



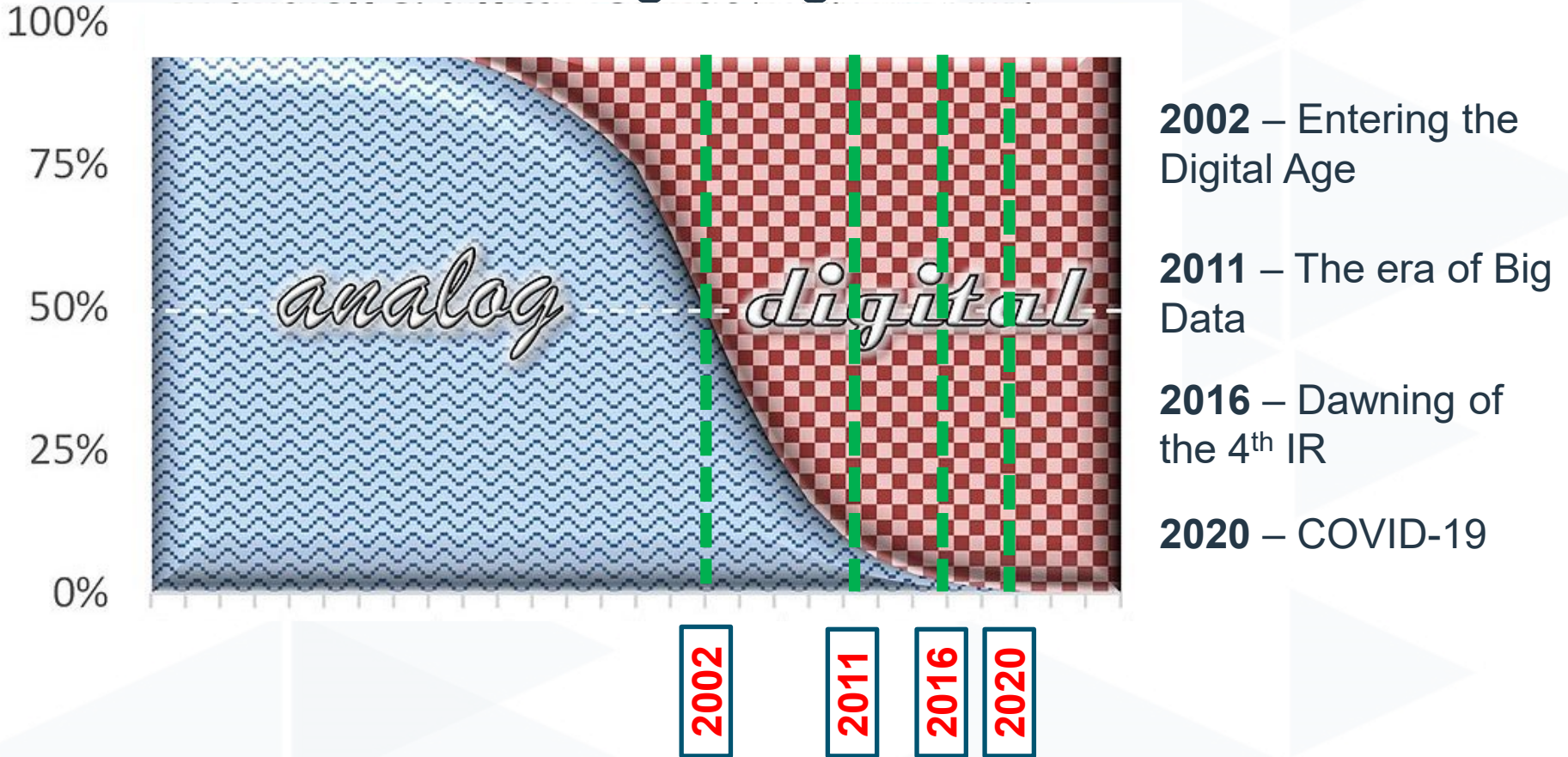
# KNOWLEDGE MANAGEMENT: ADAPTING TO THE DIGITAL (R)EVOLUTION

University of Auckland Business School  
Public Lecture  
October 27, 2021

KNOWLEDGE  
@WORK

FRAGOMEN

# The Digital Age Timeline



**2002** – Entering the Digital Age

**2011** – The era of Big Data

**2016** – Dawning of the 4<sup>th</sup> IR

**2020** – COVID-19

# Agenda

- 1. What is Big Data and Why Is It a Big Deal**
- 2. Dawning of the 4<sup>th</sup> IR and Its Impact**
- 3. COVID-19: Accelerator of Change**
- 4. Next Steps for Organizations**

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# What is Big Data and Why Is It a Big Deal

# What Is Big Data: Definitions

- Extremely large data sets that may be analyzed computationally to reveal patterns, trends, and associations, especially relating to human behavior and interactions.
- Big data is an evolving term that describes any voluminous amount of structured, semi-structured and unstructured data that has the potential to be mined for information.
- Big data is a collection of data from traditional and digital sources inside and outside your company that represents a source for ongoing discovery and analysis.
- Big data is a buzzword meaning a massive volume of both structured and unstructured data that is so large it is difficult to process using traditional database and software techniques.

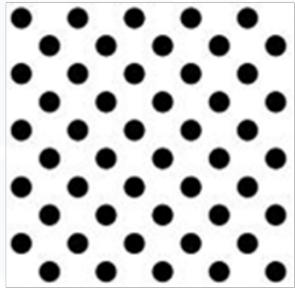
# What Is Big Data: **By the Numbers**

- Data is growing faster than ever before and by the year 2020, about 1.7 megabytes of new information will be created every second for every human being on the planet
- 90% of the world's data has been created in the past two years. The volume of data is expected to double every two years.
- 500 million tweets daily, 300 hours of video uploaded every minute (YouTube), 41.7 million WhatsApp messages every minute and 2.9 million emails sent every second

**At the moment, less than 0.5% of all data is ever analyzed and used**

# What Is Big Data: By Dimensions

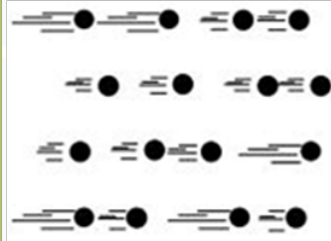
## Volume



### Data at Rest

Terabytes to Exabytes of existing data to process

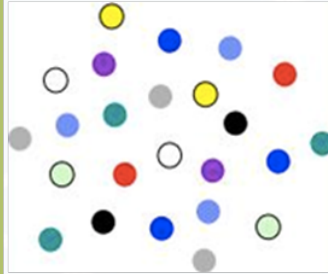
## Velocity



### Data in Motion

Streaming data, requiring milliseconds to seconds to respond

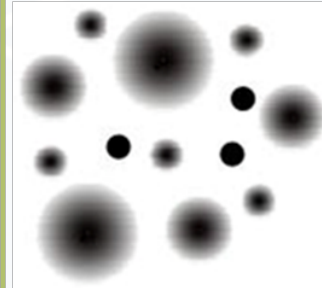
## Variety



### Data in Many Forms

Structured, unstructured, text, multimedia,...

## Veracity



### Data in Doubt

Uncertainty due to data inconsistency & incompleteness, ambiguities, latency, deception, model approximations

## Value



### Data into Money

Business models can be associated to the data

# Big Data @ WORK

LAW  
ENFORCEMENT



CROWD  
SOURCING



MILITARY  
APPLICATION



CONTENT  
DEVELOPMENT





# Key Benefits of Big Data

Big Data enables organizations to leverage ***both conventional and unconventional*** data points (such as unstructured text) - information that was previously ignored because there was no reasonable way to process it. The result is:

1. New decision making
2. Better decision making
3. New products and services

# KM Optimizes Big Data

***Integrate and organize  
big data***



- Enhances findability and navigation
- Data validation
- Provides efficient classification tools to augment human tagging
- Sheer volume of data requires an organization schema

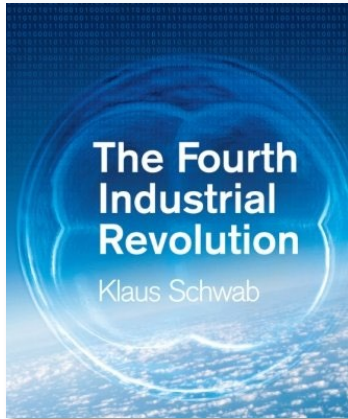


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## Dawning of the 4<sup>th</sup> IR

# ORIGINS OF 4IR

We stand on the brink of technological revolution that will fundamentally alter the way we live, work and relate to one another. In its scale, scope and complexity, the transformation will be unlike anything humankind has experienced before.

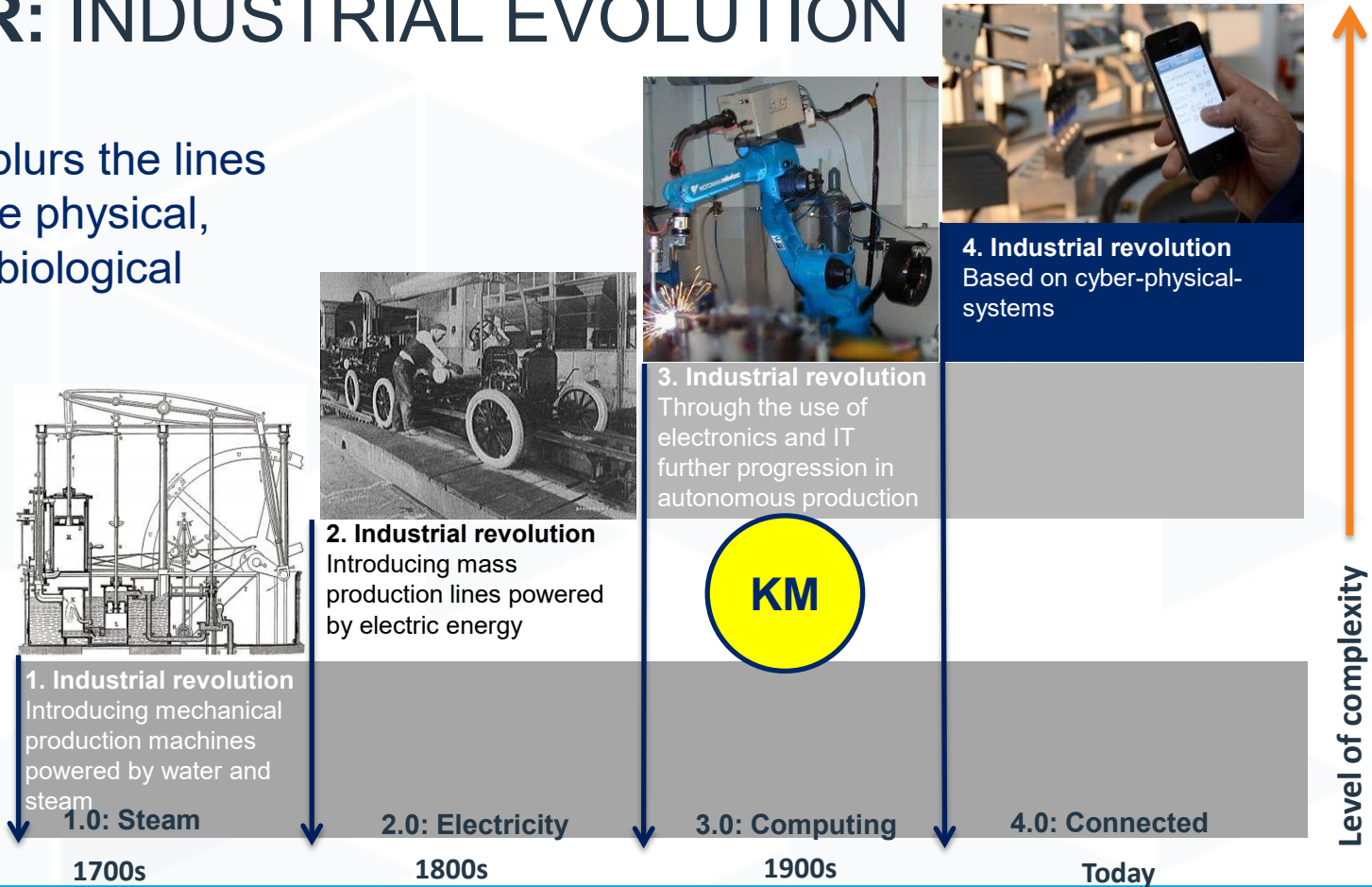


***Klaus Schwab***  
Founder & Executive Chairman  
World Economic Forum

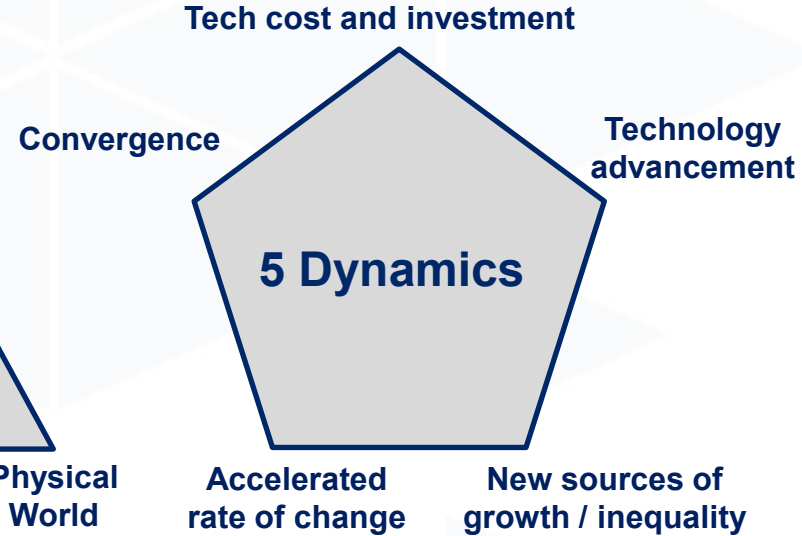
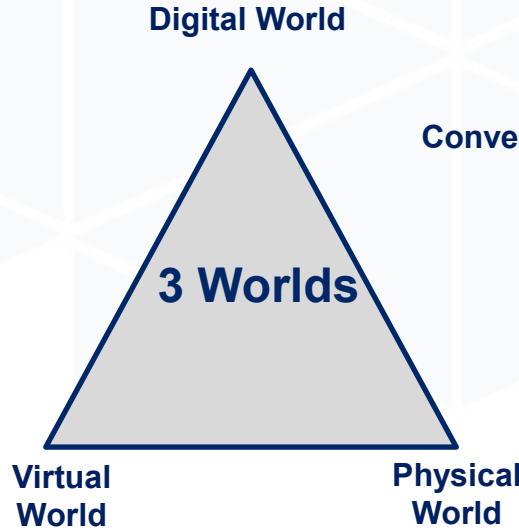
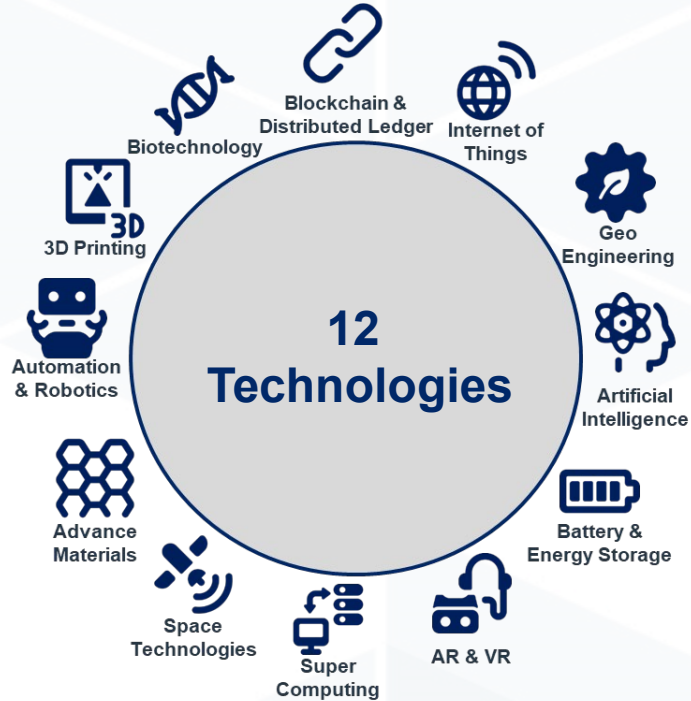


# 4IR: INDUSTRIAL EVOLUTION

The 4<sup>th</sup> IR blurs the lines between the physical, digital and biological spheres



# 4IR: BY THE NUMBERS



# 4IR KEY Characteristic: Technology adoption

## NUMBER OF YEARS IT TOOK FOR EACH PRODUCT TO GAIN 50 MILLION USERS:

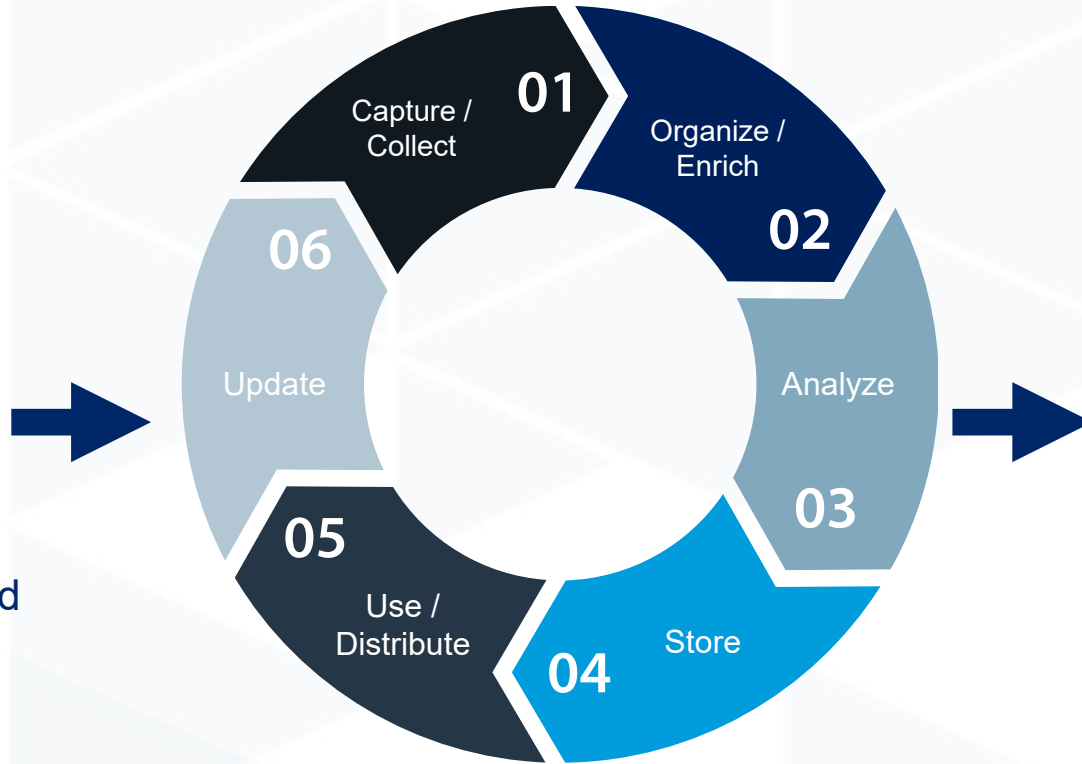


# Knowledge Management in 4IR

## Big Data



“Scale, scope and complexity”



- Taxonomy development
- Auto categorization
- Augmented analytics platform
- Knowledge graphs
- Data visualization
- Unstructured data search and analysis



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## COVID-19: Accelerator of Change

# CRISIS: DANGER AND OPPORTUNITY

# 危机

In the midst of every crisis,  
lies great opportunity

- Albert Einstein

# TURNING CRISIS INTO OPPORTUNITY

## Innovation



## Cooperation



## Behavior Change



## Policy Shift



## Resilience



# COVID-19 Areas of Impact on KM

- The primacy of intelligence
- Capturing tacit knowledge
- The need for risk mitigation

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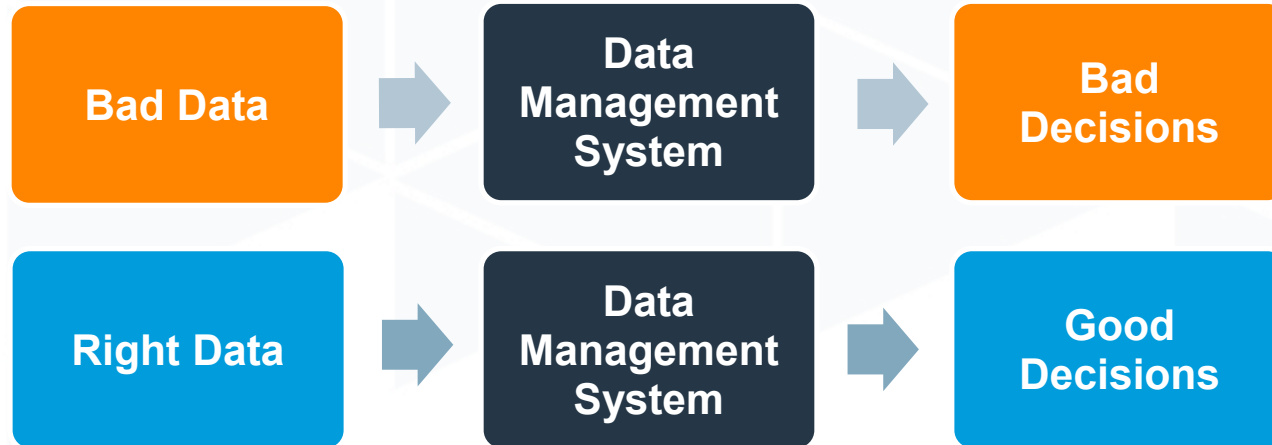
## Next Steps for Organizations

# Roadmap for Success

- Data Discipline
- Promote Data Democracy
- Identifying the Right Skills
- Thinking Differently

# Data Discipline

At the core of Big Data is right data



Proprietary Data + Public Data + Analytics = **Actionable Insights**

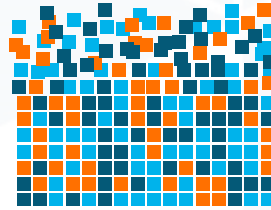
# Data Democracy

One of the most critical aspects of big data is how it can flatten hierarchical decision making

## Decision Making Spectrum

Experience-based

**BIG DATA**



Data-based

**BIG DATA**



- ✓ Contributions from all
- ✓ Decision making is distributed



# The Right Skills

## DATA SCIENTIST:

Mix of statistics, BI, business analysis, communication, curiosity, visualization, common sense



## DATA ENGINEER:

Mix of data expert, data warehousing, data cleaning, data extraction, HADOOP, NOSQL



## ANALYTICS ARCHITECT:

Mix of business analysis, project lead, communications, common sense, analytics



## GRAPHIC DESIGNER:

Mix of design, visual analytics, marketing, creativity



# Thinking Differently



- Questions raised
- Patterns uncovered
- Correlations observed
- Insights gained
- Problems solved

# WITH YOU TODAY



## **Scott Leeb**

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Scott Leeb is currently the Global Corporate Lead for Knowledge at Fragomen, a leading international immigration law firm. Over the past 25 years, Scott has created, managed and grown the global business intelligence/knowledge management programs at four Fortune 500 companies (Prudential Retirement, The McGraw-Hill Companies, KPMG and Ingram Micro), and a leading international philanthropy (The Rockefeller Foundation). He also advised the Saudi Arabian and US federal government on how to build and sustain their knowledge capabilities.

Scott has spoken in Europe, Asia, Africa, Australia, North and South America on a wide range of topics including competitive intelligence, business intelligence, market intelligence, strategy and knowledge management. He began his career as a senior intelligence analyst for the US Army, specializing in East Asian political-military affairs. Scott holds MAs from The Australian National University and Columbia University, a BA from Yale University and a language certificate from Beijing University.