



Data-driven Strategy

Infonomics in Practice

Realizing the True Value of Business Data

THE BIG DATA ERA

In recent years, society has seen an explosion in the amount of data being created and in the number of companies taking advantage of data as an important source of information. A full 90 percent of all the data in the world has been generated over the last two years alone, and the amount of data is estimated to grow by a factor of 10 by the year 2020¹. At the same time, it is reported that 1.5 million data-savvy managers are needed in the United States in order to take full advantage of this big data². Undoubtedly, we have entered into the big-data era.

The big-data era has provided huge competitive advantages for businesses that are able to integrate data into corporate decision making. For example, Apple has set up a data warehouse in which it stores and analyzes every piece of identifiable information in order to get a better understanding of its customers across product groups and the customers' actions and preferences. Walmart, another data giant, learns from data trends in social media and can entice online shoppers to purchase 10-15 percent more merchandise than they would otherwise spend. Kraft used detailed store, chain, product, stock and pricing data to improve in-store promotion configurations and grow its revenue by \$100M. UPS, by continually collecting and analyzing over 200 data points per truck along with GPS data to reduce accidents and miles driven, has saved over \$50M, delivered 35 percent more packages per year and doubled driver wages³. Prioritized, and used appropriately, big-data can yield big profits.

WHAT ARE DATA WORTH?

Despite the increasing use of business data and the apparent benefit it has created for companies, it is currently not being valued as an asset on the balance sheet and has not been assigned any economic value. It wasn't until 9/11 that this problem was brought into focus. "After 9/11, when some companies attempted to submit claims to their insurers for the value of the data they lost, the US Insurance Service Office (ISO) revised the Commercial General Liability Policy template to explicitly exclude coverage for information assets, saying that the lost value of the hardware would be reimbursed, but data would not because it has no discernible value."⁴

While information and data is indeed valuable, there are legitimate reasons against prescribing it as a balance-sheet item. First, from an accounting perspective, information is not identical to other intangible assets such as copyrights or patents. Usually, information has no definite life span, nor can it be amortized or tested for impairment as a normal asset. Second, even if information has a definite life span, not every piece of information or data provides value. Some is critical to the business while other information is not. Consider, for example, information about the design of the iPhone 7 compared to information regarding the design of an outdated personal computer. Useless information only distracts the attention of decision makers and incurs storage costs without generating any economic value. Third, even when information is useful, it holds different value for different potential users. Therefore it is hard to assign a universal price tag that is accepted by all. Ultimately, the underlying problem for companies and accountants stems from their lack of understanding of their data and a lack of commonly recognized valuation methodology.

¹ Eric Savitz, Big Data: Getting Ready For the 2013 Big Bang. Retrieved from <http://www.forbes.com/sites/ciocentral/2013/01/15/big-data-get-ready-for-the-2013-big-bang/>

² James Manyika, Michael Chui. Big data: The next frontier for innovation, competition, and productivity. McKinsey Global Institute

³ Doug Laney. Evidence of Information's Tangible Economic Value. Retrieved from <https://centerforinfonomics.wordpress.com/>

⁴ Doug Laney. Infonomics: the new economics of information. Retrieved from <http://www.ft.com/intl/cms/s/0/205ddf5c-1bf0-11e3-b678-00144feab7de.html#axzz3ljupNJLV>

THE THEORY OF INFONOMICS

To solve the problem of information and data valuation, Doug Laney of Gartner⁵ created the theory of Infonomics to encourage companies to quantify the value of their business data. The theory has drawn huge attention from the public and has become a milestone of progress in the industry.⁶ Simply put, Infonomics provides a framework for businesses to value, manage and wield information as a real asset in generating revenue. Laney also notes that from an accounting perspective, information can fit perfectly into asset recognition standards and requirements: it is something that was acquired as a result of past events, owned and controlled by the company, could have exchange value and is able to generate future economic profit. The establishment of Infonomics has allowed CEOs to begin to think seriously about their data as an asset.

VALUATION MODELS

Laney and his colleagues have further proposed six valuation models for companies to use in pricing business data internally⁷. The models can be categorized into two types: fundamental models and financial models.

Fundamental models, which assess:

- The intrinsic value of information. This model values information characteristics including accuracy, accessibility, completeness and ubiquity. Scarcity and uniqueness (indicated by ubiquity) of the information is also included in the formula. "Data that's more unique to your organization and not available to your competitors has the potential to provide more value," says Laney.
- The business value of information. Apart from accuracy and completeness, this model evaluates the relevance of data as well as when the information was generated, because timely information provides more relevant information and, therefore, is more valuable. This model is said to be tailored to fit the organization's needs and can even be applied to specific data types such as unstructured data or third-party data.
- The performance value of information. This model measures how owning a unit of information incrementally contributes to a business objective, represented by key performance indicator (KPI) targets, over a given period.

Financial models, which assess:

- The cost value of information. The cost model measures how much the company would need to pay to acquire the information asset, or reacquire the information if lost (also referred to as the replacement cost).
- The economic value of information. This model measures how an information asset contributes to the revenue of an organization by running an experiment comparing the revenue generated with the knowledge of information against the company's revenue without the information.
- The market value of information. This model measures revenue generated by selling or renting corporate data. A big challenge of this approach is that most information assets don't have an open market. Another way of applying this method is to find the price of similar data from syndicated data providers or competitors.

BENEFIT TO THE BUSINESS

Quantifying the value of information enables companies to perform better across five key domains:

1. **Strategy:** Once identified, information value continues to be the legacy of the company and helps CEO create a corporate vision.
2. **Risk:** A consistent set of value metrics can help the company reduce the risk of undesirable or illegal information exposure while improving data quality.
3. **Productivity:** Understanding information value helps determine the effectiveness of information, leading to improved use and deployment of information.

⁵ Douglas Laney biography: <http://www.gartner.com/analyst/40872/Douglas-Laney>

⁶ Linda Tucci. Putting a price on information: The nascent field of infonomics. Retrieved from: <http://searchcio.techtarget.com/opinion/Putting-a-price-on-information-The-nascent-field-of-infonomics>

⁷ Nicole Laskowski. Six ways to measure the value of your information assets. Retrieved from <http://searchcio.techtarget.com/feature/Six-ways-to-measure-the-value-of-your-information-assets>

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4. Investment: Currently, companies only have a vague estimation of the economic benefit of data when investing in technologies and resources to manage or access data. Knowing the comparative value of information before and after the investment, managers can better determine the ROI and prioritize projects.
5. Value premium: Information assets provide additional value to companies in acquisition deals. Acquirers and investors will put a higher valuation on companies that are information savvy.

THE INFORMATION VALUE GAP

Applying Infonomics models correctly is easier said than done as information is valuable only if it has the potential to be turned into actionable business outcomes. Therefore, two criteria must be met before a company sets out using these valuation models: First, companies must understand their data and be able to distinguish the valuable information from the useless information. Secondly, it is critical for companies to recognize how the information could potentially be used. Unfortunately, many companies today are not in a position to meet these two criteria. They either cannot discern which piece of information is useful, do not know how to access the quality information, or cannot decide how the information could be correctly used. It is this lack of understanding of information that constitutes the information value gap, the difference between the realized information value and its potential value, a huge issue for companies in today's marketplace.

To further clarify, realized information value is the value that has already been captured in the current total market value of the company, whereas the potential information value is information's anticipated potential benefit and optimal use, which could be calculated using the proposed valuation models. For those companies that have already maximized the use of valuable data in their decision making process, the information value gaps tend to be very narrow, since the potential information value has combined into the market value of the company.

Laney demonstrates the size of the current information value gap by showing that⁸ info-centric companies—companies that demonstrate information centric traits such as having a chief data officer, an enterprise data governance program or data scientists—have a 200-300% higher Tobin's Q⁹ than the norm. A higher Tobin's Q indicates that the discrepancy between the higher market values and lower asset values for a given company are partially the result of the value of information assets being used. Therefore, for most companies that own valuable data but are not using it optimally, the market value could be higher if the potential information value is transformed into the realized value. Understanding the potential use of information is, by all means, the first step to acknowledge, quantify and realize the potential value of information.

PUTTING THEORY INTO PRACTICE WITH THE CICERO GROUP

Gartner has created the world of Infonomics and developed effective valuation methods that provide a framework for businesses to price their information asset, Cicero Group puts the theory into practice. Cicero Group believes that idle data is an expense, but leveraged data is an asset. Throughout our abundant experiences of utilizing data to solve practical business problems, we have understood and explored all the possibilities and limitations of the business data. We put companies in a better position to discern, evaluate and extract their useful information and to optimize the information use.

Cicero Group leverages a four-step process to help business materialize the value of their information.

1. Collecting the right data from the right sources in an effective manner
2. Identifying the best methodologies to analyze data and extract valuable information
3. Proposing value-added strategies tailored to the recognized problems
4. Implementing strategies and measuring performances

By closely following these steps throughout the value realization processes, Cicero Group ensures that valuable information are correctly identified, and that each piece of valuable information has been put into their best use to maximize potential value.

⁸ Douglas Laney. Evidence of Information's Tangible Economic Value. Retrieved from <https://centerforinfonomics.wordpress.com/tag/big-data/>

⁹ Tobin Q: shows the relationship between a company's market value and the replacement value of its assets

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As a data analysis services provider, Cicero Group is doing more than simply analyzing numbers. Starting from understanding the needs of our clients, we think critically from their perspectives and tap deep into problems. Instead of the conventional way of decision making, the deductive approach that begins with a predetermined solution and then try to justify it, Cicero Group employs an inductive reasoning that is fundamentally different and more strategy-driven. We work with our clients to develop hypotheses, test critical assumptions and model anticipated scenarios. We combine our thorough understanding of data and our deep insights with strategic approaches to leverage the maximal information value.

Only by putting the data into their best strategic use, can companies manage their information more effectively and price it competitively to reflect the unique information value. And it is exactly this way of strategic and critical thinking that sets Cicero Group apart. As a pragmatic practitioner of Infonomics, Cicero Group helps companies recognize valuable information, pricing it strategically, unlocking the potential and bridging the information gap.

Authors:

Randy Shumway
CEO, Cicero Group

Scott Neuner
Principal, Cicero Group