

Watson Wins Jeopardy!

# Data Analytics Helps Business Decision Making

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# 1.0 Introduction

- ❖ **Data analytics**
  - Data analytics (DA) is the process of examining data sets in order to draw conclusions about the information they contain, increasingly with the aid of specialized systems and software.
- ❖ **Most essential functions of data analytics in decision making in an organization**
  - Understanding and targeting of customers
  - Improvement in performance of operations
  - Gaining of competitive advantage
- ❖ **The chosen analytic tool is [IBM Watson Analytic](#)**

## 2.0 Background

## 2.1 History of Data Analytics

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- ❖ In the mid-1950s Analytic 1.0 stage
  - Data collection and preparation
  - Less in analyzing data
- ❖ In the mid-2000s Analytic 2.0 stage
  - The process of discovering, collecting, and analyzing new information
- ❖ From 2010 onward Analytic 3.0 stage
  - Embed analytics directly into decision and operational process
  - Take advantage of machine-learning and other technologies to generate insights
  - Prescriptive and predictive analytics

## 2.2 Significance of Data Analytics

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- ❖ Reduce costs
- ❖ Faster decision making
- ❖ New products & services



## 2.3 Review of Traditional Business Intelligence Solution

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- ❖ **Costs too expensive**
  - Buy or develop relevant business intelligence tools.
  - Professionals for maintaining and training the business intelligence.
- ❖ **Data grow and become complex**
  - Production, expansion, competition and investment have become complex.
- ❖ **Time to value takes too long**
  - In most cases, a business intelligence system takes up to 18 months for complete implementation.



## 3.0 Statement of Problem

## 3.1 Demonstrating the features of IBM Watson Analytics.

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### ➤ Vision

IBM Watson Analytics site promises: "A smart data discovery service available on the cloud; it guides data exploration, automates predictive analytics and enables effortless dashboard and infographic creation."

### ➤ Issue statement

Many businesses lack an understanding of the claims made by IBM and are unable to evaluate them.

### ➤ Method

Understanding the features and capabilities of IBM Watson Analytics is the first step in deciding if they are appropriate for business.

## 3.2 What kind of questions can IBM Watson Analytics answer?

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### ➤ Vision

IBM Watson Analytics uses the language and keywords of your business to build questions that explore and visualize your data.

### ➤ Issue statement

Although the questions appear free form, they must contain column titles, and data sets with additional keywords to be understood.

### ➤ Method

Examining the process for building questions, provides a clearer picture of Watson's capabilities.

## 3.3 Compare IBM Watson Analytics with other tools in decision making.

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### ➤ Vision

IBM Watson Analytics is a smart data analysis and visualization service you can use to quickly discover patterns and meaning in your data – all on your own. With guided data discovery, automated predictive analytics and cognitive capabilities such as natural language dialogue, you can interact with data conversationally to get answers you understand. Whether you need to quickly spot a trend or you have a team that needs to visualize report data in a dashboard, Watson Analytics has you covered.

### ➤ Issue statement

Other companies, SAS and Salesforce, offer products that compete with IBM's.

### ➤ Method

A comparison of SAS Visual Analytics and Salesforce Analytics allows consideration for the choice that will best suit a particular company.

# 4.0 Business Component

# Benefits of using IBM Watson Analytics

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- ❖ Save costs
- ❖ Save time
- ❖ Faster decision making



Manage your pension online in one place. Check your balance, see your projected retirement, and add more money in a few clicks.

1. Export data to IBM Watson Analytics
2. Link it to customers' sign ups
3. Generate a list of clients
4. Correlate this information with location data
5. Generate better leads

- ❖ Increase 50% of potential customers.
- ❖ Save 50% of the time to build customers' profiles and effective account management.



Mondi migrated whole system from SAP system to be hosted by IBM and analyzed by IBM Watson Analytics.

Mondi is a leading international paper and packaging group with operations across 31 countries.

- ❖ Between 300-400 times faster report generation, saving on time.
- ❖ More than 200 hours of labor was saved monthly, cutting labor costs by 35%.



$$\text{ROI} = (\text{Gain from Investment} - \text{Cost of Investment}) / \text{Cost of Investment}$$

		2017
<b>Cost</b>	Acquisition	\$960
	Technology Analyst Salary	\$46,655
	Learning IBM Watson Analytics	\$44.99
<b>Total Cost</b>		\$47,659.99
<b>Benefit</b>	Servers - Hardware	\$4,651
	Finance Analyst Salary	\$88,821
	Faster Decision Making	###
<b>Total Benefit</b>		Above \$93,472
<b>ROI</b>		96%+

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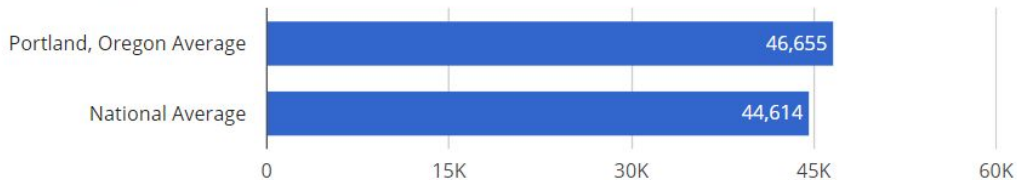
Access Twitter data

Full access to IBM Analytics Exchange data & offerings

## Your Personalized Information Technology Analyst Salary Report

### Job Profile

Based on the answers you provided, you should average **46,655 in Portland, Oregon** which is **4% higher** than the **national average**.



[Flip to back](#)



### Learning IBM Watson Analytics Paperback – June 6, 2016

by James D Miller (Author)

★★★★★ 2 customer reviews

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Make the most advanced predictive analytical processes easy using Watson Analytics with this easy-to-follow practical guide

### About This Book

- This is the first and the only book on IBM Watson Analytics, and it shows you how to leverage Watson in an enterprise environment through rich use cases
- Incorporate Watson Analytics into your business strategy and confidently add this cutting edge expertise to your resume
- This book is written by James D Miller, IBM-certified expert and accomplished Director and Sr. Project Leader



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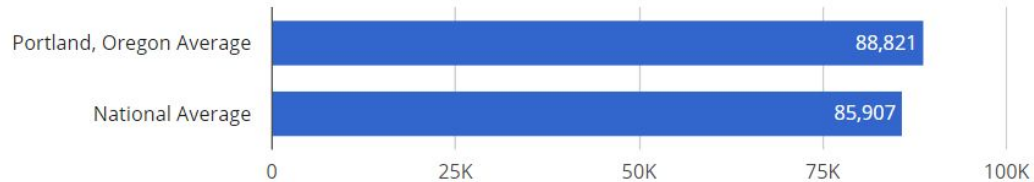
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### Job Profile

Based on the answers you provided, you should average **88,821 in Portland, Oregon** which is **3% higher** than the **national average**.



# 5.0 Technology Component

## 5.1 How does IBM Watson Analytics work?

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### IBM Watson Analytics

- ❖ is a cognitive system which works by analyzing information.
- ❖ is a system which has learning capabilities.
- ❖ also constantly updates for purposes of constant adaptations to knowledge and linguistic patterns.

# IBM Watson Analytics Demonstration

## Analytics made easy

Predictive analytics and data visualization built for you.  
Analyze your data in minutes on your own without downloading software.

Try it for free



# 6.0 Results

# 6.1 Demonstrating the features and capabilities of IBM Watson Analytics

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## Features:

- ❖ Self-services: Easy for an individual to obtain the data, analyze it, and discuss the results.
- ❖ Natural language dialogue
- ❖ Stories: If the problem is similar, Watson can use the templates for its own analysis

## Capabilities:

- ❖ Automated data discovery
- ❖ Exploration
- ❖ Dashboard creation



## 6.2 What kind of questions can IBM Watson Analytics answer?

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Building question:

- ❖ Matching the words in the problem to the column titles of the given data set
- ❖ Matching the words remaining in the question with real data values in the given data set
- ❖ The keywords aid in selecting and formatting the visualization

keyword                      column titles

↘                      ↙                      ↘

What is the degree of efficiency and satisfaction of flights?

↖

data value

Add special keywords to build question:

### **Compare**

How do the values of <Column title> compare by <Column title>?

How does the type of travel compare with the <age> and <gender of passengers>?

### **Trend**

What is the trend of <Column title> over <Column title>?

What is the trend of <destination travel> over <departure travel> for a flight?

### **Contribution**

What is the contribution of <Column title> and <Column title>?

What contribution does the <type of airline> make to the <flight destination>?

Add special keywords to build question:

### **Relationship**

What is the relationship between <Column title> and <Column title>?

What is the relationship between <origin state> and <destination state>?

### **Breakdown**

What is the breakdown of <Column title> by <Column title>?

What is the breakdown of the <departure city> and <city of destination>?

### **Grouping**

What is the grouping of <Column title> and <Column title>?

What is the grouping of <number of airlines>?

[Show analytic query](#)

## 6.3 Compare IBM Watson Analytics with decision making tools.

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### SAS Visual Analytics

SAS Visual Analytics is an alternative data-discovery tool employed in business to assist in the process of making decisions.



### Salesforce Analytics

Salesforce Analytics comprises another technology in the realm of data collection, analysis, and interpretation.





IBM Watson  
Analytics

★★★★☆ 8.3



SAS Visual  
Analytics

★★★★☆ 6.7



They both provide:

1. Comprehensive pixel reports
2. Customized dashboards
3. Templates for the report formatting
4. Access control and security
5. Even offer the same data discovery and visualization

...

SAS Visual Analytics: [System Requirement](#)



SAS® Visual Statistics for  
SAS® Cloud

From  
9,180.00 USD



SAS® Visual Analytics for  
SAS® Cloud

From  
6,120.00 USD



SAS® Analytics Pro

9,380.00 USD



SAS® Visual Data Discovery

11,030.00 USD



SAS/ACCESS® Software

3,260.00 USD



IBM Watson  
Analytics

★★★★☆ 8.3



Salesforce  
Analytics

★★★★☆ 7.2

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The advantage of Salesforce Analytics is its development on the platform of the Salesforce that allows the integration of the navigation with all the enrolled data.

Salesforce Analytics requires the inputs of business concepts.

Given its complexity in interpreting data, Salesforce Analytics is priced lower than the IBM Watson Analytics in the market.

# 7.0 Conclusion

- ❖ Data analytics makes it easier for businesses in analyzing and interpreting data into meaningful information.
- ❖ IBM Watson Analytics helps businesses making significant decisions.
- ❖ Features that make IBM Watson Analytics stand out from SAS Visual analytics and Salesforce analytics include self-service and natural language dialogue.



- ❖ IBM offers outstanding capabilities that make it perform its tasks effectively.
- ❖ Considering the benefits exhibited by IBM analytics, a well-established business needs to have one such system.

# 8.0 Future Research

Problem: What is the challenge that IBM Watson Analytics brings to a business?

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Vision: Each system contains advantages and disadvantages that make people choose other systems over it. Having an insight on the possible challenges and preventing them early enough makes an organization stay focused on the goals and objectives set.

Issue statement: Finding out more about challenges the IBM Watson Analytics brings to a business.

Method: Give a clear picture of what the users might face when using the IBM Watson Analytics. Analyzing the challenges of IBM Watson Analytics and identifying possible sources of challenges.

Questions???