Why and How to Measure the Value of Your Information Assets

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Information is a business asset to be managed, deployed and valued. Chief data officers, chief analytics officers, CIOs, chief marketing officers and CFOs should use Gartner's information valuation methods to measure information usefulness and monetary value.

FOUNDATIONAL DOCUMENT

This research is reviewed periodically for accuracy. Last reviewed on **15 November 2016**.

Key Challenges

- Most executives readily admit that their organization mismanages its information assets, particularly compared to how traditional assets are managed. This leads to missed business opportunities and undue expense.
- Currently, information is not recognized by the accounting profession as a balance sheet asset, which means few organizations have a true sense of the value information generates — or could generate if optimally managed and deployed.
- Research from Gartner and several academic researchers suggests that information-centric companies tend to outperform their peers and that financial markets tend to favor them, but business leaders have no approach to measuring this hidden value.
- Most IT leaders struggle to demonstrate the economic benefits of key information management-related initiatives, such as master data and metadata management, data quality, information governance, information architecture, information infrastructure upgrades and even business intelligence or analytics.

Recommendations

- CxOs and corporate boards should require that information is valued by their organizations as an asset (and not just talked about as one).

- CDOs and CAOs with the guidance of CFOs should establish a standard methodology for measuring the actual and potential economic value of key information assets to their organizations. Adopt one or more of Gartner's suggested information valuation models and perform these measurements periodically.
- IT and business leaders should use their information valuations at least to help prioritize and budget IT and business initiatives, improve information management culture and discipline, and to make informed information strategy, life cycle and other decisions.

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Strategic Planning Assumptions

- Through 2015, more than 90% of business leaders will view content information as a strategic asset, yet fewer than 10% will quantify its economic value.
- By 2016, 30% of businesses will have begun directly or indirectly monetizing their information assets via bartering or selling them outright.
- By 2017, 80% of chief data officers will strive to maximize the value of information while they continue working to minimize its risks.
- Through 2018, more than 75% of chief data officers will not report to the CIO or other IT leader.
- By 2020, information will be used to reinvent, digitalize or eliminate 80% of business processes and products from a decade earlier.
- By 2020, 30% of data will be prescribed provenance, business, security and value metadata at the time of its creation.

See "100 Information and Analytics Predictions Through 2020" for these and other related Gartner strategic planning assumptions.

Introduction

This document was revised on 17 December 2015. The document you are viewing is the corrected version. For more information, see the Corrections page on gartner.com.

Imagine a retail manager with no record of his store's inventory and no way to gauge its value, or consider CFOs with no record of their companies' financial assets, nor their value, or an HR executive with no company directory, employee ratings nor compensation data. This would seem ridiculous — but that's the state of information management in most organizations today.

CIOs typically lack any reliable inventory of what information exists throughout the organization, for example, where it is, what it means or the measurement of its value. Yet "information" is the CIO's middle name — and we are in the midst of the information age.

Physical assets, financial assets and even certain intangible assets like patents and copyrights are inventoried, measured and valued on balance sheets. It is the law and has been for corporations since the 1930s.[1] Even a company's workforce, regarded as "human capital" since the 1960s, is also measured, valued and reported.[2]

So why not information?

Information meets the formal, established criteria of a balance sheet asset. Accounting standards bodies (for example, the American Institute of Certified Public Accountants [AICPA], the Financial Accounting Standards Board [FASB] and International Financial Reporting Standards [IFRS], among others)[3] each define an asset similarly as having the following characteristics:

- Something owned and controlled by an entity as a result of past events
- Something exchangeable for cash
- Something that can generate economic benefits for that entity

However, archaic accounting practices (for example, generally accepted accounting principles [GAAP] and IFRS[1]) dating back to the post great depression era of standardized fiscal reporting[4] practices, to-date disallow the capitalization of information assets on financial statements. Even as the value of other intangibles such as copyrights, trademarks and patents are measured and reported, the increasingly critical asset of organizations in every sector and the namesake of the information age is not.

In Gartner's view, this long-standing failure of the accounting profession to acknowledge information as an asset has given rise to the general lack of information management discipline among most organizations. Moreover, it has resulted in most organizations failing to generate nearly as much economic value as is possible from their data. There is a certain breed of infocentric and infosavvy company that demonstrate leading practices in information management, yielding market-to-book values far above the norm.[5] Yet this value is not formally reflected — anywhere.

Gartner contends that formal information accounting practices (specifically, measuring the value of information) is a significant step for most of our clients in realizing the potential benefits of their available information assets. The old adage "You can't manage what you don't measure" is very apt in this case.

However, since no such established models exist, as part of our pioneering research into infonomics over the past decade, Gartner has worked with dozens of clients, accounting and economics professionals in developing and implementing a set of practicable approaches.

Currently, although international accounting standards for valuing information are not imminent, financial analysts have begun valuing businesses in-part based on their wealth of information assets and information-related capabilities.[6] We expect this trend to continue.

Nonetheless, Gartner recommends and has worked with organizations to measure the value of their information assets for a variety of reasons. These include:

IT-related benefits

- Improving the management of information.
- Smarter prioritizing of information-related initiatives such as data governance, analytics, retention and archival.

- Creating a common language for IT, business leaders and CFO to communicate about information.
- Justifying and proving the benefits of IT, information-related and business initiatives.
- Driving information culture, leading to improved information-related discipline.

Business benefits

- Improved economic benefits from one of the enterprise's most underutilized resources.
- Achieving a consistent understanding of the value of all assets for executives — not just GAAP assets.
- Driving improved corporate market valuations.
- Making an impression on investors and potential business partners.
- Monetizing data directly by selling or bartering with it.
- Becoming a more infocentric business (specifically, decision making and process automation/ optimization).
- Innovating with information to develop new products and services.

Analysis

Adopt Information Asset Valuation Methods to Improve Information Management and Business Performance

To assist our clients in putting infonomics principles into practice, we have collaboratively developed a variety of methods to compute the value of an information asset. These include both fundamental and financial valuation approaches. Our fundamental models consider the quality-related aspect of information or its impact on alternate performance indicators. Our financial models measure value in monetary terms by adapting accepted methods for valuing traditional assets. When adopting financial models, solicit the support and involvement of your financial organization.

Some of these methods adapt acknowledged approaches for asset valuation, although none have been accepted or endorsed as yet by any accounting standards bodies. For now, the models are exclusively for the internal use of enterprises in gauging and comparing the value of their information assets. This type of analysis may then be used to help improve efforts related to data collection, management and deployment — and as such, it is not the measure itself that is as meaningful as:

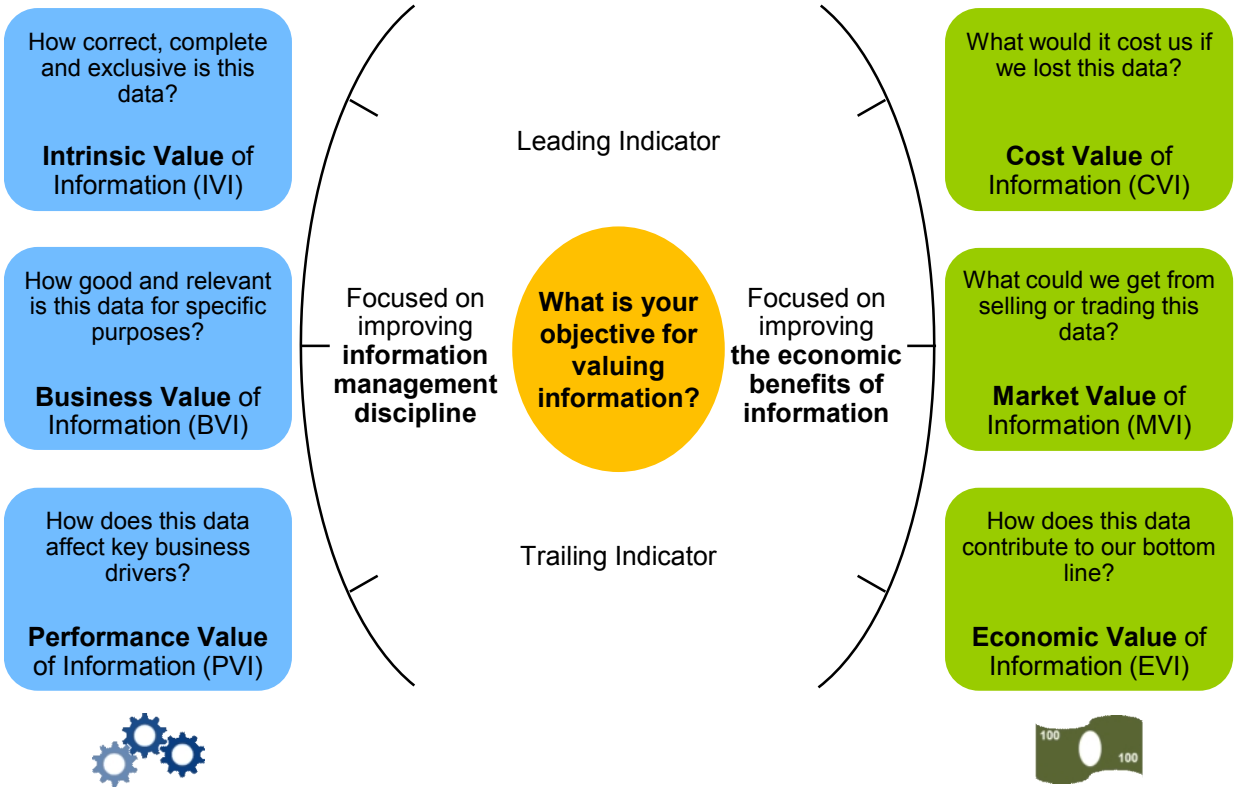
- The delta between the realized and potential value of an information asset.
- Tracking the appreciation or depreciation of the value of an information asset over time.

All asset valuation-related methods (for example, IRR, economic value added [EVA])[7] for any kind of asset are based on a set of assumptions. It is important that assumptions are properly described and consistently applied. Your focus should be as much (or more so) on the enhancement or impairment of value over time, than the discrete metric itself, which means that applying a valuation model periodically is paramount.

Avoid valuing information at a unit or record level. In most cases, this level of granularity is unnecessary and time consuming. These models generally work best when treating a class of information (for example, customer data, product data, maintenance data, call center data, or employee data) as a portfolio of information. While it may be easier to apply these models to specific datasets, you will likely find more benefit in applying them to the previously logical groupings (portfolios) of related information assets.

Finally, we offer multiple models for various needs and circumstances. Selecting which to use and when to use them depends on your objectives. Figure 1 highlights the fundamental valuation models on the left and the financial valuation models on the right. Some are leading indicators while others are trailing indicators and some are oriented toward enterprise information management (EIM) improvement, while others toward assessing information's business benefits. You may find that it makes sense to apply several models for the benefit of different IT, information, financial and business leaders — or for different kinds of information assets.

Figure 1. Selecting an Information Valuation Method



Source: Gartner (August 2015)

Apply Fundamental Information Valuation Models to Prioritize and Improve Information Management Discipline

The following fundamental valuation models are for organizations or departments that are not yet ready or have no pressing need to ascribe a monetary value to their information assets. These models are useful for assessing an information asset's quality and potential-versus-actual utility to help in improving enterprise information management (EIM) strategies. They may also be useful as leading indicators of an information asset's potential economic benefit.

Intrinsic Value of Information (IVI)

Overview

The intrinsic value of information is its presumptive benefit that enables broad comparisons across information classes and regardless how the information may currently be used. This method gauges how correct and complete the information asset is and how likely other organizations are to have it. The suggestion is that higher quality and available information that is more proprietary or exclusive has greater intrinsic value potential. This method can be useful to prioritize information-related investments among differing information sources or initiatives. For example, the intrinsic value of information (IVI) is particularly useful to guide data quality or security-related efforts and investments.

Formula

IVI is a function of:

- **Validity**. Percentage of records deemed to be correct.
- **Completeness**. Percentage of total records versus the universe of potential or supposed records.
- **Scarcity**. Percentage of your market or competitors that also likely have this same data.
- **Life cycle**. The reasonable usable utility of any given unit (record) of the information asset (e.g., in months).

$$\mathbf{IVI} = \mathbf{Validity} * \mathbf{Completeness} * (\mathbf{1} - \mathbf{Scarcity}) * \mathbf{Lifecycle}$$

Implementation

This model is ideally suited for use by data stewards to compare the potential utility of multiple types of information, or for tracking the improved (or degraded) potential of particular information assets over time. The optimal IVI is a 1.0 (specifically, perfect data accuracy and completeness with no copies or versions of any part of this data available outside the organization). For information with a high IVI, you may want to increase or ensure its broad availability and use. For information

with a low IVI, you may want to redouble information governance and quality efforts (see "Assessing Key Data Quality Dimensions" for ways to measure these and other data quality attributes).

Example

Table 1. Sample Calculation — Intrinsic Value of Information

Type of Information	Validity	Completeness	Scarcity	Life Cycle	IVI
Customer Support Records	0.85	0.95	0.00	24 months	19.4
Customer Contact Information	0.62	0.67	0.33	36 months	10.2

Source: Gartner (August 2015)

In this example, the company's customer support data has greater intrinsic value than its customer contact data. Therefore, irrespective of specific business uses, customer support data usage should perhaps be prioritized over and above customer contact data. Alternatively, the customer contact system and processes might demand more attention on improving the data they capture.

Variations

- Include subjective or objective measures of data quality such as timeliness or precision.
- Determine completeness at either record level or dataset level and introduce factor weightings.
- For value comparisons more in line with established information theory, substitute ln(life cycle), where life cycle => 1, and ln (scarcity) where scarcity > 1.

Benefits and Challenges

Benefits: The IVI is the simplest of the information valuation models to use. The data quality factors can be determined via automatic profiling and a basic market understanding. It can help quickly compare the potential of different information assets, identify data quality, data privacy or information governance issues, or identify data that perhaps shouldn't be retained.

Challenges: The IVI does not consider relevancy of data (actual or potential) to any actual business purpose.

Business Value of Information (BVI)

Overview

This method considers the utility of an information asset to actual business usage (unlike the above IVI method). It addresses how good the information is, how applicable it is to the business, and how up-to-date the information is. This method is handy to get a quick take on information's potential

real-world benefit. For example, when there are competing business priorities, this model can be used to align information-related priorities with them.

Formula

BVI is a function of:

- **Relevance**. How useful the information could be (or is) to one or more business processes (0 to 1).
- **Validity**. Percentage of records deemed to be correct.
- **Completeness**. Percentage of total records versus the universe of potential or supposed records.
- **Timeliness**. How quickly new or updated instances of the data are captured and available to be accessed.

$$\mathbf{BVI} = \sum_{p=1}^{n} (\mathbf{Relevance}_p) * \mathbf{Validity} * \mathbf{Completeness} * \mathbf{Timeliness}$$

Where n = the number of business processes or functions.

Implementation

To implement this method, it is handy to have a general breakdown of business functions throughout the organization. This can be as high level or detailed as you consider practicable. Measuring the gap between information's actual value versus its potential value (specifically, using actual versus potential Relevance estimates) can quickly identify opportunities for better utilizing your "dark data" (see "Assessing Key Data Quality Dimensions") for ways to measure various data quality attributes.

Example

Table 2. Sample Calculation — Business Value of Information

Type of Information	Sales Process Relevance	Maintenance Process Relevance	Ordering Process Relevance	Validity	Completeness	Timeliness	BVI
Sales Transactions	.50	.20	.90	.99	.96	.80	1.21
Weblog	.80	.10	.30	.95	.99	.98	1.11

Source: Gartner (August 2015)

In this example, sales transaction data has a slightly greater business value index than weblog data, mainly because it is considered to be of much higher relevance in product/materials ordering. Considering the use of these types of data across a broader range of processes might further distinguish their business value.

Variations

- Include other data quality metrics.
- Use different ways of determining *relevance* (for example, survey, data usage analysis).
- Measure accuracy, completeness and/or timeliness relative to each business process rather than in general.
- Consider the BVI of different information for only a single business process of particular interest.
- Include factor weightings.
- Substitute ln(timeliness) for that term where timeliness > 1 for better consistency with established information theory.

Benefits and Challenges

Benefits: The BVI relates data to actual business value. It is relatively simple to implement and can consider actual versus potential scenarios. This model is useful to identify "dark data" and make "defensible disposal" decisions.

Challenges: *Business Relevance* can be highly subjective and may demand a time-consuming functional analysis to determine.

Performance Value of Information (PVI)

Overview

This approach looks at the realized (or estimated) impact of an information asset on a business objective that is represented as key performance indicators (KPIs). This answers the question: How much does having this information improve business performance? In short, it requires running a controlled experiment (or conjecturing one), but this method results in a definitive, empirical value measure.

As a trailing indicator of information value, this method may be less useful than the IVI or BVI models for prioritizing information-related initiatives or determining potential information value, However, it is a preferred approach for measuring realized business benefits against established business metrics and as a leading indicator of information asset's financial value.

Formula

The PVI is a simple ratio that calculates KPI improvement by incorporating a given information asset, extrapolated over the usable life span of any given instance of data:

$$PVI = \left[\left(\frac{KPI_i}{KPI_c}\right) - 1\right] * T/t$$

Or for multiple KPIs, the overall PVI can be expressed as the mean of their individual PVIs:

$$PVI = \frac{\sum_{p=1}^{n}\left[\left(\frac{KPI_i}{KPI_c}\right)-1\right]_p}{n} * T/t$$

Where:

- i = Business process instances using the information asset (informed group)
- c = Business process instances not using the information (control group)
- n = The number of different KPIs measured for the test
- T = The average usable life span of any data instance
- t = The duration over which the KPI was measured

Implementation

Using the PVI model ideally requires running a controlled experiment in which certain instances of a business process incorporate a certain information asset that other instances do not. It is a classic A-B test. A positive PVI demonstrates that the data is valuable for this process; a negative PVI indicates that the additional data somehow impedes the process. For Gartner recommendations on business KPIs, see "The Gartner Business Value Model: A Framework for Measuring Business Performance." In determining the PVI, it is important to keep all other aspects of the revenue process constant during the trial.

Example

A simple example of this method is the scenario in which one target marketing campaign makes use of information about customer preferences and behavior, while another otherwise identical campaign does not make use of this data. After a period of time, the performance of these two groups is compared.

Table 3. Sample Calculation — Performance Value of Information

KPI	With Additional Data	Without Additional Data	Data Life Span	Trial Duration	PVI
Number of leads	6,000/month	4,500/month	24 months	3 months	2.67
Number of sales	120/month	55/month	24 months	3 months	9.45
Revenue per order	$40/month	$45/month	24 months	3 months	(0.89)
Overall PVI					**3.74**

Source: Gartner (August 2015)

In this example, the new data has the biggest impact on lead, and negatively affects the revenue per order. Perhaps the new data somehow encourages the promotion of lower-revenue offerings or targeting of lower-income customers, or discourages the purchase of multiple products.

Variations

- Measure single or multiple KPIs.
- Eliminate the time variables.
- Incorporate or avail the new data in various ways.
- Test alternative information sources for a single KPI to determine which one provides the most benefit.
- Substitute ln(T) and ln(t) for those terms, where $T > 1$ and $t > 1$ for better consistency with established information theory.

Benefits and Challenges

Benefits: The PVI yields hard, empirical measurements that are an excellent predictor or proxy for financial measures. It introduces a real-world scenario without the need for business-function level analysis.

Challenges: The PVI requires running one or more experiments, potentially involving system or process changes. The way in which data is integrated into the process affects the outcome. It does not take into consideration the expense of incorporating the data into a process.

Apply Financial Information Valuation Models to Hasten Their Improved Economic Benefit

A financial information valuation model is useful to organizations that need to determine how information assets perform compared to other assets; what to invest in their collection, management, security and deployment; and how to express their value when used in business transactions (for example, merger and acquisitions, data syndication, information bartering).

These economic models are variants on established asset valuation models that are used by valuation experts and accountants to value traditional assets. However, these models have been adapted to accommodate one of the nuances of information's unique characteristics: information is not depleted when consumed.

Cost Value of Information (CVI)

Overview

This method simply assesses an information asset as the financial expense required to generate, capture or collect it. An optional term that considers the impact to the business if this information asset were rendered unavailable (for example, damaged, lost), or stolen (specifically, copied) is also included. This method is preferred when there is no active market for the information asset and its contribution to revenue cannot be determined adequately. Additionally, this model can be used to assess the potential financial risk of an information asset's damage, loss or theft.

Formula

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

Where ProcExp = The annualize cost of the process(es) involved in capturing the data.

- Attrib = The portion (percent) of *process expense* attributable to capturing the data.
- T = Average life span of any given instance of data.
- t = Time period over which the *process expense* is measured.
- n = The number of periods of time until the information is re-acquired, or until business continuity is no longer affected by the lost or damaged information.

Implementation

The process expense and portion attributable to information capture can be tricky to ascertain, given that it may be collected in the course of business operations, in which case it is normally expensed. If the portion of the process allocated to the acquisition of that information asset were determinate, this amount ostensibly could be claimed as an asset value instead of being expensed (current accounting regulations notwithstanding). The cost of reputational or competitive risks should also be considered, should this information be exposed publicly or stolen by competitors.

Example

In this example, we consider the cost value of data without it having been stolen, damaged or lost:

Table 4. Sample Calculation — Cost Value of Information

Type of Data	Process Expense	Percent of Process Attributable to Data Acquisition	Data Life Span (T)	CVI
Equipment maintenance	$2,000,000/year	2%	3 years	$120,000

Source: Gartner (August 2015)

The equipment maintenance process costs $2 million per year and it is determined or estimated that 2% of this expense goes toward capturing and collecting this data. Therefore, $40,000 worth of data is captured per year, but since it has a usable life span of three years, we value it at $120,000.

Variations

- Consider the amortized expense of physical process assets, plus their ongoing operational expense (including labor) in determining the overall process expense.
- Include the inventory carrying costs (*administration expense)* of the data in addition to its acquisition expense.
- For better consistency with established information theory, substitute ln(T) and ln(t) for those terms, where $T > 1$ and $t > 1$.

Benefits and Challenges

Benefits: The CVI is the best means of estimating information replacement cost and negative business impact if lost, stolen or damaged. Accountants prefer this method as a more conservative and less volatile approach for initially valuing most intangible assets.

Challenges: Some factors requiring estimation and subjectivity. Remember that these costs most likely are expensed already, so the CVI merely expresses the value of information in terms of shifting it from an expense to an asset.

Market Value of Information (MVI)

Overview

This method looks at the potential or actual financial value of an information asset in an open marketplace. Typically, data monetization is transacted among trading partners in return for cash, goods or services, or other considerations such as preferential contract terms and conditions. Yet, increasingly, companies are selling their data outright via hosted data marketplaces (for example, ProgrammableWeb, Quandl, Microsoft Azure Marketplace) or industry-specific information brokers.

This market value method, generally, is not applicable for most types of information unless they are licensed or bartered. However, as organizations become more sophisticated and aggressive at leveraging their information externally, they should consider this approach.

Formula

Our modification of this traditional method recognizes that most information is not actually sold (specifically, ownership transferred); rather it is licensed. Therefore, we have included a factor for the diminished marketability of information as it becomes more ubiquitous to the marketplace. This is represented as a variable discount factor (represented as an inverse premium) applied to a hypothetical ownership transference (exclusive price) of the information asset.

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

Implementation

Use the MVI[9] when considering monetizing information via sale or barter. Ideally, use the CVI or EVI model to determine the exclusive price — specifically, how much you might demand to transfer complete ownership of (or exclusive rights to) the information asset to another entity. Then determine or estimate how many probable parties will license this data over the average life span of any given record. Traditional market analyses methods for determining market sizes can also be used to determine the number of likely information licensors.

Additional surveys of potential licensors can determine the premium factor, by asking "What premium (multiple) over any given licensing fee would you pay for exclusive access to or outright ownership of this data?"

Example

This example considers the marketability of an organization's customer loyalty data and is inspired by recent investor claims as reported in a recent Wall Street Journal article.

Table 5. Sample Calculation — Market Value of Information

Type of Data	Exclusive Value	Addressable Market Size	Percent of Market Sold to Over Average Life Span of Data	Probable Number of Licensors	Ownership Premium Over Licensing	MVI
Customer loyalty program data	$1,000,000	5,000 organizations	20%	1,000 licensors	700x	$1,428,571

Source: Gartner (August 2015)

This example illustrates what we generally expect: an MVI that is a small multiple of the information's exclusive value. This is because the knowledge among potential licensees about the general availability of the data almost cancels-out the number of licensees (specifically, the number

of probable licensors ~ the data ownership premium). However, an organization can achieve exponential MVI multiples when its data becomes an essential industry standard information product (for example, credit bureaus, financial data brokers, market research organizations).

Variations

- Consider net present value (NPV) of the anticipated cash flows.
- Consider the situation in which information's ownership is transferred — although this is rare.
- Run the model for different combinations or refine and package the information asset combinations.
- Consider limiting the number of licensees to yield a lower premium factor.
- The market value of an information asset may be determined simply by assessing a current market for comparable forms of data.
- Consider measuring scarcity (see the IVI model) in determining the premium factor

Benefits and Challenges

Benefits: The MVI is most useful for determining the value of a saleable or barterable information asset. It can also be useful for determining the price point for an information product, or it can also be adapted for ensuring acceptable licensing fees for another's information product.

Challenges: It is not particularly applicable or useful for nonmarketable information assets. It includes highly subjective factors that may require extensive market analysis. The exclusive price for an information asset may be difficult to determine or estimate.

Economic Value of Information (EVI)

Overview

This method generates the net financial value of an information asset by applying the traditional income approach for asset valuation, then subtracting the information's associated life cycle expenses. Like the PVI, this method empirically calculates the information asset's actual value. As such, it is more of a trailing indicator than a leading indicator of information value — unless the first revenue term can be estimated adequately.

Formula

The EVI[10] considers the realized change in revenue when a particular information asset is incorporated into one or more revenue generating processes. Then, the cost to acquire, administer and apply the data is netted out.

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

where $Revenue_i$ = The revenue generated using the information asset (informed group)

$Revenue_c$ = The revenue generated without the information asset (control group)

T = The average expected life span of any given information instance or record

t = The period of time during which the EVI experiment or trial was executed

Implementation

As a financial variant of the PVI method above, the EVI requires running a trial over a period of time. However, in this method, revenue is the only KPI, the value is monetary rather than a ratio and the life span of the information asset is factored in. First, measure the difference between how much income is generated with versus without using the information. Then subtract the life cycle costs of the information. (Refer to the CVI model above for guidance on computing life cycle expenses.) Finally, multiply this sum by the ratio of the information assets life span (T) to the duration of the trial (t). In determining the EVI, it is important to keep all other aspects of the revenue process constant during the trial.

Example

In this example, we determine the net economic benefits of e-commerce network performance data and social media trend data:

Table 6. Sample Calculation — Economic Value of Information

Type of Information	Revenue With the Data	Revenue Without the Data	Data Acquisition Expense	Data Administration Expense	Data Application Expense	Data Life Span	Trial Duration	EVI
E-commerce network performance data	$25,000/month	$22,000/month	$500/month (amortized)	$250/month	$1,200/month	6 months	3 months	$2,100
Social media trend data	$28,000/month	$22,000/month	$1,000/month (licensed)	$200/month	$2,000/month	12 months	3 months	$11,200

Source: Gartner (August 2015)

In the first example, capturing and taking advantage of e-commerce network performance data, ostensibly to optimize website performance, yields a $3,000 monthly gross benefit with $1,950 in information life cycle expenses for a monthly net income of $1,050.

In the second example, licensing and incorporating social media trend data, perhaps into marketing and/or the product recommendation engine, yields a $6,000 monthly gross lift for $3,200 in added expenses for a marginally higher net of $2,800. However, since the utility of the social media data is longer, its EVI is much greater. Given competing IT priorities, incorporating the social media data seems to be the better bet.

Variations

- Simply calculate the revenue difference, regardless of estimated expenses.
- Assume a constant data life span.
- Include discounted cash flows for longer life span information like customer contact data.
- Substitute economic stimulus for revenue for public sector organizations.
- Substitute ln(T) and ln(t) for those terms, where T > 1 and t > 1 for better consistency with established information theory.

Benefits and Challenges

Benefits: The EVI is an empirical analysis of the contribution of information to the top and bottom line. There is no need for a functional analysis, other than in establishing information-related expenses when data is duplicated and/or applied in multiple ways.

Challenges: The EVI requires a live experiment and the ability to estimate the expense of information." Many traditional business leaders are still uncomfortable with the contemporary concept of experimenting with revenue-producing processes. The EVI is a trailing indicator, although results can be used to prioritize IT and business initiatives.

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Toolkit: Assessing Key Data Quality Dimensions"

"The Birth of Infonomics and the New Economics of Information"

"Introducing Infonomics"

"Increase the Return on Your Information Investments With the Information Yield Curve"

"The Benefits and Risks of Using Open Data"

"Improving the Value of Customer Data Through Applied Infonomics"

"How Organizations Can Monetize Customer Data"

"Predicts 2015: The Intersection of Information Innovation and Business Digitalization"

Evidence

[1] Generally Accepted Accounting Practices, International Financial Reporting Standard for U.S. Corporations. Financial reporting laws in many other countries also were established in and around this time.

[2] Economics Nobel laureate Milton Friedman and his colleague Gary Becker at University of Chicago pioneered the concept of managing labor and workforces with the same discipline as corporate assets, and coined the term "human capital" in their book of the same title.

[3] American Institute of Certified Public Accountants, Financial Accounting Standards Board, International Financial Reporting Standards.

[4] In the U.S., the Securities and Exchange Commission (SEC) was formed in 1936 to standardize financial reporting with the main objective of averting financial crises like that of the Great Depression. At that time, the major asset classes were demarcated.

[5] For more on infonomics, see "Maverick* Research: The Birth of Infonomics, the New Economics of Information" or visit the Infonomics Wikipedia page for additional articles on information value.

[6] However, since most information assets are more like current assets than fixed assets in that they have a limited operational life span (less than one year), they shouldn't normally require a net-present-value (NPV) calculation.

[7] KPMG's recent report, Data and Analytics: A New Driver of Performance and Valuation reveals how financial analysts view the impact of data and analytics strategies on market value. The report indicates that nearly a quarter of financial analysts have already changed their investment opinion of the companies they follow and have revalued them, specifically based on the company's data and analytics strategy. Additionally, almost half of financial analysts indicate they will do so in the next 24 months.

[8] Internal rate of return, economic value added.

[9] There are similarities, although the Market Value of Information (MVI) model should not be confused with the financial industry standard Market Value Add (MVA) formula, which calculates the difference between the market value of a firm and the capital contributed by its investors. The MVI does not consider cost of capital, but could be adapted to net-out information life cycle costs.

[10] There are similarities, although the Economic Value of Information (EVI) model should not be confused with the financial industry standard Economic Value Add (EVA) formula, which calculates

an estimate of profit more than the return required by investors (or the profit earned less the cost of capital). The EVI does not consider cost of capital, but rather the information's life cycle costs.

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