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Big Data MBA: Making Big Data the Center of your Business Model

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Data is
the new oil.

“Data is the New Oil…”

Understanding the “Economics of Oil” requires understanding the difference in value between “Raw” Oil and “Refined” Oil

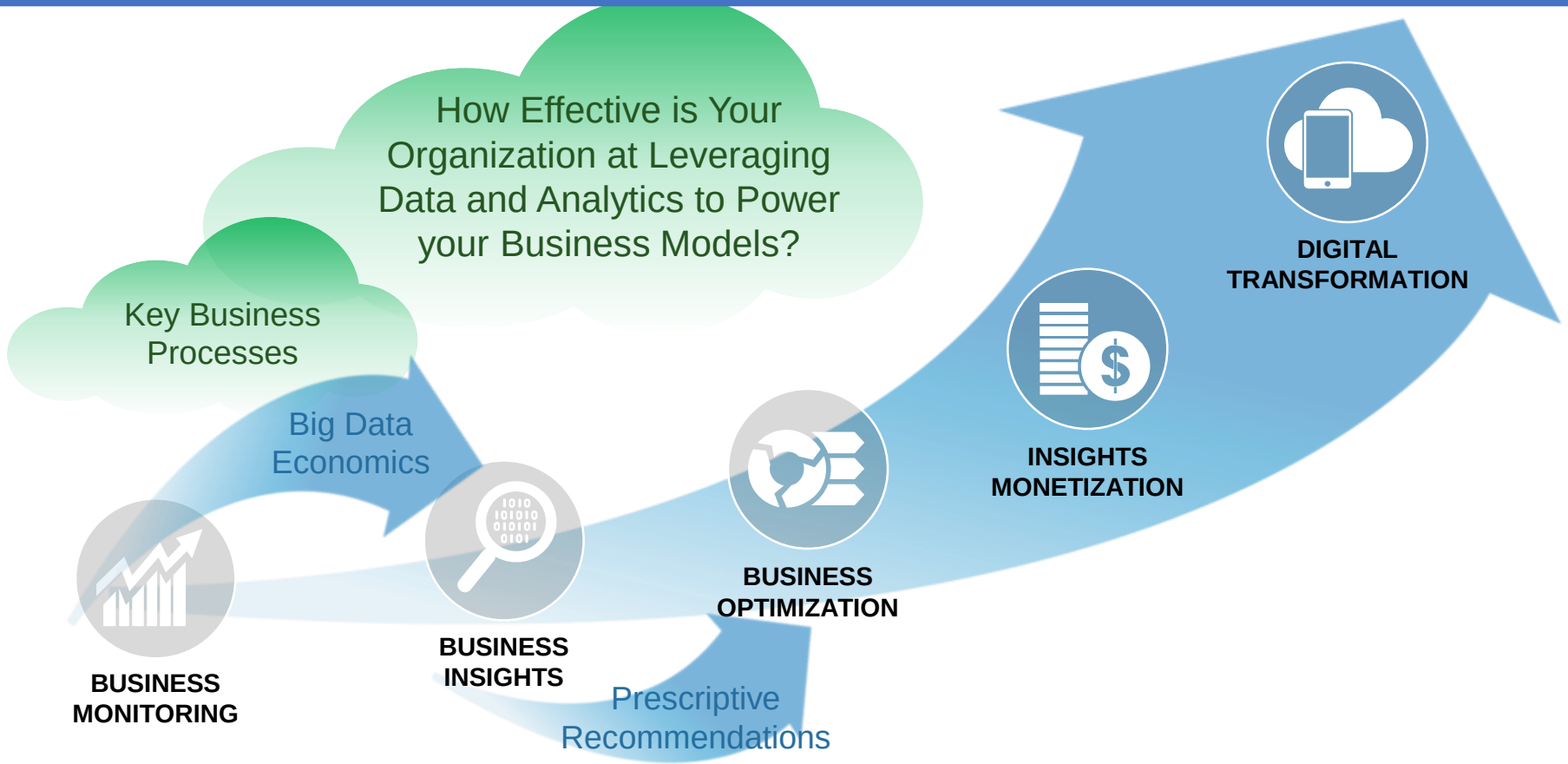
Raw WTI Crude Oil	VP MRX02 Racing Fuel
$62 / Barrel	$125 / 5-Gallon = $1,050 / Barrel
Refined high-octane racing fuel **17x** more valuable than raw WTI crude oil *	

But how much more valuable is that barrel of high-octane fuel if that barrel never depletes, never wears out and can be used across unlimited use cases?

Source: Bill Schmarzo “Big Data MBA” Course Curriculum

* as of 04/04/2019

Big Data Business Model Maturity Index



Bill Schmarzo “Big Data MBA” Curriculum

Data Science Value Engineering Framework

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Understanding the Economic Value Curve

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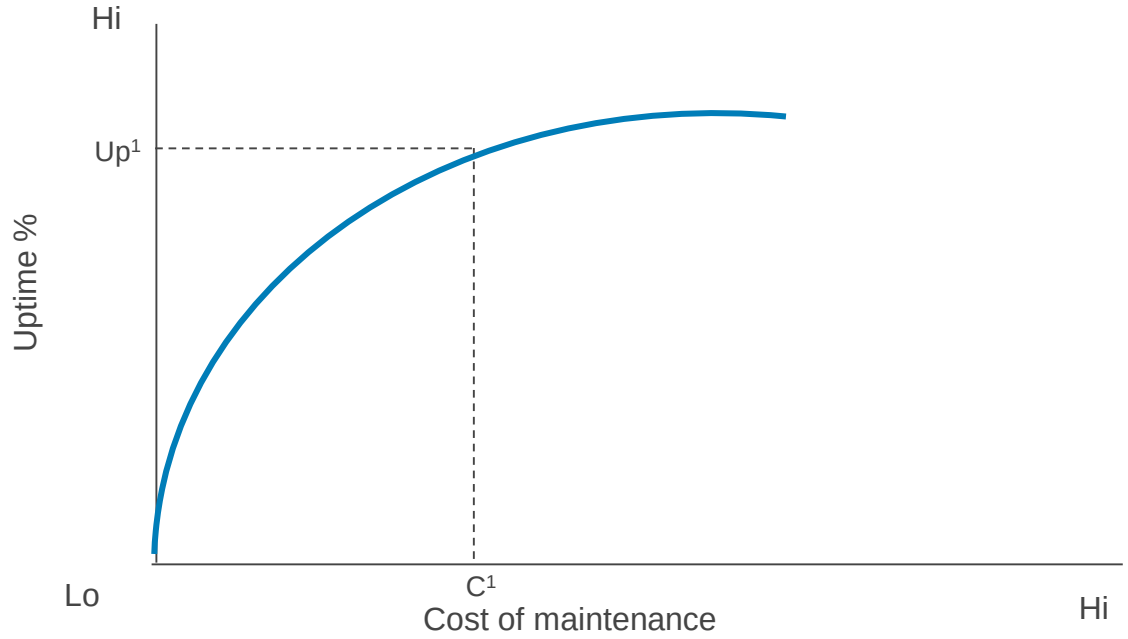
Industrial Operations Challenge

We can create an **Economic Value Curve** that determines the point of optimization between 2 variables like Uptime Percentage versus Cost of Maintenance

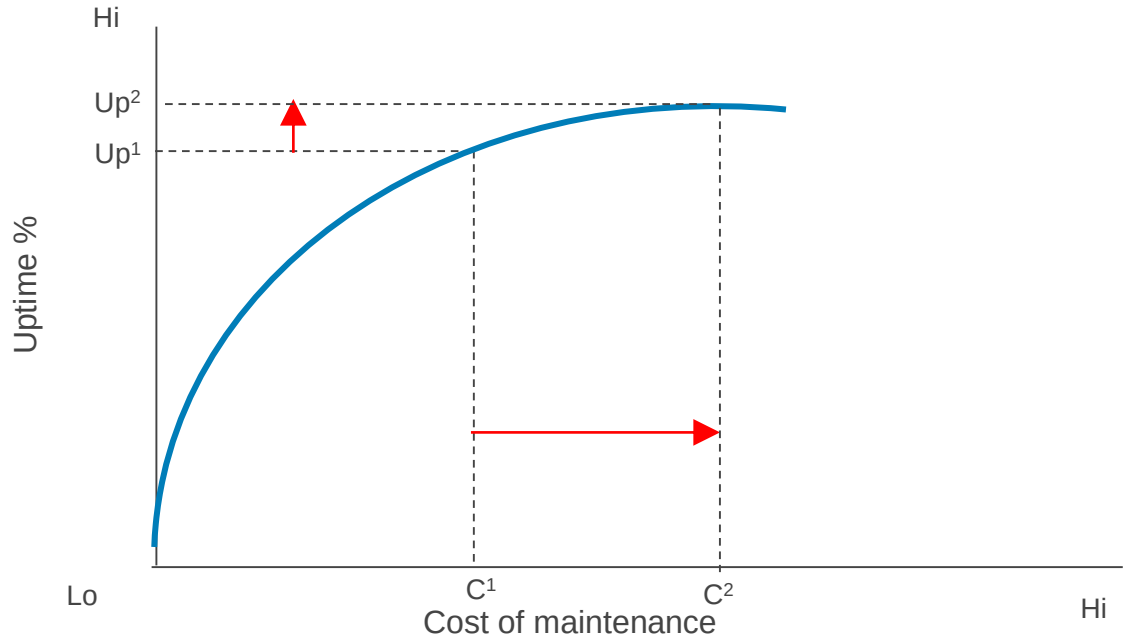


Maintenance costs could include direct and indirect costs such as work hours, overtime costs, extra parts and inventory, extra consumables, and the costs associated with fixing parts that were not going to break

Source: Bill Schmarzo "Big Data MBA" Course Curriculum

Industrial Operations Challenge

Only way to improve Uptime given current **Economic Value Curve** is to invest more in Maintenance. Unfortunately, **Law of Diminishing Returns** dictates that additional spend yields marginal improvements



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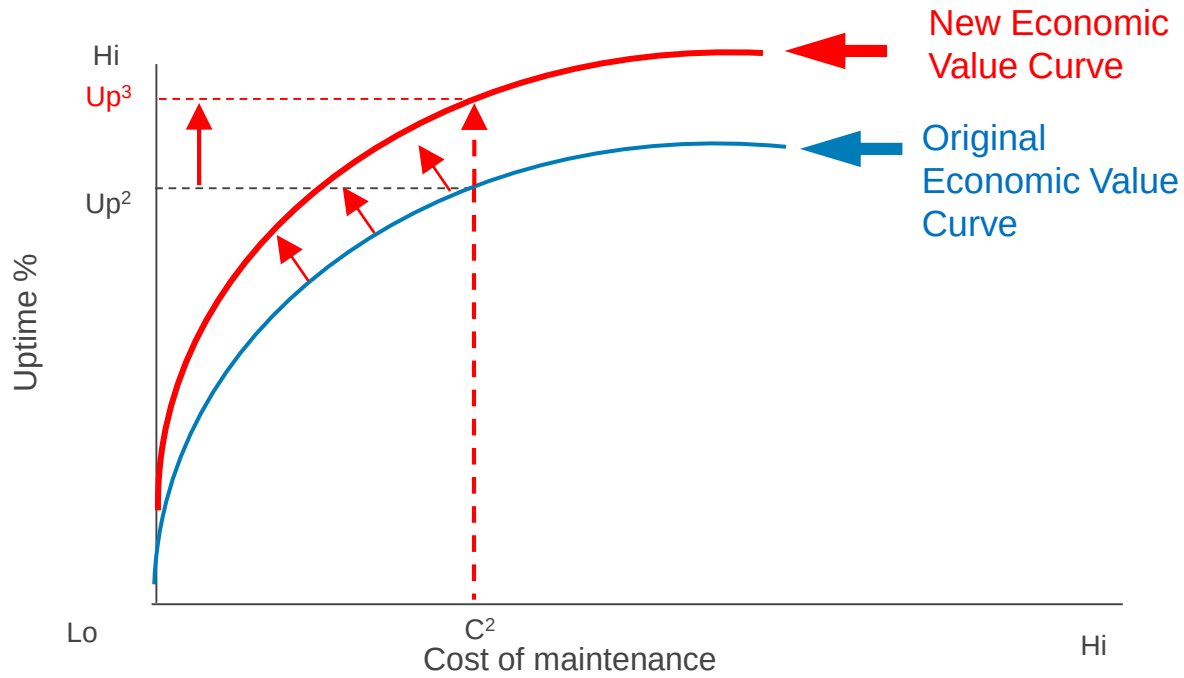
Source: Bill Schmarzo "Big Data MBA" Course Curriculum

Changing the Economic Value Curve

The way to beat **Law of Diminishing Returns** is to re-engineer the sources of value creation to create new **Economic Value Curve**; that is, increase Uptime from Up2 to Up3 with same Maintenance spend



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Source: Bill Schmarzo "Big Data MBA" Course Curriculum

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Using Big Data + Economics) To Drive Innovation (Autonomous)

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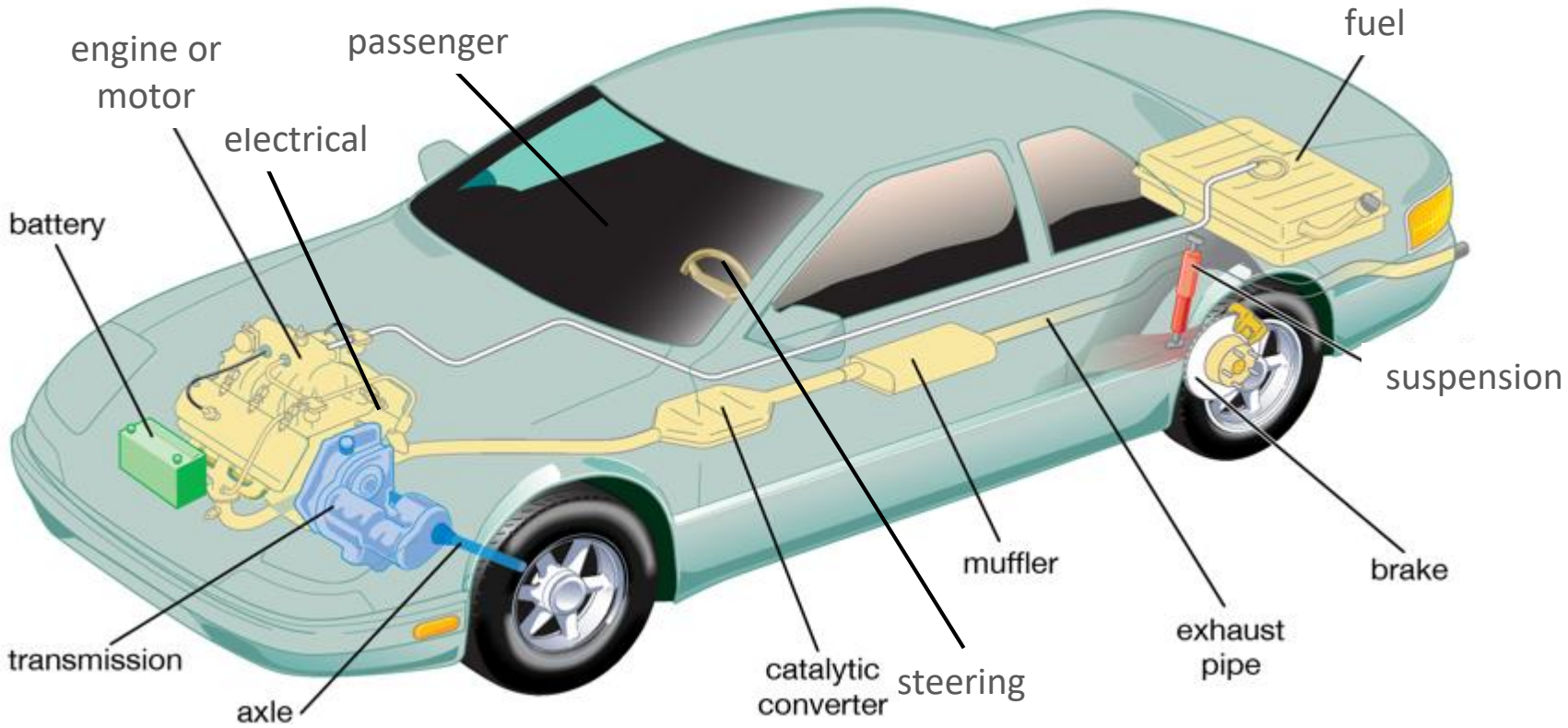
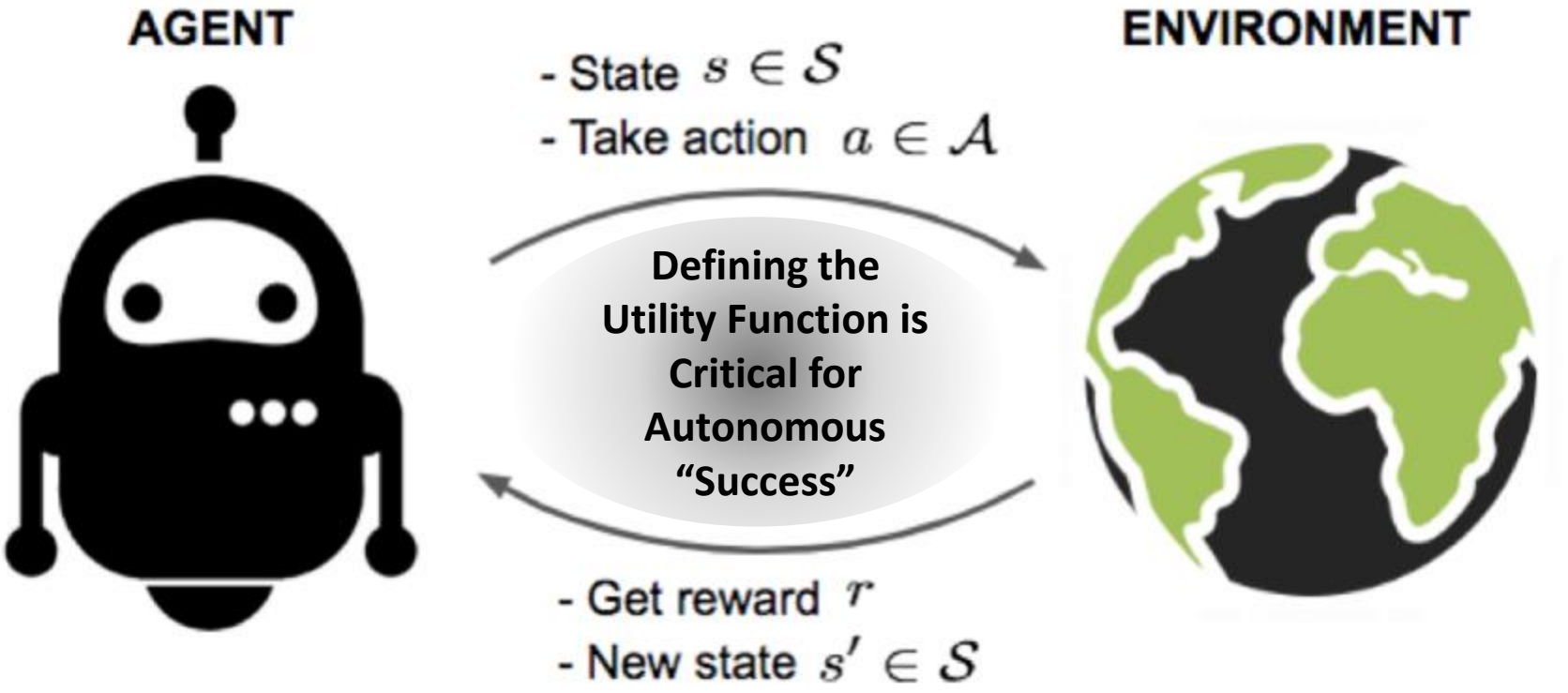
What are Autonomous Entities?

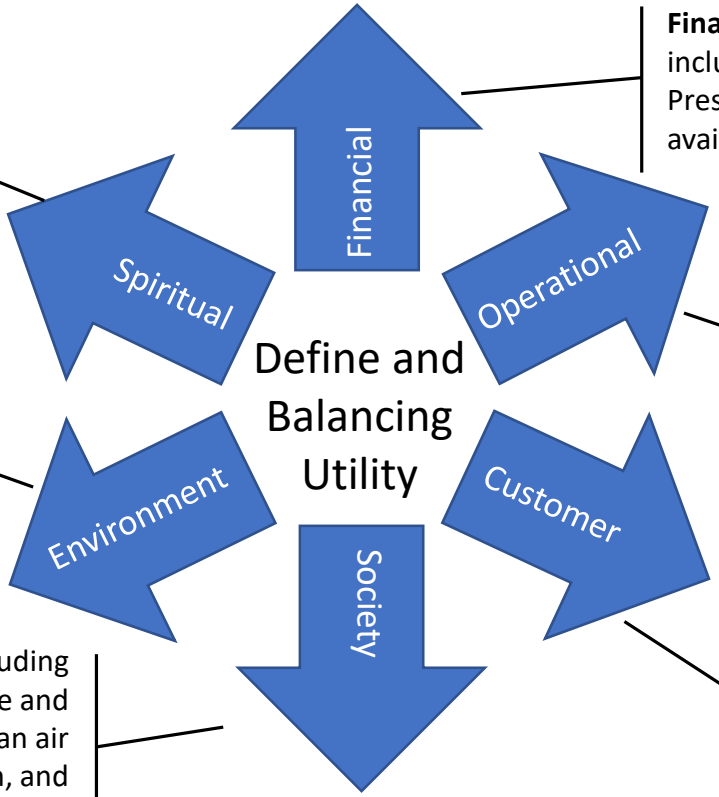
Autonomous entities are complex systems comprised of subsystems that must work in concert to optimize its AI Utility Function… without human intervention



Big Data Drives AI Agents / Autonomous Entities



Utility Function: Optimizing Across Conflicting Priorities



Financial (Economic) Value Creation including Return on Investments, Net Present Value, Shareholder Value, capital availability, and Gross National Product

Operational Value Creation including reliability, predictability, repeatability, stability, safety, and scalability

Customer Value Creation including perceived value, enjoyment, satisfaction, likelihood to recommend, net promoter, quality, safety, and fairness

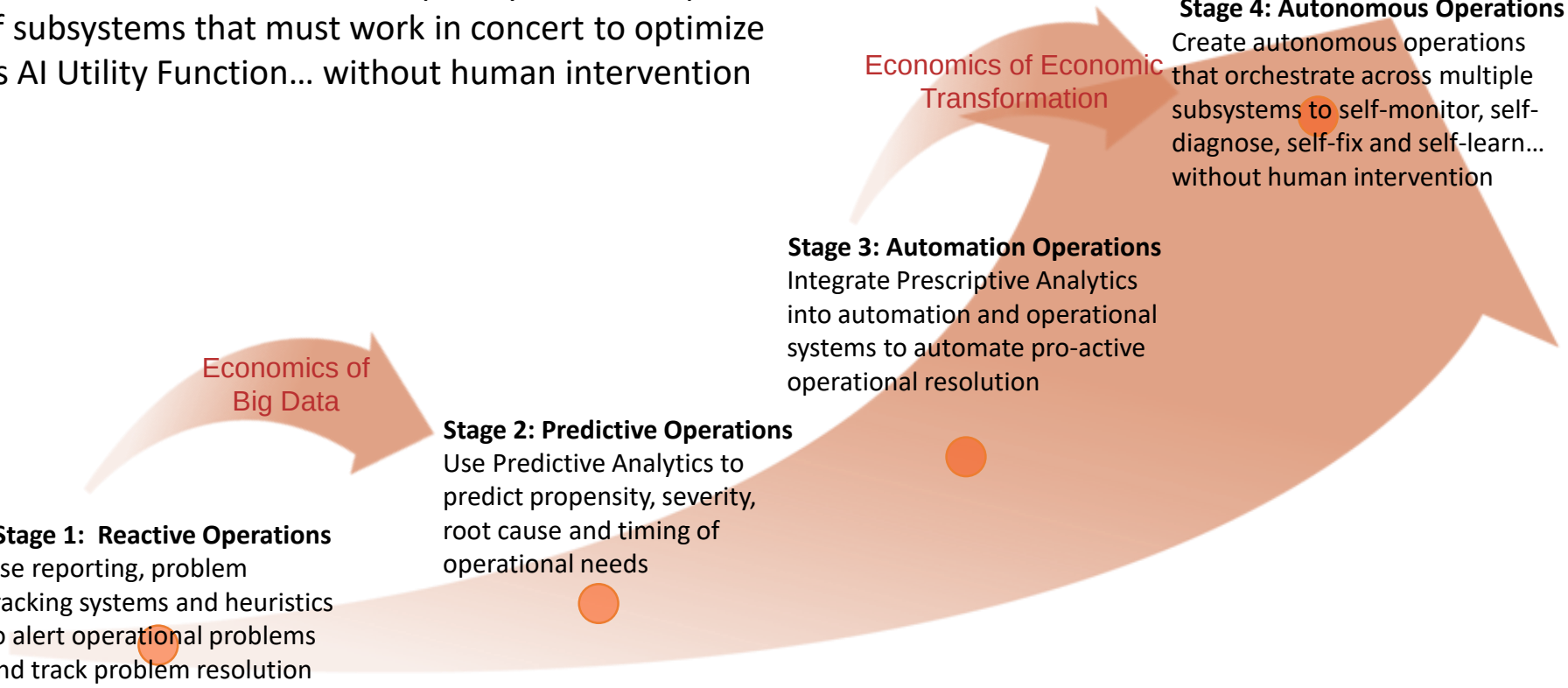
Society Value Creation including improving quality of life and healthcare, access to clean air and water, job creation, and education availability

Environment Value Creation including improving energy efficiency, recycling and sustainability while reducing carbon footprint

Spiritual Value Creation including doing good, giving back, mentoring, harmony, solemn, belief, devote

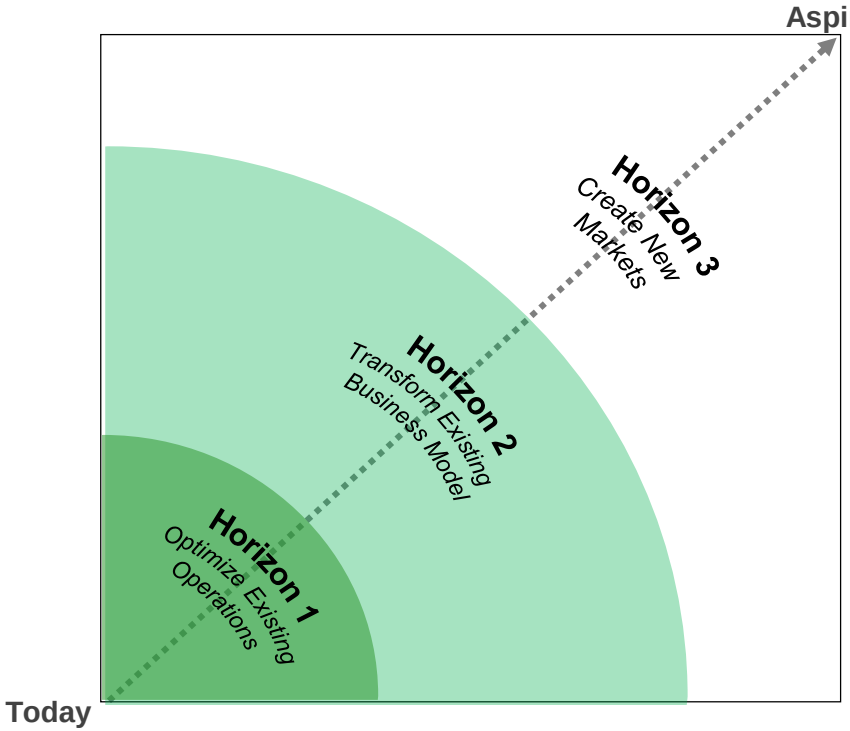
4 Stages to Autonomous…

Autonomous entities are complex systems comprised of subsystems that must work in concert to optimize its AI Utility Function… without human intervention



3 Horizons of Digital Transformation

How do organizations exploit new digital technologies, real-time data, advanced analytics and communication channels to digitally transform their business and operational models?



Agriculture Company

Horizon 3: Autonomous Farming

Exploit analytics-infused automation technologies and deep customer, product, operational insights to create autonomous farms that self-monitor, self-diagnose, self-heal and self-learn without human intervention

Horizon 2: Digital Farms

Create Digital Farms *that that seek to optimize operational performance across interrelated use case by exploiting equipment, farming usage patterns, soil, crop, pesticide/herbicide, weather, commodities pricing and operational insights*

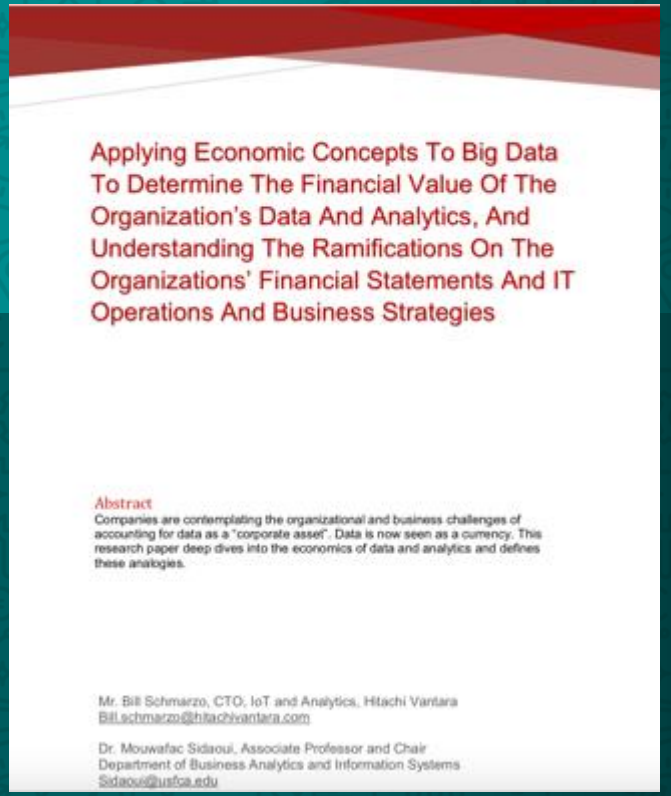
Horizon 1: Farming Excellence

Optimize farming operational management *via yield optimization, waste and energy reduction, predictive maintenance, resource scheduling, machinery utilization, inventory optimization, asset lifecycle management etc.*

Source: Bill Schmarzo “Big Data MBA” Course Curriculum

Exploiting the Economic Value of Data

University of San Francisco Economic Value of Data Research Project



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Economic Value of Data Research

- Data is an asset that never depletes, never wears out, and can be used across unlimited use cases at near zero marginal cost

- **Economic Multiplier Effect**: an increase in spending produces an increase in value greater than the initial amount

Customer point of sales data

Sales

Promotional effectiveness

+2.5%

Marketing

Customer acquisition

+2.0%

Call Center

Customer retention

+3.5%

Product Dev

New product intro

+2.6%

Source: Bill Schmarzo “Big Data MBA” Course Curriculum

“Economics of Data™“ Playing Cards

Intellectual Capital "Rubik's Cube" Challenges

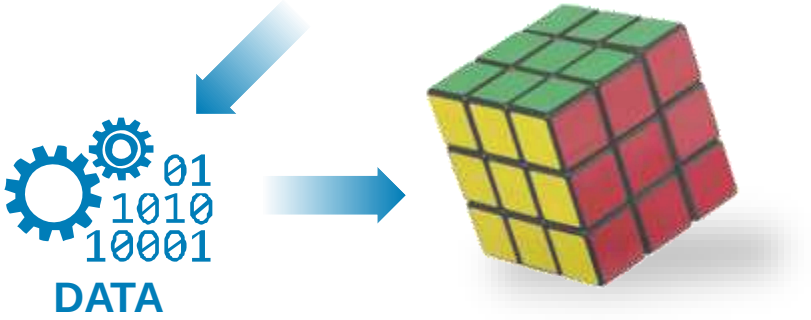
- How does the organization **determine the economic value of its data** in order to drive prioritization and investment decisions?
- How does the organization **avoid data silos** and **shadow IT spend** that thwarts potential value of data?
- How does the organization avoid the disillusionment of "**orphaned analytics**"?
- How does the organization leverage an asset that never depletes, never wears out, and can be used across unlimited number of use cases at near zero marginal cost?

Source: Bill Schmarzo "Big Data MBA" Course Curriculum

Intellectual Capital "Rubik's Cube" Solution

USE CASES

Clusters of **decisions** around common subject area in support of organization's key **business initiatives**



DATA

Detailed historical transactions coupled with internal unstructured and publicly-available data sources

ANALYTICS

Data transformed into actionable analytic insights (scores, rules, propensities, segments, recommendations)

Source: Bill Schmarzo "Big Data MBA" Course Curriculum

“Economies of Learning” versus “Economies of Scale”

- “Economies of Scale” have given large enterprises unsurmountable market advantages through exploitation of mass production, distribution and marketing.
- In knowledge-based industries, “**Economies of Learning**” more powerful than the “**Economies of Scale**”
- **Today, every industry is becoming a knowledge-based industry**

SMART CITY

SMART FACTORY

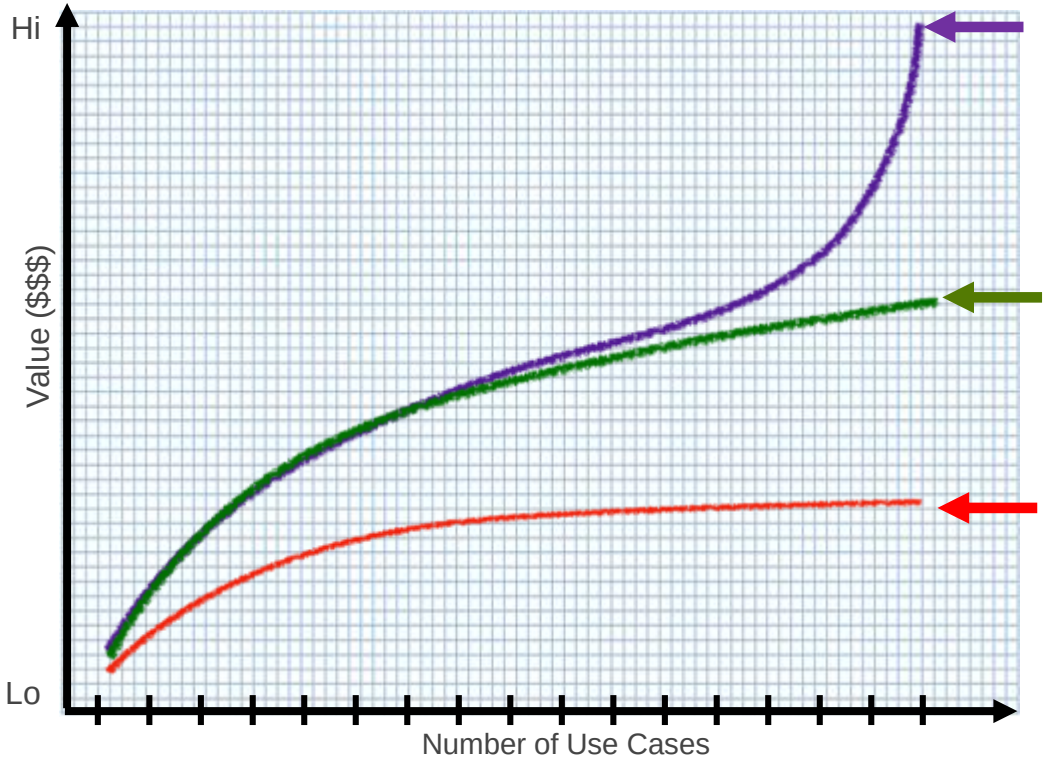
SMART AIRPORT

SMART HOSPITAL

Source: Bill Schmarzo “Big Data MBA” Course Curriculum

Schmarzo Economic Digital Asset Valuation Theorem

In knowledge-based industries, “Economies of Learning” more powerful than “Economies of Scale”



Effect #3: Economic Value Accelerates

- *Refining* Analytic Module predictive effectiveness ripples thru previous use cases that use that Analytic Module

Effect #2: Economic Value Grows

- Cumulative financial and operational value grows use case by use case

Effect #1: Marginal Costs Flatten

- Reusing “*curated*” data and analytic modules reduces marginal costs for new use case (no data silos or orphaned analytics)

Source: Bill Schmarzo “Big Data MBA” Course Curriculum

Data is not the new oil.

Data is the new sun.

UNIVERSITY OF SAN FRANCISCO

University of San Francisco Economic Value of Data Research Project

Data is unlike any other corporate asset

It never depletes

It never wears out

Same data set can be used across infinite use cases

Source: Bill Schmarzo “Big Data MBA” Course Curriculum

Thank You!

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Top-ranking Blogs

- To Achieve Big Data's Potential, Get It into the Boardroom
- Big Data Business Model Maturity Index
- 6 Laws of Digital Transformation
- History Lesson on Economic-Driven Business Transformation
- User Experience: The New King of the Business
- IOT: Transitioning from Connected to "Smart"
- Learning How to "Think Like a Data Scientist"

Contact Information

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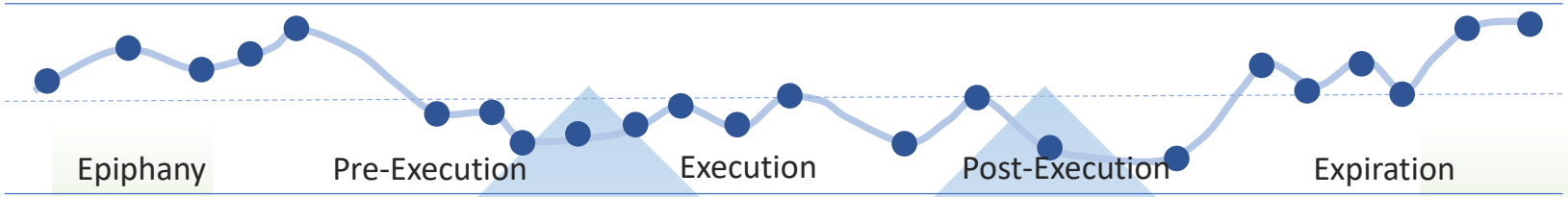
Digital Transformation Value Creation Mapping

Digital Transformation sweeps aside traditional industry borders to create and capture new sources of customer, product and operational value

Identifying Sources of Value Creation



Codifying Sources of Value Creation

Operationalizing Sources of Value Capture