

A blurred photograph of a group of business professionals in a modern office setting, engaged in a meeting. The image is overlaid with a dark blue semi-transparent rectangle containing white text.

Leveraging the Power of Infonomics to Drive Financial and Strategic Benefits



DATA CLAIRVOYANCE
REMOVING DATA CHAOS. CREATING DATA VALUE.

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INTRODUCTION

Leveraging Infonomics to Drive Financial and Strategic Benefits

Some of the big buzzwords in the data field today are infonomics, the economics of data and data monetization. The essential idea is that organizations can change how they manage and use data to optimize the impact on their Profit & Loss and on their operations.

There are a variety of considerations and even pitfalls in exploring such possibilities. But the potential gains can be significant — not only for organizations to develop ways to actually monetize their data, but also for those that find ways to better manage and determine the value of their information assets.

CHAPTER 1

Understanding Infonomics -- and What it Means to Your Organization

At its core, infonomics is all about finding a better way to process and extract value from the data that one creates. Many organizations have robust processes for generating and gathering data ... as well as data scientists, business analysts, and others who are eager to consume the data. The problem is often that they lack a critical step in between.

One of the field's more overused pieces of jargon is **data mining**. Although that's not our precise focus, the analogy does have some bearing on the deriving value from data. In fact, the discipline requires one to take a fresh look at the process of mining itself. Are there ways to process data more efficiently, and thus be able to find more value?

Three steps in value creation

To derive more value from their data, organizations need to take a new look at how they gather, process, and share data to eliminate waste and maximize efficiency. There are three major steps of the process.

The first step involves how one **creates, touches, and changes the actual data**. This function is generally the responsibility of the CIO, CTO or CEO, with influence from the CDO and other executives. The organization is basically collecting data through a variety of processes, including interfaces with web apps, data collecting machines, telematic devices, and so on. By and large, organizations have this step pretty well figured out. The problem is that while they're piling up massive amounts of raw data, they often lack the processes, technology, and culture to convert it into actual value. In a gold mining operation, this would be like excavating huge piles of raw material, but then leaving it untouched — no more than a mound of dirt and rocks.

That takes us to the second step of the data supply chain: the processes for **managing, curating, and enriching the data**. In many organizations, this step is either ineffective or missing altogether. As a result, the organization may fail to adequately collect metadata, and improve or enrich its data

Before you can start reaping the benefits of your data, it's critical to make sure you're consuming the right data.

quality. Even more of a problem is that data goes directly from being collected to being used. This can create an enormous amount of waste (that is, data which is essentially useless) that becomes “baked into the system.” In fact, evidence suggests that a typical medium-sized organization can have as much as \$20 million of basically useless data sitting inside its operational model.

The third and final step is the **consumption of data**. As an organization gets better at optimizing its consumption of data, it can also become more effective in deriving insights and making decisions based on that data — benefits that feed right back into its operational model, and give it a higher probability of generating new revenue.

These benefits can take several forms. One could be finding new ways to monetize your data. For example, we’re working currently with a client that has created a reliable predictor of certain economic metrics based on data it already collects, and it’s selling this indicator to managers of hedge funds. Essentially, the organization has created a brand-new line of revenue, based on a new use of existing data. Another form of revenue enhancement comes from the impact on the organization’s ability to make better marketing and product development investments and financial decisions, as well as its ability to manage and prevent risk.

One other critical factor in the consumption of data is making sure you’re consuming the *right* data. You may have heard some of the data problems that have been plaguing Target, including misuse of customer data in marketing, and in major data breaches.

But a more recent controversy involves how the retailer used the wrong data in its ambitious attempt to enter the Canadian market. In essence, they aggressively set up a sizable chain of stores, and then watched as sales stumbled. The problem? Although they’d used all the most recent sales data for stocking their Canadian stores, incredibly, it was all data from U.S. operations. That meant that some shelves were almost always empty, because they happened to appeal to the Canadian consumer, while products on other shelves hardly moved, no matter how it was priced or merchandized. The key lesson is that it’s not just the data quality that’s important, it’s also using the right data.

Focusing on the fundamentals

Clearly, infonomics *can* work — and there are many examples of companies that use data thoughtfully to generate new sources of revenue and improve business decisions. But you also need to make sure you’ve taken care of the fundamentals — having a solid solution for processing the data to ensure its quality, and at the same time providing the right data for your decision-makers to use.

CHAPTER 2

4 Major Benefits of Treating Data as an Asset

Many people in the data industry talk about how valuable data is, but they rarely take the point to its logical conclusion. If one really regards data as an asset that is actually valuable, that means it's an asset that should, or at least could, be accounted for.

Although many believe that there's no reliable, quantitative way to value data as an asset, there are indeed ways one can do so. But let's approach it from another perspective — the *reasons* one should want to do so. There are four key benefits that immediately come to mind.

1. Imagine several years from now, when everyone recognizes data as an asset with real monetary value (even though it's intangible). Data-centric companies might start accounting for their data value in their annual reports to shareholders, much like the McDonald's arch is part of that corporation's collective value. With data calculated, valued, and reported as an intangible asset, one could conceivably even go to the bank and take a loan out against its value.

There could be additional ways to leverage data value as well. In reports to shareholders or to Wall Street, you could talk about the valuation of your data. Quantifying how much of your business the data is driving could also come as good news to shareholders, and even move the needle on your share prices. (Of course, this is a two-edged sword: if your data is costing your organization more to maintain than it adds to your bottom line, you may not want to talk about it at all.)

2. A second benefit has to do with the role of valuation in merger & acquisition (M&A) activities. If your company is about to be acquired, your total book value is driven by your EBDITA multiple (earnings before interest, taxes, depreciation and amortization). If you could make the case to the acquirer that you're really worth seven times your multiple, that could make a huge difference for your shareholders.

Treating data as an asset...could also open the door to some very significant gains in both financial and strategic areas.

There's no secret to this line of reasoning — it all starts with your ability to quantify data value. Imagine, for example, that you could show a correlation of X% between your data valuation and your business model, and that you're scheduled to increase data volume by Y% over the next six quarters.

To a venture capital or private equity firm, this argument provides for easy back-of-the-napkin math: for example, your earnings and revenue will grow by five times over the next three years. That's the kind of math that deals get done on — and it's all about multiples, projected earnings, and revenue. Granted, this financial argument is probably most appropriate for medium to large organizations that are collecting a lot of data as part of their ongoing operations.

3. A third benefit also relates to the M&A space. When you hear that one company is acquiring another, you may also hear speculation about what's driving the acquisition. In my experience, there are three chief reasons why M&As happen: a) the acquirer wants to get a competitor off the market; b) regulatory forces are requiring market consolidation (such as what we're seeing in the healthcare space); or c) the acquirer wants to gain operational synergy.

This third scenario — operational synergy — may be the most commonly cited rationale for M&A activities. But what this often means is that the buyer recognizes it has a major weakness at some core activity, so buying another company that does it better is a nice, painless solution. We'll just buy the right process/tools/people (or so the thinking goes), and then we'll migrate our whole company over to the new system.

But the devil is in the details. In many M&A activities, such a combining of organizations can come at a significant cost, when processes move too rapidly, and there is never a true migration to a single platform. Rather, there is often conflicting and confusing data all over the place: an operational nightmare. A company may have hoped an acquisition would pay off in operational synergy — however, because the two data sets didn't mesh, the acquirer may soon be worse off, in some ways, than it was prior to the acquisition.

On the other hand, if you treat data as an asset, you might approach the whole due diligence process differently. Instead, you could start by running a data certification model on the company you're considering buying, comparing the balance sheets of data for both firms. This would let you compare apples to apples — and see if there really will be operational gains.

4. The fourth benefit is the "El Dorado" of data valuation: the ability to monetize data. If you truly treat data as an asset, you're already well on your way — because you know the financial value of your data to your own organization, you have a much better perspective on pricing it to sell to others.

These are four compelling reasons to take a new look at the data you already have to determine its financial value. One thing you probably can count on is at least a little resistance, because most organizations and data professionals still only pay lip service to treating data as an asset.

Even so, taking this perspective will not only result in a more realistic view of your own budget priorities regarding data — it could also open the door to some very significant gains in both financial and strategic areas.

CHAPTER 3

Adopting an Approach to Data Valuation that Actually Works

Although there is a fair amount of discussion around the evolving topic of data valuation, some are still looking for specifics about exactly *how* to make it happen.

Even when the most respected industry analysts address the topic, they often speak a fairly general level about how companies can learn to turn data into dollars. Ten years ago, that insight might have been enough to turn some heads and get people thinking about data in a new way. But today, you're late to the game if you're not thinking about exactly how you're going to do it, rather than merely talk about it.

In addition, to the extent that these analysts make concrete recommendations, they often over-index on the technology aspect — and specifically, on the “gold standard” technology organizations that are perennial stars on Gartner's Magic Quadrant. However, if your primary goal is to value data as an intangible asset, these organizations can only do pieces and parts of the work that is required.

The real challenge is that in order to account for data assets, one must account for all three categories — physical, logical and conceptual — and some of the major analysts are so focused on the technical that they address only the physical and a little bit of the logical.

The data industry appears to be on the cusp of a major evolutionary cycle involving data, and that one of the key obstacles is to get past the conundrum of data valuation. It can be done — in fact, it *must* be done — but it's a far more involved process than just buying an application. On the other hand, the payoff can be enormous.

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Where is data valuation headed?

There are some organizations that are taking a more robust approach to data valuation, however. One example is the company Palantir, which is doing a lot of work in the area of physical and technical metadata discovery and research.

Although Palantir is not quite as strongly positioned in the *conceptual* aspect of metadata, their work is opening new frontiers in data and metadata management, and has amazing potential. Their technology is already giving federal law enforcement organizations the ability to conduct truly surgical searches for information on persons of interest.

CHAPTER 4

The Impact of Reflexivity on Valuing Data Assets

One of the interesting factors in the ways people view data value within an organization is reflexivity.

The term refers to the phenomenon that individuals' of the same data can be self-reinforcing, even as the perceptions stray further from each other, and the actual, intrinsic value of the data. In fact, history books are full of times when this dynamic played out on macro scales — creating asset bubbles in everything from the 16th-century international tulip market to the real estate bubble of the previous decade. In each of these cases, disaster was preceded by blissful exuberance. In addition, perceptions became increasingly disconnected from reality, such that the perceived truth became the market value, despite the much lower intrinsic value.

Many people have written about this phenomenon of diverging perceptions, but none more comprehensively than famed hedge fund manager George Soros. In fact, he built much of his management and investment philosophy on the certainty that the influence of **reflexivity** can and will cause perceptions to deviate from reality (and when it does, chaos is sure to follow).

Now consider the CEO of an organization, who has responsibility for reporting every 90 days on the state of their organizations' financial performance. If there is any discrepancy between what is *considered* to be true and actual reality, they are held criminally responsible — a sobering prospect.

What could cause such discrepancies? After all, the CEO may perceive that the data and operational metrics they use to make decisions are sound, accurate, and trustworthy. But I learned another perspective firsthand over the course of more than ten years of working intimately with data used to make decisions about cash flow, reserve projections, and other key decisions. I learned that perception about data is rarely the exact truth. As with most things, perception about an organization's data is the reality we gladly accept — but sometimes it is not the same as actual reality.

But perception about data is rarely the exact truth.

Different views of the same data can't *all* be right

The same reflexivity dynamic can occur when data is not managed as professionally as financial assets. Each community of data users naturally sees the data through their own lens. For example, users in the business units focus on their process and activities that directly support the Profit & Loss, balance sheet, and cash flow. IT staff, meanwhile, tend to focus on the tools, systems, code, and technologies that they either find interesting or must support. As these groups work with each other around shared data, they create feedback loops — perspectives on the data that tend to self-reinforce the prevailing view.

But there is often also a minority of individuals among the data's users whose opinion is all but ignored, even though they may be the only ones who understand the real intrinsic value of the data assets in question. No group has a monopoly on this more realistic view of the data — it could include business users, technology staff, or others. The more important point is that people tend to not want to hear about such fundamental problems in an organization's data, even as reflexivity continues to drive the various views further and further apart. Eventually the minority will be proven right — but perhaps only after a small discrepancy has metastasized into a bigger problem.

All of these slightly different biases being imposed on the organization's central data assets by each community of data users will ultimately result in multiple opinions, views, and positions on that data. What's more, it will create a sense of chaos, confusion, and lack of clarity as to what certain data elements even mean across the organization.

Which truth is true?

In the case of an organization, which of the many possible views of the data should a CEO embrace as the accurate one? Fortunately, organizations can use the disciplines of data and metadata management to answer this question, by offering proven ways to drill into one's data, understand where it may be faulty, and know how to fix the problems.

Not to sound discouraging, but tackling the issue of reflexivity around data assets is a formidable challenge. If your organization hasn't done so already, you should probably start by taking a cold, hard look at your [data governance](#) plan. Next, you should ensure that you have systems and processes for effectively [collecting and managing metadata](#). There's also the issue of [data lineage](#) — that is, how data moves through your organization from the point it's created or acquired until it's consumed.

Of course, that's a very high-level summary of a very complex process. Still, taking on the challenge of data and metadata management should be a high priority, in my view. Because, if the very people who on a day-to-day basis must support, manage, create, and leverage the organization's core data assets have significant confusion about them, it seems unlikely that their CEO will be able, with empirical certainty, to support the various decisions they make. The captain of the enterprise may not literally have to go down with the ship — but he or she could still have to pay a heavy price when the data asset bubble bursts.

CHAPTER 5

How to Improve Your Organization's Information Asset Management

It's one thing to say that one's data is valuable — but it's quite another to actually *treat* it that way using a disciplined approach to information asset management. Thoroughly describing the process would take a lot more than a blog post — or even several — but as a starting point, here are the four biggest elements of the solution.

1. **Manage your metadata.** If you feel like you're hearing more and more talk about metadata management, you're correct. The reason is that increasing numbers of organizations are seeing their data as real (although intangible) assets. Therefore, metadata management is a process as critical to the organization as it is to have a CFO function that maintains a chart of accounts and supporting ledgers.

At the core of your metadata management strategy is a **metadata repository**, containing all the “tribal knowledge” about the physical and logical aspects of your metadata — that is, insights into your data from the people who use it everyday. There are six categories of metadata to gather: business, technical, core, data quality, people, and search. Be wary of solutions that claim to automate metadata gathering, because these solutions typically focus on capturing the technical components — which are important, but by no means everything you need.

2. **Business data element inventory.** In addition, you need a defined and living inventory of your physical and logical business data elements (BDEs) that allows you to compare and account for data value. A BDE is a single category of data, such as customer date of birth, that is usually spread throughout the enterprise in dozens or even hundreds of databases and spreadsheets — sometimes appearing multiple times in a single file. When used in combination, your BDE inventory and metadata repository can basically function as the chart of accounts for all of your data.

3. **Data quality and data governance operations.** These two processes go hand in hand to drive the data improvements to impact your bottom line. *Data quality* starts with the process of profiling

Most of the metadata solutions on the market today tend to miss the mark.

data, followed by comprehensive data assessment and data improvement. If you don't have a data improvement tool already in place, one sound approach is to test at least a couple of options using a Design-of-Experiments framework to measure how different mixes of people, roles, and technologies succeed at improving data. Once you've done that, you need to develop ways to track and report on aggregated data quality scores. *Data governance* — preferably overseen by an Office of Data led by a Chief Data Officer — provides the structure and discipline needed to define and enforce a more systematic approach to information asset management.

4. **Enable true collaboration.** The fourth major component is a system to ensure that the people who care about your data can collaborate around it in real time — much like the way accountants share information about physical assets throughout each monthly or quarterly close cycle.

Here's why. Data represents different values throughout your organization. For example, people who create data often see it differently from those who consume it. But at some point in the middle of these differing views, there needs to be a shared understanding and valuation. The key to gaining this understanding is to create a process and culture that uses social technologies (purpose-built platforms for exchanging information that work in ways similar to Facebook or Twitter) to facilitate real collaboration, in real time. In order for this capability to be social and culturally "sticky," each individual must actually *want* to use it, and ideally, even get some enjoyment from doing so. Only when you accomplish this at the individual level will the process have a chance of being adopted by the masses.

Most of the metadata solutions on the market today appear to miss the mark in regard to the social component of information asset management. They're claiming that they have the social side figured out — but often they just feature interfaces that look like Twitter or Facebook, but in reality are little more than embedded email capabilities. Instead, you need a social tool that will transform the way your people interact and collaborate, similar to the way LinkedIn has revolutionized networking.

To truly solve this social piece, you can create a dynamic, evolving social ecosystem characterized by a "gameified" culture — and with your data assets at its center. All you need to do is provide the underlying structure and rules, and then step back. Your people will figure it out and sustain it.

Keep focused on the bigger goal

It may seem strange to start a conversation focusing on data, and end up talking about culture. But this is actually the only way to really get a handle on information asset management. Data flows through your organization, constantly being created, consumed, and modified — and by taking a systematic approach to understanding its real value, you can improve its quality, make smarter decisions, and know where to allocate your resources more strategically.



CONCLUSION

Make Better Use of One of Your Most Valuable, Yet Least Understood, Assets

Whether one calls it infonomics, data monetization, or some other term, the reality is that many organizations have vast amounts of untapped value in their data. Extracting that value and leveraging on behalf of the organization is neither quick nor easy, however, and requires a sustained effort.

On the other hand, the discipline holds a great deal of potential — not only in terms of the possibility of deriving insights that one can sell to external users, but also in driving greater efficiencies, enabling better decision making, and other strategic benefits.