TELUS

Big Data: trends and governance

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Agenda

- TELUS' internal corporate context

- Big data? What's the big deal?

- Use and governance – a phased approach

- Lessons learned – what you can take away from our experience

TELUS' Security Context

- Corporate demographics:
  - National telco service provider:
    - $10B revenue (2012)
    - 7.5 M Wireless Customers
    - 1.3 M HSIA Customers
  - Significant service provider to both SMB and large complex organizations

  - *Critical infrastructure and service provider

  - Mandate of the CSO: protect TELUS systems and networks, drive and embed security into all areas of the Business to ensure world class security capabilities

Evolving threat landscape

Timeframe: 2005 ~ 2011:

- Embedding Security:

  Partnership approaches over traditional policing regimes; integration into SDLC
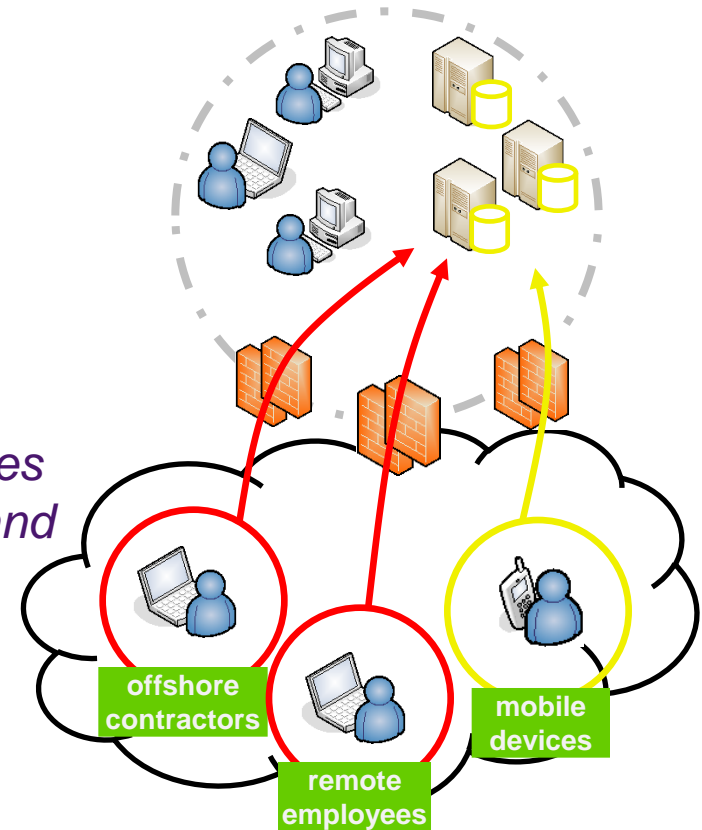
- Technology Trends:

  Fundamental shifts of disruptive technologies transforming how and where data is used and controlled

- Threats:

  Changing actors and advanced intrusion methods that enterprise must adapt to

- Solutions:

  Approaches and tools to embedding security as well as managing technology trends and advanced threats

So, what is Big Data anyway?

TELUS

- **Big Data describes data sets that are too large, too unrefined or too fast-changing for analysis using traditional relational or multidimensional database techniques.**

- **The *extreme scale* of the data requires specialized analytics applications to parse and make sense of the data *based on* the parameters set out by the Business**

- **Example Data points:**

    - **Facebook – 15TB of new data/day , ~120PB, ~6200 nodes**

    - **Twitter – 1TB of new data/day , ~12PB, ~80 nodes**

    - **Yahoo! – 20TB of new data/day, ~72PB, 4500 nodes**

Variety, Velocity, Volume & Veracity & Depth

Evolution into Big Data…
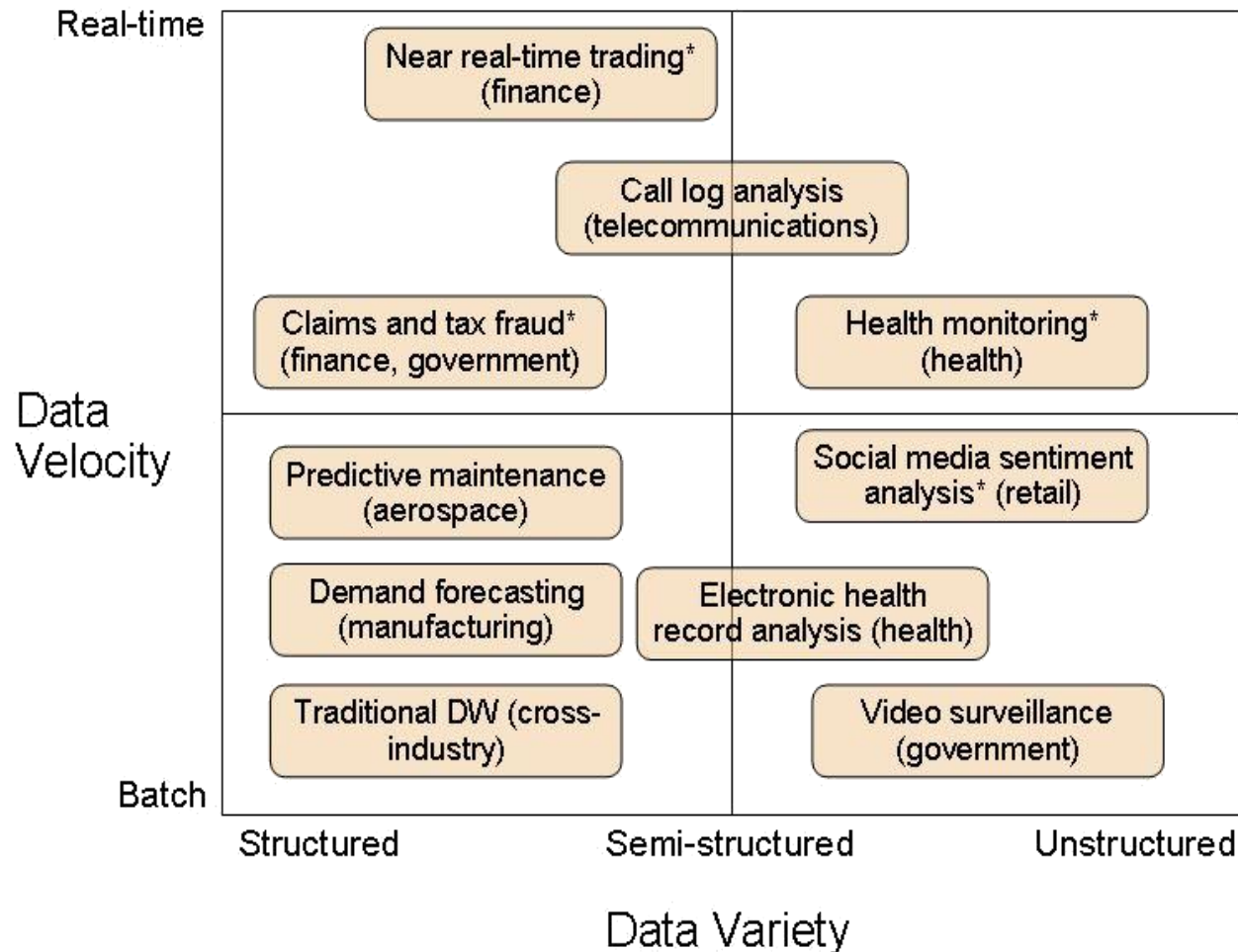
- **TELUS CSO rolled out first instance of SIEM in 2006:**
    - Aggressive plans to ingest 100s of Firewalls, Network Element logs, and IT system logs
    - SIEM collectors could not handle the flow – adding more infrastructure was <u>costly</u>, and operationally complex to support
    - Solution scaled back to critical, high value data zones and systems: SOX, PCI, PIPEDA

- **2011 ~ 2012: Technical evolution and maturity in high volume, high velocity data analytics was the key**

Big Data Security Architecture Maturity

- **Fast forward to 2012 – TELUS SIDC architecture security objectives:**
  - World class security event correlation / management
  - Security Operations Excellence:
    - Real time automated threat analysis
  - World class security response technologies

Big Data Security Architecture Maturity

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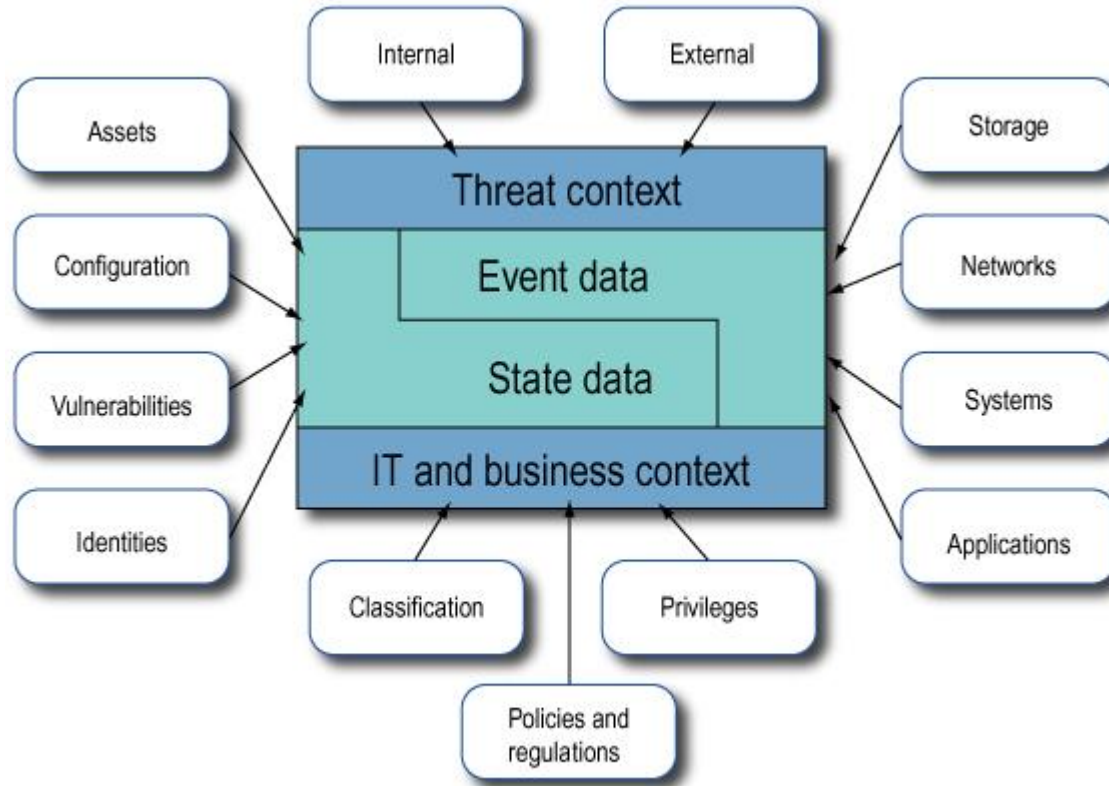 - World class security response technologies

Problem:

How do we deal with all that data?

SIEM Big Data Analytics
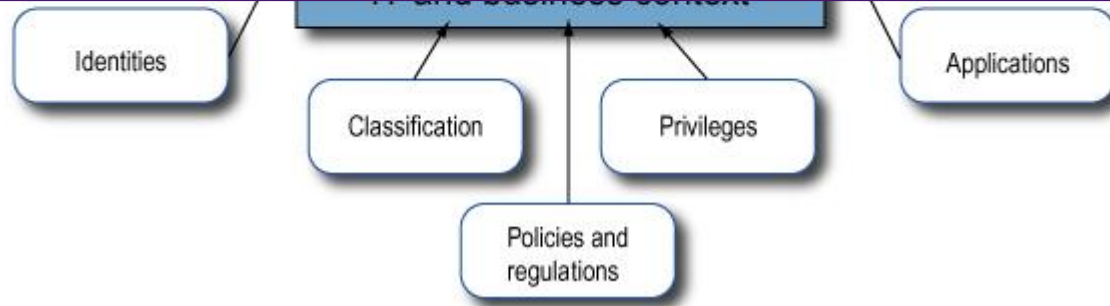
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SIEM Big Data Analytics

Internal External

Assets

Threat context

Storage

## Big Data Analytics Tier
Objective: filter events - funnel relevant events to SIEM for more detailed meaningful analysis and response

Identities

Classification Privileges

Applications

Policies and regulations

Popularity of Big Data

- In parallel, Business Development and Network Assurance Teams are meeting with vendors….
  - Vendor: "Big Data will solve all your problems!"
  - Business: "Cool! Let's run a trial!"

| BU 1 | BU 2 | BU 3 | BU 4 |

Big Data Experimentation
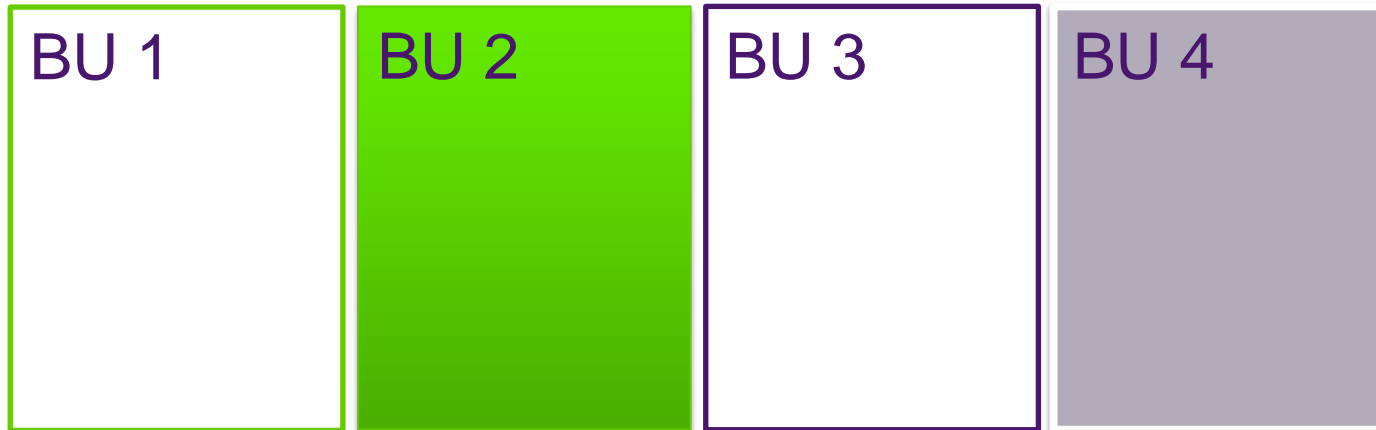
- ## Opportunity:
  - Assess the true value of Big Data to deliver better services to our clients
  - Drive operational excellence and efficiencies

- ## Challenge:
  - Management of data
  - Management of meta data
  - Control who has access to the correlated / contextual data analysis
  - Strategic focus – common business and technical alignment

Big Data Experimentation

- **Other challenges to consider:**

  - Where will big data analysis occur?

    - Cloud?

  - Vendor
    - Many start ups in this space – will they be around in 3 ~ 4 years?

    - Trust?

Big Data Experimentation

- **Good news travels fast:**
  - Ongoing business analysis into the benefits of big data analysis
    - Opportunities and assessments filter up to the executive ranks

Let's do more POCs!
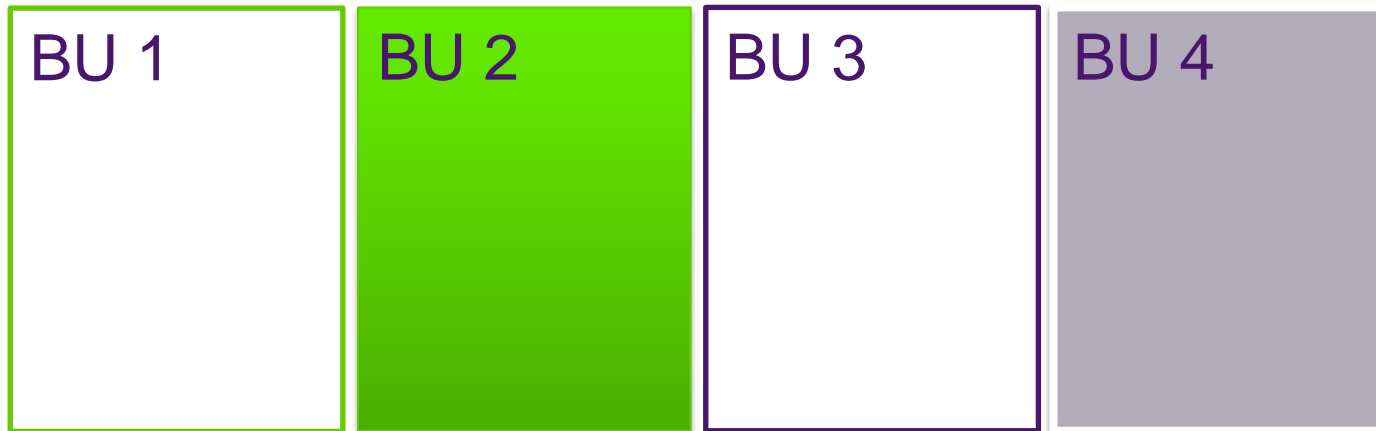
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Big Data Governance

- ## Governance:

Policy	Practice	Procedure	Leadership
TELUS Security Policy	TELUS Data Classification	Compliance Team Oversight	Executive oversight
TELUS Ethics Policy	TELUS Data Retention Standards	TELUS CSO Architecture TELUS Privacy & Compliance Team	Executive strategic direction

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*Key activity is data classification. It will identify particularly sensitive data to monitor access to.

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*Critically important, assess the contextualized / correlated data!

Compliance Transparency
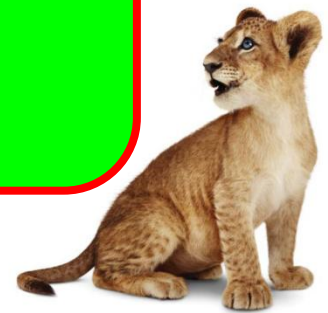
- **Transparency of use cases**
  - A great idea may not necessarily be in alignment with policies, regulations, or legislation

  - Some examples:
    - Geo-location data enriched with Customer specifics

    - CRM data to behaviour or trend activity

Expect to hear…

- "But Carlos, what's the big deal?"

- "Mmm, you're paranoid!"

- "You're standing in the way of progress!"

- "Our competitors are already doing it!"

Big Data - Governance

| BU 1 | BU 2 | BU 3 | BU 4 |

Executive Steering Committee

- Common view of opportunity

- Common view of challenges

- Common view of risks

- Transparency in governance

Wrap Up

- Don't shy away from Big Data Analytics – They are very useful

- Eyes wide open!

- Transparent governance & use of best compliance practices are key

Questions?

Contact information

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