

LAMBTON COLLEGE



A Report on [Infonomics]

121 Brunel Rd, Mississauga

ON L4Z 3E9

A Group assignment explaining How to Monetize, Manage, and Measure Information as
an Asset for Competitive Advantage

Big Data Analytics DSMM

**Under the supervision
of
Professor Pedram Habibi**

Submitted BY: GROUP I

Aadarsha Chapagain (C0825975)

Rajasekhar katta (C0833766)

Submitted To:

Lambton College

Professor Pedram Habibi

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Abstract

The economics of information is known as Infonomics. The study provides a framework for businesses to manage, commercialize, and value knowledge as a genuine asset. To understand well the study of unique characteristics of how information could be relevant, complete will help. To monetize the information several methods were introduced, and some are Increasing customer acquisition/retention, creating a supplemental revenue stream, and entering new markets these methods primarily focus on lowering maintenance expenses, cost escalation, and delays. Alongside, Improving citizen well-being. With a focus on monetizing information using advanced analytics organizations are given an edge to predict and better decision-making out of business intelligence tools and reports. Moreover, Information management techniques make use of software and other technologies that are meant to assist businesses in making the most of their data in order to boost output, promote transparency, and provide business insights. The industry-standard methodologies, like the SCOR model, capability models, standards and checklists offer tremendous new precepts for how to manage information and outstanding metrics for the information supply chain. Along with other methods of managing information as an asset, information management standards and approaches can be leveraged. There are impressive disciplines around managing IT/infrastructure/technology and some ideas could be learnt and applied in the information management arena asset management technique can be used to improve information maturity as well, Gartner has provided seven dimensions which can be used as guiding tools or blocks. The dimension is to be followed in order starting with a vision, followed by Strategy, next Metrics and Governance, then People and Process and lastly Infrastructure. Even the companies whose business model relies on the information have not mentioned it as an asset in their books. So, there is a difference between market value and replacement value of tangible assets which is represented by "Tobin q". Investors have realized this difference. According to the accounting definition, information can be owned relying on conditions such as control, cashing and probable future value. To ensure functional utility the quality of the information should be measured. Fundamental and Financial Valuation approaches can be used to compute the valuation of information assets. Under fundamental valuation models, there are three measures (value of information) intrinsic, business, and performance financial valuation models have three measures as well cost (CVI), Market (MVI) and economic (EVI) values of information. The idea of supply and demand can also be adapted in the information arena a. The rate of return for information assets is higher for low-maturity organizations and lower for high-maturity organizations since they have already reached the optimization ceiling.

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1. Introduction

Infonomics is all about asserting economic significance to information. The book “Infonomic” by DOUGLAS B. LANEY is divided into three parts: monetizing, managing, and measuring information as assets. It describes how the information is intangible and different from the other traditional assets but at the same time can be used like other assets to generate revenue. Laney has taken as a metaphor for the supply chain to visualize how the information goes to the lifecycle including production, shipment, delivery and usage like an item manufactured in a factory. It provides the strong foundations to consider it as an asset in the modern economy and illustrates some remarkable examples of companies using it to their benefit.

2. Glossary

CMMI: Capability Maturity Model Integration

DAMA: Data Management Association International

EDM: Enterprise Data Management

KPMG: KPMG is a global network of professional firms providing Audit, Tax and Advisory services.

IBM: International Business Machines Corporation is an American multinational technology corporation headquartered in Armonk, New York, with operations in over 171 countries.

EIM: Enterprise Information Management

CDO: Chief Data officer

SEC: Security and Exchange Commission

DQ: Data Quality

CVI: Cost value of Information

MVI: Market value of information

EVI: Economic Value of information

IOT: Internet of things

IPO: Initial Public Offering

3. Body of the report

3.1. Monetizing Information as an Asset

Despite growing awareness of information's potential to offer advantages beyond operational and analytical ones, data & analytics leaders rarely possess the skills or expertise necessary to put these concepts into practice in their own companies.

The practice of information asset management is lacking a critical component that precludes monetization: an accurate inventory of current data, both internal and external.

Business leaders should create and maintain an inventory of potential information assets that can contribute to monetization, establish an information monetization function, and take into account both direct and indirect opportunities for monetization in order to take advantage of the potential benefits that information monetization offers.

3.1.1. Why Monetize Information

The economics of information is known as infonomics. The study provides businesses with a framework for managing, commercializing, and appreciating information as a true asset.

The technique of exploiting data to generate more income is known as data or information monetization. According to McKinsey & Co., the best-performing and fastest-growing businesses have adopted data monetization and made it a key component of their strategies.

Selling direct access to your data to outside parties is known as direct data monetization. You have the option of selling it raw or in a version that has already been processed into analysis and insights.

Examples of this type include listings of potential business partners or research findings that have an impact on the industries and enterprises of purchasers.

The fascinating part is indirect data monetization. First, there is optimization based on data. This entails examining your data to unearth insights that can boost the productivity of your company's operations.

Data can be used to understand customer behavior and find out how to contact them.

Considering another example companies like John Deere and Caterpillar just collect the data from these actions, exploit it for their own gain, and modify the machinery for the benefit of future generations.

In the end, this knowledge is being used by fertiliser firms like Monsanto and Archer Daniels Midland to enhance their agricultural goods.

3.1.2. Prime ways to Monetize Information

Information has economic value that organizations can “turn into money” in two essential ways: By exchanging it for goods, services, or cash, and by using it to increase revenue, or reduce expenses or risks.

Businesses are focusing on their sales and marketing operations as some of the main ways they are monetizing information assets.

This approach entails gathering more information about clients and potential partners and acting on it.

The following twelve drivers of data monetization should be more than enough to help you craft a business case:

1. Increasing customer acquisition/retention.
2. Creating a supplemental revenue stream.
3. Introducing a new line of business.
4. Entering new markets.
5. Enabling competitive differentiation.
6. Bartering for goods and services.
7. Bartering for favorable terms and conditions, and improved relationships.
8. Defraying the costs of information management and analytics.
9. Reducing maintenance costs, cost overruns, and delays.
10. Identifying and reducing fraud and risk.
11. Reducing maintenance costs, cost overruns, and delays, and
12. Improving citizen well-being.

3.1.3. Methods for Monetizing Information

In the sphere of tasks for monetizing information as an asset, there are a number of stages that, if carried out effectively, would result in the large rewards.

Determine and contrast prospective sources for the direct and indirect commercialization of knowledge. Analyze the practicality of your information monetization concepts.

Pick high-value information monetization tactics from other businesses, especially those in different industries, and execute or tweak them.

Information should be prepared and packaged for monetization. Verify the validity of your ideas for information monetization.

Types of data which could play an integral role in the monetization.

- Operation Data
- Dark Data
- Commercial Data
- Public Data
- Social Media Data

You must decide how much of the information will be improved through integration, analytics, or reporting, as well as how and to whom the information will be made available, when you directly monetize information.

Optimizing the business is the aim of indirect monetization. Internal data use to improve a process or product in a way that results in measurable benefits, like income growth or cost savings, is what this entails.

Adapt monetization of high value from other industries. Your efforts at monetization can be sped up by analysing, understanding, and implementing what other firms are doing, particularly outside of your own sector.

Public case studies, trade associations, and industry conferences can all serve as springboards for fresh perspectives on how to monetize knowledge.

Overall, the Success in Information Monetization Looks Like, be prepared for answers or imitations from competitors as with any improvement or innovation to a business model.

Even if all you're doing is licencing aggregate point-of-sale (POS) data that isn't filled with personally identifiable information (PII), some rivals might try to question your business's integrity.

Others may quickly copy you, perhaps deteriorating the market information you have been the only owner of. Competitors that develop joint ventures or brand-new, external

enterprises that are free from the same industry compliance regulations may increase your monetization strategy. Many companies in heavily regulated industries like banking and insurance are already taking these steps.

3.1.4. Analytics: The Engine of Information Monetization

Business intelligence (BI) uses business analytics, data mining, data visualization, and data tools to help organizations make better data-driven decisions.

Advanced analytics uses sophisticated, automated methods to assess data, revealing correlations and relationships and extracting predictive information. Data mining, which sorts large quantities of diverse data into clean, usable data is the key for Advanced Analytics.

Unstructured Information understanding using BI systems and technologies are hard-coded to accept specific types of data from well-known sources in recognized formats. Rough analysis of unstructured text is now possible thanks to developments and expansions in BI technology.

But to really analyze it utilizing language and syntactically aware algorithms, it is necessary to progress to advanced analytic technologies that specialize in this.

Additionally, sources of business knowledge and performance are rapidly being made available in even more intricate media, such audio and video, in addition to written text.

BI tools are mostly intended to provide historical facts rather than to help with forecasting the future. Data drilling, slicing, and dicing, which is the specialty of BI tools, can also give users insight into why something happened in addition to what happened.

But if you want to know which is more profitable—knowing the history or projecting the future—ask any stock trader. The solution is obvious.

It's true that even basic spreadsheet programmes come with a variety of statistical formulas and chart types to reveal and depict trend lines.

Advanced analytic technologies significantly outperform basic BI tools in terms of the kinds of visualizations, pattern matching and correlative algorithms, predictive techniques and modelling capabilities, simulation, forecasting, and scenario planning capabilities available to organisations. This is because these technologies are their sole domain.

Investigating innovation using BI Beyond fundamental BI, a market for analytical products that spur company creativity is developing.

The previously mentioned enhanced analytical skills of discovering unique patterns, running simulations, and exposing weak signals can be utilised to inspire fresh perspectives on the company's operations, plans, emerging customer requirements, and market developments.

The upside that innovation offers can and should be driven by a deeper and more exploratory study of accessible data from both internally and externally, as businesses try to wring ever more cost out of the business.

Example of Business intelligence evolving in medical, this wealth of data is a fuel spawning additional innovations in health care, particularly mining it to develop new or improved clinical pathways.

Electronic medical records (EMRs) databases are quickly replacing years of pen-and-paper-based diagnoses, lab results, surgical records, and notes from doctors, nurses, physical therapists, etc.

There is also the imperative. In the US, Medicare, Medicaid, and the Affordable Care Act (Obamacare) all reward medical professionals for providing high-quality care while discouraging patients from returning for the same condition more than once.

One of the top five health systems in the U.S., Mercy Hospitals, collaborated with advanced analytics vendor Ayasdi to discover instances where clinical variance could be restricted and targeted toward the better decision making.

Strategic, tactical, and operational decision-making may be improved and made more actionable with the use of analytical tools and solutions, improving business performance can produce observable economic advantages.

Decision-making is required for the solutions are frequently directed towards circumstances where the number of actors, quantity of information, the variety of information sources, the possible results, and

They are very important or urgent. Therefore, they frequently include enhancing or decreasing risk or automating company operations, not just educating people

Businesses should really take into account the power of advanced analytics when their industries are changing and evolving.

It offers quicker insights for better decision-making and is reliable when generating forecasts and recommendations.

We have looked at many approaches to comprehending, developing, and putting into practice concepts for monetizing knowledge throughout above section. We have removed the conceptual obstacles to considering how to get economic gains from the information assets that are currently available yours and those of others.

We have examined the information monetization strategies used by dozens of firms from almost every sector and location. And we have gone over a fundamental procedure for implementing it in your company.

One significant obstacle stands in the way of monetizing information at the company level, though. If you've observed, almost all of the examples in this section are unique, functionally-focused concepts.

Undoubtedly, several new companies that have emerged over the past 10 to 20 years have been built on the economic foundation of information monetization.

Gartner analysts Saul Brand and Dale says “Enterprises must find new digital business opportunities, driven by macroeconomic and microeconomic forces.

These will enable them to modify their income statements and balance sheets to improve capital deployment and, ultimately, to restructure their businesses.

Many IT and business executives talk about information as an asset, and maybe even have the phrase “information is an asset” included in their data strategy documents or data governance principles.

The next step in your infonomics journey is to become adept at managing information as an actual asset.

3.2. Managing Information as an Asset

Information management describes the procedures, frameworks, tools, and software that a business employs to carry out regular business operation to turn Information as an Asset.

3.2.1. Information Management Maturity and Principles

Information management refers to the full spectrum of social, technical, and operational activities performed by a system used to handle information.

Information management is a practice that involves individuals, social networks of persons, organisations, enterprises, and governments.

Implementing enterprise information management requires more than one project. Organizations must instead carry it out as a planned programme that changes over time.

EIM can be implemented to serve a small business unit, where various data and analytics programmes must be coordinated, or it can be implemented throughout the entire organisation. As a result, EIM is a programme model of the enterprise class, and maturity may be tracked along several dimensions.

Organizations can determine what stage of maturity they have attained and what steps need to be taken to advance to the next level using Gartner's EIM maturity model.

The maturity model includes seven elements that Gartner has determined are crucial for EIM maturity.

7 essential building blocks for EIM maturity

- Vision
- Strategy
- Metrics
- Governance
- Organization Roles
- Life Cycle
- Infrastructure

The maturity levels and indicators themselves are aligned with current and nearterm capabilities of enterprises across industries and geographies:

- Level 1 organizations (in lower 10%, aware of key issues and challenges)
- Level 2 organizations (approximately 30%, operate in a reactive application-centric mode)
- Level 3 organizations (approximate 40%, more proactive)
- Level 4 organizations (approximately 15%, managing and leveraging information)
- Level 5 organizations (fewer than 5%, typically model organizations, optimized aspects)

We can't boost EIM in your organisation by improving only your maturity level. We'll take a tour of how various sectors and disciplines manage their assets, including supply chains, ecosystems, IT, human resources, and financial asset management techniques, in order to establish an effective information management approach that manages information as a real asset.

Many challenges with managing information as an asset span multiple EIM dimensions. These typically relate to issues with leadership, priorities, resources, and culture.

In a Nutshell, New digital transformation plans are required as a result of the tremendous waves of disruption that today's businesses are facing, including a scattered workforce, cybersecurity concerns, altering customer expectations, and changes in international regulations.

For business transformation, recent work must be seamless, automatic, networked, affordable, and accessible. Information Management uses technology to power and secure daily operations while connecting professionals with clients.

3.2.2. Information Supply Chains and Ecosystems

A supply chain is a system of actions and assets used to transport a good or service from its place of manufacture to its point of consumption.

Typically, a supply chain begins with the harvesting, collection, or generation of some kind of raw material.

In supply chain metaphor, data are raw, original transactions, text files, emails, images, or the like. They often have utility only in the context of the process that created or captured them.

Information Supply Chain SCOR Model Application

Although it seems simple enough, even the simplest supply chains have numerous moving pieces that must work in close coordination. These procedures are described as follows by the Supply Chain Operations Reference (SCOR) model:

Plan: Methods for balancing overall demand and supply to create a strategy that best satisfies sourcing, production, and delivery needs.

Source: Procedures for acquiring products and services to satisfy anticipated or unforeseen demand.

Make: Processes that finish a product to satisfy anticipated or unforeseen demand.

Deliver: Processes that deliver finished goods and services in order to satisfy anticipated or real demand; these processes frequently include order management, transportation management, and distribution management.

Return: Processes associated with returning or receiving returned products for any reason. These processes extend into post-delivery customer support.

Enable: Processes for establishing and operating the supply chain procedures, resources, and facilities, including relationships with all stakeholders and other involved parties

The SCOR model also provides a few levels of detail for scoping, configuring, and process/performance attributes. These details enable the handling of specific supply chain scenarios such as “make-to-stock” versus “make-to-order” supply chain configurations for general and custom goods and services, respectively.

Differentiating these two configurations for the supply of information can be helpful in designing for:

1. Generalized information uses such as a data warehouse or data lake, or
2. Specified information purposes such as an architected data mart or report, input to a new application, or partner data feed request.

As supply chains grow more sophisticated, they appear and behave more as networks—complex flows of goods and services among suppliers, distributors, payment processors, and customers.

Accordingly, organizations should characterize, architect and document their information lifecycles in this way as well.

The Metrics of Supply chain management defines the key concepts.

- Reliability
- Responsiveness
- Agility
- Costs
- Asset Management Efficiency

In brief, Information is Crucial because it provides the framework on which managers make choices and supply chain processes carry out transactions, information is essential to supply chain performance and just like healthful ecosystems are essential for people, animals, and plants, information is also equally important in fueling the businesses and business process in the present world.

3.2.3. Leveraging Information Asset Management Standards and Approaches

Several association, groups, and professional service industry have established their own information-related management tools and methodologies. Each of these bodies (CMMI, DAMA, EDM, KPMG, IBM) of knowledge, approaches, resources, and tools has its unique uses and benefits for information management leaders and professionals. Yet, most of them tend to lack adoption, completeness, integration, and/or usability.

There is impressive discipline around managing IT/infrastructure/technology and some ideas could be learnt and applied in information management arena.

Content management and data management are similar and overlapping concepts so methodologies and principle of content management might help for information management.

Several processes under the Knowledge Management can be adopted for information management which will in turn help in transferring and incorporating information assets into business products and services.

Standards and methods from asset management other than IT and can be also used as reference for information management. They are physical asset, financial asset, human capital and other intangible asset.

3.2.4. Applied Asset Management for Improved Information maturity

Information maturity provides mechanism to tackle challenges and follow best practices for managing internal and external information as an asset and to structure organizations and roles to build an info savvy organization.

It addresses barriers to managing information, provide new ways to approach information asset management and suggest a set of “Generally Accepted Information Principles” for doing so by taking an in-depth look into each of Gartner’s EIM (Enterprise Information Management) dimensions or building blocks.

For each dimension, observations and insights from supply chain, ecosystems and the other asset management disciplines can be added to a supplemental set of ideas and practices to further elevate the concept of enterprise information management to one of information asset management.

Gartner’s EIM maturity model enables organizations identify what stage of maturity they have reached and what actions to take to get to the next level. The EIM maturity model comprises of seven dimensions which have been identified as essential to enterprise information management.

The Gartner’s seven EIM dimensions are guiding tools or blocks that should be taken into consideration and adapted by any organization that is serious about managing information as an actual asset.

The EIM dimensions are to be followed in order starting with Vision, followed by Strategy, next Metrics and Governance, then People and Process and lastly Infrastructure so as not to have a situation whereby the “cart is put before the horse”.

As using them in the order provided will enable an organization to realize its goals of identifying its maturity level and the next steps to take.

To become info savvy means that organizations need to manage and deploy information with the same kind of discipline as with their traditional assets. This doesn’t happen without strong focused leadership or a variety of more tactical roles.

Primary among these is the chief data officer (CDO). The chief data officer role is foresight, not fad. From history, we see that advances in business and management science have always required new kinds of specialist leaders.

Today, a new kind of leader is starting to arise, to take charge of the management and exploitation of the information assets of the firm and their existence is an important signal that should be heeded.

They are the pioneers of a key future discipline in infonomics. CDOs involved with progressive business strategy and adding business value tended to be reported outside of IT and to a higher level. Their span of thinking about the kinds of information to be commanded tends to be wider and their notion of information as a valuable corporate asset tends to be more complete.

3.3. Measuring Information as an Asset

3.3.1. Is Information an Asset?

Five gentlemen filed a motion to obliterate(remove) the antiquated accounting systems which were not able to take account of intangible assets. The title of the hearing was “Hearing on Adapting a 1930’s Financial Reporting Model to the 21st Century.” Steve M. Samek, of Arthur Andersen, pointed out that our current accounting metrics and reporting system are not able to measure the actual value (emerging source of value) in the New Economy

Transparency causes the ability to make informed decisions. Without a proper track and record of economic indices, only “guesstimates” is possible. Even after 2 decades of the hearing, nothing much has been done to take account of information and other intangible assets formally.

The current accounting model fails to provide much information for intangible assets which obscures the true value or worth of a company.

The company’s information asset is under goodwill or elsewhere in the balance sheet even for organizations (TransUnion, Onvia, HG Data, IMS Health, A.C. Nielsen, and IRI) whose business depends upon buying and selling the information.

Companies are required to quantify, record and assess other assets but not information assets. An information asset is helping to increase the revenue directly or indirectly and ignoring it as an asset creates a disparity in market value and book value. This disparity is given by Tobin's quotients

Tobin q =market value/replacement value of tangible assets

The value has more than double from 0.4 in 1945 and now regularly eclipses 1.0 in any given year and it tripled when data warehousing and business intelligence rose to mainstream popularity.

Investors see something special in info-savvy companies. Info-savvy companies hiring CDO and data scientist and launching data governance program have a q-value nearly 2 times greater than market value.

When Facebook announced its initial public offering (IPO) in 2012, its S-1 filing with the U.S. Securities and Exchange Commission (SEC) indicated reportable assets of \$6.6 billion and predicted a conservative post-IPO market cap of \$75 billion. That implies that it had close to 68 billion of information asset. Information from each user was worth about \$81 now it is \$200.

Although we have become efficient and reliant on technology and accumulating information, but it is hidden from the balance sheets. Info-centric companies' business models revolve around collecting, buying and selling information and have a balance sheet devoid of their most valuable assets.

Organizations that treat idle information as anything less than having potential benefits do themselves a disservice. Like any asset, its realized value depends upon the organization's capacity to deploy the information.

3.3.2. Who Owns the Information?

The ability to use, replicate and share data means it cannot be considered in the same way as a physical asset with an owner. Rather, it is important to think of rights, roles, responsibilities, and limitations for those who access data in the various process from collection, use, sharing and storage.

The accounting definition provides more guidance around the potentiality of information as something which could be considered owned which consist of three conditions or characteristics

- Something owned and controlled by an entity (Control of information)
- Something exchangeable for cash (Cashing In on information)
- Something that generates probable future economic benefits which flow to that entity (Probable Economic value)

While most information assets cannot be protected as intellectual property, the way you use information can be legally protected.

The business method patent offers a vehicle for defining and securing the ownership rights to almost any unique and useful process you develop. This includes algorithms. Algorithms are used to create information and make use of information.

The term data trustee was introduced as it establishes information as a shared resource with shared responsibility. Moreover, it acknowledges that the same information can exist in multiple places at the same time (or is non-rivalrous in economic speak).

The term “Ownership” encourages politics and information silos whereas the term data trustee depicts that data is a shared asset and the property of the company, not individual business units or people.

It makes perfect sense that information’s quality should be measured to ensure its functional utility, and that its financial value should be measured to ensure its economic benefits

3.3.3. Quantifying and Accounting for information Asset

The claim for loss of corporate information assets was denied by insurance because electronic data is not tangible property in the event of 9/11 which points to the need of quantification of information as an asset.

Poor Data Quality has a detrimental effect on innovation, business performance, and competitiveness. Particularly in the realm of Big Data where orders of magnitude increase in volume, variety, and velocity of information, the issues, and their economic impact are greatly amplified.

Gartner data quality expert Ted Friedman has identified many Data Quality (DQ) indicators, which include both objective and subjective dimensions, Validity, Completeness, Integrity, consistency, uniqueness, precision, timelines, and accessibility are objective data quality metrics whereas existence, scarcity, relevance, usability, interpretability, believability, and objectivity are subjective data quality metrics.

To assist organizations in putting Infonomics principles into practice we can use various methods to compute the value of an information asset. These include both Fundamental and Financial valuation approaches.

The fundamental models consider the quality-related aspect of information while the financial models measure value in monetary terms by adapting accepted methods for valuing traditional assets. Under fundamental valuation models, there are three measures (value of information) intrinsic, business, and performance.

The intrinsic value of information is its presumptive benefit and can be used to prioritize information-related investments, and guide data quality or security-related efforts.

The business value of information considers the utility of information, helps to realize the potential real-world benefit, and aligns information-related priorities for competing businesses. Performance value considers the estimated or realized impact of information assets it yields empirical measurements that are good predictors or proxies for financial measures.

Financial valuation models have three measures as well cost (CVI), Market(MVI) and economic(EVI) values of information. The cost value of information considers the financial expenses required to generate, collect, or capture it. It can be the best means of estimating information replacement cost and negative impact if stolen lost or damaged. The market value of information looks at the potential or actual financial value of an information asset in the open marketplace.

The economic value of Information (EVI) generates the net financial value of information assets by applying the traditional income approach for asset valuation and then subtracting the information's associated lifecycle expenses

The realized, probable and potential value of information and their differences gives an idea about performance and vision gap. The Performance Gap is the difference between the realized value of an information asset and its probable value. Information Vision Gap is the difference between probable and potential information valuations. By combining information valuation models, we can identify and close information value gaps.

3.3.4. Adapting Economic Principles for Information

Information is an unstable resource. It is representational of some other thing or activity, does not deplete when used, may be employed concurrently, costs relatively little to store or transmit, and can quickly change or vanish.

Executives, business leaders, and architects must understand how the pricing equilibrium differs for information compared traditional services and products.

It is based on a more comprehensive function of information costs, workable uses, and market saturation rather than balancing supply and demand Information buyers shouldn't assume being able to purchase it for only a small price increase.

And information providers must consider how diminishing market saturation will affect the number of purchasers at any price point (and vice versa), as well as how this would affect their identifiable income stream.

However, the way an information unit's price fluctuates in reaction to other factors (i.e., its elasticity)—primarily the supply and demand of information—may be just as significant as—or perhaps more important than—fixing a price for it.

The amount a supplier (publisher, producer) of information asset supplies in response to a change in price is measured by the price elasticity of information supply.

However, given that data is intrinsically reproducible, why would a supplier, such as a book publisher or data broker, limit the supply even with downward pressure on prices? Simple: to stop the price from falling below zero, producing little or loss-making earnings.

There are three fundamental ways to design systems that can prevent the adverse effects brought on by streams of similar data:

- Transmit only distinct data if it is produced and filtered by the publisher. IoT devices, for example, might only send updates when their state changes.
- Transmit only differential data, which includes the delta between subsequent data points. Examples include the aptly named differential backups, and accelerometer sensors and water leak detectors.
- Produce and transmit only derivative data. Examples include publishing a revision to a previously published book or article or applying different algorithms to a piece of information to craft uniquely differentiated messages for customers.

When it comes to information yield low-maturity organizations will see accelerating improvements in the rate of return on their information assets from information-related investments, while high-maturity organizations will see decelerating rates of return as they approach an optimization ceiling

4. Summary

Infonomics is all about leveraging the existing information available in the organization and utilizing in such a way that it acts as an asset for the organization. Information has all the features that an asset in an organization possesses but still, it is not considered as an asset in accounting books and litigation, they are represented as goodwill. Companies that have realized the significance of information and are at the higher end of information maturity are able to take huge benefits of it. When it comes to information the efforts should be made towards monetizing it, measuring it and managing it.

5. Conclusion

In the modern economy, information has value and companies are realizing its significance which has increased revenue, making the business and service processes smooth and efficient. Although the significance is realized in the business world, it is still not properly treated and reflected as an asset in accounting and legislation. More effort in monetizing, managing and quantifying information as an asset is needed which will yield proper utilization of these newly discovered shiny assets.

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