Our evolving analytic platform

• RESEARCH PARTNERSHIPS • ACADEMIC INSTITUTIONS
- Academic Institutions
- Human Services Experts
- Subject Matter Experts
- Technology Companies

• RISK • SECURITY • PRIVACY
- Compliance & Audited Security Processes
- Privacy Expertise
- Technology Security Management
- Executive & Project Governance

• DATA
- Customer Data & Open Data
- Cross-Source Data Matching
- Data Governance & Stewardship
- Data Security & Anonymization

ACHIEVING COLLECTIVE IMPACT THROUGH DATA

• CENTRE OF EXCELLENCE • ECONOMIC DEVELOPMENT
- Customer & Project Collaborations
- Global Connections, Local Presence
- Job Creation & Economic Stim
- Attract Knowledge, Investments & Capital Anonymization

• PROCESS • PEOPLE • TECHNOLOGY
- Business Consulting & Facilitation Team
- Cognitive & Predictive Capabilities
- State-of-the-Art Analytics Environment
- Best Practices & Methodologies

• CUSTOMER • INDUSTRY • STAKEHOLDER
- Public Service
- Human Services
- Water & Land Mgmt
- Agrifood

Do Student Loans Work?

In an outcomes, evidence based world in which we now live, why do we fund enrolment and not graduation?

Does a $1 loan translate into a high performing student? A drop-out? No effect?

What would a $2 loan generate? $0.50?

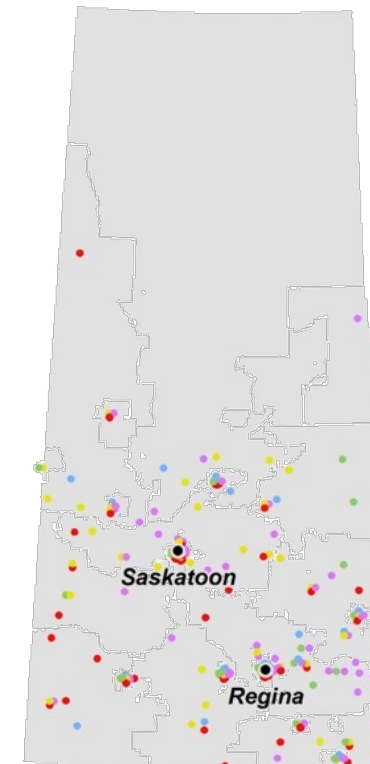# Top Injury Claim Volume

By injury event type (wind gust alert days)

- (179) Fall to floor, walkway, or other surface
- (178) Overexertion in lifting
- (155) Bending, climbing, crawling, reaching, twisting
- (80) Struck by Falling object
- (57) Bodily reactions & exertion, n.e.c.
- Postal Code Regions

> On Wind Gust Alert days, falls become the most common injury event type

Injury Type as a Percentage of Total Injuries

	No wind gust alert	Wind gust alert
Fall to floor, walkway	**8.07%**	**12.24%**
Overexertion in lifting	12.83%	12.17%
Bending, climbing	10.56%	10.59%
Struck by falling object	5.37%	5.47%
Bodily reactions	3.97%	3.9%

The presence of a wind gust alert increases the proportion of Fall-related injuries by over 50%

Saskatoon

Regina

wcb | Saskatchewan Workers' Compensation Board

Suncor – Autonomous Vehicles

- **Run 24/7, 365 days/year**
- **25% reduction in maintenance costs**
- **20% improvement in fuel efficiency**
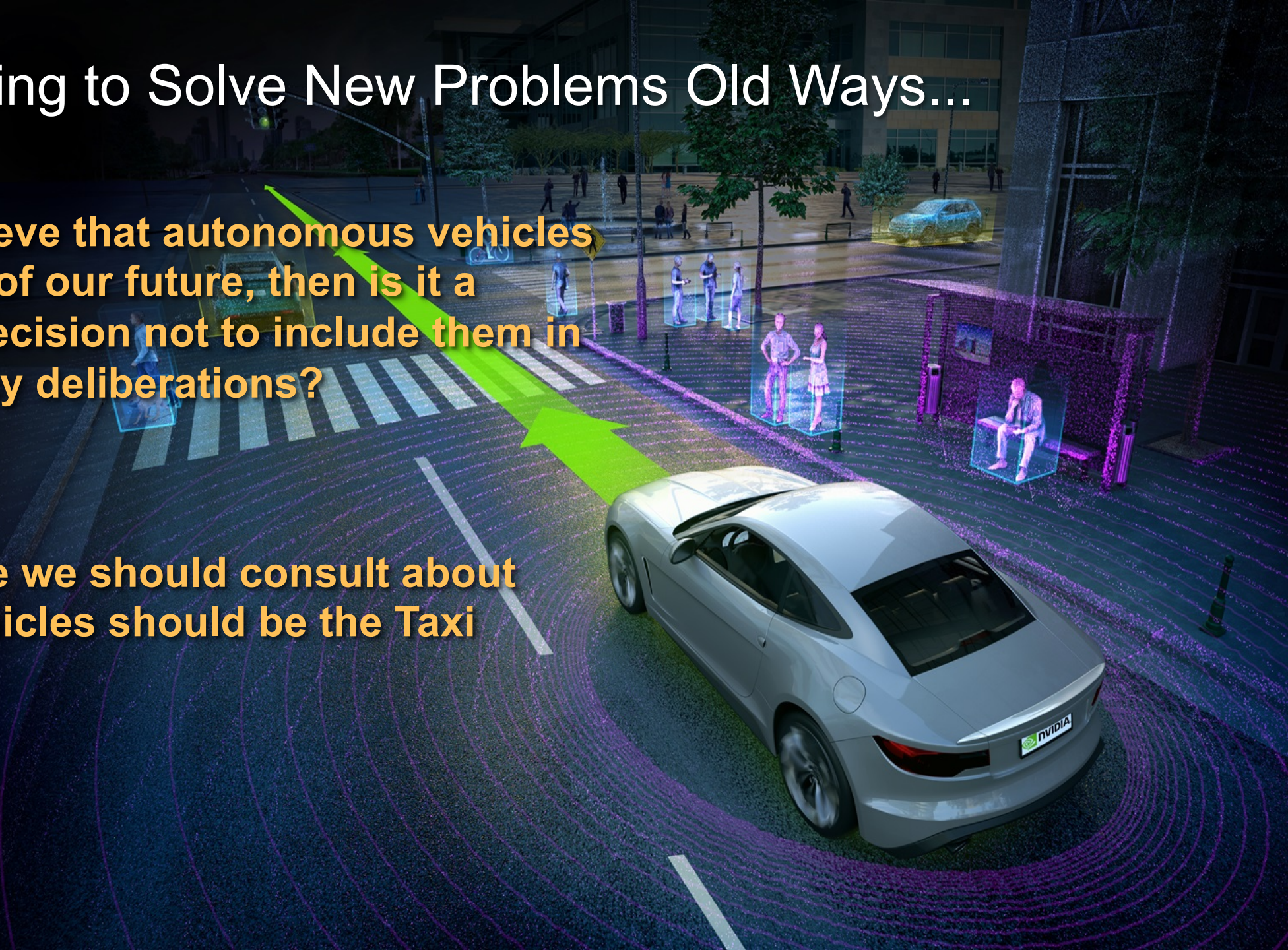- **$750K annual salary reduction**
- **95% improvement in safety**

Imagine a world....

- **No accidents.....**
- **No Autobody Shops...**
- **No Automobile Insurance....**

Trying to Solve New Problems Old Ways...

If we indeed believe that autonomous vehicles (cars) are a part of our future, then is it a conscientious decision not to include them in our current policy deliberations?

The LAST people we should consult about autonomous vehicles should be the Taxi Drivers...

STRUCTURED & UNSTRUCTURED DATA

- Highly organized information that uploads neatly into a relational database (think traditional row database structures)

- Lives in fixed fields, and is easily detectable via search operations or algorithms

- Structured data is relatively simple to enter, store, query, and analyze

Structured Enterprise Data

Data Warehouse   ERP Systems   CRM Systems

10%

Unstructured Enterprise Data

Email Systems   Research Data   Surveys   Customer Call Centre Records
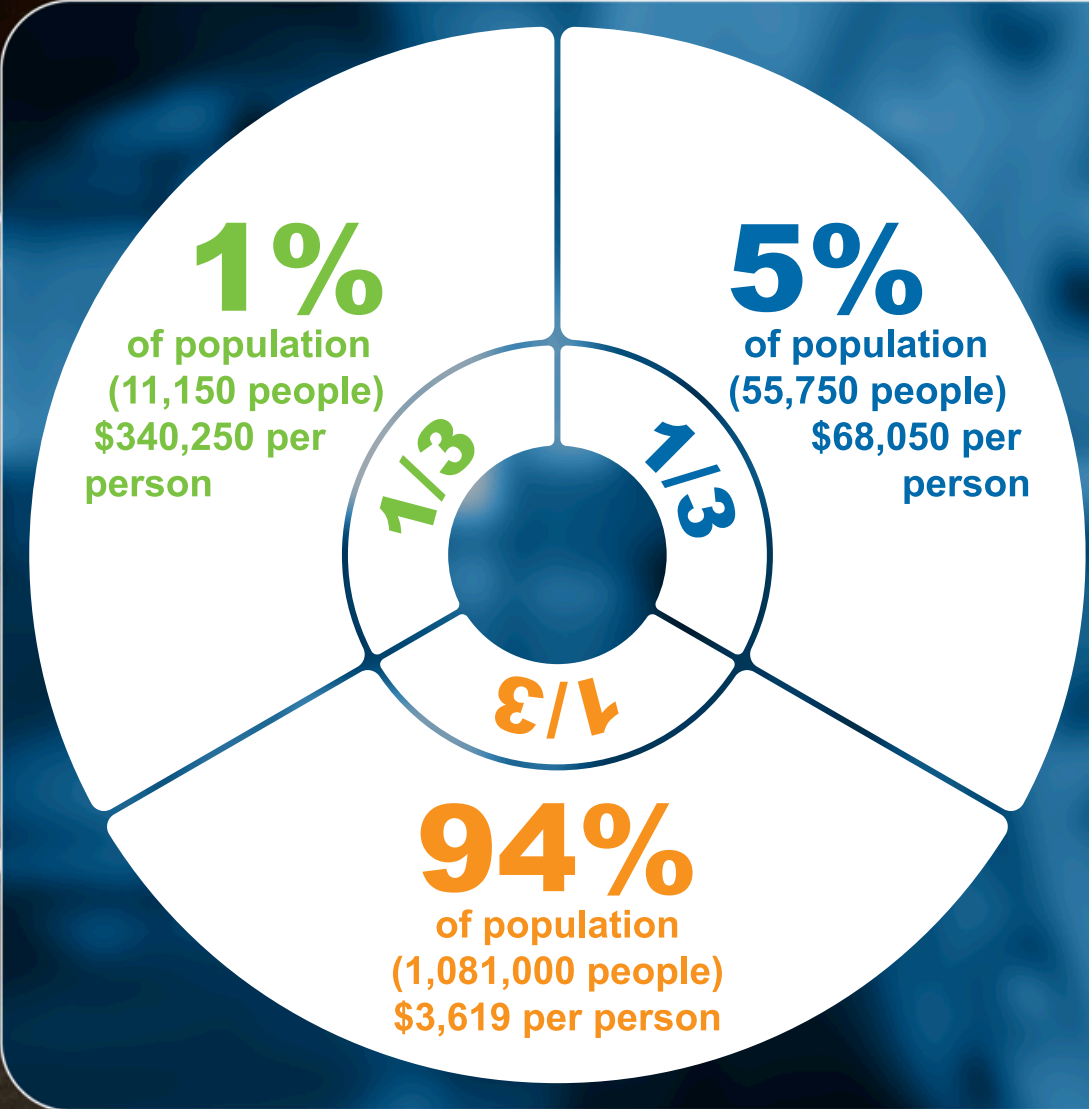
Social media feed data

Images/Video   90%   Audio

- May have its own internal structure, but does not conform neatly into a spreadsheet or database

- Increasingly available in the form of complex data sources, such as web logs, multimedia content, email, customer service interactions, sales automation, images, video, audio and social media data

8

"It's not about your Data, it's about THE data…"

- Data knows no organizational boundaries

- Data knows (nor cares) about social norms!

- You possess a micro-fraction of the data available to you and a micro-fraction of the data that is *useful* to you

- Privacy and security must be respected and understood...your anonymous data and my anonymous data is not necessarily anonymous
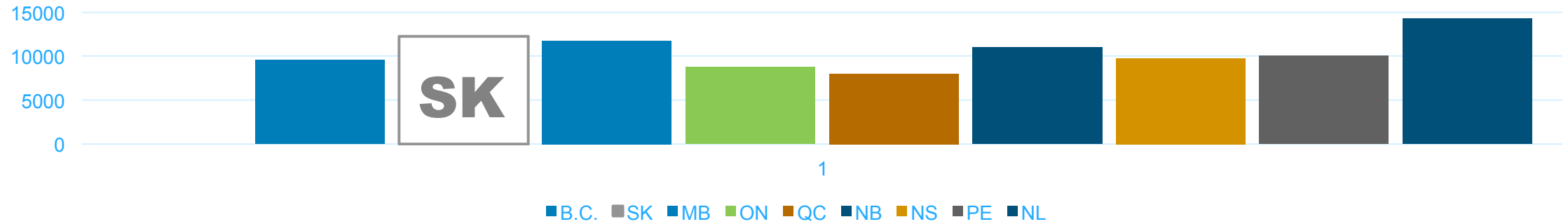
Saskatchewan Human Services spending

1% of population (11,150 people) $340,250 per person

5% of population (55,750 people) $68,050 per person

1/3   1/3   1/3

94% of population (1,081,000 people) $3,619 per person

- $14.46B in Provincial Budget

- Approximately 82% devoted to Human Services

- $11.86B devoted to Human Services

- 6% of the population uses 2/3 of the spend

INSIGHT TO IMPACT

INSIGHTS ➡ OUTCOMES

GOVERNMENT OF SASKATCHEWAN

Ministry of Government Relations
Ministry of Careers Training and Immigration
Ministry of Justice
Ministry of Finance
Ministry of Social Services
Ministry of Education
Ministry of Health

ORGANIZATIONAL REPORTING - INDIVIDUAL ACCESS - AD HOC CAPABILITIES - ORGANIZATIONAL REPORTING - INDIVIDUAL ACCESS - AD HOC CAPABILITIES - ORGANIZATIONAL REPORTING - INDIVIDUAL ACCESS - AD HOC CAPABILITIES

ENTERPRISE REPORTING

CROSS ORGANIZATION INITIATIVE REPORTING

FIRST NATIONS ORGANIZATIONS
Tribal Councils
Bands

COMMUNITY BASED ORGANIZATIONS
United Way
18-45 Up
YMCA
YWCA

SCHOOLS
Divisions
Alternative Education (MTMS)

HEALTHCARE
eHealth
Saskatchewan Health Authority
Providers (JPCH)

DATA & KNOWLEDGE

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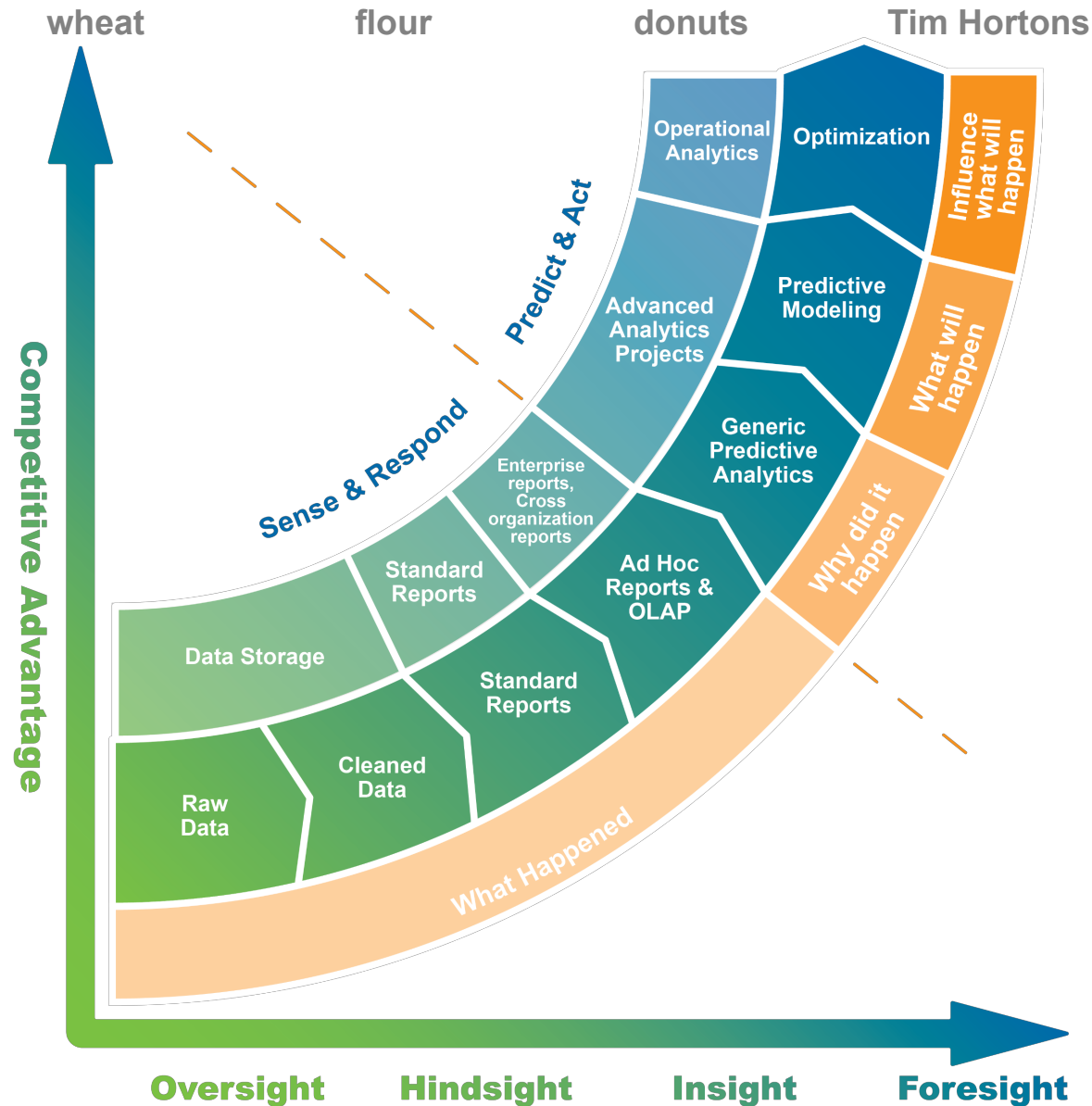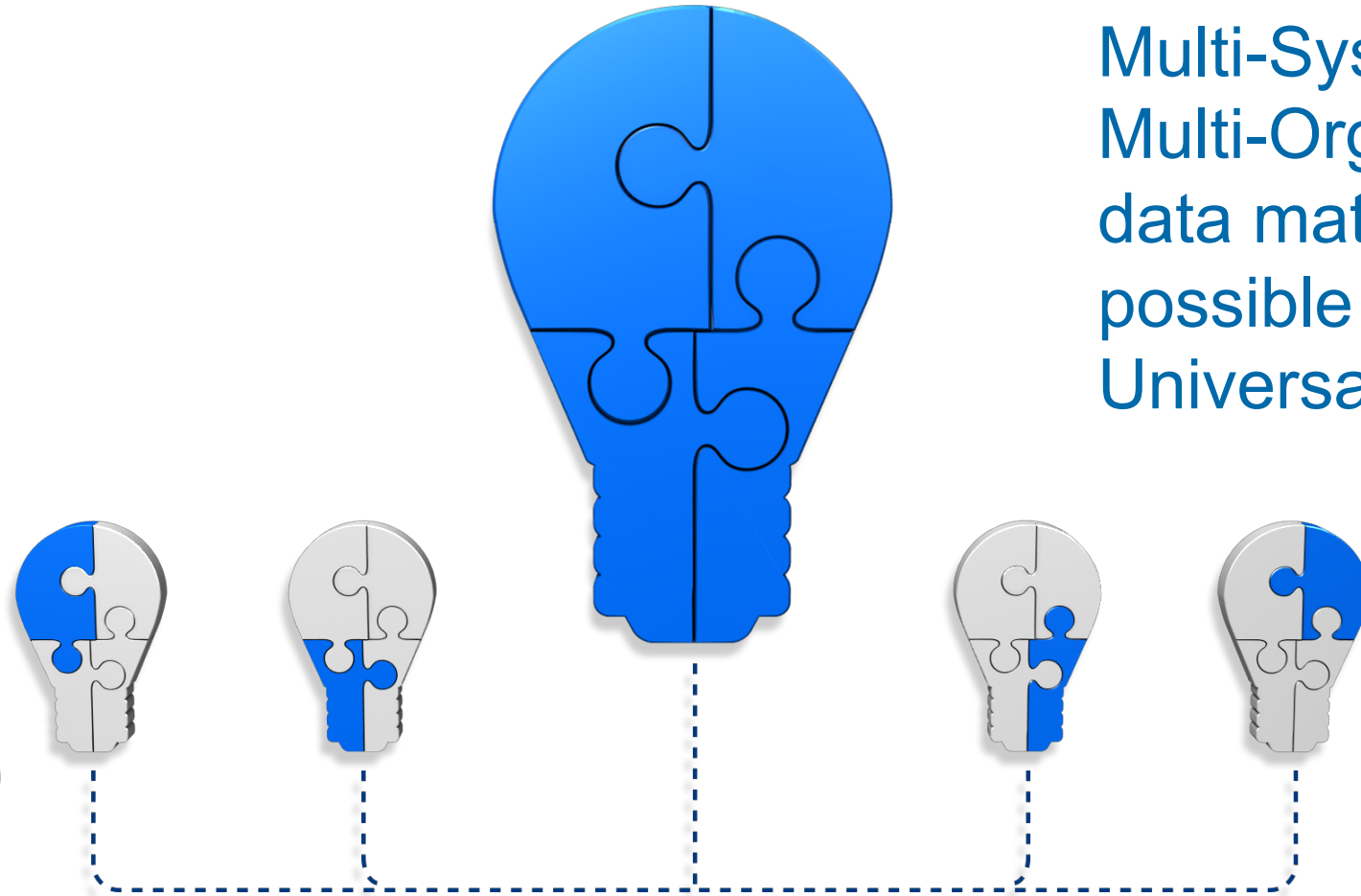
Analytics Maturity Curve

Scope of Services
- Data Storage

OPERATIONAL REPORTING
- Standard Reporting
- Enterprise Reporting
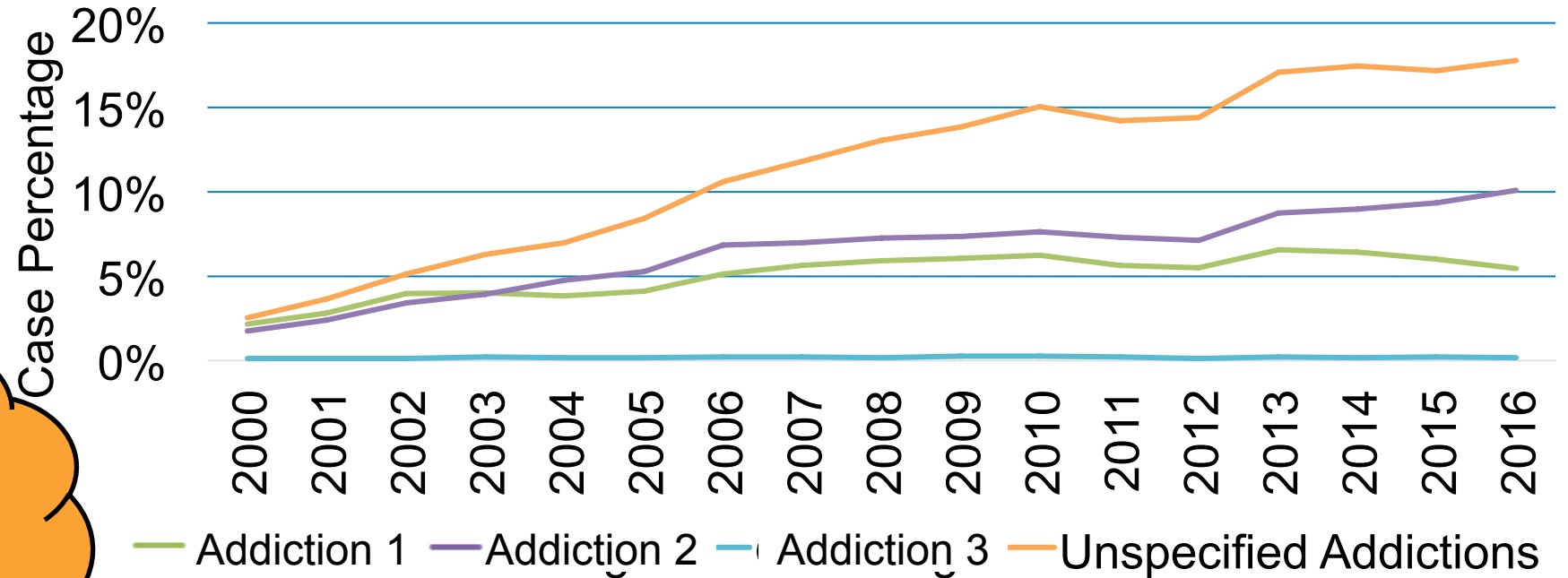- Cross Organization Reporting

ADVANCED ANALYTICS
- Advanced Analytics Projects
- Operational Analytics

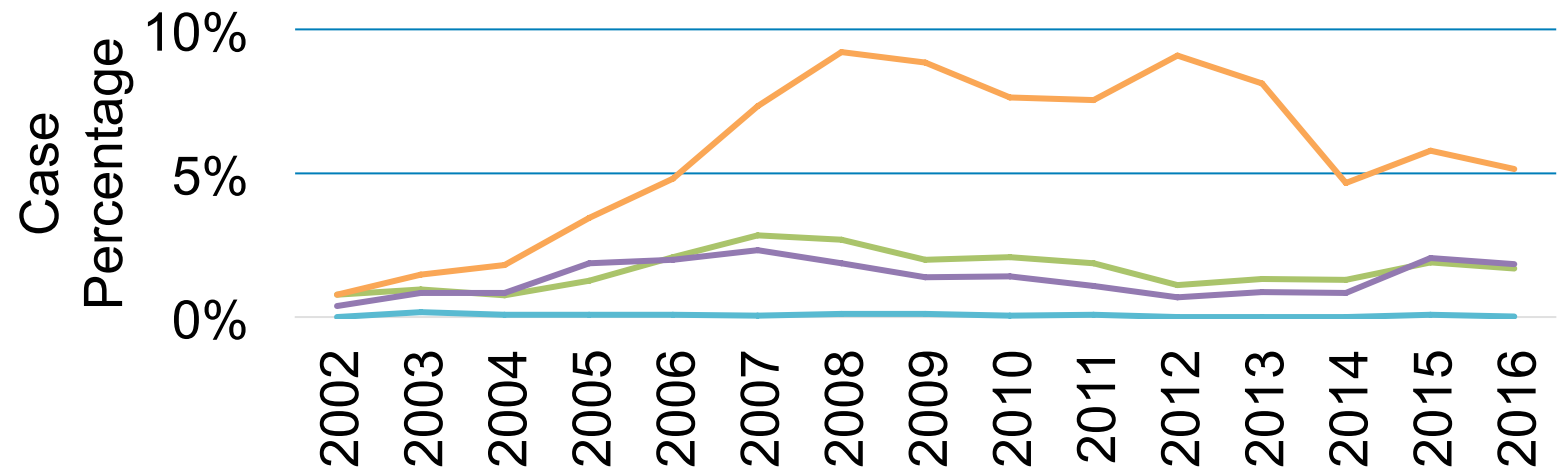Multi-System and Multi-Organization data matching is possible **without** a Universal Identifier.

Text Mining Over Years: Addictions

Program A

Graphs indicate the percentage of cases where addictions were *mentioned* – more than **200 categories** were mined from the text
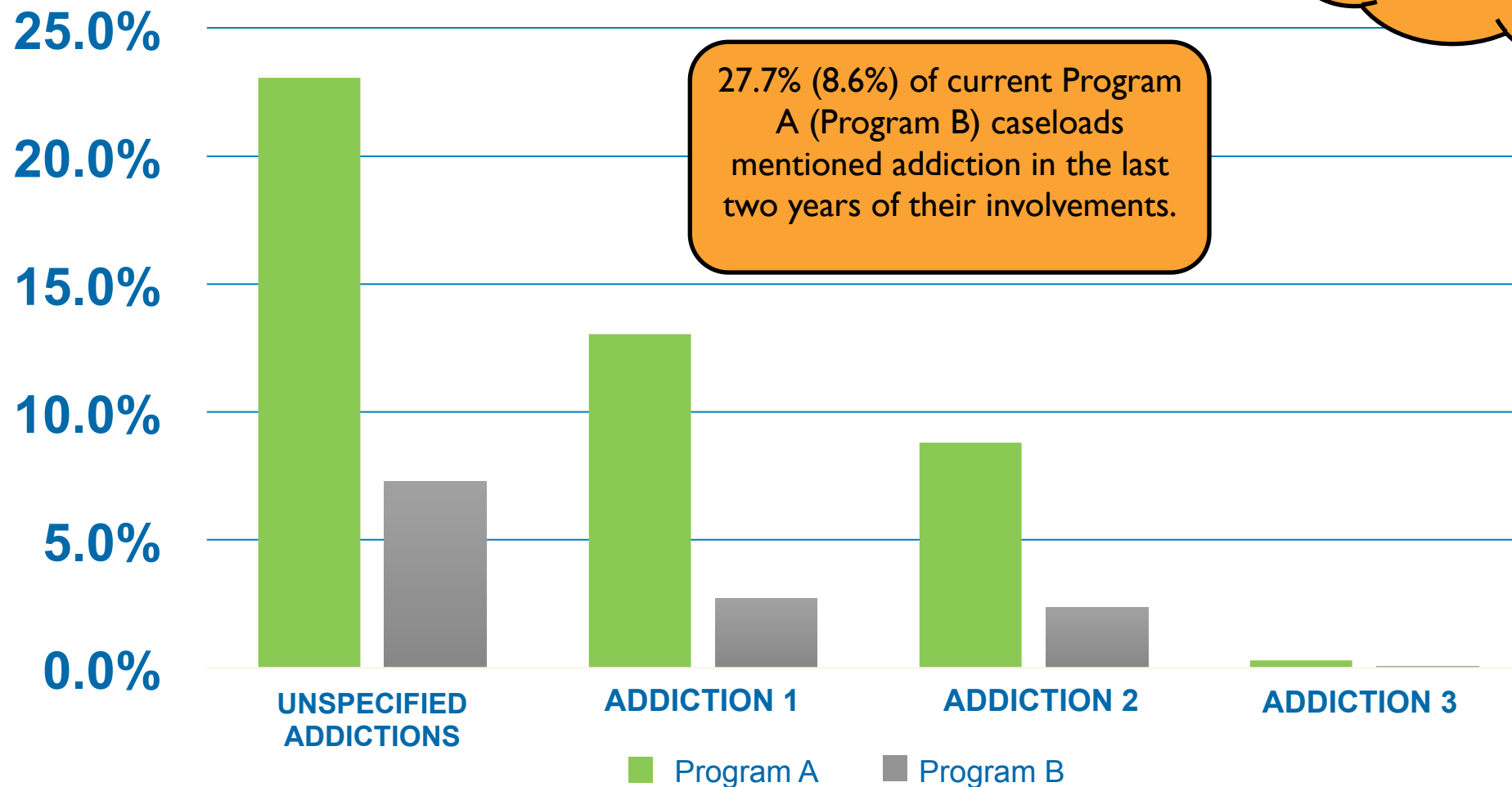
Program B

Addiction 1   Addiction 2   Addiction 3   Unspecified Addictions

Which topics were mentioned in a client's case notes?
(in the last two years of their involvement)

Addiction

Current Caseload Assessment of open text mentions.

27.7% (8.6%) of current Program A (Program B) caseloads mentioned addiction in the last two years of their involvements.

- Program A
- Program B

Sample Cohort Analysis (fictitious numbers)

Example:

Females with dynamic/high number of beneficiaries as well as SRHS involvement

Size (%)	**11.6** %
Money spent on the cohort ($M) in last 1 year / (%)	$**36.4** M / **21.4** %
Average money per involvement in last 1 year ($K)	$**13.9** K
Average number of months involved in last 1 year (month)	**11.5**
Average $ per involvement per month ($) in last 1 year	$**1,207**
Average $ per involvement per beneficiary per month ($) in last 1 year	$**546**

By leveraging insights from open text and structured data across all Human Services ministries, client cohorts were created to provided targeted interventions and programming.