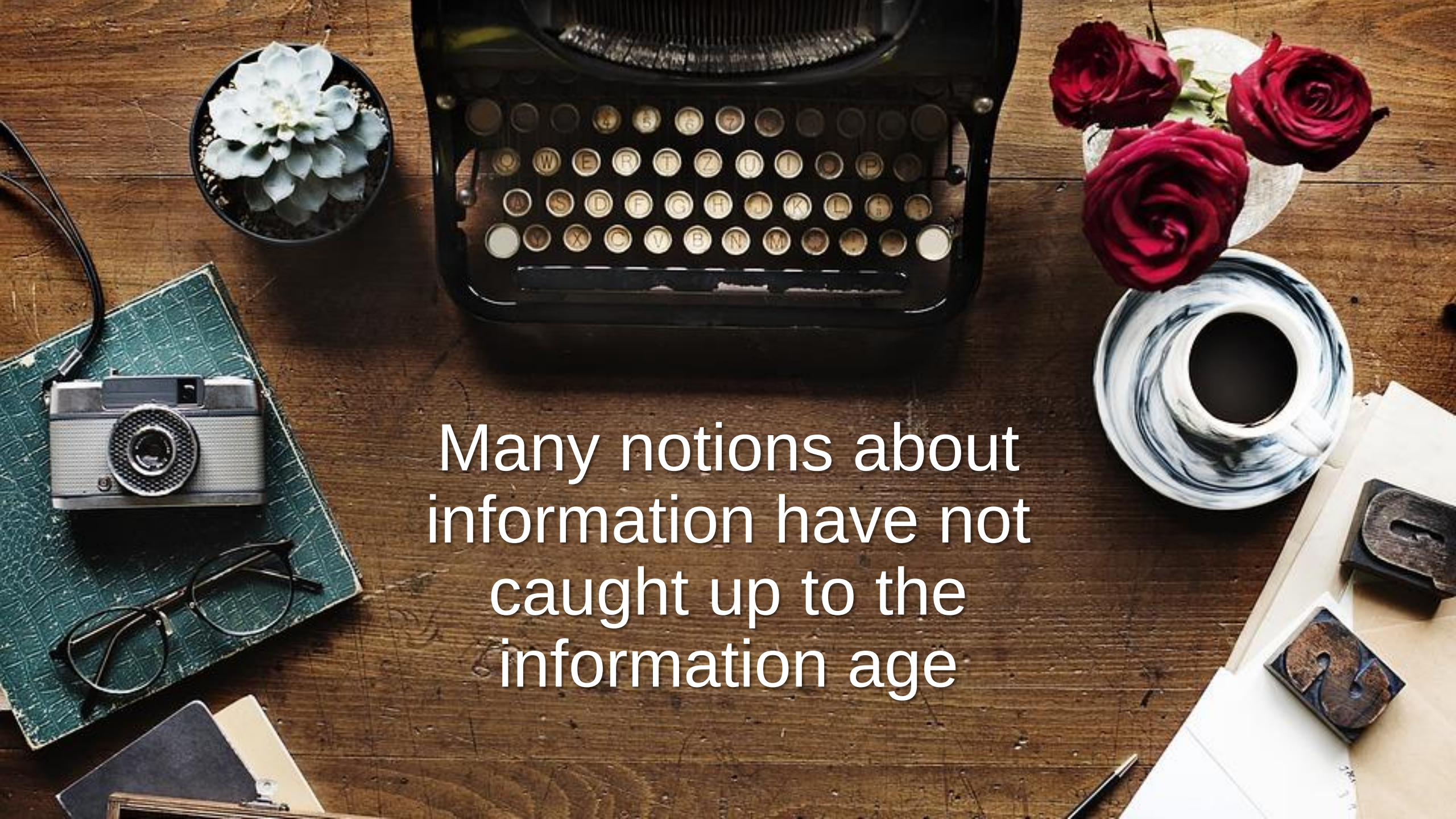
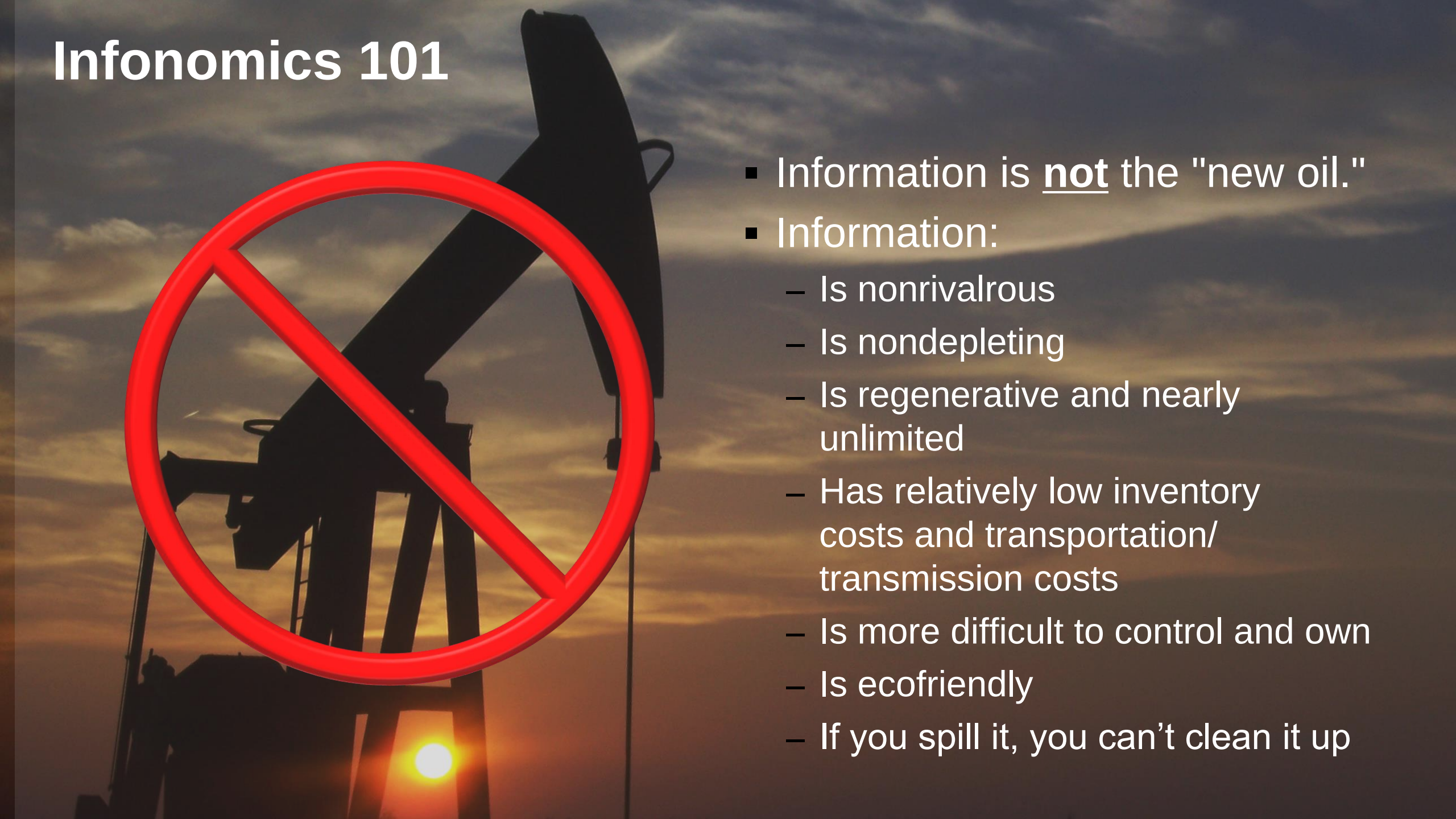
Infonomics

Monetizing, Managing and Measuring Information as an Asset

Douglas Laney
@Doug_Laney


Many notions about information have not caught up to the information age

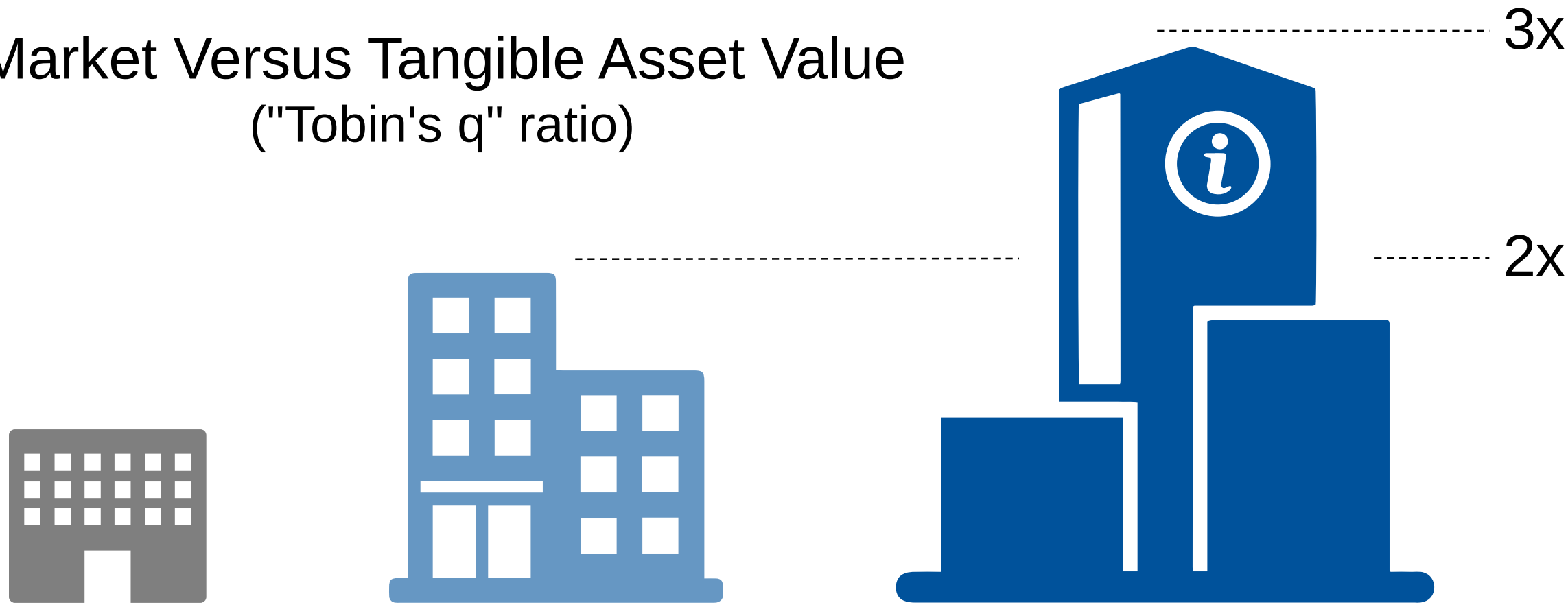
Infonomics 101



- Information is **not** the "new oil."
- Information:
  - Is nonrivalrous
  - Is nondepleting
  - Is regenerative and nearly unlimited
  - Has relatively low inventory costs and transportation/ transmission costs
  - Is more difficult to control and own
  - Is ecofriendly
  - If you spill it, you can’t clean it up

Information-Centric Organizations Receive Higher Market Valuations

Market Versus Tangible Asset Value
("Tobin's q" ratio)



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Everyone Agrees and Nobody Agrees: "What Is Information?"

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Data Strategy versus Reality

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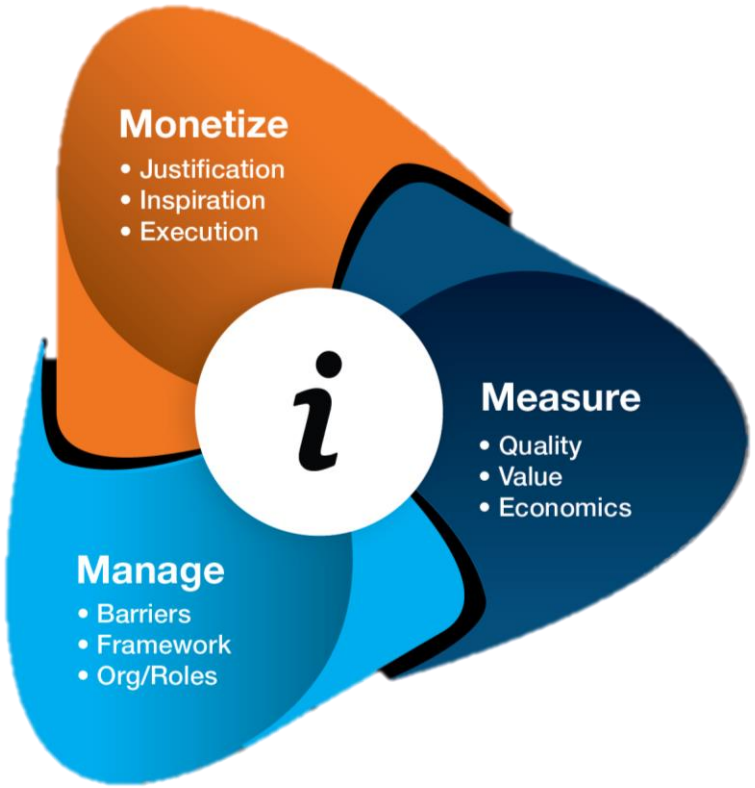
The 3-Dimensional Challenges and Opportunities of Infonomics



Monetizing Information

Generating measurable economic benefits from or attributable to available information assets

Managing Information

Applying traditional asset management principles and practices to information

Measuring Information

Gauging and improving information's economic characteristics

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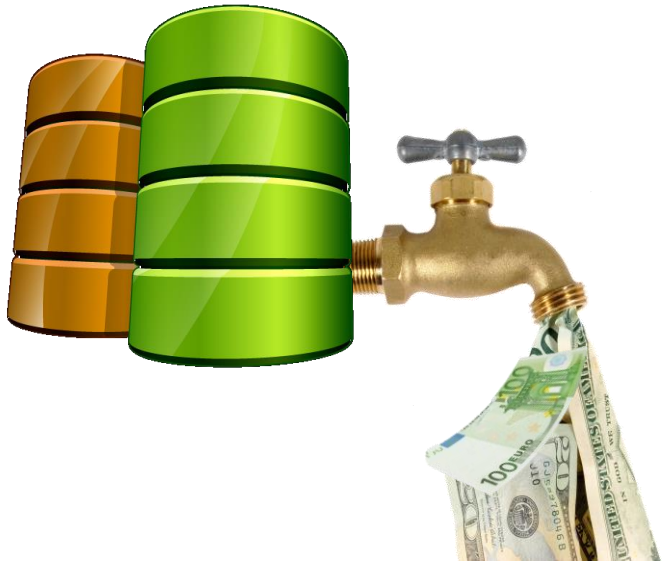
Monetizing Information as an Asset

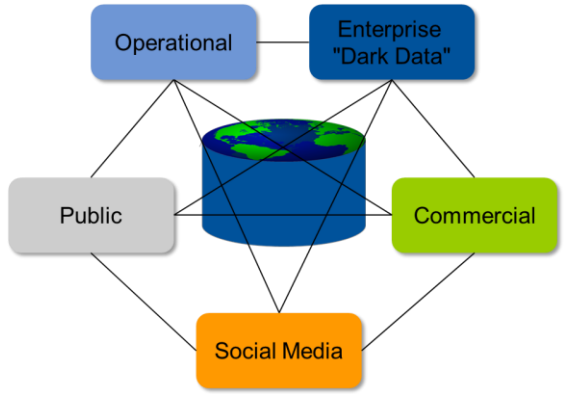
The Benefits of Information Monetization

- Create a supplemental **revenue** stream or new line of business
- **Barter** for goods/services at a discount or with favorable T&Cs
- Compel enterprise **information management/ governance** improvements
- **Defray costs** of enterprise information management and business analytics
- Impress investors; improve market-to-book corporate **valuations**
- Enable **competitive differentiation**
- Strengthen partner, supplier, customer relationships



Methods to Monetizing Information as an Asset

1. Establish an information strategy or information product function
2. Inventory your available information assets
3. Draw inspiration from and adapt how others have monetized data
4. Identify ways to generate direct and indirect revenue streams from each information asset
5. Test monetization ideas for feasibility
6. Prepare data and establish market
7. Gauge success and alter strategy/tactics as necessary



Art of the Possible™

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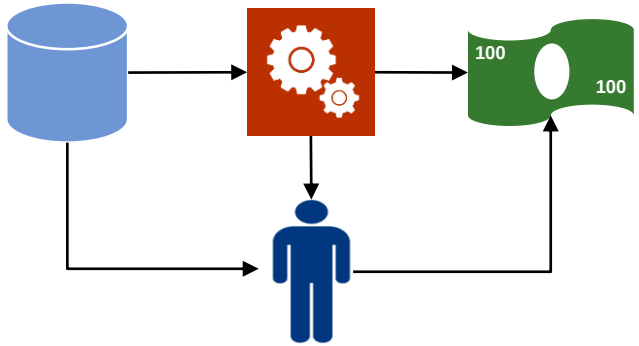
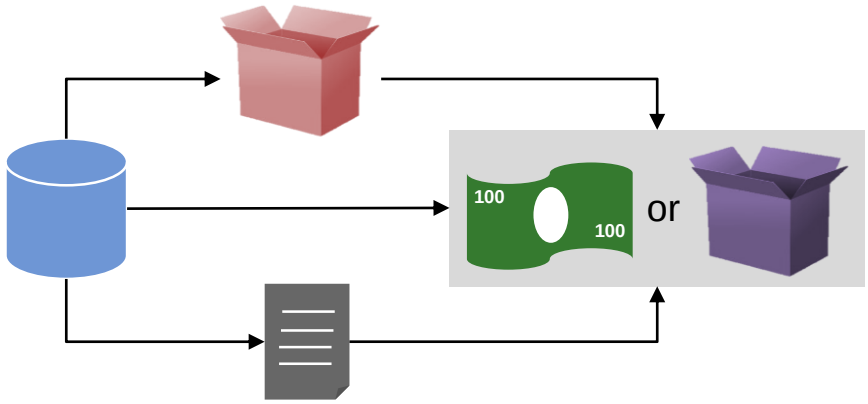
Generating Myriad Economic Benefits from Information



INDIRECT DATA MONETIZATION

- Using data to improve efficiencies
- Using data to develop new products, markets
- Using data to build and solidify partner relationships
- Branded indices



DIRECT MONETIZATION

- Bartering/trading with information
- Information-enhanced products or services
- Selling raw data through brokers
- Offering data/report subscriptions

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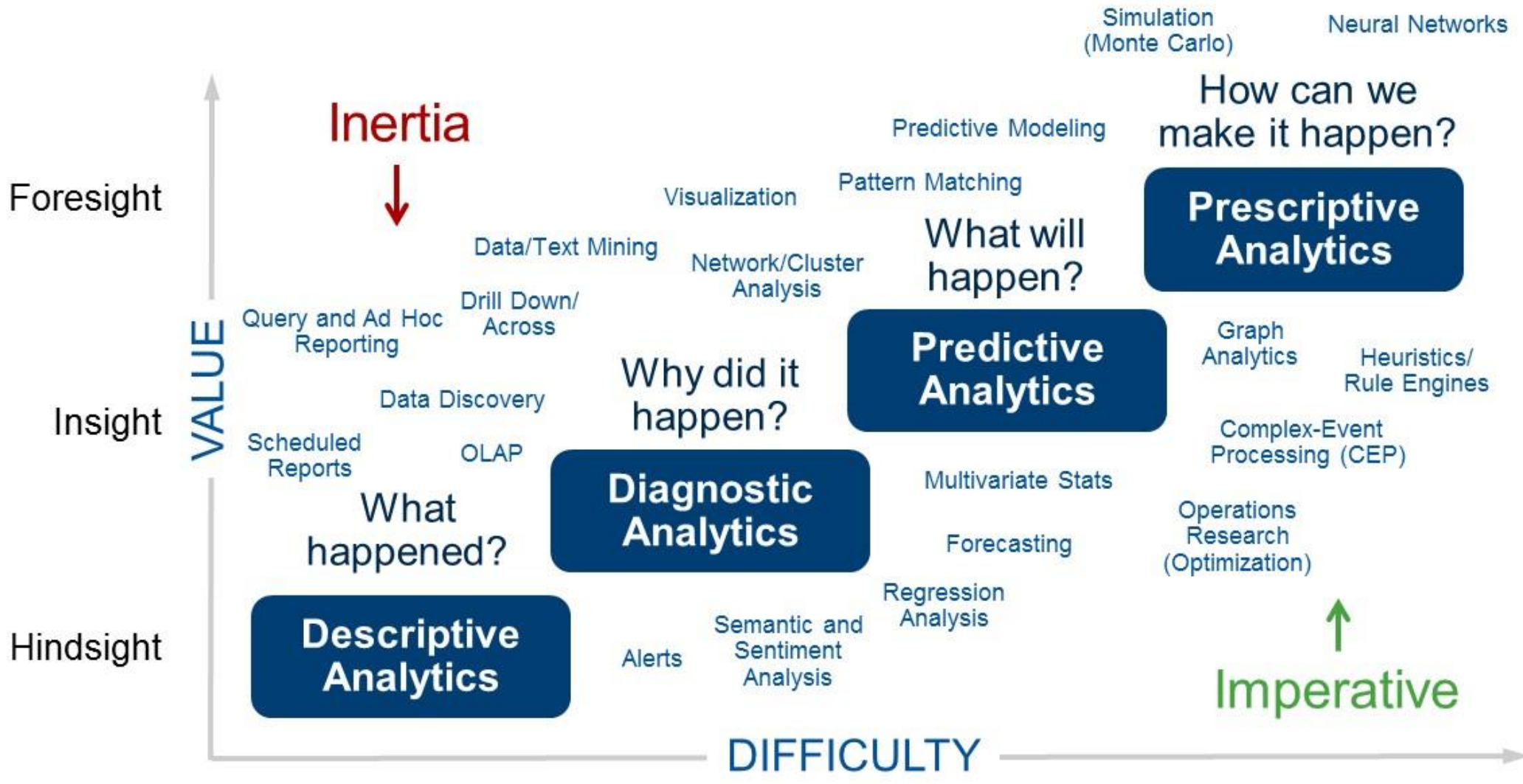
The Gartner Analytic Continuum



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Information Monetization Examples

@WalmartLabs

LOCKHEED MARTIN

DOLLAR GENERAL

POINT DEFIANCE ZOO & AQUARIUM

ÍSLENDINGABÓK

Social Media	Project Content	Sales and Inventory Data	Customer Data	Genealogy Data

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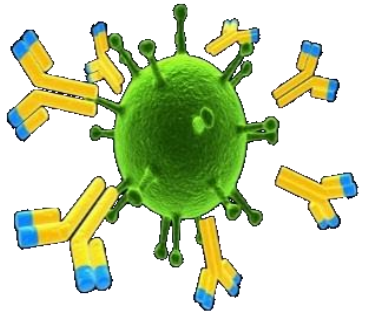
Microscopic Big Data

- Opportunity:
  - Improve on the antiviral efficacy of antibodies by developing synthetic ones.
- Data and Analytics:
  - Analyzing 10s of billions of short DNA sequences in the creation of customized *thioaptamers*.
- Results:
  - Broader range of diagnostic and therapeutic uses than antibodies.
  - Faster to develop and higher quality than antibodies.
  - Greater shelf-life and ease of handling than antibodies.
  - No inherent immune responses.

AMBiotech



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Instrumentation and Analytics Is Now a Racket

- Opportunity:
  - Improve tennis player consistency, power and strategy.
- Data and Analytics:
  - Integrated tennis racquet sensors and algorithms determine the strength of impact, point of impact, spin, the way the racquet is moving, twisting or turning, and number of forehand vs. backhand shots.
  - Streams data via Bluetooth to mobile dashboard.
- Results:
  - Enables advanced players to optimize power vs. spin, and adjust their stroke and shot selection for future matches.
  - Compare your shots to those of top pros.
  - Discovered top players get the most power from hitting the ball slightly above center.

Squeezing Every Drop of Data

- Opportunity:
  - Inconsistencies in orange juice due to variations in orange crop, sourcing and seasonality.
- Data and Analytics:
  - "Black Book" model algorithm developed by Revenue Analytics crunches data from up to one quintillion data points including satellite images, weather, expected crop yields, cost pressures, regional preferences and detailed data about the 600 flavors that comprise an orange, plus variables such as acidity and sweetness.
- Results:
  - Precise dynamic formula for how to blend orange juice for consistent taste, including pulp content, for its $2B orange juice business.
  - After a hurricane or freeze, it can replan the business in 5 to 10 minutes.

Sniffing and snuffing insurance fraud

- Opportunity
  - Save and make money by reducing fraudulent auto insurance claims
- Data and Analytics
  - Predictive analytics against years of historical claims and coverage data
  - Text mining adjuster reports for hidden clues, e.g. missing facts, inconsistencies, changed stories
- Results
  - Improved success rate in pursuing fraudulent claims from 50% to 88% and claim investigation time by 95%
  - Additional $12 million in subrogation recoveries
  - Marketing to individuals with low propensity for claim fraud

INFINITY.

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Oh Baby! (宝宝)

- Opportunity:
  - Chinese families often want to give their babies English names for future study or business in Western countries.
- Data and Analytics:
  - A 16-year old British schoolgirl developed a website to match a dozen desired personality traits selected by the parents, along with the gender, to a database of English names.
  - Candidate names are shared on WeChat social media platform with family and friends to help make a final decision.
  - After the name is chosen, a printable certificate is generated with the name, its meaning and examples of famous people with that name.
- Results:
  - Has named nearly 250,000 Chinese babies to-date (September 2016), and has generated almost £50,000.
  - Avoids embarrassing names like Gandalf or Cinderella pulled from films.

Special Name 菜单

This University Is Transforming Education Quality Through Big Data

- Opportunity:
  - Georgia State University was facing student advisor crunch and wanted to improve graduation rates by optimizing available resources.
- Data and Analytics:
  - Took help with a consulting firm, EAB and analyzed 2.5 million grades records over 10 years to create a list of factors that hurt chances for graduation.
  - Applied predictive analytics and built the Graduation and Progression Success early warning system prompting 10,000 student-advisor meetings per year
- Results:
  - Graduates are getting that degree an average half a semester sooner than before, saving an estimated $12 million in tuition.

Strategic Planning Assumption

By 2020, 10% of organizations will have a highly profitable business unit specifically for productizing and commercializing their information assets.

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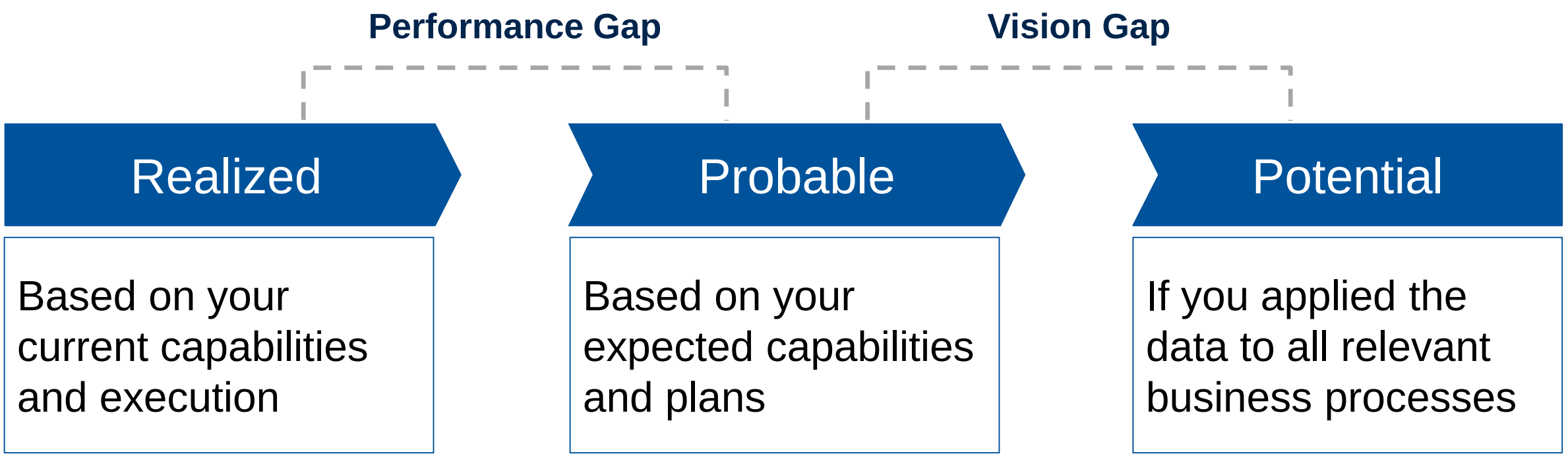
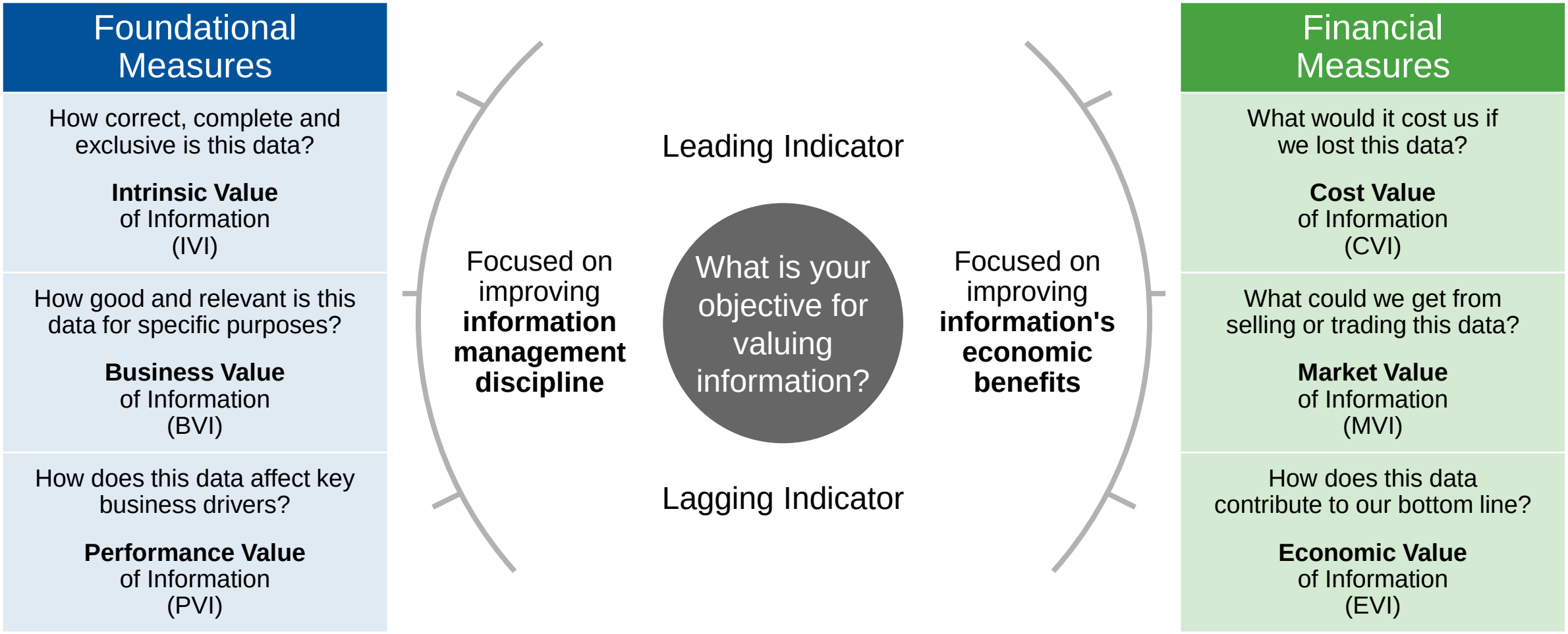
Three Degrees of Information Value



Gartner Information Valuation Models



Source: "Why and How to Measure the Value of Your Information Assets" (G00277972)

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Key Issues

1. Why is understanding the value of information a critical skill?
2. How to begin or expand your information monetization effort?
3. What are inspirational examples of information monetization?

Managing Information as an Asset

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Manage Information by Borrowing From Traditional Asset Management Practices

Material

Inventory

Maintenance

Security

Training

Credit

Roles

Disposal

Hiring

Financial

Workforce

Investment

Leverage

Volatility

Portfolio Management

Teams

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Maturing Through Applied Asset Management Principles, Standards and Practices

Information Asset Management

- Inventorying / cataloging
- Curation
- Tracking / utilization
- Rights and responsibilities
- Measurement and condition
- Licensing
- Customer needs / context
- Services / continuous Improvement
- Defensible solutions (e.g. disposal)
- Versioning, derivatives, retention
- Collaboration and communication
- Operations
- Corrective vs. preventative maintenance
- Repair vs. replacement
- Loss/damage risk assessment
- Advocacy and fiduciary responsibilities
- Economic strategy
- Etc.

Physical Asset Management (PAS-55)
Supply Chain Management (SCOR)
Financial Asset Management
ITAM / SAM (ISO 19770)
IT Service Management (ITIL)
Knowledge Management (KCS)
Human Capital Management (P-CMM)
Library Science (IFLA)
Records Management (ISO 15489)
Intellectual Property Management

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Generally Accepted Information Principles

Assumptions

Asset Assumption

Proprietorship Assumption

Appraisal Assumption

Dominion Assumption

Benefit Assumption

Constraints

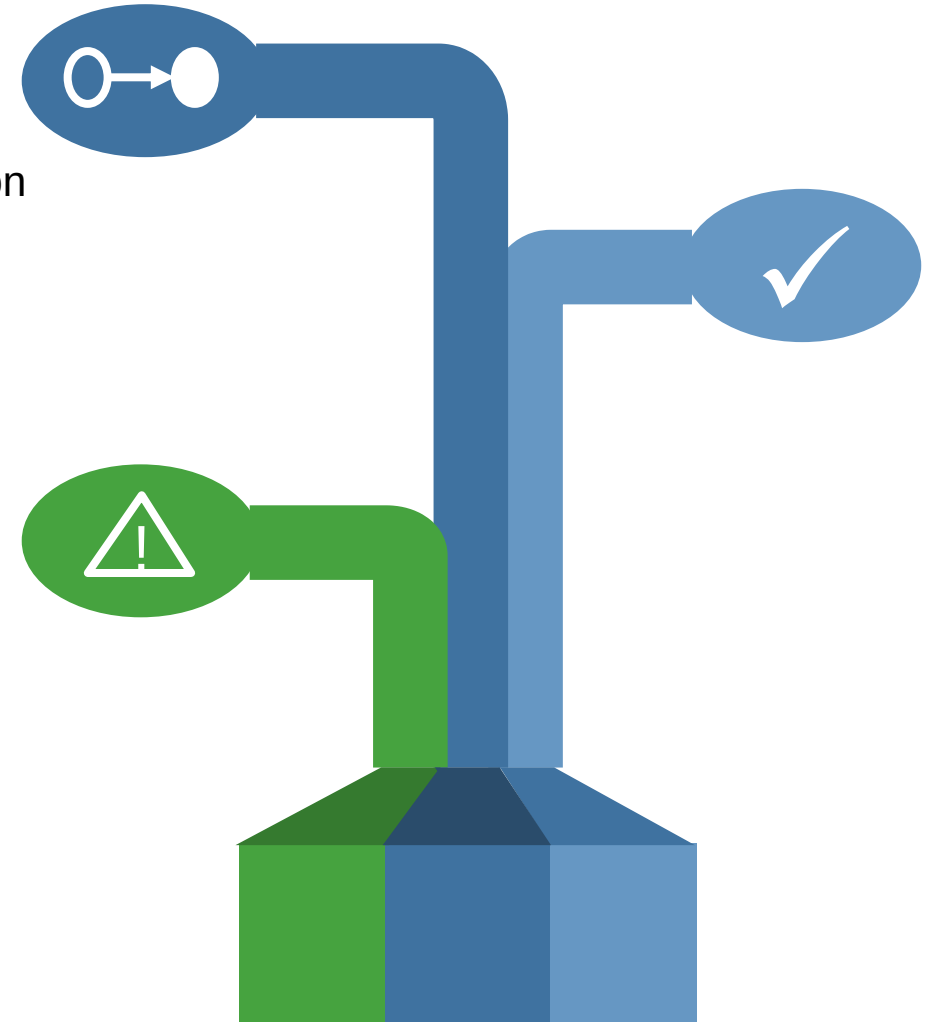
Specificity Constraint

Recognition Constraint

Jurisdiction Constraint

Valuation Constraint

Resource Constraint



Principles

Relevance Principle

Inventory Principle

Ownership Principle

Authorization Principle

Assessment Principle

Possession Principle

Replicability Principle

Optimization Principle

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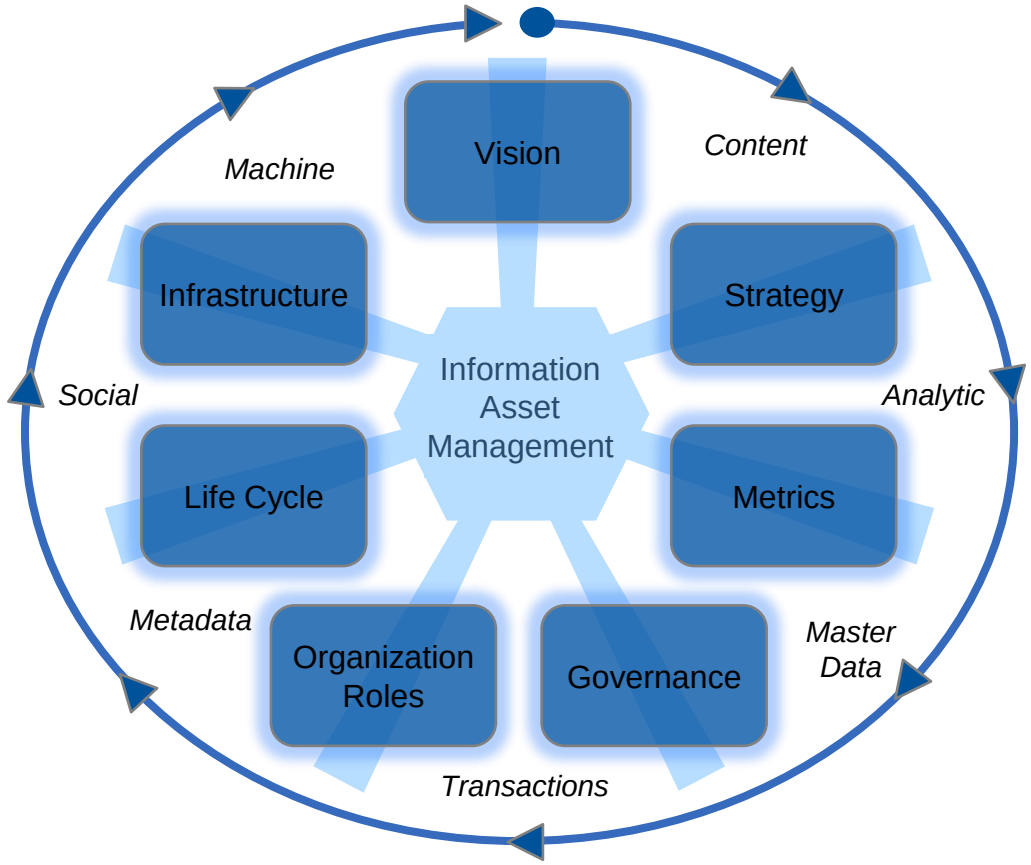
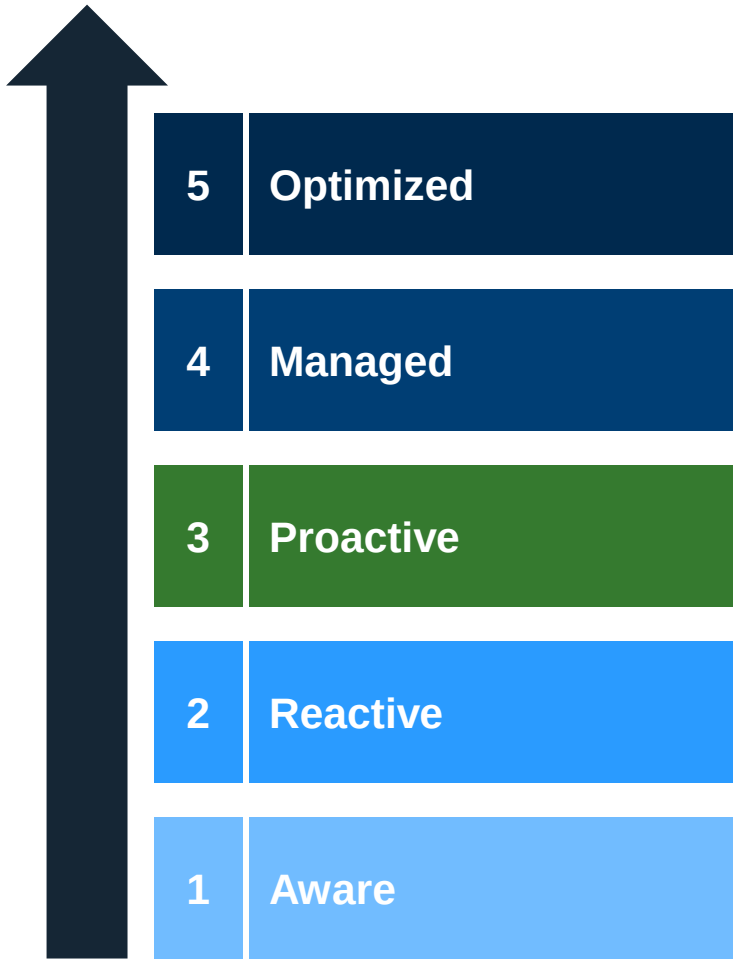
Assess and Mature Information Management Capabilities





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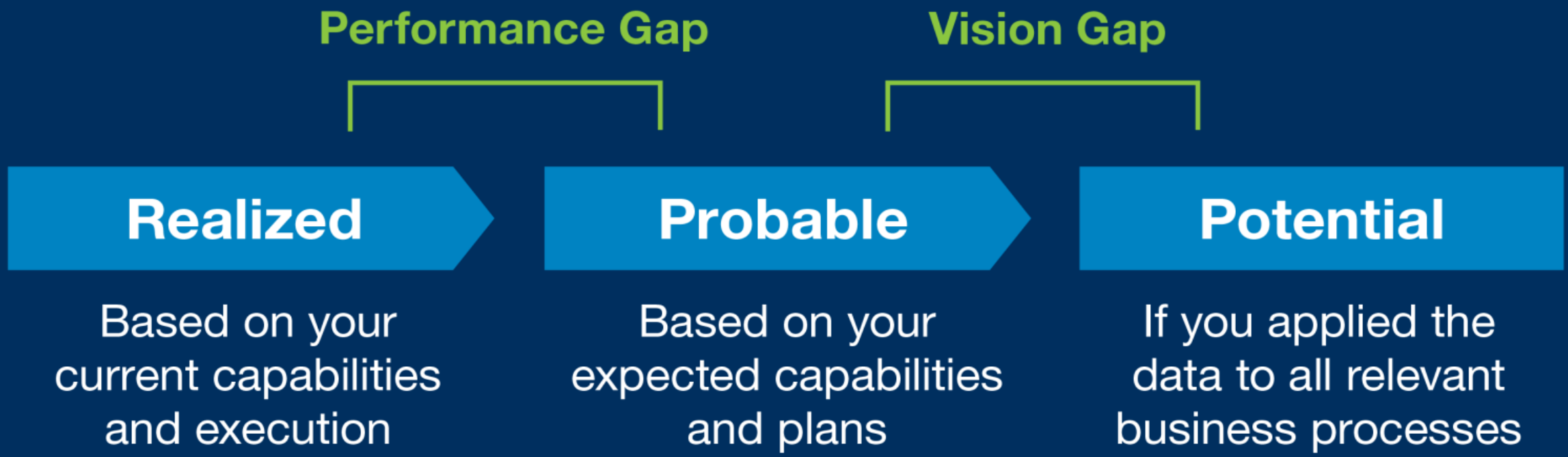
Measuring Information as an Asset

Three Degrees of Information Value



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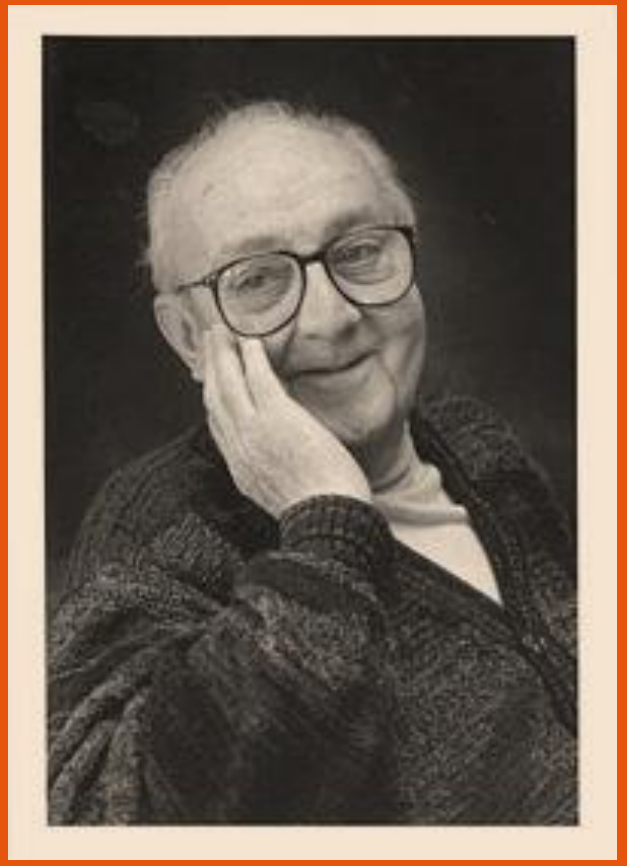
Dr. George E. P. Box



“All models are wrong, but some are useful.”

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Gartner Information Valuation Models

Foundational Measures

How correct, complete and exclusive is this data?

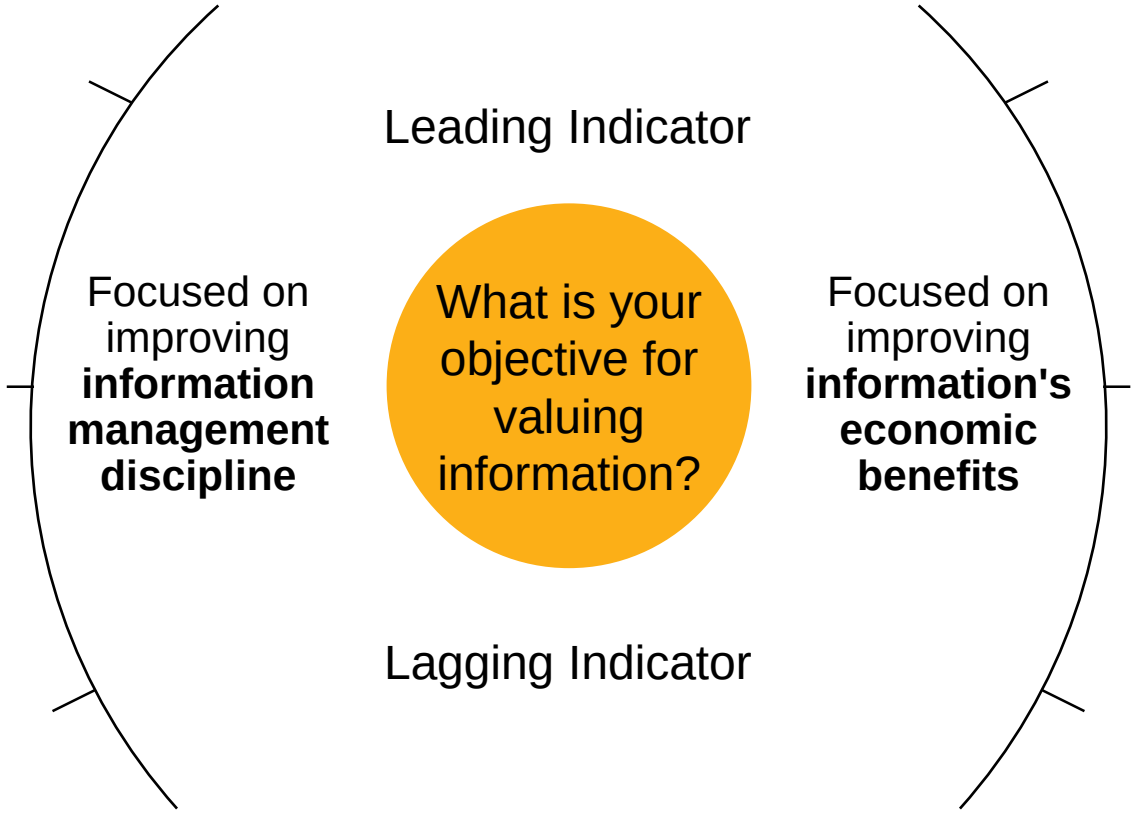
Intrinsic Value
of Information
(IVI)

How good and relevant is this data for specific purposes?

Business Value
of Information
(BVI)

How does this data affect key business drivers?

Performance Value
of Information
(PVI)



Financial Measures

What would it cost us if we lost this data?

Cost Value
of Information
(CVI)

What could we get from selling or trading this data?

Market Value
of Information
(MVI)

How does this data contribute to our bottom line?

Economic Value
of Information
(EVI)

Source: "Why and How to Measure the Value of Your Information Assets" (G00277972)

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Gartner Information Valuation Models

Foundational Measures	
How correct, complete and exclusive is this data? **Intrinsic Value** of Information (IVI)	$IVI = Validity * Completeness * (1 - Scarcity) * Life\ Cycle$
How good and relevant is this data for specific purposes? **Business Value** of Information (BVI)	$BVI = \sum_{p=1} (Relevance_p) * Validity * Completeness * Timeliness$
How does this data affect key business drivers? **Performance Value** of Information (PVI)	$PVI = \left[\left(\frac{KPI_i}{KPI_c}\right) - 1\right] * T/t$

Source: "Why and How to Measure the Value of Your Information Assets" (G00277972)

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Gartner Information Valuation Models

$$\mathbf{CVI} = \frac{\mathbf{ProcExp} * \mathbf{Attrib} * \mathbf{T}}{t} \left\{ + \sum_{\mathbf{p}=0}^{\mathbf{n}} \mathbf{Lost\ Revenue}_p \right\}$$

$$\mathbf{MVI} = \frac{\mathbf{Exclusive\ Price} * \mathbf{Number\ of\ Partners}}{\mathbf{Premium}}$$

$$\boldsymbol{EVI} = \left[\mathbf{Revenue}_i - \mathbf{Revenue}_c - (\boldsymbol{AcqExp} + \boldsymbol{AdmExp} + \boldsymbol{AppExp})\right] * \mathbf{T/t}$$

Financial Measures

What would it cost us if we lost this data?

Cost Value of Information (CVI)

What could we get from selling or trading this data?

Market Value of Information (MVI)

How does this data contribute to our bottom line?

Economic Value of Information (EVI)

Source: "Why and How to Measure the Value of Your Information Assets" (G00277972)

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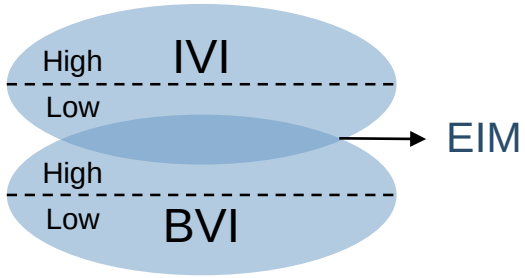
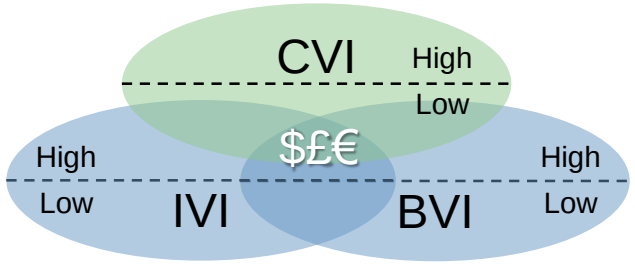
Six Ways to Combine the Information Valuation Models



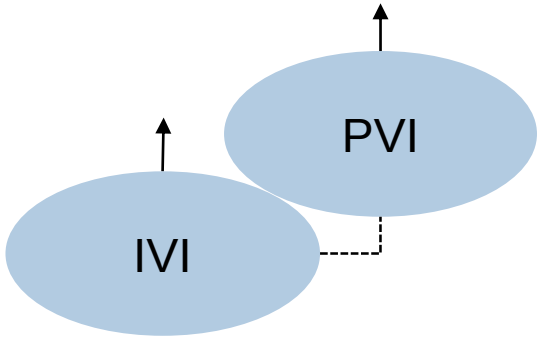
INVESTMENT:

Prioritize and fund information management initiatives for information assets with low intrinsic value and high business value.



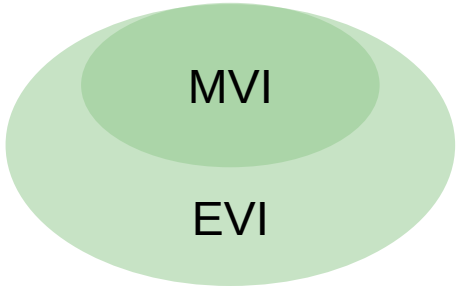
MONETIZE/ANALYTICS:

Determine the market ability of information assets, i.e., those with high quality, low cost and high external business relevancy.



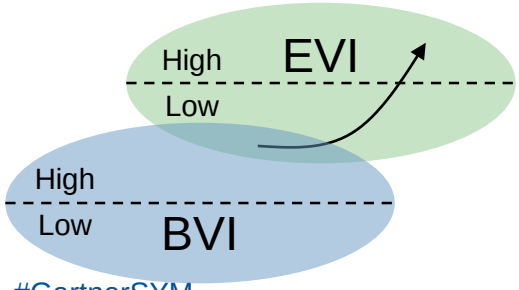
GOVERNANCE:

Gauge how improving data quality metrics (intrinsic value) affects key performance indicators.



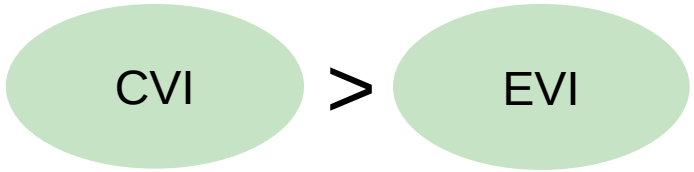
ENHANCED VALUE:

Determine how much additional economic value can be achieved by monetizing information assets.



INNOVATION/DIGITAL:

Identify information with high potential business relevance that could be driving more economic benefits.



LIFE CYCLE EXPENSE:

Dispose off information that costs more to capture and retain than its economic benefits.

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Information Valuation Models in Practice

Major global retailer

We prioritized analytics initiatives

- Evolved from "squeaky wheel" IT funding model
- Focused on data accessibility to benefit the enterprise
- Quantified and reported on data quality issues

Healthcare services company

- Move beyond copy-cat budgeting and "blunderfunding"
- Measure information risks and liability
- Treat information as an asset

We are validating our data protection investments

Information Valuation Models in Practice (Continued)

Global financial services firm

We're changing employee behavior

- Improving information management practices
- "Putting dollar signs on data"
- Redefining information-related roles

Software-as-a-service company

- Quantifying the value of software usage data
- Identifying ways to generate economic value from data
- Improving customer experience, attracting partners

We identified ways to monetize data

Information Valuation Models in Practice (Continued)

Utility company

We reduced infrastructure costs by over $1M/year

- Identified and measured the cost of "dark data"
- Measured the economic value of this data
- Made a *defensible disposal* decision to delete the data

Security system company

- Measured the business relevancy of various data
- Measured the economic value generated by this data
- Innovated with data having high potential and low value

We improved our market valuation by $300M via information innovation

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What Would You Say? How Would You Prove It?

Your Board of Directors

What is our organization's information worth?

How are we maximizing the ways its monetized?

How are we treating it like any other asset?

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Strategic Planning Assumption

By 2021, the prevalence of equity analysts valuing organizations' information portfolios in valuing businesses themselves will spark formal internal information valuation and auditing practices.

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Bottom Line: Help your organization or clients…

- ✓ Monetize your (and others) information in a wide variety of ways
- ✓ Manage your information with the same discipline as your other assets
- ✓ Measure and improve your information's potential and realized value

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"We finally have a road map for those seeking entry to the Information Age. If you read one business book this year, Infonomics should be the one." — **Phil Fasano, former EVP and CIO at AIG and Kaiser Permanente**

"Infonomics is a must read for business leaders who intend to succeed in data monetization, a requisite organizational capability for firms competing in the Digital Economy." — **Barb Wixom, MIT Center for Strategic Information Research**

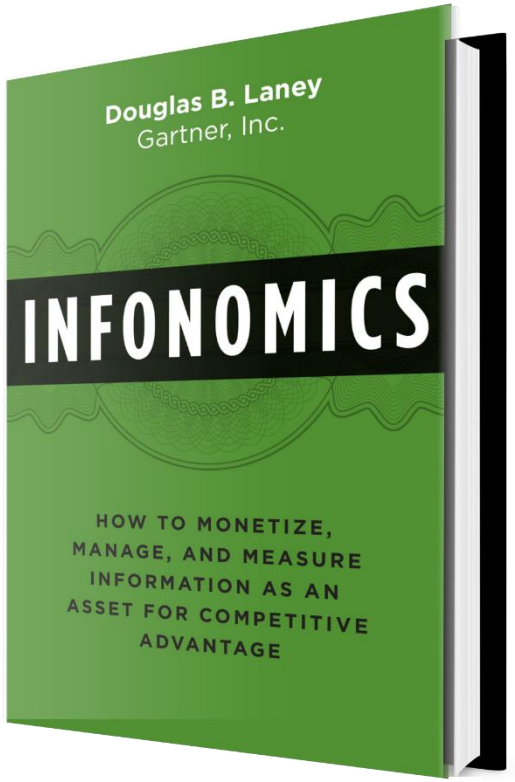
"This is the first book that I have seen that tackles this new frontier and addresses the economics of information. Infonomics as a discipline could and should change the way we make business decisions and the way we value companies." — **Gerry Pennell, Chief Information and Technology Officer, International Olympic Committee**

"We will one day look back at Doug's work and say, it is the groundbreaking work that firmly put data and data leadership in the middle of the business arena." — **Althea Davis, Chief Data Officer, ABN AMRO**

"'Infonomics' provides any digital leader with a focus on data with a new set of ideas and concepts that will enable an explosion of value from data to be created." — **Richard Corbridge, CIO, HSE Ireland**

"I immediately notified my colleagues about this book as soon as I read it." — **Raghu Katakam, CIO and Adjunct Faculty, Northwestern University**

"I believe this book and Laney's concepts will ignite further research and innovations in economics, data management and business innovation." – **Dr. Rich Wang, CDO, State of Arkansas**



www.gartner.com/infonomics

Instructor/study Guide Available

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