Web Analytics 2.0

Introduction

World Wide Web ≠ Internet Service

We must remember that both are not the same

Web is different then **Internet**

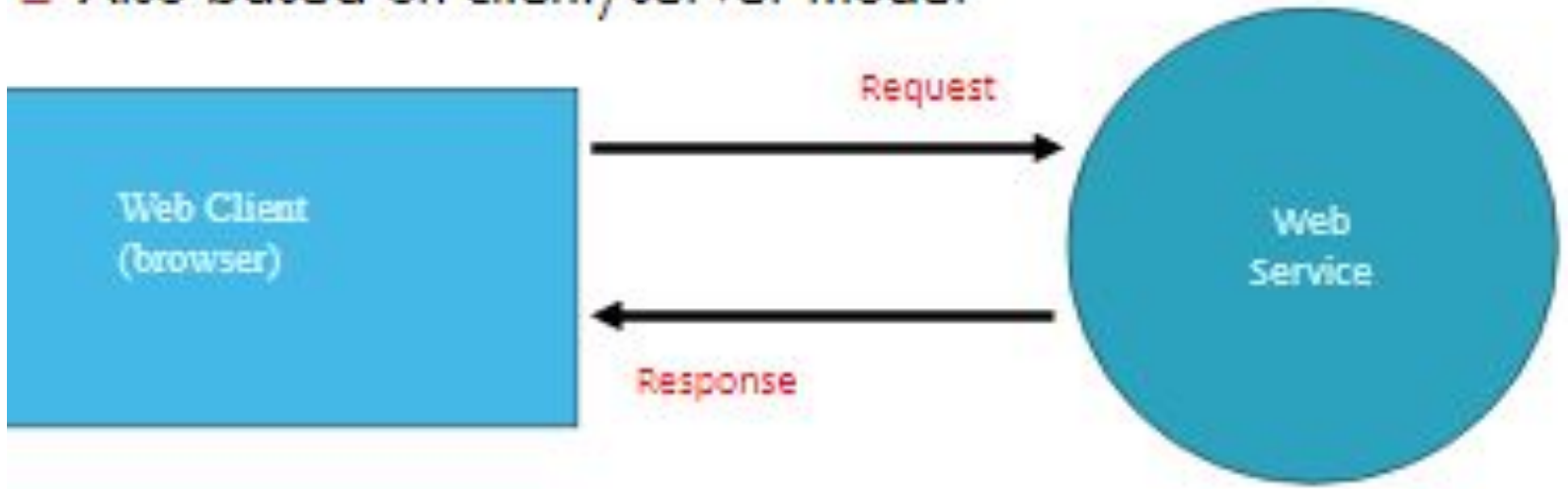
World Wide Web

- The world wide web is larger collection of interconnected Documents or Content

- Facilitates communication between people .....and also computers

Contd...

- Web based on Hypertext
- Also based on client/server model



Internet

The Internet is the collection of interconnected computer Networks.

Web 1.0

Web 1.0 [Push]

Web 1.0 is an old internet that only allows people to read from the internet.

Web1.0 is a one-way platform

Web 1.0(Read-only Static web)

- First stage of the World Wide linking web pages and hyperlink
- Most read-only Web. It focused on companies home pages
- Dividing the world wide web into usable directories
- It means Web is use as "Information Portal".
- Everyone has their personal own little corner in the cyberspace
- It started with the simple idea "Put content together"
- Media companies put content in the web and pushes it to user. using web 1.0 Companies Like BBC,CNN able to get online.

Contd...

Things works in web 1.0

Sad facts of Web 1.0

SAD FACTS

- Read only Web
- Limited user interaction
- Keyword based (dumb) search ------ Web Directories
- The Lack of standards -------→Browsers war

Next Step

When we got a grip on the technical part, web became clearer and then we discover

- Power of Networks
- Power of Links
- Power of Collaboration
- Power of content and reach
- Power of Friends

Web 2.0

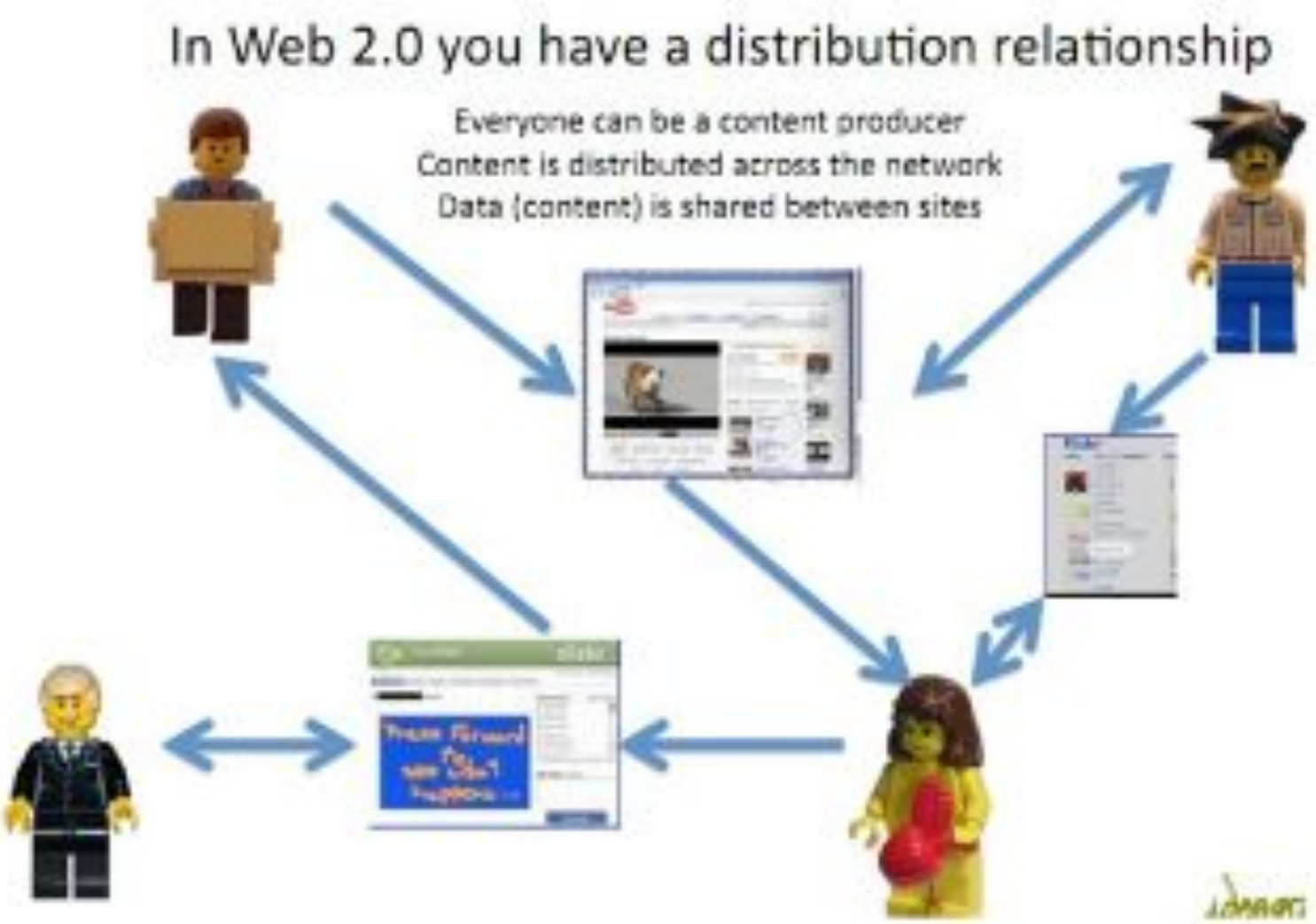
And then the Next step is

- Web 2.0 [Share] Web2.0 is a two-way Platform

A term used to describe a new generation of Web services and applications with an increasing emphasis on human collaboration.

Web 2.0(Read-write interactive web)

- It is a platform that gives users the possibility (liberty) to control their data.
- This is about user-generated content and the read-write web.
- People are consuming as well as contributing information through blogs or sites like Flicker, YouTube, Digg, etc.


In Web 2.0 you have a distribution relationship
Everyone can be a content producer
Content is distributed across the network
Data (content) is shared between sites

Principles of Web 2.0

No Products but Services

- "There are no products, only solutions"
- A problem solving approach
- Must Provide Simple Solutions

Ideas Behind Web 2.0

- *Individual Production and User Generated Content*
- *Harness The Power of The Crowd*
- *Data on an Epic Scale*
- *Architecture of Participation*
- *Network Effects*
- *Openness*

Contd...

Customization

- Every individual is unique
- Some people want to be different
- Allow him to choose instead of forcing him to use what you have made
- Make him feel home

e.g. My yahoo, Google Homepage, MySpace , Firefox extensions

Contd...

Concepts

Web 2.0 can be described in 3 parts which are as follows:

- Rich Internet Application (RIA) - It defines the experience brought from desktop to browser .whether it is from a graphical point of view or usability point of view. Some people relate RIA with *AJAX* and *Flash*.
- Service-oriented Architecture (SOA) - It is a key piece in Web 2.0 which defines how Web 2.0 applications expose its functionality so that other applications can integrate the functionality and produce a set of much richer applications (Examples are: Feeds, RSS, Mash-ups)

Contd...

Social Web – It defines how Web 2.0 tend to interact much more with the end user and making the end user an integral part.

Contd...

Technologies

The client-side/web browser technologies used in Web 2.0 development are :

Ajax (Asynchronous JavaScript +XML)

Ajax programming uses JavaScript to upload and download new data from the web server without full page reload.

Adobe Flex

Flex makes it easier for programmers to populate large data grids, charts, and other heavy user interactions. Applications programmed in Flex, are compiled and displayed as Flash within the browser

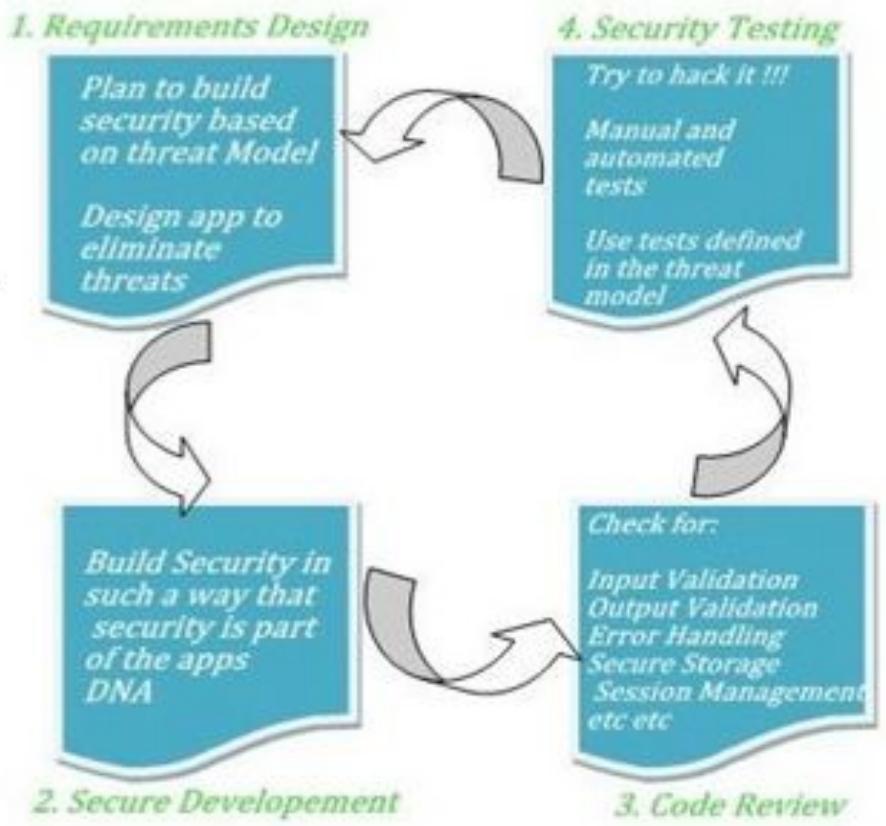
Web 1.0 vs Web 2.0

Web 1.0	Web 2.0
The mostly read only Web	The widely read -write web
45million global user(1996).	1 billion + global user(2006)
Focused on companies	Focused on communities
Home pages	Blogs
Owning content	Sharing content
HTML,portals	XML,RSS
Web forms.	Web Application
Netscape	Google
Page views	Cost per click

Web 2.0

Sad Facts

- Same old Keyword based search.
- Web application are still rigid
- Each Website have its own data and it is not sharing it.
- Computers can not understand any thing
- Web 2.0 is Social change. The technical part has not change much.



Common Web2.0 Vulnerabilities

1) Cross Site Scripting

2) Cross Site Request Forgery.

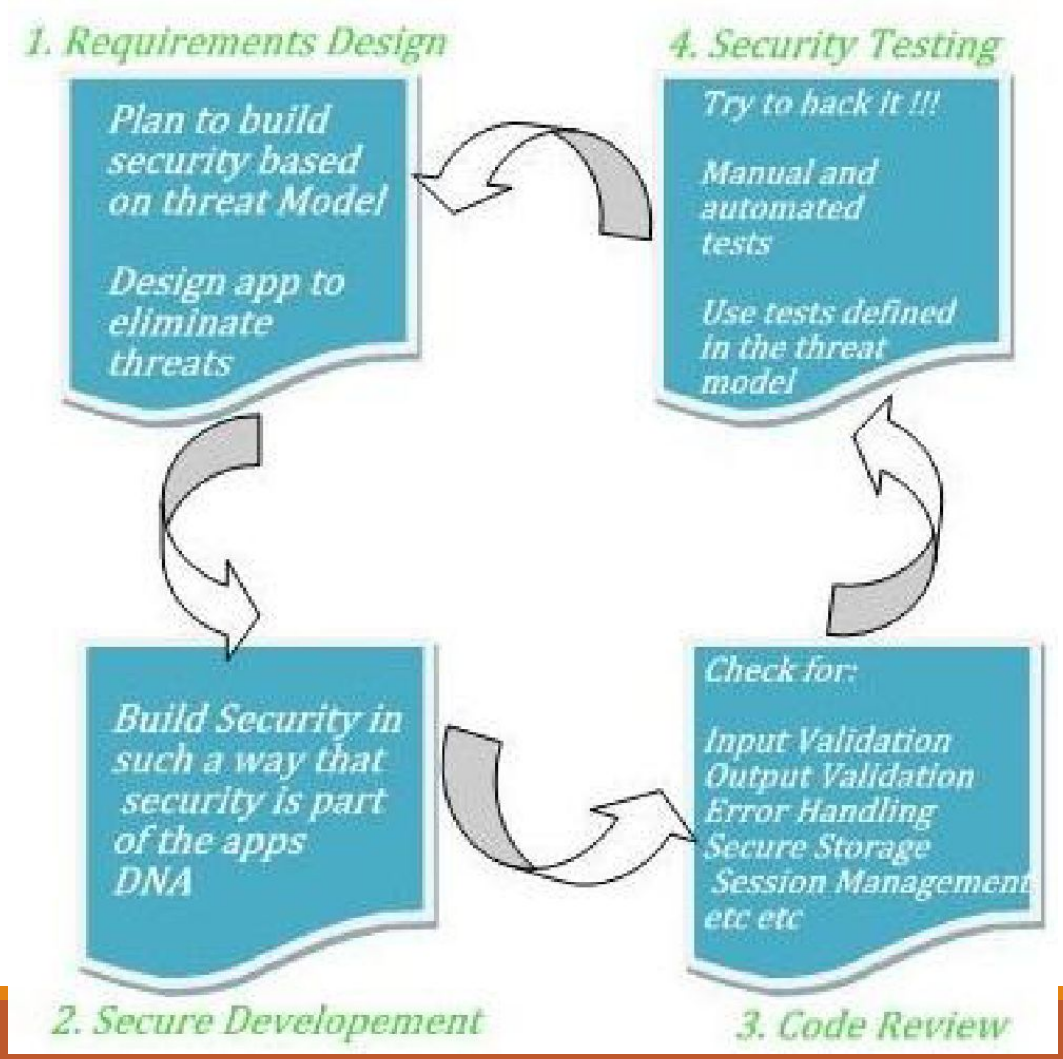
3) SQL Injection.

- Xpath injection
- JSON injection

4) Authentication and Authorization Flaws.

5) Information Leakage.

How to Prevent Web2.0 Vulnerabilities



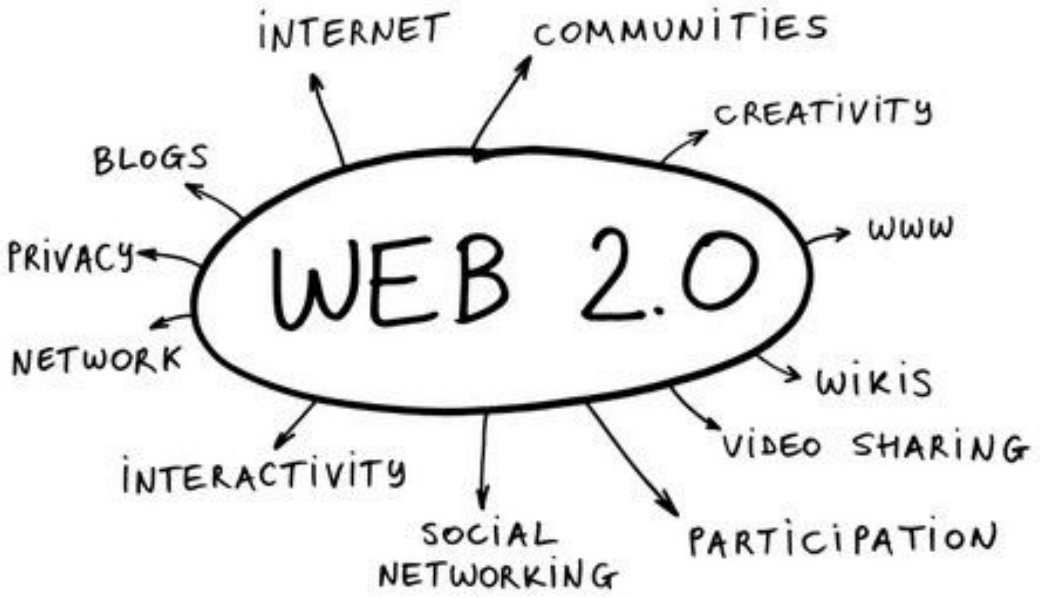
How to Prevent Web2.0 Vulnerabilities

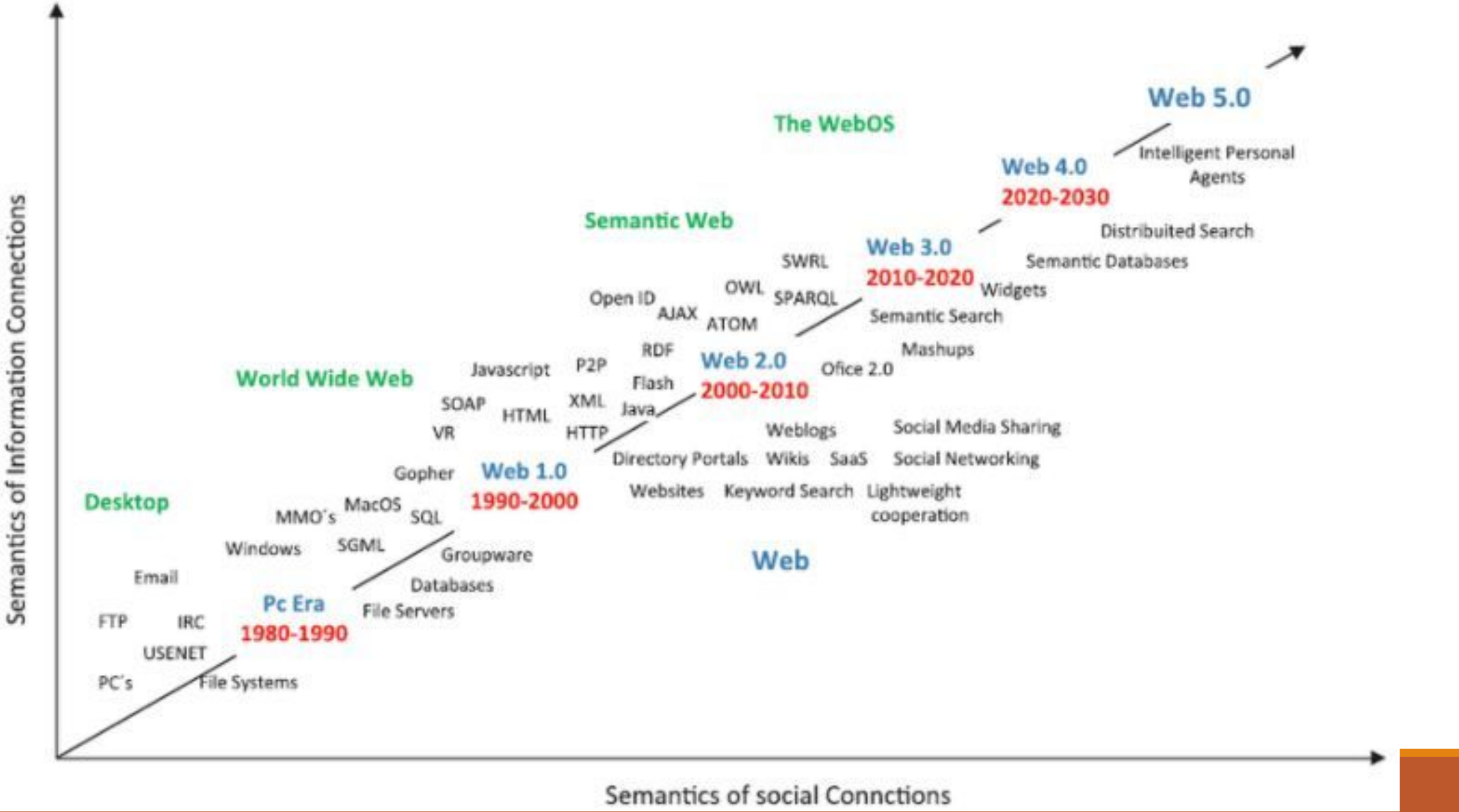
Validate all Websites

Risk Reporting Tools

Validate and Escape all Inputs

Add Authorization




Semantics of Information Connections
Semantics of social Connctions
Desktop
Pc Era
1980-1990
PC´s
File Systems
USENET
FTP
IRC
Email
Windows
MMO´s
MacOS
SGML
SQL
File Servers
Databases
Groupware
World Wide Web
Gopher
VR
SOAP
HTML
HTTP
Web 1.0
1990-2000
Javascript
P2P
XML
Java
RDF
Flash
Web 2.0
2000-2010
Directory Portals
Websites
Weblogs
Wikis
SaaS
Keyword Search
Ofice 2.0
Mashups
Social Media Sharing
Social Networking
Lightweight cooperation
Web
Semantic Web
Open ID
AJAX
ATOM
OWL
SPARQL
SWRL
Web 3.0
2010-2020
Semantic Search
Widgets
Semantic Databases
Distributed Search
The WebOS
Web 4.0
2020-2030
Intelligent Personal Agents
Web 5.0

Web 2.0


Essential web analytics steps
Setting goals
Collecting data
Processing data
Identifying key performance indicators
Developing a strategy
Experimenting and testing
TechTarget

Primary Types of Web Analytics

-Offsite Web Analytics

-Onsite Web Analytics

- ★ Log file
- ★ Page tagging

WEB 3.0 (LIVE)

Key Elements of Web 3.0

The Social Web

The Semantic Web

Web 3D

The Media Centric Web

Security and Challenges of Web3.0

issues related to scalability,security and performance

huge collaboration of public and private data

lack of data standard for controlling over metadata and data privacy

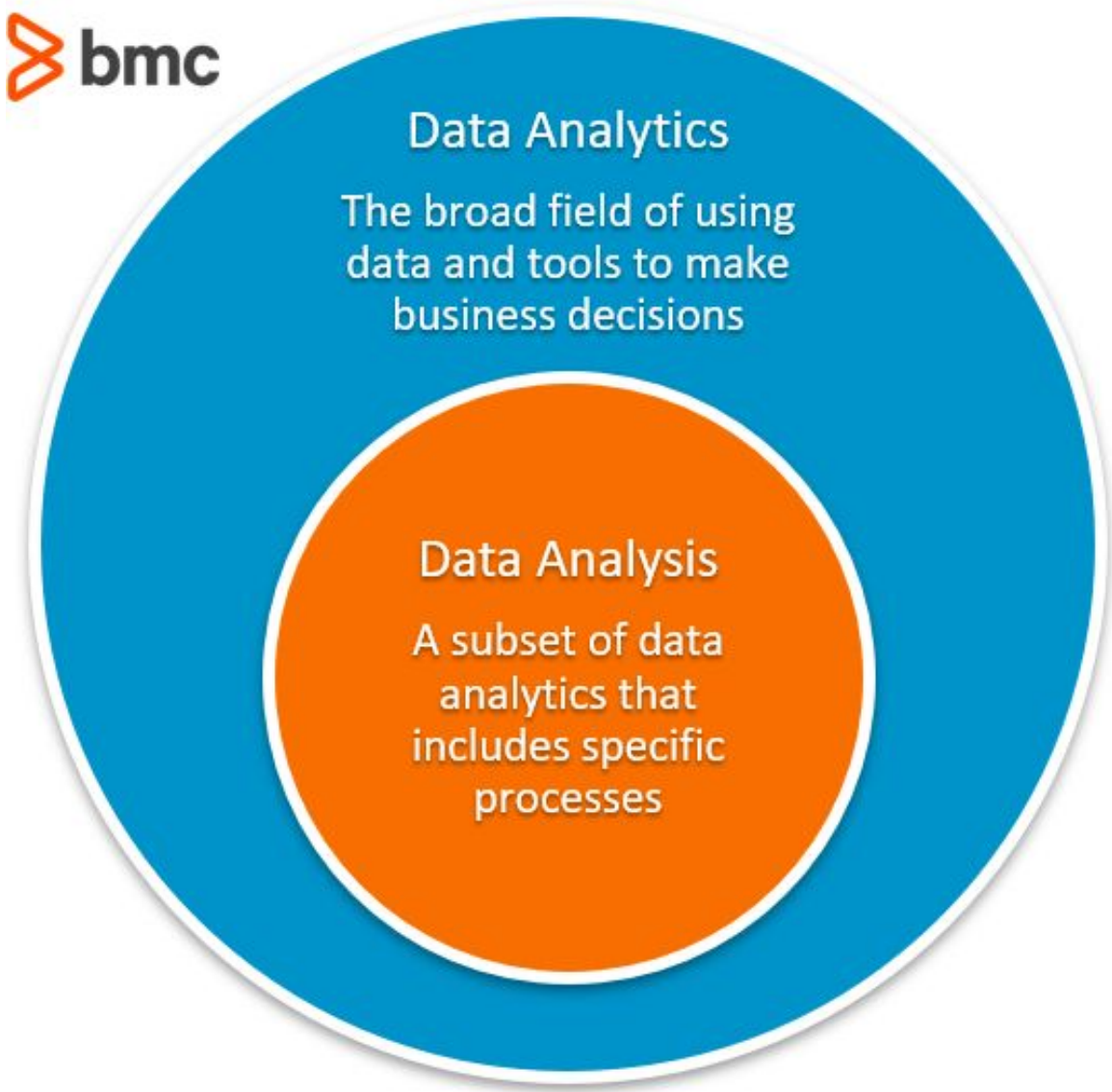
Data privacy

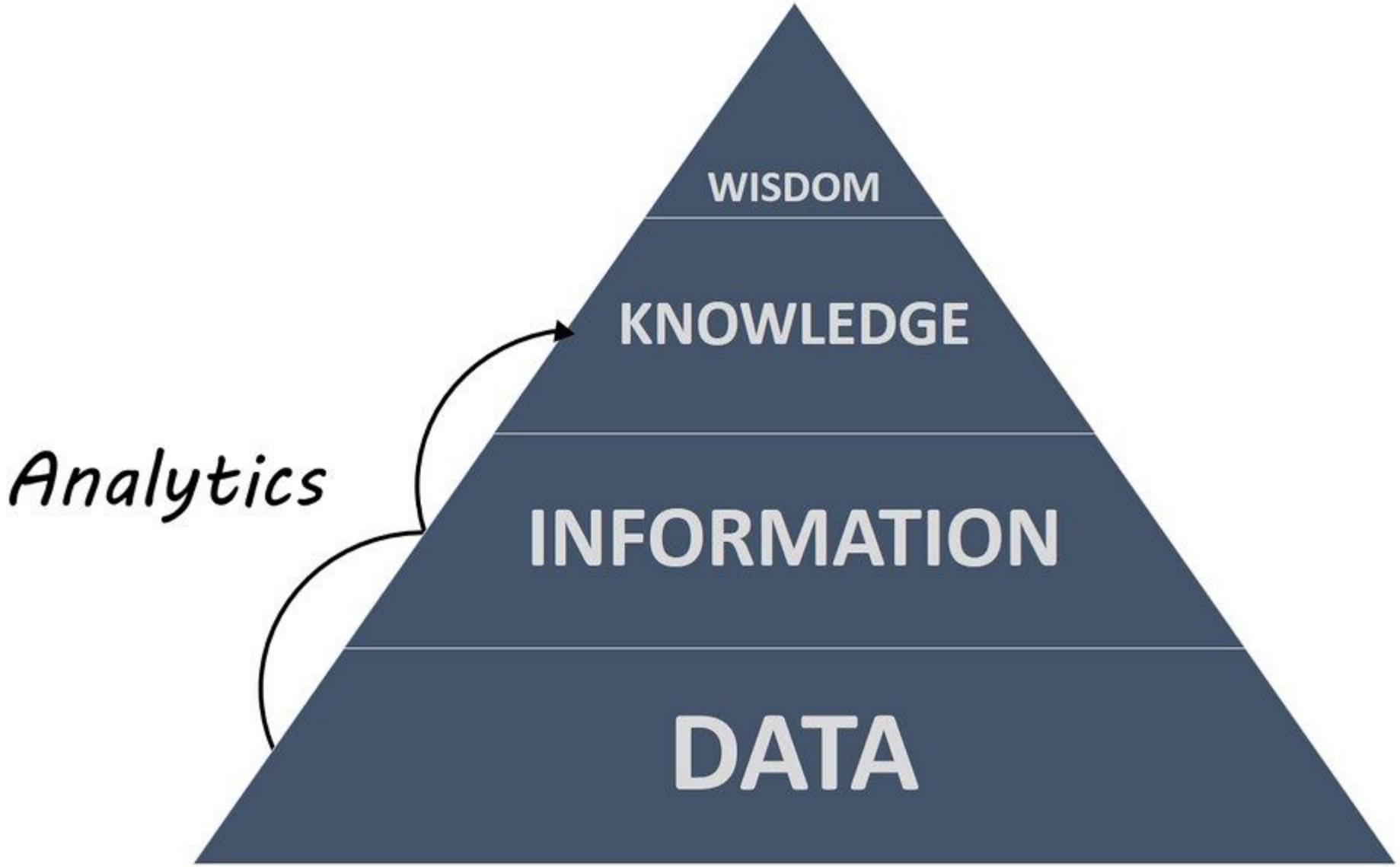
WEB 1.0	WEB 2.0	WEB 3.0
1996 – 2004	2004 -2016	2016+
The Hypertext Web	The Social Web	The Semantic Web
Tim Berners Lee	Tim O'Reilly, Dale Dougherty	Tim Berners Lee
Read Only	Read and Write Web	Executable Web
Millions of User	Billions of User	Trillions+ of Users
Echo System	Participation and Interaction	Understanding self
One Directional	Bi-Directional	Multi-user Virtual environment
Companies Publish Content	People Publish Content	People build application though which people interact and publish content.
Static content.	Dynamic content.	Web 3.0 is curiously undefined. AI and 3D,The web learning
Personal Websites	Blog and Social Profile	SemiBlog, Haystack.
Message Board	Community portals	Semantic Forums
Buddy List, Address Book	Online Social networks.	Semantic Social Information

Web1.0	Web2.0	Web3.0
Read-only Static web	Read-write interactive web	Read-write intelligent web
Company-oriented	Community-oriented	Individually oriented
Low-portability (computing equipment)	Medium portability(mobile)	High portability(mobile and consumer electronics)
Professionally developed stand-alone applications	User-developed open applications	User-developed smart applications

Web1.0	Web2.0	Web3.0
Syntax-aware basic browsing and search capabilities	Syntax-aware advanced browsing and search capabilities	Content(semantic)-aware and context-aware next-generation browsing and search capabilities
Low data richness(HTML)	Medium data richness(XML)	High data richness(RDF)
Point-to-point/hub & spoke architecture	Service-oriented architecture(SOA)	Web oriented architecture(WOA) andinternet of things
Sliced data	Light interlinked data	Worldwide database

Data Analytics vs Data Analysis: What’s The Difference?


bmc
Data Analytics
The broad field of using data and tools to make business decisions
Data Analysis
A subset of data analytics that includes specific processes


WISDOM
KNOWLEDGE
INFORMATION
DATA
Analytics

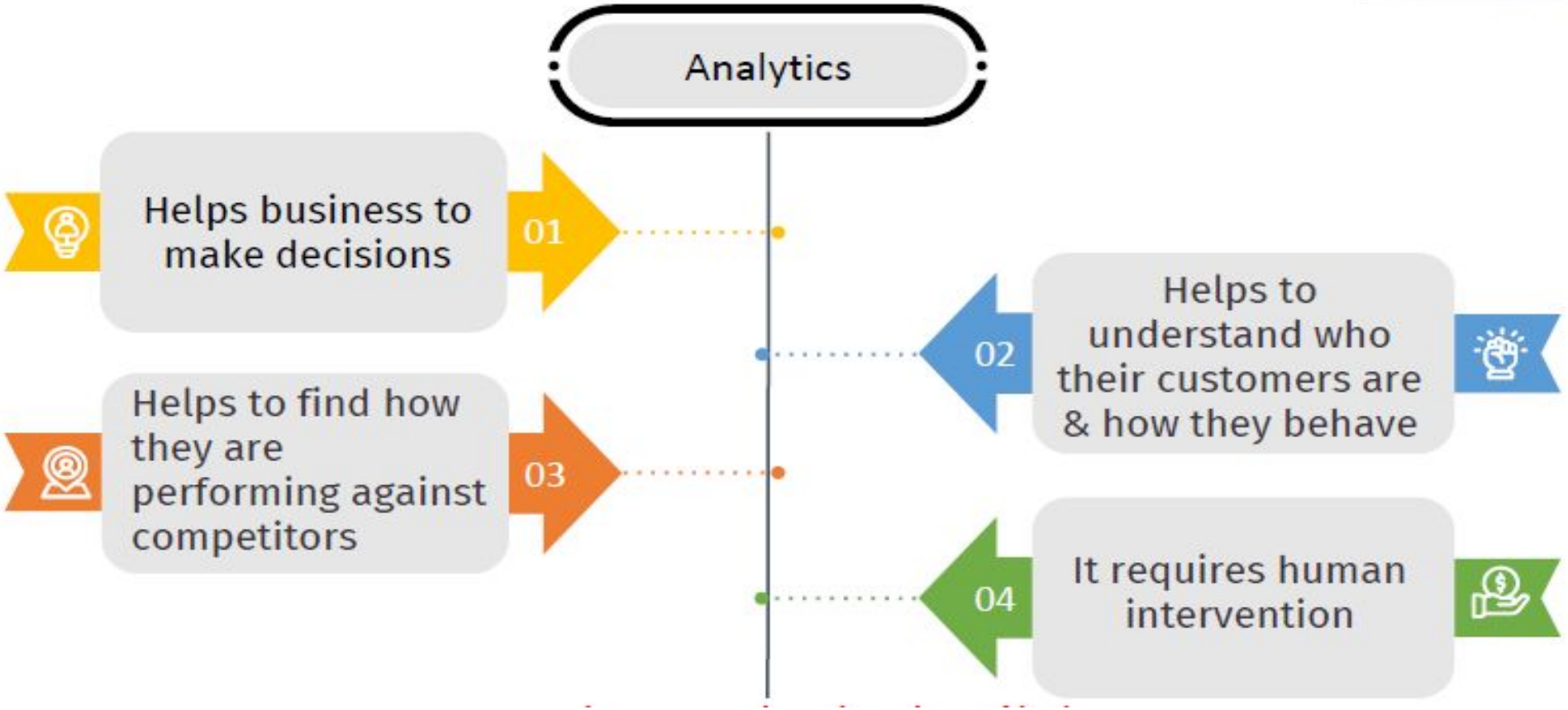
bmc

Data Pipeline

How data is moved

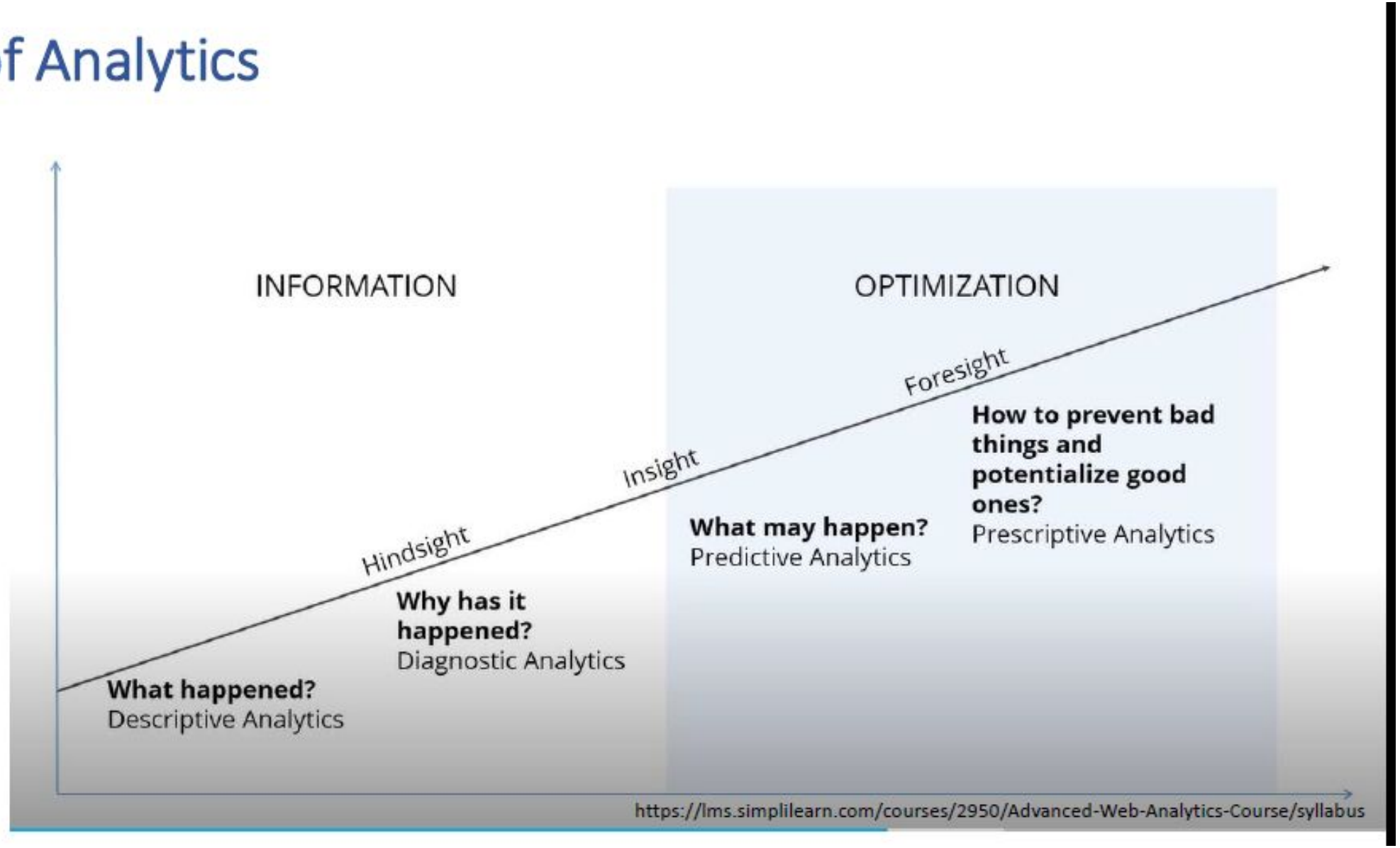
Analysis and Analytics...What?

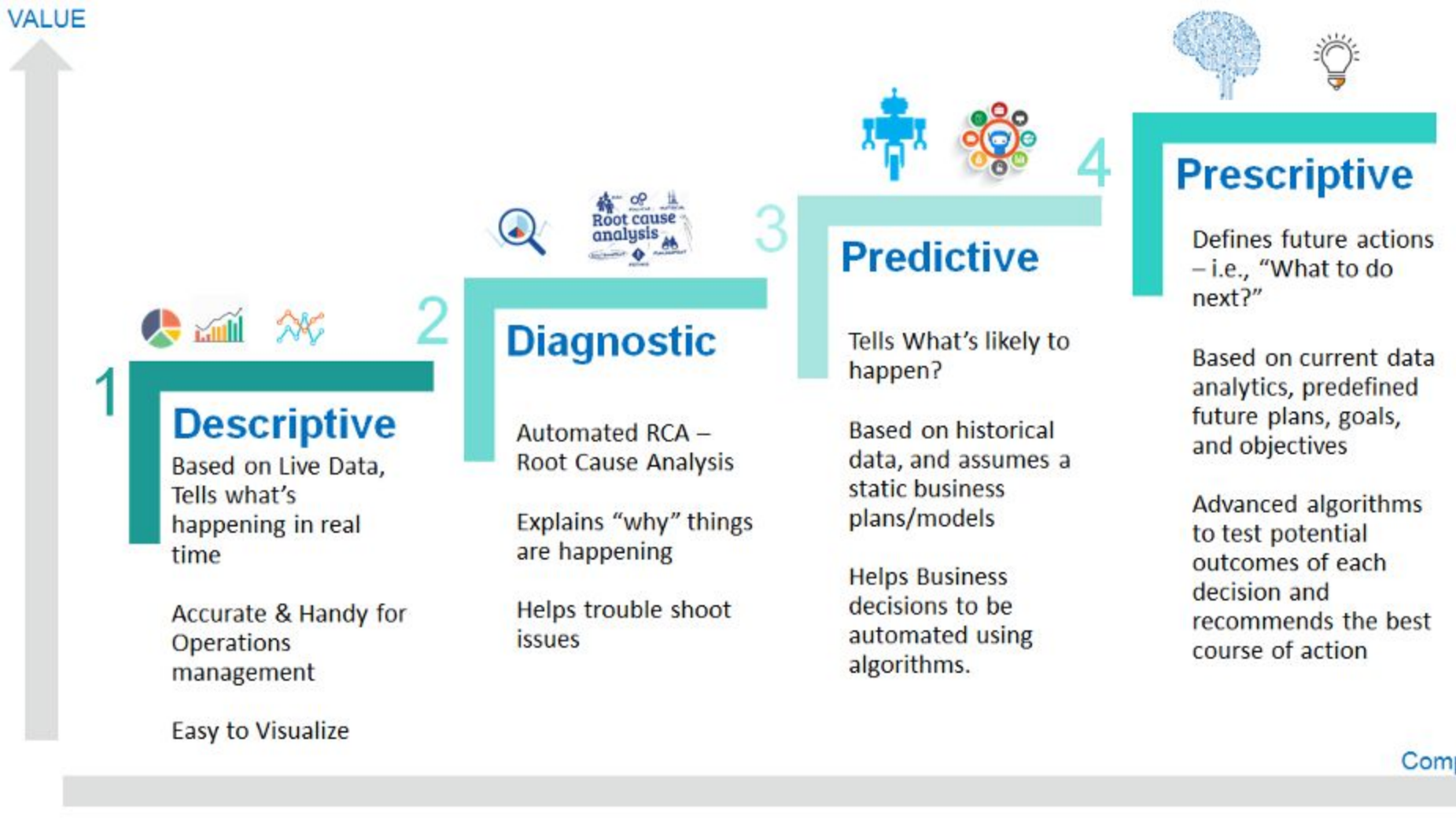
- Analysis:
  - Breaking complex concept to smaller parts for better understanding.
  - Analysis **drives** **insight**



Types of Analytics

- Descriptive
- Diagnostic
- Predictive
- Prescriptive




VALUE
1
Descriptive
Based on Live Data, Tells what's happening in real time
Accurate & Handy for Operations management
Easy to Visualize
2
Diagnostic
Root cause analysis
Automated RCA – Root Cause Analysis
Explains "why" things are happening
Helps trouble shoot issues
3
Predictive
Tells What's likely to happen?
Based on historical data, and assumes a static business plans/models
Helps Business decisions to be automated using algorithms.
4
Prescriptive
Defines future actions – i.e., "What to do next?"
Based on current data analytics, predefined future plans, goals, and objectives
Advanced algorithms to test potential outcomes of each decision and recommends the best course of action
Complexity

Digital Analytics

- Digital Analytics is the science of analysis with focus on Internet data.
  - Website – **Web Analytics**
  - Mobile apps
  - Social Media
  - Third party sources
- It is the analysis of quantitative and qualitative data, to gain insights and drive continual improvement.
- Big Data, Cloud and Diagnostic Analytics are the trends in Digital Analytics
- **Web Analytics**
  - The measurement, collection, analysis and reporting of Internet data for the purpose of understanding and optimizing web usage

    (ultimately for business intelligence …for achieving online business goals)

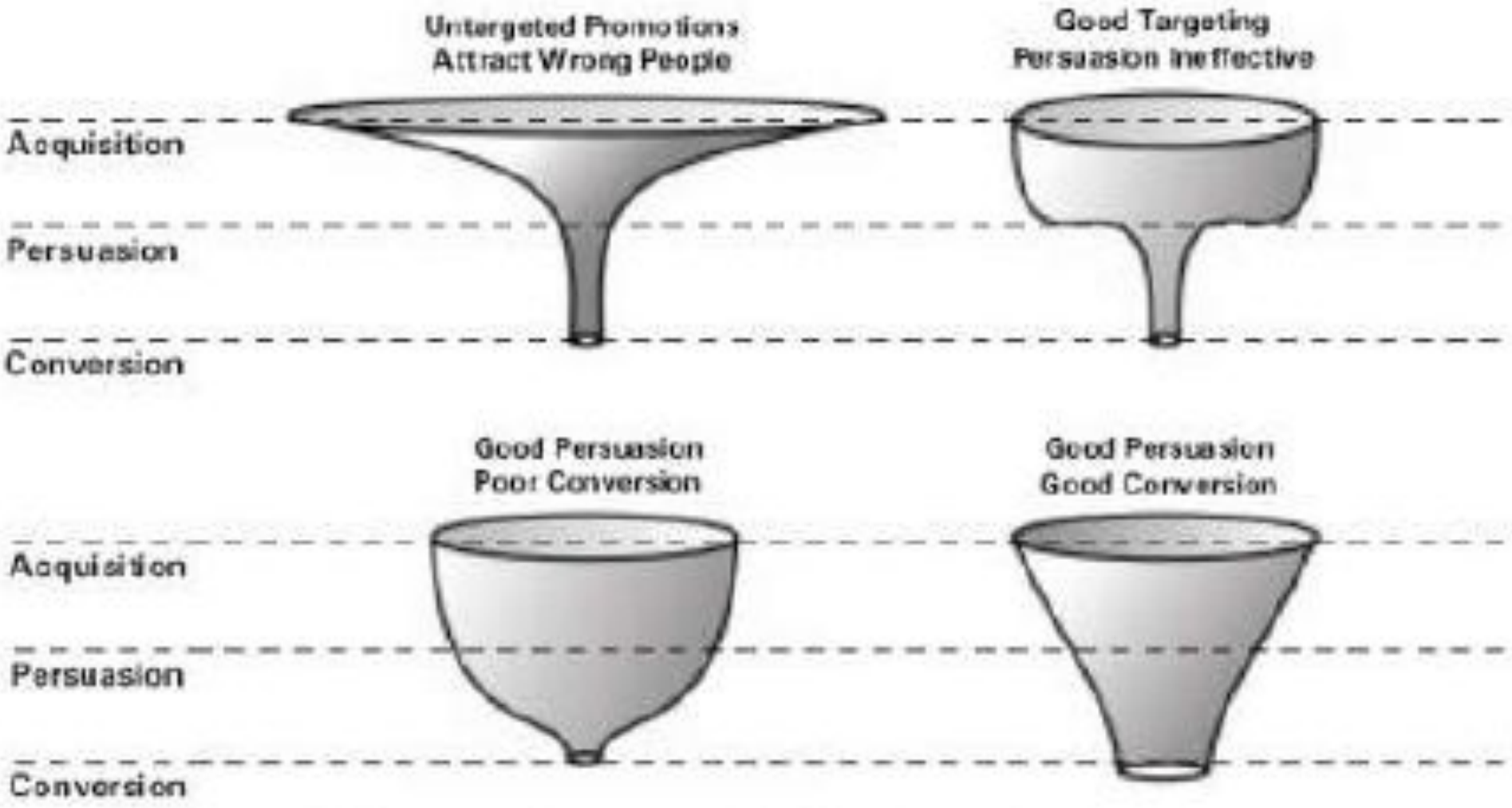


Fig. 1: Customer Life Cycle Funnel

web analytics 2.0

Why do we do web analytics? The following list helps to answer this question:

1. To quantify the economic value of a website
2. To create a “customer-centric” website
3. To enhance profits by using:
    a. Internal site searches
    b. Pay-per-click marketing
    c. Optimization of your search engines
4. To find the most important key performance indicators (KPIs)
5. And from the knowledge gained through numbers 1–4: to create an “actionable dashboard”

What is Web Analytics?

Web analytics is the study of website visitors' behavior. In a commercial context, Web analytics especially refers to the use of data collected from a website to determine which aspects of the site work towards the business objectives; for example, which landing pages encourage people to make a purchase.

At a general level, data collected almost always includes Web traffic reports. This data is typically compared against key performance indicators (KPIs) and used to improve a website or marketing campaign's audience response.

What is web analytics?
Web analytics is a set of strategic methodologies implemented to maximize online and e-commerce activities. It measures, collects, analyzes and reports on Internet data, so as to understand and optimize Web usage.

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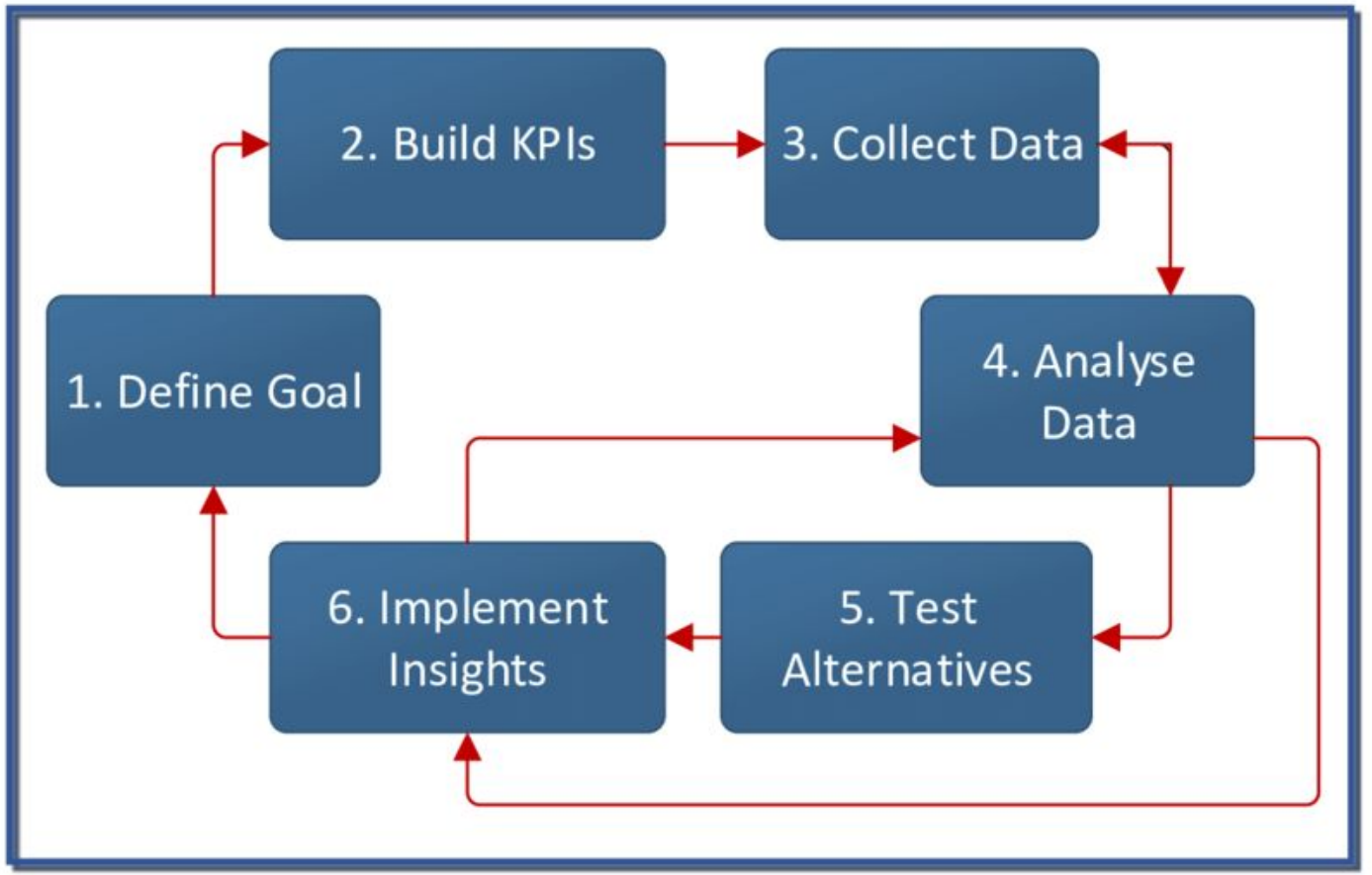
Web analytics is a set of strategic methodologies implemented to maximize online and e-commerce activities. It measures, collects, analyzes and reports on Internet data, so as to understand and optimize Web usage.

Essentially it tries to answer:

1. Who is coming to our web site?
2. What are they doing when they come to the website?
    2. Is this what we want them to do, if not what is the gap between what they are doing and the ideal?

By analyzing this data, companies can find insights to try and close the gaps between what visitors are doing and the ideal and try and actually bring more of the right kind of visitors to the website.

WEB ANALYTICS 2.0



Defining Goals

Web analytics metrics:

- Total & unique visits
- Total & unique page views
- New vs returning visitors
- Traffic sources
- Bounce rate
- Exit rate
- Click-through rate
- Time on page

BUILD KPIS

"A quantifiable measure used to evaluate the success of an organization, employee, etc. in meeting objectives for performance.“

1. **Overall traffic**
2. **Bounce rate**
3. **Traffic sources**
4. **Desktop vs. mobile visits**
5. **New and returning visitors**

KPI ATTRIBUTES

1. UNCOMPLEX
2. RELAVENT
3. TIMELY
4. INSTANTLY USEFUL

Web 2.0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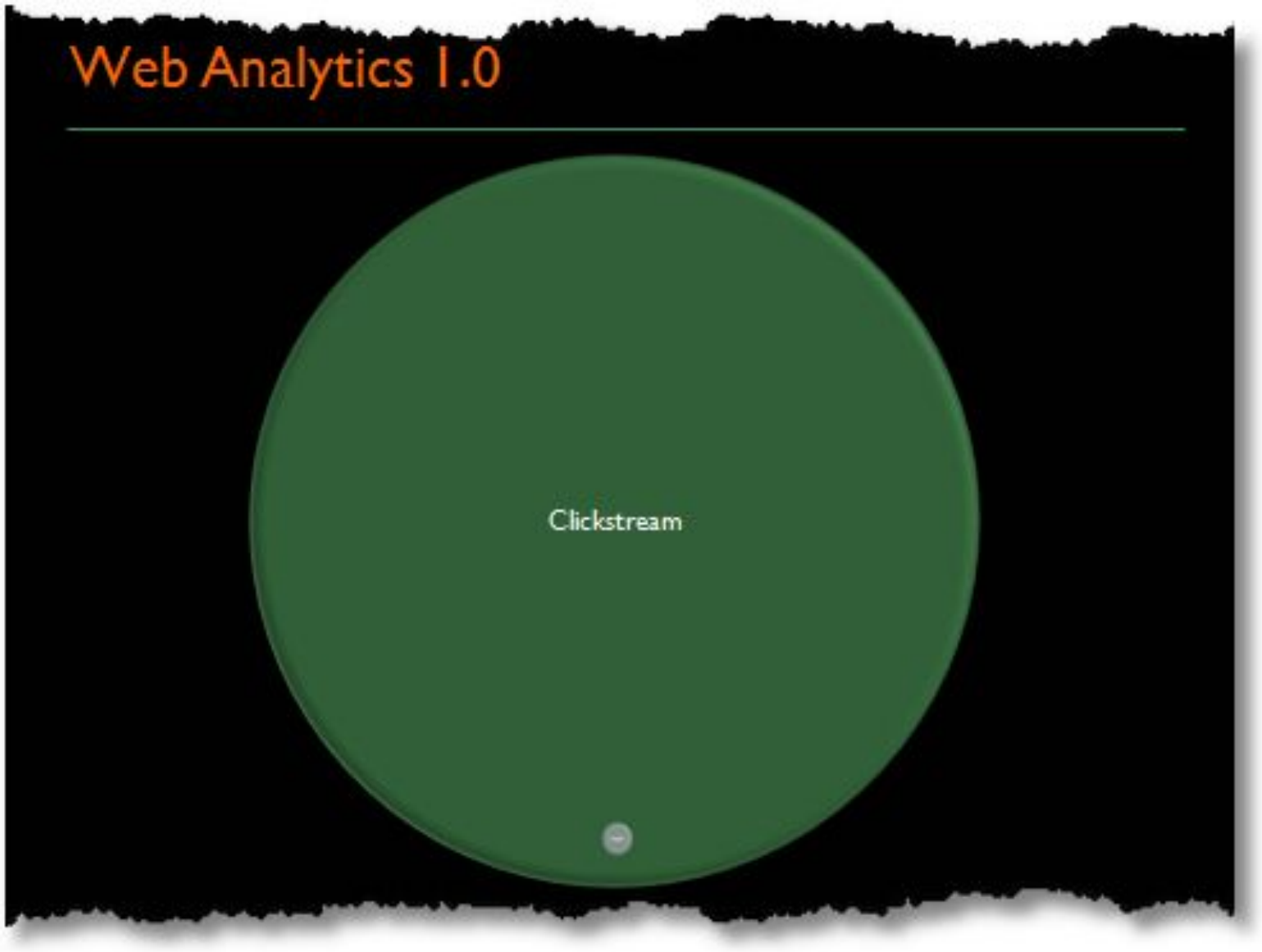
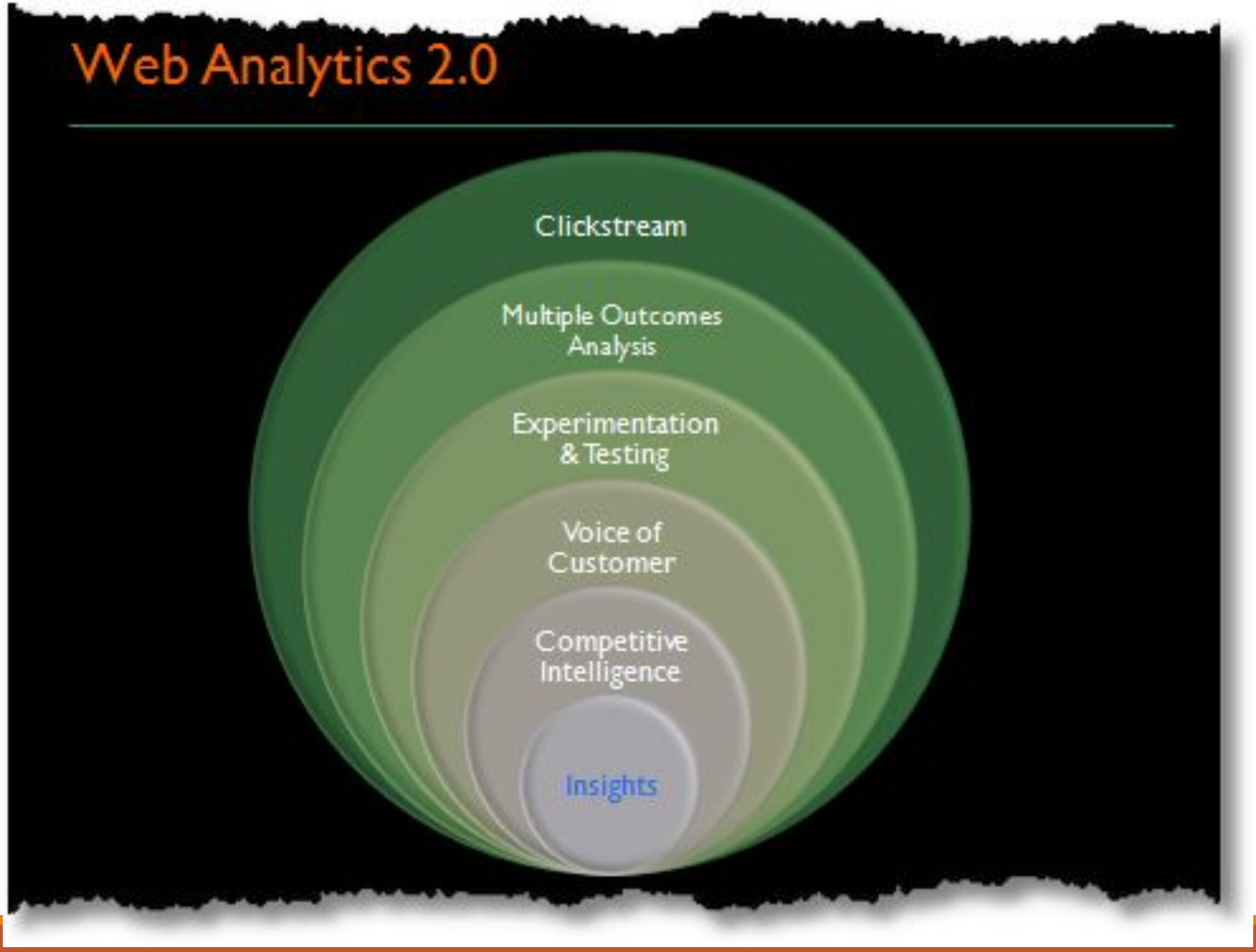

Web Analytics 1.0
Clickstream


Web Analytics 2.0
Clickstream
Multiple Outcomes Analysis
Experimentation & Testing
Voice of Customer
Competitive Intelligence
Insights