



# **MULTI DIMENSION IMPACT ACCOUNTING (MDIA)**

## **Section III Accounting Concepts**

**A TrueValueMetrics Book  
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# Background

## **TO DO ... Complete this paper**

This paper will be complete when it describes the data and the framework with enough clarity to make it possible for systems architects to use it to design the data flow and analysis processes.

# KEY CONCEPTS OVERVIEW

## THE PURPOSE OF ACCOUNTING

### To understand economic activity

The purpose of accounting ... conventional money profit accounting ... is to use data that costs as little as possible to understand economic activity to enable decisions that will create value that is the biggest possible. This is what has been central to accountancy for a very long time but over time it has become most used to serve the much more limited objective of profit maximizing in business and delivering wealth into capital markets.

MDIA has the same central goal, except that the mission is to create the maximum of social value taking into consideration multiple dimensions: people, place, planet and profit.

Conventional accounting collects and organizes data in a systemic way, data that are neutral and an efficient representation of reality. MDIA aims to do something similar for the impacts on people and planet as well and in a manner that will enable optimization for the benefit of society (people) and the natural environment

### Accountancy ... a system

Money profit accountancy is a system, and MDIA is a variant of this system. Both based on the same basic principles for record keeping and accounts that have been used for several centuries. Accountancy has universality, but we have become accustomed to seeing accountancy being used only in an organizational setting, whether it is a company, or in government or an NGO ... and in recent years accountancy has been used creatively without respect for basic principles.

But the powerful logic of accountancy applies wherever there are economic transactions and it is logical to apply the principles of accountancy to the Community and the public in much the same way that the system applies to an organization and its stakeholders.

## THE DOUBLE ENTRY PRINCIPLE

### Double entry

Double entry is arguably the central principle of accounting, and the principal reason why accounting has been such an effective system of business metrics for so long.

It would seem that accounting is very old ... there has always been a need for fairness in socioeconomic affairs, and equitable transactions must always have had a role in human

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interaction. Keeping track has a long history ... and hiding wealth and covering ones tracks has an equally long history.

While some of the old fashioned principles of accounting may no longer be the focus of modern accounting and accounting education, the central core of accountancy, that of 'double entry' is alive and well and very powerful.

Double entry is at the center of accountancy. It is a powerful idea, now almost 500 years old ... and maybe somewhat diminished in its importance with the use of computerized accountancy over the past 40 years. However, it still has an important role to play in accounting excellence that can also be applied in the area of MDIA.

There are two sorts of accounts that together balance ...

- (A) Balance Sheet Accounts; and,
- (B) Income and Expenditure Accounts.

In the money profit setting, changes in the balance sheet accounts over a period is a measure of profit. The difference between total income and total expenditure over the same period is also a measure of profit.

In corporate accounting the accounting is about the activities of the organization. In MDIA the accounting is for the impact of all economic activity on people, place and planet as well as on the profit for an organization.

### **Balancing the books**

The concept of “balancing the books” has deep significance for the control of economic resources. It is a whole lot more than the accountancy done as a step towards filing a tax return or satisfying a legal requirement imposed by some regulatory agency. Balancing the books helps to identify problems in the activities of an economic entity through the simple process of equating what has been used with what has been achieved ... and if this is not right, something needs to be addressed.

From very early in my career I have used the balance sheet as a benchmark for everything to do with the accounts. If the balance sheet is changing in ways that cannot be explained by the economic activities that are going on, then something is amiss. This is a very simple tool ... but very powerful. It disturbs me that many critical organizations in our modern society including governments and some major financial institutions like Central Banks seem to play fast and loose with the double entry idea and operate on what is essentially a single entry accounting system.

## Financial statements

Financial statements are amazing. In large part because of the double entry construct, in a few short pages, financial statements are able to convey a huge amount of information about the financial status and performance of the reporting entity. Many millions of transactions are condensed into a few summary totals that are (relatively) easy to understand.

Financial statements comprise balance sheet and operating statement that together tell the story of the financial state of the entity and the operating performance of the entity. Most entities will also report in a cash flow format, and there are various requirements and reasons for having notes and explanations as well.

The balance sheet is one of the most powerful analysis tools in accountancy ... critical for financial analysis, especially in complex situations. A balance sheet is accountancy shorthand to describe the financial conditions of an operational entity. It shows assets and liabilities and explains how the difference between them came about. A balance sheet is an efficient way of showing with very few numbers the impact of thousands or millions of individual financial or economic transactions. Comparing the balance sheet from different dates makes it possible to measure progress very tangibly and very easily.

An operating statement helps to show how an operational entity is functioning. It shows what revenues or income there has been and what expenditures there have been, and the results of this. The operating statement is prepared using widely understood categories of revenue and expense so that they are easy to understand and useful for comparative analysis.

Inside a large operating organization there will be many subsidiary operating statements that will facilitate analysis inside the organization. In accountancy there are rules about how this subsidiary analysis is done which may collectively be referred to as rules of consolidation.

### Incomplete records

The logic of double entry and the framework comprising balance sheet accounts and profit and loss accounts that describe status, change in status and the cost and value or revenue of activities makes it possible to draw conclusions about missing elements. If the elements of the balance sheet are known for a period in the past and the current time, then it is possible to deduce the profit or progress made during this time.

While it is better to have a complete set of data for analysis, important conclusions can be drawn from only a subset of all the data. Because of the balancing principle it is possible to prepare a complete presentation of financial performance without having all the data. It is also possible to validate the coherence of the data.

In practice this means that MDIA can build a useful picture of community progress without having all the details of all the economic activities in the community.

## **ORGANIZING THE INFORMATION**

### **Accounts**

The origin of an account probably goes back to the idea that a responsible person had to give an account ... an accounting for what had happened. In practical terms an account in accounting is a critical part of the way accounting gets data organized.

There are two types of accounts in conventional accounting. These are the balance sheet accounts and the accounts of the operating statement. Because of the double entry construct, the balance sheet accounts and the operating statement accounts taken together are always 'in balance' ... that is the total of the 'debits' equals the total of the 'credits'

### **Account codes**

Account codes identify accounts ... just as account names identify accounts. Codes can make it easier to process transaction data automatically, as long as the account code designers have some understanding of computer logic and sorting.

### **Books of original entry**

#### **Voucher**

A voucher is a document or record of some sort that describes the transaction. It may be a document that describes the sale ... an invoice ... or it might be a set of papers prepared to evidence the approval of the the transaction.

#### **Journals**

Journals the books of original entry are the first step in traditional accountancy for getting the details of the transaction organized and on the record. Journals ... or day books ... are essentially lists of transactions ... with ALL transactions being put on the record.

### **Transactions**

Transactions are the elemental economic event. Any economic activity comprises many transactions. Every purchase or sale is a transaction. Production is a transaction. Consumption is a transaction. Movement is a transaction. Everything.

Using transactions as the only base of information about an economic activity is problematic. Because of the volume of transactions it is likely that there will be errors, and in total these errors may well be substantial.

MDIA uses the double entry accounting construct so that it becomes possible to use quite small amounts of data to build up a good picture of the impact that economic activities are having on the community and how much resources are being used to give what result ... whether value adding or value destroying.

## REPORTING

### Financial Statements

Financial statements are the way modern accounting communicates the results of accounting ... the state and the performance of the organization. The purpose of collecting, organizing and storing financial transaction data is to understand and report on the state and performance of the organization to the stakeholders.

Financial statements are routinely prepared to include:

- a balance sheet
- an activity statement; and,
- a cash flow statement

There are usually some notes to the accounts and some commentary by responsible officers of the organization.

In years past, the preparation of accounts was a 'once a year' exercise, but that time is long gone. Now companies are expected to report their financial state and performance every three months. Inside the organization, the preparation of financial reports to monitor the progress of the organization is more frequent, usually monthly ... that is twelve times a year.

Getting the frequency of financial reporting right is important. If the reporting is done too often it becomes a burden both for those responsible for preparing the reports and for those who should be analyzing the results. If the time interval between reports is too long, there is too long a delay in responding to the information and taking corrective action. Financial reporting once a month is probably the best compromise.

The periodic reports may merely confirm that what was expected has actually happened ... or it may show up performance issues that need to be addressed. With monthly reports there is a relatively short time from the time the data is collected to the time the data summaries are reported.

### Balance Sheet

The balance sheet is one of the most powerful analysis tools in accountancy ... critical in corporate financial analysis ... but alas, missing in much of public sector financial reporting. A balance sheet is accountancy shorthand that describes the financial conditions of an organizational entity. It shows assets and liabilities and explains how the difference between them came about.

A balance sheet is an efficient way of showing with very few numbers the impact of thousands or millions of individual financial or economic transactions and comparing the balance sheet from different dates makes it possible to measure progress very tangibly and very easily.

### **Activity Statement ... Profit and Loss Account**

There are various names given to an activity statement. These include operating statement, profit and loss account, income and expenditure account ... and all serve to explain the use of resources and what was received in return.

While the balance sheet is useful in describing how much change has happened ... the activity statements serve to explain how the change happened. These statements may be in summary form ... or in great detail depending on the need for analysis. They show all the costs and all the revenues or income summarized from the transactions in an organized way.

The information from an activity statement shows the manner in which the balance sheet changed. The profit or surplus reported in an activity statement for a period prepared under double entry accounting rules is the same as the change in the balance sheet from the beginning to the end of the period.

In GAAP money profit accounting the data and analysis most usually apply to an organization. Most of the analysis has a focus on improving the performance of the organization. In MDIA, the data and analysis are also concerned with people, place and planet ... in other words, the social, community and environmental impact of economic activity.

### **Cash Flow Statements**

A cash flow statement is a clarifying presentation that shows the way cash has been used, and how cash has been acquired.

A cash flow statement repeats much of what is in the activity statement, excluding transactions that have no cash impact and including transactions that have impact on cash but not on the calculation of profit.

For example:

- Financing has an impact on cash but not on profit.
- Changes in level of inventory have an impact on cash, but not on profit. Use of inventory in cost
- of sales, has an impact on profit.

### **Notes to Accounts**

While good accountancy should be very clear and based on sound accounting principles, there are times when there is a need for some explanation. Notes are an integral part of a set of accounts.

In much of modern accountancy the notes have become very complex, and it is not at all easy to understand the impact of these notes on the financial statements themselves.

But nothing will happen unless there are reports. Reports should be part of a system and report nothing as reliably as they report something of significance ... in other words accountancy has reports that are not a subset of journalism but are an independent system in their own right.

### **Reporting impact**

In conventional money profit accounting there is no reporting of impact beyond the impact associated with profit. The other elements of the 'Triple Bottom Line' ... people and planet ... are ignored. They are 'externalities' that are not accounted for in conventional money profit accounting.

Reporting impact is important, and this is the whole 'raison d'etre' for MDIA.

## **ANALYTICAL ACCOUNTING**

### **Cost accounting**

Cost centers, profit centers, investment centers, departments, etc are all rather similar. The key is to understand what they are doing and what they are costing.

If what they are doing does not seem to have any value ... then some further questions need to be asked and decisions made.

Corporate accounting systems usually have very effective cost accounting capability, but getting useful information from these systems is not always obvious.

### **Cost, price, value, profit and impact**

Cost, price and value are three numbers that describe economic activity. The relationship between these numbers determines the performance of almost any economic activity. All of these measures are important ... any one missing and the understanding of the dynamic of societal progress is compromised.

Three critical metrics in understanding economic activity are: (1) cost, (2) price, and (3) value. The relationship between these numbers determines the performance of almost any economic activity. All of these measures are important ... any one missing and the understanding of the dynamic of societal progress is compromised. These metrics are a part of a further three critical indicators: (1) productivity ... productivity improves when less cost produces more goods or services; (2) profit ... profitability improves when price is increased and cost is decreased; and (3) impact on society ... impact improves when the value increases and the cost decreases.

## **Unit costs, unit prices and unit values**

Unit costs, unit prices and unit values are very informative ... they make comparison easy both over time and from place to place. There are some challenges because units of measure and currency exchange rates may confuse ... but when these issues are taken into account, unit costs, prices and values are very powerful.

## **Productivity**

Productivity is a derivative of cost ... productivity is the most important single metric for the performance of our global society. In broad terms science and technology has made it possible for society to live very comfortably, but leadership has not made the decisions that embrace what is possible for the benefit of a broad society but for narrow self interest.

## **Profit**

Profit is the relationship between cost and price, and has an impact on the stakeholders of the organization. Profit measures the performance of an organization, but does not bring into account the costs to society, or on the positive side, the value derived by society. Profit is the key metric for capital markets, and profit drives corporate stock valuation. Unfortunately profit and valuation now has taken on a life that is far removed from corporate operations and the impact of these operations on society with serious consequences.

## **Value**

Impact on society is a function of value and cost, but not only these metrics. Price has a role in allocating how added value is shared between different segments of society and across the value chain. MDIA explicitly addresses this matter both at the individual community level and across complex value chains.

## **Impact on society**

## **Management accounting**

Management accounting is a subset of accounting that helps to get useful analysis into the hands of decision makers. Management information is sometimes defined as the least amount of information that is needed to make good decisions reliably.

## **Efficiency**

Efficiency comes more from engineering than from accountancy ... but the idea is very relevant. Productivity is something similar to efficiency, as is cost effectiveness. In each case the amount of output is being related to the amount of input that went into the activity and its result.

## Department costs and the variants

A cost center is one way in which costs can be organized to help understand and control costs.

By pulling costs together within a unit called a cost center, it is possible to get information about a company's activities in a simple way.

## AUDIT

In old fashioned accountancy ... the audit opinion, the statutory audit opinion, was simply that the financial report was a true and fair view of the entity and that the report reflected the underlying vouchers and records. It was nothing more than this.

## Reliability

The data associated with accountancy are boring ... but the system does what it can to ensure that the data are reliable and may be trusted. The techniques used for this include organization so that there is both internal control and internal check. The quality of accountancy data are enhanced by the professionalism of accountants who address the details that is so essential to data reliability. The data reliability of accountancy is very much greater than what may be achieved using statistical method on top of small surveys. While there is a case for the statistical approach in some limited circumstances, it is not a useful alternative for financial control and for most accountancy reporting purposes.

## Independence

There is a need to have data ... and accounting ... independent. This helps to ensure that the data and the accounting reports reflect reality and are not merely some fiction desired by operating management. There are many different approaches that can be taken to have this independence ... it is, however, usually not enough to have an independent audit to provide this independent view when the structure itself is deeply flawed.

### *Inadequate independence*

*Most accounting data originate in an operating environment. In the relief and development industry most activities are funded by donors who want feedback, and frequently donors fund Monitoring and Evaluation (M&E) to get this feedback ... but is this good enough. In some cases it is not, and in other cases the feedback is appropriate ... but there is no systemic internal control or internal check that ensures that the data are reliable and neutral.*

## **Audit is not accountancy**

A common mistake is to think that a good audit will solve the problem of bad accountancy. It cannot. Audit is a process that verifies the state of the accounting system and the reliability of the reporting.

## **ACCRUAL -V- CASH BASIS ACCOUNTING**

### **Accrual accounting**

Accrual accounting is used in the business world because it matches the expenses and the revenues within a reporting period so that the profit results are not distorted. This type of accounting has been the norm for commercial and industrial entity accounting since early in the industrial revolution ... but has not been used in most governmental entities.

#### *Cash basis for government accounting!*

*The principles associated with accrual accounting are clear, but in some government accountancy (such as the United States) the statutory authorities and the regulators have seen fit to suspend the accrual principles and allow important assets and liabilities not to be recorded in balance sheet accounts. How convenient!*

*I tried to engage the International Federation of Accountants (IFAC) on this problem in the 1990s, but there was enormous pushback from those with power and influence. The argument gets made that the accrual method would pose an excessive burden on government accountants, yet it is a requirement for corporate entities and has been for almost 150 years! Another example of one rule for government and another rule for everyone else!*

Accrual principles apply when MDIA is used for the analysis of economic activity and all of the analysis perspectives that are possible. The same concepts of accrual apply in value accounting as in money profit accounting. This has many benefits, including the bringing into account of future impact of present activities, both beneficial and detrimental.

### **Cash based accounting**

Cash based accounting is common in government organizations. The US uses a cash based system. These systems have become intertwined with budget procedures ... have become increasingly complex and legalistic and increasingly seem to be inadequate to control funds and achieve any reasonable level of accountability for anything. Cash based accounting in government is one of the weakest aspects of modern governance and makes a mockery of responsible financial management ... which is almost certainly the big reason why it has remained the favored system of accounting in government.

Some countries have moved away from cash based systems in order to get better control of the financial management of government ... notably New Zealand, Australia and the

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UK. The move from cash based to more accrual based accounting is a substantial change with the potential for much confusion.

MDIA Value accounting can learn from the large scale government accounting experience ... and have an easier time simply because the scale is more manageable.

### **Depreciation**

Depreciation brings together both an economic reality and an accounting principle. Some things last for a long time, some last for less time. The time they last and can function economically is the economic life of the thing. The cost when the thing is new is the acquisition cost, but the cost or using this thing in any period is the acquisition cost divided by its economic life.

A basic principle of accounting is that revenues for a period are matched against the costs of generating those revenues in the period.

## **CONSOLIDATION ACCOUNTING**

### **The consolidation process**

Consolidation accounting is an important part of accountancy. Hardly anything is as simple as it seems, and consolidation accounting has the essential logic that sorts this complexity into its component parts and allows for a rigorous way to 'roll-up' granular activities into a consolidated summary. This is a normal part of corporate accountancy used in organizations. A large number of economic activities taking place in many different places and maybe in different businesses, but using consolidation logic may be brought together into a single summary for all of them.

The same consolidation logic can be used for all the economic activities that are going on in a place, a community. The economic activities may be implemented by different organizations but the impact of all of them applies to the place. A consolidating statement shows how different activities contribute to the total impact. The logic used for this is very similar to the logic used for consolidation in the organization.

The consolidation technique makes it possible for complex organizations to aggregate their financial reporting so that a single report gives a fair representation of the underlying operations.

As the organization becomes more complex, the scope for planned misrepresentation increases. What is powerful and useful for the corporate style GAAP accounting is equally of importance and useful in developing metrics for community impact analysis.

For organization accounting the idea of consolidation is to be able to present in one report the combined activities and results of many entities or units.

For MDIA the idea of consolidation is the same. A simple consolidation report can summarize the outcome of many different activities and organizations in a community.

## **Rules about consolidations**

In GAAP accounting there are strong rules about how consolidations are done ... but the strong rules are also complex and subject to many views about what is permitted. Where there is complexity it is possible for clarity to disappear.

Some of the same issues arise in MDIA where the focus is on activities in a community. Under MDIA, the aim is to highlight alternatives rather than to argue simply for the one approach. The principles of consolidation accounting are quite clear. However law and practical complexity make consolidation accounting difficult, and in turn less and less useful. For MDIA the basic principles of consolidation accounting apply.

MDIA aims to keep complexity to a minimum so that reports can be easily understood and have value to the public.

## **Consolidation for the community**

The reason why consolidation accounting is an integral part of this paper is simply that a community is impacted by many different economic entities and activities, and the way in which these interact has already been defined comprehensively in the accounting principles associated with consolidations.

Very few transactions are simple and have impact only on the direct participants ... most have other ramifications which are important in the money accounting of the business world, but have even more importance in the context of the combined flows of value and money around the community.

## **Consolidating statements**

In GAAP accounting a consolidating statement is used to help analysts understand how the data for the consolidated reports were aggregated, and to give a profile of the performance of the organization.

The same sort of report is useful in the community to show what entities in the community are creating wealth and which are not.

In organization accounting, consolidating statements show how different units make up the consolidated results.

For MDIA a consolidating statement shows similar information. A consolidating statement shows what is working and what is not.

# MORE ABOUT COST ACCOUNTING

## WHAT IS COSTING FOR?

### **The purpose of cost accounting**

There is a reason for having a separate section on cost accounting. It is simply that cost accounting is the foundation for all the management information that flows through a business organization. Over time, the performance metrics in a modern organization have morphed into something that no longer 'looks like' cost accounting, but the core underpinning of all business management information systems starts off with a good understanding of cost accounting.

#### *Rolls Royce -v- Pratt and Whitney*

*I had a job interview with Pratt and Whitney early in my career. During the interview we talked about the cost accounting at the company, and it was fairly clear that P&W had a rather unsophisticated way of doing their costing. Around the same time Rolls Royce had a very intricate cost accounting system with every item costed in a very detailed way and expressed to many decimal places of a penny! I remember thinking that RR was facing bankruptcy because they had a cost overrun on the RB211 engine program (first used in the Lockheed 1011) of hundreds of millions of dollars, and P&W seemed to have good control of its big numbers.*

*It was an 'ah-ah' moment with the takeaway that good cost accounting should never be dominated by detail at the expense of the big picture!*

The purpose of cost accounting is to understand costs and thus be in a position to manage costs. There are many different techniques that can be used, but the overriding goal is to have a useful understanding of costs, for better decisions to be made and for progress to be accelerated.

The goal is not only to understand what costs are and what progress is being made ... but to understand also how this progress relates to the progress that should have been made.

Cost accounting provides the data foundation in the corporate setting so that management need not use anecdotes, journalism and publicity brochures for decision making ... and MDIA takes these same ideas and applies them in the broader community setting.

## **Simple Question: What is the Cost?**

Surprisingly, the answer to this question is rarely known. Some is desire for secrecy ... some is just 'don't know'. People who do not know these facts are not managers ... they are not managing.

For some reasons experts in community development ... and in all sorts of social sector disciplines have little understanding of how much things should cost ... how much things did cost ... and the behavior of costs. This is a critical indictment of the experts and the whole of the international official relief and development assistance (ORDA) community ... as well as a lot of government procurement work.

But this is also true in large parts of the private and enterprise sector as well. This is difficult to explain politely, but it seems to be a result of poor understanding on the part of educators and an increasing domination of accountancy and metrics by a legal and mathematical focus rather than a technical and engineering focus.

## **The cost question ought to be easy to answer!**

When cost is known, then a lot is known about performance. In modern society there is surprisingly little information about cost ... much more about price.

I have done corporate cost accounting in many settings, and have become sensitive to the need for cost accounting to be relevant to the management issues at hand. In the 1970s Rolls Royce had very precise cost accounting ... but the RB211 jet engine development went over cost estimates by hundreds of millions of dollars. Meanwhile, Pratt and Whitney had quite sloppy cost accounting, but knew much more accurately the executive information they needed to know.

Society does not need to have precise cost information, but there should be a good understanding of the underlying costs of everything.

## **How much did it cost ... the money cost?**

Knowing how much something costs is pretty basic. Understanding cost and cost behavior is central to the MDIA system of metrics. It is appalling how little data about cost is reported, and how little information about cost is understood and appreciated by people with responsible jobs. Because there is so little understand of cost ... cost gets used to justify bad practice of all sorts.

Cost is very basic ... but even though it is a fundamental building block of analytical understanding, it is very rare that the data are presented clearly ... if at all.

Cost accounting is very well established inside corporate operations ... but little of this emerges into the public space. The level of public ignorance about costs ... and the behavior of costs is terrible low. Cost accounting is not particularly difficult ... it is not rocket science! It is facilitated when there are trained staff and there is accounting and MIS system that incorporates costing.

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Cost accounting is painfully tedious and difficult when the record keeping is poorly designed and critical data not available. This is a reflection of management competence and priorities. As in many things, more and more does not mean better and better. It is very easy for cost accounting to produce massive amounts of data, and almost no usable information ... on the other hand, cost accounting data can save millions of dollars and produce success rather than failure.

I did a cost analysis of costs on a large pulp and paper mill construction project. About three days work and I was able to show that the contractors were spending twice what the budget allowed ... they had spent 2% of the money and done just 1% of the work. The owner's representative took this up with the contractor ... the critical feedback process ... and a crew of 1,400 workers was reduced to 700 starting next day! This was a cost plus contract ... saving to the owner probably around \$150 million in 1966 dollars!

There are two main ways to get at cost. One is to add up the detail, and the other is to drill down from the total. The best ... that is the most reliable ... cost data are obtained when both techniques are used and a similar result is obtained. Another important approach is simply to know the business and to keep eyes and ears open ... it is amazing how much useful information is circulating that helps to determine how much things cost. More analysis may be relatively easy and useful. What else is known? What are the wage rates of the people working for the organization. A single expatriate is expensive and not cost effective unless he/she is doing important valuable work.

#### **Historic cost**

A valid criticism of accounting is that it is all about history ... and this also applies to cost accountancy. But it is also a fact that if you know something about the past, it is possible better to understand today and the future.

##### ***Why history is important***

*Someone told me a long time ago that if you do not know where you have been, and do not know where you are, you are unlikely to know where you are going.*

Clearly knowing everything about the past is going to be costly, consume time and therefore be counterproductive ... but having knowledge about the behavior of costs, prices and values ... and about productivity, profits and value adding are valuable. In fact, there is no high performing corporate organization that does not understand these things.

##### ***Appreciation of cost behavior***

*I have never come across a successful organization where the management and responsible department heads did not have very clear understanding of the behavior of costs and the characteristics that make their products or services valuable. Where key staff understand these things ... there is success.*

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*With cost accounting I am able to learn more about the structure of costs ... material labor, indirect production costs, etc. than most of the operating staff. Because they know how to combine what I know with their real world it is possible to do things that enhance productivity. Knowledge of cost gave people the confidence to try something that they would not do otherwise ... it lowered the risk of trying to improve! Knowledge of cost also helped people to focus on what is important and do things that had a material impact.*

In the corporate world, there is a good foundation of knowledge about cost, prices and profits. Not much of this is available to the public, but it is an integral part of decision making in the corporate setting. The situation about cost knowledge in the public sector as a whole and the relief and development sector in particular is remarkably limited. As a result it is fair to say that society gets a lot less from its government than it should ... even at the best of times.

The purpose of cost analysis is to improve understanding.

Good accounting data are neutral, and merely reflect some underlying reality. Cost analysis takes data and puts it in a form that augments understanding. It really does not matter what analysis is done as long as the result is better understanding and improved decision making. It does matter that the analysis is done on top of neutral data. It does matter that data are reliable and reflect an underlying reality.

#### ***Problem with deteriorating data***

*In the 1970s, when fisheries population dynamics was a rapidly developing science, I was friendly with Dr. John Gulland at FAO and we talked about the problem of using more and more mathematics to compensate for less and less reliable data. Over the years more and more mathematics was being done on less and less reliable data.*

As computational power had increased ... the problem had become more and more serious. It is time to get back to having more and better data.

Accountancy uses rather little mathematics on top of simple data that are well organized. A priority to improve data collection, data flows and data storage will be very valuable.

### **Cost analysis**

Analysis is a step to creating value from data

Data are nothing without analysis. The effective use of the product of analysis for decision making and holding people and organizations accountable is what makes MDIA valuable. Experience has shown that performance improves when there is active feedback and there are the data that enables people and organizations to be held to account. People may not like it ... but their performance improves.

The purpose of analysis is to get a better understanding. The data are neutral ... the analysis then produces results that might suggest some conclusions. It really does not

matter what analysis is done as long as the result is better understanding and improved decision making.

One value step is moving from data through analysis to understanding ... another is to move from understanding to effective action. In some situations this has been done with wonderful results, but mostly there have been interventions that were more expensive than effective.

### **Without costing ... anything goes!**

Without costing ... anything goes! This is a critical matter, because optimized performance requires that decisions are made with a good understanding of how much things cost ... and how much things should have cost.

Knowledge is part of “internal control”. Cost is part of a meaningful system of internal control and where it is missing it is difficult, if not impossible to manage.

When people who are responsible for something do not know what things should cost, and what they do cost, there is a huge problem. These people are being paid, and paid well, but they are not managing! This may be legal, but it is wrong and it opens the door to criminal gain for themselves or for others involved with the activity.

#### ***Criminal intent***

*The World Bank has very comprehensive procedures for the oversight of procurement, its tendering process and the vetting of contracts ... but, I would argue, it does not work ... and has not worked for the best part of 70 years. It is essentially a legalistic process that is very cumbersome and fails to ask the very simple question at the start and at the end ... at the start, are the contractors offering value for money, and at the end, did they offer value for money. If there is value for money ... there is no room for corruption. Nobody will ever have the answers to these questions if people do not know what things “should” cost and what things “do” cost!*

Government procurement at all levels is frequently compromised. Part of this is because the procurement process is wrong, and part of this is because people do not follow the rules and go about making benefit for themselves.

#### ***MTA procurement in New York***

*What went wrong is not clear ... but the escalators at the relatively new subway station at 63rd and Lexington Avenue on the F line are always breaking down. It is a deep station with five banks of escalators from the street to the subway platform level. Almost always one or two are not working ... whether or not they are being repaired. I grumbled to one of the maintenance mechanics who laughed at the situation ... with good reason. He pointed out that the elevators were the rated for easy duty applications, inside a store, for example ... not for 24/7 use in a transport environment. These are OTIS escalators ... made by a company that ought*

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*to know what it is doing ... but bought using a public sector tendering process where the paperwork and legal form ... not to mention bribery and kickbacks ... are more important than value for money and good engineering. There is almost no way to hold the people involved to account ... the contracting process has a form that is open, but the information needed to hold people to account is not easily accessible, if at all.!*

The analysis of big projects is often more about political benefit than economic benefit ... especially when there are public funds involved.

#### ***Port Authority of New York and New Jersey***

*The Port Authority of New York and New Jersey jointly operate some services associated with transport and crossing the Hudson River between New York and New Jersey ... services used every day by many people. They do not seem to be very good at cost accounting ... certainly not at the higher levels where big decisions get made. The performance of their infrastructure and services affects the commute of millions of people ... and the costs have never (it would seem) been optimized.*

*The Port Authority Bus Terminal in Manhattan (New York) was rebuilt in recent years ... but in spite of a dedicated bus lane, buses crawl for several miles to reach the terminal at a huge cost in bus operating cost and in passenger travel time. A much more cost effective approach would have been a new transfer station from bus to subway on the New Jersey side of the Hudson River.*

*The analysis of this is pretty clear using the MDIA approach ... less so using typical government and public sector accounting where the distinction between capital costs and operating costs becomes blurred. High speed high capacity subway service from the Meadowlands area in New Jersey to the existing subway network of New York City would have improved the transports connections measurably. What was done helped at the margin ... but not for very long and not by very much.*

*Original analysis done in early 1980s for the DeCamp Bus Riders Association*

### **Comparative analysis**

Comparative analysis has many forms ... including:

1. (1) the comparison of data from one locations with another location;
2. (2) the comparison from one time to another time;
3. (3) the comparison from one organization to another
4. (4) the comparison of what should be to what actually is;
5. (5) the comparison of one approach to another approach; etc.

### **Time series**

Time series are very powerful ... the corporate world uses them all the time. Capital markets use time series ... the public needs to have time series that show what is going on that specifically impacts their community.

### **Cost accounting ... two settings**

Cost accounting ... and thinking about cost, price and profit are central to management information in the corporate setting. But this is not the case for society as a whole. Cost accounting is weak in most public sector organizations ... and there is no history of cost accounting about society and socio-economic progress. But what works to help understand the behavior of cost in the corporate sector can be modified for use within the MDIA setting. Almost all the tips and tricks that may be used for corporate understanding can also be used to understand how to make better progress in the societal setting.

Corporate accounting systems usually have very effective cost accounting capability, but getting useful information from these systems is not always obvious.

#### ***Costing ... use the right tools***

*American Airlines used to be one of the cutting edge users of computers ... developing the Sabre reservation system and dominating this part of the airline industry. At some point this team was asked to do some costing about the airline operations like baggage handling and airport operations. They tried ... and struggled ... and failed. The computer should not have been the starting point.*

Cost accounting is a management tool. The purpose of cost accounting is not to merely exist, but to provide actionable information for managers and the organization's decision makers. Accuracy is not as important as relevance.

#### ***Relevance***

*I was trained in the UK and learned cost accounting initially in that environment. The cost accounting was rigorous, and accurate ... but not very relevant. Later I worked in the USA and found the cost accountancy “sloppy” ... but relevant and effective.*

*Around this time Rolls Royce in the UK had an accounting system that enabled it to cost everything to 4 decimal points of a penny ... but the cost of building the new RB211 jet engine was wrong by about a billion dollars and the company faced bankruptcy. Meanwhile Pratt and Whitney in the USA with its rather sloppy cost accounting had an excellent handle on what its products cost.*

*This is not to advocate for sloppiness ... but to speak up for relevance.*

The purpose of cost accounting is to build the foundation for the understanding of cost behavior. Today's costs are a combination of both history and today ... and ultimately so also are profits. When applied to MDIA understanding the behavior of cost helps to make

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socio-economic progress more than a zero-sum game ... or worse, a real world application of “Heads I win ... tails you lose”.

It is helpful to understand not only the behavior of cost ... but also the behavior of productivity. Edward Deming ... one of the history's experts on systems and quality ... would have understood the idea. Cost and productivity are different manifestations of the same system. But cost also has an effect throughout the value chain ... and different parts of the value chain have a whole range of behaviors that impact on both corporate profits and on society.

All of the many different cost elements behave in different ways ... the aggregate cost depends on all of the pieces ... and the unit cost depends on all of the pieces as well ... but not always in ways that are immediately obvious.

At the same time the value elements also behave in complex ways ... sometimes a function of a cost change, sometimes for unrelated reasons.

#### ***Cost accounting is boring***

*Yes ... cost accounting is boring if it is defined as simply the recording of the basis data. But cost accounting is exciting when it helps to understand the behavior of costs, and all the factors that influence these costs. Boredom is usually some reflection of the individual, more than it is cost accounting per se.*

#### ***Estimating Costs***

*My formal academic education is in engineering and economics ... and my professional training in accountancy. In the early 1960s, when I was working with Coopers and Lybrand in London I was assigned to recalculate the cost estimates for the Kariba Dam being planned for Zambia. My work showed that the World Bank's estimates were about 50% of what was required. My work not only took into consideration what costs had been in the past but what they were going to be during construction in the future in a remote location ... in other words, I tried to anticipate the behavior of costs rather than treating costs in a simplistic mechanistic manner.*

Clearly knowing everything about the past is counterproductive ... but knowing about the behavior of costs is very useful.

More and more detail may not be the best answer ... ability to look at data in different ways may be more useful.

Cost accounting is a powerful tool ... but it needs to be in the hands of people who have an understanding of accounting and the sectors involved.

Cost accounting is a part of accounting that informs about how much things cost. In the corporate enterprise the cost systems are well developed and are used extensively.

In the not for profit organization, cost systems are much less developed and analysis of costs is rarely integrated into the accounting systems, but done rather as ad hoc studies or as part of monitoring and evaluation exercises.

## **Management accounting**

Management accounting is a subset of accounting that helps to get useful analysis into the hands of decision makers.

*I see management information as the least amount of information that is needed to make good decisions reliably.*

Management accounting is at the heart of all corporate management information systems (MIS). The idea of excellence in corporate MIS is now so commonplace that it is rarely talked about in the press, but it is one of the big reasons why corporate organizations are so efficient in their operations.

Society and the broader economy has nothing like the MIS of the corporate world, and it becomes very easy to understand how it is that corporate performance is so good while general social and economic performance is so poor. The aim of MDIA is start to change this.

There are many ways to do analytical accounting. Rather than simply summarizing the accounts for the period based on the organization as a whole, the accounts can be summarized in more detail, as, for example:

- By department
- By cost center,
- By profit center
- By business segment

It is also possible to do analysis along the following lines:

- By individual product
- By product line
- By process or activity
- By product

## **Departmental accounting**

Cost centers, profit centers, investment centers, departments, etc are all rather similar. The key is to understand what they are doing and what they are costing. If what they are doing does not seem to have any value ... then some further questions need to be asked and decisions made.

Almost all companies will have department accounting so that the costs of a department can be understood and controlled. A department may have multiple cost centers. Department accounting is widespread because it informs about the costs of a department. Sometimes the costs are linked to revenues or activity levels. In Community Accounting applications, analysis of costs between activities in the community provides useful

additional understanding. Departmental accounting and cost center accounting are similar, with cost centers often more detailed than the department.

## **Cost center**

Cost centers, profit centers, investment centers, departments, etc are all rather similar. The key is to understand what they are doing and what they are costing.

If what they are doing does not seem to have any value ... then some further questions need to be asked and decisions made.

Corporate accounting systems usually have very effective cost accounting capability, but getting useful information from these systems is not always obvious.

A cost center is one way in which costs can be organized to help understand and control costs. By pulling costs together within a unit called a cost center, it is possible to get information about a company's activities in a simple way. The cost center is a common technique in corporate accounting to cumulate costs so that they are easily understandable and can be related to a tangible entity. MDIA also uses the cost center concept to pull together all the cost information about an activity or set of activities.

### ***Cost center metrics***

*The first thing that cost center analysis shows is cost by element of cost.*

*How much of the cost is for labor and how is this made up ... direct, indirect, overtime, benefits, incentive pay, etc.*

*How much is for various supplies ... which are important? In a shipping department ... how much was being spent on tires? How much for fuel?*

*How much for equipment use? How much for equipment lease?*

*While a cost center does not directly generate profit ... it does have productivity that can be measured. How do the costs compare to metrics of performance ... what we used to refer to as key item controls.*

The report shows actual costs ... how does this compare to what the costs should have been for what was done during the period.

## **Profit center**

A profit center is a version of a cost center ... in this case not only costs are associated with the unit, but also the revenues of the unit. This may or may not be useful depending on the structure of the company and the internal value chains. The profit center is similar to a cost center except that the profit center also brings in the revenue side as well as the costs. Variants include using contribution instead of revenues. In MDIA applications the goal is to link costs and value adding. The same concepts that link cost and revenue works also for cost and value. Where there is activity, it is possible to go to the activity value analysis using standard costs and values.

### ***Profit center metrics***

*A profit center may be more useful for performance analysis than a cost center ... or it may confuse. This depends on the structure of the company and the internal value chains. Everything that applies to a cost center applies to a profit center, except that in addition the costs for a period may be related to a revenue as well.*

*There are some dangers with profit center analysis including the potential problem of signaling profitability at the cost center level when in fact there are big costs not allocated to the profit center, but very meaningful for the company's performance as a whole.*

*A dramatic example of this is the automobile industry's willingness to ignore the accounting for unfunded pension obligations and other retiree benefits ... but the same thing can happen on a more modest scale..*

## **Investment center**

Another way to look at a part of the organization is to do it through the investment. The costs and revenues associated with a particular investment serves the reporting center.

### ***Return on capital employed***

*One of the most useful metrics is to measure profit and relate it to the amount of capital needed to earn this profit. Relating profit to sales may not be very important when the company's resources are the limiting factor ... the most usual case.*

*How much equipment and space is needed to earn the profit? This is the fixed capital needed, and might well be a critical constraining factor.*

*How much inventory is needed? How much receivables? This is the working capital needed ... and is often a much bigger amount than is expected. This may or may not be a constraint, because there are funding possibilities that tie into the level of working capital ... but these do have a cost and an impact on profit.*

## **Responsibility accounting**

Responsibility accounting is the name given to accounting where the reports specifically identify the responsible managers. This is a useful technique for getting clarity about who is responsible for what ... and there is rarely much agreement.

Not easy for the accountants ... but can be very effective in getting the management team to stop dodging their role in poor performance.

Responsibility accounting is a variant of GAAP accounting that aims to be very clear about who is responsible for the results being reported. Each page of a financial report is associated with a specific individual or team.

In MDIA applications a similar approach can be used to help the public to identify responsible individuals and units and to hold them responsible for performance

### ***Responsibility Accounting – I***

*I first used responsibility accounting as a Division Controller at Aerosol Techniques Inc. (ATI) 40 years ago. It was amazing how fast people took exception to bad numbers when their name was on the paper ... and how quick they were to find fault with what the accountants had done. It was not comfortable. But quite quickly the errors made by the accountants were corrected and the reports started to reflect the performance of the responsible manager ... and then quite quickly these managers started to make decisions that made performance better. Most of their improvements would never have been identified by analysis of the numbers by accountants ... but most of these responsible managers knew their business, and now they had a reporting mechanism where their GOOD performance could be highlighted. In these reports, the company used not only accounting costs ... budget and actual ... but also a fairly large set of key item controls that measured activity levels that were important for company performance.*

### ***Responsibility Accounting - II***

*I tried to introduce Responsibility Accounting to UNDP almost 20 years ago. The proposal was to help UN leadership to have the management information that would identify financial performance issues and help to hold people accountable. A colleague with UN experience suggested to me that the idea was silly since there were few, if any, UN staff that were interested in management or responsibility, and certainly not in accountability.*

### **Process costs**

Many products are produced using an end to end process. This is the case in, for example: chemical factories, steel mills, refineries, and pulp and paper plants. In all of these cases it is possible to cost the product because the cost behavior of each step of the process is well understood.

For each step of the process all the costs ... by element of cost ... are known and the actual and standard are easily compared. When costs vary from standard, the cause can be easily identified and taken into consideration.

### **Activity costs**

Many products are produced using an end to end process. This is the case in, for example: chemical factories, steel mills, refineries, and pulp and paper plants. In all of these cases

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For each step of the process all the costs ... by element of cost ... are known and the actual and standard are easily compared. When costs vary from standard, the cause can be easily identified and taken into consideration.

#### **Project costs**

Project costs – construction project Many

Project costs – World Bank project Many

#### **Contract costing**

Too many contracts are strong in legal language, but weak with reference to costs and expectations. This need not be ... and should not be. But it does require some level of understanding of costs and the impact of contract performance.

##### ***Contract costing – construction project***

*When 2% of a contract has been billed and paid for, it would seem that 2% of the work would have been done. A pulp and paper mill construction contract had a well known general contractor ... and the contract had a detailed project cost budget that defined the work to be done (together with engineering drawings).*

*But cost analysis showed that while 2% of the money had been consumed, only 1% of the work had been done ... suggesting a 100% cost overrun for the project at completion. For the contractor this would have been fine ... it was a cost plus contract ... but for the owner it would have been a disaster.*

*The contractor was spending the money ... payroll was legitimate ... materials and supplies were being bought and paid for ... etc. But something was wrong. We ran a series of cost audit tests and concluded that the workers were too many ... getting in each others way ... and generally more than needed ... and the same for use of materials and supplies. We made the case to the General Contractor who immediately reduced the workforce from 1,400 to 700. When the project was completed the cost was within 5% of the original budget ... way better than a 199% cost overrun.*

#### **Product costs**

Product costs can be obtained by having accounts and sub accounts for each economic element for every product and charging all expenses to these detailed accounts. This is a costly approach but it can be done. Some systems still do costing using this basic approach.

***Cost accounting is boring - II***

*I have to admit to finding the theory of cost accounting boring ... but the information is far from boring. If I could, I would like to know how much everything around me cost ... and how much it is priced at ... and how much profit is being made with it. I would like to map these facts ... to have charts that show changes over time ... and to have charts that show this from place to place.*

**Value chain costing**

One of the most useful tools for the business analysis is value chain costing ... how much of the cost is added at each stage ... from farm to consumer ... from mine to a consumer or industrial good.... etc. It is helpful to know how much profit is added at each stage, and what investment is required for each stage.

The transfer price from stage to stage in the value chain can be the difference between a value chain that works and one that does not. A value chain price at one stage becomes a value chain cost at the next stage ... but this cost contains an element of profit as well as just costs.

There is little public easily accessible information about value chain costing, but it is a critical piece of information for the understanding of progress. Progress drives itself when the incentives are right ... where the reward for investment and effort is adequate. Progress stops when the incentive is not there ... and in a long and complex value chain it only takes one piece of the chain to be devoid of incentive for the whole value chain to crumble.

Note: A number of different value chains are described in the Value Chain chapter.

***Location of industry***

*When I was first taught about location of industry it was mainly about the proximity to raw materials and energy and access to transportation. I observed at the time (1960) that this was changing because of more creative content in the emerging new products, and that location of industry was going to be driven by where the boss wanted to live.*

*I was much closer to being right than I got credit for at that time ... industry is now much more modular and each module is located where it is most cost effective. Modules that need creativity are in New York and California, modules that need labor efficiency are in China and South East Asia, modules that need natural resources are next to the mineral deposits and oilfields, modules that need to deliver to the consumer are next to the consumer wherever in the world that might be. There is an amazing interconnected global value chain optimized to make profit for the players and the investors.*

## **Cost accounting**

Cost centers, profit centers, investment centers, departments, etc are all rather similar. The key is to understand what they are doing and what they are costing.

If what they are doing does not seem to have any value ... then some further questions need to be asked and decisions made.

Corporate accounting systems usually have very effective cost accounting capability, but getting useful information from these systems is not always obvious.

## **Units of measure**

Engineers and scientists have put a lot of effort into developing units of measure that are meaningful for everything that they must measure. Some 'things' may be measured using different units of measure as for example distance may be measured in kilometers or in miles, but the thing ... distance ... is measured reliably in both cases. In society and the economy the dominant unit of measure is money, but, by engineering or scientific standards, money has none of the characteristics needed to make it a good unit of measure. Worse, in the 'social sciences' there is often a view that quantified measures cannot be used because of the 'subjective' nature of things. Clearly, the goal of MDIA can never be achieved until there are ways to measure everything in society that is important and to quantify things in a logical way.

## **Cost, price, value and value chain**

MDIA aims to be very clear about the difference between cost and price. The media tends to be very sloppy about this difference. What is price from one perspective is cost from another perspective. If I am the buy, the price is my cost. If I am the seller, the cost is the sum of the inputs that have gone into the production and making ready to sell.

MDIA also aims to be clear about the difference between price and value. In a market driven economy, it is common to consider price and value as the same, but this is rarely true. In a market, price is determined by supply and demand, with supply a function to some extent of cost, and demand a function to some extent of value. In general there is no incentive to buy unless the value is greater than the price.

The supply chain for products ... a value chain ... works well when the transfer pricing through the value chain provides a profit through each piece of the value chain. If any of the links in the chain become unprofitable, the value chain breaks.

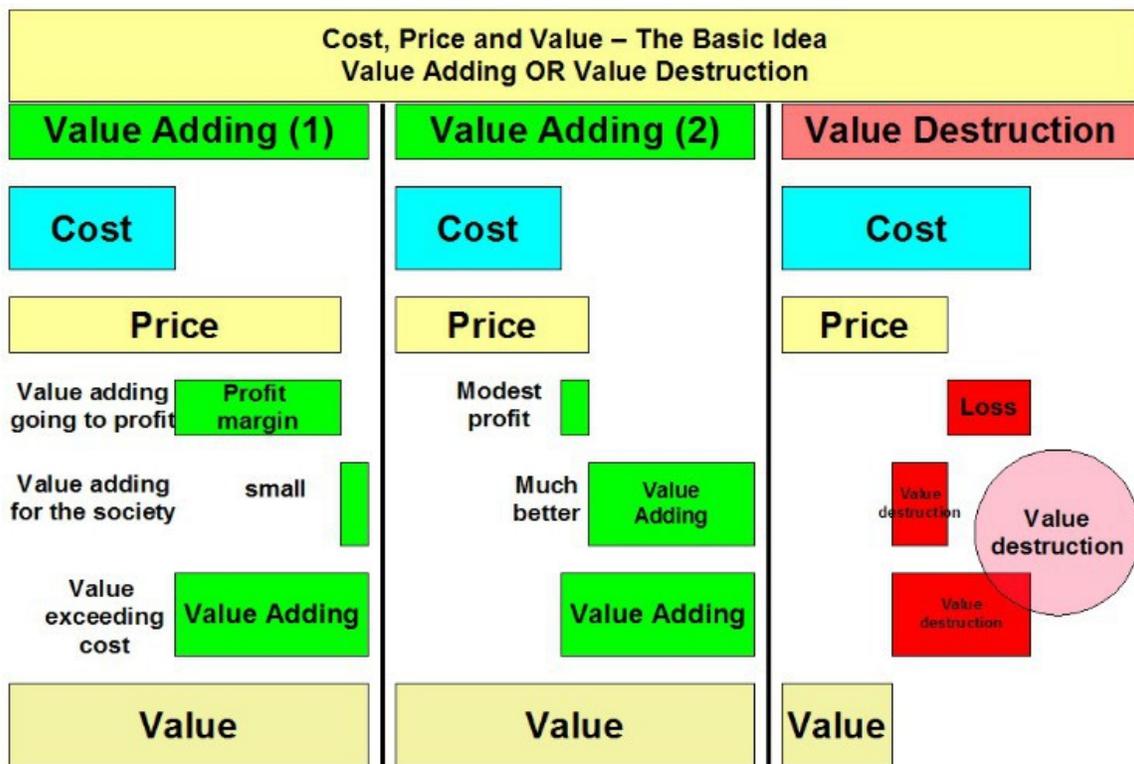
## **Base Case**

In a lower cost case the enterprise profit increases at the same price point ... and the amount of value derived by the client stays the same.

## Lower Cost Case

If the client and the enterprise are in the same community it does not matter so much whether the client or the enterprise has what share of the value added ... but where the enterprise is from outside the community it matters a lot. In the case where the enterprise is external ... the case of Foreign Direct

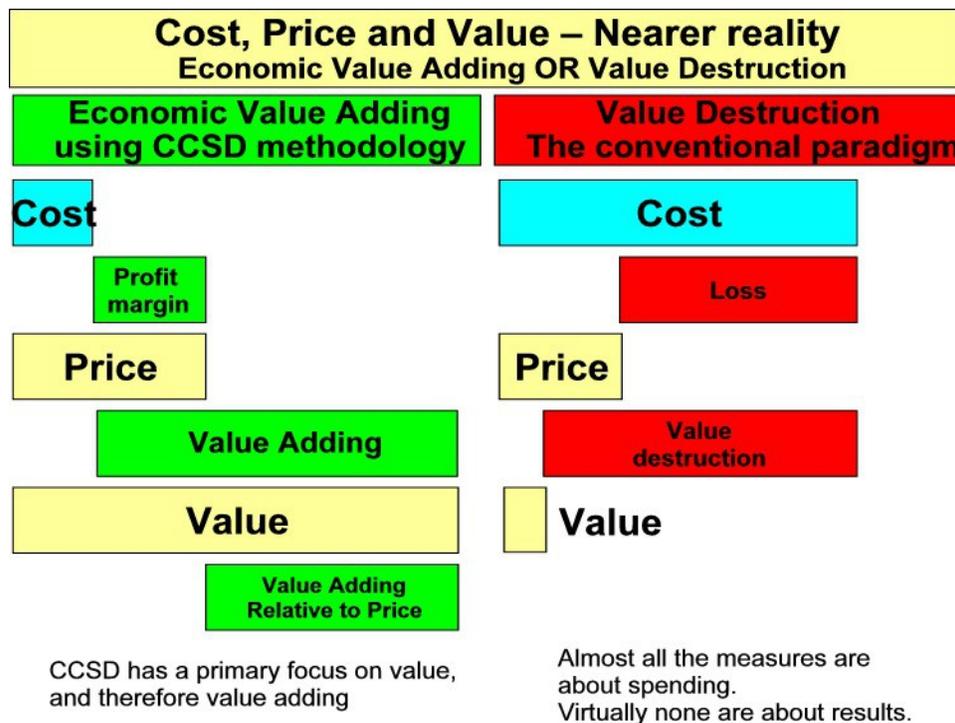
Investment (FDI) for example ... the value adding for the community is small because the profit leaves the community. If the costs are incurred in the community there is some multiplier effect ... but typically local disbursements are small and most of the costs, as for example in mining are equipment, fuel, expatriate payroll .... with rather little value for the community.



## Value adding or value destruction

### Difference between value adding and value destruction

The following graphic shows the difference between value adding and value destruction:



Conventional accounting has a singular focus on cost and price with the business goal of ensuring that price is greater than cost and the result is a profit.

MDIA brings in the value dimension so that the value added from economic activity comes into focus.

The above graphic was prepared in around 2003 at a relatively early stage in the development of MDIA. The focus at that time was to think through the relationship between a business and the customer because it was fairly clear that profit optimization was resulting in the business doing better while the consumer was getting not much extra.

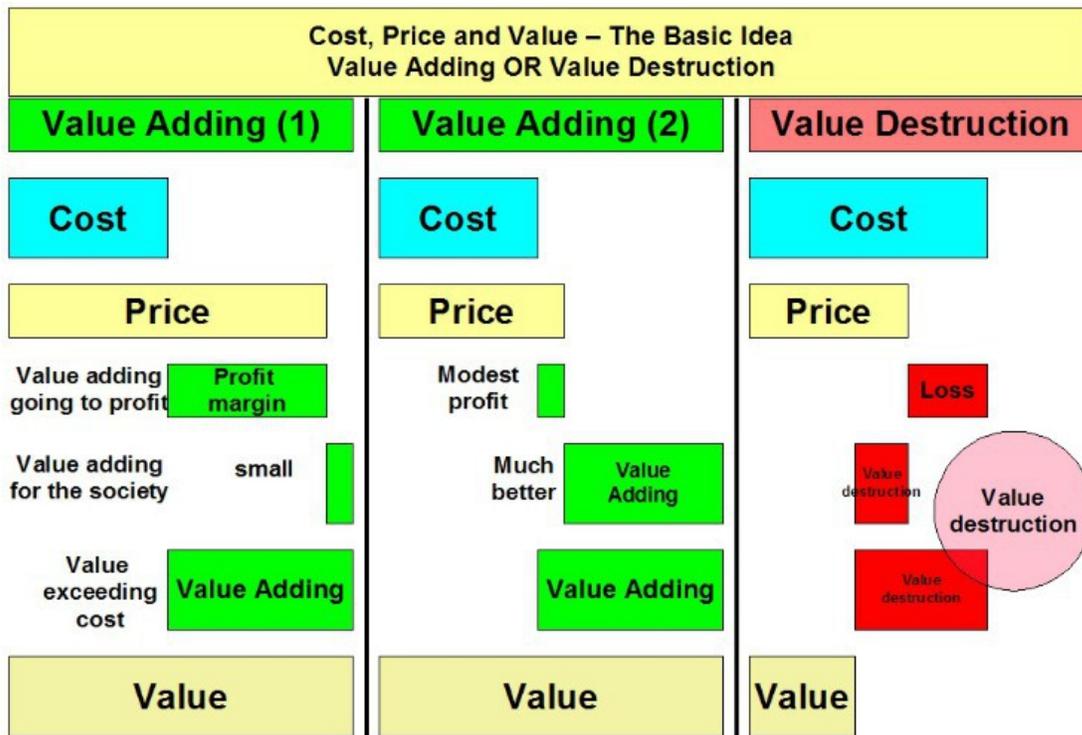
Subsequently this thinking has been expanded so that thinking about cost in MDIA is very different now than it was then. Specifically cost is now inclusive of all the impacts that are associated with everything that goes into the economic activity and the products that are the outcomes.

Cost, price and value are the critical metrics of socio-economic activity. In corporate market based economic thinking cost and price are the dominant metrics because they determine profit which in turn determines market valuation ... but in society there needs to be attention paid to the relationship also between cost and value.

**Different ways of allocating the valuadd**

The following graphic shows how pricing changes the attribution of value adding from the society at large to the corporate operator. In (1) there is a high profit and little of the added value accrues to the individual. In (2) there is a low profit and almost all the added value accrues to the society. Both are value adding and better than value destruction ... but whether the value adding has more value as profit for the organization or value to society is a question for which there is no quick and simple answer.

In the following graphic there are three situations. In the first and second scenarios there is value adding and in the third there is value destruction. Business and society, both, are interested in ensuring that there is no value destruction, and economic activity results in valuadd. There is however, a big difference in the impact on business and society between scenario 1 and scenario 2. In the first case, most of the valuadd is allocated to the business with a rather small part allocated to the customer (society) and in the second case the profit is smaller and more of the valuadd gets allocated to the customer (society).



Compared to MDIA, in conventional money cost accounting, cost is understated because the reporting boundary is drawn very tightly around the organization and is only about the money cost elements.

What this means in practice is that a much bigger proportion of economic activity appears to be value adding, when in fact on a trucost basis the economic activity results in more or less value destruction.

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This is very important. MDIA is addressing this matter, and talks about value consumption, value creation and valueadd rather than cost, revenue and profit.

## **Analysis and reporting costs and value**

The process of collecting, organizing and storing data has a cost, and not much value. But analysis and reporting makes these data valuable and powerful. Analysis may merely confirm that what was expected has happened ... or it may help to deepen understanding and facilitate new and better ways of creating value.

But nothing will happen unless there are reports. Reports should be part of a system and report nothing as reliably as they report something of significance ... in other words accountancy has reports that are not a subset of journalism but are an independent system in their own right.

## **Standards**

The techniques of standard costing can be used in MDIA as they are in corporate accountancy. A standard is what might be expected ... compared to an actual which is what actually happened. There are many ways in which the comparison between actual and standard can be made ... the aim of analytical accountancy is for this comparison to improve understanding the most and cost the least.

The idea of a standard is common ... it may be described as the norm ... it is what is expected. It is an idea that is ubiquitous. But it is also a concept that is absent in the metrics of socio-economic performance and impact on community.

The techniques of standard costing can be used in MDIA as they are in corporate accountancy. A standard is what might be expected ... compared to an actual which is what actually happened. There are many ways in which the comparison between actual and standard can be made ... the aim of analytical accountancy is for this comparison to improve understanding the most and cost the least.

Standards may be thought of as being fixed and arbitrary and useless ... or they may be used as a very powerful tool for understanding a lot of complex material in an efficient way. In this latter mode standards come alive. They start off being the best that can be ... best in the sense of reflecting the best data that are accessible ... and then they improve as better data becomes available and is made accessible.

Standard cost accounting helps cost accountants measure cost performance without getting deeply buried in detail. Standard costs are the theoretical cost of an item or service

### **Standard, actual, variance**

The comparison of standard with actual alerts a cost accountant to something that is different and helps put the focus of effort onto something that is out of the ordinary. If actual costs are different from standard costs, then it is time to find out why.

### **Standard values**

The same approach is used for value as for cost. Every activity produces something ... what is the standard value of this output? This can be determined in an arbitrary manner, and then it can be used in an analytical framework, and compared to alternative values that are justified from different other perspectives.

#### ***Being fooled***

*My understanding is that a money instrument that pays 14% will have one value, and that a money instrument that pays 7% will have a substantially lesser value.*

*In the 1980s and 1990s the US banking industry replaced high yield mortgages with low yield mortgages ... and reported huge profits as they did this. How could this be?*

*We were being fooled then ... just as the fooling continues to this day. The banks charged fees for the work of issuing new mortgages. The old mortgages were paid off without losses. The new mortgages were bundled and sold off (securitized) ... and though the value of these new mortgages was small relative to the old mortgages ... the accounting for this drop in value did not appear anywhere.*

*Something is very wrong when an industry can do this and the system of accounting does not show it.*

### **The utility of comparison**

What it is ... what should it be?

One of the continuing questions should be know not only what it is but also what it should be. This is a simple question and an important question.

It is also a question that much of society does not want to address. The answers are uncomfortable. Why is it that science and technology can put man on the moon, but food for people on this planet is too difficult.

MDIA is a system that can help to explain why the system is not working and what needs to be done to put things right. MDIA is not the answer ... merely a powerful tool to find the answers, and to monitor progress.

### **Standard cost accounting**

Standard cost accounting helps cost accountants measure cost performance without getting deeply buried in detail. Standard costs are the theoretical cost of an item or service

Standard cost accounting is a tool that has helped cost accountants measure cost performance without getting deeply buried in detail. Standard costs are the theoretical cost that an item or service should have ... and when the actual costs are different, then it is time to find out why.

The MDIA system structures knowledge about costs so that this knowledge can be used to compare what things are costing with what they should be costing. The system helps to clarify what is cost that is justified, and what is cost that merely reflects some aberration in the procurement and implementation system.

Standard costs are a way of making better use of cost data. With standard costing it is possible to compare the actual cost performance with what it should have been.

In MDIA the idea of standard cost is also applied to value and used in the determination of community progress or added value. This is very useful where “value” varies between different groups and all views need to be take into account.

### **Standard value accounting**

The same approach is used for value as for cost. Every activity produces something ... what is the standard value of this output? This can be determined in an arbitrary manner, and then it can be used in an analytical framework, and compared to alternative values that are justified from different other perspectives.

Every activity produces something ... what is the standard value of this output? This can be determined in an arbitrary manner, and then it can be used in an analytical framework, and compared to alternative values that are justified from different other perspectives.

The common standard allows comparison across geography and projects ... while not excluding alternative perspectives.

In MDIA the idea of standard costs is also applied to value. The concept of standard value greatly simplifies the determination of community progress and added value.

Value is very subjective. A standard value provides for many different perspectives of value to be incorporated into analysis while also having some way to compare value adding in a uniform way across many communities.

### **Standard, actual, variance**

Having cost standards may be interesting, but usually not very useful until they are compared in some way with the actual costs ... the variances analyzed.

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When there is variance analysis, it is possible to find information that is simply wrong ... or performance that is quite different from what had been assumed. All interesting and important ... and a guide to what needs to be done to have improvement.

Standard, actual and variance is a basis of performance assessment ... and tells how actual results were relative to what the results were expected to be. It is powerful.

There are many ways of making the comparison, some of which are very detailed, some use comparison at a more aggregate level. The result of this type of analysis is usually significant additional information about cost performance and the potential for improvement.

The comparison of standard with actual alerts a cost accountant to something that is different and helps put the focus of effort onto something that is out of the ordinary. If actual costs are different from standard costs, then it is time to find out why.

#### **Standards AND activity information**

When we use standards ... then it is possible to put activity information into perspective.

Activities – Standard Cost Activities – Actual Cost

The use of standards shows that the amount of activities that should have been produced for the money used ... and this may be compared to the amount of activity actually produced for the money. This does nothing to help assess the impact of the activity, but it does help to ascertain the relative efficiency of doing the activity.

Some simple analysis can be used to determine whether the differences are caused by changes in the unit prices of the inputs ... higher prices for fuel ... higher wages for staff, etc. or whether the cause is a question of productivity with simply less production than was expected from the standard.

The following graphic how community progress can be represented using changes in community value and the characteristics of activities to show the maintenance of the status quo, improvement or modest progress, and deterioration with poverty increasing.

#### **Useless ... or valuable**

Standards may be thought of as being fixed and arbitrary and useless ... or they may be used as a very powerful tool for understanding a lot of complex material in an efficient way. In this latter mode standards come alive. They start off being the best that can be ... best in the sense of reflecting the best data that are accessible ... and then they improve as better data becomes available and is made accessible.

#### **How much did it cost ... how much should it have cost.**

The question “How much did it cost ... how much should it have cost?” is fundamental to managing performance. It is not a question that the relief and development industry wants to answer, nor to get answered.

## **Regulation ... the enabling environment**

The regulatory environment has costs .. and benefits ... and changes the economics of a product, service or business.

## **Cost efficiency and effectiveness**

### **Cost efficiency**

MDIA uses the basics of business cost accounting to get metrics about performance efficiency. The simple questions are (1) how much did it cost? and, (2) how much was done?

With the answers about cost and how much done, it is possible to calculate the “unit cost” of the work done. Performance is not just an absolute metrics ... it is also about how much is achieved compared to what could have been achieved.

So there is a third question (3) how much should have been done with this amount of cost? This is often done in the corporate environment using “standard costs” which are the expected cost for any specific activity.

Efficiency is a function of the difference between the actual costs and the standard costs.

Alternatively, efficiency is the difference between what was done relative to what should have been done.

Cost accounting measures performance efficiency. In MDIA this is complemented with value accounting so that all the elements of socio-economic value flows are taken into consideration.

Cost efficiency is the simple idea of comparing the actual cost with what the cost should have been. This is a powerful way of getting control of operational performance. How much should it have cost to do what was done?

Knowing how much got done is pretty basic. Without knowing how much got done, there can be no oversight, control or accountability ... no inventory control ... no operational analysis ... in other words, without knowing how much got done, the whole process of management falls apart. With cost analysis it is possible to move on to evaluate whether or not the operations are efficient. One way of doing this is to compare what is being achieved with what should be achieved.

What it should have cost is a technical question. The cost that it should be can be calculated based on what needs to be done and the prevailing processes and costs. The cost in one place can be compared to costs in other places. The cost now can be compared to costs in a prior situation.

Cost efficiency is the simple idea that something should have cost X but in fact cost Y. The cost X is the cost that would be expected with a reasonably high level of performance efficiency ... usually calculated by reference to technical specifications,

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knowledge of the work to be done, and so on. The actual cost Y is what the accounting shows the item actually cost.

A standard cost is simply what something should cost based on technical considerations and the prevailing normal prices. A well done calculation of standard cost includes norms for efficiency and what would be usual in the usual setting. In the international context different standards may be used for different countries, and used for comparative analysis.

The international relief and development community has been doing “relief and development” for upwards of 60 years. A corporate cost accounting mindset would have set the stage for this community to know quite clearly what things should cost ... but rather than being an “open book” with a full set of accessible standard costs, the cost of everything is treated rather like a “state secret” that will put the nation in danger. Underneath this secrecy ... costs are probably too high and performance too low ... and no transparency a must

When there is a variance and costs are significantly higher than they “ought to be” there is almost always a reason. Frequently the reason is that the buyer and the seller ... people usually, but sometimes the institutions ... have some agreement that is not in the best interest of the groups that should be benefiting from the transaction. This is a common problem.

A public MDIA database of standard costs will help to identify situations where costs are out of control or have been distorted by inappropriate transactions. A very simple database of costs will enable comparisons to be made ... and judgments made about where costs are out of line. Too low a cost may be an indicator of a problem just as much as too high a cost. Sometimes low cost is achieved by low quality ... and this might well have serious secondary effects.

Low cost (price) drugs may be because a supplier is forgoing high profits ... which is good ... or it might be because the drugs being supplied are sub-standard and maybe dangerous ... which is bad.

### **Cost effectiveness**

Effectiveness is not the same as efficiency. They are two very different measures that are critical to management and oversight of performance. A society will progress best when the socio-economic activities are both efficient and effective.

Performance is not just an absolute metrics ... it is also about how much is achieved compared to what could have been achieved.

What progress for the money? In money accounting terms cost effectiveness is progress relative to the money used.

What value adding for value consumed? In value accounting terms effectiveness is progress or value adding relative to the resources consumed.

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Money metrics a proxy for value metrics ... in many cases the money metrics are a reasonably good proxy for the value metrics ... but not always.

Need to measure impact, not activity. A football game ... American football, that is ... is won when points are scored, not merely by having the players “in motion”. The amount of “activity” is merely motion, unless the motion results in some sort of impact.

A society progresses when its socio-economic activities are efficient and effective. MDIA therefore incorporates cost accounting that measures performance efficiency and value accounting that is the basis of socio-economic productivity. Performance is not just an absolute metrics ... it is also about how much is achieved compared to what could have been achieved.

Productivity measures in the main are broad indexes of relationships between for example the revenues of an industry with the payroll of the industry. This measure suggests that productivity is increased when there is more output for less input. But this measure ignores all the value impact associated with, for example, less payroll and therefore higher unemployment and its associated value destruction.

Money and material resources at the community level only benefit the beneficial owners of these resources unless other things are going on as well. The metrics of the community performance must identify not so much the ownership of money and material wealth, but whether or not the community is constrained because these things are not being used for any benefit in the community.

Take the case of a bank in a community that has control over money and material resources in a community.

Banks operate in and have branches located in most communities ... not all communities ... but many. A bank is a custodian for money wealth, and produces money profit for the owners of the bank and its senior executives and decision makers using this wealth. All of the bank's money transactions are recorded and periodically consolidated and reported on. There is no reporting of what the bank does for the community where it is located ... whether the bank serves to diminish the performance of the community and quality of life or not ... the only metrics are about the bank's profits!

# MORE ABOUT COST, PRICE AND VALUE

## **Cost, price and value**

Cost, revenue and profit are the key metrics in business performance. The relationship between these numbers determines the performance of almost any economic activity. All of these measures are important ... any one missing and understanding of the dynamic of the business performance is compromised.

Cost and value produce either a value adding situation or value destruction. This is a big advance over cost, revenues and profit. Value adding is good and value destruction is bad.

Cost, price and value are three numbers that describe economic activity. The relationship between these numbers determines the performance of almost any economic activity. All of these measures are important ... any one missing and the understanding of the dynamic of societal progress is compromised.

These metrics are complemented by a further three critical indicators: profit; productivity; and, impact

### **Costs**

Corporate profit performance has been optimized by a deep understanding of the behavior of costs. Cost accounting and the analysis of cost behavior has a very long history in corporate management ... but its equivalent is practically non-existent in the public sector and in the international relief and development arena. Understanding costs is essential ... and simply this will materially improve profit performance in the international relief and development industry.

The MDIA system provides a framework for understanding the behavior of cost. It can show what costs are in a specific set of circumstances, and compare this with what might have been expected and what has been achieved in other places, or at other times.

Cost has multiple components, and one of the most useful data points for cost is the one that eliminates all the profit elements from the cost value chain. The socio-economic success of the last two centuries has been reduction in cost.

### **Price**

Price is a key variable in the performance of society. It is not as important as cost, but the way price is used in society determines the way value is shared between the various economic actors.

The behavior of prices is complex, impacted by both market forces and issues of cost behavior, productivity and profitability.

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Within the MDIA analysis framework, prices are of less importance than in corporate financial analysis ... though prices do impact the behavior of the value chain, being the element that moves value from one entity to another.

Prices are a critical metric for corporate profit, for the functioning of a market and the value chain. Prices can be influenced by corporate decisions ... but market is important.

Prices that are driven entirely by the market conditions of supply and demand rarely reflect what is fair or best for society, rather what is best for those with the most power over market factors. This is dangerous and usually abused.

Price data are among the most prevalent. There is a lot that may be learned from a study of prices.

But price has its limits, notably price and value are very different concepts though in everyday use may be used. Prices are very much suited to time series analysis. Time series of prices are simple, clear and powerful.

#### ***Prices ... 30 years by month***

*As a new CFO in the fishing industry ... a major producer of marketer of shrimp worldwide ... I made a very simple plot of prices of shrimp in the New York market month by month over a period of nearly thirty years .. from 1946 to 1974. By doing this I gained a deep perspective of the shrimp industry that was better than most people had and enabled me to interpret the history of the industry very well. Because of this I was better able to predict how the oil shock turmoil of the 1970s would impact our company and how we should position ourselves for success.*

In some cases price and value are the same. In this situation the value chain through delivery to the final consumer is extracting from the consumer a price that is equivalent to the value. The consumer does not get anything of the added value. In fact the typical business model is one that aims to extract as much revenue from the market as possible.

Value adding may be derived from corporate activities that generate profit ... but value adding goes on throughout society in a not-for-profit setting as well.

Educational establishments are value adding organizations, and mostly these establishments are not-for-profits rather than being profit making organizations. The value adding associated with education is substantial.

*If the example American 25 year old with a top class education and in good health with good opportunities has a \$5 million value, and the African example child with little education and little opportunity has a socio-economic value of near zero two factors are in play to explain the difference:*

- 1. Education has contributed to value; and*
- 2. Opportunities contribute to value.*

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*It is difficult to assess which is the most important ... they both work together to result in socio-economic value adding.*

Business adds employees and makes new jobs when there is an expectation that the jobs will create corporate profit. At the same time the creation of a job does something of value in society. For a family, the value of a job for some member of the value is not only the immediate money but also the financial security that a job provides into the future. For a community the job adds to the buying power of the population and this multiplies into other businesses in the area. In its most simple form, the change in “value” between a no-job situation and a job situation is some multiple of the income of the job.

When a society has high unemployment the value of the society is reduced ... the value of society is compromised. Unemployment in a community is a little bit like empty seats in an airline. The earning potential of the seat is lost when the seat is not used for a revenue earning passenger. Similarly the value of a job is gone when a person does not work on any day. Doing a job is value adding relative to a situation where the job does not exist and a person is unemployed.

Value adding is bigger when important needs are being satisfied ... less when the need is merely a want. To illustrate this idea take the case of the person with a lot of shoes, and the person with no shoes.

When an affluent person who has many pairs of shoes buys another pair of shoes, for the business there is an exchange of money and an increment to revenues, but rather little or nothing changes in terms of the quality of life of the shoe owner. In money terms the business accounting shows revenue and profit increase together with asset cash up and asset stock down.

When a poor person who has no shoes gets a pair of shoes, the economic value proposition is very different. Quality of life for the poor person is substantially enhanced and the value adding is positive.

What happens in the shoe supplier business, however, may not be money profit positive ... in fact there may well be a money loss.

In MDIA the money loss to the business and the value adding to the beneficiary ... to society ... are taken together. In MDIA, a business that has an activity that runs at a money loss while producing a social value gets judged on both the money dimension and the value dimension together.

When society is driven only by profit metrics the outcome is a prosperous luxury sector that is profitable doing very little in terms of social value adding ... and little or no allocation of resources into the poor sector of the global economy where needs are enormous and potential for progress ignored.

#### **Value**

Value is what the recipient thinks it is worth. These relationships are key:

- When value is greater than cost there is value adding.
- When cost is greater than value there is value destruction.

Value is a simple idea, but less simple to include in a universal system of accountancy.

Value behavior depends on many factors ... many of which vary quite rapidly. Food has a huge value when a person is starving ... and water when there is a drought ... and medical supplies when one is sick ... and a job when one is unemployed.

But the value is different when they are not needed. What is right? ... the answer is both! Value is a critical metric for community performance. Value is very subjective and varies depending on many factors: the location, the socio-economic situation, the state or need, etc.

Because value is so central to socio-economic performance and value is so variable, MDIA makes the understanding and analysis of value central to the work. Just as different perspectives of value have facilitated capital market derivatives ... it should also facilitate development progress.

Modern corporate accountancy does not help much in following the process of value creation ... and destruction ... from one part of society or the economy to another. If there is profit in the corporate entity that is reporting, that is all that is required ... not requirement for that profit to be offset by the value destruction in the community caused by this profit making.

But in addition to value creation, there has also been much transfer of value adding from one location. While this has facilitated substantial profit augmentation and benefit to corporate stockholders, it has often come at the expense of value destruction in some societies, and not taken into account in general GAAP accounting.

For organization accounting, value chain analysis helps in the understanding of how profit contribution is being spread between the various organizations in the supply chain.

For MDIA value chain analysis helps in the understanding of flow of value between various entities in the community and with the world beyond the community.

#### **Unit costs, unit prices and unit values**

Unit costs, unit prices and unit values are very informative ... they make comparison easy both over time and from place to place. There are some challenges because units of measure and currency exchange rates may confuse ... but when these issues are taken into account, unit costs, unit prices and unit values are very powerful.

### **Profit, productivity and impact**

The relationship between cost, price and value determines the performance of almost any economic activity. They are components of a further three critical indicators:

1. profit ... profitability improves when price is increased and cost is decreased;
2. productivity ... productivity improves when less cost produces more goods or services; and,
3. impact on society ... impact improves when the value increases and the cost decreases.

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#### **Profit**

Profit is the relationship between cost and price, and has an impact on the stakeholders of the organization. Profit measures the performance of an organization, but does not bring into account the costs to society, or on the positive side, the value derived by society. Profit is the key metric for capital markets, and profit drives corporate stock valuation. Unfortunately profit and valuation now has taken on a life that is far removed from corporate operations and the impact of these operations on society with serious consequences.

Profit is the difference between total cost and total price, and has an impact on the stakeholders of the organization. For investors, profit is the principal measure of the performance of an organization. Profit does not bring into account the costs to society, or on the positive side, the value derived by society from economic activity. Profit is the key metric for capital markets, and profit drives corporate stock valuation.

Unfortunately profit and valuation now has taken on a life that is far removed from corporate operations and the impact of these operations on society with serious consequences.

Profit has been the subject of all sorts of analysis and study. However, the basic calculation of profit is really quite simple. There is profit when cost of sales plus overhead is lower than the revenue from sales. This is quite a simple idea ... and worth understanding.

In accountancy, because of its double entry characteristic, it has already been noted that the profit for a period is the change in the balance sheet from the beginning of the period to the end of the period. This is a quite simple idea, and very useful for assessing progress. The profit calculated by reference to cost and revenue and the profit calculated by reference to balance sheet changes should be the same. This is the whole principle of double entry accountancy, and when these two calculation methods produce different answers, it is time to ask tough questions.

#### **Productivity**

Productivity is a function of cost and may be the most important single metric for the performance of our global society.

In broad terms science and technology has made it possible for society to live very comfortably, but leadership has not made the decisions that embrace what is possible for the benefit of a broad society but for narrow self interest.

Productivity may well be the most important single metric for the performance of our global society. In broad terms science and technology has made it possible for society to live very comfortably, but leadership has not made the decisions that embrace what is possible for the benefit of a broad society but for the narrow self interest of those that benefit from corporate profit.

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Cost is a derivative of productivity. If cost is low ... it is a proxy indicator that productivity may be high. Cost is only a proxy for cost because there are several elements to cost, most important of which are the following:

- What was consumed
- How much was consumed
- The unit costs for items consumed

Some of the consumption may be labor, some materials, some equipment and capital. Productivity is a function of the amounts of these things consumed for a unit of output.

Cost is the derivative when the amounts consumed are multiplied by their respective unit costs. Low productivity low wage areas may have lower costs than high productivity high wage areas. Corporate profits ... which are determined in large part by costs ... are maximized by focus on production in the lowest cost areas. Social value may or may not be optimized by corporate profit maximization.

*Agriculture is one of the few industries where the United States has retained a position of global money profit competitiveness. The productivity of American agriculture is impressive, though there may be important questions about its environmental sustainability. That aside, American agriculture produces enough food for all of America, and enough for massive exports and does it using only 3% of the population. In contrast most of the countries that are poor have a large proportion of their population working in agriculture and not very much is produced. This is a crisis of productivity ... which should have an answer.*

#### **Impact**

Impact on society is a function of value and cost, but not only these metrics. Price has a role in allocating how added value is shared between different segments of society and across the value chain. MDIA explicitly addresses this matter both at the individual community level and across complex value chains.

Impact on society is a function of value and cost, but not only these metrics. Price has a role in allocating how added value is shared between different segments of society and across the value chain. MDIA explicitly addresses this matter both at the individual community level and across complex value chains.

#### **Value consumption, value creation and valuadd**

The value equivalent of cost, revenues and profit is value consumption, value creation and valuadd.

Accountants are very clear about the way in which cost, revenue and profit may be measured. MDIA is a way to have the same rigor around the concepts of value consumption, value creation and valuadd which do not exist within conventional money profit accountancy. In order for implement this there has to be a way to quantify value in a meaningful way which is done using the concept of standard values, just as conventional cost accounting uses the concept of standard costs.

**Value consumption**

**Value creation**

**Valueadd**

*More on revenue (H8)*

*When price is value (H8)*

*Aggregate demand (H8)*

*Price ... supply and demand ... market behavior (H8)*

*Buying power (H8)*

# ACCOUNTING FOR VALUE

## Money accounting is not enough

It is easy to say that money accounting is not enough. It is rather more difficult to define exactly what needs to be done so that value is accounted for as rigorously as money transactions and profit.

Money cost has to be expanded so that it becomes value consumption, revenue has to be expanded to be value creation, and profit becomes value added.

## The case of the extractive industries

It is fairly clear that in the extractive industries the consumption of value is bigger than money cost that flows through the money accounting.

*The oil industry is doing money accounting and reporting substantial profits which it shares with its stockholders. With an accounting for value the true economic impact of oil extraction is very different because the fact of the depletion of the oil stocks in nature is taken into account. Full value accounting would call for an accounting to be made for this depletion so that society would not be “energy bankrupt” in the future. This might be calculated as the prevailing cost of producing this amount of replacement energy using renewable energy methods.*

In the case of the oil industry, the costs of crude oil production include payments made for royalties, licenses, etc, as well as the costs of exploration, drilling and extracting the oil from the oilfield, and shipping the product to refineries and to market ... but the costs do not take into account in any financial metric the depletion of the resource, and what it would take to replace this resource. This is a huge problem, because the resource being depleted has taken many millions of years to accumulate, and the replacement cost of this is completely missing from the accounting!

Whenever there is economic activity there is consumption of resources that translates into some value creation ... which may be more than the consumption of value to create value adding or less in which case there is value destruction.

The consumption of value is a bigger idea than money cost. Many economic activities have impact that are not represented by any money transaction ... but are nevertheless very important. In the following example from the oil industry the calculation of cost is only about the money costs, and totally ignores the value associated with the consumption of the natural resource:

Many products have an impact on society that are not accounted for in money accounting transactions ... and mostly these impacts are important.

In many situations it is possible to use money cost as a proxy for value consumption. This works acceptably well in small business, but does not work at all well in large scale integrated businesses and large complex businesses that trade across country borders and with many different products and services. Very large corporate organizations are now the dominant form of organization ... and many are larger than many national economies!

### **How much did it cost ... the cost of externalities**

The cost of externalities is ignored in money profit accounting and cost analysis. However the true cost of externalities is not insignificant, and included such costs in the analysis of cost changes everything.

## **Cost efficiency**

### **What cost? ... How much was done?**

This is absolutely basic performance information. Every organization ... every economic activity should have these key numbers every day, everywhere for everything. Most well managed corporate business organizations keep the money cost accounting for their activities along these lines and are able to manage their resources for profit maximization very well. But this is not true for most government programs, most not for profit organizations, and indeed for banks and financial sector institutions.

If the decision makers know what something cost, they are also likely to know what it should have cost. This is cost efficiency and important in the management and oversight of an activity.

The institutions of the official relief and development assistance (ORDA) community ... World Bank, UN, NGOs, Bilateral government donors and philanthropies ... have little or no institutional records of how much things have cost, nor what they should have cost. This is one of the important factors that has made possible the huge corruption and mismanagement of resources that has been seen over years and years.

Money costing is done using data from a money accounting system. The costs are the “expenditures” associated with any specific product or service ... with the analysis done usually as an integrated part of the accounting system. All the elements of cost should be included in the cost.

Unit cost is the total cost divided by the number of units.

## **Elements of both cost and value consumption**

The following elements comprise the money or financial dimension of costs ... together with the complementary value aspect. All the cost elements have a value dimension which is sometimes more significant than the money aspect.

1. People cost ... with a value dimension that is huge;
2. Material cost ... consumption of value;
3. Land, facilities and equipment cost

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4. Operating overhead cost
5. Admin and general overhead cost
6. Financial costs

In the MDIA system there in addition these value elements of cost that do not figure in the money costing system:

1. Profit as a cost
2. Off balance sheet elements
3. Cost of external constraints

Data about elements of cost are important because the elements change in different ways ... have different behaviors ... and create different impact on the community because of their associated value chain.

The purpose of data in the MDIA environment is to have data to understand ... and to use this understanding to improve decision making and the quality of life!

#### **People cost (1)**

People cost depends on (1) how many people and what skills and job types; (2) the wage rates for each group; (3) the benefit costs associated with each group. The costing is complicated by matters such as training and the use of consultants and service contractors instead of direct paid staff. People costs vary enormously depending on the mix of local and international staff. Local staff are usually paid much less than international staff. There might be a cost offset to the extent that international staff can do some work more efficiently than local staff due to their knowledge, training and experience.

A profile of salary and wage rates together with present benefits and future cost and benefit commitments, shows a lot about the role of the people dimension in the performance of society and quality of life.

But people cost is also associated with a complex set of value flows. These value flows are critically important in any modern economy, but completely ignored in most financial and economic analysis, or at least only considered in a very superficial manner. Economists use the multiplier concept which comes about in part because of these value flows ... but financial reporting includes on the simple money cost.

The value flows start with the value of a person getting remunerated, and how this impact the individual and the family ... and in turn how the family money then gets used in the broader economy to pay for things that the family needs ... or the family wants.

In turn employment and employment opportunities have an impact on the general quality of life in the community ... in improving aspects of quality of life like reduced stress and comfort from job security and financial security.

#### **Material cost (2)**

Material costs are a function of a bill of material and the purchase price of the materials. Technical production factors like the scrap factor should be included so that material

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costs reflect reality. Many production processes require considerably more raw material inputs than there is output because of process losses (in machining, in casting, etc.).

The value flow associated with materials may be positive or it may be negative. The factors are complex. Converting a low value raw material into a high value product using labor and equipment may be a value creating activity for the community ... though it may not be. The full value chain for the materials needs to be understood and taken into consideration ... as for example when sourcing raw material is associated with obscene levels of toxic waste.

In money profit accounting, the full consumption of value is usually ignored with the effect of overstating profit returns ... in some cases by obscene amounts. For example, in the extractive industries the money profit accounting costs only include the money expenditures associated with the extraction ... the fact that the materials being extracted no longer exist is not part of the accounting. This is very convenient because the value consumption associated with the materials no longer existing is enormous ... and avoided using the excuse that the valuation is subjective and difficult to quantify.

The value flows associated with materials are a critical part of understanding business performance ... and community performance.

### **Land, facilities and equipment cost (3)**

In money accounting, land is thought of as a non-depreciating asset ... but it is an element in the balance sheet that may have an impact on value performance of both community and the organization. Land is potentially a way to progress, or may be a constraint on performance.

Equipment costs do not behave in a simple way, and care must be taken in costing equipment use appropriately. In many cases, the cost of using equipment may be expressed as a “cost per machine-hour”. Some of the characteristics that must be taken into consideration include (1) the life of the equipment in elapsed time; (2) the life of the equipment based on usage; (3) the utilization of the equipment in any given period; (4) the costs associated with running the equipment such as fuel and maintenance; (5) the cost of periodic major maintenance, etc.

For the community or society the infrastructure is part of this section ... and the cost associated with an infrastructure that is highly efficient or very inefficient.

The analysis of big projects is often more about political benefit than economic benefit ... especially when there are public funds involved.

#### ***Congestion Pricing ... or Congestion Costing***

*New York City tried to introduce congestion pricing in order to reduce congestion in the center of the city ... perhaps quite a good idea. The citizenry did not want to [pay the price! But the day to day reality is that everyone is experiencing the costs of congestion every time they try to*

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*move through the city. Taking an hour to go somewhere that should take 5 minutes is a very real cost ... but not in any accounting!*

Depreciation is a part of the cost framework. It is a concept that is derived from the economic life of an asset ... and in this context has nothing to do with tax law and allowable write-offs. The aim of depreciation is simply to relate the cost of using an asset to the activities the asset is used for. If an asset has a three year life, and is used most of the time, each of the year periods should be charged one third of the capital cost. This would give a reasonable result. On the other some equipment has a life that depends on how much it is used (for example, an aircraft). If some equipment has a useful life of (say) 50,000 hours, the hourly cost can be computed and the asset charged to the activity for each hour it is used. Maintenance is a potentially important part of the cost of the use of equipment and facilities.

#### **Operating overhead cost (4)**

Operating overhead costs are costs associated with the supervision and management of operations. They are made up of elements of cost (1), (2) and (3) above, and allocated to specific units of activity. MDIA tries to include data about operating overhead cost in the analysis because the productivity of many work activities depends on the effectiveness of the workers at the lowest levels, and this requires good supervision and on the job real time intervention.

#### **Financial costs (5)**

Cost of capital employed is the cost of using fixed and working capital. It is calculated by reference to the investment made in equipment, buildings vehicles, etc (fixed assets) and the investment needed for material inventory, work in progress and finished goods, receivables and cash (working capital) that are used for specific activities.

The calculation uses a cost of capital rate that varies depending on the ownership structure of the operation and the goals of this ownership. The cost to “rent” capital may vary from 2% to in excess of 200% per annum. This has become one of the most expensive aspects of modern capital market capitalism.

#### **Admin and general overhead cost (6)**

The general overhead cost is similar to operating overhead. It is made up of the same elements and allocated to operating activities on a basis that reasonably reflects the structure of the organizations and activities.

Cost is a key metric ... while it is usually the subject of intense analysis within an organization, it is difficult for the public to get access to cost information. In the corporate for profit business, reducing cost is a way to increase profit ... other things remaining the same. Little is put into the public domain about costs ... but cost is a critical part of performance metrics both for determining money profit and also socio-economic performance.

### **Profit as a cost (7)**

One of the biggest elements of cost in modern business is the cost of capital ... which is essentially the idea that profit becomes an essential part of the cost of product or service. In a system where the computation of (corporate) value is a function of the level of profit and the growth of profit ... then the profit behaves more like a cost than merely being the derivative of corporate performance.

### **Missing balance sheet components (8)**

One of the problems with the modern balance sheet is that “by law” it is possible to exclude important economic and business realities from the balance sheet of the organization. This makes it difficult to know what is going on “in reality” compared to what is being reported.

It makes sense in financial management terms but should be reflected in the reporting of the business. The rules of financial reporting now provide for this.

### **Off balance sheet leasing**

The history of off-balance sheet leasing is an object lesson in the way financial managers sought to build capacity without being limited by traditional financial balance sheet constraints ... but in the process were able to move from sensible to foolish without anyone being able to tell the difference. The rules were changed after it became clear that there was widespread abuse.

Risk is another issue where accounting rules are inadequate so that risk may be ignored in balance sheet reporting. The mathematics of risk do not easily translate into accounting because of the incredibly imprecise quantification of the cost of disaster when the disaster is big. There is no linear relationship between the small risk and big risk ... there are multiple exponentially related factors which produce the potential for out of control failure of society when not taken into consideration and planned for!

External constraints are something that have to be quantified and included in the balance sheet reporting for a community. Doing everything right and not getting any benefit from this may be a function of external constraints that should be in the analysis. A framework of governance that works or not is an example of an external constraint that should be accounted for.

# ACCOUNTING FOR IMPACT

It is very difficult to account for impact by doing the analysis from the perspective of the entity that is causing the impact

*This is an idea that Einstein wrestled with as he was doing his work on relativity.*

In order to address this issue, the MDIA framework for accounting has been developed by going back to basics and getting to a simple entity that is easier to understand. This is the 'economic activity'.

Money revenue -v- value creation

Money revenue is not enough

## Impact on community

### **The analytical entity is the community**

In the prevailing global capitalist market economy, the business organization is most central to economic performance metrics, and especially the money profit performance of the corporate organization. In turn this drives the valuations associated with the capital markets.

MDIA uses the community as the primary analytical entity. People live in a community and this is where it is most useful to assess quality of life ... and in turn to make decisions that will improve quality of life. Value metrics are related to all the issues that have impact on quality of life.

### **What is profit for a community?**

Costs and prices determine profit ... cost and price make it possible to calculate margins and profits ... and this is what is done in normal corporate accountancy and financial reporting. As we shall see later, in modern financial reporting both cost and price are capable of being distorted so that the most favorable margins and profits are being reported ... something that professional accountancy was structured to avoid.

Simply stated, money profit is the difference between cost and price. There are accounting rules about how cost and price are calculated, but in essence the difference between these two measures is profit.

The modern market based capitalist economy is based on the simple fundamental idea that profit is good, and a market should result in allocation of resources to those activities that are capable of earning profits.

Compared to systems for allocating resources that are simply rule based and bureaucratic, the market system is good ... but not good enough.

Money profit is at the center of modern capital market oriented economics ... while value is at the center of MDIA for socio-economic metrics. Profit is a meaningful metric for performance measurement within a for-profit corporate organization, but it does not take into account the impact on society of corporate activity and any social responsibility.

In corporate accounting, the basic computation of profit is that it results from sales revenues exceeding the cost of sales. Generally Accepted Accounting Principles (GAAP) have been developed to that there are rigid rules about how sales revenues and how cost of sales are calculated.

In a simple business situation, profit is realized when revenues exceed costs, and a loss is incurred when costs exceed revenues. The idea of profit or loss does not easily translate into all economic activity ... for example in the activities of government and in the activities of the not-for-profit sector of the economy.

## **How price impacts community**

Price is a key variable in the performance of society. It is not as important as cost, but the way price is used in society determines the way value is shared between the various economic actors. The following graphic shows how an economic transactions that has costs and value is shared between the enterprise and the client depending on the price being applied to the transaction.

For society as a whole the value adding is the difference between the value and the cost. For the client the value adding is what is left of value adding after the enterprise has taken out its profit. In the profit maximizing enterprise the goal is to have profit as much as possible, and the amount left in the hands of the client is of little consequence.

## **Impact on the business**

Revenue is a big driver of corporate performance and economic metrics like GDP. Revenue is a derivative of price and affected also by aggregate demand and the specifics of the product or service.

However, revenue does not correlate at all well with value creation. Much of the revenue proposition ends up being zero sum and value neutral ... or worse.

To illustrate this idea ... when an affluent person who has many pairs of shoes buys another pair of shoes there is an exchange of money and an increment to revenues, but rather little or nothing changes in terms of the quality of life of the shoe owner. In money

terms the business accounting shows revenue and profit increase together with asset cash up and asset stock down.

When a poor person who has no shoes gets a pair of shoes, the economic value proposition is very different. Quality of life for the poor person is substantially enhanced and the value increment is positive. What happens in the shoe supplier business, however, may not be money profit positive ... in fact there may well be a money loss. In MDIA the money loss to the business and the value adding to the beneficiary ... to society ... are taken together. In MDIA, a business that has an activity that runs at a money loss while producing a social value should be judged on both the money dimension and the value dimension together.

## **For everyone else ... value creation**

In money profit accounting the creation of value is usually excluded from the accounts. This makes money profit accounting easier to understand, but it creates a serious flaw in the way markets perceive corporate performance. In the prevailing money profit reporting of performance, high profits doing nothing of social good are preferred over lower profits that include value creating activities that produce enormous social good.

In the case of social sectors like education, the money profit accounting associates education with costs in a systemic way, but does nothing to associate the value creation of education with these costs. In the case of health ... the value of good health is not included in any money profit accounting system, while costs are accounted for rigorously.

Value creation happens when existing resources are used and something of more value than the resources used is created. In corporate accounting profit is revenue less cost ... in MDIA, value creation is the resultant value less the value consumed.

## **Emerging new metrics**

Attempts have been made to have more comprehensive metrics, with more or less success.

In the area of Corporate Social Responsibility (CSR) attempts are being made to present corporate activities favorably with respect to impact on society. The idea is good ... but it is difficult to give CSR much credibility without relevant metrics. Corporate CSR units do not have metrics that have anything like the same power as the money revenue metrics of the business organization. Deployment of MDIA has the ability to change this.

## **Missing value creation**

There are metrics about business profit and all sorts of economic activity that goes into making up Gross Domestic Product ... but virtually nothing in the prevailing system of metrics that addresses the matter of value creation.

Value creation may be a result of the consumption of value resources ... or value creation may be something that does not have any associated value consumption.

Value creation may be costly in terms of resources consumed, or not. There are many examples of value creation that are pure win-win.

A polite society is derived from people behaving nicely ... something that has no material cost, nor any consumption of value ... but does have a significant value outcome.

## **Cost and value behaviors**

Cost and value are not static in nature, nor are their behaviors linear and simple. Rather they are quite complex, but they may be understood using relatively simple cost and management accounting techniques.

Cost, price and value are the core drivers of the global socio-economic system ... and central also to how the markets work.

It has been apparent for some time that there has been something missing in modern economics ... as well as in modern financial analysis, but it is has not been particularly clear how critical these missing elements are to the reasonable functioning of the global system.

Over the past several decades there has been a boom in computational capacity ... but not matched by public understanding of this phenomenon. Worse, the analysis done has increasingly been brilliant but wrong. Bigger and bigger decisions have been made with less and less understanding and the result of this should have been easy to predict. Enron and the demise of the Anderson accounting firm were an early warning of a serious crisis of analytical understanding, and the need to have better understanding of the underlying behavior and causalities.

## **Understand behavior of all key metrics**

The MBA trained analyst has a very good grasp of the behaviors associated with cost, price and profit and the way these may be managed for the benefit of corporate stakeholders ... but the value element that has impact on society is less well understood and is largely ignored.

## **Phony profits**

### **Phony profits ... ignoring liabilities!**

But even in the business world much of the profit reporting is phony! GAAP rules should ensure that profits that are reported have economic substance ... but the system of rule making in recent years has preempted reality and reported profit can be meaningless. The fundamental principles of good accountancy used to require that financial reports reflect a true and fair view of the financial situation of the organization ... but this idea has been totally disregarded in modern financial reporting in case after case ... modern bank accounting ... the accounts of General Motors ... the accounts of Enron ... and a whole host of large complex organizations.

## **Money surplus metric in not-for-profits**

### **A bad metric for an entity with a value purpose**

A money surplus or deficit is used as a measure of performance in many not-for-profit environments ... but this is only a very poor proxy for performance. The purpose of most not-for-profits is not to have a surplus of money, but to be doing something of value to society. Nevertheless the money accounting is the primary reporting system that is used in these organizations.

## **Value Adding or Destruction**

### **Profit and loss ignores social impact**

GAAP profit ignores social impact! Money profit, which is the key measure of performance for the corporate profit maximizing businesses, ignores social impact. This is important, because many profit maximizing initiatives have negative impact on society. Reducing costs usually increase profits, especially in the short run ... and costs may be reduced by many initiatives like, for example, cutting back on environmental pollution control, relocating production to lower wage locations, etc.. GAAP rules allow the computation of costs to ignore completely the depletion of natural resources. GAAP accounting takes into account the disbursements made to have the right to exploit a resource, but there is no explicit costing for the depletion of the resource, and the fact that the resource is consumed.

Phony profits created by ignoring value consumption are a problem in money accounting. This problem is addressed in value accounting because it is value consumption and value creation that are the key determinants for value adding or destruction. Profit gets bigger while society deteriorates. This is not a good outcome ... but is never in the metrics because social impact measures are not part of GAAP accounting.

### **Therefore value adding or destruction**

Value adding or destruction is a derivative of value creation and value consumption. Value adding happens when the resulting value ... value creation ... is greater than the value consumed. Value destruction is when the resulting value is less than the value consumed. MDIA takes into consideration ALL the issues that impact value to society and the community. Value consumption is not only the money cost but the value change associated with the use of the resources in economic activities. Similarly value creation is the value change associated with economic activities ... hopefully positive value change.

MDIA uses much of the money accounting framework to understand the dynamics of value creation ... and especially the idea that a powerful metric for progress is the change

in the “state” of the reporting entity. In MDIA the community is the primary reporting entity, and its change in state is the main measure of value adding or destruction in the community.

## **Value Adding**

### **Value creation less value consumption**

MDIA thinks in terms of value adding being the difference between value consumed and value created.

Cost and value result in more than profit value adding. Cost and value make it possible to calculate value adding ... something that is very important for society. This value adding is more accurate than profit ... but never used in the prevailing mainstream metric systems.

Value adding is a better measure of socio-economic performance because it embraces not only the money component but also the social value component. Some profit is earned by destroying social value, and simply ignored in standard money accounting and reporting. On the other had, social value adding aggregates the money profit and the social value add in a rigorous way.

Unit costs, prices and values are very informative ... they make comparison easy both over time and from place to place. There are some challenges because units of measure and currency exchange rates may confuse ... but when these issues are taken into account, unit costs, prices and values are very powerful.

The measurement of value has a large subjective component ... but it is still possible to have some useful measurement. By using the concept of standard value ... a concept rather similar to standard costs ... it is possible to compare different programs and see how one program performs relative to another.

In the case of malaria control programs, the goal is to reduce mortality and morbidity. By having a table of standard values it is possible to report that one approach had more value relative to the costs than another.

The perception of value differs from place to place, and also changes over time. The changes are ongoing. Values change over time because of the evolution of society. The MDIA set of standard values makes it possible to start a process of understanding value perception better, and also to make value adding the goal of economic interventions.

### **What value arises from profit anyway?**

Profit has a value in its own right ... the revenues are bigger than the costs ... so on the face of it there is a positive outcome. But there are derivatives of profit that are even more important that arise because a “market mechanism” values a possible future flow of profit, and a history of past profit in a way that creates a market value ... that is price ... that is more than the real value increase taking place in the business accounts. The Initial

Public Offering (IPO) is a vehicle for monetizing the market value associated with a flow of business profits.

## **Value reporting!**

Value reporting needs to be as pervasive as profit reporting. Every organization should be reporting not only its money accounting, but also its value accounting. Capital markets should value stock based on both money profit and value.

## **Value in Not-for-Profit activities!**

The concept of profit has no meaning as a performance measure for not-for-profit activities ... but value has a very real meaning. The MDIA value construct applies everywhere in both private and public sector organizations that are working for the public good, but without effective performance metrics.

## **Value adding ... impact**

Value adding is a broader concept than profit. Value adding is the difference between the ending value and the initial value. It may also be thought of as the value created less the value consumed.

Value is rarely the same as price. Many things in life with the most “value” are truly priceless ... good health, friends and family, the birth of a child, happiness, and so on. It is a challenge to associate a number with value ... but MDIA does this by using a dialog around sets of standard values. Value consumed is more than the financial costs. Value consumed reflects costs but also includes issues like the damage to the environment ... or the exploitation and consumption of natural resources that have taken millions of years to create as in the petroleum industry.

## **Value ... financial and social**

Capital markets are all about value ... but it is financial value only. A stock has a value based on its financial profit history and profit potential. What the company does for society is not a part of the capital market computation. It is just about profit history and profit potential ... about money flows ... about risk and the safety of money capital.

Social value is much more. It is no accident that the phrase “Pursuit of Happiness” is in the founding documents of the USA and not “Chase for Money”. Happiness derives from social values that end up making life worth living. MDIA embraces both the financial and the social value and puts both in the metrics of the community.

## Value Destruction

### What is value destruction

Value destruction is when there is more value consumption than there is value creation ... a similar idea to profit and loss which are derived from business money costs and business money revenues.

The corporate business community understands corporate value destruction. When a business does things that enhance immediate profit but at the expense of the future profit of the company, there is corporate value destruction.

Society has value destruction in the same way ... arguably in a more important way and with more complexity.

### Value destruction in a money economic boom

Value destruction is possible in a society even when an economy using money based metrics shows it is booming and growing strongly. The calculation of corporate profit ignores all sorts of value elements which impact on society in one way and impact corporate profit in another way

The case of outsourcing manufacturing from the USA to (say) China has a favorable impact on corporate profit, but has an unfavorable outcome on the social value metric for the USA community with some favorable offset for the Chinese community. When corporate profit is the only metrics that is being monitored by decision makers and investors, then community impact gets ignored.

### Missing value because of ...

Value destruction is pernicious ... and difficult to address unless decision makers are using the right set of metrics of performance.

*An American 25 year old with a top class education and in good health can look forward to a 40 year career that pays very well. The cost of the education may have been something around \$1 million, but the earning potential for the person is many multiples of this. A net present value calculation will probably put the NPV of this person at around \$5 million.*

*The example of an African child ... in Niger, say ... at 25 years old with little education, a lot of health problems and almost no job opportunities ends up with a NPV of perhaps \$5,000. If American job opportunities decline ... not so much in quantity but in the level of remuneration, then the NPV changes from (say) the \$5 million referred to above, to something much lower ... say \$2 million. There is very real value destruction when this happens ... in this case one person represents a value destruction of \$3 million.*

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The corporate profits that are being generated simply by moving production to low cost areas of the world from high cost areas are also changing the value proposition for both the low cost area and the high cost area. Meaningful metrics about this take all the value issues into consideration ... in both places ... and also around the decision makers in the corporate organizations and investors in the capital markets.

The ideas of Adam Smith and the invisible hand of the economic market should not be discarded ... but the role of metrics in driving the market and influencing outcomes should be respected.

Markets driven primarily by corporate profit and individual gain will produce outcomes that have massive value destruction in high wage locations around the world ... which is bad.

In the outsourcing of manufacturing, MDIA value metrics will show value adding in low wage areas ... and this value adding will help substantially in raising people out of abject poverty ... which is good.

Corporate decision makers ... investors ... labor leaders ... policy makers, etc. have to address the challenge of value destruction caused by the relocation of corporate activity from one place to another. Maybe some value destruction has to take place ... but maybe not.

If the brain-power that has a singular focus on making the most corporate profit and the most money gain in the capital markets were to be deployed to address the dynamics of socio-economic value adding and destruction there would be a better outcome.

## **Money profit ... truvaluadd**

### **Money profit metric inadequate**

#### **The value metric also important**

The money profit metric is inadequate as a driver of decision making and the allocation of resources in the modern global economy. Return on investment ... where return is all about money profit and money capital gain is not enough. Value adding ... and its negative, value destruction ... for society are also of critical importance, and maybe even more important for society and the way capital gets allocated to competing opportunities.

The value metric should not replace profit but be complementary. Much of the time value adding is consistent with corporate profit, but not all the time. The efficiencies associated with realizing profit are also efficiencies that result in improved value adding ... most of the time, but not always.

The best outcome is where value adding and profit have the same profile and behavior ... then very good decisions are going to get made with an outcome that is good for profit and good for society.

But not all profitable corporate activities end up with value adding ... and there are places where there is value destruction. There should be as good metrics about the value dynamic as there are about corporate profit ... and this is what MDIA is all about!

#### **The value metric about quality of life**

Community and society are more important than the corporation in the matter of quality of life. Family and friends ... social interaction ... are an important part of life, and the quality of life.

A corporation can play a part ... and other organizations ... because they provide jobs and they provide goods and services that satisfy needs. An organization can be a good employer and a good community citizen ... or not.

# MEASUREMENT AND QUANTIFYING VALUE

## Measurement

The process of measurement changes the reality of what is being measured. This is a well known problem in science at the limits of knowledge, but it is also a problem in the everyday world of life and living.

### *Human behavior*

*The question was whether or not improved lighting in the factory improved production rates or not? It turned out that production stabilized at the same level no matter whether the lighting was brighter or dimmer. What appeared to improve production was a change in the lighting ... either brightening or dimming. In other words, simply paying attention to people was what really mattered. In socio-economic measurement, it might be expected that there will be some beneficial result merely by doing data collection.*

### *Making measurements*

*I learned something about measurement as an engineering student. To understand something, you have to make measurements. If you want to understand causality ... measure what you are doing and measure the impact.*

*As an accountant trying to get business managers to make critical decisions, we measured everything that seemed to have potential importance. We got the most impact when what we measured had real relevance to the people doing the work. For the shipping department, measuring how many miles a truck drove per tire was important ... and the supervisor of that department knew and cared a lot about it. And when the purchasing department also understood the matter ... the company progressed. Measurement helped identify its importance and keep score so that responsible people could be given credit.*

The lesson for MDIA is that we need to measure what is important for all the stakeholders in society, the economy and the environment... and then get the data that will drive decisions that will translate into progress.

## **ANALYSIS**

### **Analysis is a step to creating value from data**

MDIA is nothing without analysis. The effective use of the product of analysis for decision making and holding people and organizations accountable is what makes MDIA valuable. Experience has shown that performance improves when there is active feedback and there are the data that enables people and organizations to be held to account. People may not like it ... but their performance improves. The purpose of analysis is to get a better understanding. The data are neutral ... the analysis then produces results that might suggest some conclusions. It really does not matter what analysis is done as long as the result is better understanding and improved decision making. One value step is moving from data through analysis to understanding ... another is to move from understanding to effective action. In some situations this has been done with wonderful results, but mostly there have been interventions that were more expensive than effective.

### **Comparative analysis**

Comparative analysis has many forms ... including (1) the comparison of data from one locations with another location; (2) the comparison from one time to another time; (3) the comparison from one organization to another (4) the comparison of what should be to what actually is; (5) the comparison of one approach to another approach; etc.

### **Time series analysis**

Time series are very powerful ... the corporate world uses them all the time. Capital markets use time series ... the public needs to have time series that show what is going on that specifically impacts their community.

### **Spatial analysis**

# MORE ABOUT VALUE CHAIN

## ANALYSIS OF THE VALUADD?

Where is the funding coming from? Where are the beneficiaries?

Over the past decades a very large proportion of the international official development assistance has been disbursed in the north, with the idea that it was going to beneficiaries in the south. But mostly this did not happen. Most funds have been disbursed in the north where there is benefit for the contracting organizations and rather little left that is of benefit for the south.

A much better way is to disburse more directly in the south where there are direct benefits and associated multiplier effects. When funds are disbursed in the south, the impact of international official development assistance is very good. Local disbursement in beneficiary communities not only has a direct benefit, but delivers other economic improvement through the multiplier effect.

The success of relief and development depends more than anything else on whether it is economic value adding or economic value destruction that is dominant. In economic value adding the value increment exceeds the cost. In economic value destruction the value increment is lower than the cost.

In the corporate environment the price of goods and services and the market serves to control cost and ensure that the clients get value for their money. No similar mechanism exists in the relief and development sector. Decisions are made based on a process that has no independent (market) checks and balances and it is easy to commit to make expenditures without the activities and outputs have much meaningful tangible value.

## Value chain

The value chain has been a critical factor in organizing development, production and marketing around the globe. The value chain has been structured to maximize profit for the involved organizations with little regard to the optimization of community value. The results have been predictable with favorable profit optimization largely offset by value destruction for society.

The value chain is very well understood in the corporate sector, and there has been very effective profit improvement for the corporate sector by taking advantage of all sorts of cost improvement opportunities in manufacturing to improve the profit bottom line.

But the deep knowledge of the corporate value chain is not matched by anything like the same amount of understanding of the value chain as it impacts social value and the impact of corporate activities on society. The relocation of manufacturing from the United States to China has been very profitable ... but what are the costs to society that do

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not figure in the corporate accountancy. Nobody has been doing MDIA and nobody knows.

We do know corporate profits increased as more and more manufacturing was outsourced to low cost areas. We do know something of the job creation in these low cost areas and we do know something of the job losses in the places where manufacturing plants were closed ... but what we know is far less than what we need to know. We do not really know very much at all about the impact on the communities --- this is not part of a system of metrics, and only part of what we need to know is on the record.

*Al Gore on July 17th, 2008 ... 'We're borrowing money from China to buy oil from the Persian Gulf to burn it in ways that destroy the planet,' he said. 'Every bit of that has to change.'*

### **Value chains are everywhere**

Very few ... if any ... economic activities take place independent of everything else. Only very small and simple transactions have impact only on the direct participants ... most have other ramifications which are important. The corporate system of financial analysis extracts the factors that result in the most money profit for the enterprise, but leaves out the analysis of impact on others in the value chain, and the impact on people, place and planet throughout the value chain. This is an important weakness on money profit accounting and a core strength of MDIA.

Modern corporate accountancy is complex with many rules, mostly relating to the way an organization reports to its financial stakeholders and, to a much lesser degree, to the public. These reports are the result of complex consolidation that takes into consideration what is allowed in reporting the internal and external value chains that impact costs, revenues and profits. There are no requirements for any of the impacts on people, place and planet to be reported in a rigorous way.

*There is a growing set of initiatives that are trying to improve the framework for the reporting by organization in respect of sustainability, corporate responsibility, carbon footprint, and the like. Compared to money profit accounting for the corporate organizations, these initiatives are weak with little or no regulatory or legal reporting mandates to encourage and support them.*

Managing value chains makes it possible for a corporate organization to minimize its exposure to taxes, duties and other regulations that impact its financial performance. None of this is easily accessible to the public at large. Were the public to have an understanding about value chains it would make it possible for the public to hold organizations accountable for their performance in every place where they operate and throughout the value chains they use to support their operations.

### **Value chain analysis**

Value chain analysis shows who are the winners and losers in the chain of economic activities that link together in the supply chain to produce the goods and services people need.

The result of value chain analysis can be very powerful ... but because of this it is not always easy to get the data that are needed for objective independent analysis.

MDIA sets the stage for having much more data on the record that are useful ... and though the data will not be good enough to satisfy legal criteria for criminal guilt ... the data will be good enough to make it quite clear what is going on.

### **Value chain analysis for profit maximization**

Price for the seller becomes cost for the buyer. This next buyer sells for a new price, and profit is again the difference between cost and price.

It can be argued that the most powerful tool that MBA training has given to their students is the spreadsheet mathematics to take the inherent costs, prices and values of the value chain and optimize the value chain to maximize profit for organization. These experts know how to move value from various pieces of the value chain and move it into the optimizing organization.

This is a very powerful concept and has facilitated a very rapid and efficient concentration of wealth into large organizations and entities with a minimum of investment.

### **Value chain for maximum social benefit**

The accounting used for corporate profit maximization does not include social costs nor social benefits. These are both important and are brought into account with MDIA. The costing is not obvious ... but it is pretty clear that some quantified measure needs to be attributed to the consumption or destruction of social value.

The value chain is very well understood in the corporate sector, and there has been very effective profit improvement for the corporate sector by taking advantage of all sorts of cost improvement opportunities in manufacturing to improve the profit bottom line.

But the deep knowledge of the corporate value chain is not matched by anything like the same amount of understanding of the value chain as it impacts social value and the impact of corporate activities on society.

In the value chain, price for the seller becomes cost for the buyer. This next buyer sells for a new price, and profit is again the difference between cost and price.

### **Value chain shows where are the profits?**

How do valuable raw materials create profit with little benefit to the community of origin?

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Value chain analysis shows who are the winners ... those that have small cost and high price. But costs are usually based on simple GAAP concepts and not on MDIA analysis.

*When cost is based on the consumption of MDIA value rather than the consumption of GAAP cost and total value added is the goal rather than profit, there are different results.*

#### **Value chain and the market economy**

Value chains flow through markets ... but the market is more a fiction than a reality, which is part of why they are so valuable in value chain manipulation and also so dangerous. It is not easy to tell when a market transaction is driven by supply and demand for physical goods, or whether the market is being driven by speculation about future market values, or whether the driver is legitimate hedging against future price movements.

#### **Gaming the value chain**

One of the ways in which profits are maximized is by using the value chain to get profits domiciled where they most benefit the company.

Outsourcing from a high cost location to a low cost location results (rather obviously) in lower costs and therefore higher profit.

Value chain can be used to move profits from one legal entity to another ... this may have tax or other financial advantages.

#### ***Tea auction – Malawi (as of 1989)***

*If you are a tea grower in Malawi, your product is sold for export through the Tea Auction. The idea is that this auction price is a market determined price that will maximize the amount paid to the tea industry in Malawi. Up to a point, this is right ... but there is a substantial part of the Malawi production that originates from estates owned by international tea companies. These companies have to sell at the auction ... but they also want to have tea for their international business. As tea distributors they want low prices ... and if low prices mean that the estates get less profit it does not matter much ... in fact it helps because they get less problem with local taxes and with the repatriation of profits.*

Value chain can be used to make profit performance look good but not mean much

#### ***\$200 Sneakers (as of 2002)***

*It costs about \$2 to make a pair of sneakers in China and a number of other low wage countries. Manufacturers make a good profit by selling a lot of them at (say) \$4. But the profit made by manufacturing is tiny compared to the profit made by the marketing organization and the wholesale and retail system in North America or Europe. Retailers have a very comfortable markup ... and so do the wholesalers and the marketers.*

*They have expenses to keep their “brand” popular ... like sponsoring high profile stars ... but everything in this part of the value chain is about perception and not about the essential substance.*

The added value substance happens at the manufacturing stage ... only value perception gets added subsequently. Over time perception loses its value and at the limit there is not much left.

### ***Outsourcing in South Korea (1970s)***

*In a practical situation, however, lower costs may be offset by some inefficiencies and other issues. In the 1970s, I pulled back production that had been outsourced to South Korea from the USA. Production cost savings were offset by the costs associated with unmanageable supply chain logistics and rapidly changing consumer tastes.*

### **Value chains for the community**

End to end value chains tell interesting stories ... and maybe for this reason are not easy to compile. The value chain works well when everyone is making money, and it matters less in this situation that some party is making a lot of money, while others are making only modest amount.

Things work when everyone is in positive money making territory.

In a situation where one main party is making most of the money ... it is likely that this is reflected in the capital markets as a high valuation of the company's stock ... but this is dangerous.

When attempts are made to make the allocation of money and value fairer with respect to the community, the money making by the one main party gets reduced ... and this in turn reduces the valuation on the capital markets.

Getting equitable distribution of value adding between corporate enterprise and society is not going to be easy ... and there may be major disruption of capital markets as this adjustment proceeds. In corporate accountancy and capital market terms this will be a bad change ... but looked at through the MDIA perspective and including community values it is likely that society will be far ahead.

### **Value chain for banking and finance**

Over the past 30 years the USA has taken apart most of the regulatory framework around banking and the capital markets, with very good results reported by the institutions in the sector over this period of time. The good results do not, however, take into account the costs of the periodic failures of big institutions in the sector (Continental Illinois) and whole segments of the sector (Savings and Loan). But worse they do not take into account the wealth that is merely removed from one segment of society to become profit in the banking and finance sector. The sub-prime mortgage crisis is just the latest in a

series of moves over the years by the banking and capital market industry to concentrate wealth in their sector at the expense of society as a whole.

### **Value chain for fossil fuel production**

In the energy industry the fossil fuels that are being extracted originated millions of years ago ... the replacement cost of these resources is unimaginable ... so it gets ignored! This is easy and convenient ... but not a good approach. These issues are brought into account with MDIA. The costing is not obvious ... but it is pretty clear that some cost needs to be attributed to the consumption or destruction of the value associated with the depletion of a finite energy resource

#### ***Replacement cost of fossil fuel resources***

*In the energy industry the fossil fuels that are being extracted originated millions of years ago ... the replacement cost of these resources is unimaginable ... so it gets ignored! This is easy and convenient ... but not a good approach. A better way would be to cost the depletion of resources at the prevailing replacement cost (for example from renewable energy like solar PV) and in this way the MDIA performance of all energy production systems would be computed in the same manner.*

We know a lot ... or rather, a lot is known. The problem is that the knowledge tends to be in private hands for proprietary purposes, specifically to use the knowledge to increase profits and returns for stockholders and executives.

### **The value chain of knowledge - feedback**

Value is not created when data are collected, nor when analysis is done. Value is created when there is feedback so that better decisions get made and there are better outcomes. Value only gets created when something is built ... when jobs are created ... when constraints are removed ... etc. There is no value increment from added understanding per se or knowledge that stays in academic circles and is never used in society.

#### ***Academia - huge amount of effort with small impact***

*Academic expenditures have grown substantially over the past several decades ... but have the results kept pace. Have the results justified these increased expenditures.*

*The data are not easy to find ... but it would appear that the activities favored by the academic community are high in visibility and rather low in value. The two key outputs seem to be study that leads to a PhD qualification, and research that furthers an academic career. From a personal perspective these are both fine ... but the global social value is not so clear.*

*The brain power that is available in the academic setting is impressive ... but it has little value until it is mobilized to do work that has value. It is*

*not at all clear what work being done by the academic community has value ... such metrics broadly speaking do not exist!*

### **Concentration of economic power ... monopoly**

Monopoly is profitable.

*Everyone has heard of the story of John D. Rockefeller and Standard Oil. It is amazing how much money can be made when an organization gets monopoly control of the value chain. And amazing also, that so little has been learned from that experience.*

One of the lessons is that monopoly is powerful ... and laws do not work very well unless they are very carefully crafted. Most statutory laws are notable not for what they control, but what they allow ... whether this is because of sloppy lawmaking or because the lawmakers know exactly what they are doing is a matter of opinion.

#### **1970s – new oil and old oil**

*The oil shock of 1973 was a wake up call ... and not surprisingly Washington went to work to legislate a solution. Part of the solution was going to be the profit incentive and removal of price controls over domestic production of oil and gas.*

*Oil from oil wells that were already producing was to keep the old price. Oil from new wells could be sold at the (then much higher) prevailing market price.*

*Not surprisingly production of old oil declined and production of new oil increased ... never mind the timeline for creation of new wells was months and years, but the change took place in days. Did the legislators know this was going to happen and give great profit to (their friends) the oil industry? Clearly this was good popular legislation because the old price controls were kept in place, and high price incentive was only allowed for incremental new production that was needed ... or was this just a sham?*

#### **1970s – Foreign Corrupt Practices Act**

*In the aftermath of the 1970s oil shocks, a new era of international profit opportunities emerged. For the first time in history there were many governments that had previously unimaginable wealth ... the oil exporting countries ... and the world's entrepreneurs wanted to tap into this market.*

*Bribery, kickbacks, etc. emerged as the marketing modality of the era ... but it was found offensive by much of the public when the media started to tell stories. Stories about Lockheed were everywhere ... but not much about Boeing. The American press has all sorts of stories ... but not so much in the European press.*

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*Washington had to do something ... and this something was the Foreign Corrupt Practices Act. I am not a lawyer but I get the impression that this law, like so many others is big on PR, but rather irrelevant in terms of addressing the underlying core problem ... and it is relatively easy to step around.*

*Getting control of a value chain is enormously valuable ... this is true with the oil value chain ... it is true with any market where there are a limited number of competing entities.*

## COMPARATIVE ANALYSIS

### Importance of multiple datapoints

The importance of multiple datapoints applies in spatial analysis just as it does in other techniques of analysis. It may not be easy to know exactly about something ... or the complete story about anything ... but most often, it is relatively easy to tell something by reference to what it is in another place.

#### *One datapoint ... and two datapoints*

*If you have one datapoint it is a whole lot better than having no datapoints. If you know a person is 4 feet tall ... that is a lot more information than not having any height measure at all.*

*If another person is 5 feet tall ... there are now more datapoints ... and more questions ... and the beginning of some answers.*

*Perhaps ... is one person taller than the other because of age difference? Or is it some other factor?*

*If someone weighs 70 kg that is a potentially useful datapoint ... if they weighed 50 kg a year before, then the two datapoints are very useful. One datapoint tells only the status at one point in time or place ... two datapoints enable one to know what is different between two datapoints.*

*If the datapoint shows a bad situation at one point in time ... a better datapoint later is progress in the right direction.*

There is a substantial amount of mathematics and statistics around data analysis ... but there is a lot that can be learned by simple plots of comparative data. Simple plots answer some big questions very easily ... but the data are needed.

Accountancy argues for more data that are simple and easy to understand ... and MDIA argues for having more and more of the data with a community focus. If you cannot understand what the simple data shows ... walk around the community and see what is missing.

# STATE, PROGRESS AND PERFORMANCE

## State is the balance sheet of society

The balance sheet of society has all of the elements that are in a money profit financial accounting balance sheet, plus all the elements that reflect the value of everything that has socio-economic importance.

In MDIA the idea of balance sheet is everywhere and what is included in the balance sheet depends on both perspective of the analysis and the boundary of the report.

The UN system of national accounts (UNSNA) is one of the systems that produces a balance sheet at the national level. These accounts are much more complete than most of the accounting typically produced by government, but have limited use because they are not part of a broader analytical system for everything in the society and the economy.

MDIA uses the concept of balance sheet primarily to understand the state of an organization and a place. The state of a place may be aggregated to inform about the state of a country, and aggregated again to inform about the state of the planet.

## Progress is change in this balance sheet

Corporate business accounting has well defined ways of computing profit for business. This definition of profit by Lord Benson over 60 years ago is very simple!

***“My Lord, a profit is the difference between two balance sheets”***

*In the 1950s, Henry Benson ... a senior managing partner at Cooper Brothers in the UK was asked while testifying in a British High Court to define profit. After a short moment of reflection he replied “My Lord, a profit is the difference between two balance sheets”*

*Henry Benson subsequently became Sir Henry Benson and later on Lord Benson. Cooper Brothers combined with Lybrand, Ross Bros and Montgomery of the United States to form the international firm of Coopers and Lybrand which in turn became a part of PriceWaterhouseCoopers PLC*

*This is a very efficient and elegant way of describing the core idea of profit.*

This definition is one of the most elegant definitions about anything anywhere. It is such a contrast to the way profit gets defined in law and regulation ... and the FASB standards and IASB standards, where different rules can be applied in a variety of different circumstances, and in the end, there is no certainty about anything.

### Change in state shows progress

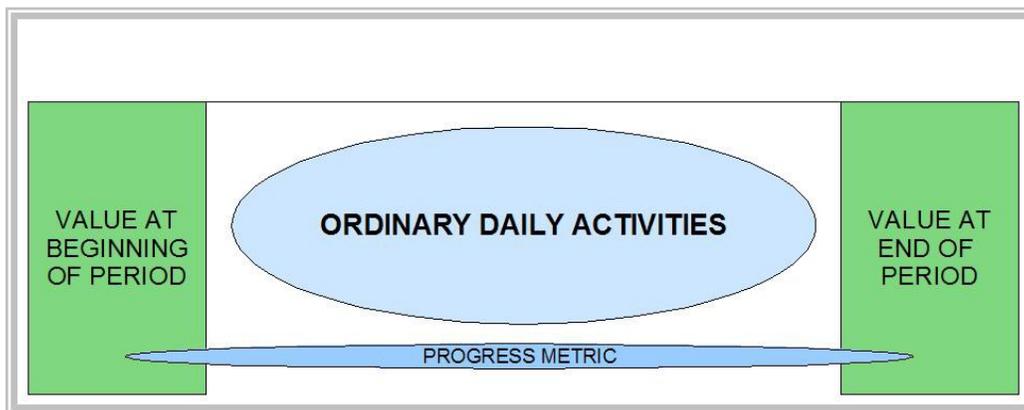
The idea of changing state as a primary metric of progress is very simple. Is the community better now than it was in the past? In the images below, the value of the community at the beginning of the period is compared to the value at the end of a period

In Case 1, the value at the end is the same as it was at the beginning . Ordinary daily activities produce what is consumed and it is a stable situation.

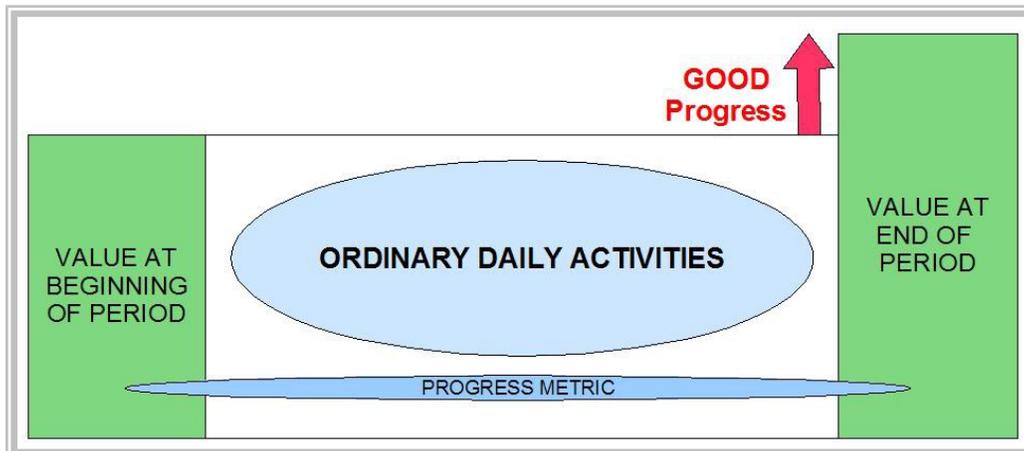
In Case 2 the value of the community is more at the end of a period than at the beginning of the period ... ordinary daily activities produce more than is consumed.

In Case 3. the value of the community is the less at the end of a period than at the beginning of the period. Ordinary daily activities result in value destruction. It is a problem situation.

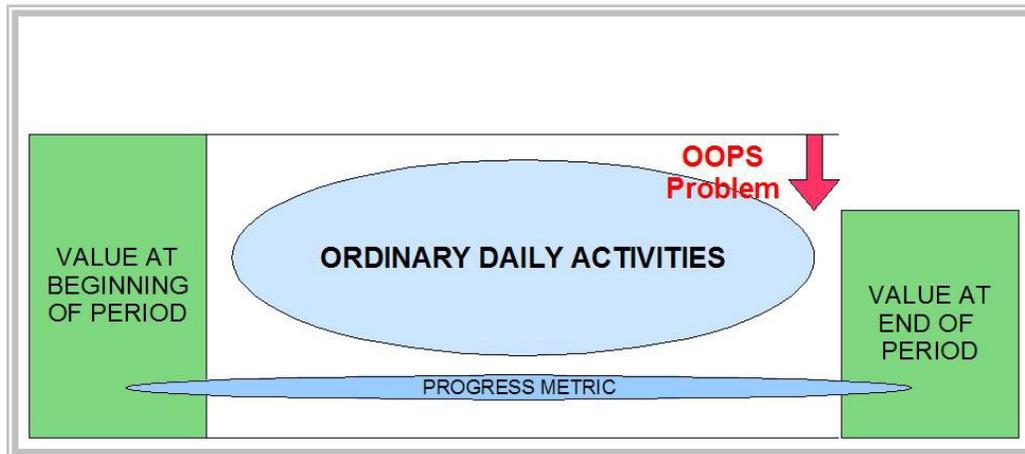
#### Case 1 ... no progress



#### Case 2 ... positive progress ... value add



### Case 3 ... negative progress ... value destruction



The ideas that are generic in these graphics are equally applicable for the metrics of performance for almost any economic activity, for organizations, for places, for people and for all the elements of the state of the planet.

### Performance

#### Resources are consumed

MDIA considers activity as an event that consumes resources and creates outputs like goods, services and happiness. Where value creation exceeds value consumption there is value adding, otherwise value destruction.

MDIA treats the period value adding aspect of economic activity in the balance sheet in exactly the same way that period profit is treated in a business balance sheet. The profit of business is the net of changes in all the assets and liabilities of the business balance sheet. Similarly the value adding of economic activities changes the value balance sheet.

The balance sheet concept applies at the level of the activity or of the community. The value balance sheet may be used also for organizations and for individuals or families. The most useful for the “management” and oversight of society and socio-economic performance is, however, the balance sheet of the community.

#### Value is created

When a resource is consumed in some activity, something is done. It is of interest to know what is done, but normally the objective is not to do something but to have something of value be created. Metrics about the amount of activity in relation to the resources used enables the calculation of cost efficiency ... but it is the production of value that is more important and enables the calculation of cost effectiveness.

Where value creation exceeds the value consumption there is value adding ... otherwise there is value destruction.

## **Value adding impacts balance sheet**

Value adding or destruction impacts the balance sheet ... the balance sheet of the activity and the balance sheet of the community.

A community balance sheet that incorporates elements of quality of life will change when value adding or value destruction activities take place in the community.

It should be noted that “off balance sheet” transactions are as wrong in MDIA value accounting as they are in corporate accounting. The value balance sheet for a community is affected by all socio-economic activities that relate to the community.

# STATE – THE BALANCE SHEET OF SOCIETY

## **A Balance Sheet Shows State**

Facts at a specific moment in time. It is a core piece of the double entry construct

The balance sheet has been a core piece of financial accounting and reporting for a very long time ... it is part of the genius of accountancy and a big reason why accounting is such a powerful system of economic performance metrics. The balance sheet is a financial representation of the “state” of the reporting entity ... it reports on the condition of the entity, whether an organization, a nation or a community. If you do not know where you are, it is difficult to know where you are going!

## **Money, value and community focus**

The reporting of state may be done from many angles or perspectives. The underlying facts and the associated data are the same, but the aggregation of the data are different because of the many different views that are possible.

## **The money balance sheet**

The state of an organization is based largely on information reported in the balance sheet. A for-profit entity had assets, liabilities and the owner's equity ... that is the investors' equity. Other entities have money balance sheets that reflect the assets and liabilities of the entity based on the money flows and the balances. In the main, the balances are merely a reflection of the aggregate cumulative money transactions.

## **The value balance sheet**

The value balance sheet is a core piece of the MDIA framework of metrics. Instead of the balance sheet being only about money in MDIA the balance sheet is about the value of the entity ... the present value of what the entity has done and will do for value in society.

## **Community focus**

In the MDIA framework, it is community rather than organization that is the primary focus of analysis and reporting. Community is a place where people live, and a place has truly long term if not perpetual existence.

### ***Example of my home town in England***

*Facts about my own little home town of Okehampton in Devon, England were recorded in the Domesday Book compiled by William the Conqueror shortly after his invasion of England in 1066. The town existed then, and*

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*the town exists today. The place is forever. The did not grow much in almost 900 years!*

The balance sheet of a community is the main analytical and reporting focus. The balance sheets of organizations, projects and other economic activities are subsidiary to the community ... and are aggregated or consolidated into the community balance sheet.

Any entity that might use standard money accounting can just as well use the MDIA methodology. The system works for all organizations whether or not they are for profit or not-for-profit, whether they are in the private sector or in the public sector, and whether or not they are large or small.

### **Balance sheet has assets and liabilities**

A business balance sheet ... a money accounting balance sheet ... has assets and liabilities, all of which relate to money transactions of one sort or another. There are money accounting rules about how the assets and liabilities are recorded and included in the financial reporting.

A MDIA value balance sheet has asset data representing good things in the community, and liabilities which are bad things in the community. The value balance sheet has much in common with a money accounting business balance sheet. The money accounting balance sheet has assets and liabilities about all the money elements of the community ... and these are part of the value balance sheet. In addition the value balance sheet has data about elements that relate to quality of life and the latent potential of the reporting entity.

### **Assets**

The resources of the community are an important part of the foundation for progress of the community. Though the community may not have a lot of money, there may be many other material resources, as well as the human resource that can be the driver of sustainable progress. There are 7 main asset elements with both money and value dimensions:

1. Land ... natural resources;
2. Labor ... people, human resources;
3. Capital ... money, financial resources;
4. Physical capacity ... infrastructure, production capacity, organization;
5. Intellectual capacity ... science and technology, know-how, enabling environment;
6. Organizational capacity; and
7. Governance and the enabling environment.

Value balance sheet starts with money balance sheet elements ... but the quantification of the elements is not the same. MDIA includes the value of the elements in the balance sheet as well as the cost

## **Liabilities**

Constraints and “lack of” are treated as liabilities in the value balance sheet. While money liabilities have the same form in both money and value balance sheets, the value of activities and issues that constrain progress and performance of the community are the treated as value liabilities. The 7 liability elements mirror the value assets thus:

- The lack of land ... natural resources;
- The lack of labor ... people, human resources;
- The lack of capital ... money, financial resources;
- The lack of physical capacity ... infrastructure, production capacity, organization;
- The lack of intellectual capacity ... science and technology, know-how, enabling environment;
- The lack of organizational capacity; and
- The lack of governance and the enabling environment.

Constraints are liabilities in the value balance sheet. Constraints may be either an active limit on what progress may be achieved, or something passive like the lack of something that is critical. Examples of active constraints may be the enabling environment, the framework of law and insecurity. Examples of passive constraints may be lack of water, lack of money, lack of infrastructure, and so forth.

## **The value elements in state**

### **Assets and liabilities in the value context**

In the value context an asset is something you have and you need. Something that you need has a value that may be substantially different from the exchange (or market) value of the item, or the value of the same item when you already have enough.

In this same context a liability is something you need and do not have. This is quantified by the reduction in quality of life associated with the lack of this item.

To the extent you have something and it is surplus to your need, then the value of this part of the asset adjusts to its exchange value.

## **Elements of the balance sheet**

### **Land ... natural resources**

#### **As assets**

Land and natural resources have been important drivers of wealth creation ... and in large part the history of wealth is also the history of natural resource exploitation. Natural resources in a community should be considered as important assets of the community. There are a host of issues associated with natural resources and their use for the benefit of the community. Many of these are constraints that impact the community and the opportunity of the community to make socio-economic progress.

1. Land is an important natural resource and frequently constrained as to use for the benefit of the community by ownership issues.
2. Forest and trees are important
3. Rivers and water are important
4. Minerals and energy resources are important
5. Wind and tide may have value

There are many different resources. In classical economics where agriculture and trade were the dominant economic activities, the resources needed for economic activity were identified as land, labor and capital. Modern economics builds on these ideas and the role of many intangibles is now taken into account in a more complete manner.

#### **Liability is a lack of these things**

A community is constrained when it does not have enough land and natural resources. A community may adapt ... but it may not.

### **Labor ... People / human resources**

#### **As assets**

In money accounting, people are not part of the balance sheet, though their performance makes a huge difference in profit performance. In the MDIA framework people are reported as the asset that they are.

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There has to be care in the handling of data about people which may be constrained by legal issues of one kind or another. Many facts about people may not be shared in the public space because of law and regulation.

People are very important. People have many roles including:

- Investor
- Executive
- Worker
- Member of a family
- Member of a community
- etc

People are especially important in the community ... without people there can be no community. It is people that are the beneficiaries of quality of life and opportunity. People are also the source of labor, creative ideas and intangibles like friendship. People are family ... and people are community! People are the most important resource in any place ... way more important than money.

What value is a person? This depends on many factors all of which are interdependent. The value is education cannot be realized unless there is a way to put the skills learned to productive use. So also, the value of wellness and good healthcare is realized by the other parameters of a person's quality of life. The value of a person has a lot to do with the opportunities to do something of value with the person's skills and experience! There are multiple attributes that go into building the value of people in society. Though this is complicated, the value of a person can be quantified based on the various attributes of the people and the community.

Sustainable socio-economic progress depends on people ... human capacity and the human resource more than any other resource. In the end, the human resource is the one that will facilitate or constrain progress and performance. The key, therefore is to enable people to be the energy that drives socio-economic activity and the production of goods and services. In a modern society, it is people who get benefit, but it is also people who work to produce the benefit. A program that has people focus and has a dynamic that is people centric can be sustainable.

People define the needs ... and people are the most important resource. When this is the thinking behind the way the planning is done, development becomes an investment with a return and not merely an expenditure. Modern economics recognizes the dual role of people ... as people with needs ... and as people that produce to satisfy needs. In other words, people are more than merely a factor of production, they are also the driver of demand.

#### **Liability is a lack of these things**

The lack of labor ... people, human resources is a constraint. The lack of labor is a liability ... the lack of capacity in the population is a liability. If people are a valuable resource, the lack of people is a constraint and a liability. The constraints associated with

the population are a function of matters like the history of nutrition and health, the history of education and the history of the community.

### **Capital ... money and financial resources**

#### **As assets**

Money resources are important. Money is needed to serve as a medium of exchange, and to some extent a store of value. But the biggest reason for money resources is to pay salaries and to pay bills and to be part of the broad money economy. Without money an organization has to close down or go into a dormant state. Good ideas disappear when there is not money to sustain a framework for the ideas to develop and perhaps flourish. Almost everything that is needed, whether goods or services must be paid for with money ... or money equivalent.

Credit is a money equivalent, up to a point. The assumption is that money will be available in the future ... and if this proves to be wrong, then the “credit” disappears.

#### **Liability is a lack of these things**

The lack of capital ... money, financial resources ... and the lack of credit is a constraint and recorded as a liability

### **Built environment - buildings, infrastructure, etc**

#### **As assets**

There are two levels of value associated with buildings (1) the satisfaction of the basic need for shelter; and (2) the buildings needed to support quality of life and the productivity of society.

The basic need for shelter is very important in the present circumstance of Haiti. With as many as 250,000 housing units destroyed in the earthquake there is a very large need for basic shelter.

Many of the major commercial and governmental buildings have to be rebuilt

- Roads and bridges determine the efficiency of transport.
- Internet and telephone infrastructure determines the efficiency of communications
- Various types of equipment determine productivity in the activities of the society
- Working capital is part of this. Business activity needs working capital ... inventory and the ability to finance trade transactions.

Liability is a lack of these things

The lack of physical capacity ... infrastructure, production capacity, organization ... is a liability.

**Liability is a lack of these things**

**Knowledge ... knowhow and intellectual capacity**

**As assets**

Know-how is a key enabler of progress. In fact it is the growth of knowledge over the past 200 years that has made it possible for global society to progress so rapidly. The growth in knowledge has been far more rapid than the growth in the application of knowledge. Worse, the application of knowledge has been for both bad and good.

The knowledge associated with science and technology enables economic productivity and a quality of life that could not exist in previous eras before this knowledge became available

**Liability is a lack of these things**

The lack of intellectual capacity ... science and technology, know-how, and an enabling environment are liabilities

**Enabling environment ... organization, governance, rule of law**

**As assets**

Organizational capacity contributes to economic productivity. Organizational capacity has value ... it is very important in making it possible for the economic activity of the community to be productive. Productive economic activity is surplus producing and helps a community progress.

An individual is very limited in what he or she can do alone ... but when individuals work as a team all sorts of amazing things can get done. Organization is needed so that things can get done ... and organizations are a way for organization to take place. It is organizations that do things, create jobs and make it possible for there to be progress.

Organization is needed to have productive activities. Most activities may be initiatives of the private sector ... private organizations, and using private capital. In a functioning economy most activities are paid for by the beneficiaries of the activities.

Being organized is an asset. The challenge is to be organized so that there is a structure within which (1) there can be financing; (2) there can be wage employment; and, (3) there can be socio-economic value adding.

There are many legal forms that are possible ... depending on the prevailing legal framework and the way the community wants to be organized or structured. From an accountant's perspective the key elements are: (1) the funding of working capital so that wages can be paid; (2) the balance sheet value improvement that results from the work done and the payment of wages; and, (3) the monetization of the value improvement so that the funds mobilized may be repaid or recirculated.

**Liability is a lack of these things**

Liability is the lack of organization ... organizational capacity

## **Governance and the enabling environment**

### **As assets**

Governance is a matter that may facilitate the progress of a community or constrain it ... governance may therefore be an asset or a liability. Governance is an asset when it provides an enabling environment for progress ... otherwise it is a liability.

Money liabilities are amounts owed by the entity to others ... a fairly simple concept.

The concept of liability in value terms is more nuanced. Essentially a liability is a lack of an important asset needed to satisfy community needs.

### **Liability is a lack of these things**

There are two ways in which constraints are manifested: (1) by specific things that stop activities or limit productivity; and, (2) by the lack of things that are needed to have productive activities in the community. Crime is a specific thing that stops activities and limits productivity. Lack of land, for example, constrains agricultural activity.

In MDIA there is value in having the capacity to satisfy needs ... that is Tier 1 needs. Conversely there is a value liability when such capacity does not exist. The same analytical logic applies to all the types of capacity.

The lack of governance and enabling environment

## **Off balance sheet items**

### **The money accounting rules**

The money accounting rules have been changed over time so that many important financial matters are routinely excluded from balance sheet reporting. This is a dangerous state of affairs brought about by “law based” money accountancy that allows wrong principled reporting to take place. It is very convenient for business organizations to be able to legally lie about the financial condition of the organization.

### **Pension liabilities**

Unfunded pension liabilities are one of several major issues that are reported in a convenient way rather than in a complete and correct way. There are others.

### **Contingent liabilities**

But the concept is less clear when there is conditionality about what is to be paid and where the calculations are complex. Liabilities that might be very large when a set of conditions apply, but may not exist at all if other conditions apply create a huge risk for anyone relying on financial analysis of the entity.

*I was part of an investment group that almost acquired a shipbuilder in Florida. There was a good business plan and the future of the acquired organization looked good ... but there was one problem. The shipbuilder built mainly fishing trawlers, and there was the potential for a lawsuit related to one of the company's trawlers sinking in a storm in the Atlantic with loss of life. While all the normal insurance protections were in place ... there was a small possibility that there might be a counter-claim*

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*about a deficiency in design, or something along those lines. Even though several hundred vessels of this or similar design were in use ... this contingent liability was sufficient to stop this transaction from closing.*

#### **Risk**

Change is a risk ... and a poor community is likely to be risk averse for good reason. The matter of risk must be taken into consideration and risk managed appropriately.

It should be noted that “risk” is an issue that is almost totally ignored by the wealthy who one might say “self insure” and do not hurt when things go wrong ... while the poor have to endure even more hardship when risks hit society, and they are caught up in the damage that ensues.

# PROGRESS ... CHANGE TO A BETTER STATE

## **Winning the game! What game?**

For almost 300 years, the game has been to produce and consume more and more because more production and consumption reasonably correlated to better quality of life and standard of living. Over the past 60 years this has become less and less true, and especially in the last 40 years.

The game of optimizing for business profit is no longer a sustainable game. This metric is no longer a good proxy for the measurement of socio-economic progress, even though it served reasonably well for a good part of the industrial revolution.

So much of modern progress has merely been doing more and more of what, arguable, the world neither wants or needs. A huge effort has been expended in trying to create wants and needs ... for no good reason. This is the whole purpose of the advertising industry and brand PR organizations.

The world has achieved an amazing capacity to produce ... something never achieved before at any time in human history, but the metrics about socio-economics are pushing for production of all the wrong things ... for things that produce profit and rarely if at all those things that would most satisfy needs and be valuable, without necessarily being profitable.

The prevailing metrics are now wrong most of the time, something that is terribly dangerous for the future of humankind and the planet.

## **Progress – optimizing for economic efficiency**

### **Progress – optimizing for quality of life**

In the money metrics construct winning is more and more of money and material goods ... with quality of life assumed to improve with more and more of these things. In MDIA there is a focus on maximizing quality of life as well as maximizing business profit performance.

### **Progress – minimizing stress on the planet**

In MDIA there are metrics about all the economic components that go into making stress for the planet. These are the components that are included in MDIA analysis:

- Resource depletion and degradation
  - Resource depletion – energy
  - Resource depletion – minerals
  - Resource depletion – water

- Resource depletion – old growth timber
- Land degradation
  - Land use
  - Water pollution
  - Solid waste pollution
- Ocean degradation
  - Waste
  - Overfishing
- Atmospheric degradation
  - Atmospheric pollution
    - Greenhouse gases
    - Nitrous oxides
    - Sulphur dioxide
    - Particulates
- Biosphere degradation
  - Biodiversity
  - At risk species

## **Profit versus value**

A value balance sheet for a community that is host to large scale minerals extraction will quantify what it is losing in natural resource value compared to what the community is gaining in value such as employment and perhaps assistance with infrastructure, education, health, etc. MDIA value chain analysis and value accounting relative to the business organization may indicate that the profit for the organization is substantial while there is offsetting value destruction for the community.

How can this be? And the answer is that business money profit accounting keeps value “off the balance sheet”! It can be argued that not having value metrics is important to the modern corporate community!

## **Intangible activities have impact**

### **Policy improvement**

There are many intangible activities that can change the value balance sheet of a community ... and change it significantly and rapidly.

### **Impact of policy improvement**

For example, improvement in the policy framework that expands economic opportunity changes the “value” of many of the community value assets associated with people.

MDIA enables the dynamic of exponential change to be recorded and be a part of the accountability of decision making.

Improvement in the way decisions are made about allocation of resources to value adding activities changes the value balance sheet. MDIA makes explicit the relationship between tangible and intangible activities and value change even though these matters are not linear but multiple sets of complex exponential multipliers.

## **Security ... crime**

Security changes a lot ... the value of security is high based on all the economic opportunity that exists when there is compared to when there is not. People need security in order to go about their daily lives and engage in socio-economic activities. A high crime neighborhood is associated with a poor quality of life!

## **Job opportunities**

The “value” of a person is diminished when there are no job opportunities where a person may use their skills.

## **Organization**

A place may have people and resources but nothing gets done and there is no progress. This is because there is no capacity for organization. Putting in place a framework of organization adds value to the community and enables resources to be used effectively to create the value for progress.

## **Stats (statistics) on the game, but what game?**

Since the time of Adam Smith, the capitalist economic system has been based on the idea that the enterprise system and free markets will optimize economic performance. Over time the proxy for measurement of economic performance has become the accumulation of money denominated wealth. The underlying assumption seems to be that more wealth is better and perhaps that more and more wealth will yield a better and better quality of life and more happiness.

## **Better and better quality of life**

The game is better and better quality of life ... and the metrics of performance should have a focus on this. Better and better quality of life is the way this game needs to be scored, and the way the game is played. The “stats” should be all in support of this game. This is about social value as well as about business profit ... it is about values in society as well as money and material wealth.

## **More and more an unsustainable game!**

The dominant performance metrics are all about money and profit and economic growth based on more and more and more economic consumption. The end game for this system of metrics is a planet that no longer works to support humanity ... but will appear “profitable” until it is “too late”.

More and more growth is the prevailing metric! This is a dangerous situation ... consumption growth and profits are the top metrics and a path that will ultimately ... and maybe quite soon end up with global value destruction on an unimaginable scale.

The main metrics for global economic performance are large aggregates and averages about growth and capital market performance. These metrics have some importance in aggregate, but do not inform decision makers adequately. The measures used for global economic performance are interesting, but not very useful. They have connection with correlation ... but do little or nothing to help with cause and effect and with making better decisions. MDIA aims to change the mindset that economic performance is about more and more but is better when it is about improved quality of life for society.

## **Not a bigger pie ... a better pie!**

MDIA is aiming for some paradigm change. In the MDIA view, global economic performance is the aggregation of socio-economic performance in the individual communities. Progress and performance is a result of tangible activities at the community level ... done by real people who understand the cause and effect of actions in their locality.

The history of economic performance has a lot to do with technology and productivity ... and much less with issues like monetary and fiscal policy. Technology and productivity are the “changemakers” that enable the creation of wealth, while monetary and fiscal policy, and the framework of law merely reposition wealth among various constituencies in society.

The prevailing metrics suggest that the global economy has done very well when viewed from the luxury of society at the top of the socio-economic pyramid ... but the performance of the global economy from the perspective of more than 4 billion people who are poor and hungry, the socio-economic performance is pathetic.

There are chronic problems with the socio-economic system and especially decision making and the allocation of resources and the accountability for resource use ... and the prevailing system of metrics does little or nothing to help.

The singular incentive of money, power and profit has created a monster that is difficult to tame ... but not impossible. Metrics are very powerful ... but the metrics need to be about all the important things and not only about the money profit subset of metrics. There also need to be metrics about important social value matters, even though these are more difficult to quantify.

The way the modern socio-economic systems works is not merely inefficient, it is substantively dysfunctional. It does not have the capability to allocate resources to satisfy the real needs of billions of people, but puts resources into “creating” artificial need for people who already have more than enough for their well-being.

***How do Heads of State become billionaires?***

*There is something very wrong with a socio-economic system where Heads of State in countries that are resource rich become money billionaires while the population of their countries remain in a chronic condition of poverty. This reflects decision making metrics that are money profit weighted with little or no attention to social values ... or indeed basic moral values ... not to mention a lack of transparency and accountability that is difficult to explain.*

**Money profit / value performance**

Money profit and value performance not the same ... they are very different. The economic elite and major decision makers have become comfortable with profit measures that ignore all the value destruction in society that enables profit making at its maximum. The profit money accounting metrics are convenient ... but fundamentally wrong.

**Activity and impact are different as well**

Activity and impact are different as well ... though many people doing academic studies and carrying out ORDA funded projects report mainly about the activities they have done rather than any impact these impact that may have been realized!

**Wealth**

The driving force of modern market economics and capitalism is the simple idea that the pursuit of wealth is the best incentive for people to be fully engaged in activities that produce progress. There is no question that an economy based on this premise is better than one driven by egalitarian sharing of the product of enterprise ... as in socialism or communism ... but that does not mean that the capitalist market system works very well and is the best that can be devised.

Without an alternative measure of performance the capitalist market system is going to be “the best there is” ... but based on true value metrics it is abundantly clear that something better is possible.

Building wealth by the exploitation of the poor is as old as history. There is nothing wrong with the creation of wealth ... but there is a lot wrong when there is little progress out of poverty because it is the price being paid for the accumulation of wealth and its concentration in the corporate sector and among powerful individuals in the economic elite. Concentration of economic power was seen as detrimental to society in the era of the “robber barons”, and the basic logic of the argument has not changed at all over the years.

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# MORE ABOUT REPORTING

## Boundary

Corporate financial reporting is based on a reporting boundary that is drawn tightly round the organization. In consolidated account reporting the boundary extends round all the subsidiaries that are included in the consolidation. The reporting excludes everything outside the boundary.

This works reasonably well for money profit accounting and the performance of the organization in money profit terms, but it fails to account for all the externalities, which, in many cases are bigger than

## Local enterprise

If the client and the enterprise are in the same community it does not matter so much whether the client or the enterprise has what share of the value added ... but where the enterprise is from outside the community it matters a lot. In the case where the enterprise is external ... the case of Foreign Direct

## External enterprise

There are very big differences in impact between the impact of a local enterprise and an external enterprise. This is obvious when detailed economic input output analysis is done, but this is rarely done by the parties involved with either policy formulation or corporate decision making

### *The external enterprise case*

*Investment (FDI) for example ... the value adding for the community is small because the profit leaves the community. If the costs are incurred in the community there is some multiplier effect ... but typically local disbursements are small and most of the costs, as for example in mining are equipment, fuel, expatriate payroll .... with rather little value for the community.*

*If the client and the enterprise are in the same community it does not matter very much at the community level whether it is A or B who is the winner in a contract agreement. But it matters very much when the winner is in the Cayman Islands and the loser is in the United States. The economic evidence of the last 50 years is that corporate profits have increased, investor wealth has increases and ordinary working people have had increasing economic challenges.*

### ***Tea – The Case of Malawi***

*The Tea Auction in Malawi was a good example of market theory (from the World Bank) creating a disaster for local agriculture in Malawi. For most of recent history there has been global production surplus of most agricultural products, and tea is no exception. Other things being equal, an auction will produce an equilibrium price that is low when there is a surplus situation. Not surprisingly the tea auction resulted in very low export prices ... insufficient to pay for the costs of production.*

*Some of the tea estates were owned by Malawi interests ... including President Banda ... and some were owned by a major international tea marketer. For the local interests the low prices were catastrophic ... for the international company they were both a seller and a buyer and it made no difference to them. Rather it was a big benefit because it removed all the problems of explaining profit and being assessed profit tax and handling repatriation of local profits. For the local interests low auction prices had to be translated into low costs ... and this was done by paying extremely low wages to agricultural workers. While this was good for the plantation owners, it was terrible for the workers and the community.*

*The auction was the vehicle that allowed profit to be moved from the producer end of the value chain for tea to the marketing end ... for value to be moved from the south to the north. Bottom line ... this is one of the root causes of present day poverty in Malawi.*

### ***Oil in Nigeria***

*The oil in Nigeria is mainly in the Niger delta, and offshore from this area. For hundreds of years, local people were able to prosper from fishing. But over the past fifty years that has changed. Fishing grounds have been polluted, and local people have become very poor.*

*But there are huge fund flows associated with the oil that comes from this area. Multi-billion dollar investments have been made in exploration and oil drilling ... huge royalty payments are made to the Nigerian government ... and local people are obscenely poor. There is blatant inequity in the value chain ... and no way for the inequity to be resolved.*

## **Perspective**

Reporting has many faces. There are many views, many perspectives.

The underlying accounting aims to be an objective representation of the facts, how this is reported depends very much on the perspective and where the observer (reportee) is standing.

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As already discussed, value is an intensely personal matter, so a report from 'my perspective' may well be different from the perspective of someone else.

*An investor (a person) may want to see the performance of a company from his/her perspective and with a focus on the money profit being earned and the behavior of the stock price on the capital markets.*

*An employee of the company may want to see the performance of the company through the rates of pay, the workplace conditions and the benefits such as healthcare and pensions.*

*A customer of the company may want to see the performance of the company in terms of the price and the quality of the product.*

All of these are valid perspectives, and all of them should be able to be quantified in a fairly simple way so that there can be some agreement as to a fair way for these all to be optimized at the same time.

A similar set of multiple perspectives exists with respect to issues like energy

*A company like Chevron is being criticized for its corporate behavior in Ecuador. It is a complicated case in terms of law, but quite simple in terms of corporate behavior. A few years ago Chevron acquired Texaco, another big oil company. Before that Texaco had operated in Ecuador and in the process left a substantial amount of polluted land. Whether or not they operated in a manner that would be acceptable in the United States is rather doubtful. Local villagers have sued Chevron, and the courts in Ecuador have determined that a fine of \$9.5 billion should be paid. It was double this because the judge also fined Chevron for not 'apologizing'. This has been canceled. Chevron refuses to pay arguing that there was bribery and corruption in the conduct of the legal process, and nobody that 'honors rule of law' would enforce such a judgment. This has been going on for around 20 years ... and it is still not clear who will win in the end.*

*In December 2013, a Canadian court determined that Chevron's assets in Canada could be pursued by the villagers in settlement of the judgment in Ecuador. US courts have taken the position that everything must be settled in Ecuador. Meanwhile, pollution is pollution, and unacceptable wherever it is taking place.*

So while an oil company's behavior with respect to pollution may be bad, the fact is that the energy that becomes available to society as a result of oil company activities is a huge value to society. While the pollution component of energy production and use should not be ignored, nor should the contribution to quality of life arising from the energy sector be ignored either. They both should be valued in an appropriate meaningful way.

## Financial reporting

Financial reporting is done by almost every organization in the world according to the standards of conventional financial accounting, though the reporting is not always available to the public at large.

### Reporting and feedback

Reporting is another step in adding value to data. Analysis that never gets into a report is a waste of time, effort and resources.

The report gives feedback to decision makers so that they may see the impact of decisions.

Feedback is a very important engineering idea, and is used in all sorts of engineering applications to achieve the desired outcomes.

### Balance sheet reporting

The form of balance sheet reporting has become fairly standardized. The balance sheet has three main sections:

- Assets
- Liabilities
- Shareholders' equity

Within assets and liabilities, there is a classification between the current assets and liabilities and the long term assets and liabilities.

Current assets less current liabilities is also referred to as working capital.

Working capital may be reported either excluding cash or including cash. In some cases only the cash needed for operations is included in working capital, with the surplus excluded.

Non current assets include fixed assets less a provision for depreciation and investments of various sorts.

Non current assets also include intangible assets such as goodwill and intellectual property.

Non current liabilities include debt used for financing the company.

Shareholders' equity includes the amount subscribed for shares in the company used to finance the company, and also includes the accumulated reserves retained by the company after paying out dividends to the shareholders.

In general terms, all of this is the result of money transactions. There is nothing in conventional money profit accounting about anything beyond the reporting boundary which is always tightly drawn around the activities of organization.

## **P&L reporting**

The P&L report starts off with revenues or sales.

This is followed by a summary analysis of all the expenditures that have been incurred to achieve the sales.

These expenditures are deducted from the sales to give the profit.

The summary analysis of expenditures usually will show cost of sales, which are all the expenses directly attributable to producing the products sold.

Other expenditures will be shown in more or less detail. Usually the amount of financial expenses and taxation will be shown separately.

The amount of depreciation will usually be shown separately.

As for the balance sheet, all of this is the result of money transactions. There is nothing in conventional money profit accounting about anything beyond the reporting boundary which is always tightly drawn around the activities of organization.

## **Elements of cost**

Materials, labor and equipment are the main elements of cost that go into most production activities ... and determine costs.

### **Fixed and Variable Costs**

But these items also determine the behavior of costs and how costs can be improved.

## **Impact reporting**

For the past few years, there have been initiatives to improve the impact reporting by companies. The approach has been to work from questionnaires to assess the impact that corporate activity is having, but this approach has many weaknesses. One key weakness is that it is self-reporting with no effective way to ensure reliability, and another is that most large companies are too big and complex for any of the answers to be of much meaning.

These are some of the reporting and analysis initiatives that have been launched:

- GRI ... Global Reporting Initiative
- IIRC – IR ... International Integrated Reporting Council – Integrated Reporting (IR)
- GIIN / IRIS ... Global Impact Investing Network / Impact Reporting and Investment Standards
- GIIRS ... Global Impact Investing Ratings System
- SASB ... Sustainable Accounting Standards Board
- SROI ... Social Return in Investment

Nearly every segment of the impact agenda has its own set of standards for reporting, for example:

- GOTS ... Global Organic Textile Standard

## **How price impacts community**

Price is a key variable in the performance of society. It is not as important as cost, but the way price is used in society determines the way value is shared between the various economic actors. The following graphic shows how an economic transactions that has costs and value is shared between the enterprise and the client depending on the price being applied to the transaction.

For society as a whole the value adding is the difference between the value and the cost. For the client the value adding is what is left of value adding after the enterprise has taken out its profit. In the profit maximizing enterprise the goal is to have profit as much as possible, and the amount left in the hands of the client is of little consequence.

## **Integrated reporting**

In the last few years there has been an initiative to integrate the financial reporting with the reporting of impact. Up to now this integration has been limited to the inclusion of impact information into the same reporting cycle as the financial reporting rather than being a total integration of the metrics of money profit performance with the various dimensions of impact performance.

The initiative to move to integrated reporting has the value that it stimulates conversation about impact, but it does not get to the stage of radical reform of the accounting process itself. This is something that MDIA is aiming to do.

## **Profile of the population**

The profile of the population tells a whole lot about the community ...

- There are the questions of how many:
- There are questions of health:
- There are questions of education
- There are questions of jobs, work
- There are questions of wealth
- There are questions of housing

How to present this so that it is clear, simple, but not simplistic.

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# OTHER ISSUES

## Economic Value Adding (EVA)

Economic Value Adding (EVA) became a powerful tool to manage wealth perception. but it is only used in the process of personal wealth creation and ignores the impact that personal wealth creation activities are having on society as a whole. MDIA uses a similar accounting methodology to EVA but including all the impacts that economic activities of all sorts are having on the society.

Economic Value Adding is used in the standard GAAP accounting world to optimize stockholder value.

Impact on society is not taken into consideration. Economic Value Adding in the MDIA framework is concerned with the impact on society and answers the question whether or not economic activities are contributing to the quality of life of the community at large.

Value and Profit Year

2000	2001	2002	2003	2004	2005	2006
0	2.5	5	7.5	10	12.5	15
17.5	20	22.5	25	27.5	30	32.5

## Transfer prices

Prices are critical in economic analysis and the determination of profit and value to any entity. Transfer pricing is used to put a value on goods and services as they move from one sub-entity to another within an organization, or between controlled entities. They are a tool that can be used to move profit between entities and may have inappropriate consequences.

## Modularity

Modularity helps make something manageable ... and makes it useful more rapidly. This is applied in MDIA to make little things useful while waiting for other detail. In the MDIA framework the community data can be worked on section by section ... bits of the economic activity analysis can be done. Modularity helps make something manageable ... and makes it useful more rapidly. This can be applied in MDIA to make little things useful while waiting for everything to be deployed.

## Cost of metrics

The cost of MDIA must be small relative to the economic activities that are going on. Because MDIA aims to be useful in low income communities, the cost of the system is designed to be very very low ... and using only ultra low cost technology and systems. A good accounting system does not come free, but it should not be excessively expensive. Good design especially of analytical codes helps to reduce cost without sacrificing analytical power. The MDIA system can be deployed with very low costs making use of existing available infrastructure. Good design, together with effective use of the Internet and relational database systems makes MDIA much lower in cost than its value.

## Analytical neutrality

A critical strength of accountancy is that it produces analysis that is neutral and objective. The use of accounting data may prove a point or support an opinion ... but the data and results are neutral. This is a fundamental of good professional accounting and is key to the system being of value. Old fashioned corporate accountancy had rules of conduct, both professional and internal to ensure that data were neutral and correct. Now MDIA must do the same.

In good accountancy the analysis is neutral ... it reflect a reality. Analysis may reflect a variety of perspectives, and one perspective may differ from another, but they should all be computed using an analysis neutral methodology. Taken together, a variety of different analysis results make a picture. But the process has to be neutral, and reflect as much as possible what is reality. This is in stark contrast to the aggressive use of financial engineering to create the appearance of value merely by re-presenting the reality.

You can fool some of the people some of the time ... but not everyone all of the time.

Old fashioned accountancy based on certain key principles helped to keep financial reports reliable and understandable ... but legislation and rules have sometimes worked to make wrong accounting legal and allowable. These situations have usual had the support of powerful interests ... but this does not make the accounting right ... just legal!

## MARKETS

There are several reasons that markets exist ... some of them with good consequences, but not all:

- Markets help balance supply and demand
- Markets help adjust prices to an equilibrium between supply and demand
- Markets help monetize value
- Markets facilitate transfer of wealth between social segments
- Markets help balance supply and demand

Markets probably do this better than politicians ... but this is very inefficient in the modern global economy for a multitude of reasons. Markets help adjust prices to an equilibrium between supply and demand Markets help monetize value

## **Markets facilitate transfer of wealth between social segments**

The large scale transfer of wealth is facilitated by markets

## **Making data valuable**

There is a wide recognition that knowledge confers power and therefore has value. There are many organizations that have data ... and knowledge ... but these are little used for social benefit, rather, they are used to give the organization some competitive advantage. MDIA aims to make data useful as management information for development ... in a complete comprehensive framework. This is the missing element that is needed to bring the north and the south together for global benefit.

- Getting data ...
- Getting data organized and into a data store where it can easily be accessed ...
- Mobilizing resource so that they are allocated effectively ... the north has wealth and the resources to be enormously helpful, but rarely are the resources well used.
- The south has needs ... some are very urgent but resources do not get well allocated for priority needs.

## **Foreign Direct Investment**

Foreign Direct Investment (FDI) is investment from outside the community ... and while there may be benefit from this investment in the community, this is going to be some share of the total benefit arising from the investment. Experience shows that this share may be quite small, and maybe quite negative when all the social costs to the community are taken into account. The split of value added is critical to the success of the local community, and almost always a deep secret probably because the share attributed to the community is so small.

## **Sustainability**

Sustainability is a fashionable idea ... but with many meanings. One is that sustainability is to do with damage being done to the environment by the human race ... and the issues of the survival of our specie. Another is more pedestrian relating to the ability of a person or an organization to have enough financial resources to pay its bills and survive economically. One view of sustainability relates to the environment. Are economic activities doing excessive environmental damage or consuming too much of resources?

## PROJECTIONS

### *Commodity Price Projects and the World Bank*

*For several years I did financial analysis assignments for the World Bank in connection ... and was frequently faced with questions about the future cost of commodities. The deep study of commodity prices was not my specialty ... but I had some fairly broad knowledge of markets and the behavior of prices, especially in turbulent times.*

*As a consultant to the World Bank ... ones expertise does not have the same weight as the staff expert. Over and over again the World Bank embraced price projections that the consultants considered completely wrong ... they helped to get flawed projects to have numbers that satisfied World Bank criteria for approval ... and ensured from the start that the World Bank would have a failed project. Nobody at the World Bank has seen fit to allow me to compare the long term price projections made by the World Bank in the period from 1978 to 1982 with the prices actually realized ... but my work during that time suggests that the World Bank was embarrassingly wrong.*

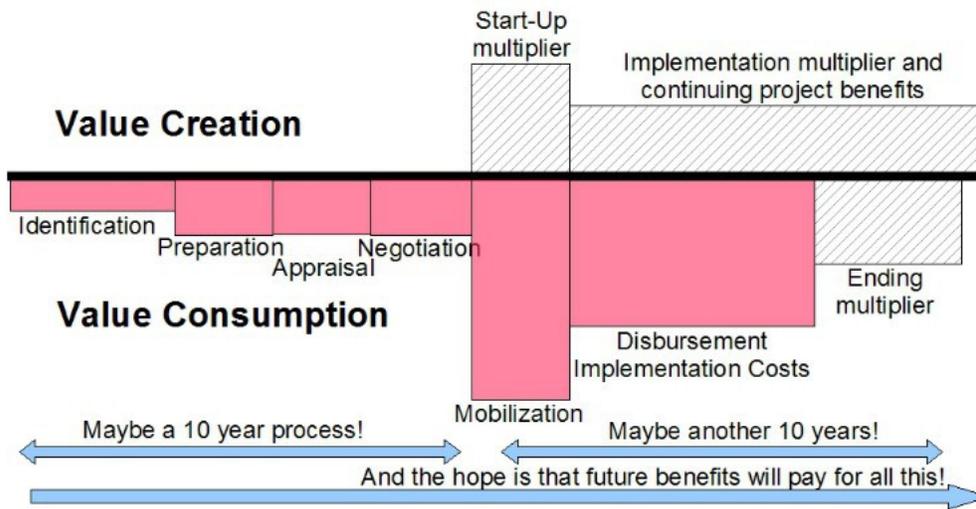
### **Value chain cost, price and profit**

Price has an important role in the matter of economic incentive ... and the question of sustainability. The value chain works and is efficient when the transfer pricing through the value chain provides a reasonable rate of return on capital employed within each piece of the value chain. If any of the links in the chain become unprofitable, the value chain becomes dysfunctional.

### **Value change during the project cycle**

The timeline of a typical “development” project shows changes in value starting with value consumption as the project is prepared and starts implementation, followed by value benefits as the project continues. For big World Bank type projects the length of time is significant and the scale substantial ... with the costs of value consumption certain and the benefits much less certain. When the benefits do not materialize, the project creates massive value destruction ... and for many if not most World Bank projects this is the sad reality.

### The Value Perspective of the WB Project Cycle



MDIA looks at any and all economic activities from the perspective of value creation and value consumption. The problem with the WB project cycle is that there is substantial value consumption that is sure, and long term benefit that is uncertain. The following graphic is a simple depiction of the costs incurred over a long time before a project is funded and implemented. When a World Bank project does not generate benefits there is a long term loan repayment cash flow that keeps the project in a value consuming mode for many years.

While this is obviously terribly bad for the community and the economy that serves the citizenry, this is less bad for those that have enriched themselves at various stages of the project ... no matter that the project is an economic disaster over the long term.

### Progress is improved quality of life

Progress is incremental value that reflects improved quality of life ... an improved social state that makes quality of life better. Socio-economic value progress is one of the core metrics for a smart society ... yet almost absent from the money related metrics used by the corporate community, capital markets and the broader society at the present time.

MDIA has a community focus treating the community as the reporting entity. The rules for consolidating accounts apply as all the subsidiary units doing economic activities in the community are brought into account. MDIA includes transactions that reflect value as well as the normal money transactions.

MDIA is more accountancy than a statistical construct. The data are as simple as possible ... the transactions as small as possible, as many as possible and as clear as possible. Some of the value of MDIA derives from how MDIA can do accounting for community progress. In the following graphic ... the value of the community at the

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beginning of the period is the same as it is at the end of the period ... the community has gone about its business for the period, the time has gone by, but nothing has changed.

Data about the daily activities is not needed in the MDIA system in order to be very clear about progress ... whether it is progress or problem. All that is needed is data about the value changes that have taken place from the beginning of the period to the end of the period as shown below.

Progress is about an improving quality of life ... it is not merely having more profit or more growth, though these may be part of the assessment. In the MDIA methodology the primary measure of progress is the value increment accruing to a society ... the net of value consumed in the period and the value created during the period taking into consideration all the activities of the community. The framework for quantifying value transactions have some similarities with those of business accounting.

The three key datapoints in MDIA are cost, price and value. Value is the key datapoint in measuring progress or problem. Cost is a function of and derivative of productivity and important in the analysis of activities. Price is important in money accounting and how value creation is allocated to different groups.

While value is important, it is also a complex datapoint because there may be an unlimited number of views of what the unit or measure of value is for any specific element. This has been embraced for some years now by capital markets as they have created more and more complex financial instruments ... maybe not all of them proving to have substance ... but the basic idea also works for MDIA value, and in the case of MDIA it has been combined also with standards also drawn from traditional corporate accounting. MDIA refers to the unit of value as the CVU ... Common Value Unit. More than anything else, however, MDIA is designed to be very practical, very simple, very low cost and very valuable.

## **Economic activity produces progress**

Which changes the balance sheet

## **CONCEPTS FROM OTHER DISCIPLINES**

### **A fusion of several disciplines**

MDIA is a fusion of some of the key principles of engineering, management, human behavior and accountancy. The key characteristics of engineering that are incorporated into MDIA come mainly from engineering thermodynamics, control theory, hydraulics and aerodynamics. Ideas from the area of management relate to how get knowledge converted into value. Ideas from human behavior are included because, if not, the chance of anything being of value is very much diminished.

Principles from the established field of corporate accountancy are used because they are surprisingly close to what is needed ... and simply need some modest modification to make them work for society as a whole rather than merely for the corporate subset of society.

### **Some engineering concepts**

#### **Making value chains benefit community**

The end to end value chains tell interesting stories ... and maybe for this reason are not easy to compile. The value chain works well when everyone is making money, and it matters less in this situation that some party is making a lot of money, while others are making only modest amount.

Things work when everyone is in positive money making territory.

In a situation where one main party is making most of the money ... it is likely that this is reflected in the capital markets as a high valuation of the company's stock ... but this is dangerous.

When attempts are made to make the allocation of money and value fairer with respect to the community, the money making by the one main party gets reduced ... and this in turn reduces the valuation on the capital markets.

Getting equitable distribution of value adding between corporate enterprise and society is not going to be easy ... and there may be major disruption of capital markets as this adjustment proceeds. In corporate accountancy and capital market terms this will be a bad change ... but looked at through the MDIA perspective and including community values it is likely that society will be far ahead.

#### **Making data valuable**

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## Economic Value Adding

Economic Value Adding (EVA) became a powerful tool to manage wealth perception. but it is only used in the assessment of organizational performance and the process of personal wealth accumulation while ignoring the impact that this is having on society as a whole. Economic Value Adding is used in the standard GAAP accounting world to optimize stockholder value. Impact on society is not taken into consideration.

The MDIA methodology has some of the characteristics of EVA but as well includes all the impacts that economic activities are having on the society as a whole and the state of the planet. MDIA includes the externalities that EVA ignores.

## **Keeping score**

In sports, scorekeepers keep score and the score tells which team it is that wins. Society is similar ... with the present money metrics system of scoring, winning is about more and more money. In a value based society winning will be maximizing quality of life ... the values that make life worth living.

MDIA thinks of progress as winning the game ... and maximizing quality of life. This is not a money construct but a value construct and way more complete as a system of metrics than mere money and money accounting that has changed rather little since it was devised in its modern form some 400 years ago. In MDIA, progress ... maximizing the quality of life ... has a central role, just as profit has a central role in the business entity and the money metrics of capital markets.

## **Breakeven analysis**

When costs are thought of as being fixed and variable, and revenues are thought of as being directly related to quantities, in a profitable activity, there is a mathematical point where revenues equal the sum of fixed and variable costs. This is known as the breakeven point.

## **Value and Profit**

This graphic illustrates the way in which the capital market magnifies issues and contributes to volatility rather than being a moderating influence.

At the time when year over year profit changes from increase to decrease, the value of the stock drops substantially.

These stock values are based on perception and in one case perception is probably overvaluing the stock, and in the later case is probably undervaluing the stock ... but both are unreal.

## **Timeline of costs and values**

The following graphic shows the very different timeline for incurring costs and realizing values. This is a critical problem in development and not central to much of the development planning process that is practiced.

As a practical matter most of the cost have been incurred before it can be shown that there are any benefits ... and this provides a dangerous opportunity for costs to be misused long before the lack of benefit raises questions about performance.

## **The project form of organization**

The project form of organization accentuates problem with

*The F line subway station at Lexington Avenue and 63rd Street in Manhattan is an interesting example. It is a new subway station opened*

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*around 1990 serving a deep subway with multiple sets of escalators. Almost every week some of the escalators are broken down and awaiting maintenance. ... these are Otis Escalators, a reputable product, but in this situation they are always breaking down.*

*Though almost impossible to prove, it is likely that the contractors who installed the original equipment did not do the work right ... and that the inspectors and contract oversight engineers did not do their work right either. It is pretty clear that something went wrong, and in the best of all worlds, we should know what is was and be able to hold the people responsible to account. Almost certainly something like over-billing and under-performing was involved ... payments for favorable inspections ... and so on.*

*It is pretty obvious this is what happened ... but there is no practical way to find the facts and hold people to account.*

Many cities have a problem with street congestion ... and several cities around the world have tried to address the problem with some form of “pricing” that charges users for road use.

#### ***Congestion costing***

*But before the discussion of congestion pricing, it would be useful to have a discussion of congestion costing. How much does it cost society to have such a dysfunctional system of city transport so that productivity is far below what it should be. This is where data about behavior of cost is useful.*

Operating a truck has three major cost elements, the labor cost, the cost of fuel and the cost of the equipment (truck). These costs vary based on time (labor), the power being used (fuel) and mainly time (for the truck). A truck stuck in traffic has high costs ... and is doing nothing useful ... just waiting to get moving and go somewhere. There might be another big cost ... the cost of not delivering on time.

Buses carrying passengers have another cost to society which is the opportunity cost of the time being wasted by all the passengers on board. If 30 people on a bus are delayed one hour by congestion ... what cost does this have. If the costing is done at \$50 an hour, the hourly cost is \$1,500 ... and at a low wage rate of \$10 an hour it is still \$300 an hour.

How many people in a city like New York lose an hour a day because of getting stuck in traffic. Maybe its 500,000 people ... maybe a lot more. At a wage rate of \$10 an hour, not that much above minimum wage, the daily cost is \$5 million. For a year this amounts to \$1.25 billion.

There needs to be dialog about congestion costs ... when society knows what congestion is costing ... then perhaps leadership will give this an appropriate priority.

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