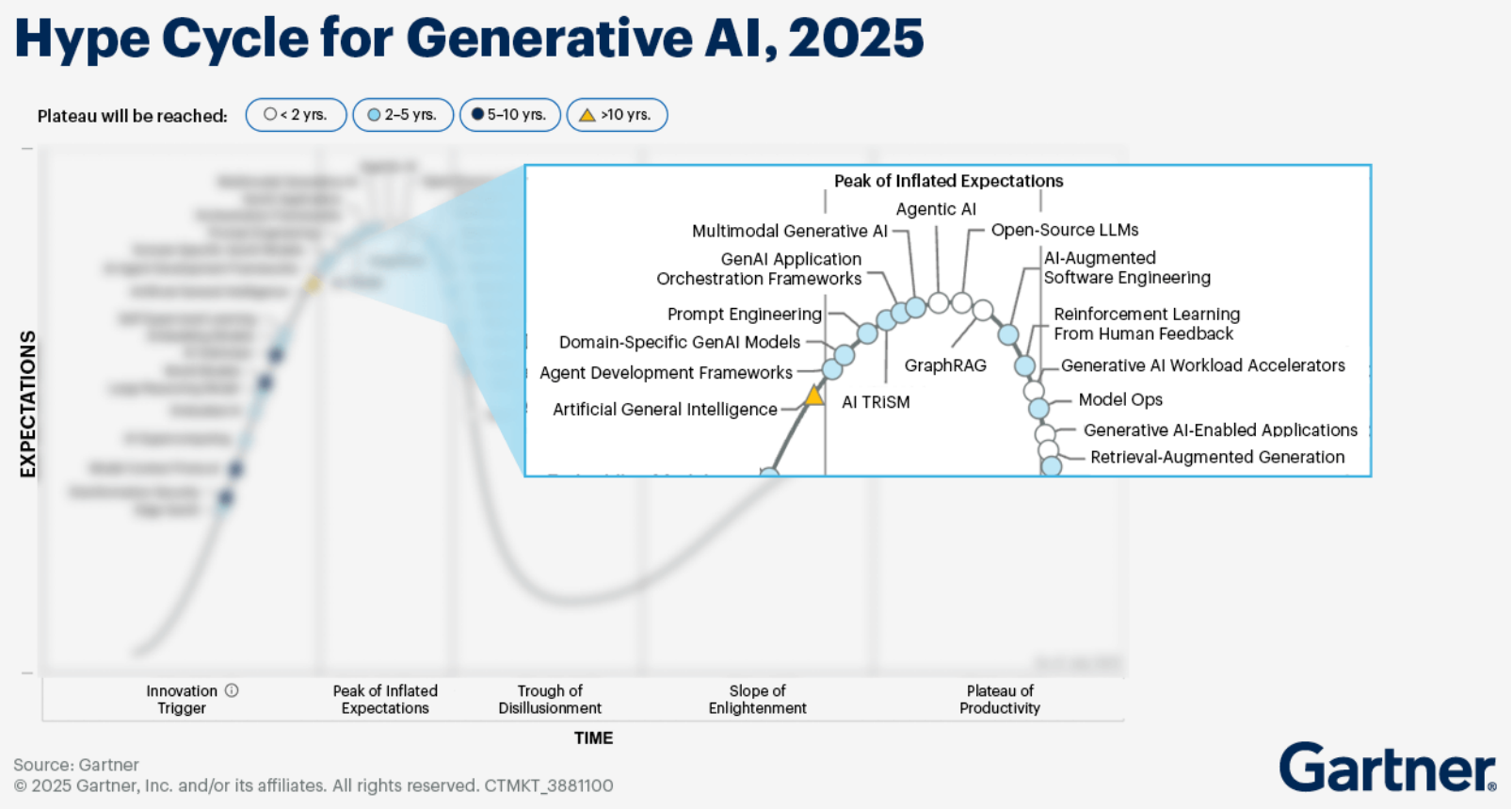


A decade of AI & machine learning

Sudden visibility ≠ Sudden maturity

Capability arrived before readiness

Where we are now — GenAI meets reality



From Demos to Discipline

THEN

- Experiments
- Excitement
- Pilots

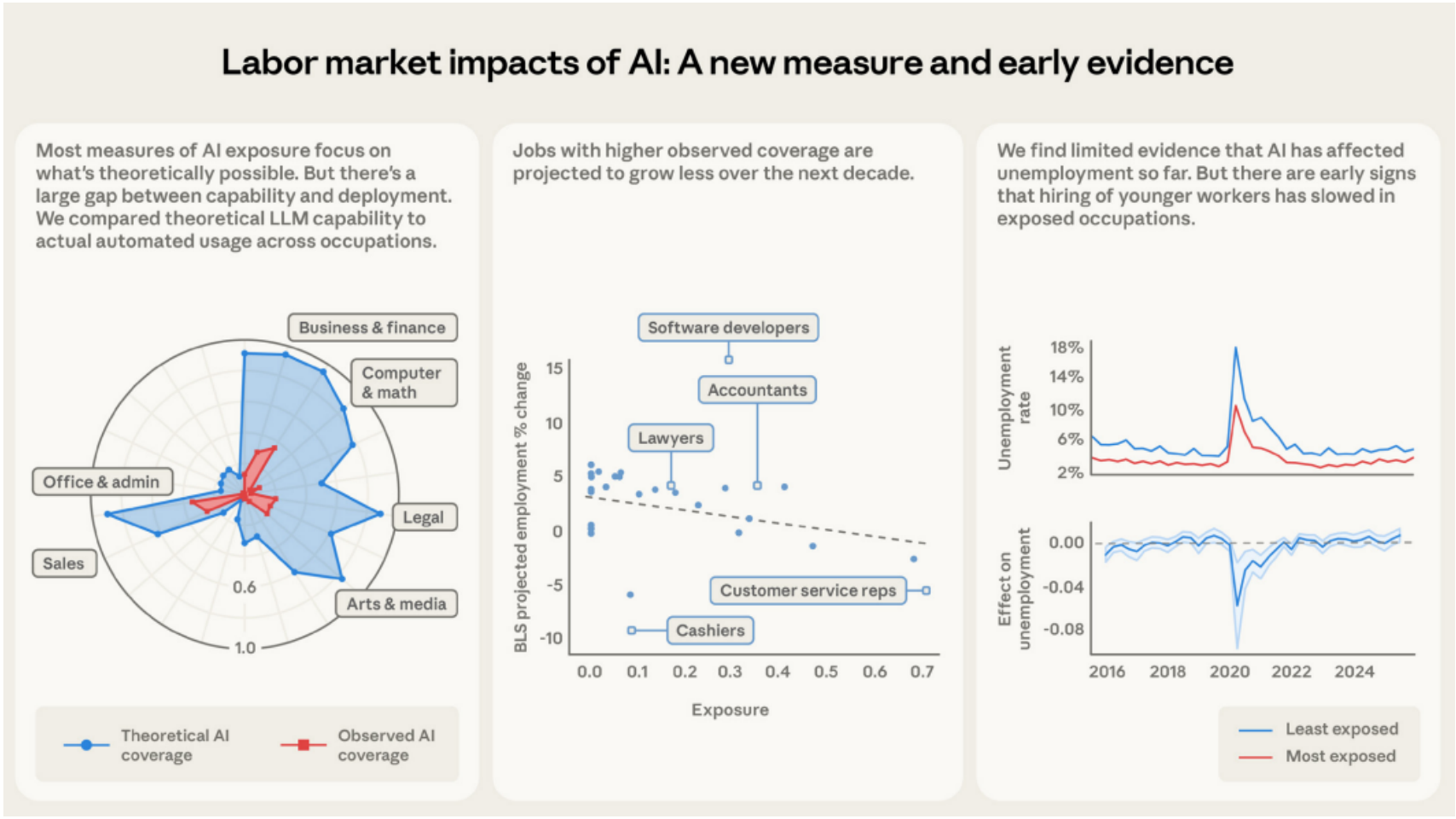
NOW

- Governance
- Data
- Skilled practitioners

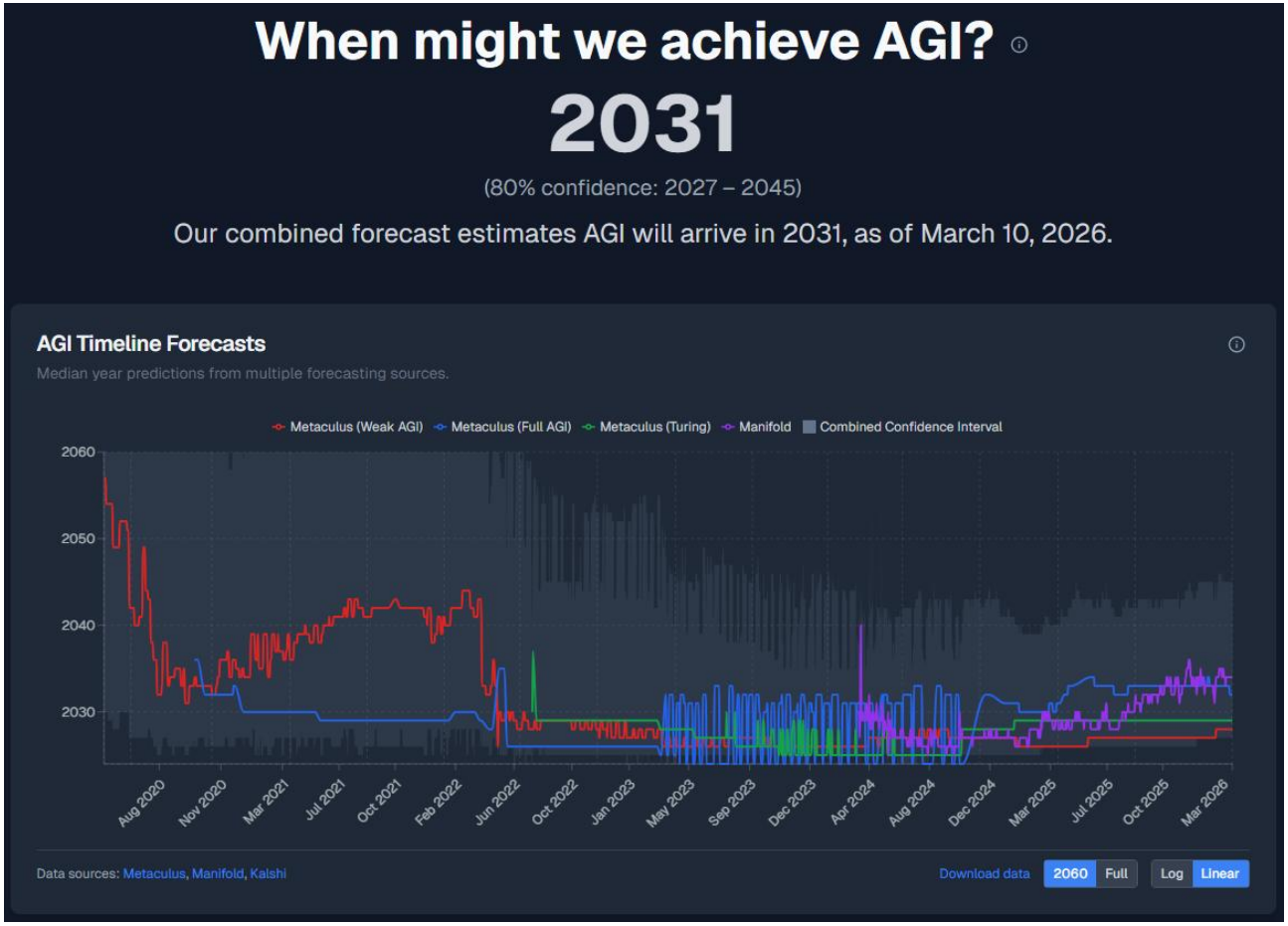
The fear — "Is this going to take my job?"

Let's look at the evidence…

What AI Is Doing — and What It Isn't (Yet)



How Much Time Do We Actually Have?



80% confidence interval: 2027–2045

Median estimate: 2031

The Risk Isn't Replacement — It's Irrelevance

Professionals who can't leverage AI will be outpaced by those who can

Why You're Exactly Where You Should Be

Being early to the professionalization phase is how careers compound

Demos - Setting the stage

Brief Description Example 1	Brief Description Example 2	Brief Description Example 3
Mining Chemicals • Simple human prompt • Complex analysis of operational use • Simple tax analysis • BC's administrative application consistent with Legislation • Output: Complex memo in Word	**Gas Plant Control Eq** • Sophisticated Copilot prompt • Complex analysis of operational use • Simple analysis • BC's administrative application competes with Legislation • Output: Simple tax determination	**Real Property contract** • Sophisticated human prompt • No analysis of operational use • Complex analysis • BC's administrative application competes with Legislation • Output: Excel table

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Thank you

Jennifer Muirhead

Partner
403-691-8291
jennifermuirhead@kpmg.ca

Erin Jensen

Partner
403-615-0194
ejensen@kpmg.ca

Natalia Krizbai

Senior Manager
403-691-7925
nataliakrizbai@kpmg.ca

kpmg.com/ca