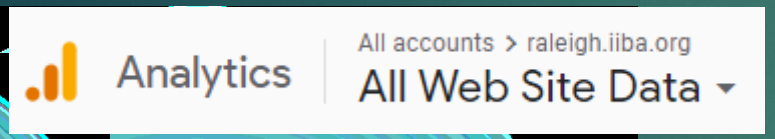
Google Analytics of IIBA.Raleigh.org from the Big Data



Big Data Analytics

- Background
- Applications Catalog
- Structured Data
  - Risk of Hospitalization
- Unstructured Data

Ravi Mulukutla, PhD
Sr. Agile Business Analyst

Market Research & Digital Analytics Lead
IIBA RTP Chapter
Marketing & Communications Committee

Acknlowledgement

- Seema Manchikalapati, PMP, CBAP, Marketing & Communications Committee Chair
- Jey Subbiah, MBA,CBAP,ASQ-CQIA, Raleigh Chapter President

Google Analytics….

----is a web analytics service offered by Google that tracks and reports **website traffic**, currently as a platform inside the Google Marketing Platform brand.

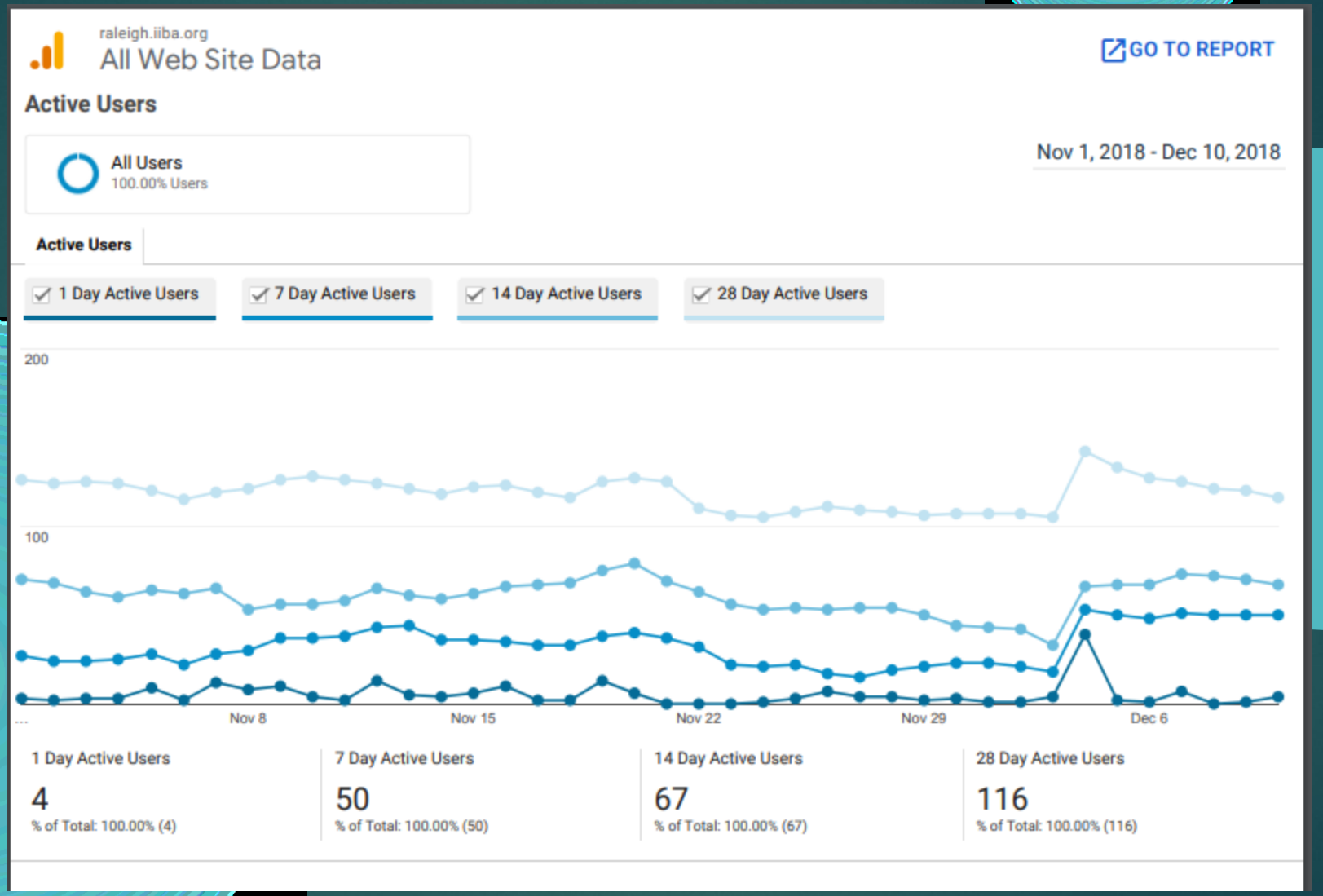
---- approach is to show high-level, dashboard-type data for the casual user, and more in-depth data further into the report set.

-----analysis can **identify poorly performing pages** with techniques such as funnel visualization, **where visitors** came from (referrers), how long they stayed on the website and their geographical position.

http://analytics.google.com/analytics/web/

Overview – Dimensions

- ACTIVE USERS
- AUDIENCE OVERVIEW
- DEMOGRAPHICS
- ACQUISITION OVERVIEW
  - Direct / Organic search / Referral / Social
- PAGES OF WEBSITE VIEWS
- SOCIAL NETWORKING SITES OVERVIEW
- RECOMMENDATIONS & NEXT STEPS


raleigh.iiba.org
All Web Site Data
GO TO REPORT
Active Users
All Users
100.00% Users
Nov 1, 2018 - Dec 10, 2018
Active Users
1 Day Active Users
7 Day Active Users
14 Day Active Users
28 Day Active Users
200
100
Nov 8
Nov 15
Nov 22
Nov 29
Dec 6
1 Day Active Users
4
% of Total: 100.00% (4)
7 Day Active Users
50
% of Total: 100.00% (50)
14 Day Active Users
67
% of Total: 100.00% (67)
28 Day Active Users
116
% of Total: 100.00% (116)

raleigh.iiba.org

All Web Site Data

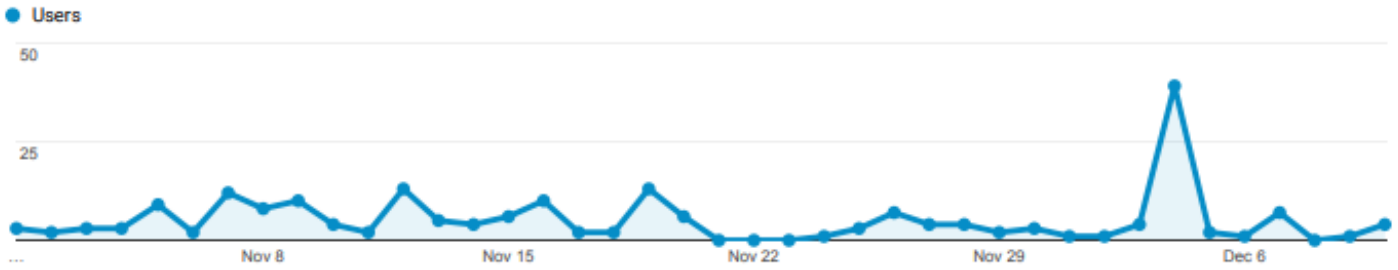
GO TO REPORT

Audience Overview

All Users
100.00% Users

Nov 1, 2018 - Dec 10, 2018

Overview



Users	New Users	Sessions
163	139	243

Number of Sessions per User	Pageviews	Pages / Session
1.49	817	3.36

Avg. Session Duration	Bounce Rate
00:01:37	61.73%

Demographics

- Language
- Country
- City

System

- Browser
- Operating System
- Service Provider

Mobile

- Operating System
- Service Provider

	Country	Users	% Users
1.	United States	115	70.55%
2.	Brazil	15	9.20%
3.	Italy	5	3.07%
4.	Canada	4	2.45%
5.	Australia	3	1.84%
6.	Portugal	3	1.84%
7.	Thailand	2	1.23%
8.	(not set)	2	1.23%
9.	United Arab Emirates	1	0.61%
10.	Belarus	1	0.61%

Insights www.Raleigh.iiba.org

- **Bounce rate average: 61%**
- **Bounce rate** is the percentage of single page visits (or web sessions). It is the percentage of visits in which a person leaves your website from the landing page without browsing any further. **Google analytics** calculates and report the **bounce rate** of a web page and **bounce rate** of a website.
- In other words, it collects all sessions where a visitor only visited one page and divides it by all sessions.
- As a rule of thumb, a bounce rate in the range of **26 to 40 percent is excellent**. 41 to **55 percent** is roughly average. 56 to **70 percent** is higher than average, but may not be cause for alarm depending on the website. Anything over **70 percent** is disappointing for everything outside of blogs, news, events, etc.

Having a high bounce rate can mean three things:

- The quality of the page is low. There's nothing inviting to engage with.
- Your audience doesn't match the purpose of the page, as they won't engage with your page.
- Visitors have found the information that they were looking for.

- **Recommendations for Raleigh.iiba.org**

Some proven ways to reduce bounce rate

1. Improve Your Content's Readability
2. Avoid Popups – Don't Disrupt the UX
3. Create a Compelling Call-to-Action
4. Improve Your Brand Storytelling
5. Keep Your Blog Fresh With the Right Content
6. Target Keywords With High-Value Traffic
7. Attract the Right Visitor
8. Write Attractive Meta Descriptions for Search Users
9. Create Multiple Landing Pages for High-Volume Keywords
10. Speed Up Your Page Load Time
11. Set External Links to Open in New Windows
12. Show Credibility

Reference: https://neilpatel.com/blog/13-ways-to-reduce-bounce-rate-and-increase-your-conversions/

Acquisition Overview

All Users
100.00% Users

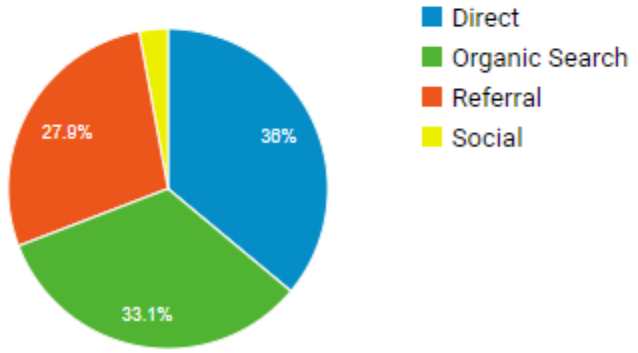
+ Add Segment

Primary Dimension: Top Channels

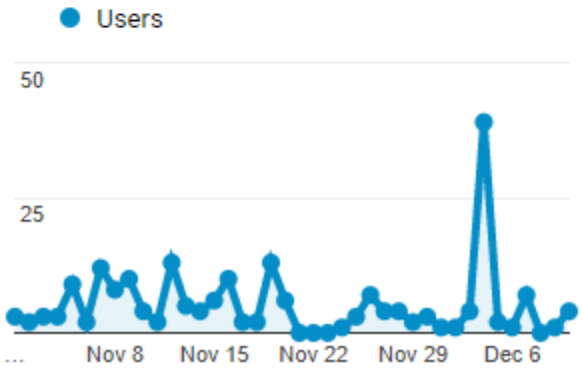
Conversion: All Goals

Edit Channel Grouping

Top Channels



Users



		Acquisition			Behavior		
		Users ↓	New Users	Sessions	Bounce Rate	Pages / Session	Avg. Session Duration
		163	139	243	61.73%	3.36	00:01:37
1	Direct	62			64.71%		
2	Organic Searc	57			40.45%		
3	Referral	48			82.50%		
4	Social	5			66.67%		

raleigh.iiba.org

All Web Site Data

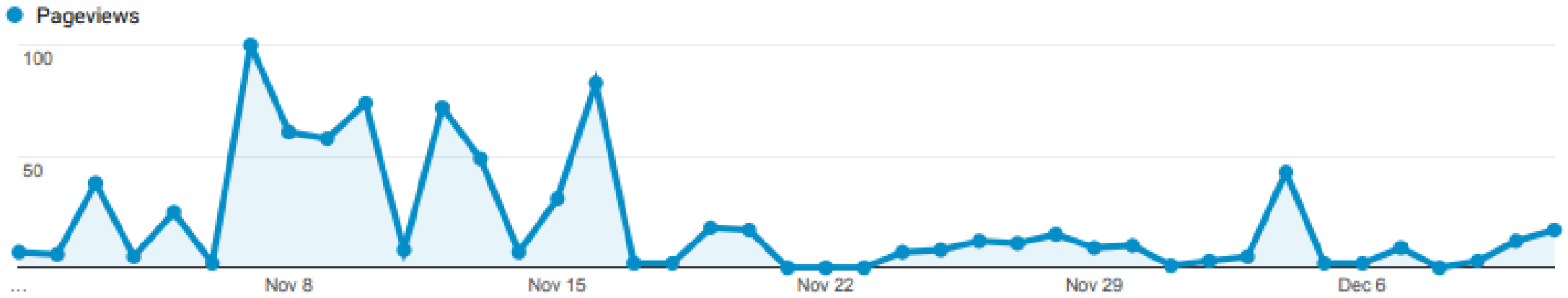
GO TO REPORT

Pages

All Users
100.00% Pageviews

Nov 1, 2018 - Dec 11, 2018

Explorer



Page	Pageviews	Unique Pageviews	Avg. Time on Page	Entrances	Bounce Rate	% Exit	Page Value
	834 % of Total: 100.00% (834)	602 % of Total: 100.00% (602)	00:00:41 Avg for View: 00:00:41 (0.00%)	249 % of Total: 100.00% (249)	61.45% Avg for View: 61.45% (0.00%)	29.86% Avg for View: 29.86% (0.00%)	$0.00 % of Total: 0.00% ($0.00)
1. /	174 (20.86%)	116 (19.27%)	00:00:48	104 (41.77%)	39.42%	30.46%	$0.00 (0.00%)
2. /event/2018-annual-iiba-rtp-holiday-social	78 (9.35%)	58 (9.63%)	00:01:25	33 (13.25%)	60.61%	47.44%	$0.00 (0.00%)
3. /user/login	59 (7.07%)	32 (5.32%)	00:00:25	9 (3.61%)	77.78%	18.64%	$0.00 (0.00%)
4. /h/6948147.html	41 (4.92%)	41 (6.81%)	00:00:00	41 (16.47%)	100.00%	100.00%	$0.00 (0.00%)
5. /cart	40 (4.80%)	21 (3.49%)	00:00:06	0 (0.00%)	0.00%	5.00%	$0.00 (0.00%)
6. /user	40 (4.80%)	16 (2.66%)	00:00:53	1 (0.40%)	0.00%	5.00%	$0.00 (0.00%)
7. /membership	29 (3.48%)	25 (4.15%)	00:00:19	19 (7.63%)	94.74%	68.97%	$0.00 (0.00%)
8. /certification	23 (2.76%)	15 (2.49%)	00:00:50	1 (0.40%)	0.00%	21.74%	$0.00 (0.00%)
9. /user/register	22 (2.64%)	17 (2.82%)	00:00:47	7 (2.81%)	85.71%	45.45%	$0.00 (0.00%)
10. /events-list	17 (2.04%)	16 (2.66%)	00:00:12	2 (0.80%)	0.00%	11.76%	$0.00 (0.00%)
11. /contact	16 (1.92%)	10 (1.66%)	00:00:39	0 (0.00%)	0.00%	37.50%	$0.00 (0.00%)
12. /iiba-rtp-meetup	13 (1.56%)	13 (2.16%)	00:01:07	0 (0.00%)	0.00%	84.62%	$0.00 (0.00%)
13. /board-directors	11 (1.32%)	10 (1.66%)	00:00:18	1 (0.40%)	100.00%	36.36%	$0.00 (0.00%)
14. /chapter-membership	11 (1.32%)	8 (1.33%)	00:00:26	0 (0.00%)	0.00%	9.09%	$0.00 (0.00%)
15. /our-chapter	11 (1.32%)	10 (1.66%)	00:00:29	2 (0.80%)	50.00%	27.27%	$0.00 (0.00%)
16. /standard-chapter-membership	11 (1.32%)	7 (1.16%)	00:00:13	0 (0.00%)	0.00%	9.09%	$0.00 (0.00%)

Insights www.Raleigh.iiba.org

- **Social: 5%**

The Social Relationship

- The social web connects people where they share, critique and interact with content and each other.
- Social analytics provides you with the tools to measure the impact of social.
- You can identify high value networks and content, track on-site and off-site user interaction with your content, and tie it all back to your bottom line revenue through goals and conversions.

Here's how we see this story:

Sources & Pages: Identify networks & communities where people engage with your content.

Conversions: Measure the value of social by tracking your goals, conversions and ecommerce transactions.

Social Plugins: Measure your on-site user engagement.

Social Users Flow: Compare traffic volumes and user traffic patterns through your site.

Social Networking sites

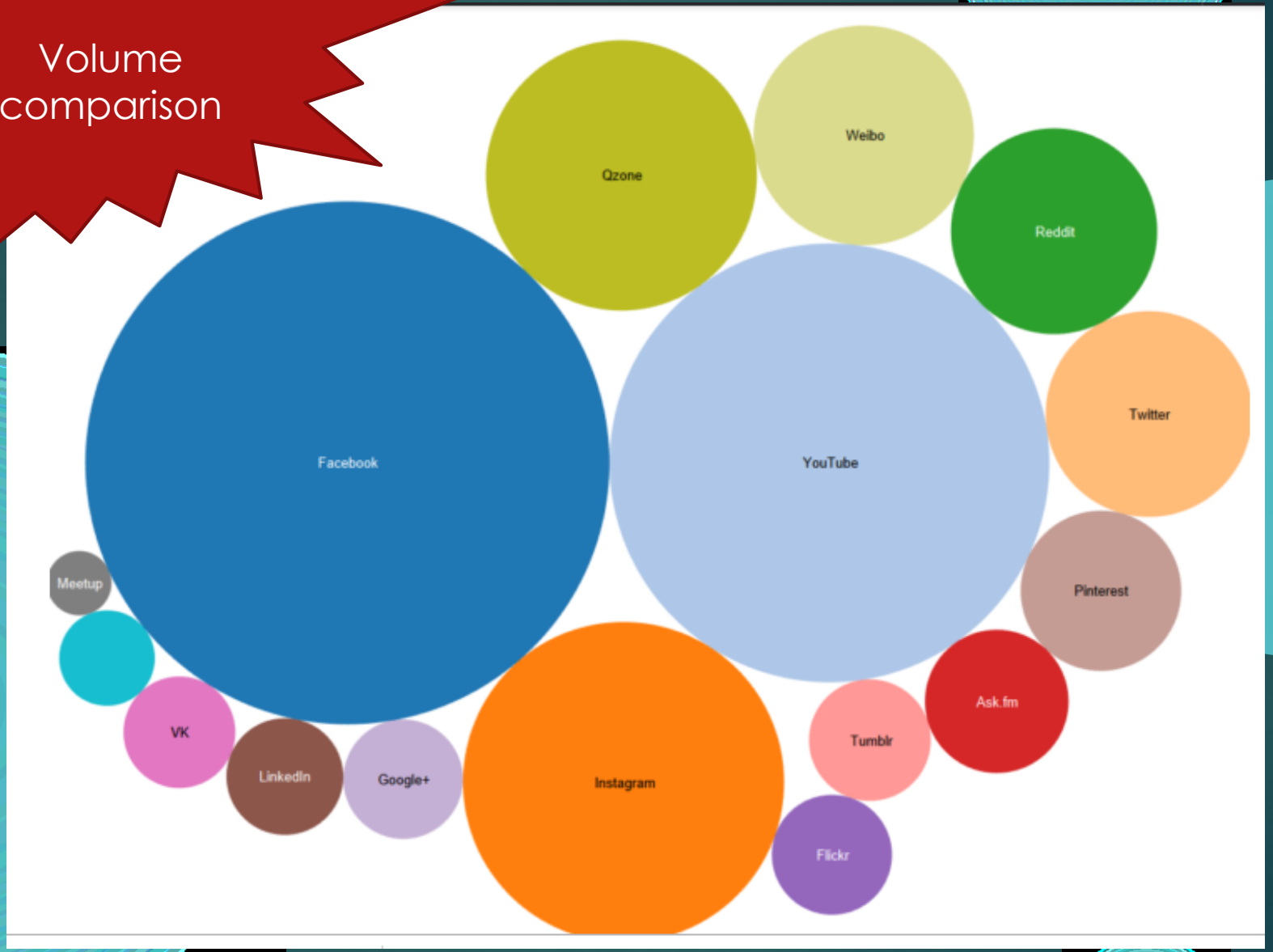
Last updated: August 2, 2018

Here's the graph of top 15 social networking sites in the world. As you can see Facebook is leading the pack with a huge margin in front of Youtube. Then there's another gap of similar size to Instagram on the third place.

NEW: Instagram has now 1 billion users. That is the answer to the question, what will be the next big thing.

Social network	Monthly Active Users
Facebook	2,230,000,000
YouTube	1,900,000,000
Instagram	1,000,000,000
Qzone	563,000,000
Weibo	~~376,000,000~~
Twitter	336,000,000
Reddit	330,000,000
Pinterest	200,000,000
Ask.fm	160,000,000
Tumblr	115,000,000
Flickr	112,000,000
Google+	111,000,000
LinkedIn	106,000,000
VK	97,000,000
Odnoklassniki	71,000,000

Volume comparison



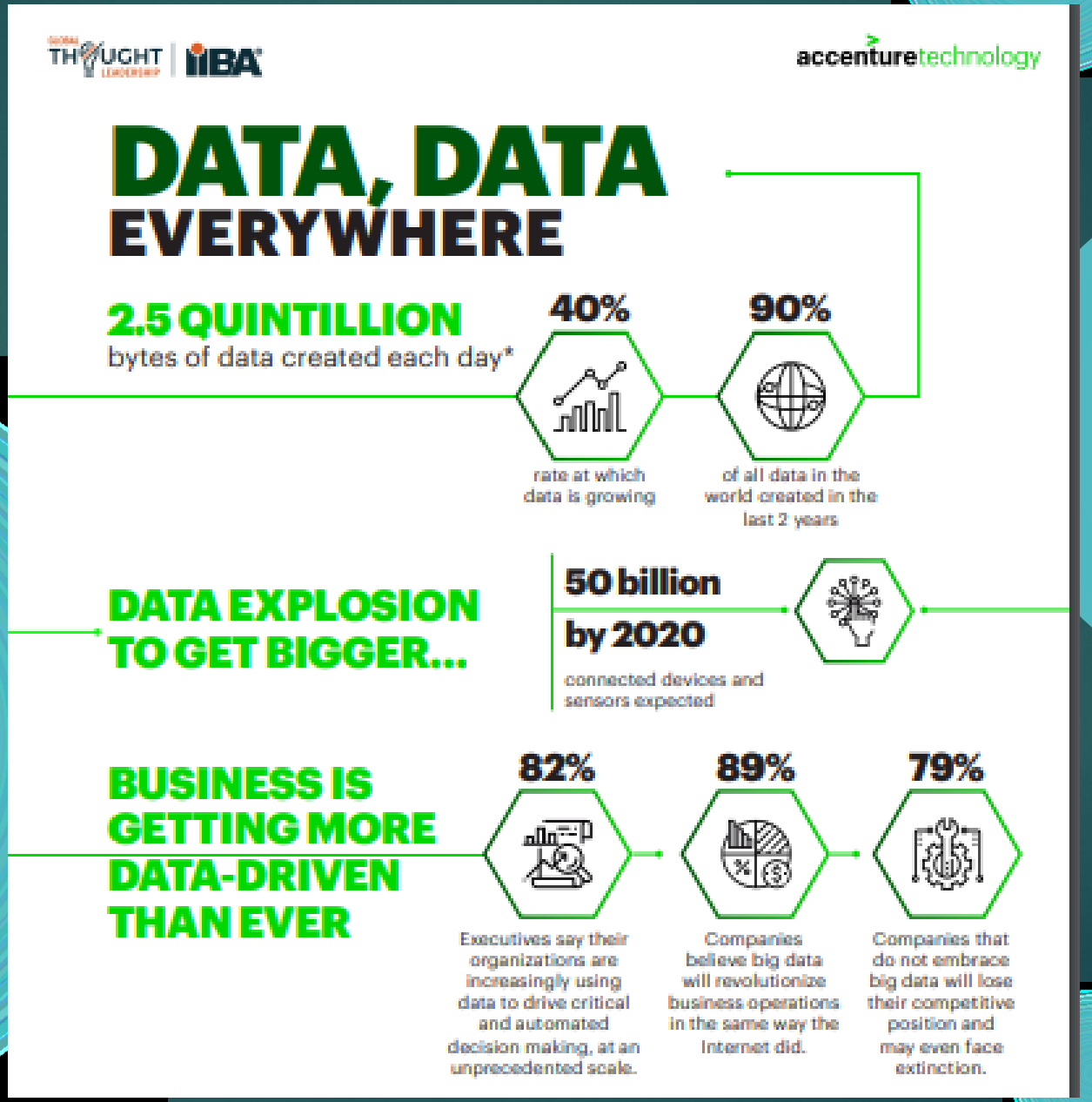
Next steps:

- Lower the Bounce Rate with a goal
- Enhance the social network engagement
- Improvise the content in the pages
- Monitor the Google analytics on monthly basis

Thank you …any questions please..

Big Data Analytics

- Background
- Applications Catalog
- Structured Data
  - Risk of Hospitalization
- Unstructured Data


THOUGHT LEADERSHIP
IIBA
accenturetechnology
DATA, DATA EVERYWHERE
2.5 QUINTILLION
bytes of data created each day*
40%
rate at which data is growing
90%
of all data in the world created in the last 2 years
DATA EXPLOSION TO GET BIGGER...
50 billion
by 2020
connected devices and sensors expected
BUSINESS IS GETTING MORE DATA-DRIVEN THAN EVER
82%
Executives say their organizations are increasingly using data to drive critical and automated decision making, at an unprecedented scale.
89%
Companies believe big data will revolutionize business operations in the same way the Internet did.
79%
Companies that do not embrace big data will lose their competitive position and may even face extinction.

The FOUR V's of Big Data

From traffic patterns and music downloads to web history and medical records, data is recorded, stored, and analyzed to enable the technology and services that the world relies on every day. But what exactly is big data, and how can these massive amounts of data be used?

As a leader in the sector, IBM data scientists break big data into four dimensions: **Volume, Velocity, Variety and Veracity**

Depending on the industry and organization, big data encompasses information from multiple internal and external sources such as transactions, social media, enterprise content, sensors and mobile devices. Companies can leverage data to adapt their products and services to better meet customer needs, optimize operations and infrastructure, and find new sources of revenue.

By 2015
4.4 MILLION IT JOBS
will be created globally to support big data, with 1.9 million in the United States

Volume
SCALE OF DATA

40 ZETTABYTES
[43 TRILLION GIGABYTES]
of data will be created by 2020, an increase of 300 times from 2005

It's estimated that
2.5 QUINTILLION BYTES
[2.3 TRILLION GIGABYTES]
of data are created each day

6 BILLION PEOPLE
have cell phones

WORLD POPULATION: 7 BILLION

Most companies in the U.S. have at least
100 TERABYTES
[100,000 GIGABYTES]
of data stored

Variety
DIFFERENT FORMS OF DATA

As of 2011, the global size of data in healthcare was estimated to be
150 EXABYTES
[161 BILLION GIGABYTES]

By 2014, it's anticipated there will be
420 MILLION WEARABLE, WIRELESS HEALTH MONITORS

4 BILLION+ HOURS OF VIDEO
are watched on YouTube each month

30 BILLION PIECES OF CONTENT
are shared on Facebook every month

400 MILLION TWEETS
are sent per day by about 200 million monthly active users

Velocity
ANALYSIS OF STREAMING DATA

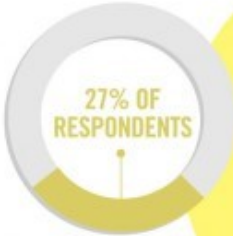
The New York Stock Exchange captures
1 TB OF TRADE INFORMATION
during each trading session

Modern cars have close to
100 SENSORS
that monitor items such as fuel level and tire pressure

By 2016, it is projected there will be
18.9 BILLION NETWORK CONNECTIONS
– almost 2.5 connections per person on earth

Veracity
UNCERTAINTY OF DATA

1 IN 3 BUSINESS LEADERS
don't trust the information they use to make decisions



in one survey were unsure of how much of their data was inaccurate

Poor data quality costs the US economy around
$3.1 TRILLION A YEAR

Sources: McKinsey Global Institute, Twitter, Cisco, Gartner, EMC, SAS, IBM, MEPTEC, QAS

IBM

	Structured Data	Unstructured Data
Characteristics	• Pre-defined data models • Usually text only • Easy to search	• No pre-defined data model • May be text, images, sound, video or other formats • Difficult to search
Resides in	• Relational databases • Data warehouses	• Applications • NoSQL databases • Data warehouses • Data lakes
Generated by	Humans or machines	Humans or machines
Typical applications	• Airline reservation systems • Inventory control • CRM systems • ERP systems	• Word processing • Presentation software • Email clients • Tools for viewing or editing media
Examples	• Dates • Phone numbers • Social security numbers • Credit card numbers • Customer names • Addresses • Product names and numbers • Transaction information	• Text files • Reports • Email messages • Audio files • Video files • Images • Surveillance imagery

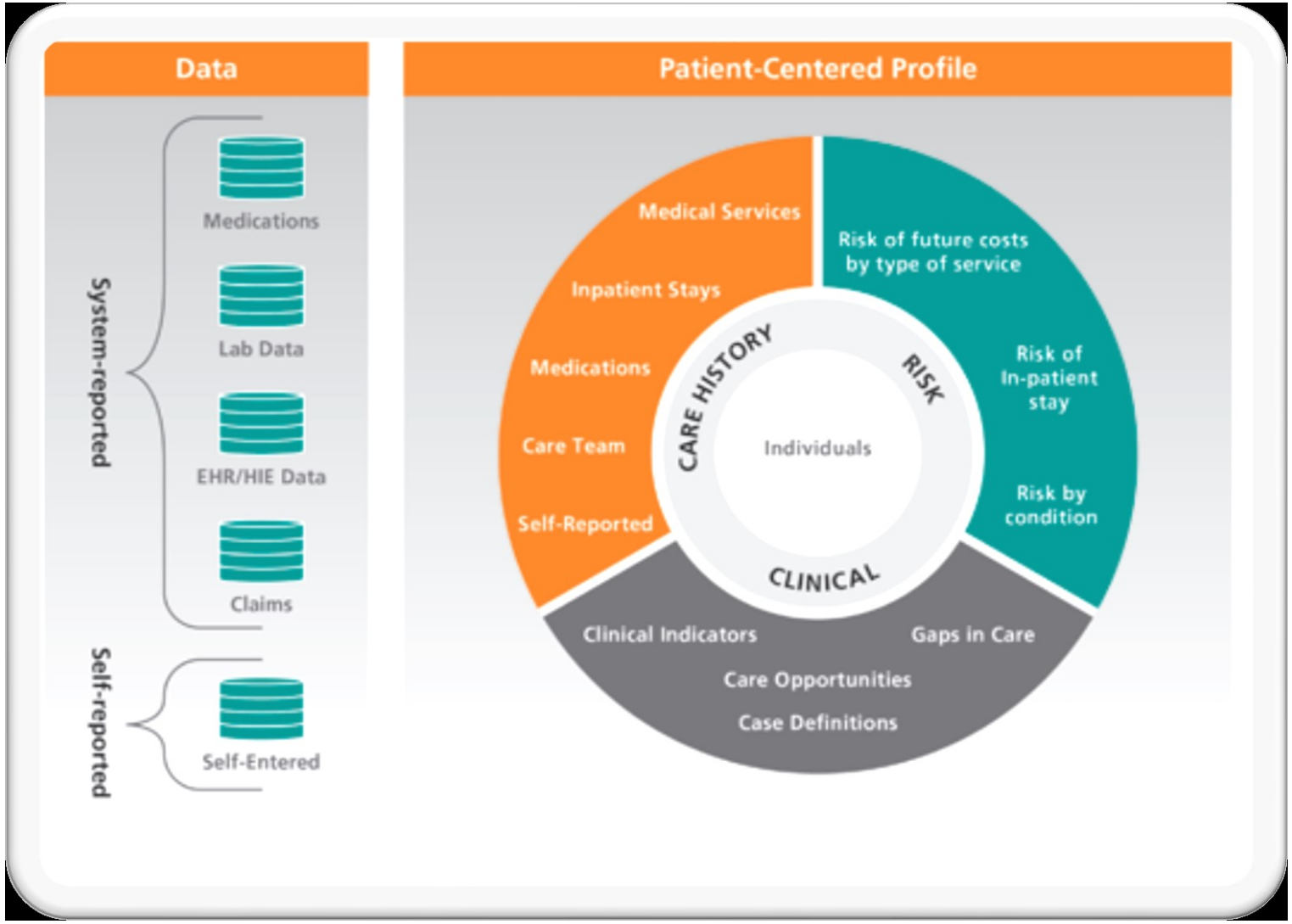
Big Data Analytics Service Providers https://www.learnbigdatatools.com/big-data-analytics-landscape-2019/

Any hospital visit can be scary — and frighteningly expensive.

- The average hospital stay in the US costs just over **$10,700**, based on an analysis of data from the Healthcare Cost and Utilization Project (HCUP).

- Using the 2014 National Inpatient Survey from the Agency for Healthcare Research and Quality, HCUP found the hospital visits and costs associated with different medical conditions classified by the **Clinical Classifications Software** principal diagnosis category.

- In total, there were 35.4 million hospital stays with an aggregate cost of $384.5 billion.


Data
Patient-Centered Profile
System-reported
Medications
Lab Data
EHR/HIE Data
Claims
Self-reported
Self-Entered
Medical Services
Inpatient Stays
Medications
Care Team
Self-Reported
CARE HISTORY
RISK
Individuals
CLINICAL
Risk of future costs by type of service
Risk of In-patient stay
Risk by condition
Clinical Indicators
Gaps in Care
Care Opportunities
Case Definitions

IBM Watson Health™

The Risk of Hospitalization Models

Emerging analytics for population health and care management

The Risk of Hospitalization Models are designed to help:

- Provide information that is useful at both a population and patient level
- Predict those at risk for costly hospitalizations
- Focus the efforts of care management staff on those patients who are at the highest risk for potentially avoidable admissions, based on the Agency for Healthcare Research and Quality's ambulatory-sensitive admission criteria, in addition to providing estimated risk for related and all-cause admissions

A proactive, predictive strategy

For high-prevalence chronic conditions, the IBM Watson Health Risk of Hospitalization Models help identify potentially avoidable admissions before they occur.

Condition-specific insights on likelihood of patient being hospitalized

Patient's risk of hospitalization one, three and six months into the future

Risk of all-cause, related and potentially avoidable admissions

Highest-impact factors contributing to patient's risk score

The ROH Models use data from a year of patient claims history, including prescription drug history (where available) as well as historical inpatient and outpatient service utilization. Additionally, the models use the Watson Health Disease Staging patient classification system as a method of identifying disease severity.

The ROH Models are based on claims from the MarketScan® Commercial Database and from the CMS Medicare Standard Analytic Files, 5% Sample.

Taken together, the model outputs provide a broad view of patient risk information. This insight can be used by care management staff to make critical patient stratification and intervention decisions in a more informed fashion.

Patient A – diabetes admission type 1 – potentially avoidable

- Month 1 score: 0.486
- Month 3 score: 0.648
- Month 6 score: 0.776

Most significant risk drivers	Value
Average count of ER visits over enrolled months	1.18
Maximum disease stage for target disease	3.06
Average count of inpatient medical stays over enrolled months	0.82
Average inpatient days over enrolled months	3.18

Sample output of the Watson Health ROH Models for a diabetes patient.

* The COPD models are limited to patients ages 40 and above.

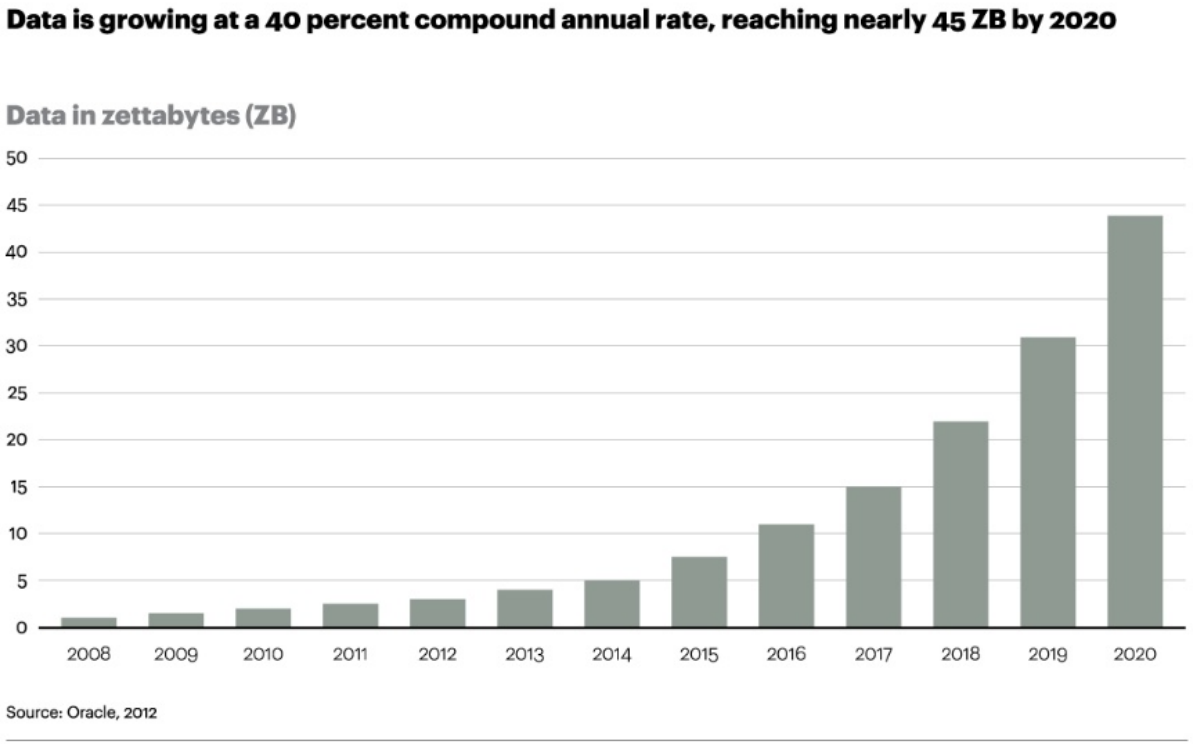
Applications and insights

The Watson Health ROH Models are specifically tailored to patients with four common chronic conditions: asthma, diabetes, congestive heart failure (CHF) and chronic obstructive pulmonary disease (COPD)*.

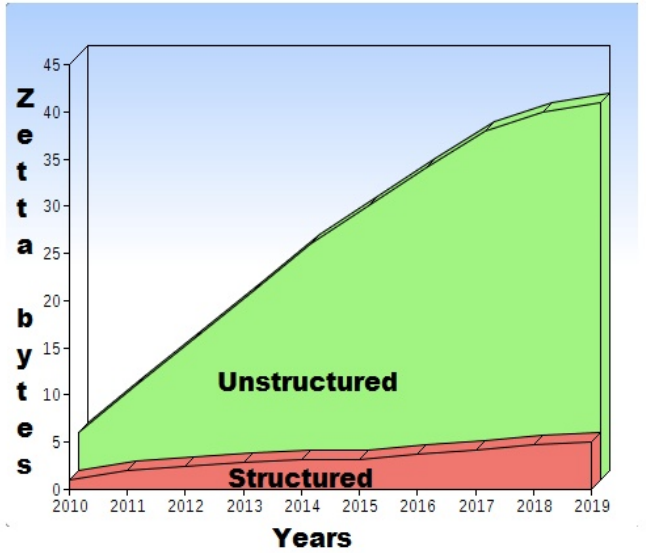
In addition to providing an estimate of the likelihood of hospitalization for these conditions, the models provide additional information that enhances their utility, including:

- Risk of all-cause, related and potentially avoidable admissions
- Estimates of the patient's risk of hospitalization within one, three and six months in the future
- Model variables which have the greatest impact on the patient's risk score

Data Is Growing at 40% Annually



80% of Data Is Unstructured



https://hbr.org/video/3633937151001/the-explainer-big-data-and-analytics https://www.linkedin.com/in/feinleib

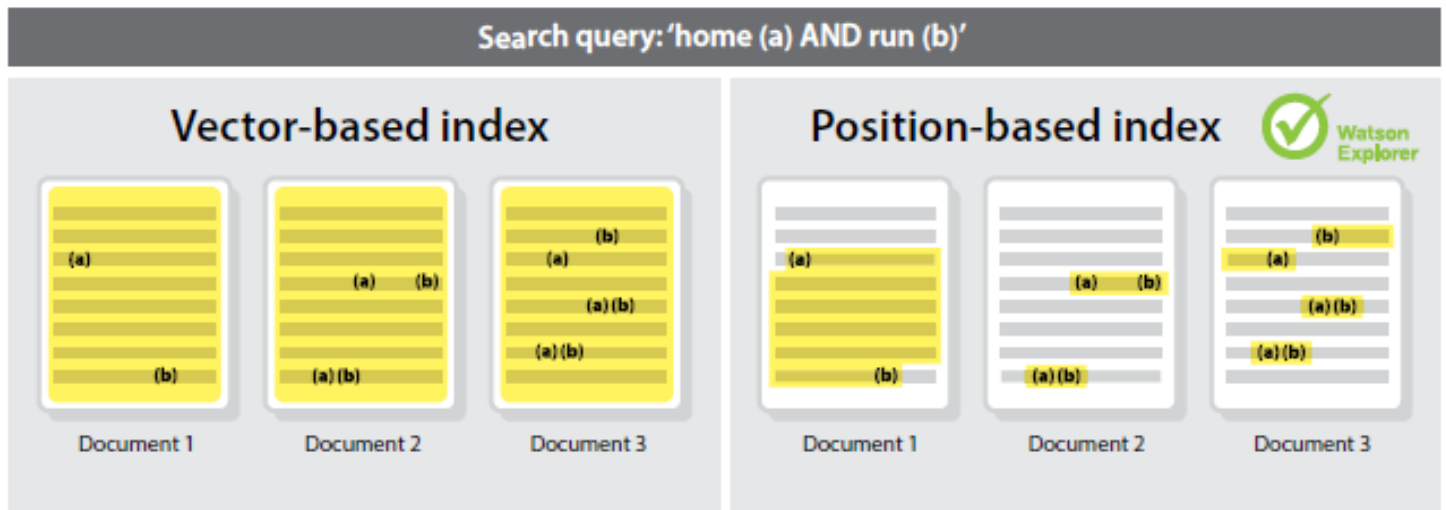
“Between 2010 and 2020, the amount of data will increase by 40% annually, with 80% of the data relevant to organizations being unstructured." ~IDC

IBM Watson Explorer

Explore, analyze and interpret information for better business outcomes

- **A position-based index** that offers numerous advantages over the traditional vector-based index approach used almost universally in commercial and open-source search systems.
- **This compact index structure** provides a foundation for flexibility in important areas such as index size, query processing, content refreshes and security.
- **A comprehensive suite of interfaces** (web browser, application framework, API, command line) for easy and comprehensive integration, administration and deployment.
- **Deep integration** capabilities in the most complex and challenging IT environments.
- **Fully distributed and fault-tolerant** deployment model for the largest and most demanding applications.

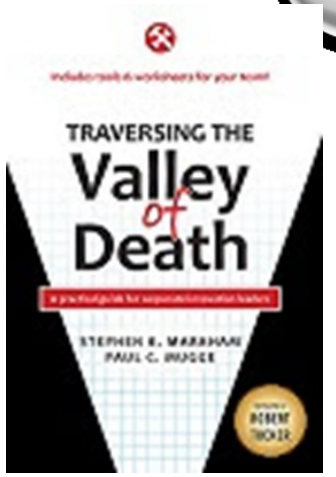
IBM WATSON


Search query: 'home (a) AND run (b)'
Vector-based index
(a)
(b)
(a)
(b)
(a) (b)
(b)
(a)
(a) (b)
(a) (b)
Document 1
Document 2
Document 3
Position-based index
Watson Explorer
(a)
(b)
(a)
(b)
(a) (b)
(b)
(a)
(a) (b)
(a) (b)
Document 1
Document 2
Document 3

Watson Explorer parses any content type (including full text and associated metadata) and converts it into **XML** to deliver sophisticated search and navigation results such as virtual documents based on information, not just physical documents

DOCUMENTS

- ✓ Business Case & Proposal – BRI
- ✓ SOW - CIMS
- ✓ 8-Step process & Model – BRI & CIMS
- ✓ Sample Documents - BRI



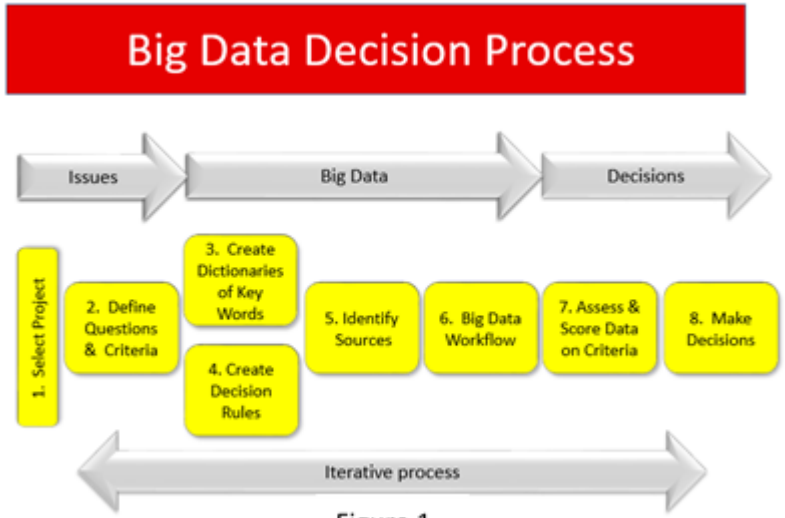


Figure 1

Effect of ß-Mannanase on Broiler Performance and Dry Matter Output Using Corn-Soybean Meal Based Diets†

F.J. Mussini[1], C.A. Coto[1], S.D. Goodgame[1], C. Lu[1], A.J. Karimi[2], J.H. Lee[3] and P.W. Waldroup[1‡]
[1]University of Arkansas, Fayetteville AR, USA
[2]University of Kurdistan, Kurdistan, Iran
[3]CTC Bio Inc., Seoul, Korea

Abstract: The effect of a commercial beta-Mannanase enzyme (CTCZYME; CTC Bio Inc., Seoul, Korea) on broiler performance and dry matter output in corn-soybean meal diets was investigated. One hundred and twenty one-day-old male chicks of a commercial broiler strain were fed for 19 d on a nutritionally adequate diet based on corn and soybean meal. At that time birds were randomly allocated to four treatments, each of which had six replicates of five birds each. Aliquots of the basal diet were supplemented with four levels of the CTCZYME: 0%, 0.025%, 0.05% (recommended level) and 0.1%. Chromic oxide was used as an indigestible marker. After eight days of acclimation excreta was collected daily, weighed and dried at 130°C for 24 h to obtain the dry matter output. After seven days of excreta collection the birds were weighed and the experiment was terminated. There were no significant differences for body weight gain, feed conversion or feed intake. The addition of CTCZYME at the inclusion level of 0.05% and 0.1% significantly reduced (p<0.002) the daily dry matter excreta output per bird. Analysis of the excreta showed a reduction of the nitrogen level as the level of CTCZYME increased, indicating an improvement in nitrogen utilization by the bird. Gross energy of the excreta decreased as the inclusion level of the enzyme increased. When the

METABOLISM AND NUTRITION

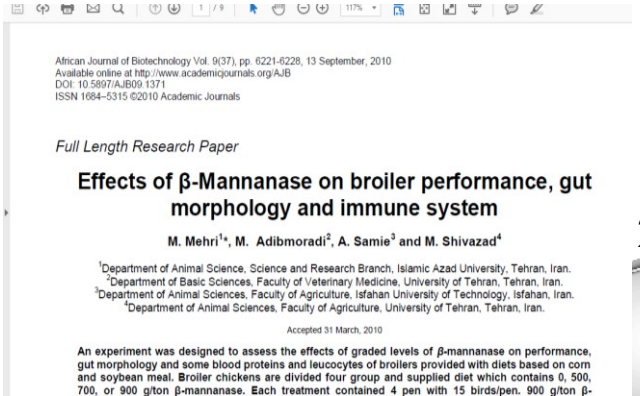
Effect of β-Mannanase (Hemicell) on Growth Performance and Immunity of Broilers

X. T. Zou,*[1] X. J. Qiao, and Z. R. Xu

Animal Science College, Zhejiang University, HangZhou, 310029, P. R. China

ABSTRACT Two hundred four broilers (1-d-old) were randomly allocated to 4 treatments, each of which had 3 pens of 17 chicks per pen and were used to investigate the effects of β-mannanase (Hemicell) on growth performance and immunity. The chicks received the same basal diet based on corn-soybean meal and Hemicell was added to the basal diet at 0, 0.025, 0.05, and 0.075%, respectively. Weight of each replicate was determined at wk 0, 3, and 6 of age. There were no significant differences in average

However, the addition of Hemicell significantly increased ($P < 0.05$) weight gain in the 4- to 6-wk and 0- to 6-wk periods. Feed conversion for the 0.025 and 0.05% groups was significantly greater ($P < 0.05$) than for the control group in the 4- to 6-wk and 0- to 6-wk periods. Hemicell significantly increased ($P < 0.05$) the serum IgM concentration in 3- and 6-wk-old broilers. Proliferation of T lymphocytes in 6-wk-old broilers for the 0.05% group was also improved ($P < 0.05$) significantly. The results indicate



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Full Length Research Paper

Effects of β-Mannanase on broiler performance, gut morphology and immune system

M. Mehri[1]*, M. Adibmoradi[2], A. Samie[3] and M. Shivazad[4]

[1]Department of Animal Science, Science and Research Branch, Islamic Azad University, Tehran, Iran.
[2]Department of Basic Sciences, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.
[3]Department of Animal Sciences, Faculty of Agriculture, Isfahan University of Technology, Isfahan, Iran.
[4]Department of Animal Sciences, Faculty of Agriculture, University of Tehran, Tehran, Iran.

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An experiment was designed to assess the effects of graded levels of β-mannanase on performance, gut morphology and some blood proteins and leucocytes of broilers provided with diets based on corn and soybean meal. Broiler chickens are divided four group and supplied diet which contains 0, 500, 700, or 900 g/ton β-mannanase. Each treatment contained 4 pen with 15 birds/pen. 900 g/ton β-

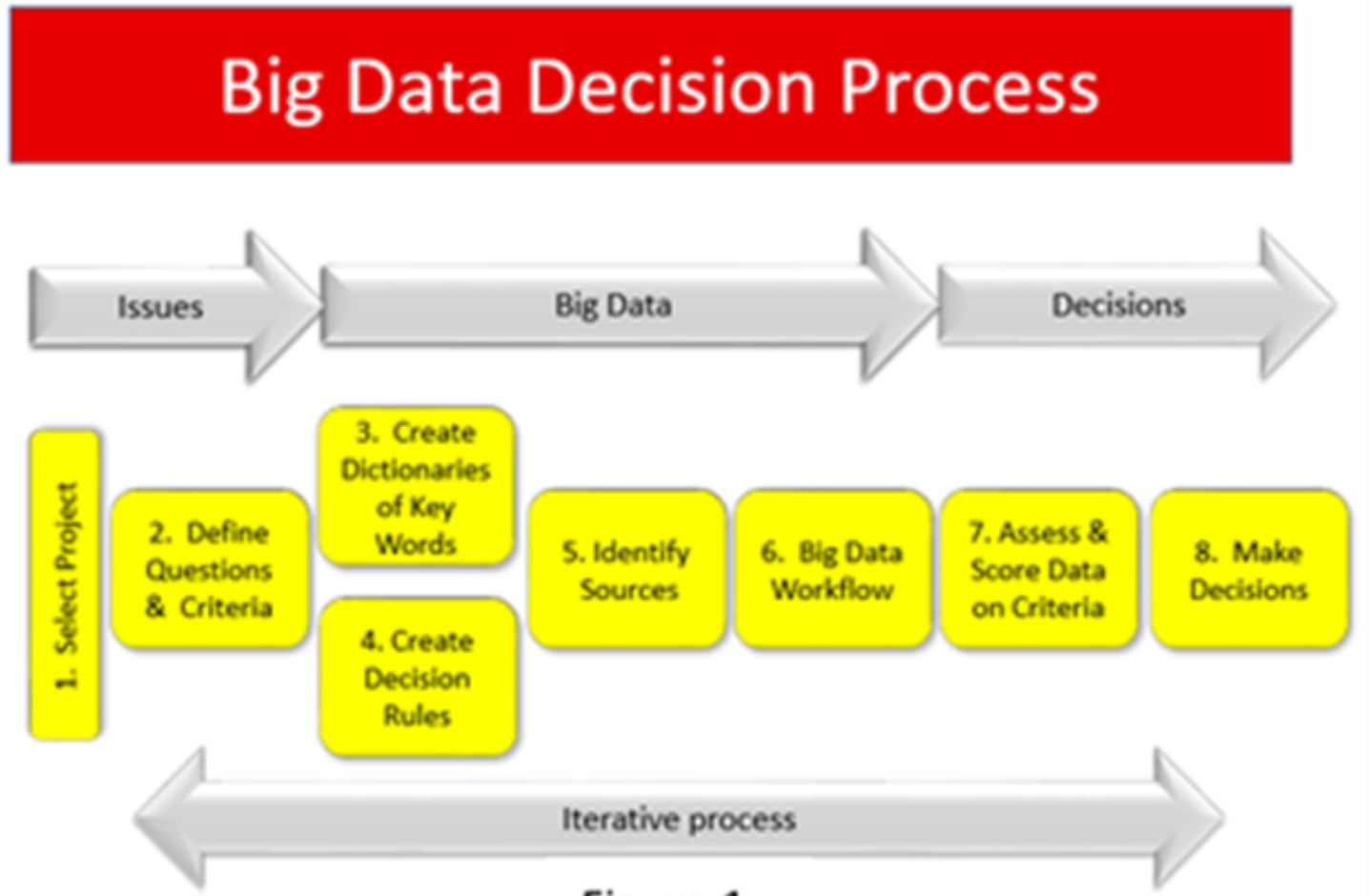
Big Data Decision Process
Issues
Big Data
Decisions
1. Select Project
2. Define Questions & Criteria
3. Create Dictionaries of Key Words
4. Create Decision Rules
5. Identify Sources
6. Big Data Workflow
7. Assess & Score Data on Criteria
8. Make Decisions
Iterative process

Figure 1


Thank You!