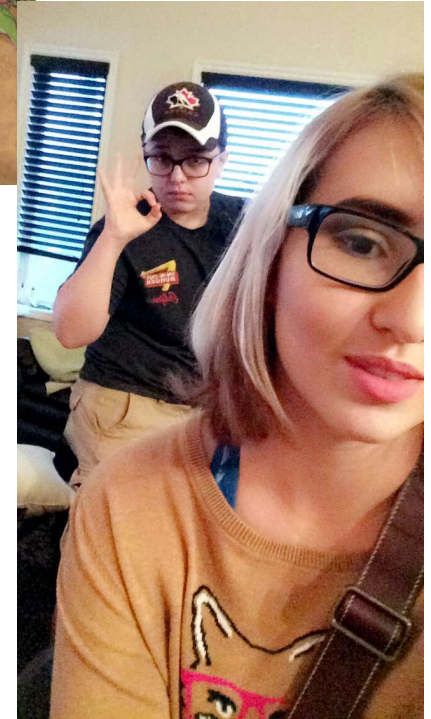




Unlocking the Potential of Big Data

January, 2018



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Regulation

Health Care



Practice

Policy

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What is “Big Data”?

- “extremely large data sets that may be analyzed computationally to reveal patterns, trends, and associations, especially relating to human behavior and interactions”

google.ca

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How big is BIG?



Twitter users send out **277,000** tweets

EVERY MINUTE



Facebook processes **350GB** of data



100 hours of new video are uploaded on YouTube



Google processes more than **2 million** search queries



Why “Big Data”?

Smart decision = intuition + data + science

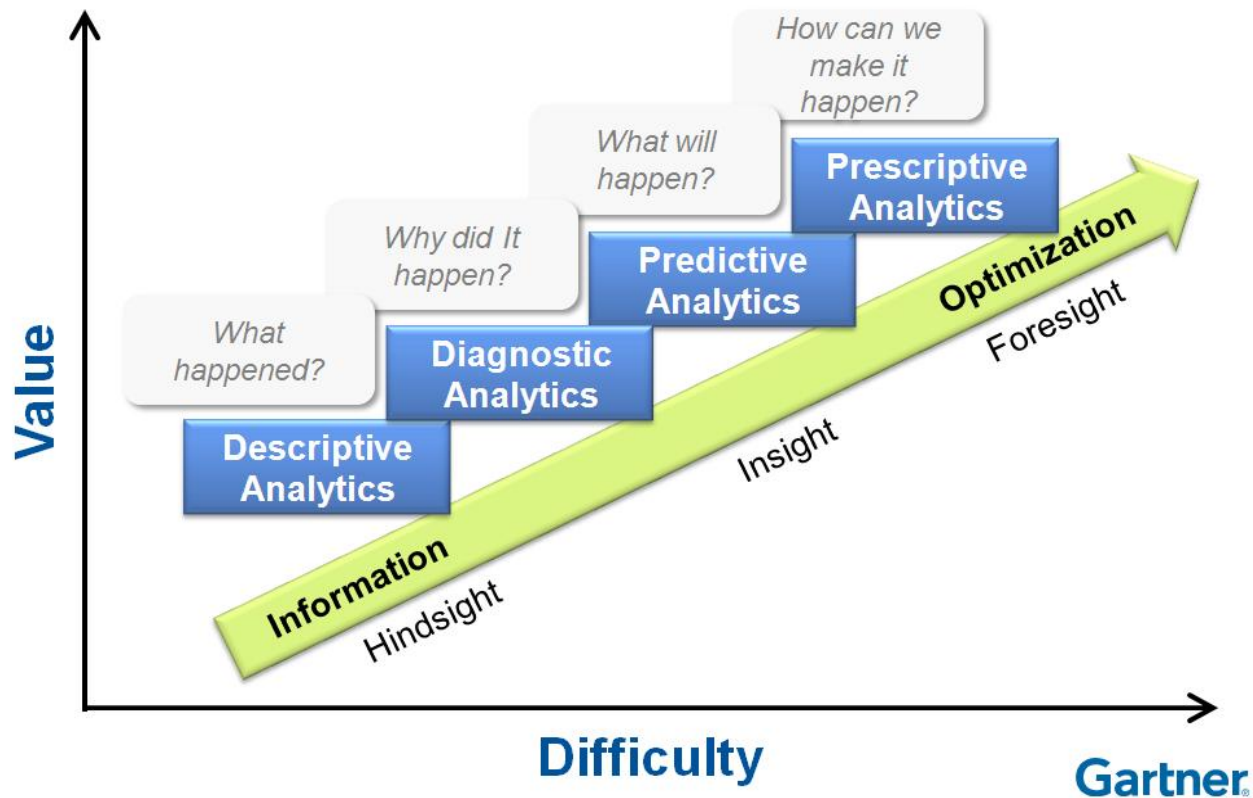
“Data is a unique resource; it can be refined into information, can provide significant insight, complements intuition and should be the primary driver for business decisions.” (Ziko Rajaballi, 2017)

<https://about.me/ziko>

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Analytics Are No Longer a Nice to Have



<https://blogs.gartner.com/matthew-davis/files/2013/05/Analytics.jpg>

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Uses

- broaden the platform for decision-making
- add transparency and consistency to decision-making
- enable nimble policy responses to regulatory issues

LFE Project Purpose

Use evidence to improve the efficiency of the IEN application process

Objectives

- be evidence-informed
- be transparent, be clear
- build capacity

www.nurses.ab.ca

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LFE Project Overview

Baseline analysis of application data
(characteristics, outcomes, timelines)



Policy and practice review and
implementation of changes



Pre- & post-implementation data
analysis, additional projects



Data Analysis

Exploratory Analysis

- Data management and cleaning
- Frequency, cross-tabulations, chi-squared tests
- Univariate and bi-variate analysis



Confirmatory Analysis

- Stepwise selection of variables
- Multi-level regression modelling

Timeline Analysis

- Average times
- Cumulative times

Exemplar Analysis

- Comparison of groups with similar characteristics
- Outcomes
- Average times
- Cumulative times

Important Characteristics

- Education Credential
- Educated Where the Scope of Practice is Similar to Canada
- Practice Currency
- Number of Years Since Last Practiced or Graduation
- Consolidation of Education

Policy and Practice Changes



INITIAL ASSESSMENT CRITERIA CHECKLIST

Applicant Name: _____

Stakeholder #: _____

Start Date: _____ End Date: _____

Assessment Completed By: _____

STEP 1 – Ineligible Criteria

Does the applicant meet any one of these criteria?

- Not educated as an RN
- Not educated at a post-secondary equivalent level
- No RN licensure in the jurisdiction of education because did not apply for licensure or did not pass required exams
- Wrote the June 2006 Philippines nursing exam and did not re-write and pass the exam or Parts III and V of the exam
- Has not practiced as an RN in ten or more years
- Does not meet the good character and reputation requirement for registration
- Attempted a Canadian RN registration examination 3 times and did not pass and has not passed on a re-write allowed by another Canadian jurisdiction
- Has completed a competency assessment for another Canadian jurisdiction and CARNA has determined that identified competency gaps are too extensive to be addressed through bridging education available to CARNA applicants

If ANY of the above are checked:



Ineligible Letter

STEP 2 – SEC Assessment Required

Does the applicant meet any one of these criteria?

- Has not practiced since graduating from an RN program between 4 and 9 years ago
- Last practiced as an RN between 4 and 9 years ago
- Failed a nursing registration exam
- Transcripts or verification of registration not available from source due to extraordinary circumstances
- Discrepancies or gaps are found between identity documents and other required documents

If ANY of the above are checked:



SEC Required Email

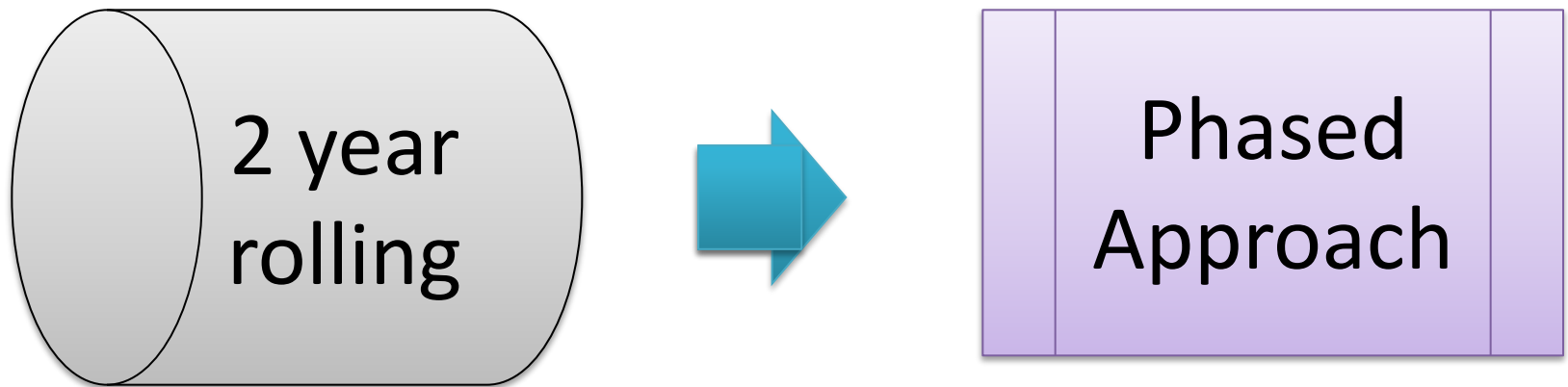
Bridging Education



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Application Time Limits



Cumulative Timelines

Cumulative Timeline	Baseline		Pre		Post*	
	Med	Avg	Med	Avg	Med	Avg
From Complete Application to:						
Initial Assessment Notification	86	98	49	101	34	44
SEC Review Notification	279	334	288	303	185	196
Post-Bridging Education Notification	684	709	619	614	319	315
First TP Granted	380	492	356	405	83	119
First Exam Writing	495	556	386	401	191	190
Exam Result	546	572	421	416	202	197
Initial RN Registration	607	656	589	594	303	305

Calendar days



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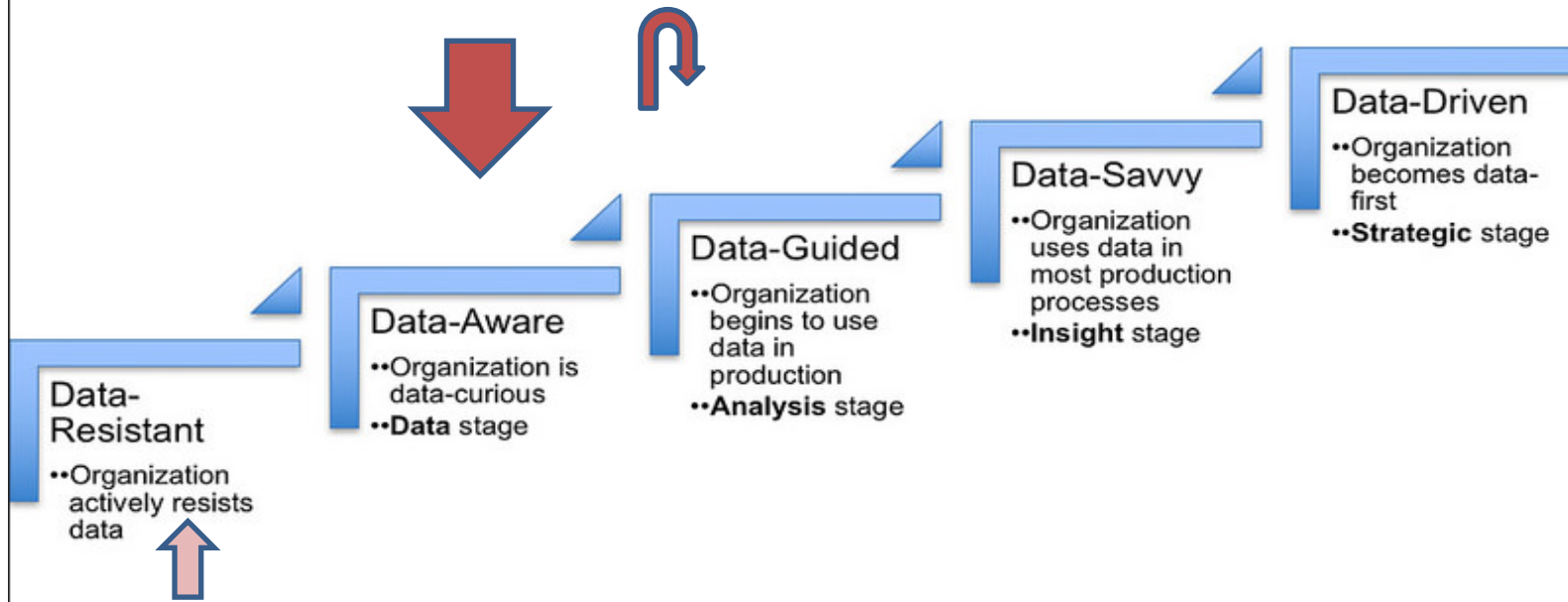
Lessons learned

- Managing the transition to data-driven decision-making
- Skill set
- Understanding your data
- Collaboration and partnership

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Evolution of the Data-Driven Company



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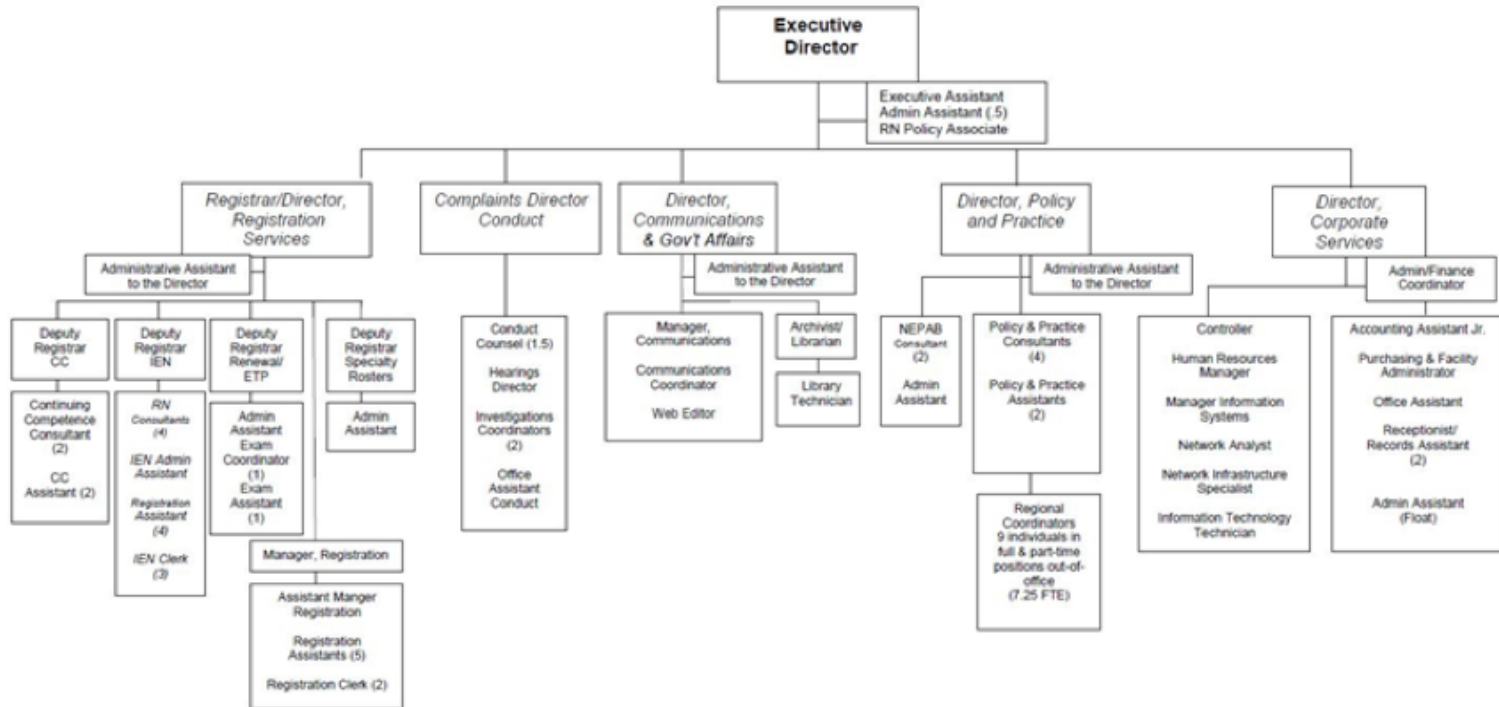
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Then.....

CARNA Organization Chart



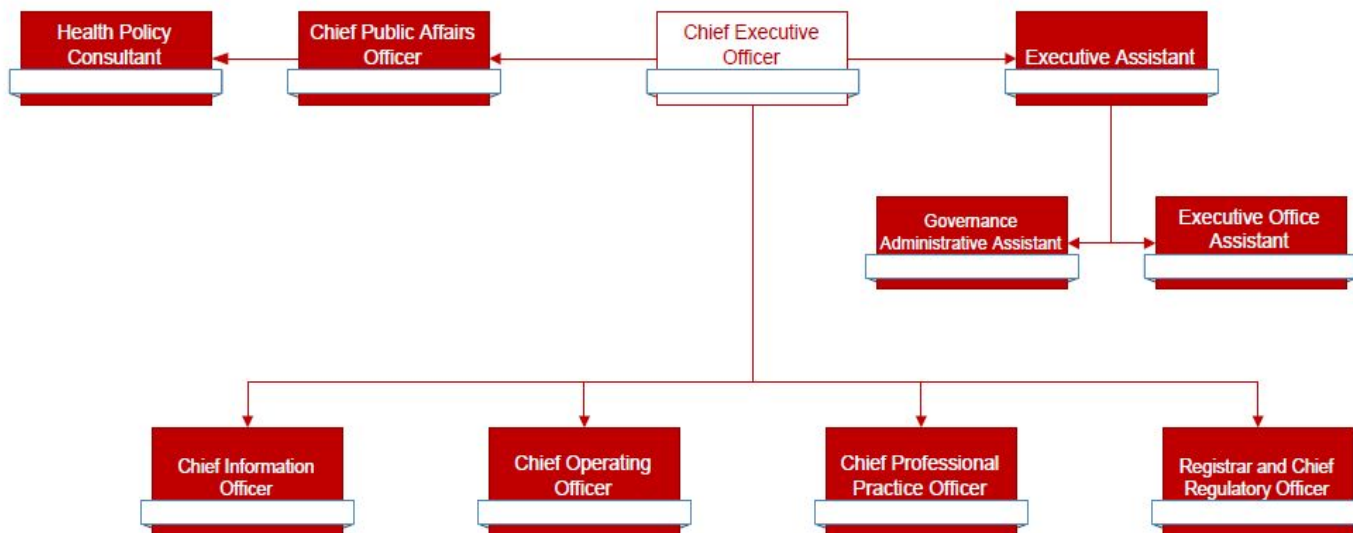
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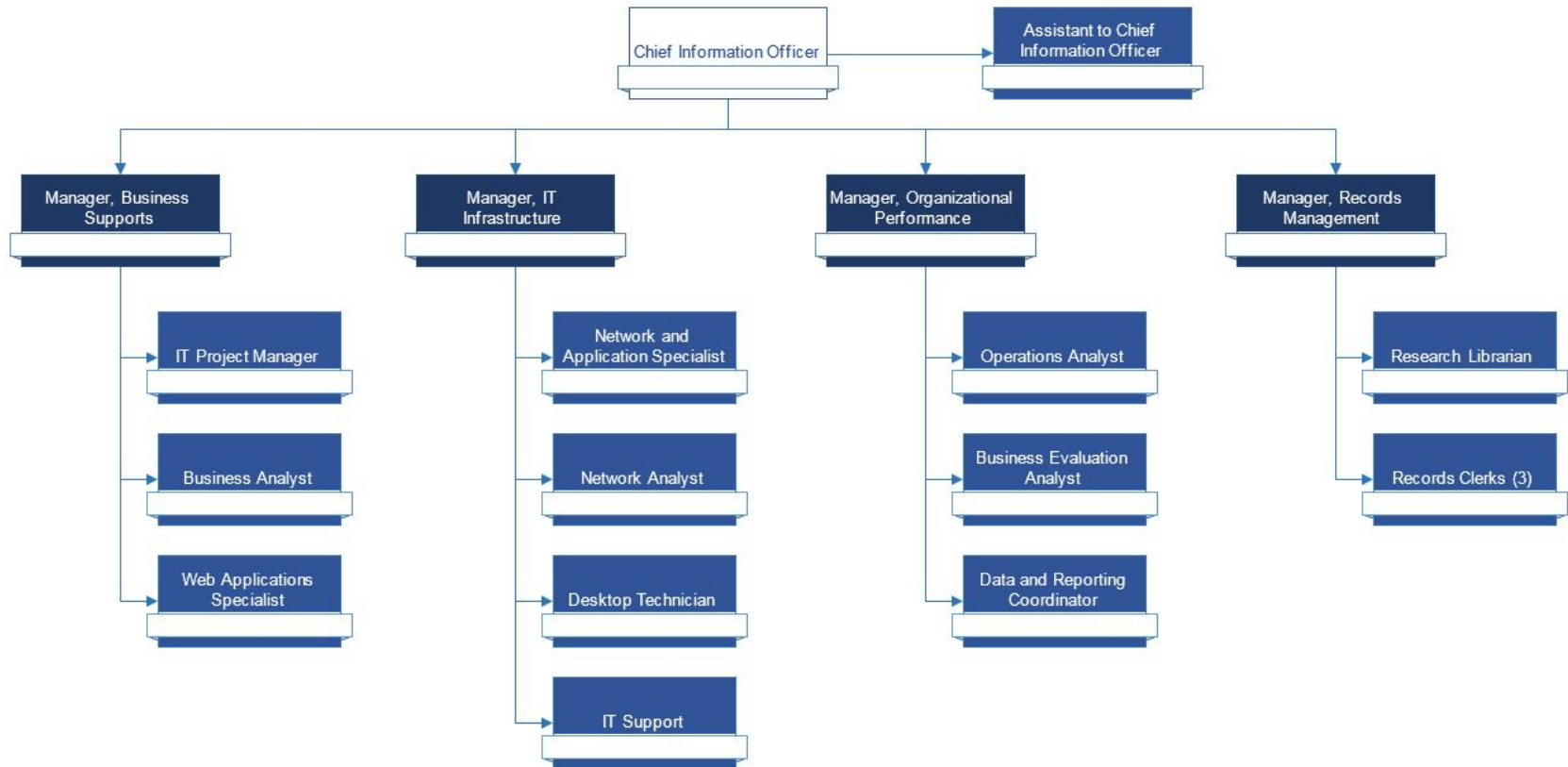
Now.....

CEO Office



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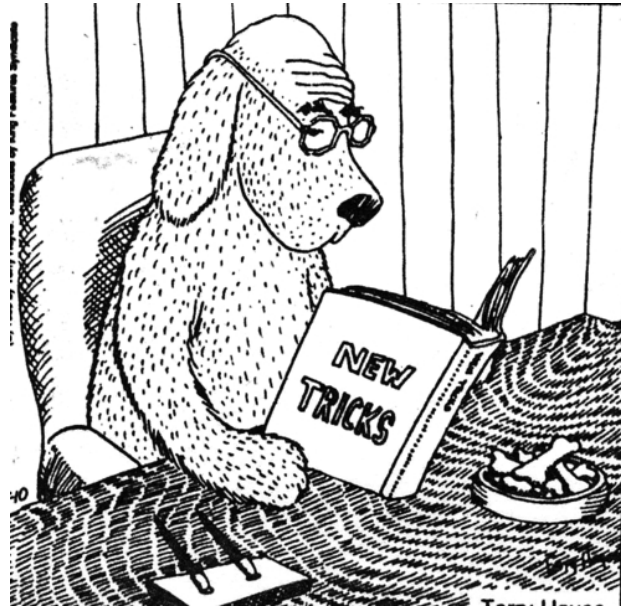




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- It starts at the top
 - And in the middle
 - And where the action happens



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startrek.com

<https://datahero.com/blog/2017/07/31/data-driven-decision-making-skills/>

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BIG DATA



VOLUME
DATA SIZE



VELOCITY
SPEED OF CHANGE



VARIETY
DIFFERENT FORMS
OF DATA SOURCES



VERACITY
UNCERTAINTY OF
DATA

<http://labs.sogeti.com/big-data-useless/>

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Unlikely Partnerships



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Project Support



**Health
Canada**

**Santé
Canada**

Internationally Educated Health Professionals Initiative

Research Partners



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Questions?

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