INFONOMICS

THE NEW ECONOMICS OF INFORMATION

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Our notions of information predate the Information Age
Information is **not** the “new oil”

And, it’s impossible to clean-up if you spill it.

Information is:

✓ Non-rivalrous
✓ Non-depleting
✓ Regenerative
✓ Nearly limitless
✓ Easily transported
✓ Cheaper to store
✓ Easier to steal
✓ Doesn’t degrade
✓ More ecological
✓ Has no alternative
Established in 2001
• Award-Winning Consultancy
• Foundation Built on Data
• Strategists, Architects, Engineers, Analysts, Scientists

Data Ecosystem Reengineering
• Data Lake Architecture
• Data Warehousing
• Data Orchestration & Migration

Caserta Background

Strategic Consulting
• Analytics & Data Science
• Data & Analytics Strategy
• Data Monetization & Valuation
• Chief Data Officer Advisory

Advanced Technical Implementation
• Data Architecture
• Data Engineering
• Artificial Intelligence

Helping Clients Treat and Deploy Information as an Actual Asset
Is Information an Asset?

An item of property owned by a person or company, regarded as having value and available to meet debts, commitments, or legacies.

A single item of ownership having exchange value or convertible into cash. Or the total resources of a person or business such as cash, notes, and goodwill.

An asset is a resource with economic value that an individual, corporation or country owns or controls with the expectation that it will provide a future benefit.

Asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity.

Assets are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events.

Any economic resources (tangible/intangible) that can be owned or produce value. Assets have a positive economic value.
Investors are impressed by information-centric companies

Average Company

Infosavvy Companies

Infoproduct Companies

2X market-to-book value*

3X market-to-book value*

*Tobin's “q” ratio
What is information? [Nobody agrees, and everybody agrees.]

CEO: Information is one of our greatest competitive assets.

CFO: Information is one of our most risky assets.

COO: Information is one of our greatest performance assets.

Consultant: Data vs. information vs. knowledge vs. wisdom… bla-bla-bla…

CIO: Information is one of our greatest pains in the asset.
The Caserta Strategy Approach: Helping Clients Treat Information as an Actual Economic Asset

“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 Insurance

“Closing the ‘knowing-doing’ gap when it comes to treating information as an asset.”

— Jonathan Copulsky, Senior Partner, Deloitte

“Doug quite literally wrote the book on what our team is trying to achieve day to day.”

— Ryan den Rooijen, Global Director of Data Services, Dyson

Must-Read Book of the Year.
Introducing Infonomics: Treating information as an actual asset

MONETIZING INFORMATION
Generating economic benefits from available information assets

MANAGING INFORMATION
Applying asset management principles and practices to information

MEASURING INFORMATION
Gauging and improving information’s economic characteristics
INFORMATION AS AN ASSET
MONETIZING | MANAGING | MEASURING
Generating Myriad Economic Benefits from Information

INDIRECT DATA MONETIZATION

- Improving process performance or effectiveness
- Reducing risk / improving compliance
- Developing new products or markets
- Building and solidifying partner relationships
- Publishing branded indices

DIRECT MONETIZATION

- Bartering/trading with information
- Enhancing products or services with information
- Selling raw data through brokers or data markets
- Offering insights, analyses and reports
- “Inverted” data monetization
Methods to Monetizing Information

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 economic benefits 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

THE SEVEN SOURCES OF DATA

Your largest sources of data aren’t those you own, they are those you don’t.
Scale the Analytics Continuum

Source: Gartner
Information Monetization Examples

- Sales and Inventory Data
- Social Media
- Project Content
- Customer Data
- Genealogy Data
- IoT
- Multimedia Content
- Location Data
Infonomics Study Eye-Opener:

Organizations with a C-level CDO, are 3x more likely to generate non-monetary commercial value and 7x more likely to generate monetary value from their data externally.
INFORMATION AS AN ASSET
MONETIZING | MANAGING | MEASURING
When data strategy and reality diverge…
Borrowing from Physical Asset Management

- Raw materials
- Unfinished inventory
- Finished goods
- Storage
- Maintenance (planned and unplanned)
- Replacement
- Standardization
- Disposal
- Transportation
- Resource training
- Safe handling
- Security
Borrowing from Financial Asset Management
Borrowing from Human Capital Management

- Recruiting
- Hiring
- Training
- Staffing
- Roles
- Teams
- Performance reviews
- Reduction in force
- Termination
- Outsourcing
- Temporary workers
Sources of Asset Management Inspiration

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
Understanding and applying information asset primitives

The Information Value Chain
The Information Value Chain

Application
- How is information providing business benefit

Administration
- What are we doing to add value to the information

Acquisition
- Where are we getting information from

VALUE
Information Asset Primitives

Acquisition:
- Generate
- Trade
- Capture
- Search
- Purchase
- Observe
- Rent
Information Asset Primitives

Application

Administration

Acquisition

VALUE
The basis of every great data strategy

Generally Accepted Information Principles
<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Constraints</th>
<th>Tenets</th>
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**Generally Accepted Information Principles**
Assumptions

Assumptions are agreed-upon basic beliefs about information. They guide our understanding about how information assets can and should be perceived, managed, and deployed.
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

**Tenets**
- Relevance Principle
- Inventory Principle
- Ownership Principle
- Authorization Principle
- Assessment Principle
- Possession Principle
- Replicability Principle
- Optimization Principle

Information should be considered and treated as an asset, because it meets each of the asset criterion.
An organization’s information assets include all forms of data and content of discernible identifiability for which it can claim ownership and/or exclusive control.
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Information has uses well beyond its original purpose, does not deplete when used, and can be used simultaneously for different purposes.
Generally Accepted Information Principles

Constraints

Constraints are general information regulations, confinements, or bounds. They acknowledge the limits of how well information assets can be monetized, managed, and measured, and therefore restricts how absolutely the tenets can be applied.
### Generally Accepted Information Principles

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The groupings of data or content that comprise an “information asset” will vary from one use case or organization to another.
Tradeoffs among information asset quality, availability, and accessibility are inevitable.

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Generally Accepted Information Principles

Tenets

Tenets are generally agreed-upon axioms that dictate how information assets should be managed, and lead to more detailed guidelines, policies, procedures, and standards specific to the organization.
Generally Accepted Information Principles

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Information assets should be managed with at least the same discipline as other recognized assets.
Generally Accepted Information Principles

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Information assets should be cataloged, described, classified, related, and tracked.
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The quality characteristics, cost, value, and risks of any information asset should be knowable at any point in time, and used for prioritizing and budgeting information-related initiatives.
An information asset should be acquired or retained only if its actual or planned value is greater than its cumulative cost, or as required by laws or other regulations.

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**Tenets**
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An information asset should be duplicated only to improve its utility or availability, and only if doing so also increases its net value.

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- **Replicability Principle**
- **Optimization Principle**
Assess and mature your data & analytics capabilities

Data & Analytics Maturity

CULTURE

TECHNOLOGY

GOVERNANCE

ARCHITECTURE

DEPLOYMENT

STRATEGY

METRICS

ORGANIZATION & SKILLS

5 Optimized

4 Managed

3 Proactive

2 Reactive

1 Aware

Over 200 distinct best-practice indicators.
Infonomics Study Eye-Opener:

Organizations with CDOs are 3x more likely to share data freely across business units.
INFORMATION AS AN ASSET
MONETIZING  |  MANAGING  |  MEASURING
Three Degrees of Information Value

**Performance Gap**
- **Realized**: Based on your current capabilities and execution

**Vision Gap**
- **Probable**: Based on your expected capabilities and plans
- **Potential**: If you applied the data to all relevant business processes

Source: “Infonomics: How to Monetize, Manage, and Measure Information for Competitive Advantage”
“All models are wrong, but some are useful.”
Information Valuation Models

**Foundational Measures**

- **How correct, complete and scarce 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 did it cost to collect this data, or if we were to lose it?**
  - **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 revenue / expenses savings?**
  - **Economic Value** of Information (EVI)

**Leading Indicators** (Potential Value)

**Lagging Indicators** (Realized Value)

Improve information management discipline

Improve information's economic benefits

Source: “Infonomics: How to Monetize, Manage, and Measure Information for Competitive Advantage”
### Foundational Value of Information

**Foundational Measures**

<table>
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<th>Formula</th>
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<tr>
<td><strong>Intrinsic Value of Information</strong> (IVI)</td>
<td>$IVI = \text{Validity} \times \text{Completeness} \times (1 - \text{Scarcity}) \times \text{Life Cycle}$</td>
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<td><strong>Business Value of Information</strong> (BVI)</td>
<td>$BVI = \sum_{p=1}^{n} (\text{Relevance}_p) \times \text{Validity} \times \text{Completeness} \times \text{Timeliness}$</td>
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<td><strong>Performance Value of Information</strong> (PVI)</td>
<td>$PVI = \left[ \left( \frac{KPI_i}{KPI_c} \right) - 1 \right] \times \frac{T}{t}$</td>
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# Financial Value of Information

The financial value of information (EVI) can be calculated using the following formula:

$$EVI = [Revenue_i - Revenue_c - (AcqExp + AdmExp + AppExp)] * \frac{T}{t}$$

## Cost Value of Information (CVI)

The cost value of information (CVI) is calculated as:

$$CVI = \frac{ProcExp*Attrib*T}{t} + \sum_{p=0}^{n} Lost Revenue_p$$

## Market Value of Information (MVI)

The market value of information (MVI) is calculated as:

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

Source: “Infonomics: How to Monetize, Manage, and Measure Information for Competitive Advantage”
Applying 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 of information that costs more to capture and retain than its economic benefits.

Source: “Infonomics: How to Monetize, Manage, and Measure Information for Competitive Advantage”
Infonomics Study Eye-Opener:

Organizations with a C-level CDO are 4x more likely to be using data to transform business processes, products or services. Those with a “CDO lite” (non-exec) are 2x as likely.
INFORMATION AS AN ASSET
MONETIZING  |  MANAGING  |  MEASURING
Bonus: INFORMATION ECONOMICS
Supply and Demand

- The principle of supply and demand operates differently with information than with other assets.
  
  - Non-rivalry means the supply is infinite.
  
  - A more sophisticated function of information costs and market saturation is needed. (Game theory?)
The forces of information pricing and elasticity affect everything from data markets to data security.

- Artificial price controls are necessary
- “Open arms-length marketplaces” are just starting to emerge
- Data curation (alternative sources) is the key to keeping information prices low
Marginal Utility

- The marginal utility of information for both human and technology-based consumers of information should drive business and architecture decisions.
  - Increasingly most “consumers” of information are machines not human. Architect for this.
Opportunity Costs

- The opportunity costs of certain information assets must be factored into selecting and publishing them.
  - Externalities from consuming/publishing alternative data sources are difficult to determine
  - Traditional analytics suffers from the “endowment effect”
How the information production possibility frontier affects information-related behavior and investments.

- Common but poor rationale for weak information governance
- Embed/automate IG; model ROI
- Apply the future value of an information asset to fund innovations today
Yield Curve

- The information yield curve concept can gauge the relative affects of information asset management maturation.
  - Integrate the concepts of information monetization, management & measurement
  - Visualize the effects of info asset management maturation (or not) over time
✓ Monetize your (and others!) information in a variety of ways.
✓ Manage your information with the same discipline as your other assets.
✓ Measure and improve your information’s potential and realized value.
✓ Understand and take advantage of information’s unique economic characteristics.
Elevate Your Data Strategy

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- Follow #Infonomics on Twitter & LinkedIn
- Become certified on Infonomics via Coursera
THE RIGHT PARTNER FOR YOUR DATA JOURNEY

Transformative Strategic Consulting & Advanced Technical Implementation