Community Analytics

MEANINGFUL METRICS FOR A SMART SOCIETY

KEY CONCEPTS

DRAFT

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August 2009

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Market Prices
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About

A separate collection of information about CA has been collected together in a booklet titled “About Community Analytics”. This booklet is relatively short and describes the key concepts of CA quite briefly. The aim is to have an easy to read introduction to CA, for people who are going to be users of CA in various ways.

The booklet has the following content:

	Economic activities	
	Activities and state	
	Assets and liabilities	
	What is the cost	
	Behavior of cost	
	Elements of cost	
	What is price	
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	Why is CA needed	
	How does CA work	
	What is the value of CA	
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About Activity

In the CA system an activity:

1. Uses resources to do something
2. By doing something something has some impact

Use of resources has two components:

1. Use of resources that are accounted for in the money accounting of an organization
2. Use of resources by an organization that are not fully accounting for in the money accounting ... as in cash based systems
3. Use of resources that are part of society's commons and not included at all in an organizations accounting of activity costs.

In corporate accountancy there is an integration between the balance sheet, the operating statement and the cash flow. The data in the accounts is the same ... and each of these reports shows a part of the whole. The data in each are coherent. The changes in the balance sheet are explained by the performance reported in the operating statement. The cash flow statement reconciles with the operating statement and the balance sheet.

These ideas translate well to the CA system. They may be used to deduce information that is not easily obtained. While it is relatively easy to collect balance sheet data, it is much more difficult to get all, or nearly all of the data to report reliably about activities. Using the inherent integration of balance sheet and operating statement, it is possible to use the changes between two balance sheets to deduce the result of economic activities without actually having all the details of the activities.

Activities are the origin of value adding ... or value destruction. Data about activities may be needed to explain why some aspect of the community balance sheet has changed ... but it might be quite obvious without much need for detailed data.

Activity reporting is similar to the reporting of the corporate Profit and Loss Account or Operating Statement. An Activity Report may show some of the characteristics of economic activities in the community that have had an impact on socio-economic changes. An Activity Report helps to explain the changes that have taken place in the balance sheet of the community. Thus, for example, an increase in stock levels of grain might be explained by an unusually good harvest ... and explain why there was a good harvest.

CA also uses time series of key items to gain an understanding of what is happening in the community. Market prices are a leading indicator of market conditions and other broader issues in the community. High food prices and low livestock prices is a reliable indicator of emerging famine conditions.

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About Assets

There are three main sections in a balance sheet ... the assets, the liabilities and the net of these. Assets may be classified in a number of ways. For financial for profit balance sheet purposes the following are the main classifications:

- Current assets
- Fixed assets
- Intangible and other assets

Current assets

Current assets are the assets that change rapidly and are liquid like cash, or will convert to cash quite quickly ... usually no more than in 12 months. The main classifications are:

- Cash
- Accounts receivable
- Inventory
- Prepayments

Fixed assets

In for profit accountancy, fixed assets are the assets that change quite slowly ... usually over multiple years. The cost of is the amount the fixed assets lose value during the period ... this is depreciation. The main classifications are:

- Land;
- Buildings;
- Leasehold improvements;
- Equipment;
- Vehicles;
- Vessels;
- Furniture, Fixtures and Fittings (FFF).

Intangible and other assets

It has been recognized correctly over the past few decades that there were important values that should be incorporated into the balance sheet as assets ... referred to as intangible assets. The main groups are:

- Goodwill; and
- Patents and trademarks.

There are also assets that are based not on the money costs to acquire them, but the value that they have in making the activities productive. These include:

- Human resources; and
- Know how.

Depreciation

Depreciation is a construct that makes it possible to present reports about business and economic performance in a logical way that reflects the depletion in value of an asset over a period of time while it is economically useful.

Depreciation ... an Economic Concept

The idea that depreciation should follow tax rules is confusing. Depreciation is an economic and accounting construct to charge the depletion in asset value based on an economically sound reality.

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Working capital

In for profit accountancy, working capital is the capital required to make the activities possible. Working capital may be considered to be the net of current assets and the operations part of current liabilities ... usually the accounts payable.

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About Community Analytics (CA)

Community Analytics (CA) is a system that measures socio-economic performance and serves as a way of "scorekeeping" for the community ... for society. CA is rigorous, easy to understand, independent and reliable. The data acquisition and analysis are derived from techniques long use in corporate accountancy and macro-economics, as well as using mobile technology and social communications that have become ubiquitous.

Why? Community Analytics (CA) has been created because something much better than the prevailing system of capital market and socio-economic metrics is needed. National, government, corporate and social metrics are all compromised. They are no longer adequate for effective understanding of the dynamics of society. Something is needed that goes beyond the money metrics that are prevalent today. Because the metrics are wrong ... decision making is wrong ... and unfavorable outcomes result.

What? CA goes beyond corporate accountancy and macro-economics. CA makes community the reporting entity ... and uses not only money metrics but also social value. CA measures not only profit, but also value adding and impact on society. The corporate accounting ideas of balance sheet and operating statement are applied to the community as a whole, and not just the organizations in the community.

When? CA is timely ... providing the earliest possible alerts about socio-economic change. The data acquisition is instant and the analysis and reporting as fast as it needs to be. CA identifies causality by using temporal (time) analysis ... it measures progress over time ... using community balance sheet changes as a critical metric, and how the activities of society result in value adding progress or value destruction.

Where? The CA system has a community focus. Where is very important. Things are different from place to place. What works in one place may not work in another. What are the constraints in one place may not constrain in another. Priorities depend on the place .. progress depends on the place and what is possible in the place. CA is ubiquitous ... pulling data from remote places where little is usually seen and reported.

Who? People ... all people ... are important. CA is a system that serves the needs of all people ... not just special stakeholders. CA is facilitated by people who are able to help with the acquisition of data ... and is CA is for people who need data to hold people accountable for their decisions and their activities.

How? CA operates like an accounting system. There is accounting for both money and value elements of society. CA aggregates a lot of little pieces of data .. and the logical framework derived from corporate accountancy makes it is possible to see the totality without data overload. CA goes beyond single stories to make multiple stories tell the complete story in a meaningful manner.

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This book is all about Community Analytics (CA) ... about what it is and why it is needed.

There has been talk about transparency and accountability for several decades ... but the process for doing transparency or accountability never been developed, or, to the extent that it was developed, never deployed.

CA has been developed from the corporate system of financial accountancy that has been used for a long time in modern corporate organizations ... and in turn evolving from a system of accounting developed several hundred years to enable merchant adventurers to keep accounts and report to their investors. Double entry is a simple technique that requires both action and response to be recorded ... when money is paid out, it is expected that value comes in ... when some good is delivered, it is expected that money is paid in for the good.

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About Cost and Elements of Cost

Caveat

Important that there is good understanding of what is cost, and what is price. If I am the buyer, then the price paid is my cost. If I am a seller, then the price paid is my price. Hopefully the costs are less than the price so I can make a profit.

Cost

There are very little accessible data about costs. Money cost is what gets paid for someone to have a good or service. Money cost is also the use of resources to create a good or service ... the aggregation of all the elements of cost that go into creating something. Elements of cost are things like: labor; materials; operating expenses, admin and overhead expenses, depreciation and financial costs. In most good organizations, cost accounting is detailed ... and often very informative ... but also maybe overwhelming. Standard costs and variance analysis are methods that help clarify cost data, identify variations that need explanation and measure cost efficiency. 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.

Cost

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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.

Elements of Cost

Elements of cost help with an understanding of cost ... and the behavior of cost.

Financial elements of cost

There are several elements that make up the cost of anything. It is convenient to use the following categories to analyze the financial dimension of costs:

1. People cost
2. Material cost
3. Facilities and equipment cost
4. Operating expenses
5. Admin and general overhead cost
6. Financial costs

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Beyond financial elements of cost

In the CA logical framework there are also these elements of cost

7. Profit as a cost
8. Consumption of social value
9. Cost of external constraints

Drill down to elements of cost is important because the elements of cost all change in different ways ... have different behaviors ... and different impact on the community.

The purpose of data in the CA 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.

Material cost (2)

Material costs are a function of a bill of material and the purchase price of the materials. A scrap factor should be included. Most production processes require more raw material inputs than there is output because of process losses (in machining, in casting, etc.).

Facilities and equipment cost (3)

Equipment costs do not behave in a simple way, and care must be taken in costing equipment use appropriately. 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.

In some cases, as for example, in using an aircraft for vector control, there are people and material costs that have variability depending on equipment utilization. All fixed assets have use costs that should be brought into account for costing.

Depreciation

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, 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 had an piece of equipment may have a life that depends on how much it is used (for example, an aircraft) ... say it will be useful for 50,000 hours of use. In this case the hourly cost can be computed and the asset charged to the activity for each hour it is used, and offset against the depreciation provision for the asset.

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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.

Cost of capital employed (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.

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 o 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.

Cost of profit (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.

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About Impact of Culture

Greetings. All of us working in market development with the very poor know that it is not just supply and demand that shapes markets, but it is also who you are, where you live and who you know which enables you to participate in markets as a supplier and/or consumer. Gender, race, caste, ethnicity and social status are factors that affect a persons participation in the market. I am looking for examples that can illustrate how these characteristics affect market participation.

Examples needed:

Caste - where caste prohibits or determines the participation of people in a market development activity

Social status - a group or person with higher social status in a value chain are opportunists and take advantage of people of lower status in the value chain

Religion - fatalism and/or passivity is a barrier to get people interested in participating in a market development project. For instance people feel that God has made things the way they are and things cannot be changed

Gender relations that prohibit or impede the participation of women

Donor dependency stifles participation in market development initiatives - people wait for handouts instead of taking calculated risks to participate in the market

Lack of market orientation affects market development (examples from a transition economy -socialist to market economy would be great)

Aversion to cooperatives as a result of attitudes that cooperatives are bad because in a socialist economy cooperatives were ruled by people with power

Trust - lack of trust between actors exists because of the difference in ethnicity, race, religion but the intervention assists in building trust.

Also examples where trust does exist because social groupings have the same code of conduct and norms that make obligations in transactions enforceable (for instance people will not sell poor quality product to someone in their own group because they will not be able to sell in the future)

IF you have any such examples to share-PLEASE prepare a small description with the following titles:

- Project title:
- Project Location:
- Organization facilitating the project:
- Brief description of the problem (1-2 paragraphs)
- Brief description of your intervention: (1 paragraph)
- Brief description of how your intervention facilitated improved participation of the targeted group (1 paragraph)

Please send your write-ups to <mailto:mmorgan@economicsunplugge.com> mmorgan@economicsunplugge.com

All submissions will synthesized and returned to those who submitted.

Thanks so much.

Mary Morgan

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About Liabilities

There are three main sections in a balance sheet ... the assets, the liabilities and the net of these.

Liabilities

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

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 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.

What is equivalent to a liability in the CA balance sheet

There are the equivalent of liabilities in the CA value balance sheet. While money liabilities have the same form, activities and issues that constrain the performance of the community are the equivalent of liabilities.

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.

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About Management Information

Management information is quite new ... while accountancy has a history going back some hundreds of years, management information is just a few decades ... and facilitated by computers and electronic data processing (EDP).

The purpose of management information is to improve decision making. Management information is a tool.

> **"Management information is the least amount of information that enables a good decision to be made reliably and in a timely way."**

Good data and analysis are a good starting point for management information. Relating operational key data with accounting information makes it possible to address issues that are important and will make a difference.

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About Money Profit

Money profit is at the center of modern capital market oriented economics ... while value is at the center of the Community Analytics (CA) system of socio-economic metrics. Profit is a very good metric for performance measurement within a for-profit corporate organization, but it does not take into account impact on society and social responsibility.

What is profit?

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.

Phony profits!

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.

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.

Profit ignores social impact!

Profit as a measure of performance for the corporate profit maximizing businesses (PMBs) ignores social impact. Because so many profit maximizing initiatives have negative impact on society even though they increase profit performance ... for example environmental pollution, relocating production to lower wage locations, etc. ... profit gets better while society deteriorates. This is not a good outcome ... but the social impact dimension is not part of the profit metric.

Sustainability

Profit may translate into positive cash flow that makes a business sustainable ... but society can only be sustainable when economic activities are both sustainable in themselves AND are providing positive value increments for society ... for all the value elements of a society including the people and their complete physical environment.

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About Ownership

The issue of ownership is very important to the success of socio-economic progress.

Some commentators attribute the economic success of the United States to the broad ownership of enterprise by millions of Americans ... and the recent failure of the system to a breakdown in this as certain institutions came to dominate the financial markets and concentrate economic power in dangerous ways.

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About Planning

Planning is usually top-down

When planning is top-down, there are usually ... almost always ... significant resistance to the implementation. This may or may not be justified, but it must be taken into consideration.

> My experience has been that most development planning is poor ... not taking fully into consideration the key constraints and issues that will impede success.

Better to plan using a Micro-Up approach

A community centric micro-up approach changes the dynamic of development. The plans can be made taking into consideration the priorities of the community and what is most needed by the community for progress.

The goals of progress can be defined by the community ... and steps taken to move the community towards its goals.

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About State

In corporate accountancy there is an integration between the balance sheet, the operating statement and the cash flow. The data in the accounts is the same ... and each of these reports shows a part of the whole. The data in each are coherent. The changes in the balance sheet are explained by the performance reported in the operating statement. The cash flow statement reconciles with the operating statement and the balance sheet.

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About Value and Elements of Value

Actual value of value ... quantifying value

The idea of actual value is very difficult to include in any analysis system simply because "value" is perceived differently by almost every individual. Value is personal in the extreme! To ignore value as an critical independent measure and use the market and price as a proxy is not a solution.

Standard value

The CA system has taken a different approach. Market price is not a good proxy for value and creates dangerous distortion on socio-economic decision making. CA uses a concept derived from standard cost accounting ... a standard value. In CA, everything has a standard value tabulated and in the record ... a best estimate of what the value is based on what is known. For example ... good health has a value ... but people are uncomfortable with putting a money number to define a value like this.

A global standard value

From one perspective the same thing should have the same value everywhere on the planet ... and for this CA has a global standard value. This is prepared based on a lot of input, but in the end it is a dataset that nobody will relate to ... and for very good reason. People and cultures are very different from place to place.

The community standard value

The typical community usually has a reasonably common view of value that is based on cultural norms and the traditions of the community. Comparative study of the standard value profile of one community compared to another is a powerful tool for improving understanding about how progress may be optimized. In addition a community standard may be compared against the global standard profile.

Ranking of community standard values

A ranking of community standard values helps to clarify a lot about the assigned money numbers. What people think in terms of ranking should also be reflected in how the assigned money numbers are also showing. When the ranking of different communities are compared it is possible to see how various factors change the perception of value ... maybe going beyond the anticipated issues of culture.

Importance of value

Value is the driver of quality of life ... society will be at its best when the available resources are used with a maximum of productivity. A measure like profit, or cash flow is important for sustainability ... but it is the mix of value and profit rather than just profit alone that should be driving decisions about the allocation of resources.

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Accountability

CA has ambitious aims ... to make it possible for the public to hold decision makers accountable ... to make it impossible for decision makers to avoid responsibility.

Accountability

The following is a common mindset: "I know what I am doing ... and God forbid that you or anyone else will try to hold me accountable!"

The systems that are in place and fully supported by decision makers to trumpet their successes need to be balanced by systems that report both the successful outcomes and the unsuccessful outcomes.

CA data and analysis are neutral ... they merely attempt to reflect the truth about what is going on. The CA system treats good and bad performance the same way using a uniform system. The CA system aims to be as objective as possible incorporating the difficult concept of value as an integral part of the system.

A Difficult Conundrum

It is easy to measure progress when there is agreement about what progress is ... but much more difficult when there are different views about what progress is and how revenues should be used.

Regulation does not provide accountability. The relationship between the regulator and the organization subject to regulation is about the law and the rules … which may or may not have any element of performance analysis and assessment.

Corruption

Corruption has many forms ... and the impact of corruption on the socio-economic progress of society may be quite modest or catastrophic.

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Accountancy

The point of accountancy

The point of accountancy is the use of data that costs as little as possible to create value that is the biggest possible. This is what has been central to accountancy for a very long time and has served the (limited) objectives of profit maximizing business and capital markets very well. CA has the same central idea, except that the goal is to create the maximum of social value. Accountancy collects and organizes data in a systemic way ... data that are neutral and representative of reality.

Accountancy ... a system

Corporate Accountancy is a system, and CA 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 core principles of accounting

The old fashioned principles of accounting are timeless ... though sidelined in much of modern accounting practice and accounting education. The reason is quite simple ... most of the leadership of our modern global society has favored a regime of minimal accountability that allows greed to flourish.

The central point to accounting is to get data about facts into a record that is reliable. How it is done is very much a secondary level set of issues. The data are neutral ... and they are about facts. Measuring facts may be difficult ... but accounting aims to have data about facts on the record. When you have data ... there can be analysis ... and reports ... and conclusions. And if there is organizational structure there can also be decisions and improved performance.

Double entry is a powerful idea, now almost 500 years old ... and perhaps somewhat diminished in its importance with the use of computerized accountancy over the past 40 years. There are two sorts of accounts that together balance ... (A) Balance Sheet Accounts; and, (B) Income and Expenditure Accounts. Changes in the balance sheet accounts over a period are the same as the difference between income and expenditure over the same period. In corporate accounting the accounting is about the activities of the organization. In CA the accounting is for the activities of the Community and embraces everything.

This 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.

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Account Codes

Account codes ... analytical codes

The power of relational analysis is maximized by the design of the analytical codes. This is the key to easy analysis, and relatively easy to do for a relational database. Frequently, however, it is ignored and easy analysis then becomes impossible.

An experience accountant can tell a lot about an organization simply by looking at the account codes ... and the logic of the account codes.

> This contributor did consulting work that involved the World Bank, the IMF, the UN and bilateral donors in developing countries, some of which were English speaking and used Anglo Saxon accounting and some French speaking using the French Plan Comptable. Mostly the accounting was treated as a necessary evil, and the account codes were disorganized. Not surprisingly the accounts and the financial reporting was equally disorganized and not very useful for any analytical purposes.
>
> Rather disconcertingly, the IMF recommended code of accounts for many years for government accounting was very badly formatted, making it difficult for government accounts to be easily analyzed using the account codes.

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Accounting Creativity

Accounting creativity has no place in performance metrics and reporting ... but such creativity has been given a place by allowing basic accounting principles to be subverted by laws, rules and regulations that are convenient but not principled.

Wrong ... any way you look at it!

Law, rules and regulations that allow important liabilities to be left off the balance sheet of a corporate entity are just plain wrong ... though law makers can make such reporting legal. Companies like General Motors were allowed to report in this manner for years ... but in the end real reality caught up with the legal fiction. Banks and financial organizations were allowed to report unrealized profits on their asset portfolio using a "mark to market" construct ... but it caught up with them when the real world market stumbled and the real value of their assets turned out to be a fraction of the reported balance sheet values. This reporting is wrong ... any way you look at it!

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Accrual Basis 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 is not used in most governmental entities and many not for profit organizations (See also Cash Basis Accounting)

CA uses the accrual principles, applying these concepts not only to the money dimension of the accounting but also to the value dimension. This has many benefits, notably bringing into account future impact of present activities, both beneficial and detrimental.

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Actual Cost

Efficiency of analysis and reporting

There are many ways to measure and report performance ... no one way is the “right” way ... but some are better than others. The key concepts of reporting in accountancy are

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Analysis

Efficiency of analysis and reporting

There are many ways to measure and report performance ... no one way is the "right" way ... but some are better than others. The key concepts of reporting in accountancy are very efficient. The principles of accounting make corporate financial reports informative and useful without being extremely long.

Powerful ... not voluminous

Corporate financial reporting is very efficient ... making it possible for a huge organization like, for example, General Electric, to report in a very few pages the activities and results of perhaps 300,000 people. This is done using a Balance Sheet, a Profit and Loss Account and a Statement of Cash Flow.

Creating value from data

CA data are used for analysis ... and this has value. It is a useful step towards better decision making and holding people and organizations accountable.

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

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.

Objective Analysis

The purpose of analysis is to understand the data. The purpose of reporting is to make it possible for others to share this understanding.

For CA data are neutral ... they do not represent opinions. Data flows into a store and all data are analyzed so that conclusions can be drawn. For CA the goal is reliable management information so that good decisions may be made. The concept of neutrality also flows through the process of analysis.

Organized data

CA is built on the concepts of accountancy, and accountancy is, at its core, a system for recording economic transactions in an organized manner. In the corporate form, all the economic transactions are put into the record ... ALL ... and the analysis proceeds from there. In accounting there is no statistical component to the recording of transactions.

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In accounting great care is taken to prepare reports based on all the relevant transactions and not just a subset that may or may not reflect all the data. This is a very different approach to surveys and statistical studies done for research. Financial reports are not research ... they are merely all the data summarized according to the basic principles of accountancy.

Analysis must have clarity

CA analysis has a community focus. The frequency of CA analysis depends on the natural frequency of the subject matter and the objective of the analysis. CA reporting aims to make the result of analysis easily accessible, convenient and timely. The purpose of CA reporting is to facilitate decision making that improves the quality of life of a community.

Verified data

One of the first steps is to be assured that the data are what they purport to be. Data should be easily verified ... and data that cannot be verified should be treated with the utmost caution.

> Sadly, this is no longer universally true because accounting principles have been superseded by various laws, rules and regulations that allow various forms of reporting of financial results that are in conflict with the underlying principles of accountancy but suit various stakeholders in the process.

CA builds on accounting principles, applying them to a reporting unit that is the community and incorporating the double entry of both money and value.

There are many tools available for analysis and reporting included techniques like (1) aggregation analysis; (2) time series analysis; (3) value chain analysis; (4) various forms of cost analysis; and, (5) various way of looking at impact and cost effectiveness.

Analysis of aggregated activities

Accounting has good concepts for how different activities should be aggregated so that there is a minimum of double counting and distortion ... this is consolidation accounting, and it is very useful when rigorously applied in the analysis of community performance.

Cost analysis and cost efficiency

Cost accounting is a subset of accounting that informs about how much it has cost to do something. This is not difficult to do when there are trained staff and there is a good accounting system. It is painfully tedious and difficult when the record keeping is simplistic and critical data not available. This is a reflection of management competence and priorities.

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.

Impact and cost effectiveness.

In theory, the reason for doing the work is to get a result. The result has a value ... a social value which should be given a value. In the case of health interventions the impact should be more good health ... and good health has value. It is not easy to quantify this, but CA avoids this problem by assigning standard values to most of the outcomes of community activities.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION BBB

	Balance Sheet	
	Balance Sheet Analysis	
	Bankruptcy	
	Behavior of Cost	
	Behavior of Value	
	Beta	
	Better Metrics	
	Better than Accountancy	
	Beyond Financial Metrics	
	Breakeven	
	Bribery	
	Budget	

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Balance Sheet

A balance sheet is a very powerful part of financial reporting. A balance sheet shows the state of the reporting entity at a point in time. It shows assets and liabilities and the net of assets and liabilities.

When a current balance sheet about now is compared with a balance sheet about some time past, there is an immediate view of how things have changed. revenue of the period should be matched with the costs associated with this revenue.

The balance sheet of a community, a neighborhood or a block shows in stark simplicity what is happening. Much may stay the same from year to year ... indeed from century to century ... but some items change rapidly, sometimes for the better, sometimes not. A community balance sheet report can be prepared that shows what is changing in some detail while having the rest that has not changed in simple summary.

A common interval or period is one year ... but there are circumstances when more frequent analysis is useful. Monthly reporting provides information about seasonality for example. In farming there are times when stocks are very low, and then after harvest very high. A monthly balance sheet report shows when stocks are lowest and highest.

Balance sheet – assets

A balance sheet should show the total of assets, and detail the make-up of the assets. There are both tangible and intangible assets. Money, equipment, etc. are tangible assets. Goodwill is an intangible. There are current assets and there are fixed assets. There may also be “off the balance sheet” assets.

In the corporate environment the generally accepted accounting principles (GAAP) are applied. In CA the concepts are broadened to ensure that assets are reflected in the best possible way to show the state of the community. In the CA environment, possibilities and potential are assets.

Balance sheet – liabilities

In corporate accounting with GAAP the liabilities are those that are reflected in law and about money. The amounts owed, are the liabilities. There are also contingent liabilities that may be liabilities if certain things do not work out.

In the CA environment constraints of various kinds are liabilities.

Balance sheet – net state

The net state is the difference between the assets and the liabilities. In corporate accounting this is stockholders' equity.

In the CA environment, the net state is a convenient measure of the state of the community. However, it is rare for this measure to be complete enough to be a useful comparative index across many different communities.

Some history

The accounting profession used to have great concern that there should be no chance of manipulating the values on the balance sheet ... but this has been subverted.

Caveat

Accountancy has been very engaged with ensuring that assets and liabilities are accurately reflected on the balance sheet. Unless these numbers are right, financial reporting becomes an exercise in dangerous stupidity. It is

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apparent that sound accounting principles have been ignored in the development of modern rules about how financial assets and liabilities are valued for balance sheet reporting.

Revaluation of assets

The practice of revaluing assets was frowned up by accountants until the 1980s when rule making bodies started to allow the practice.

Off balance sheet assets, liabilities and risks

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Balance Sheet Analysis

Balance sheet analysis I ...

This method of analysis results in getting an understanding of the strength of the balance sheet and the potential of the organization in corporate accounting analysis or for the community in CA.

A tabulation and analysis of the balance sheet of a community is an illuminating exercise.

Balance sheet analysis II

This method of analysis results in an understanding of how the organization's balance sheet or the community balance sheet has changed over time.

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Behavior of Cost

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Behavior of Value

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Better Metrics

Beyond Financial Metrics

The analysis of the global economy has been driven for a very long time by metrics that were keyed around financial ideas. The most important measure of all was financial profit ... as well as wealth, the ownership of things that money could buy!

An economic analysis system based on production ... the communist system ... eventually failed because the allocation of resources under this system was inefficient. Relative to this system the money metrics and market based optimization of profit system did much better ... but is also deeply flawed. The system serves to allocate resources so that there is a maximization of profit, but at the expense of value.

Dr. Muhammad Yunus

Dr. Muhammad Yunus has made the observation that metrics that only have the money dimension are inadequate. There needs to be a system of analysis that takes into account the full range of social values ... not just those that get denominated in money terms!

CA is built around the idea that there is a need for information that will guide decision makers along the lines described by Dr. Yunus. The logic of a financial accounting system is a good starting point ... and with CA is enhanced to include not only money transactions, but also transactions that reflect the consumption of value and the creation of value. Corporate financial reporting is very efficient ... making it possible for a huge organization like, for example, General Electric, to report in three pages the activities and results of perhaps 300,000 people. This is done using a Balance Sheet, a Profit and Loss Account and a Statement of Cash Flow. The principles of accounting make financial reports informative without being long with a lot of disorganized detail.

It should be noted, however, that the principles of accountancy have been systematically diluted over the past forty years by lawmakers, regulators and rule making bodies at the behest of special interests. The result is that modern financial reports rarely represent what is true and fair as they did in older simpler times. This, more than any other single factor, explains the abysmal state of financial reporting in modern corporate organizations ... when excellence in management information is perfectly possible.

Community Analytics (CA) is a better system of metrics. Capital markets, economic and financial policy have been driven for a very long time by metrics that were keyed around accountancy and financial ideas. In the prevailing systems of financial and economic reporting, if there is no money transaction, there is nothing. Everything is measure with respect to money ... money profit, as well as wealth.

A better system is needed ... but simply having a different system does not mean it will be a better system. For example, an economic analysis system based on production ... like the communist system ... eventually failed because allocation of resources under this system was inefficient. Relative to this system market based optimization of money profit did much better, but it is a deeply flawed approach, and something better is possible.

The prevailing system ... a market oriented capitalist system ... serves to allocate resources so that there is a maximization of money. The weakness is that it does not take into consideration the impact that money profit maximization has on society.

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CA adds information needed by decision makers that go beyond financial numbers. Principles from the established field of corporate accountancy are used because they are 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. CA uses the logic of financial accounting as the starting point. CA includes not only money transactions, but also transactions that reflect the consumption of value and the creation of value.

Profit and growth being the dominant metrics of progress and performance explains much of the behavior of decision makers and markets ... and made exponentially worse by a system where profits are reported based on convenient accounting rules rather than rigorous accounting rules ... and where the most important index of growth is Gross National Product (GNP).

There is something wrong when reported profits reflect profits that the organization is going to make ... the “mark to market” arrangement. There is something wrong when risks are thought to be reduced when they are merely hidden and ratings have little relationship with reality!

There is something wrong when the Gross National Product (GNP) is largely made up of banking services, health costs and consumer buying. GNP should be the aggregate of the national product ... what the efforts of national economic activity have produced ... product. Good health is a product ... health costs are not. Where should margins and profits fit into the economic growth equation? Why don't we have a Gross National Cost as well as a Gross National Product.

There is a deep need for metrics that make more sense, and give incentive to getting the important things done in the economy so that there is sustainable progress and improvement in the quality of life. More and more phony growth and phony profit is a road to nowhere.

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Boondoggles

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Better than Accountancy

Corporate financial reporting is very efficient ... making it possible for a huge organization like, for example, General Electric, to report in three pages the activities and results of perhaps 300,000 people. This is done using a Balance Sheet, a Profit and Loss Account and a Statement of Cash Flow. The principles of accounting make financial reports informative without being long.

The lost integrity of accountancy

The principles of accountancy have, over the past forty years been systematically diluted by lawmakers, regulators and rule making bodies at the behest of special interests so that modern financial reports have less reliability now for representing what is true and fair than in the past. This, more than any other single factor, explains the abysmal state of financial reporting in modern corporate organizations.

Recognition that financial metrics were not adequate and economic statistics were also insufficient is not new. Dr. Stone working at Cambridge in the 1950s brought accounting ideas and economics together to develop a system of National Accounts that remains today as the UN System of National Accounts. (UNSNA). The United Nations Development Programme (UNDP) expanded thinking about international socio-economic development performance from simply Gross National Product (GNP) growth to a very much broader indicator that incorporated quality of life and referred to as the Human Development Indicator (HDX).

My own work with engineering metrics and control engineering ... and later with cost accounting and corporate profit improvement ... and then in the area of national development planning and emergency aid coordination showed me that metrics were very useful. My experience also showed me that wrong metrics and wrong incentives have rapid and deeply perverse consequences.

Accountancy is a strong logical framework for the metrics of corporate performance based on money profits. Adding the value dimension to this logical framework results in a very powerful system for “double bottom line” reporting and analysis.

When the accountancy framework with value is applied to the community as the reporting entity, then a whole new paradigm of socio-economic progress analysis becomes possible. When this framework is combined with 21st Century data acquisition techniques and data processing, all sorts of possibilities are within reach!

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Breakeven

Breakeven

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. The idea of breakeven supports the widespread view that there are economies of scale ... but the reality is that there are as many dis-economies of scale as there are economies of scale.

When value is considered in the scale analysis as well as just costs and revenue, the results may well differ. A small business may bring significant advantage to a community ... a big business may ruin the community.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION CCC

	CA Observer	
	Capacity	
	Capital Market	
	Cash	
	Cash Basis Accounting	
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	Cause and Effect	
	Change in State ... Measure of Progress	
	Clarity	
	Code of Accounts	
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	Community Reporting	
	Comparative Analysis	
	Competition	
	Complexity	
	Concentration of Economic Power	
	Concepts of Accountancy	
	Conclusions	
	Confrontation	
	Consolidation	
	Constraints	
	Continuum	
	Cost	

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	Cost Accounting	
	Cost Efficiency	
	Cost Effectiveness	
	Cost, Price and Value	
	Cost ... Actual and Standard	
	Cost ... Elements of Cost	
	Creativity	
	Criminal behavior	
	Currency	

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CA Observer

A CA Observer is the source of much of the data about society used in the CA system ... economic and social activities ... and the socio-economic impact.

Data have a simple short format ... and automatically are expanded by relational reference in the CA database system

A CA Workbook or Guidebook provides a comprehensive reference for the CA Observer to use in the submission of the data messages.

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CA ... How?

CA is both a comprehensive framework and a modular framework. As a comprehensive system, everything is included. As a modular system, important matters can be addressed with limited resources and high impact benefit realized at a modest cost.

While there are many initiatives to improve the reporting of organizations, and an established framework of macro-economic indicators ... there are few initiatives that address socio-economic performance from the perspective of the community.

CA becomes possible because of many low cost ways there are now for collecting and storing data, and for its analysis. The structure of social networks is supported by an IT infrastructure that could also be used for CA data. Social networks make it possible for people to interact in ways previously impossible ... CA and social network infrastructure makes it possible for everything of any relevance to a community to be on the record and in place where it may be used usefully.

There was a time when data collection was a very costly exercise, but much less so in recent years with better and better technology. Modern web based IT and cellular phone based text messages make it possible to have data collection that is timely and very low cost. Massive amounts of data can be stored and mined for critical information rapidly and at low cost. Cost effective technologies are being used to the greatest extent possible to make CA not only effective but also affordable.

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CA ... What?

CA has two roles: (1) score-keeping; and, (2) data for management information that facilitates improved performance. CA is a structured system of data collection and analysis to enable a paradigm shift in the way socio-economic performance is measured. CA is score-keeping for the game is life ... and the pursuit of happiness ... and the playing field is the community.

But CA is only score-keeping and statistics ... and is neutral. It is not a rule making authority like the National Basketball Association. It is not a referee that ensures the game is played by the rules. It is not a coach that gets the team ready for a game and calls the plays. It is not a player. It is not a spectator merely getting entertainment. It is not an owner that benefits from the outcome of the game ... or a gambler trying to profit from a wager on the outcome of the game. CA is independent and its score-keeping and data are to be trusted. Score-keeping is more than determining the game winner ... there are also a whole range of performance statistics.

Examples of scoring systems

- Golf: The number of strokes used for the round. Lowest number wins.
- Cricket: Number of runs. Largest number of runs wins.
- Tennis: Numbers of winning points wins a game. Most games won wins a set. Most sets won wins a match. Most matches won wins a tournament.
- Baseball: Number of runs. Largest number of runs wins. The system of runs is quite complicated, but simplifies to number of runs to determine the winner.
- Soccer: Number of goals scored.
- American football: Number of points scored ... with points assigned for different actions: touchdowns, conversions, field goals, etc.

CA score-keeping and statistics builds on many of the concepts already developed for corporate accountancy and management information and for economic indicators. Accountancy has great power when used well to organize data for financial and operational analysis ... and with CA the reporting entity becomes the community and not the organization and the critical key stakeholder are the residents of a community rather than the stockholders and management of an organization. CA aims to have no opinion ... its goal is merely to collect data and analyze data so that better decisions can be made about the use of resources for socio-economic progress.

Sporting analogy

CA is score-keeping. It is not the rule making authority like the National Basketball Association. It is not a referee that ensures the game is played by the rules. It is not a coach that gets the team ready for a game and calls the plays. It is not a player. It is not a spectator merely getting entertainment. It is not an owner that benefits from the outcome of the game ... or a gambler trying to profit from a wager on the outcome of the game. CA is independent and its score-keeping is to be trusted.

CA, however, does more than just keeping score. CA also handles statistics.

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> With the CA data and analysis it becomes possible for everyone to know a lot more about socio-economic performance than would be the case without. In sport, the score determines which team wins, but the statistics of the game show which players contributed the most to the result.

CA is grounded in some very old basic concepts of accountancy and measurement ... but also embraces 21st century technical possibilities. In simple ... perhaps simplistic ... terms, CA is like Facebook except that the central focus is a physical community rather than "me". With CA, the connections are not "my" friends and interests, but the people, organizations and issues that influence or impact the socio-economic performance of the community. CA is structured so that the data about a community is organized in useful ways, rather like the way corporate accounting information is organized into accounts and different datasets that make it easy to understand corporate performance. CA uses some of constructs that make corporate accountancy powerful ... but does not limit itself to just money transactions, but also embraces activities and initiatives that affect socio-economic well-being.

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CA ... When?

CA is a timely system ... data are collected as quickly as reasonably possible and fast enough so that the data still has high value. The value of data usually diminishes with time. Time matters. The very idea of progress implies something about time. Are things better now than they were? The CA system helps answer this in a simple but quite rigorous way.

Changes over time are a critical measure of progress. The history of change may be studied at leisure ... but the data about changes that are taking place now is most valuable when available in a timely manner. Management information needs timely data in order to be useful.

"When" is a data a element that helps to establish causality. Quite simple time series will often show useful relationships without the need for complex sophisticated analysis. Without paying attention to timing, analysis may suggest causality that is impossible. Without appreciation of changes that naturally occur over time, such as seasonality, simple analysis can easily result in very incorrect conclusions. Changes over time are very helpful to understanding what is going on.

Where conditions change from day to day the data should be collected daily. Where conditions change more slowly, the data can be collected less frequently. The key is to collect data so that the results of data analysis are "in time" for good decisions to be made when they are needed.

Production Reports at Southern States, Inc.

This story illustrates the vital importance of timely information. Most of my career I have been associated with corporate accounting, consulting, planning and the analysis of performance. I have not done many line management assignments ... but in this case some years back I was appointed VP Manufacturing for Southern States Inc, a manufacturing company making air-break switches for the electric utility industry during a reorganization to improve the company's results.

The company had orders, but the factory was a bottleneck ... and we had neither the time nor the money to invest in expanded manufacturing facilities. We had to do better with what we had. For years the factory production report had been written up and distributed every day around 10 am ... informing everyone of the production numbers for the day before ... a fairly standard practice! I changed this to give management a report at 8.30 am (the factory got started at 7.30 am) about the anticipated production for the day ... today, not yesterday! By 9 am the support staff were deployed fixing problems that would improve performance today! The factory always beat its anticipated production ... and the factory production almost doubled without any major capital investment to expand the capacity!

Having datapoints associated with time makes it possible to do time series. Tine series show how things are progressing or regressing. The time interval should be a balance between very frequency and cost and the value of the associated results. Sometimes data needs to be daily, or even more frequent ... sometimes once a year is enough!

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CA ... Where?

CA is about a place ... any place ... anywhere ... everywhere! The good thing about a place is that it has perpetual existence. A place never moves ... there is a basis for longitudinal comparison that is reliable.

Example: Okehampton in England

I grew up in Okehampton ... a small rural market town in the southwest of England. In 1935 it had a population of around 3,500. In the 1950s the population was something around 4,200. Back in the 11th century when the Doomsday Book was written up after the Norman conquest, Okehampton had a population of around 600 and was an important frontier town. Times changed ... but not the place.

CA has a focus on community. CA recognizes that there are big differences between places ... and even similar places have a myriad of subtle differences. Focus on the place ... gives clarity at the community level. At the national level, it is, perhaps, possible to understand something about the "state" of the national economy, but rather little about how and why the economy is in this state.

It is possible to do management by walking around at the community level ... and there is no need to rely on sophisticated survey techniques and statistics that have been popularized in academia and research institutes and provide surprisingly unreliable management information. Community level data start to tell something or real importance ... and it becomes possible to see what are the factors that have resulted in the state of the community. If something in the data is surprising ... data at the community level helps to pin-point what caused this and why and how this came about.

Some communities are too big and complex to be easy to understand ... in which case the neighborhood may be a better level for detailed data. Common sense applies. In some cases it may be appropriate to get data at the block level. In high density urban settings, the block may still be quite a large population, and the economic activities quite complex.

Community is a place ... and all communities should "add up" to a larger place, that my be a district, or a state, or a country. In this perspective of community there is no spatial overlap. Within a community there may also be neighborhoods ... and within neighborhoods also blocks.

Community may also be based on a group interest ... an affinity group. This may overlap the community defined by geographic area. A note of caution ... the "roll-up" or aggregation of affinity groups is complex and should be done carefully and rarely used as a national or global aggregate.

When and where example: Malaria ... Vector Control

The mosquito has a short life span ... but the malaria population grows fast when conditions are favorable. Killing mosquito larva is an effective way to limit the mosquito population, but larvacides are expensive. The cost of source control is minimized without reducing effectiveness when larvaciding is done in the right place and at the right time.

Killing adult mosquitoes can be done using ultra low volume (ULV) spraying ... but it is most cost effective when spraying is done only where and when it is needed. Data that shows the stage of larva development ...

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and the size and location of emerging mosquito populations collected today ... determines what should be done and where in the next 24 hours. The is a spatial element and a time element. Today's data determines what we do tomorrow!

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CA ... Who?

CA is for everyone ... and CA is facilitated by everyone. CA may be implemented through an organization or not ... but the data still reflects a community perspective, and the data are neutral and aim to merely reflect community reality.

While the family is one of the key units of society ... and within the family the well-being and happiness of every individual is important, for the development and management of public policy, the community ... or neighborhood or block ... is easier to use as an indicator of progress and the effectiveness of interventions. There are some datasets that are best compiled using the family as the unit because this is the best place to identify impact ... as for example, the case of public health, where interventions are undertaken in the community as a whole, and the impact is best observed within the individual families.

There is a critical need for the data to be credible and for this there has to be a component of independence, but it is still possible for those with an interest in the outcome to be a part of the process of data accumulation, but they must never be the sole source of data. The data may be contributed by anyone ... and data may be validated by anyone. The data may be used by anyone who is working to improve community progress. There is a "weighting" of the data based on the credibility of the contributors ... and access to data is also controlled to reduce the use of the data for inappropriate purposes.

CA is best when the results are independent of the participants ... when the data are neutral. So while anyone may contribute to the CA dataflows, there is a set of internal checks to ensure that the data and analysis are NEUTRAL, objective and independent.

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CA ... Why?

The prevailing system of metrics ... financial accountancy, market indexes, economic indicators, etc. ... has become deeply flawed at the the organizational level, the capital market level and the macroeconomic level. The flaws have compounded over time with disastrous consequences, and by 2008 the capital markets became paralyzed and the economic system froze like an automobile engine without oil. CA is needed because there has been a complete breakdown in the system used for analysis of organizational performance and the economic performance of society.

For example ... GNP

The measurement of economic growth is one important metric for the capital markets ... but the metric has become quite meaningless. GNP is Gross National Product ... and product would normally be an outcome. In modern GNP speak, however, anything and everything goes into the product ... including profits with no value and costs with no product. It is little wonder that economic incentives encourage unsustainable behavior!

Capital market performance and money wealth have been used as a proxy for socio-economic performance. Profit and stock price growth has been the primary goal of private and corporate enterprise with little attention paid to the impact on society as a whole. Excessive reliance on computer models, simulation and statistics with too little validation is a formula for catastrophe. A good part of economic data is based on small surveys and a lot of statistics. This system gives good results at low cost in a stable environment, but falls apart whenever there are changes, and especially disruptive changes. Modern financial accounting has failed to get money capital allocated efficiently to solve the world's critical issues ... endemic poverty ... poor health ... lack of education ... basic services ... etc.

What gets measured gets done

The system must measure what is needed so that good decisions get made and resources are allocated in the best possible manner. Socio-economic performance can be improved as soon as bad practices are stopped. CA helps to stop scams, rip-offs, shoddy goods and services, thievery, corruption and other bad practices. Socio-economic performance will improve when good, reliable on time data are available for decision makers and socio-economic productivity can increase an order of magnitude ... with with the planet more sustainable ... and everyone a beneficiary.

A paradigm shift to CA puts the socio-economic performance of everyone on the same playing field and using the same system of keeping score. The progress of 3 billion people who are poor can have the same visibility as the 3 billion who are economically middle class or the economic elite. Under the CA paradigm, information is used not only to do score-keeping ... but also to guide decisions and the deployment of scarce resources. CA embraces the idea that what gets measured gets done as well as the idea that management information is the least amount of information that gets the best possible decisions made reliably.

Information that makes it possible for 3 billion people to improve their productivity by $300 a year ... about $1 a day ... is an improvement in the 33% to 100% range. This is huge. A similar absolute improvement at the top of the economic pyramid would be

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hardly noticed. But with unemployment in this demographic increasing exponentially ... it is now time to address the critical metrics of society so that wealth is not accumulated in one segment of the population merely by scamming the other segments of society.

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Cash Basis Accounting

Accounting ... double entry accounting is very powerful and serves to provide a way to control and account for assets entrusted to operating managers. Cash basis accounting that is used widely in government and the public sector has none of the logical structure that serves to make double entry accrual accounting so robust.

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.

Cash basis for government accounting!

The principles associated with accrual accounting are clear, but most government and public sector accountancy (such as the United States) use cash basis accounting. The statutory authorities and regulators have seen fit to suspend the accrual principles and allow important assets and liabilities not to be recorded in the balance sheet accounts.

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

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

See also Accrual Basis Accounting

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Cash Flow

Cash flow ... derivative of money cost and money inflows

Cash flow is a metric that relates to sustainability in a world where money is the medium of exchange. Cash is used to pay bills. Money inflows may come from revenues which are a function of price, or they come from financing or some change in the balance sheet like sale of assets. Activities that result in a persistent cash deficit will fail in due course, simply because the money runs out. The timing of the demise of the activities may be delayed by borrowing ... but that also will fail in due course.

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Community - Elements of CA Analysis

The primary community elements are the following:

- People ... families
- Organizations
- Sectors
- Activities
- Programs and projects
- Events
- Resources
- Constraints
- Possibilities ... potential

The socio-economic interactions in a community are complex ... and probably the critical determinant in the process of progress. The graphic below sets out some of the pieces of the puzzle ... people and the family, the extended family and friends ... all together are the base building block of community.

In community there are all sorts of activities that go on ... economic, cultural, spiritual. All have varying importance. All interact with each other in a multitude of ways. They all have some role in success ... or they serve to constrain and limit progress.

There is also governance. Human society creates governance ... it may be light, or not. Governance that is internal, local and relevant has some advantages over external governance that may not be respectful of local conditions. A mix of both may well be best ... and result in a favorable enabling environment.

There is also organization. Without organization, people are severely limited ... but with organization people can do collectively many things that they cannot do on their own.

More than anything else, a system is needed that allows the people of a community to self organize and optimize how the resources of the community are best used. The foundation of such as system is a set of appropriate performance metrics.

This is the goal of Community Analytics (CA), which is a system of metrics for socio-economic measurement that builds on the two key ideas: (1) the basic concepts of money accountancy used by organizations; and (2) the idea that this can be modified so that it has community focus rather than organization focus, embracing accounting for value as well as simply accounting for money.

The key concepts of money accountancy used by organizations are (1) the idea of double entry; and (2) the organization of data into accounts that either relate to operations, or relate to the balance sheet. These ideas make it possible to draw conclusions about performance without having a full set of data but without compromising the reliability of the conclusion.

The system of accountancy that is used by organizations record money transactions and prepare reports to the stakeholders of the organization. There is a tremendous pool of experience associated with this work ... but it has the weakness that the impact on society is not part of the system.

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Community - Focus on the Community

Structural Complexity

Society is very complex. The institutional framework is very complex. The following graphic shows some of this complexity ... in a very simplified manner. There is complexity at the national level and the international level (not shown) and all sorts of complex detail at the community level.

... but less so at the community level

The community is where people live ... and a lot easier to understand.

Even though a community is simpler ... it is still quite complex, but this complexity can be understood. Though there may be many relationships, they are relatively simple, and therefore, understandable. At the community level people have names, and are not merely part of a statistical pool. Activities are tangible, and accounting for costs and results is an exercise that everyone with interest can understand. The community is where progress dynamics are easier to understand and where measurement has more clarity.

Community - Organizations in the Community

High performance economic activities are invariably carried out by organizations. It is possible for individuals to do significant creative work, but production needs organization and investment.

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Community - Sectors

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Community - Activities

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Community - Programs and Projects

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Community - Events

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Community - Resources

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Community - Constraints

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Community - Possibilities and Potential

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Community - People ... Human Capital

People

People have many roles in the functioning of a community. People are the population ... or the population are people.

Family

The family is one of the key units of society ... and within the family the well-being and happiness of every individual is important. For the management of public policy, however, the community ... or neighborhood or block ... is easier to use as an indicator of progress and the effectiveness of interventions.

There are some datasets that are best compiled using the family as the unit because this is the best place to identify impact ... as for example, the case of malaria, where interventions are undertaken in the community as a whole, and the impact is best observed within the individual families.

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Community - Priorities

Understanding priorities and needs

A good starting point is to recognize that every community is different, and what is a top priority in one place may not be the same in another place. Priority needs are both a reflection of physical and human characteristics at a point in time, but also a reflection of history and what has been done in the past.

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Community - Productivity

Cost effectiveness

The idea of cost effectiveness is simply that a small amount of resource produces a large amount of value. This idea has to be used in the analysis of what is going on in the community, and what could be going on if the resources of the community were being used more effectively.

Making best use of resources

Community productivity depends not only on what resources are available, but how the resources are used. The State of the Community shows what resources are in the community ... community productivity depends on how these resources are mobilized to benefit the community.

Understanding value chain externalities

Making the best use of resources sometimes required external inputs. To the extent that external inputs also have to be paid for this reduces the effectiveness of the activities. The trade off may be favorable or not. The outcome of external intervention depends on the situation and the specific circumstances. The default should be that external interventions are going to cost ... and maybe the cost will be a lot more than the benefit!

Modularity

CA starts with the assumption that there are already a lot of ongoing economic activities. There is no value in keeping detailed score about things that are routine and not changing ... at any rate for the time being. CA is modular so that it is possible to start keeping score in a meaningful way on things that are a priority. CA allows for detailed tracking of just some part of the economic activity in the community ... without the need to do it all. Things that are not changing for the moment may be taken into consideration later.

> **Caveat**
>
> To use the sporting analogy ... the game is already going on. How do you make some useful contribution as a scorekeeper when the game has already started? One way is to find out what has already happened and start off with the score as others are reporting it ... and then to keep score on a continuing basis from that point on. This seems reasonable.

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Community - Reporting

Balance sheet

The balance sheet is one of the most powerful analysis tools in accountancy ... critical in corporate financial analysis ... and central to the design of the CA system. A balance sheet is accountancy shorthand that describes the financial conditions of an organizational entity and is fully applicable to a community as the reporting entity. A balance sheet shows assets and liabilities. 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.

Activity Statement ...

An activity statement of a community in the CA system is similar to the operating statement or profit and loss account, or income and expenditure account of a business entity. An activity statement serves 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 statement serves to explain how the change happened. The activity statement can be in summary ... or in great detail depending on the need for analysis.

A CA activity statement has two sections: (1) the flows associated with money costs and the money revenues; and, (2) the flows associated with value consumption and value creation. In some cases money costs and value consumption are the same, but not always. In some cases money revenues and prices are the same as value creation, but not always.

Value chain analysis

Value chain analysis is a technique that relates cost, price and and profit ... and value consumption and value creation in a complete transaction matrix. The value chain analysis explains the aggregate of value consumption or destruction and the aggregate of value creation and value adding and reconciles the aggregate with the winners and losers at different stages of the value chain. The value chain analysis may be applied either over time, over geographic space, or between organizational entities. Value chain analysis shows how critical local community based economic activities are to the community and how damaging many profitable global value chains are to society.

Analysis and reporting

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.

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Competition

A market based economy assumes robust competition ... but a profit maximizing rich economy with a high concentration of economic power never has much effective competition.

In contrast a poor economy with disorganized ... haphazard ... supply, and with a multitude of individual buyers is a market economy, and the market efficiently reflects market equilibrium.

Many of the characteristics of a modern economy reduce competition:

- Regulation makes it more difficult to have many different items in the market to do the same function ... and competition is reduced
- Intellectual property sometimes gives a product a monopoly position ... whether or not it is justified
- Branding makes the market ineffective ... an identical product that is unbranded does not compete as a similar product, but as something that is different. This diverts profit to the brand ... but does nothing to the inherent value of the product.

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Complexity

Making Key Metrics Simple

Managing where there is complexity requires well designed data and analysis. CA's primary metric of progress is very simple. Is the community better now than it was in the past? This is not a complex idea. In the image below, the value of the community is the same at the end of a period as it was at the beginning ... ordinary daily activities produce what is consumed ... it is a stable situation.

In this next case the value of the community is more at the end of a period than at the beginning of the period ... ordinary activities produce more than is consumed.

In this last case the value of the community is the less at the end of a period than at the beginning of the period ... ordinary activities produce less than is consumed.

High performance programs integrate data collection, analysis, planning, action, more data collection, more planning, more action in a perpetual process.

Concentration of Economic Power

The history of economics suggests that the concentration of economic power is a norm in a competitive market oriented society ... but why is this?

There seem to be several different reasons for concentration of economic power ... some which benefit society and some that do not.

There are some advantages that emerge with scale ... an ability to realize economies of scale, and to do things that are impossible at a smaller scale.

But there also the ability to control the market in ways that do not benefit society. An efficient market is usually achieved by competition between many market participants on both the supply side and the demand side. As the participants grow, it becomes possible for the behavior of the large market actors to change the market in ways that reflect the interests of the large actor and are detrimental to others.

This has been recognized as a problem for way more than a century ... but the market system tolerates, and maybe even encourages the expansion of an individual company so that it eventually has huge economic power. This is not usually a good outcome for society ... but it might be.

Generally speaking the data needed for the analysis of socio-economic performance is not available to the public. Many assumptions have to be made to understand what prices ought to be in order for a company to have a reasonable rate of return on capital employed. Where a product has a high value to a customer ... a high price is possible ...

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and with a concentration of suppliers, and either oligopoly or monopoly of supply, then it is likely that the price will be high.

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Consolidation

Consolidation

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. What is powerful and useful for the corporate style accounting is equally of importance and useful in developing metrics for the community. 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 CA the idea of consolidation is the same. A simple consolidation report can summarize the outcome of many different activities and organizations in a community.

Roll up and drill down

Community is a place ... and all communities should “add up” to a larger place, that my be a district, or a state, or a country. In this perspective of community there is no spatial overlap. Within a community there may also be neighborhoods ... and within neighborhoods also blocks. Community may also be based on a group interest ... an affinity group. This may overlap the community defined by geographic area. A note of caution ... the “roll-up” or aggregation of affinity groups is complex and should be done carefully and rarely used as a national or global aggregate.

Consolidating statements

In corporate 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 CA a consolidating statement shows similar information. A consolidating statement shows what is working and what is not.

Rules about consolidations

The principles of consolidation accounting are quite clear. However law and practical complexity make consolidation accounting difficult, and in turn less and less useful. In corporate accounting there are strong rules about how consolidations are done ... but the strong rules are also complex and subject to many interpretations about what is permitted.

In the CA system, the basic principles of consolidation accounting apply. CA keeps complexity to a minimum so that community level socio-economic performance can be easily understood and have value to the public, especially in the community.

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Cost

Cost

There are very little accessible data about costs. Money cost is what gets paid for someone to have a good or service. Money cost is also the use of resources to create a good or service ... the aggregation of all the elements of cost that go into creating something. Elements of cost are things like: labor; materials; operating expenses, admin and overhead expenses, depreciation and financial costs. In most good organizations, cost accounting is detailed ... and often very informative ... but also maybe overwhelming. Standard costs and variance analysis are methods that help clarify cost data, identify variations that need explanation and measure cost efficiency. 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.

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Cost 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.

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Cost Effectiveness

Cost effectiveness is a metric that relates the cost of doing something with the value of the results achieved.

Cost Effectiveness Example: Malaria

The global strategy for malaria is to reduce the burden of the disease ... value is derived from reduction in the burden of malaria. Let us take the following two situations:

1. Bednets are used, cost $10 per net ... and say $100,000 was spent on nets ... and the burden of malaria goes down down 5%.
2. IRS is used and $100,000 is spent on IRS ... and the burden of malaria goes down 20%

At first glance it appears IRS would have a cost effectiveness 4 times better than bednets. But bednets last 3 years and IRS must be done annually ... so the comparative cost effectiveness is closer.

The comparison model can be very powerful ... but the data need to be specific, precise and timely. At the present time with very limited data about malaria interventions it appears that most of the available funds are wasted.

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Cost, Price and Value

Three key numbers: cost, price and value

Cost, price and value are very important numbers about any economic activity. Though modern society is founded on economic activity, there is a surprising lack of information about cost and value though there are massive datasets about prices. ... that is what a buyer pays for a product or services, and what prices stocks and other financial interests are trading at, what prices commodities are trading at, etc. There is by contrast almost no data about costs ... and even less organized data about value.

Corporate accountancy is only about money cost and money price. CA uses cost, price and value. Cost, price and value are the three key 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.

Cost and price

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.

Cost and value

Cost and value make it possible to calculate value adding ... something that is very important for society. For this to be of greatest use, the calculation of cost must include not only the money cost but also the value consumed associated with the activity.

What is this? 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 cost of this

There are other examples ... see ????

Price and value

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.

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Cost ... Actual and Standard

Actual costs

Keeping detailed records about actual costs is possible ... but it is rarely desirable. The purpose of cost accounting ... analytical accounting ... it to have an understanding of the behavior of costs, and the factors having an impact of cost. The detail associated with a full system of cost accounting often makes it possible to have data, but not much understanding.

Standards

The techniques of standard costing can be used in CA 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.

Useless ... or valuable

Standards my 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

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.

Cost efficiency

Cost efficiency is a measure that relates how much an activity did cost with how much much it should have cost? How much something should cost is determined by reference to experience, technical factors and prices. It is possible to calculate how much something should cost if the elements of the activity are understood. If experience in other situations is known, this may inform how much something should cost in another situation. What something should cost may be expressed as a standard cost.

Cost effectiveness

Cost effectiveness is a measure that relates how much impact or value was achieved with the use of resources ... it is a measure of productivity.

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Cost ... the Elements

Elements of cost

Keeping detailed records about actual costs is possible ... but it is rarely desirable. The purpose of cost accounting ... analytical accounting ... it to have an understanding of the behavior of costs, and the factors having an impact of cost. The detail associated with a full system of cost accounting often makes it possible to have data, but not much understanding.

People

People are an important cost ... they are also an available resource. The accounting of cost for people should be simple ... but it must be done with understanding. Some people get very little by way of remuneration. Others are paid a lot. The amount of the remuneration changes the cost of the work, and the potential for profit. But sometimes good people work for nothing ... and that changes the accounting of cost. CA does the people cost analysis using standards as well as actuals ... this enables an observer to understand what costs were relative to what they should have been.

Materials

Material cost is part quantity, part unit price and part quality and efficiency. CA takes all of these things into consideration in the analysis. Changes in unit price tell something about what is happening in the market for the materials. Quantity is a function of how much is done. Quality and efficiency are parameters that reflect reality. CA is interested not only in what the actual cost is, but how does this compare to what the cost should have been. Price, quality and logistics are all issues that affect the cost of materials.

Facilities and equipment

Equipment may be an important cost. The behavior of cost depends on the work being done and the type of equipment. The cost may be computed in a variety of ways including based on elapsed time or some sort of usage measurement. The capital cost of equipment should not be charged off in total at the time of acquisition but capitalized.

Depreciation

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, 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 had an piece of equipment may have a life that depends on how much it is used (for example, an aircraft) ... say it will be useful for 50,000 hours of use. In this case the hourly cost can be computed and the asset charged to the activity for each hour it is used, and offset against the depreciation provision for the asset.

Operating expenses

There are many costs that must be incurred to run a business that produces goods or services. They range from purchase of utility services like electricity, water and sewer to items like the maintenance supplies and services for the factory, offices and equipment.

Admin and General Overhead

Expenses and overhead may be substantial. They should be costed into activities based on the activity level. CA analysis helps to clarify what these costs actually are, and how this compares to what the costs should have been.

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Financial costs

Financial costs may be significant and therefore costed separately from expenses and overhead. CA analysis addresses all aspects of financial costs, including issues like the impact of exchange rate fluctuations.

Profit as a cost

The cost of profit may also be substantial. In the for profit world the earning of profit is the primary job ... and this becomes a cost of the product. CA captures this in its analysis and helps to explain profit behavior in complex communities and organizations.

Unaccounted for consumption of social value

Cost of external constraints and inefficiency

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Creativity

Not welcome in accountancy

Part of the genius of accountancy is that it is a system with no brains ... it serves as a very simple robot that merely knows how to put transaction information into the right location in a very simple analysis framework. In other words accountancy requires absolutely no creativity ... and in fact needs to be structured and to manage its affairs so that data are neutral and creativity totally absent.

Accounting creativity has no place in the logical framework of accountancy ... but such creativity has been given a place by allowing basic accounting principles to be subverted by laws, rules and regulations that are convenient but not principled.

Wrong ... any way you look at it!

Law, rules and regulations that allow important liabilities to be left off the balance sheet of a corporate entity are just plain wrong ... though law makers can make such reporting legal. Companies like General Motors were allowed to report in this manner for years ... but in the end real reality caught up with the legal fiction. Banks and financial organizations were allowed to report unrealized profits on their asset portfolio using a "mark to market" construct ... but it caught up with them when the real world market stumbled and the real value of their assets turned out to be a fraction of the reported balance sheet values. This reporting is wrong ... any way you look at it!

Rebuilding accounting integrity

The principles of accountancy have, over the past forty years been systematically diluted by lawmakers, regulators and rule making bodies at the behest of special interests so that modern financial reports have less reliability now for representing what is true and fair than in the past. This, more than any other single factor, explains the abysmal state of financial reporting in modern corporate organizations. The integrity of accounting ... and audit ... has not been served well by the profession.

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Criminal Behavior

Criminal behavior is an anti-social activity ans has a very negative impact on quality of life. Society may have decided that a behavior is anti-social and has given it a criminal status ... or may tolerate certain behavior and not make it criminal while it is still anti-social.

CA is more concerned about the metric of impact on society than the specific status in law. Activities that benefit society and improve quality of life are positive and add to the value of the community, while those that detract from quality of life detract from the community.

In CA standard values apply to the build up of the quantification of the impact of criminal behavior. Criminality that results in death has the same value quantification process applied as there is for death from disease. This includes the emotional component associated with loss of life. In the case of criminal death there are also measures associated with the performance of the police and security organizations.

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Currency Exchange Rates

Currency exchange rates have been an element in many national economic crises ... and the issue of wrong currency exchange rates is ongoing.

Few exchange rates are determined by market forces alone. There is a large policy component that is driven by forces outside the pure economic market. The economic analysis that results in policy is, however, far from being proven with any level of scientific reliability. Policy is largely driven by opinion and perception of benefit to key interest groups.

Exchange rates are rarely managed to benefit the population at large ... it is more usual to have exchange rates that benefit those that are in positions of power and influence.

Inappropriate Exchange Control Profits

The example of the Nigerian Naira in the early 1980s is instructive ... an grossly overvalued currency enabled those that had power and influence to profit mightily by doing their transactions at the official rate of exchange while every one had to business using a very different black market exchange rate together with all the issues associated with that.

An exchange rate reflects the underlying productivity of the economy ... anything else has to be supported by interventions that are external to the underlying economy. Imbalances of this sort are destabilizing over time and unsustainable.

Countries where the national currency also serves as an international currency usually have conflicting priorities ... does the exchange rate reflect the best for trade or the best for national economic performance ... usually two issues where the best is different.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION DDD

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Data

CA is data centric. Data are at the center of everything that is reported by the CA system.

Demise of Data

I thought this was a joke ... “My mind's made up ... don't confuse me with facts” ... but first in corporate management and then in politics and in society at large, this has is no joke but the normal reality.

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Data - About Community

Data about community

Data about a community starts to tell something or real importance ... and it becomes possible to see what are the factors that have resulted in the state of the community. If something in the data is surprising ... data at the community level helps to pin-point what caused this and why and how this came about.

It is much easier at the community level to walk around and get to know what is going on ... especially the important things that affect the place ... and to see things that may be important but being ignored in the collection of data.

Getting little pieces of information about the community makes it possible to start to do an accounting using the CA framework ... and with this it starts to be possible to have transparency and accountability.

Data about neighborhood or block

Some communities are too complex to be easy to understand ... in which case the neighborhood may be a better level for detailed data. Common sense applies.

In some cases it may be appropriate to get data at the block level. In high density urban settings, the block may still be quite a large population, and the economic activities quite complex.

State and Activities

CA aims to put into the record everything that is important about the community. These data are of two types: (1) data that informs about the state of the community ... its resources and its constraints; and, (2) data that informs about the activities and the productivity of the community. These data are also of two characteristics: (1) data that are easy to obtain and at little cost; and, (2) data that are much more difficult to obtain and requiring considerable effort and cost. Some of these data are fairly stable over time, some change rapidly over time ... some data apply to all the area, some data relate to a very specific place within the broader area.

Information about activities is usually more difficult, and especially to get all the data that are needed.

The data usually have more value when they are part of a time series ... what was the equivalent data for a past period ... and what is the situation now, and what will it be in the future.

CA uses averages to measure progress ... to measure change ... but not to understand the data. The key is to know what goes into making the average and to understand what can be done to eliminate what is bad and to enhance what is good. When this is done, the average changes ... but trying to change the average without understanding its components is a waste of resource and energy!

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Data - About Place

Spatial information ... maps ... are a critical part of the information needed for planning and the management of operations. In real estate the saying goes that the three most important features of a property are location, location and location!

Everything has a spatial characteristic, and from a cost effectiveness and performance perspective, spatial information is important and central to the way CA records data and does analysis.

Example: Spatial characteristics of IMM

Mosquito and malaria control have strong spatial characteristics that have a very large impact on performance. Accordingly spatial information and mapping are a very important part of cost effective high performance integrated malaria management and include:

1. Where are people that are host to the malaria parasite located: where do these people live, where do they work, where do they congregate together, where do they travel to,
2. Where are the sources of mosquitoes,
3. Where do the mosquitoes travel and other details of their behavior including when they travel and how they behave relative to homes, people and animals,
4. Where are infected mosquitoes located,
5. What mosquito and malaria control interventions have been done: when and where.

Satellite imagery makes it possible to accelerate learning about any location, limited, of course, to those locations where satellite imagery is available.

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Data - Data Access

Public access

The CA methodology is to have data and analysis as much as possible openly accessible. Data and analysis that might be useful for decision making are made openly accessible as rapidly as possible. The CA approach that makes data and analysis easily accessible contrasts with the widespread practice of treating data about public matters as a proprietary private property.

Data and analysis that might put people “at risk” are not openly accessible.

Multiple use

The multiple use of data is a key to making data cost effective and valuable. The basic data architecture used by CA maximizes use of data. This has the secondary effect of making the data more reliable, because data that are used are always more reliable than data that merely sit and do nothing!

Handling sensitive information ... cost accounting

Some information is quite sensitive, such as pay rates and benefit packages, and the like. Though they are sensitive, they are also important to understand since the cost of activities is very much a function of the cost of people.

Cost information ... cost accounting is often a missing link. There is a dire lack of good cost accounting. Even though computer based accounting systems are commonplace, they are rarely being used to develop data that may be the foundation for cost analysis and reporting, and in many cases may not be able to provide cost data that are useful.

Where cost data are collected, they are rarely accessible to the general public and are kept within an organization, and even then quite often not easily accessible. Cost information is treated as if it is very valuable ... which it is! However, cost information should be reasonably accessible.

There are two problems that have to be addressed: (1) how to collect cost information where there is access to the operations and the accounting; and, (2) how to get useful cost information where an organization controls the operations and does not provide access to the operations and the accounting.

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Data Acquisition

Cost effectiveness of data collection

Data collection always has a cost ... but does not always have a value. Good cost effectiveness of data collection requires as low a cost to do the work as possible and only collecting data that are going to be useful.

Data collection is optimized when the data are collected using techniques that are appropriate to the type of data. It is valuable to get good permanent data. By getting high quality in the permanent data, everything becomes very much easier and the information rapidly gains credibility. With high quality permanent data, transient data becomes easier to collect and can be related to data of substance.

Where the data are being collected for use in a relational analytical environment, the permanent data are all accessible to any transaction related to this permanent data. To use some practical examples:

1. All the information about a community is permanent, or at least permanent at a balance sheet date. All the activities in the community can be related to this community and analysis done about activities and results relative to this community.
2. Information about a specific location can be related whether it is the house and its construction, the people living in the house, the bednets being used in the house, the IRS that has been done, the malaria that they used to have, and the malaria that they now have.

Local people collecting local information

In order for data collection to be cost effective, local people have to be collecting local information, and they must be doing it using low cost techniques.

No one data collection approach is likely to be universally optimum. So much depends on the training and experience of the people in the community, and the practical issues of access to information technology and communications infrastructure.

A hybrid system involving both manual forms and electronic systems will usually be the way forward.

> Data that are used are almost always right ... data that are collected and never used are most often wrong and useless

Recording the data is also very basic. Write the key information down, preferably in ink and in a book, not a loose piece of paper.

Data collection workbooks

In addition to the interesting data that describes the transaction or activity and the cost also add in the key information needed for reference purposes later on. This includes things like:

1. Where?
2. When ... data and time?

These books have been used in accountancy for a very long time. They are referred to as “day books” or “journals” and are also referred to as “books of original entry”.

Data from these books can be copied to an electronic database from time to time and made part of a cost analysis framework. Some “research” will have to be done along the

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way to make sense of all the information, and to make it complete. Most of the data are known, the challenge is to get all the data together in a single framework so that the information is meaningful for analysis.

Data collection optimization

Data collection can be optimized ... but the techniques used for data collection rarely result in an optimized outcome.

Unless the basic question "Why are the data being collected?" is answered correctly ... the methodology used for data collection is likely to be wrong. In the CA framework the reason for data collection is simply that CA aims to generate useful management information ... and management information is defined as the least amount of information that will ensure that the best possible decisions will be made. In this CA framework, the data that are collected my well be a subset of data around a specific issue that has already been identified as important.

If the question is answered along the lines that the data are needed so that a research report can be prepared that is a requirement for an academic certification ... then the data will be collected using a very different methodology.

Collecting data about the fishing fleet

A group of experienced scientists were asked to collect data about the structure of the fishing fleet. They designed a survey and statistical method to make their inquiries and did a perfectly random set of interviews three times a week for six months. At the end of this time they had nearly nothing of value.

I was faced with the problem of time and money used and no useful data. I am an accountant that does not particularly like statistical data. Every fishing boat has a license. To get a license the fishing boat must be registered ... and to get registered a form has to be filled in, and is filed somewhere! I found the filing cabinets and now had details of every fishing boat ever registered ... date of registration, size, type of construction, date of construction, engine make and horsepower, fishing gear type, refrigeration equipment or not, etc., etc.. After a day of data entry typing there was a respectable database. After a few days of checking at the fishing port we were able to verify much of the data in the database ... and now had complete and good data about the fishing fleet.

This cost effective data collection was obtained by building on data that was already available ... but unused because it was in another department!

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Data Acquisition - Easy Data

First impressions

First impressions may also be the most important impressions.

What can be learned by walking around a community making observations and seeing things.

- What do you see when you visit Times Square in New York? What do you see when you visit Central Park in New York ... or walk along 5th Avenue?
- What do you see when you walk the streets of Long Island City ... across the East River from Manhattan?
- What do you see when you walk around Harlem at 125th Street. What do you see when you walk around Morningside Heights?
- What do you see when you walk around Upper Montclair in New Jersey ... or Verona?

Each of these locations looks very different ... and the underlying structure of these communities is different. They all reflect their history ... and decisions that were made that produced what is seen today.

What can be learned by a first walk through a rural African community ... beyond the fact that it is very different from suburban New Jersey or the farming communities of Iowa.

- There are questions about living conditions ... shelter ... the houses or huts that are the living quarters;
- There are questions about food ... where does it come from and how is it cooked;
- There are questions about water ... where does water come from? How is it stored? What is the water quality?
- There are questions about sanitation ...
- Roads ... paths ... access to the highway ...
- How far from the nearest city ...
- Where is there a health clinic? A hospital?
- What about transport? Is it all walking? Bicycles? Cars? Donkey carts?
- School? Church or Mosque?

What has this got to do with Community Analytics?

Community Analytics (CA) uses as much easy data as possible.

CA accepts all of these data points ... as crude as they are, and starts to build the database for the community. These crude data points may not be precise ... but they are usually very accurate ... and they tell a story and define a reality.

Quantification

Qualitative information is valuable ... but it is difficult to add up and manipulate. CA uses a system of grading to move the qualitative information into a quantified form. The CA approach uses two dimensions to quantify qualitative information (1) a grade A to Z about good or bad; and, (2) a numerical weight about level of importance in the community. A second step moves this alphanumeric grading to a simple number grading.

At this point there is a number 100 that is powerfully good and a number -100 that is powerfully bad.

In economic metrics it is normal for quantitative measures to be either indexes or money measures ... usually a local currency or a reference currency like the US dollar. In CA, there are both these approaches, but also an attempt to move beyond the money metric to

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one that is similar but actually a value metric. For the moment, money and value may be thought of as measured in US dollars, but in fact, the US dollar may change in its intrinsic valuation ... while value may not.

Profiling the community

Infosnips ... little snippets of of information about a community add up very quickly to tell a lot about a community. With knowledge it becomes very much easier to make better decisions ... but also this knowledge makes it possible to determine whether these decisions are having any impact or not.

Backward look measurement ... or forward looking

The CA methodology looks backwards and forward.

> If you don't know where you are, what makes you think that you can know where you are going?

CA documents where a community is ... and learns as much as possible about what caused the community to be in the present state ... and what might be possible.

But CA also facilitates documenting where the community can go ... what assets of the community can be mobilized and what potential the community has. Where there is potential ... what is the reason for this potential not being realized ... and what may be done to remove constraints on success.

Trends

Trends can show what works and what does not ... and the system of CA scorekeeping helps to show when good activities are having little impact. At the community level, it then becomes more or less obvious what it is that might be the key causal factor ... and then, maybe, what might be done about it. What is it that is making good activities ineffective ... and what should be done about it.

Linkages

Society is complex ... everything is linked together. But some links are more important than other links ... and this is often very obvious at the community level though less obvious in the aggregates that inform national level public policy. What may be done ... must be done ... at the community level so that the links work to benefit the progress of the community.

But what comes first ... is it jobs that come first ... or the reduction in crime ... or the lack of education ... or the lack of banking services ... or poor parenting ... or drugs and prostitution? The answer that may well emerge from a CA profile of the community is that all come first ... and that the best way for the community to progress is for the organizations in the community that are doing things to improve each and every one of these things should collaborate in fund raising for community action together rather than competing against each other and maybe succeeding as an organization, but failing as a community!

How CA builds value

CA builds value from easy data simply through the organization of the data in a way that facilitates scorekeeping of community progress ... and this scorekeeping is as simple as it can possibly be.

> In driving a car there are two metrics ... speed and direction. Most of the time it is direction that is more important than speed. Wrong direction and

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> you are off the road ... but the difference between 55 and 60 mph does not matter a lot most of the time.

CA helps get data that show the direction the community is going in ... is the community progressing ... are specific issues in the community getting better or worse?

What value is this for you?

At worse, CA data will show something of the performance of the community where you work ... but at best it will enable you to position yourselves so that the work you do ... the resources you use ... get the most value for the community ... and this is on the record in a systematic way. The CA data may be used to build collaboration and cooperation so that the work you do is facilitated by everyone else ... and the work and effort multiplies for benefit rather than canceling out with wasted competition or duplication.

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Data Acquisition - InfoSnips

Infosnips are the foundation of the CA data acquisition methodology ... little snippets of information that on their own do not say very much, but when organized tell a quite complete and accurate story.

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Data Efficiency

Having a lot of data is not the goal ... rather the goal is having data to help make better decisions, and to hold everyone accountable for decisions and for resources being well used.

Multiple use of data

The most cost effective data are data that are used in many different ways. There should ideally be one pool of data, and this one pool should be used in different ways for the specific analysis needed. Essentially the analysis is another view of the data.

In the IMM context local data is first used to help with local operational decisions, then is used within an operational management and oversight module that addresses cost effectiveness and performance issues, and finally is used for scientific research to help have a better understanding of the underlying science and more fundamental problems that might be emerging.

> **A lot of good data is better than a little perfect data**
> A key concept for success in the context of integrated malaria management is to have data that have meaning. The goal is not to have perfect data, but to have useful data that facilitates good decision making and helps in achieving a cost effective reduction in the burden of malaria.

Data and the academic community

The academic community has done some amazing scientific work where the scientists have seen fit to collaborate and share data ... but this is not the general rule. Much data are compiled in the academic arena and never used for anything of public value.

It is not clear why so much data are kept secret by the academic community ... but it is clear that some of these data would have been useful in the analysis of socio-economic progress.

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Data Flow – Architecture I

A functional planning and operational framework needs a dataflow system and management information. Without these, it is as dysfunctional as a human being without a nervous system.

The complex institution framework for malaria control is operating with very limited performance metrics. There are pieces, but not a complete framework. Most of the analysis data are derived from very small surveys and statistical manipulation, with very little of cost accounting, and even less of cost effectiveness analysis.

The following describes in simple terms how CA data about community is collected and used. Data are most cost effective when one set of data are capable of being used in many different ways ... in this case at both the local level and the academic or scientific level.

The key goal of data collection is to have data that are useful and help improve performance.

Local data collection ... local analysis ... local action is the cycle that improves performance most directly and most quickly.

Having the data also used at a “higher” level facilitates oversight and the sort of monitoring that can be used to identify the need for corrective action by the analysis of much larger sets of data. At a higher level there can be analysis that identifies “best practice” and issues that are impossible to identify with local analysis alone.

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Data Flow – Architecture II

The data flow has the following structure:

Event --> Observer --> Cell Phone/Mobile Device -->

SMS message --> Local computer/database/receiver --> Periodic upload to a national datacenter and periodic upload to a global datacenter

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Data Focus

CA is a system that is based on data ... just like good accountancy. It is the analysis of data that provides the information needed for decision making and to hold people accountable.

The ideas of CA are not complex ... in fact, part of the strength of CA is the simplicity of the data and the simplicity of the analysis.

What data are needed

CA is a system that has community ... a place ... as the core of data collection and analysis. All the data are linked to time and place. Every fact that is going to be important in decision making about the community is needed. Broadly this breaks down in the following sections:

1. Information about the area;
2. Information about issues to be addressed;
3. Information about interventions; and
4. Information about the results ... the impact on the issues being addressed.

The general theme about information needed for decision making is that it should make it possible to calculate cost efficiency and cost effectiveness. This translates into a need to collect data that will make it possible to produce reports showing these matters. CA is a modular system. Part of the system uses data that are all about the place. Some of the data are about the specific sector or program. There is both permanent information and information that changes very quickly. For those engaged in day to day operations, the data needs to be available quickly, while for some scientific analysis the data are needed in time series over a long period of time.

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Data Neutrality

In corporate accountancy, the reporting is done based on a system that captures data about ALL business transactions in the organization. The data are organized and the results are reported according to established rules. In theory ... and according to the foundation accountancy principles ... the reporting is simply an aggregation of data to reflect a true and fair view of the financial situation and the performance of the enterprise. Neutral data then produces reporting that is free of bias ... free of judgment.

The CA principle is that CA data are neutral and CA reporting is free of bias. It is the analysis that gives an indication of the conclusions ... and not a system that seeks data to support, or disprove a particular hypothesis.

Data must be independent and neutral in order for any of the analysis and conclusions to be credible. The value of CA is enhanced by having the data and analysis independent and neutral. In fact, independence in collecting and processing the data is essential for credibility.

A critical strength of accountancy is that it produces data that are neutral,. The use of these data may prove a point or support an opinion ... but the data 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 and conduct, both professional and internal to ensure that data are neutral and correct. New CA must do the same.

It is essential that data are credible. This may best be achieved by some level of independence in data collection, as well as independent checks. It is possible for those with an interest in the outcome to be a part of the process of data accumulation, but they must never be the sole source of data. The data may be contributed by anyone ... and data may be validated by anyone. The data may be used by anyone who is working to improve community progress. While anyone may contribute to the CA dataflows, there are internal checks to ensure that the data and analysis remain objective and independent.

In good accountancy data are neutral ... they merely are a reflection of something that has reality. Data may have economic characteristics, or represent any other piece of reality. Taken together, these data make a picture. But the data have 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. It may fool 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!

Scientists face the problem of measurement that changes what is being measured ... this and more apply in the area of socio-economic measurement. If people can they will manipulate the data so that they look good ... this is human nature ... but it makes a nonsense of the data and any subsequent analysis. Good corporate accountancy addresses this problem seriously with independent accounting teams and systems that cannot be manipulated by the operating staff. Good corporate accountancy goes further with systems of internal check to ensure the data remain untainted ... and on top of this there are both internal and external audit functions. CA facilitates multiple independent flows of data that enables a range of cross checks and validation.

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Data Reliability

Credible data

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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.

Scientists face the problem of measurement that changes what is being measured ... this and more apply in the area of socio-economic measurement. If people can they will manipulate the data so that they look good ... this is human nature ... but it makes a nonsense of the data and any subsequent analysis. Good corporate accountancy addresses this problem seriously with independent accounting teams and systems that cannot be manipulated by the operating staff. Good corporate accountancy goes further with systems of internal check to ensure the data remain untainted ... and on top of this there are both internal and external audit functions. CA facilitates multiple independent flows of data that enables a range of cross checks and validation.

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.

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Data Storage

The details of the storage architecture will change from time to time ... but the general theme is that data should be accessible easily for those who need the data to make good decisions.

Data in the hands of a data collection person	These data are needed so that the work of data collection can be as efficient as possible ... including some immediate feedback about changes that might be locally important.
Data at the community level	These data may be analyzed very quickly to provide the information needed at the local level to determine what are the issues and how they might best be addressed.
Data at the national oversight level	These data are a component of the data needed for good governance and oversight.
Data for national level research	These data are a part of a research process that has the potential to help with both learning and teaching in the country
Data for global research	These data are a part of a research process that has the potential to advance learning on a global basis. Modern computational technology such as available at the US National Center for Supercomputing Applications (NCSA) makes it possible to process very large datasets and learn from these data.

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Data Types

There are many types of data. Some relates to the format of the data, some to the characteristics of the data.

Text versus numbers

Text usually provides qualitative data ... useful, but not easy to manage, and prone to misuse. Text is widely used to tell stories ... and the stories are used to convey information, but this information is hard to put in context, and while interesting, is often not very valuable.

Numbers are boring ... but they may be more precise, and can be manipulated in various mathematical ways to get a better understanding of what is going on. Numbers are easier to validate. But at the same time statistical manipulation of numbers can make the good seem bad and vice versa.

Permanent data and transient data

Data may be characterized as either permanent data and transient data. Permanent data changes slowly, while transient data is changing all the time. For example the name of the town and its location are permanent data, while the current weather is changing all the time and is transient data. Transient data sometimes changes very rapidly ... for example data about economic transactions, while the results or impact changes more slowly.

In accountancy, the operating statement reflects the aggregation of transaction data, and the balance sheet an aggregation of items that change as a result of the transactions. This is reflected in the accounting constructs of balance sheet and operating statement, with the balance sheet representing the more permanent data and the operating statement the more transient data.

This is not, of course, very rigorous, since in a good accounting system both the balance sheet and the operating statement are the result of summing all the individual transactions.

In practical terms this translates into an ability to verify balance sheet reports more easily than one can verify transient operating statement transactions. This is a vital matter, because fraud and corruption can easily take place within the activities of an organization and the funding of these activities, but it can easily be detected if there is meaningful oversight of the results and the balance sheet that puts result on the record.

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Depreciation

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.

Depreciation in business accounting

In general, depreciation is use throughout business accounting. The starting point of economic life is common ... but there are substantial instances where tax law has intervened to change the economics of investment ... and many instances where depreciation accounting is driven by tax considerations more than by economic, accounting and technical realities. Depreciation is also accounted for incorrectly from the economic and technical perspective when the asset base is used for calculation of the maximum allowable pricing of products and services ... this eventually ruined the old AT&T (Ma Bell telephone company) ... and is doing something similar in the FORGOTTEN THE EXAMPLE FOR THE MOMENT!

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Derivatives of Cost, Price and Value

Profit ... derivative of money cost and money price

The simple definition of profit is based on money cost and money price. In financial accounting and reporting to corporate stakeholders, profit is the key measure that drives everything.

But profit is more complex in modern financial accounting. Money profit is no longer just the delta between price and profit but might be something else. The accounts may not simply record assets at their cost but on some other basis ... including "mark to market"! This is a wonderful device for taking into account unrealized profit ... simply by recording their value in the balance sheet at a price that the assets could be sold for based on the present market. Fifty years ago, a practice like this would have been banned absolutely based on the prevailing accounting principles ... but lobbying and legislation has overturned old principles and replaced them with laws and rules that are convenient ... in a rising market ... and very dangerous at any other time! Convenience is not a good principle of accounting.

Profit is at the center of the capitalist economic construct ... and is a useful metric as it relates money revenue with money costs, and serves as a useful and practical proxy for performance and productivity. But profit is is not a good proxy for socio-economic performance and the way quality of life in a community changes ... nor the sustainability of the community. In fact, thoughtless optimizing or maximizing of profit is a fairly certain way of creating an unsustainable future.

Value adding ... derivative of value and cost

If, rather than just money, the metric of performance is value adding ... that is the increment of value from an activity, then there is a very much better measure of progress and performance. Value ... that is value to society ... is almost totally excluded from modern financial and economic metrics. The reasons are many including (1) it has a subjective dimension that makes valuation difficult; and, (2) it has a devastating impact on the norms of financial valuation of corporate activity.

Cash flow ... derivative of money cost and money inflows

Cash flow is a metric that relates to sustainability in a world where money is the medium of exchange. Cash is used to pay bills. Money inflows may come from revenues which are a function of price, or they come from financing or some change in the balance sheet like sale of assets. Activities that result in a persistent cash deficit will fail in due course, simply because the money runs out. The timing of the demise of the activities may be delayed by borrowing ... but that also will fail in due course.

Sustainability

Activities that have value adding positive and cash flow being positive are sustainable ... and desirable. Activities that are cash flow positive and profitable are money sustainable but maybe not socio-economically sustainable ... and these activities have come to dominate rich developed economies in the post World War II period. By ignoring critical issues of value destruction society had the impression of wealth being created ... but much was mere puffery and the balloons were bound to break. But worse, society built the appearance of wealth while setting the stage for potentially catastrophic global disasters in the future.

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Dynamics of Society

Existing Models and Metrics are Inadequate

Over the past forty years the practice of econometrics has resulted in models that were meant to explain how the economy had behaved and predict how it would behave in the future. In fact, however, these macro models were quite limited in their capacity to understand what had happened and less able to do much useful about the future.

CA is a different model ... much more basic ... and much more grounded in data that can be used for decision making as well as for operations research. CA is about the economic dynamic of the community ... and how community is impacted by internal and external influences.

Economic models have become an important tool of modern economics ... but how good are they? The ones that are used to predict socio-economic progress for poor societies seem to be counter-productive ... and in reality most poor societies have progressed very slowly over a long period of time.

Nor is it clear how good economic models have been

It is not clear what economic models have used by the modern advanced private investment and banking community, but experience suggests that most users of models do not have a deep understanding of the assumptions used to create the models and their limitations.

It seems that most economic models are developed around the data for highly monetized economies ... but most of the poor world is only lightly monetized. Life is not driven by how much money but by how much of the necessities the family has ... some of which are obtained by money transactions, but much comes from self-production and petty trade that has a barter-like quality. The CA conclusion from economic modeling for poor communities is that productivity is the key issue that needs to be addressed, and experience suggests that when constraints on improving productivity are identified and removed, there can be amazing progress.

Crucial for effective policy formulation

Understanding the economic dynamics that drive what happens in society is important.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION EEE

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Standards

How much something should cost is determined by reference to experience, technical factors and prices. It is possible to calculate how much something should cost if the elements of the activity are understood. If experience in other situations is known, this may inform how much something should cost in another situation. What something should cost may be expressed as a standard cost.

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Education and Training

Important ... maybe more important than anything else

Education and training is very important ... that is the development of human brain-power. But human brain-power is routinely diverted from its potential into all sorts of blind alleys because the leaders of society and the establishment are usually more comfortable with the status quo than progress.

There are all sorts of reasons ... excuses ... that get used. Second rate education is tolerated because, it is argued, that society cannot afford good education. This is a "cop out" but very convenient.

The education establishment

How much education is relevant to the socio-economic world of today and tomorrow? Are educators more concerned with teaching people what to learn rather than teaching people how to learn. Like every establishment, the education establishment is as focused on retaining its position more than anything else ... and of course, in time this is very counterproductive.

Long term value of education

The long term value of education is huge ... but the typical metrics of society do not take it into consideration at all. The money profit reporting of the corporate world does not explicitly include the dynamic of education except, if at all, as a cost that detracts from profit performance. Spending money on education by society is a component of GDP ... so more spending is better ... but the spending on education by any entity of government is an element of the government budget that increases the problems of public finance and in this context less spending is better.

Typical socio-economic data does not explicitly put value on education ... while society quite broadly appreciates that education has important value.

Exploiting the value of education

The leadership

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Elements of Cost

Financial elements of cost

There are several elements that make up the cost of anything. It is convenient to use the following categories to analyze the financial dimension of costs:

1. People cost
2. Material cost
3. Facilities and equipment cost
4. Operating expenses
5. Admin and general overhead cost
6. Financial costs

Beyond financial elements of cost

In the CA logical framework there are also these elements of cost

7. Profit as a cost
8. Consumption of social value
9. Cost of external constraints

Drill down to elements of cost is important because the elements of cost all change in different ways ... have different behaviors ... and different impact on the community.

The purpose of data in the CA 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.

Material cost (2)

Material costs are a function of a bill of material and the purchase price of the materials. A scrap factor should be included. Most production processes require more raw material inputs than there is output because of process losses (in machining, in casting, etc.).

Facilities and equipment cost (3)

Equipment costs do not behave in a simple way, and care must be taken in costing equipment use appropriately. 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.

In some cases, as for example, in using an aircraft for vector control, there are people and material costs that have variability depending on equipment utilization. All fixed assets have use costs that should be brought into account for costing.

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Depreciation

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, 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 had an piece of equipment may have a life that depends on how much it is used (for example, an aircraft) ... say it will be useful for 50,000 hours of use. In this case the hourly cost can be computed and the asset charged to the activity for each hour it is used, and offset against the depreciation provision for the asset.

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.

Cost of capital employed (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.

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 o 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.

Cost of profit (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.

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Element of Cost 1 - People Costs

People costs	Collecting costs about people cost is also very useful. The basics are the same, though sometimes, indeed frequently, the pay rates are not common knowledge: 1. Who is working? 2. How long? 3. How much are they being paid? 4. Multiply and the cost amount is known. Some information is quite sensitive, such as pay rates and benefit packages, and the like. Though they are sensitive, they are also important to understand since the cost of activities is very much a function of the cost of people.
Consultants	Consultants are often employed instead of salaried staff. People costs should be adjusted to reflect this where needed.
Salary scales	In many situations the salary scales that apply to different groups of staff are very different. This makes cost analysis difficult ... but it also is an important issue that needs to be considered in planning, developing a strategy for sustainability and the analysis of performance. International pay scales are very much higher than local pay scales. This may be justified by the idea that international staff are better trained and have more experience ... but this justification may not always be valid. Labor costs are a critical component of cost. Expatriate staff costs may be 100 or 1,000 times the cost of local labor ... to some extent justified by the knowledge and experience of the expatriate, but the design of programs should include this important economic parameter. In the IMMC approach, there is a component of capacity building and training. This makes it possible for the organization to be optimized for cost effectiveness and local staff to be training so that they are not only low wage, but also productive and able to do the work that needs to be done. The Tr-Ac-Net metric for the labor component of cost includes a profile of labor cost by wage rate. There is a caveat about low wages ... the goal is not low costs, the goal is high cost effectiveness.
Benefits	In most situations the benefits accruing to staff are

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	significant and should therefore be taken into consideration when computing costs
Expatriate benefits	
Government staff benefits	
Outsourcing	
Staffing tables	

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Element of Cost 2 – Materials

Materials, supplies		Materials and supplies are frequently the key cost, and therefore important to understand and control.
Supply chain		The cost of materials depends very much on where the cost is measured in the logistics, supply or distribution chain. The cost "ex factory" may be very different from the cost delivered to an end user. Logistics ... ocean shipping, port dues, insurance, duties, warehousing, trucking, etc. are usually substantial costs even when done as efficiently as possible. Costs such as pilferage can also add substantially to the total cost.
Use of materials and supplies		Efficiency in the use of materials and supplies can made a big difference to the total cost of materials. This may be technical in nature as for example in the case of ULV spraying where droplet size can make a substantial difference in the amount of chemical used as well as how well the chemical works to kill mosquitoes.
Life of active materials		The life of active materials is another consideration. A long lasting insecticide treated bednet may have a life of several years ... so the annual cost is lower than the total cost outlay in the year of distribution and first use. The life of IRS treatment is several months ... maybe a year ... depending on the type of dwelling construction, the spray equipment and the chemical being used. Annual periodic cost is also impacted by the duration of the malaria season ... what might be OK for a short malaria season does not suffice for a longer season.
		In malaria control the active materials and supplies are both a big cost and a key to success. The behavior of cost and the way these active materials impact
Cost behavior		The analysis of cost should be based on units of measure that are the most relevant. Where the goal is the reduction of malaria, the unit of measure for cost analysis should be a good proxy for this goal, or a logical step towards this goal. In the case of ULV spraying, cost per acre is a useful metric because it relates to performance in an understandable technical way ... while cost per capita is an indicator of cost and possible cost effectiveness of impact on the population.
		CA uses indexes as a way to simplify the recording of change ... but mainly at the detail level. Progress requires change, and change can be reported using an index as a measure.

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		CA identifies key indicators of progress in a community, but does not generally combine these indicators to form an aggregate index with the exception of the CA progress indicator. This indicator is a measure of the change in profile of the community over a period of time.
		Costs vary depending on the circumstances. Good program design minimizes costs and maximized cost effectiveness. This is a central focus of the IMMC strategy. Cost effectiveness is most easily optimized when there is good information about costs, without this information planning is merely a guessing game. In the IMMC cost effectiveness model, the strategy has a focus on achieving low cost so that there can be permanent sustainability. Accordingly there is a need to understand how costs behave under varying conditions.
		The analysis of costs should be based on the units of measure that are the most relevant. Where the goal is the reduction in the burden of malaria. The unit of measure should be a good proxy for this goal, or a logical step towards that goal.
		In the case of ULV spraying, cost per acre treated is a useful metric because it relates to performance in a useful technical way ... while cost per capita is an indicator of cost and cost effectiveness impact on the population. .

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Element of Cost 3 - Facilities and Equipment Costs

Cost to purchase	The initial cost to purchase is usually a substantial outlay, but because the life of the equipment is long ... several years ... the period cost is relatively low. The cash cost is high and immediate ... the operating cost may, however, be quite low.
Depreciation	Depreciation is the way accountants allocate cost to the current period from equipment that has a long life. If the equipment will last five years, the annual depreciation is the total cost divided by five. This is referred to as straight line depreciation because the annual charge is the same over the five years of the equipment's life.
Provision for depreciation	The annual or periodic depreciation charge is credited to an account usually called a provision for depreciation ... and specifically associated with the equipment item. As the equipment gets older the provision for depreciation becomes larger. When the equipment reaches the end of its life ... that is accounting life ... the cost to purchase and the accumulated provision for depreciation are the same.
Net book value	The net book value is the cost of purchase less the provision for depreciation. At the end of the accounting life the net book value of an equipment item is zero. Usually this is adjusted to be $1 so that there continues to be a flag in the accounts about this equipment.
Fully depreciated equipment	Fully depreciated equipment does not require ongoing depreciation charges, and is to this extent lower cost than newer equipment not yet depreciation. On the other hand technical considerations may mean that maintenance is higher cost and there may also be operating qualities issues to be taken into account.
Operating costs	Most equipment has considerable operating costs ... operator costs (labor) ... fuel and lubricants ... maintenance ... operating supplies ... etc.
Machine hour costing	Sometimes it is convenient to calculate a machine hour rate for costing. This might be calculated incorporating all the operating costs, or may be simply the cost of the equipment depreciation for the period divided by the anticipated hours of use anticipated for the period.
Variability of cost	Because each cost has a different behavior, it is usually preferable to limit the costs that are aggregated for calculation. There is a trade-off between precision and

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convenience.

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Element of Cost 4 - General Operating Expenses

General expenses	Everything that is not already included in people costs, equipment, and material costs should flow through general expenses. There are many things that must be included.
Rent	The place where the activities goes on may be owned or it may the rented … in both cases there are costs.
Insurance	There are risks that have a cost … insurance is a way for the risk to be paid for in a planned manner.
Telecom	Communications has to be paid for and with more sophistication and capability there are more costs.
General repairs and maintenance	Everything needs to be repaired and maintained … and where repairs are deferred this should be reflected in a repair provision so that, while cash may be conserved, the profit reporting is not distorted incorrectly.
Security	Security relates to both the problem of assets being misappropriated from the inside, but also external threats against people and the organization.
Travel	There are expenses relating to travel for a variety of business purposes.
Etc	

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Element of Cost 5 – Admin and General Overhead

Operating overhead	In most organizations there are multiple levels in the organization. An operating overhead are the expenses that are incurred in running a unit that is not directly involved with the operations. These units may be responsible for several operating units. These expenses have to be "allocated" between the various units to get the true total cost of the operating unit. The elements of cost within this function of the organization are similar to other functions but with some additions
Staff related expenses	People costs are similar. In some organizations the method of remuneration may be different, and some of the senior staff my benefit from bonuses, stock options and similar instruments.
Space related expenses	Space costs are similar … except commercial office rather than industrial space as would be needed for a factory operation.
Risk	The management of risk applies everywhere, and should be done done at the highest level as well as operationally in every unit. Some sophisticated mechanisms for risk management are marketed … but in the end risk is a physical matter and it is this that has to be managed.
Human resource and capacity building	

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Element of Cost 6 - Financial Costs

Cost of money … no such things as a free lunch	Money has a cost ... though there are cases where money comes at no cost as, for example, as a gift or grant ... but usually free money comes with some strings or constraints. Though not easy to express in money terms, these constraints have costs to the organization.
The money costs of money	If money is borrowed, and there are fees and interest to be paid, these are costs that must be budgeted and accounted for … they can be substantial.
Repayment … not a charge against profit performance … but against cash flow.	When money must be paid back ... this is not a cost or a charge against profit, but it is a very important drain on the cash of the organization, and there must be planning for repayment.
Using money … deploying the asset cash … has a cost that should be taken into consideration.	A good way of costing the use of money is to compute how much of the organization's assets are deployed to do the work. Assume a cost of capital ... of say 12% per annum ... and think of this is as the cost of capital. It is a useful discipline. The best operations are those that do valuable work with the least possible use of resources.

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Element of Cost 7 - The Cost of Taxation

Taxation is a cost	Taxation is a cost … and it is also a responsibility. Corporate Social Responsibility (CSR) should not only be about creating a good impression to support marketing and make staff "feel good", but it should also be a about contributing a fair share to the legitimate costs of governance and the establishment and maintenance of an adequate public infrastructure.
What tax benefits where?	Tax management in the corporate sphere has trended towards simply paying the least taxes … a business model that has money profit and stock price advantages … but potentially catastrophic social consequences. To the extent that there is an expectation that the public sector has responsibilities, there must be funding for these to be paid for … and this implies some level of taxation from economic actors, especially big profitable organizations. In an efficient society there should be a relationship between the cost of taxation and the service benefits arising. An efficient society does not use taxation as a means to fund the redistribution of wealth … though an efficient society needs to fund efforts that make the pool of opportunity bigger for everyone in the community.

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Element of Cost 8 - Profit as a Cost

The acquisition price becomes my cost	When a good or service is purchased … the price (to the seller/supplier) is the cost to the buyer/user. This is not always made clear enough in financial and economic analysis with far-reaching consequences. Value chain analysis may be used in many different situations to show how the various elements of cost morph through the chain. When labor, material, equipment come together in cost of sales … the price determines revenue … and there is a result which is profit (or loss). The next step in the value chain and this profit together with labor and equipment becomes the material cost for the next stage in the chain.
Who benefits from profit	In the typical money profit organization the owners of the organization benefit from profit. To understand who benefits from profit there has to be knowledge about both the profit arising and the beneficial owner of the organization at each stage in the chain.
Importance of ownership	Where an organization is locally owned, the profit of an organization accrues to owners who are in the community … where an organization is owned by outsiders the benefit associated with profit moves outside the community and is a loss to the community.

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Element of Cost 9 - Consumption of Social Value

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Element of Cost 10 - External Constraints and Inefficiency

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End Note

What's the point?

The prevailing system of metrics ... financial, economic and social are seriously challenged. The numbers are part of a scheme that has proven profitable and unsustainable ... a system prone to bubble and bust ... and a system that has facilitated rapid generational decline in the economic strength of the United States without delivering great promise to those who deserve but do not have opportunity.

The primary reason for CA is to facilitate change. A core assumption is that what gets measured gets done. By deploying CA a lot more of what is important will be measured, and there will be greater accountability.

CA is part of what is needed so that there can be transparency and accountability. Few actually want transparency, but it is needed as a stepping stone to accountability. CA provides some of the metrics that make accountability possible even when the transparency is resisted.

Progress will be achieved when better decisions are made. Progress will continue when the metrics show that good decisions are achieving good outcomes.

CA is part of a paradigm shift. CA will disempower the cult of money profit and economic growth that has worked well to produce money wealth but without broad socio-economic progress. Instead CA will help to deliver on the promise of a better quality of life and progress that benefits everyone.

There are thousands of people ... probably millions ... who want to do things that have value. They are recognized by the few that see them ... but there is no system that recognizes them either at the individual level or at a higher level for their effort and their accomplishment. CA is a system that does this.

Individuals can make a huge difference ... but it will never be recognized until there are metrics that do the score keeping right.

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Engineering Thermodynamics

Economics and Accountancy

Technology is rarely talked about as the underlying driver of socio-economic progress ... but it can be argued that this is, in fact, the single most important factor ... that it is technology that is giving us opportunities that have never before been possible, and it is technology that provides the constraints to what progress is possible. In ancient times, the great civilizations were all associated with some development of understanding of technology ... the Egyptians, the Greeks, the Romans, the Vikings. In more recent times the agricultural revolution, the industrial revolution and now the knowledge revolution.

Modern engineering thermodynamics provides a good framework for thinking about social performance. There are engineering balances that are fundamental ... work and energy .. efficiency. These ideas translate very well into the performance of society. CA is grounded in some very old basic concepts of thermodynamics and accountancy and measurement.

CA also embraces 21st century technical possibilities. In simple ... perhaps simplistic ... terms, CA is like Facebook except that the central focus is a physical community rather than "me". With CA, the connections are not "my" friends and interests, but the people, organizations and issues that influence or impact the socio-economic performance of the community. CA is structured so that the data about a community is organized in useful ways, rather like the way corporate accounting information is organized into accounts and different datasets that make it easy to understand corporate performance. CA uses some of constructs that make corporate accountancy powerful ... but does not limit itself to just money transactions, but also embraces activities and initiatives that affect socio-economic well-being.

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Examples

What does CA tell me about Times Square?

The CA concepts tell us a lot.

> If I go to Times Square today I will see a busy tourist destination ... a huge number of people every day enjoying themselves, taking in the sights, buying souvenirs, taking photographs, visiting theaters, eating in restaurants, and so on. But a visit to Times Square does not, on its own tell me anything about its progress.
>
> I know about its progress because I went to Times Square in the 1970s when the area was a mecca for prostitution, sex shops, drugs and bums. The area was high crime, dirty and legitimate business closing up and moving to safer more desirable neighborhoods. What was once the "Great White Way" and the center for up-scale cinemas and theaters was almost out of business.
>
> And we know about Times Square in the 1940s when it was one of the most famous destinations in the world.

There was a decline ... between the 1940s and the 1970s ... and there was progress from the 1970s until now (2009). Does CA tell us anything about what caused the change from decline to progress.

What CA tells us is that the Times Square neighborhood went from great success to terrible failure and back to success not because of one single factor, but because of many factors ... and that the interaction of these factors was complex and not easily predictable.

CA tells us that complex factors do not result in linear change, but in change that proceeds at varying speed ... and sometimes at an uncontrollable speed and accelerating exponentially. Rather little change for years ... and then a tipping point, and a lot of change very quickly.

Many factors go into almost every change situation ... the decline was facilitated by the popularity of sex and drugs ... and a liberal legal environment that protected all sorts of behavior, even behavior that was offensive to many. When sex and drugs are economically profitable ... and permitted under the law, or difficult to stop using the law, then profitable business will grow. At the same time, older business that had been profitable became less so ... cinemas. Theater, etc ... and investment in these areas declined. Porn replaced first run classical films in the area ... profitable for the entrepreneurs but a disaster for the neighborhood. The police lost control ... and some in the police became involved in the prostitution and the drugs ... seemingly with impunity. The City of New York was in a financial crisis ... near bankruptcy ... the area was filthy and the sanitation department not cleaning up very well. Underneath ... the subway system was unreliable, filthy ... and sometimes described as the largest public urinal on the planet.

The rehabilitation and rebuilding of the Times Square neighborhood happened because there were many changes and initiatives ... not just one. In fact if any of the initiatives had been on its own without the support of the others ... there would have been failure. But many good things happened ... and the good things stayed in place for a long time.

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- Money ... some major commitments of money were made and some of the dilapidated properties were renovated ... Disney and Ford Foundation put their money on the line .. followed by others
- New York survived near bankruptcy ... and the City as a whole prospered.
- Tourism prospered worldwide ... but that would not have helped if Times Square was a third rate destination.
- Legal ... it became possible for Public Private Partnerships to be operated for the benefit of the neighborhood. This helped get funding in the right amount doing the right things in the neighborhood.
- Ethics / Public morality ... the unlimited in-your-face promotion and trade of sex and drugs became unacceptable in the area. Society did not want these things and law enforcement did their part.
- Prostitution, homelessness, hopelessness ... these were everywhere in the Times Square neighborhood in the 1970s ... but organizations like Covenant House and others helped to address some of the root causes ... helping enormously but not sufficient to solve some of the big causal problems. They still work doing valuable things ... but not in a desperate situation any more ... but the safety net is still important.
- Public transport ... the subway was upgraded for New York as a whole ... but the neighborhood got benefit from this. Tourists could get to Times Square without having to fear a dangerous subway
- Crime ... the New York police which was once regarded as bloated and corrupt was reformed and has become one of the best police forces in the world ... and crime is now very low by any standard.
- Hotels ... a huge investment has been made in world class hotels in the neighborhood
- Restaurants ... all sorts ... and everywhere
- Commercial ... surprisingly, the area is now not only a tourist destination but is now also home to many major international corporate offices ... especially in the finance and entertainment industries.

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Examples

How does CA work in an urban neighborhood

The easy data about a neighborhood may be obtained by walking around ... and the data may then be organized to tell the story. Easy data is all that most TV news programs ever use ... a story emerges from a few video clips.

Data acquisition .... easy data

East data are all the simple facts that someone familiar with the place takes for granted because they see them every day ... but truly define the nature of the place. Some of the easy data impressions that need to be compiled include:

- Roads ... what sort of roads? What is the condition of the roads? What traffic is on the roads?
- Buildings ... what sort of buildings? What is the condition of the buildings? Are they well maintained? Is there graffiti?
- People ... what sort of people are visible? Where do they work? Where do they live? How do they occupy themselves ... entertain themselves?
- How prosperous are the people?
- Are people busy ... or just hanging around?
- Infrastructure ... what is the water situation?
- Infrastructure ... what is the sewage / water treatment situation?
- Infrastructure ... what is the electricity situation?
- Infrastructure ... what is the telecom situation?
- Business ... what sort of business activities? Do the businesses look successful?
- Retail business ... what sort of retail business? Does retail business look successful?
- Manufacturing / worskhops ... what sort of manufacturing and workshop work is being done?
- Agriculture ... is there any? What sort of agriculture? Where does food come from?
- Banking and financial services? Is there access to adequate banking services? Is there any community based bank or alternative sources of banking services?
- Jobs ... what jobs are there and where? Are the people in the community working in the community or commuting somewhere else?
- Entertainment ... what sort of entertainment facilities are to be seen? What cinemas and theaters are there?
- Sports ... what sporting facilities are there?
- Restaurants ... what sort of restaurants?
- Hotels ... what sort of hotels?
- Crime ... is the community safe? How much crime? What types of crime?
- Police ... what is the reputation of the police?
- Courts ... are there any courts in the community or are they remote?
- Fire service ... how is the fire protection service organized.
- Governance ... what are the critical elements of governance in the community
- Education ... what schools are there? What about pre-school for young children? What about after-school for older children? What about primary school performance? What about secondary school performance?
- What about college?
- What about the level of education in the community
- Health ... what health infrastructure is there? What about clinics? What about hospitals? What about doctors and nurses?

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- What about the health status or the people in the community?
- Places of worship ... are there any churches, mosques or synagogues?

All of the easy data are associated with a time and place. The data are also associated with the source of the data ... usually the person collecting the data or perhaps data that have already been compiled by others. Data acquisition has two steps:

- Putting the data into a simple text format ... describing a single fact briefly using the character limits of an SMS text message
- Assessing (1) how good or bad this is; and (2) how important this is.

In a typical media story the easy data and video clips goes into a story ... and that is the end. In CA ... these data are the start.

The time dimension ... trends ... changes

The next stage is to get some appreciation how the facts that are easy and seem important now have changed over time. Some of this might be obtained by personal memory or by talking to people who remember the past.

- What do the buildings tell you ... sometimes the buildings tell stories that go back 100 years ... or tell about what has recently happened.
- Industrial buildings tell part of a story ... a story about jobs and economic activity.
- Residential buildings tell about the people ... how people lived.
- What do empty buildings boarded up tell you ... or new houses with new cars in the driveway ... or a new school being built?
- Infrastructure tells another part of the old story ... an old railroad, for example.

What happened? Why?

It becomes pretty obvious what happened when the easy data are organized fairly systematically. The data drive conclusions. What happened is usually easier than why things happened. However, the conclusions are usually pretty obvious ... but when they are not it is usually because multiple factors are at work. When there are multiple causal factors it is usual that there need to be multiple initiatives to achieve positive progress.

What future? How?

The value of CA is not the data themselves ... but the use of data to help improve the future. What could the community be like if all the right things were done?

Thinking about the future is complex ... it should be done as a continuum of thinking and dialog. Most people are scared of change ... even though change is needed and will, by almost any measure, result in a better situation ... good people will resist change.

Abrupt change is almost never successful ... rather change that has consensus and moves modestly in the right direction works.

Strategic direction is needed ... a long term vision ... which should be transparent ... but not rigid.

Identifying constraints is critical ... and getting constraints removed. This is not always easy because many constraints are outside the control of the community.

> When a large industrial factory closes ... the community has little or no control over the decision ... but the impact on the community is huge. The CA metrics help to quantify this ... and make the remote decision makers more accountable for the impact of their decisions than they are now.

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What value is all this?

Better decisions are possible with better data. Decision makers may be held accountable when there is good data that has credibility and is independently validated. In sports ... good teams win ... and everyone knows they have won because there is scorekeeping and the scorekeeping is reliable, clear and independent. A successful community with good quality of life has value that is so much more than a community that is failing ... good CA data helps to move a community towards success.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION FFF

	Facebook	
	Family	
	Feedback	
	Financial Reporting	
	Fixed Assets	
	Fundamentals	
	Future	

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Feedback

The value of metrics is most when the data are used with feedback to improve decision making.

> The only public sector organization that had very good performance feedback in my experience was the United Nations High Commission for Refugees (UNHCR). They were able to move from problem identification to effective action in hours, and keep its program relevant in very fast changing and often challenging dangerous conditions. No other organization in the Official Development Assistance (ODA) community had anything like the feedback capacity of UNHCR.

Basic control theory shows that when there is rapid measurement that feeds back to the operations, the system can be both stable and performing to its optimum. CA uses metrics in this manner. This is very different from ex-post-facto monitoring and evaluation (M&E) which is normally too little and too late to make much of a difference. M&E mainly what results were achieved ... good or bad ... but too late to do much to improve the outcome. The following experience is from 1973 shows, however, how powerful feedback can be when it is used in the right way and at the right time.

> **Production Reports at Southern States, Inc.**
>
> This story illustrates the vital importance of timely information. Most of my career I have been associated with corporate accounting, consulting, planning and the analysis of performance. I have not done many line management assignments ... but in this case some years back I was appointed VP Manufacturing for Southern States Inc, a manufacturing company making air-break switches for the electric utility industry during a reorganization to improve the company's results.
>
> The company had orders, but the factory was a bottleneck ... and we had neither the time more the money to invest in expanded manufacturing facilities. We had to do better with what we had. For years the factory production report had been written up and distributed every day around 10 am ... informing everyone of the production numbers for the day before ... a fairly standard practice! I changed this to give management a report at 8.30 am (the factory got started at 7.30 am) about the anticipated production for the day ... today, not yesterday! By 9 am the support staff were deployed fixing problems that would improve performance today! The factory always beat its anticipated production ... and the factory production almost doubled without any major capital investment to expand the capacity!

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COMMUNITY ANALYTICS
ALPHABETIC SECTION GGG

	Globalization	
	Grants	
	Gross National Cost	
	Gross Domestic Product	
	Gross National Product	

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Globalization

The subject of globalization has been a subject of discussion for many years ... but the dialog is rarely based on much study of data ... or much appreciation of history.

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Grants

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Gross Domestic Product (GDP)

GDP is a flawed metric

The way the GDP is compiled makes very little sense ... like most indexes the GDP is a measure, but what is being measured is far from clear.

Cost is NOT a Product

Much of the confusion in economic analysis and policy formulation would be avoided if there was a clear distinction about what is a product and what is a cost.

Gross domestic product (GNP)

Gross domestic product should be the output of the economy ... what the economy produces ... the product. Over time, more and more of the product is expressed as the cost of the product at the transaction level and over time the measure has become more and more inflated so as to become meaningless. Rather, it is much worse ... it has resulted in the wrong signals being sent about the prosperity of the nation!

Producers, consumers and prosumers

Henry Ford

Henry Ford is meant to have realized that a prosperous working class would eventually be the consumers of the automobiles that his company was manufacturing ... those that were producing were the same as those that were consuming. I associate Henry Ford's insight as being something of the origin of the idea of a prosumer.

Keynes was clear about the way economic activity behaved in a society ... but his understanding seems to be little understood by most modern economic analysts and policy makers.

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Gross National Product (GNP)

Clarity about product and cost

Much of the confusion in economic analysis and policy formulation would be avoided if there was a clear distinction about what is a product and what is a cost.

Gross national product (GNP)

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The Keynesian Dynamic

Keynes was clear about the dynamic of economic activity in a society ... but the Keysian clarity seems to be submerged in most modern economic analysts and policy dialog by ideas that are ideological more than anything else. Though there are powerful analytical tools available to process data ... most of the data are studied with a severe lack of transparency.

What belongs in the Gross Domestic Product?

The Gross Domestic Product is one of those macro-economic indicators that has leverage over the economy because of its role in moving the capital markets ... but has little to no use as a tool to understand socio-economic performance.

16% of US economy is healthcare!

The statement is made over and over again that healthcare makes up 16% of the US Gross Domestic Product (GDP). At the same time the observation is made that the proportion is the highest among the top developed countries and the health state of the US population is lowest of the group. Clearly one metric is insufficient to describe the economic characteristic of the health sector. In Community Analytics (CA) it is clear that quality of health is a valid product of the health sector, and the cost of this health care should appear in something that might be called the Gross National Cost. At the moment this does not exist as a national macro-economic indicator ... but it does feature as an element of the CA system.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION HHH

	Honesty in Reporting	
	How To Implement CA	
	Human Capital	

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Human Resources

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COMMUNITY ANALYTICS
ALPHABETIC SECTION III

	Images	
	Impact	
	Incentives	
	Inclusive	
	Incomplete Records	
	Independence	
	Inclusive	
	Incompetence	
	Infrastructure	
	Innovation	
	Insolvency	
	Integrity	
	Intellectual Property	
	Inter-Generational Analysis	
	Internet	

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Inclusive

CA includes all economic aspects in the CA framework ... a stark contrast to some corporate accounting that has taken the view that some economic transactions should be kept off the balance sheet. Anything and everything that has an impact on quality of life, standard of living, pursuit of happiness, etc. should be taken into consideration. The CA embrace of both value and money revenue is the core of CA's approach. Value is included rather than being merely a sidebar as it is in modern corporate accountancy.

But CA goes beyond just the money aspects of economic transactions, but includes also the creation of value ... the destruction of value ... and everything that has an impact on the quality of life, both now and into the future.

Many of these matters are not simple to quantify ... but that does not make them any less important. The whole purpose of CA is to have metrics that are meaningful ... and for this elements such as value have to be included.

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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 using what is known. While it is better to have a complete set of data, 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 CA can build a useful picture of community progress without having all the details.

In financial accounting, a meaningful report can be prepared from incomplete records because the balance sheet and the operating statement are related. This same idea is available in the CA logical framework so that performance can be measured reliably and usefully merely by the comparison of the community state from one period to the next, and some modest information about the activities that might be the cause. By using change in state to identify what changes are important, it is possible to focus attention on issues that should be addressed as a priority. By analysis of the state of the community it is possible to identify what issues are an absolute priority for the community.

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Integrity

Integrity is an important part of civil society ... and any society. Another related idea if trust. Without integrity and trust, it is difficult for a society to function ... and for an economy to flourish.

Rebuilding accounting integrity

The principles of accountancy have, over the past forty years been systematically diluted by lawmakers, regulators and rule making bodies at the behest of special interests so that modern financial reports have less reliability now for representing what is true and fair than in the past. This, more than any other single factor, explains the abysmal state of financial reporting in modern corporate organizations. The integrity of accounting ... and audit ... has not been served well by the profession.

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Intellectual Property

The recognition that data have value has been important in making it possible to collect data, process data, and manage with data ... but the downside of this has been that data and related analysis has been managed as intellectual property (IP) ... and this property then being exploited for its value to its owner rather than being used for public good.

The issue of the "public right to know" is not central to much debate ... and this has made it possible for public sector performance to be very low efficiency and nobody any the wiser. What a corporate organization tells the public is only a tiny amount of what the company knows ... and is carefully presented to send a message that is designed for the stakeholders, and not much related to the underlying data and knowledge.

The rule seems to be that only data that are required by law to be accessible to the pubic are going to be accessible ... everything else is going to be secret. More than anything else, this means that society will progress way more slowly than it would where data and analysis were being used to the optimum.

The argument that the value of IP produces an incentive to use data and innovate has some merit ... but so also does the argument that professionals and scientists are not only motivated by money, but also see value in discovery as a value beyond just its money value.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION JJJ

	Just in Time	
	Just	
	Justice	

J

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COMMUNITY ANALYTICS
ALPHABETIC SECTION KKK

	KISS	
	Know-How	
	Knowledge	

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Key Concepts - Money Oriented Accountancy

The point of accountancy

The point of accountancy is the use of data that costs as little as possible to create value that is the biggest possible. This is what has been central to accountancy for a very long time and has served the (limited) objectives of profit maximizing business and capital markets very well. CA has the same central idea, except that the goal is to create the maximum of social value. Accountancy collects and organizes data in a systemic way ... data that are neutral and representative of reality.

Accountancy ... a system

Corporate Accountancy is a system, and CA 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 core principles of accounting

The old fashioned principles of accounting are timeless ... though sidelined in much of modern accounting practice and accounting education. The reason is quite simple ... most of the leadership of our modern global society has favored a regime of minimal accountability that allows greed to flourish.

The central point to accounting is to get data about facts into a record that is reliable. How it is done is very much a secondary level set of issues. The data are neutral ... and they are about facts. Measuring facts may be difficult ... but accounting aims to have data about facts on the record. When you have data ... there can be analysis ... and reports ... and conclusions. And if there is organizational structure there can also be decisions and improved performance.

Double entry

Double entry is a powerful idea, now almost 500 years old ... and perhaps somewhat diminished in its importance with the use of computerized accountancy over the past 40 years. There are two sorts of accounts that together balance ... (A) Balance Sheet Accounts; and, (B) Income and Expenditure Accounts. Changes in the balance sheet accounts over a period are the same as the difference between income and expenditure over the same period. In corporate accounting the accounting is about the activities of the organization. In CA the accounting is for the activities of the Community and embraces everything.

This 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.

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Key Concepts - Community Analytics

The point of accountancy

The point of accountancy is the use of data that costs as little as possible to create value

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KISS

The KISS principle ... Keep It Short and Simple, or some variant of this is a very good principle. If the aim is to communicate, it must be done in a way that gets and holds someones attention, and this means short and simple ... and also interesting and relavant.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION LLL

	Land	
	Liabilities	
	Liquidity	
	Linkages	
	Local Focus	
	Logical Framework ... Account Codes	
	Logical Framework ... of Accountancy	
	Logical Framework ... of CA	
	Logical Framework ... for Development	
	Logical Framework ... Keynesian Economics	
	Logical Framework ... used by USAID	
	Losers	

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Land

MALI: Land grab fears linger

Photo: Phuong Tran/IRIN
Farmers in Segou

SEGOU, 2 December 2009 (IRIN) -

In Mali the government has approved long-term leases for outside investors to develop more than 160,000 hectares of land. Government officials say the country could not develop its cultivable land otherwise, but local farmers say they fear being pushed out.

Rice producer Siaka Daou from Niono, 300km north of the capital Bamako, told IRIN he is worried about becoming a day labourer for industrial agriculture giants.

"The way the government is parcelling out land from Office of Niger [region] is worrisome. This will stamp out small producers. We will no longer have land to cultivate and will be forced to work for industrial agriculture producers."

The region, 300km northeast of Bamako, contains some of the most fertile rain-fed land in Mali.

Former Finance Minister Abou Bakar Traoré, who in April 2009 signed an agreement to lease more than 11,000 hectares to the West African Economic and Monetary Union, told IRIN: "Land deals are not pushing any farmers off the land, but rather trying to improve the land for these producers."

Approved land deals

A joint Mali-Libyan group started construction on a 40-km irrigation canal at an estimated cost of $54.7 million. 100,000 hectares, rice production

US-funded Millennium Challenge account irrigation project estimated to affect 800 households is providing five hectares of irrigable land per household, of which two are free and three are paid over a 20-year period. 16,000 hectares, modern agriculture enterprise creation

West African Economic and Monetary Union. 11,288 hectares. Agricultural production to be undertaken by private farmers in Mali and other countries in union. Draft contract mentions food security in region.

Petrotech/ AgroMali. 10,000 hectares, biodiesel feedstock/jatropha

Source: IIED/FAO/IFAD, 2009

International research groups have called such deals land grabs by investors seeking produce for their own countries, but Mali's Agriculture Minister Agatham Ag Alassane told IRIN the country has no choice if it is to feed its own population.

"Our concern today is to modernize agriculture, especially rice cultivation. To do this, we need a lot of resources and a lot of land. We cannot give a tractor to a small producer who would use it on two or three hectares; that would be a waste." Boosting irrigable land will ensure there will be enough work for local producers and enough food for local populations, Agatham told IRIN.

Land development secretary Abou Sow told IRIN it will cost half a million dollars to clear enough land to meet local food needs. "We have one million [hectares] of potentially cultivable land, of which we have developed 70,000. The state cannot do it

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alone. The need for cultivable land increases every year, but development has not followed suit. These contracts allow Libyans, Chinese and others to come help us."

Productive use

Mali's land code protects local land rights, but only as far as the land is used for "productive use". But "productive use" is not clearly defined and this may "open the door to abuse and undermine the security of local land rights", according to a 2009 Food and Agriculture (FAO) report on land deals in Africa.

For the 162,850 hectares of land approved for allocation thus far – 0.6 percent of Mali's cultivable land, according to the FAO – the government will be paid US$292 million by investors from Libya, the West African Economic and Monetary Union and the US-funded Millennium Challenge Account.

Some land investors in Mali must build and maintain irrigation systems, pay a rental fee of up to $12 per hectare per year and an annual water fee. But what remains unclear in many land contracts is how much of the harvest remains in the country. "Most of the sample contracts are silent on the issue," said the FAO report.

During a July 2009 visit to a Libyan-funded irrigation project, Mali's National Association of Farmers issued a communiqué demanding more information about the contract signed between Libya and Mali.

"The contract signed remains invisible…there are no guarantees in the contract that the [local] population would benefit from it," the association said. "The renewable 50-year lease sparks fears of a Libyan land grab."

sd/pt/np

http://www.irinnews.org/Report.aspx?ReportId=87284

[This report does not necessarily reflect the views of the United Nations]

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Logical Framework ... of Accountancy

The double entry concept

CA has been developed from the corporate system of financial accountancy that has been used for a long time used in modern corporate organizations ... and in turn evolving from a system of accounting developed several hundred years to enable merchant adventurers to keep accounts and report to their investors. Double entry is a simple technique that requires both action and response to be recorded ... when money is paid out, it is expected that value comes in ... when some good is delivered, it is expected that money is paid in for the good.

Financial balance sheet

Corporate accountancy uses the balance sheet to describe the state of the organization. The balance sheet describes the financial state of the organization at a given point of time. The balance sheet provides a listing of assets, a listing of liabilities, and shows the difference between the two.

Changes in the balance sheet over time are a result of activities in the time period. The net change from one period to the next in the balance sheet is the same as the net of revenue and cost or profit in the activity report. The net change in the balance sheet from the beginning of the period to the end of the period is the same as the net result reported in the activity statement.

The assets and liabilities of a balance sheet are accounted for at their cost ... reflecting the double entry of cash used equals asset acquired ... and liability acquired will be satisfied by cash paid. The listing of assets and liabilities can be in summary or detailed.

Activity reporting

The activity report ... the profit and loss account ... describes the operations of the organization for a specified period of time and the relationship of revenue to cost and therefore profit. There are innumerable formats for activity reports ... and many different names. They may be prepared with a lot of detail or be very much summarized. To a great extent the public and external stakeholders get summary reports and internal managers and staff work with reports at the appropriate leve3l of detail.

The data contained in activity reports that is usually hidden from external view would serve very well to improve transparency ... but few corporate organizations embrace this.

Integration of balance sheet and activity reporting

This integration of balance sheet and activity statement comes about because of the double entry characteristic ... and provides a powerful way of understanding a lot about an organization without needing to know everything about an organization ... or community.

This concept underlies the ideas of balance sheet, operating statement and the relationship they have to each other ... specifically that the the net change in balance sheet value between two dates equals the income from the operating statement between these two dates. Corporate accountancy uses both balance sheet and an activity report to describe the organizations performance. The balance sheet describes the financial state of the organization at a given point of time and the activity report ... the profit and loss account ... describes the results of operations of the organization for a specified period of time.

The net change in the balance sheet from the beginning of the period to the end of the period is the same as the net result reported in the activity statement.

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Cash flow statement

A cash flow statement is similar to an activity statement but has a focus only on those transactions that have a cash impact. For example, some accounting costs, such as depreciation related items, do not have a cash element. In the logical framework, changes in the balance sheet, activity reporting and cash flow are all different views of the same comprehensive set of data.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION MMM

	Management Cycle	
	Management Information	
	Market Forces ... Macroeconomic Metrics	
	Market Prices	
	Market Volumes	
	Markets and Markets	
	Materiality	
	Measuring Performance	
	Media	
	Metadata	
	Micro-Up	
	Misinformation	
	Models	
	Models ... Econometric Modeling	
	Models ... Input Output Modeling	
	Models ... Integrated Community Development	
	Models ... Integrated Malaria Management	
	Models ... Integrated Health Management	
	Modularity	
	Monetization	
	Money Profit	
	Monopoly	
	Moore's Law	
	Multi-Variate Analysis	

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Macro-Economic Metrics

Key indicators

Macro-economic metrics did not identify the economic crisis of 2008 until the damage was done ... the models could only anticipate previous experience ... even while other models were being used to game the system.

At the macro level there are all sorts of metrics ... mostly derived from small surveys and aggregated statistically. They serve as useful proxies for more reliable metrics ... and serve quite well as long as changes are modest and there are no disruptive elements. When there is disruption and things change these measures are inadequate and probably wrong.

But there are more fundamental problems with macro-economic metrics. They do not provide the level of detail or granularity that is needed to make decisions at any level much below the level of the Federal Reserve ... and the models are worse than useless outside the specific economy where they were developed.

CA acknowledges that a range of macro-economic indicators exist and that these time series need not be changed, but a new set of indicators need to be developed and deployed.

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Management Cycle

The basic management cycle is very simple ... but often absent. CA has data at the center of the management process. Data are needed to develop management information which is central to the process ... to know what is being achieved, and how it can be improved.

"Management information is the least amount of information that enables a good decision to be made in a timely way."

This is a simple representation of the CA perspective of the management cycle.

The management cycle has three elements ... repeated over and over again: (1) Collect data, do analysis; (2) plan and organize; and (3) implement ... and measure and analyze. These are reflected in the following schematic. Everything has a data component.

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Markets and Markets

There are many that are totally committed to the idea that markets are the perfect invisible hand that makes economics work ... but experience suggests that while markets have a very important role in the functioning of the economy and society, they are only one part of the totality of the socio-economic infrastructure.

Markets are better than administered prices

My experience of pricing in Communist countries in the decades prior to 1990 would have convinced anyone that a system of administered prices ends up distorting the economy and making it totally unproductive. Markets do a far better job of allocating resources, and moving goods and services in response to demand.

But administered prices have been little better in the non-Communist world. President Nixon imposed several rounds of price controls in the aftermath of the 1973 oil shock ... and accomplished nothing but market distortion and disruption. At the time I was running a factory and buying large quantities of bronze under a long term purchase contract. When price controls were introduced in the USA, but not in the rest or the world, our supplier suddenly had no supplies for us. Not surprisingly the supplier chose to sell on the world market at the world market price rather than in the USA at a much lower administered price. To keep our foundry operating we had to purchase bronze in Europe at the prevailing world price ... and then fly the metal to the USA in time to keep production going. Instead of bronze prices going from 50 cents a pound to 35 cents a pound ... the administered price ... my cost moved from 50 cents to $1.35 a pound. So much for controlling inflation through administered prices!

But markets only work well when there is competition, and the competition is reasonably fair. The market does not work well as a resource allocation mechanism and as a vehicle for creating incentive for more supply when the supply chain is complex and there are market players on both sides of the same transaction. This has become very common, and the market mechanism often serves as a vehicle for extracting profit from the value chain

Monopolies, oligopolies and the concentration of power

Monopolies, oligopolies and the concentration of power have been a problem in all of history. There has been commentary on this since biblical times. Concentration of power is a reliable predictor of economic abuse. This was recognized in the 19th century and exploited to the maximum extent by those with powerful interests ... as it probably has been for all of history. The US lawmakers have tried to prevent the abuse of the concentration of economic power with Anti-Trust legislation ... and so also have other jurisdictions. It is difficult, because the rewards a great and there has been no lack of creativity.

Democracy is an attempt to stop government and politics from becoming a system for the concentration of power ... but it has not been totally successful, and ever since it has been possible to pass law, there have been powerful interests trying to influence legislation in their favor.

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Market Mechanism ... Price

The market mechanism is the classic determinant of price, and, it has to be said, the market is more often better at getting a sensible price than bureaucrats in secluded government offices. But the market is not always right, and can be very wrong when there is an excessive amount of "gaming" in the market. The market works because there is some speculation ... but the market fails when the market is dominated by speculation.

Many prices are set, not by the market, nor by government fiat, but by thoughtful analysis in corporate offices. They are set with, in most cases, the goal of making the most profit from the product or service. The models to optimize profit are complex, but usually flawed. Good judgment and luck are important as well. Experience and knowledge of the product and the customer are vital.

None of these methods of determining price explicitly take into consideration the role of value. Corporate investment in profitable products and services trumps any investment in value producing products and services ... and at the limit, society fails.

There are massive datasets about prices. ... that is what a buyer pays for a product or services, and what prices stocks and other financial interests are trading at, what prices commodities are trading at, etc. Price is what is being paid for the item ... price is the money received when an item is sold. For a buyer, the price is a cost ... something of a conundrum that confuses analysis! Price may be value ... but usually is not. The price is merely what an item is traded at ... and may or may not have anything to do with value. Many factors influence price ... and where price is determined by market forces, there are many factor that influence the behavior of prices in a market. 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.

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Materiality

The idea of materiality is very important in the CA context. Materiality is the very simple concept of putting focus on things that are important.

The KISS principle

Keep it short and simple ... KISS ... is a useful idea to keep in mind. The best data are data that can be easily collected, easily understood, easily checked, reliable ... and useful. CA is committed to the idea that CA data must have this characteristic ... but that the data should also be useful for more complex analysis as well as having a local community use.

In good accountancy, the data have utility and value in part because of the way data are organized. They help make it possible to focus on what is important. Good accountancy includes analysis about what is going to make a difference, without burying in costly inconsequential detail. CA does this for things that are important for the community ... with the purpose of having these data is to get something done that improves the status of the community. Modern society is drowned in information that tells us a lot about unimportant matters ... while there is very little reliable information about matters that are very important.

Many analysts do not realize how much time and effort they spend on matters that will have no impact on performance. And if the analyst does not understand what is material ... what hope is there that they will understand anything.

Materiality is the concept that helps focus effort and analysis on issues that matter. The accountancy version of “Don't sweat the small things!” There are many examples including reports that include cents in multi-million dollar tables, a sure sign that the analyst does not understand materiality.

By having a focus on material items, reporting can avoid getting overloaded with detail that matter little. Using materiality in reporting does not mean lesser matters are ignored ... everything is in the purview of the data acquisition ... and monitored. Materiality is based on a full range of data ... it is not a supposition unsupported by data.

Materiality is a very simple concept. Put focus on things that are important. By having a focus on material items, reporting can avoid getting overloaded with detail that matter little. Using materiality in reporting does not mean lesser matters are ignored ... everything is in the purview of the data acquisition ... and monitored. Materiality is based on a full range of data ... it is not a supposition unsupported by data.

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Measuring Performance

Metrics ... what gets measured gets done

Metrics are very important ... because what gets measured gets done. This is more powerful than the measures themselves might suggest, in part because of the deep complexity of people both individually and as a group.

> **"What gets measured gets done"**

What does measurement tell you?

Maybe the first thing that measurement tells you is that the goals are not really what they should be. What is measured may be what the entity is trying to do ... so when activities are measured and not impact, it is an indication that activities have priority over results. This is a common problem and rarely addressed. It is a problem that the CA system addresses at its core.

CA has its origins in technical engineering measurement, economic measurement and corporate accountancy.

A key feature is simple but powerful organization of data so that they are useful without creating unmanageable data overload.

Data must be objective and independent in order to be believable

How to measure

It usually is very easy to know what to measure if two things are known: (1) what are the goals or objectives; and (2) what is the technology or science that is or may be used. Measure what is important ... measure what makes sense. How to measure cost is easy. Price is easy as well. Value is more difficult ... and all the more reason for having it central to the analysis system, and being able to prepare reports that look at results from different perspectives.

Progress ... relative to what?

The progress of science and technology has been spectacular over the last century ... but too much of this has been used in ways that have done damage rather than good. Military engineering has adopted new great science faster than civilian engineering ... with predictable results. The application of science has followed financial profit and rarely social value.

> **Social progress ... peace and prosperity**
>
> Science and technology ... knowledge about these things has improved exponentially over the past 50 years along a trajectory driven by, inter alia, Moore's Law. But for much of middle class society times are tougher. Why? Performance of leadership ... of public policy and its practice ... has been poor.

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Modularity

CA starts with the assumption that there are already a lot of ongoing economic activities. There is a need to start keeping score in a meaningful way as soon as possible. One way to do this is to keep track of just some part of the economic activity in the community ... preferably some part that is important. Things that are not changing fast may be taken into consideration later.

Caveat

To use the sporting analogy ... the game is already going on. How do you make some useful contribution as a scorekeeper when the game has already started? One way is to find out what has already happened and start off with the score as others are reporting it ... and then to keep score on a continuing basis from that point on. This seems reasonable.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION NNN

	National Accounts	
	National Aggregates	
	Natural Resources	
	Needs	
	Neutral Data	
	Ning	

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National Accounts

National Accounts

The UN System of National Accounts developed in the 1950s expanded the national system of financial statistics to include balance sheet indicators. This was an important improvement of the expanded trade statistics that were previously used ... but the data available for most developing countries is still very limited and also very late. While the data are weak, the willingness of the international institutions to substitute estimates for actuals is problematic at best, and might have contributed directly to some development failure.

Some of the key concepts that are included in the UN System of National Accounts are also embraced by CA. The balance sheet is a key concept in CA ... but at the community level becomes very understandable and a very simple way of measuring progress. Balance sheet analysis used at the community level provides tangible metrics about progress and specific lessons may be learned. CA is to the community what the system of national accounts can be to a nation.

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Needs

Needs, Wants and Market Demand ... Poverty

Needs

Human beings in rich countries have little appreciation of the difference between basic needs and the many "wants" of a rich society. Those that live at the $1 a day level know how important it is to have water to drink, some food to eat, some clothes to keep warm and some shelter from the elements. This population knows something about family and children secure the future. Somehow, this population understands the importance of education and the need for healthcare. Above all this population is incredibly entrepreneurial and are survivors against all odds.

The definition of basic needs changes as the wealth of the society increases ... but it is worth remembering that there are many layers of need. Below the lowest of the basic needs ... the outcome is death.

What people want!

Human beings are conditioned to want things that are essential to survival ... it is part of the human biology. But beyond the basics for survival wants take on a very different set of characteristics.

Market demand

Poverty

It is confusing to hear the one liner that "people living under $1 a day" are the ultra poor, and ordinary poverty is merely "living with under $2 a day of income". But worse, the very idea that so much of the world's population, maybe 2 billion people or about one third of the world's population, live at this level of poverty is disgusting. Until these levels of poverty are eliminated, the world should consider the national and international processes of relief and development an abject failure.

Poverty is not caused by the laziness of poor people as much as it is caused by a systemic failure of the economic apparatus. People work hard ... but they get little reward, and there is little progress. A paradigm shift is needed that allows a productive economic system to work and makes it possible for poor people to be included.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION OOO

	Objectives	
	Oligopoly	
	Ordering Priorities	
	Organization	
	Organizations	
	Organized Data	
	Overview ... When CA?	
	Overview ... Why CA?	
	Overview ... Where CA?	
	Overview ... Who For?	
	Overview ... Who By?	
	Overview ... How?	
	Ownership	

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Objective Data

Objective

Managers, people in charge, rarely want to have objective independent measurement ... do not want transparency ... and do not want the associated accountability. Poor metrics allow managers to avoid accountability ... resources are consumed but good results are not achieved.

Development aid

Over 60 years there has been more than $1 trillion disbursed for development. This should have produced great progress ... but what has actually been achieved? Far, far less! Yet monitoring and evaluations mostly show that projects have achieved budgeted objectives. Please ... what is going on? All the performance metrics have been deeply flawed for years.

Objective ... independent

Data may objective without being independent ... but the system has got to be designed and structured so that this is so.

Self reporting is a cost effective way of getting data ... but self reporting is notoriously self serving. However, a good system can mitigate the negative aspects of self reporting and make the data useful.

One way to do this is to have some level of independent data flow that will provide a benchmark against which self reporting can be checked. There can be internal check within a self-reporting system so that collusion is required in order for wrong data to be processed. There are other ways.

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Organized Data

Organizing data ... the idea of accounts

Accounts are a way of getting a lot of transactions ... that is debits and credits ... organized so that they can easily be understood. All of the cash transactions are recorded in one account ... the cash account. All of the goods received and goods delivered are recorded in one account ... the stock or inventory account. So with other similar transactions ... similar transactions all together in one account. CA goes beyond the corporate system of accounting so that there is a similar rigor for recording social value as the corporate system has around recording revenue and profit. 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.

Account codes

Account codes are important in accountancy ... they make organizing a lot of data much easier and especially, account codes facilitate easy rapid analysis. The logic of account codes makes it possible for there to be “roll up” and “drill down” that are easy and make sense. The structure of the account codes in themselves tell a story about the organization! 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.

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. CA provides a framework so that small amounts of data can be used to build up a complete 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.

Vouchers ... Journals ... Books of original entry

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 the 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. The data about society in the modern world may not use these paper based elements ... but the data has to start somewhere. Essentially, all these various elements do is to put on paper ... on the record ... a piece of data about a fact. This does not change as the system becomes electronic!

Relational database

A relational database is part of the key to modern data organization. The normalization of the data makes it possible for a lot of data to be well organized with a minimum of effort. The modern relational database makes it possible for almost unlimited information to be analyzed and summarized in all sorts of ways. The rigidity of accounting and also CA makes it possible for much of the analysis and the aggregation of data to to be done very simply and very quickly and easily.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION PPP

	Past	
	Past, Present and Future	
	People	
	Performance Measurement	
	Perspective	
	Present	
	Price	
	Productivity	
	Profile	
	Profit	
	Progress of the Community	
	Projections	

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Performance Metrics - Elements of Performance

CA measures progress ... measures performance ... they are related but not the same. The following graphic shows in a simplified way how cost is related to implementation and to results. The goal is for the community value at the end of the period to be more than at the beginning of the period. Resources are consumed to fund implementation activities that produce an impact and value creation.

Costs: How much did it cost?

Knowing how much something costs is pretty basic. 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. Understanding cost and cost behavior is central to the CA system of metrics.

How much got done?

Knowing how much got done is also 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.

Cost efficiency ... how much should it have cost?

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?

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 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.

How much impact? ... How much value?

Cost effectiveness ... how much value for the cost?

Cost effectiveness is the more complex idea of relating cost to the value of the accomplishment. The idea is simple in theory, but becomes more difficult as the problems being addressed are more complex. CA uses techniques to get an overall idea of cost effectiveness, and then goes into more detail to assess the way different initiatives contribute to progress. This may require multi-variate analysis of the datasets where there are multiple interventions being used.

The core of CA metrics is the goal of having fund allocations flowing into intervention activities that are the most cost effective and deliver the most of social value. The Tr-Ac-Net/IMMC cooperation using the CA framework for performance metrics provides the basis for this to become the norm.

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Performance Metrics - Efficiency

How much did it cost?

This ought to be easy to answer ... straight from any good well designed and functioning accounting system. Knowing how much implementation activities cost is a critical first step in knowing anything about performance. In some cases the amount of money mobilized and used may be a proxy for how much money was used for ... the cost of ... implementation activities.

How much was done?

This ought to be an easy statistic to obtain ... very easy in any well managed operation!

Unit cost ... and standard cost?

The unit cost compared to the standard cost gives a measure of efficiency. How much was done compared to what should have been done? How much did an activity cost compared to what it should have cost?

Efficiency

Efficiency is the relationship between what something did cost with what it should have cost. There are many ways in which this can be calculated, for example taking into consideration the local enabling environment, or discounting this and making a comparison without taking this into consideration.

How does performance compare to other places?

Comparison between places shows where performance is on a par with other places, or not.

If the measure is about the same item but in different places, then it is possible to start to draw conclusions about what is happening in different places.

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Performance Metrics - Effectiveness

How much impact?

Did the activities have any impact on the quality of life ... did the state of the community changer ... did anyone receive any benefit? How much impact? What value did this impact have?

A first step is to know how much progress was made in moving towards a goal that benefits society ... for example, how much mortality was reduced.

A second step is to give the reduction in mortality a value. CA does this by assigning a standard value to everything that socio-economic activities are trying to do. The standard value has a unique value in each community reflecting somewhat how different cultures value different things ... and there are also global standards for reference and comparison.

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Performance Metrics - Poverty Reduction

The fact of poverty

Poverty

It is clear that the people in the community are poor ... but the balance sheet of the community shows that the community is the home to vast natural resources. Why is there a disconnect between the people poverty and the natural resource wealth? What is it that makes this possible? What are the systemic issues that are keeping the poor people poor?

Analysis shows that there are many issues that go into explaining the persistent poverty. There are rules of law that make it possible for property rights to trump human rights. There are ownership rights that have priority and allow absentee owners to get rich while local people stay poor.

Why poverty is endemic

Why poverty should be in a museum

Eliminating poverty

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Performance Metrics - Project Activity

Project activity measurement is widely practiced ... and is central to most monitoring and evaluation exercises ... but this measure is not very valuable.

The team is in motion

Commentators for an American football game often use the phrase ... the team is in motion ... to describe what is happening. Project activity measurement has some of the same characteristics ... something is happening, but the question about usefulness is not addressed. The football team needs yards and touchdowns. The project needs to be delivering the socio-economic impact that was intended.

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Performance Metrics - Simplifying the Metrics

Progress is all about making change ... so what changes have been achieved from the beginning of the period (BOP) to the end of the period (EOP) . The measure of this can be quite simple ... or quite complex ... but the key is for the metrics to be clear

It is impossible to do management by walking around at the national level ... and even the sophisticated survey techniques and statistics that have been popularized in academia and research institutes provide rather little management information. It is, perhaps, possible to understand something about the "state" of the national economy, but rather little about how and why the economy is in this state.

Progress is measured by how these many different things are getting better. Less crime, less disease, less pollution is better. More sport, more telecenters, more clinics is better. The elements are not limited to the set shown ... any item that is important can be measured in this way.

The community centric perspective produces a very different and much more understandable view of how activities are done, how resources are allocated and what decisions are best. Community is where there can be accountability. The community is, after all, the most important locus of life, so quality of life impact can be monitored and measured. The CA construct for measuring progress ... the changes in the socio-economic state of the community from the beginning of the period to the end ... applies to every aspect of the community along the following lines.

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Performance Metrics - Trends

Is performance improving?

Comparative data ... trends over time ... identifies if performance is improving or not.

One datapoint is unlikely to be very useful ... but two datapoints have much more value. If the measure of the same item but the time is different, there is the beginning of a time series and change over time is now known.

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Price

Price is what a buyer pays for some good or service. It is what the customer pays at the supermarket or drug store.

Understanding price ought to be simple ... but is not. The price is usually framed in a way that makes comparison between different products as difficult as possible. This is no accident ... it is designed to confuse the customer and mis-inform as much as possible. Making comparison difficult is a standard practice in marketing.

There are also prices all the way along the value or distribution chain from factory gate to final retail sale. This chain sometimes involves changes in ownership, in which case there are prices that are reflected on invoices ... but the distribution chain may be under single ownership in which case there is no inter-organization price, merely a transfer price as the items moves along the distribution chain.

Price is also associated with the problem of affordability. People who need something may be poor and not have enough money to pay the price that the supplier can demand. This is a key issue in public policy for health, education and a number of other essential services needed by a progressing society such as water and sanitation.

Price

Price is what is being paid for the item ... price is the money received when an item is sold. For a buyer, the price is a cost ... something of a conundrum that confuses analysis!

And price may be value ... but usually is not. The price is merely what an item is traded at ... and may or may not have anything to do with value. Many factors influence price ... and where price is determined by market forces, there are many factor that influence the behavior of prices in a market.

Prices in the financial markets

Stock Price

Bond price

Commodity Price

More than just supply and demand

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Productivity

Productivity is a very important measure, especially productivity computed in respect of social values rather than productivity relative only to financial profit. A society that is not productive is unlikely to be sustainable ... and what might appear to be sustainable is not when there is a draw down of the assets of the society.

An economy is as productive as its people and its infrastructure ... with infrastructure being used in the broadest sense of the word. For many years, the US had a better infrastructure than most everywhere else, but this advantage has been allowed to diminish over time. There was a time when almost all examples of great infrastructure were the best and biggest in the USA, but that time is long gone. For the past several decades ... since the 1970s ... the US advantage in productivity because of its infrastructure has been in decline ... and with it the standard of living. The following are two examples:

Productivity Example: US Steel in the 1950s

There was a time when US made steel was the best quality and the lowest cost. The US used the best machinery and the workers pushed the equipment to the limit ... way better than the Europeans at the time. The US steel workers were paid a lot more than the workers in Europe, but the high productivity in the US kept the cost of the steel low.

The productivity of US steel was a function of productivity and cost from end to end of the value chain. Iron ore was mined productively. The transport was highly efficient and low cost ... the steel mills typically located where ore ships could unload directly into the plant. Energy was low cost. Everything end to end was productive.

What happened?

Productivity Example: Interstate Highway Congestion

When the Interstate Highway System there was a huge improvement in distribution productivity. Trucks were able to travel faster and with less wear and tear on the vehicles. Over time, experience showed that much bigger trucks were practical, and productivity went up even more.

But all this ground to a halt when the highways became overcrowded. With too many vehicles, the transit times increased, safety dropped, and productivity increases reversed. As overcrowding increased, costs soared. The cost of congestion is not a widely reported metric of productivity and economic performance, but if it was, congestion costs would be seen to be a terrible drag on the productivity of the United States.

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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
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. CA explicitly addresses this matter both at the individual community level and across complex value chains.

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.

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.

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.

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.

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.

Elements of cost
Materials, labor and equipment are the main elements of cost that go into most production activities ... and determine costs.

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Fixed and Variable Costs

But these items also determine the behavior of costs and how costs can be improved.

Scientific progress

The progress of science and technology has been spectacular over the last century ... but too much of this has been used in ways that have done damage rather than good. Military engineering has adopted new great science faster than civilian engineering ... with predictable results. The application of science has followed financial profit and rarely social value.

> **Social progress ... peace and prosperity**
>
> Science and technology ... knowledge about these things has improved exponentially over the past 50 years along a trajectory driven by, inter alia, Moore's Law. But for much of middle class society times are tougher. Why? Performance of leadership ... of public policy and its practice ... has been poor.

The understanding of performance has helped the corporate world improve their productivity performance way beyond what was expected ... and the productivity improvement translated into more profit and more stockholder value. The metrics were all that the corporate stakeholders needed ... but the metrics were inadequate for society at large. What is the social advantage arising from a job in one country versus a job in another country ... who to whom does this advantage accrue. The data are not particularly sophisticated, but the understanding of what the data are showing maybe very important, complex, and multi-faceted.

Matching revenues and costs

A basic principle of accounting is that revenues for a period are matched against the costs of generating those revenues in the period. This concept has important ramifications because many current community activities have immediate costs and future value. This issue is aggravated when the current costs are money costs and the future value is social value, with no direct way to be monetized.

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Profit

Profit ... derivative of money cost and money price

The simple definition of profit is based on money cost and money price. In financial accounting and reporting to corporate stakeholders, profit is the key measure that drives everything.

But profit is more complex in modern financial accounting. Money profit is no longer just the delta between price and profit but might be something else. The accounts may not simply record assets at their cost but on some other basis ... including "mark to market"! This is a wonderful device for taking into account unrealized profit ... simply by recording their value in the balance sheet at a price that the assets could be sold for based on the present market. Fifty years ago, a practice like this would have been banned absolutely based on the prevailing accounting principles ... but lobbying and legislation has overturned old principles and replaced them with laws and rules that are convenient ... in a rising market ... and very dangerous at any other time! Convenience is not a good principle of accounting.

Profit is at the center of the capitalist economic construct ... and is a useful metric as it relates money revenue with money costs, and serves as a useful and practical proxy for performance and productivity. But profit is is not a good proxy for socio-economic performance and the way quality of life in a community changes ... nor the sustainability of the community. In fact, thoughtless optimizing or maximizing of profit is a fairly certain way of creating an unsustainable future.

Modern society is largely driven by material economic activity, but there is a surprising lack of understanding of the behavior of economic activity and the impact on society. Money profit ... that is the derivative of money cost and money price ... is the biggest single metric for the performance of the economy. Social impact is totally ignored ... value is not in the dialog.

Profit ... financial profit

Financial reporting is calculated using prices ... that is revenues ... and costs to calculate and report profit. There are rules about how this is done in practice ... but the key principle that should determine the detail of the rule is that the revenue of the period should be matched with the costs associated with this revenue.

Caveat

One of the (many) ways in which modern American accounting has gone off track has been to have rules that allowed revenues to be taken into the accounts without the long term costs of these revenues. An example is the pension and health benefits of auto-workers who built vehicles that were sold years ago, but without these benefits being treated as a cost and provided for. The law and the rules of FASB and GAAP allowed this practice ... but the principles of good accountancy do not.

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Profiteering

The idea of making profit has a good justification ... but the idea of making maximum profit, and doing this at the expense of the disadvantaged or because of some form of break-down of the market mechanism ... cannot be justified.

The idea of more and more is a sad outcome of a material society ... and profiteering arises when the opportunity to make more and more profit emerges because of some disruption in the fair behavior of the market.

War profiteering is a well known example of profiteering. In a war situation, there are usually shortages in many items because resources have been diverted to the war effort. Some people have control of items for which there is a demand, but not much supply. A market equilibrium is not possible because of the supply constraint ... so prices can be anything that people can pay. In a war economy, prices are usually controlled so stop price gouging and profiteering ... and punishment for infringement usually severe.

The idea of “alpha” in the stock market is almost a vindication of profiteering ... with alpha being the earning of more profit than would be considered normal.

Concentration of economic power makes alpha easier ... makes profiteering easier. Anything that makes the market less efficient favors those with economic power and works in most cases to diminish the competitive position of those with the least power ... those in the most poverty.

CA recognizes that cost and price determine profit ... and that without any other metrics, a free society will maximize the profit metric. However, if there is also a value adding metric, then there can be a balance between the maximization of profit and the maximization of value adding.

The use of both profit and value adding as metrics of performance has the potential to make profiteering less attractive ... especially in circumstances where the profit process is associated with value destruction in the broader society.

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Progress of the Community

Change in State ... Measure of Progress

In corporate accounting the profit for the period is also the change in the period of the net assets ... that is the assets less liabilities ... of the balance sheet , adjusted of course, for changes in the capital of the enterprise. This is a key concept that facilitates rapid and powerful analysis.

CA has modified this concept to use for value ... for community value. The productivity of daily activities changes community value between the beginning and the end of the period. In a stable community the ordinary activities produce no change ... life goes on ... value at the beginning of the period is the same as at the end of the period.

Ordinary activities produce no change

When productivity is good ... there is progress, and the value at the end of the period is more than at the beginning of the period. This is a surplus producing community. On the other hand, when the production of the community is insufficient to sustain the consumption of the community, the is value consumption and the value at the end of the period is lower than at the beginning of the period. This is unsutainable.

GOOD ... progress	OOPS ... problem

Data about the daily activities is not needed in order to measure progress ... whether there is progress or there is a problem. All that is needed is data about the community value at the beginning of the period and the end of the period.

Data about activities can help to show what it is that has made the community successful or not. A community may be surplus producing one year when the weather is favorable and in deficit in a year when the rains fail. Prices may change so that the terms of trade for the community deteriorate and leave the community in deficit ... or they might change in the community's favor. Detailed data about specific activities can show what is important and what is not.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION QQQ

	Quality	
	Quality of Life	
	Quantification	

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Quality of Life

Quality of life

Quality if life ... the pursuit of happiness ... is enshrined in the US Constitution. While the highest priority of mankind is to survive, after that, happiness is a critical driver of what is done. Money, as a proxy for happiness, has not done very well ... but it is money, more than happiness that is the main metric in modern accountancy and economics. CA incorporates quality of life and happiness into its framework of performance metrics.

Bhutan

It is noteworthy that the small country of Bhutan has chosen to move beyond using GNP as its measure of economic performance to a National Happiness Index. Imagine how things would change if China, India, Brazil and the G8 all were to embrace happiness as the primary goal of national economic policy!

It has been said that modern capitalist market economics is simply about more and more and more ... and there is an element of truth in this. If this is applied as the core economics of the planet, it is a formula for disaster. Quality is as important as quantity. Value that produces happiness is more important than mere growth and money profit. Productivity and efficiency ... and an adequate sufficiency for everyone's reasonable needs. None of this is out of reach ... but the metrics must help. Playing the game with the wrong scorekeeping system will not get the job done.

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Quantification

Quality of life

In the history of measurement there has been a lot of dialog about the problem of accuracy ... especially in science and engineering. The intellectual effort has been substantial and progress has been made that is very impressive.

But in the history of measurement as it relates to economics and finance there has been little dialog and a number of crucial issues have still to be addressed ... let alone resolved.

Money is widely used as a measure in financial and economic analysis and reporting ... but money is variable and not firmly anchored to anything! At best money ... its price ... is determined by supply and demand, and these in turn are driven by underlying economic performance and global sentiment about one money relative to other moneys.

CA has chosen to use metrics that are based directly on the underlying economic performance of the community, including the community's potential. At this stage quantification is based on the following:

- Very good is “a”
- Very bad is “z”
- Something in the middles is “m” or “n”

Nuances many be achieved using any letter of the alphabet ... varying shades of good from “a” to “m” ... varying shades of bad from “z” to “n”.

The scale of good or the scale of bad is reflected using a numerical modifier ... thus a very strong good would be “a9” and a very strong bad would be “z9”

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COMMUNITY ANALYTICS
ALPHABETIC SECTION RRR

	Relational Data	
	Remuneration Analysis	
	Reporting	
	Reporting Entity	
	Reporting: Facilitating Change ... Feedback	
	Reporting: Financial Reporting	
	Reporting: Holding People Accountable	
	Reporting: Reporting Entity	
	Responsibility	
	Return on Investment	
	Return on Capital Employed	
	Return on Resources Consumed	
	Right and Wrong	
	Rights	
	Roll-Up	
	Rule of Law	

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Reporting

There are many reasons for reporting. Among these the following are the most important: (1) to facilitate change or improvement; and (2) to hold people accountable.

Some characteristics

The key characteristics of CA reporting are as follows:

- A report should be “a click away” ... web accessible ... mobile accessible
- Less is more
- The core reporting entity is the community
- Data sources are confidential ... but the report has high reliability
- There is clarity ... even in complexity
- Reporting of cost routinely includes value consumption
- Value adding more equal of more weight ... or emphasis ... than profit.
- Quantifying value is important ... but even without quantifying value should be identified.
- Value is the key metric ... even though there may be multiple views of how important any specific value has.
- CA reporting highlights surplus production
- CA reporting highlights productivity

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Reporting - Facilitating Change ... Feedback

Analytical and reporting efficiency

There are many ways to measure and report performance ... no one way is the "right" way ... but some are better than others. The key concepts of reporting in accountancy are very efficient. The principles of accounting make corporate financial reports informative without being extremely long and full of disorganized detail.

> **Powerful ... not voluminous**
>
> Corporate financial reporting is very efficient ... making it possible for a huge organization like, for example, General Electric, to report in a very few pages the activities and results of perhaps 300,000 people. This is done using a Balance Sheet, a Profit and Loss Account and a Statement of Cash Flow.

Management information

The purpose of management information is to improve decision making.

> **"Management information is the least amount of information that enables a good decision to be made reliably and in a timely way."**

Accounting provides data that are a good starting point for management information. Relating operational key data with accounting information makes it possible to address issues that are important and will make a difference.

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Reporting - Financial Reporting

Financial balance sheet

Corporate accountancy uses the balance sheet to describe the state of the organization. The balance sheet describes the financial state of the organization at a given point of time. The balance sheet provides a listing of assets, a listing of liabilities, and shows the difference between the two. Changes in the balance sheet over time are a result of activities in the time period. The net change from one period to the next in the balance sheet is the same as the net of revenue and cost or profit in the activity report. The net change in the balance sheet from the beginning of the period to the end of the period is the same as the net result reported in the activity statement. The assets and liabilities of a balance sheet are accounted for at their cost ... reflecting the double entry of cash used equals asset acquired ... and liability acquired will be satisfied by cash paid. The listing of assets and liabilities can be in summary or detailed.

Activity reporting ... profit and loss / income and expenditure / etc.

The activity report ... the profit and loss account ... describes the operations of the organization for a specified period of time and the relationship of revenue to cost and therefore profit. There are innumerable formats for activity reports ... and many different names. They may be prepared with a lot of detail or be very much summarized. To a great extent the public and external stakeholders get summary reports and internal managers and staff work with reports at the appropriate level of detail. The data contained in activity reports that are usually hidden from external view would serve very well to improve transparency ... but few corporate organizations embrace this.

Integration of balance sheet and activity reporting

This integration of balance sheet and activity statement comes about because of the double entry feature of accountancy ... and provides a powerful way of understanding a lot about an organization without needing to know everything about the organization. The net change in balance sheet value between two dates is the same as the income from the operating statement between these two dates. The net change in the balance sheet from the beginning of the period to the end of the period is the same as the net result reported in the activity statement.

Cash flow statement

A cash flow statement is similar to an activity statement but has a focus only on those transactions that have a cash impact. 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 P&L 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:

- Depreciation has an impact on profit reporting, but not on cash.
- 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

Good accountancy reports based on sound accounting principles are usually clear, but there are times when more explanation is needed. Notes are an integral part of a set of accounts. In recent times, these notes have become very complex, and it is not at all easy to understand the impact of the explanations have on the results being reported.

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Reporting - Holding People Accountable

Holding people accountable is a key incentive to right behavior in society and among decision makers. It is human nature to make decisions that are most in favor of oneself and ones family and friends ... but that is not usually what is best for society, and the organization.

There is a lot of talk of transparency ... but there is less of putting transparency into action. Reporting is part of transparency.

But reporting is more than just a pro-forma ... reporting is a part of a process that helps people to understand.

Why the escalators don't work

The subway station at 63rd and Lexington on the F line is relatively new ... but the escalators are frequently broken down. Why? They are Otis escalators ... normally a high quality escalator manufacturer ... but in this installation they are not working well. The reason for this is some gross incompetence somewhere ... in the purchase and contracting for the equipment ... in the installation of the equipment ... in the ongoing maintenance and operation of the equipment.

Data about these decisions ... about the operations ... are hidden from view, so there will be no accountability for the responsible parties. But one thing we do know ... somewhere in this set up there is something very wrong.

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Reporting - Honesty ... and Misinformation

Reporting Clarity

A good report is one that is clear, complete and unambiguous.

> Financial reports are able to report a lot about corporate performance in very few numbers ... a few pages to report performance of an organization with more than 100,000 staff is impressive. In order for this to be reliable, there have to be sensible rules and the strict application of good principles of financial reporting.

Though there have been serious problems with financial reporting in recent years ... notably Enron, financial sector institutions, and a number of corrupt enterprises, the basic principles of accountancy applied to financial reporting are very powerful.

There are many ways in which reports are prepared in ways that misinform. Often the best way to misinform ... or half inform ... is to report using graphs.

Progress ... but at what cost?

The data presented in the following examples are unclear and only tell part of the story. They are constructed in a way that provides misinformation. The data must be organized so that this type of analysis is easy.

Example 1	Experience from the Marathon Oil, Bioko Island
	In this example, the graphic clearly shows change over three years. The left three year series shows the prevalence of malaria infected mosquitoes down by 95%. The right hand series shows the prevalence of malaria parasites in children down 44%. But there is no indication of how much this cost. There is no indication about the population involved, and the size of the program in terms of area. The graphic does show progress ... but at what cost?

Distorted graphics

Thee following is an example of distorted graphics. It should be noted that this appeared in a report that was prepared by a well known consulting firm ... McKi9nsey and Company ... and distributed at a very high profile international forum ... the World Economic Forum ... by a group that was skilled in PR but maybe not as good on responsible reporting ... Malaria No More.

The good new is that they achieved in great measure what they set out to do ... Malaria No More helped to mobilize a lot of money for malaria control activities and in this regard their work was magnificent. But they also set the stage for the money raised to be

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used very badly and for the results to be puny compared to what might otherwise have been possible

Example 2	Experience in Zanzibar 2000-2006
	In this example morbidity has declined by 77% according to the report and the graph, and this is a good outcome. But is it the whole story. This relates to measures at the clinic ... less malarial incidence results in less attendance at the clinic ... but what about those that do not have access to clinics. Mortality is down by 75% according to reports ... but this is mortality among the young children subset. The question about cost is not addressed. Is this the most cost effective way to reduce the malaria impact. Maybe it is, but the information is not presented. The main interventions were bednets and free delivery of ACT medication.

Cause and effect

The cause and effect at very important pieces of information. It is difficult sometimes to "prove" causality, but good management and decision making makes it very important to have data that facilitate good judgment and supports not only the making of a decision, but validating the quality of the decision as quickly and as reliably as possible.

Example 3	Experience in Eritrea 2000-2006
	The morbidity was reduced based on the number of visits to clinics by 63%. The mortality was reduced by 85%. A small survey of 2,300 households suggests that bednet distribution has reached 67% of the population in Eritrea. This example is a simplification that shows progress, but does not explain why or at what cost. At the national level there is progress but regionally within Eritrea there were areas that progressed well and areas that did not improve very much. Why was this? Was it because they were already malaria free, or was it because the interventions were ineffective ... important questions that should be guiding policy and program. There is no cost

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information included that shows cost effectiveness.

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Reporting - Reporting Entity

Most financial reporting is done from the perspective of an organization, with the reporting oriented to its stakeholders. Most economic reporting is done in an aggregated manner, often at a national level. Community Analytics (CA) does socio-economic reporting with the community ... society ... as the reporting entity.

Community as the reporting entity!

The community is where people live their lives ... it is the most important locus for the measurement of quality of life, in all its aspects. The analysis of society is impossibly complex at higher levels ... but at the level of the community, the issues are tangible, and everything may be put into context and prioritized in the most meaningful way.

Organizations

In the prevailing systems of reporting, most reporting is done by organizations ... private sector, public sector, for profit, not for profit, etc. In the CA system these entities are a part of the community just as a cost center or profit center or subsidiary company are parts of the corporate reporting system.

Community ... a place

Community is a place ... and a place always exists ... though the socio-economic activity and quality of life associated with the place can change. CA reporting shows how the place improves or deteriorates based on what activities happen in the place.

Community ... an affinity group

A community may also be an affinity group ... a school group, a church group, a business group. CA reporting may be used for these groups, but these are components of a community that is a place. They may overlap ... and they certainly can contribute, but they are not a primary reporting entity for CA.

Multi-community communities

A reporting entity may be better as a multi-community community than taking many little communities as independent reporting units. The fundamental concepts do not change ... but the effectiveness of the system is improved.

Neighborhoods

In a bigger community, the neighborhood may be the optimum reporting entity. In big urban areas, it is the neighborhood where socio-economic activities take place and where progress may be observed.

Blocks

In high population densities areas there might also need to be reporting block by block. There is a big difference in the outcome between a barrel of good apples, and a barrel of apples with just one bad apple in it. CA reporting at the block level differentiates between good and bad apples.

Roll-up ... aggregation

CA reporting may be aggregated in just the same way that corporate accounting can be aggregated using the process of consolidating accounts. The CA system of aggregation is based on the place and not the affinity group or the organization.

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Return

The idea of return is very common in the field of for profit investment ... but less so in the area of philanthropy and in public sector initiatives. The concept is simple ... an amount of money paid out now produces a flow of money back in the future ... a return.

In practice there are many ways to do the calculation. The different ways of doing the calculation reflect different priorities.

Return on Investment

Return on investment (ROI) is probably the most common and is used to measure results from the perspective of an investor. ROI is not a good measure of performance from most other perspectives, especially where financial leverage is being used to improve reported ROI. When profits are positive, financial leverage improves the ROI, but the same leverage with losses becomes catastrophic.

Return on Capital Employed

Return on capital employed (ROC) is a better measure of performance than investment. It measures how much revenue and profit are generated relative to the amount of capital being used, that is, the equipment and machinery, etc. (fixed assets) and the inventory, receivables, etc. (working capital). ROC eliminates the financing costs and leverage and provides a measure that is most closely related to real, that is technical, productivity.

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Risk

Risk is a core feature of life ... and also business and economics. Any decision ... any action has risk of some sort. Risk is ubiquitous ... and needs to be understood and managed.

High risk ... high reward

It is common to associate high risk with high reward ... but a more important challenge is to get high reward ... high performance, without an excessive amount of risk.

Managing risk

There are two ways to manage risk. One way is to reduce the risks by using best practice and actually reducing the risk that exists. Another way is to share risk in some way so that the damage associated with an event are shared. The latter is the basic principle associated with insurance.

> I was responsible for risk management for an international fishing company. The company operated around 80 fishing trawlers around the world.
>
> We managed the fishing vessels in a way that reduced the likelihood of loss ... good staff, good equipment and good training.
>
> We took the risk that in the event of a loss of one vessel, we would bear the cost. We self insured to the extent of one vessel loss in the course of a year. In the event of a multiple vessel loss we carried reinsurance so that such a loss could be shared through the underwriting.

Systemic risk

The banking crisis of 2008 came about because of systemic risk ... the system failed. Risks had been managed in ways that critically damaged the system ... perverse incentives ... gaming the system ... and so forth. There is risk in everything ... but the way the financial sector organized itself to make profit from services on top of an economy with no substance was remarkable. The banking sector became, in its essence ... a casino ... and no surprise that it eventually imploded.

CA is a methodology that identifies systemic risk more reliably than the existing economic tools. When there are economic transactions and reported profits, but no added value emerging from the transactions ... then there is the makings of problem. In economics ... as in thermodynamics ... perpetual motion is impossible. When profits and reported and there is no value adding ... at some point the process collapses.

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Roll Up

Roll up

Community is a place ... and all communities should "add up" to a larger place, that my be a district, or a state, or a country. In this perspective of community there is no spatial overlap. Within a community there may also be neighborhoods ... and within neighborhoods also blocks.

Community may also be based on a group interest ... an affinity group. This may overlap the community defined by geographic area. A note of caution ... the "roll-up" or aggregation of affinity groups is complex and should be done carefully and rarely used as a national or global aggregate.

Drill down

The antithesis of roll-up is drill down. With drill down it becomes possible to understand the components that make up any situation ... drill down gives the subsidiary data that aggregates to the summary. (See Drill Down for more)

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COMMUNITY ANALYTICS
ALPHABETIC SECTION SSS

	Scorekeeping ... Who Wins?	
	Scorekeeping ... Stats.	
	Scorekeeping ... Early Childhood	
	Sector Analysis	
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	Silicon System Technology ... SST	
	Simplification	
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	Sustainability ...	
	Sustainability ...	
	Sustainability ...	
	Sustainability ...	

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Scorekeeping ... Who Wins?

The system of measuring financial performance and economic performance cannot have the easy clarity of keeping score in sport ... but it can be a whole lot better.

Who wins?

In almost any sport there is a scorekeeper ... and it is very clear who is the winner. In soccer, the number of goals scored, in rugby and American football, the number of points scored, in baseball and cricket, the number of runs scored, in tennis a system of points, games and sets! ... and so on.

But the system of measuring financial and economic performance does not work in this way. There is a fundamental disconnect between what the key measures should be and what they actually are. In the most simplistic way, it can be said that the financial and social measures are all about money ... and not much else. Economists may recognize externalities ... but they ignore them in their mainstream measures.

The CA approach, on the other hand, makes value the measure ... which might be a money metric or something else. Performance is better when there is more value being created for a given amount of resource use ... and resource use includes the idea of consumption or destruction of value as well as simply the use of money related resources.

Numbers are a very efficient shorthand. Almost all scoring systems use numbers.

Examples of scoring systems

- Golf: The number of strokes used for the round. Lowest number wins.
- Cricket: Number of runs. Largest number of runs wins.
- Tennis: Numbers of winning points wins a game. Most games won wins a set. Most sets won wins a match. Most matches won wins a tournament.
- Baseball: Number of runs. Largest number of runs wins. The system of runs is quite complicated, but simplifies to number of runs to determine the winner.
- Soccer: Number of goals scored.
- American football: Number of points scored ... with points assigned for different winning actions: touchdowns, conversions, field goals, etc.

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Scorekeeping ... Stats.

Understanding performance ... who played well?

It is not enough just to know the performance ... but also the how and why of this performance.

> **Who played well?**
>
> In sports, the fans want to know more than just the score! They want to know how the game was played, and who were the players that gave the winning team the victory. The coach wants to know the details ... so that the game can be played better next time!

The understanding of performance has helped the corporate world improve their productivity performance way beyond what was expected ... and the productivity improvement translated into more profit and more stockholder value. The metrics were all that the corporate stakeholders needed ... but the metrics were inadequate for society at large. What is the social advantage arising from a job in one country versus a job in another country ... who to whom does this advantage accrue. The data are not particularly sophisticated, but the understanding of what the data are showing maybe very important, complex, and multi-faceted.

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Sector Analysis

Through the ages

While CA has a focus on the community and its progress, there are a series of modules that address issues that are specific to a sector.

One of the lessons learned from experience is that successful initiatives usually have deep understanding of the underlying science and technology of their business. Efficient and effective operations are usually the results of a profound knowledge of the way costs and values behave ... and decisions are made accordingly.

A separate series of workbook has been prepared to go into detail about the various sectors. What follows is a very abbreviated summary of some of the main sector issues.

Food	Hunger ... famine ... starvation ... death are as much associated with food as abundance. Sustainable food production, food security and access to food has a CA value related to life itself.
Water	Water ... essential to life ... critical to agriculture and almost all production activities and terribly wasted. CA value is big.
Shelter	Shelter is a basic need ... tents in a refugee camp, shacks in an urban slum, urban apartments, suburban houses and mansions.
Clothing	Clothing is a basic need ... and many levels of luxury as well
Sanitation	Lack of sanitation leads to polluted water and the spread of disease.
Security	Security ... lack of physical violence ... conflict and war. Huge impact on quality of life way beyond the direct death and injury.
Jobs ... opportunity	Jobs and economic opportunity have large value ... a huge multiplier effect on the quality of life.
Health	Good health is valuable ... bad health is costly to treat and has associated negative economic impact
Education	Children learn a lot from parents and society ... and the system of education and training. A big value for society.
Roads	All weather roads make a big difference to economic performance. They cost a lot ... but improve productivity.
Communication	Where there is economic activity ... communications can improve know how and decision making.
Entertainment ... culture	Social interaction, in their many forms are a very important part of the quality of life ... religion. music dance, art, drama, sports!
Financial services	Financial services help a society to function. History reports abusive financial service practices from ancient times ... nothing

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new, but controls like CA value accounting need to be in place.

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Silicon System Technology (SST)

Through the ages

There have been a number of “ages” in human history ... the stone age, the bronze age, the iron age, the industrial age, and now, ostensibly, the information age.

But the information age really has not arrived yet. Rather what we have experience over the past three or four decades is the emergence of silicon system technology that is enabling all sorts of computations to be done surprisingly efficiently. The technology is associated with Moore's Law ... Moore being a key figure in the history of Intel, one of the big developers of silicon system technology. Moore's Law is that the technology doubles in power and halves in cost every 18 months ... and over a very short time this makes the technology potentially incredibly useful.

Up to now the use of SST for the good of society has been more accidental than anything else. Clearly SST has been deployed as fast as it could be in advanced military applications ... most of which are very secret. On the other hand SST has been used in society as a whole to improve profit but no much to improve society directly.

And as to knowledge or the information age ... the use of SST to handle data, information and knowledge is very much in its infancy.

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Social Performance Management

Since around 2005, there has been increased dialog about various aspects of social performance. One of the many initiatives that has emerged is the idea of Social Performance Management.

One of the instances of this is the work of the Grameen Foundation.

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Standards - Standard Cost and Standard Value

Standard cost and standard value are very powerful techniques for managing and getting control of very large and complex operations.

Actual cost systems are data intensive, with very many transactions that vary all the time, but only in a consequential way rather infrequently. The aggregate of these transactions is important, and the aggregate should not vary very much unless there is something going on that is of importance. A standard is built by being thoughtful about the item ... whether cost or value. The aim is to determine what the cost or the value should be.

In the aggregate the cost or value should be the unit standard times the number of items. In the case of costs, the aggregate of actual costs should be about the same as the aggregate standard cost. If there is a substantial difference, then there needs to be analysis to see what is causing the variance.

Value is different ... but when the consumption of value (a standard value calculation) exceeds the product of value ... that is the creation of value (another standard value calculation), then there is the need for inquiry.

Arguably, the core of CA is the use of value ... and specifically the use of standard value. Everyone knows that value is important ... but nobody wants to embrace value as a numeric measurable elements, despite the fact of its centrality to quality of life ... everything that is important in society.

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Standards - Standard Costs

Standard costs

Because cost is such an important metric, accountancy has developed techniques to have cost information in various efficient ways. One of the most useful techniques is the use of standard costs. This technique makes it possible to have useful cost information with a minimum of detail calculation. In most stable operations, actual costs and standard costs will be almost the same.

The application of Community Analytics (CA) is simplified by the use of standard costs. Standard costs are used in most corporate cost accounting systems and are a powerful way to reduce a large amount of data to something that can be readily understood and acted upon. CA takes the concept of standard cost and also applies it to value ... making it possible to understand value impact more clearly than any other approach.

The standard cost is what something should cost based on technical considerations and experience. The standard cost can be calculated from the bill of materials, the bill of labor, the operating processes and the costs associated with everything. In a factory setting, this is a very normal thing to do.

It is relatively easy to check that a standard cost is right by comparing the standard cost of all the production in (say) a factory department with the actual costs incurred by the department. If the standard costs reasonably reflect the actual costs there will be little difference between the standard and the actual. This idea may be better understood by the following examples: (1) standard costs used in the construction of a pulp and paper mill; and, (2) standard costs for foundry production.

Example Construction Costs: Pulp and Paper Mill

This experience relates to the oversight of a large cost plus construction contract for a pulp and paper mill in Texas. The consulting engineers costed the whole project in detail, with a budget cost for everything that was going to be built, and costs for each of the stages of construction ... excavation, foundation formwork ... foundation concrete ... backfill ... structure ... roof ... cladding ... and then going through the purchase, installation and testing of the equipment.

Each week the contractor advised what had been done. Each week the contractor advised how much had been spent and how much they were owed.

As field accountant, I compared what it should have cost for what had been done with what the contractors had spent. My analysis suggested that the contractor had done about 1% of the work (based on the budget or standard) but had billed for about 2% of what was the total contract cost estimate ... in other words about a 100% cost overrun.

The next step was to physically look at the work being done ... and to understand why the costs were out of line. Almost everything was “padded” as far as it could be. Too many people in each work-crew ... unused spare equipment onsite not needed but being billed ... supplies ... like form lumber used once near new being junked ... etc.

Thursday, about 3 pm, the senior manager of the consulting engineers

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reviewed my work ... by 10 pm he had concluded that it was credible and called the contractors for an urgent review next day. Next day the contractors were ask to explain themselves ... and why 1,400 workers were on site? Monday the work continued with just 700 workers. The contract was completed on time and just 2% over budget!

When cost data are weak, it is usual for operations to be sloppy and costs excessive. When cost knowledge is absent, addressing cost efficiency will not take place and the easy way to do something will usually be chosen over the better way to do it. Examples abound in international development assistance, such as, for example ... the use of high cost international experts is often chosen over much lower cost local staff.

Standard Costs – Foundry Costing

This experience goes back to being VP manufacturing for an air-break switch manufacturing company where we had a foundry to produce the castings we needed. We produced thousands of different castings weighing from around 100 pounds down to about a quarter of a pound! For decades the company had used a simple "per pound" cost to describe the cost of their castings, and as a result over time the engineers had reduced the weight of all our castings thinking they were reducing costs, but in fact doing more to reduce product quality and foundry productivity.

When we used standard costing to define the cost of each casting based on the cost behavior of all the processes in the foundry, and the use of each process in producing the casting ... it became clear that the small castings were far more costly to produce ... and weight much less important than, for example, scrap rates, the amount of cleaning required, and what sort of equipment was used in production.

We validated the standard costs by comparing the total of production quantity times the standard cost (by part) with the total department costs for the foundry department. There was a variance but not big enough to invalidate the approach.

We refined the standards so that the various elements of cost were taken into consideration. We also refined the department costs to have various sections ... especially important being the cleaning room labor costs. We ran the standard actual calculation for a month and found cleaning costs under-estimated into the standards. We then did daily standard actual for labor costs in the cleaning room and were able to find specific castings that were the worst offenders ... due to design that made casting very difficult. The engineers improved the design ... making the casting heavier ... and costs reduced.

This became the new practice for design engineering and costing ... a win win for the company.

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Standards - Standard Value

Standard values are used in CA in much the same way that standard costs are used ... that is they make it possible to quantify critical information without having a lot of detailed data and complex computations.

Standard values, however, are different from costs in that they vary depending on the perspective of an individual, the perspective of the community, and the value systems of different people and communities. Standard values reflect a variety of different value systems influence by culture and tradition rather than being a result of purely technical calculations. The following table is an example of different standard values that might arise because of the different situations in, for example, the United States and a typical poor community in a developing country.

Description	A US perspective	A very poor community
A lost days work	$200	$2
Death of a child less than 1 year old	$100,000	$50
Death of a person aged 75	0	0
Extending life of 75 year old person by one year	$100,000	0
Having medication to save life of a child	$100,000	$50
Unlimited toys for Christmas	$50,000	$20
Being safe at home	$50,000	$100
Caring for an aging parent	-$50,000	$1,000
Caring for an orphan	$10,000.00	$100

Standard values provide insights that are helpful. They start to show how different aspects of society and of life relate to each other. Different communities will value different things in different ways.

Values are central to CA ... standard values are a way to include value in the analysis of progress and performance. There is little agreement about what values are priority and what are of lesser importance, but by putting a numerical value onto value it becomes possible to move towards more agreement and understanding.

For value to be central to the CA metrics of performance and progress, standard values have to be developed for a wide variety of indicators.

Though it may not be possible to get agreement quickly ... if ever ... it will be possible to build a database that shows standard value profiles for many communities, and it will then be possible to compare profiles between different places. These profiles of value make it possible to prioritize resource use in a more appropriate way for the community ... and for dialog about values to have a solid starting point.

A process to create standard values

CA starts with an estimate of this value ... quite arbitrary, though maybe based somewhat on common sense and an idea of what society thinks! For many items what people are prepared to pay is a useful indicator of what value might be ... but only an indicator. An

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iterative process of disagreement and revision and improvement ... comparison with other standard values ... and a profile of standard values emerges.

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Background Brief - Two Questions

What does Community Analytics (CA) do?

Community Analytics (CA) does for the community what Management Information Systems (MIS) and accountancy does for corporate business ... in other words CA provides a methodology for keeping score about socio-economic progress in a community ... a framework of data that suggests how well the game is being played and how things may be done better.

CA has one characteristic that is very different from other systems to evaluate performance ... rather than looking at performance in the community from the perspective of the organization and the activities being funded ... CA looks at performance from the perspective of the community and the people in the community. CA is looking at performance in the community from the perspective of need in the community and the impact of activities on improving the situation in the community.

The CA approach shows how vital it is for a community to have access to a full range of economic activities ... it shows that most single focus interventions will only succeed when they are done in parallel with other interventions that address other parts of the essential portfolio of economic activities.

What can CA do for you?

If your organization embraces CA, you will gain a deep appreciation of how valuable your own work can be ... but probably learn that the work you do has relatively little impact compared with what it could be.

What is this? How can this be? The CA methodology shows something of the micro-economic behavior of the community ... and the complex array of linkages there are between sectors.

- What is accomplished if a malaria program helps a child survive malaria ... but then dirty water gives the child cholera and the child dies.
- What is accomplished if a child gets an education ... but then gets malaria and dies?
- What is accomplished if a child grows up healthy and gets an education ... but then cannot get a job.
- What is accomplished if the community grows more food ... but the road to market cannot be used because the bridge has fallen down.
- What is accomplished if there is economic prosperity ... but rival ethnic factions start fighting to achieve control of the benefits of prosperity

Your organization's work will be most valuable when you do what you do as well as possible ... and others do what they do as well as possible ... and nothing gets left undone.

The performance of your organization will be best ... and your donors will be the most satisfied, when multiple organizations are working together to help the community. One agenda ... one organization ... getting all the money is unlikely to get the best outcomes. A group of organizations collaborating around all the issues that must be addressed in the community will get a much better job done ... and CA show how much bigger the impact is when there is collaboration than when there is not.

How does CA work?

The very short answer is that CA acquires as much data as possible about the community .... gets the data organized as much as possible ... and puts it into a form that tells the

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story about problems, opportunities and progress in the community. Data acquisition is mainly about very simple matters ... but when aggregated, these data can tell a big story.

The data in the CA system are both temporal ... to create time series ... and spatial to know what happens where.

CA data are about not only the money performance ... such an amount of money was spent ... but also that this was done and the value or impact of this was thus and so.

People say that value is subjective and therefore cannot be quantified ... but CA shows that value is too important to be ignored because quantification is not easy. CA uses the concept of standard values ... similar to standard costs in corporate accountancy ... to start a process of quantifying value and including this in performance metrics.

For example ... high mortality is a bad outcome ... it should be, and is, possible to quantify an untimely death. Maybe the number for a 30 year old adult should be $100,000 ... or should it be $10 ... or should it be $50 million. The exact number is not the critical matter ... what is critical is that this mortality should be incorporated into a system so that this loss of value is on the record, reported, and steps to taken to improve future outcomes. Whether distance is measured in miles or kilometers does not really matter ... as long as we understand what we are doing. We need to measure the value loss associated with mortality ... death ... and make sure that there are interventions to reduce the losses.

For example .... what happens when crime rises. The cost of policing may rise as the authorities respond but this is not a sufficient measure of the socio-economic consequences of crime. Education suffers ... but how much? Housing values suffer ... but how much? Business investment suffers ... and jobs decline ... but how much? CA shows how big these value changes are ... they are big ... and they are not yet part of any systematic system of credible socio-economic metrics

CA and the modern world

CA is simple at its core ... but modern technology makes it possible to do a lot of simple things and make sense of them. The technology that brought us Facebook and Twitter is going to be used to make CA ubiquitous.

The business model for CA is an Internet business model to the extent that is possible ... and supplemented by face to face training and conversations at all levels of society. Paid seminars will help fund the deployment of CA ... some corporate sponsorship is being sought to ensure that the appropriate level of Internet infrastructure is available. Most important, however, is that the ideals of the CA system are not compromised by the funding.

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Standards - Standard Value of the Community

The standard value of a community reflects the value of people. Community analysitcs is both community centric, and within that is people centric. People are at the center of everything. Accordingly it is people that determine the basic start point for the standard value of the community.

For a start, and to simplify the standard value is expressed in US dollars ... which serve as a proxy for a universal reference currency.

The standard value of a human being is $100,000 ... if the population of the community is 10,000, then the standard value of the community defaults to 10,000 times $100,000 or $1 billion. This standard value is based on a norm of a 30 year old adult being able to have remuneration of $100,000 a year.

If the community has a normal quality of life and a normal expectation of of opportunity into the future there are no adjustments that need to be made ... but these norms are changed by the realities of the community, where it is, the economic environment, and so forth, then the value of the community changes.

Community standard value (SV) increases when the future has the potential to be better than the present ... and decrease when the future is likely to be worse than the present.

Community standard value reduces when the earning power of the population is lower than the standard norm assumed in the first step. Thus if the earning power of a 30 year old adult is more or less than $100,000 the community SV would increase or decrease.

When the quality of life is normal, there is no adjustment to the community SV ... but if quality of life is reduced in any way, such as by high crime and violence, then the community SV would decrease.

When the health of the community is normal ... there is no adjustment to the community SV, but when health is worse than normal there is a decrease in the community SV

When the level of education of the community is normal ... there is no adjustment to the community SV, but when the education of the community is less than normal there is a decrease in the community SV.

When the infrastructure in a community is sufficient to sustain the activities of the community ... there is no adjustment to the community SV, but where the infrastructure is insufficient, then there is a decrease in the community SV.

These computations depend on the definition of normal ... and, of course, normal cannot be defined with accuracy nor with much specificity. But useful definitions may be made that show trends and directions with considerable accuracy.

These computations also depend on assumptions that ensure that there is a minimum of double-counting and overlap. The community SV decreases when the level of education is lower than the normal ... and the community SV decreases when the level or remuneration is lower. But it is to some extent it is the level of education that determines the level of remuneration ... maybe, or maybe not, with other determinants.

SV calculations are usually done with the various elements weighted so that the aggregate reflects the minimum of double counting. To some extent this is the same concern that accountants have in making good aggregations in consolidated accounts.

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State of the Community

The state of the community is a similar construct around value as the financial balance sheet of a corporate organization is around money denominated assets and liabilities. The community has many assets ... many asset classes ... and liabilities or constraints. In CA a value is attributed to all these assets and a negative value attributed to the liabilities and constraints.

Assets

The asset classes include everything of value to the community ... tangible and intangible ... money denominated or not. People are valuable ... human capital if you will. Natural resources are valuable ... and their use and depletion is important and must not be ignored in the metrics. Knowledge is important ... as is organization, governance, security, spirituality and happiness. The CA goal is for everything that contributes and makes up quality of life to be taken into account.

Liabilities

The liabilities of the community are those things that serve to detract from quality of life and from the productivity of the community. In endemically poor communities these liabilities are all pervasive. The lack of food security ... the lack of physical security ... the lack of productive land ... the lack of water ... the pollution of the environment ... the lack of health services ... the lack of schools

Change of state from time one to another time two is the main CA metric of progress. Corporate progress is the net change between two balance sheets ... in CA progress is the net change between two states of the community.

Value change activities

Value change activities ... socio-economic activities ... are the activities that are going on in society. It is these activities that change the community state from state one to state two ... value adding activities improve the state of the community and the quality of life ... value destruction activities produce a deterioration in the state of the community and quality of life. It is possible to know whether there is progress or not merely by looking at the change of state of the community, but it is understanding the value change activities that makes it possible to understand how the community is performing.

Inclusive

CA has the view that all economic aspects should be included in the CA framework ... a stark contrast to some corporate accounting that has taken the view that some economic transactions should be kept off the balance sheet. Anything and everything that has an impact on quality of life, standard of living, pursuit of happiness, etc. should be taken into consideration. The CA embrace of both value and money revenue is the core of CA's approach. Value is included rather than being merely a sidebar as it is in modern corporate accountancy.

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Sustainability

Sustainability

A sustainable future is not assured ... and increasingly modern technology and social and economic activities put stress on the future. The future was never assured in the history of mankind, but the risks have changed. In the distant past, it was the capacity to produce that was the key constraint. In the present time, there is power to produce, but it is possible for this same power to do damage that must also be managed.

CA builds on what exists and has gone before ... no need to reinvent the wheel. What CA does, more than anything else is to position data and analysis where they are able to do the most good ... that is at the community level, and for the community. Beyond economics and accountancy, CA is a fusion of key principles from science, engineering, management and human behavior. The key characteristics of engineering that are incorporated into CA 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.

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?

There are two components to sustainability. There are some very successful business people that consider cash flow to be king ... with good reason. A business that has cash is in control of its destiny! For these business people profit is a source of cash ... and cash is a source of strategic strength. Nothing is sustainable when the bills cannot get paid.

Another dimension of sustainability is the issue of value adding and value destruction. It is possible to have a favorable cash flow, but to be destroying value ... and in time, value destruction is worse than simply not being able to pay the bills.

Sustainability

Activities that have value adding positive and cash flow being positive are sustainable ... and desirable. Activities that are cash flow positive and profitable are money sustainable but maybe not socio-economically sustainable ... and these activities have come to dominate rich developed economies in the post World War II period. By ignoring critical issues of value destruction society had the impression of wealth being created ... but much was mere puffery and the balloons were bound to break. But worse, society built the appearance of wealth while setting the stage for potentially catastrophic global disasters in the future.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION TTT

	Technology that Enables CA	
	Technology that Enables Progress	
	Thinking Outside the Box	
	Time Data	
	Time Series Analysis	
	Top Down	
	Transactions	
	Transient Data	
	Transparency	
	Transparency and Accountability	
	Trends	
	Twitter	

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Technology - Enabling CA

CA is grounded in some very old basic concepts of accountancy and measurement. But it is the availability of 21st century data acquisition and data processing infrastructure that makes CA practical and possible.

In simple ... perhaps simplistic ... terms, CA is like Facebook except that the central focus is a physical community rather than "me", the individual person. CA enables connections not only around "my" friends and interests, but also around the people, organizations and issues that influence and impact the socio-economic performance of the community.

CA is structured so that the data about a community is organized in useful ways, rather like the way corporate accounting information is organized into accounts and different datasets that make it easy to understand corporate performance. CA uses some of constructs that make corporate accountancy powerful ... including, not only the money transactions and impact, but also the value dimension of the activities ... both value consumption and value creation.

For data acquisition, there are more and more cost effective electronic platforms, with the mobile phone now being very powerful, ubiquitous, cost effective and easy to use. The phone itself now has the computing power that used to be reserved to large mainframes 40 years ago ... and as a terminal it has amazing versatility both to receive information and to enter and send information. The SMS text message capability opens up all sorts of possibilities for data acquisition and transmission.

Data organization is facilitated by modern relational database design. The normalization of data makes it possible to have good data consistency ... important for comparative analysis. The administration of a powerful database becomes practical and cost effective when the system is operated using a "cloud" architecture ... an approach that is now possible with widely accessible Internet.

Data analysis is facilitated when there are data available. CA is a source of neutral data that may be used for analysis when needed. The CA analysis process is not based on data collection for a specific study, but data collection to help with oversight of the broad progress of socio-economic development. Very large datasets are possible with modern technology ... a impossible large analysis routines may now be routine!

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Technology - Enabling Progress

Technology is rarely talked about as the underlying driver or facilitating factor in socio-economic progress. In ancient times, the great civilizations were all associated with some development of understanding of technology ... the Egyptians, the Greeks, the Romans, the Vikings.

In more recent times there has been the agricultural revolution, the industrial revolution and now the knowledge revolution. Technology has made it possible for amazing developments in transport ... at sea, in the air and on land. Medical science is opening new understanding about disease. Materials technology makes it possible to build materials that are stronger and lighter than any materials found in nature. Food science makes it possible to engineer taste and nutrient content in foods in ways that seem like science fiction.

All of this science and technology facilitates much higher productivity ... much more output. Technology makes it possible to produce more and be more profitable. But merely maximizing profit leaves society inadequately served., and maybe at terrible risk

The food industry may be heading for systemic failure ...

Food Inc. and other documentaries

The 2008 film Food Inc. raises all sorts of questions about the use of technology to maximize production and profit. Is there systemic risk in the modern food sector just the same way that there was systemic risk in the financial sector? For years, other documentaries have tried to alert the public to the disconnect between food surplus and chronic hunger!

Climate change may be setting up for irreversible warming. Poverty has bad health outcomes ...

Inconvenient Truth

The film Inconvenient Truth my have it right or not ... but there are a huge number of obscene practices that facilitate profit and pollute the environment. Abject poverty impacts health .. and poor people die prematurely ... and they don't need to!

Technology can help in all sorts of ways ... but only if the system sends the right signals. A system that only measures money profit is not going to optimize the use of science and technology for society ... but merely to optimize its use for profit maximization.

Technology can be the enabler of a CA system to acquire data and then do data logistics, analysis, storage and reporting. Over the past fifty years there have been multiple major steps in the power, speed and economy of data processing ... and today there is no excuse for a shortage of data about important matters.

The missing value dimension

Value may well be missing from metrics because the people with power ... the establishment ... do not see any benefit from value metrics. What there is at the present is quite good enough. But society at large needs the value analysis because the system now gets profit from value destruction ... and in

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> the end this is catastrophically unsustainable.

CA is being developed with a value dimension .... and CA will deploy using all the modern ways of acquiring data ... doing analysis ... and making data available to the public.

Technology to facilitate paradigm shift

Throughout history technology has always been the primary limiting factor in making sustainable progress ... but there has been a shift in the last few decades. Technology may now have the power and capacity to do far more than our society will allow it to do.

CA was designed to be independent of technology ... the data are a logical framework that does not need technology ... but this becomes a million times more powerful when it is matched with the capabilities of technology.

CA is about data much more than about technology. The ideas of CA were applicable when paper was the storage medium, and the same ideas still have application in a fast moving digital age.

Powerful technology and analytical capability should not be used as a substitute for good data. There is no more place for sloppy concepts in a powerful analytical environment than in the much more power constrained situation of earlier times.

Rapid changes in IT economics are taking place, and it is likely that this will continue. Computational power has increased exponentially for many years and the potential is a long way from being fully utilized.

Stationary centralized computational systems have given way to distributed systems ... to the Internet and to mobile systems. The power has gone up and the costs have come down.

> If the cost to power relationship has improved by a factor of 1 million over the past 40 years ... how come a data centric profession like accountancy are not a million times more useful? Why has so little of the potential been used for public good?

Internet and World Wide Web

While CA is built on concepts that were applicable for pre-computer accountancy, the architecture of the data also works for an electronic environment and Internet accessible data and analysis. As Internet technology has evolved, the need for and use of "broadband" has increased, and most applications now require broadband access for the Internet to be an efficient tool. This has the effect of making the Internet a limiting factor for the universal deployment of CA. The combination of Internet and other technology driven tools now makes data centric programs cost effective.

Satellite imagery

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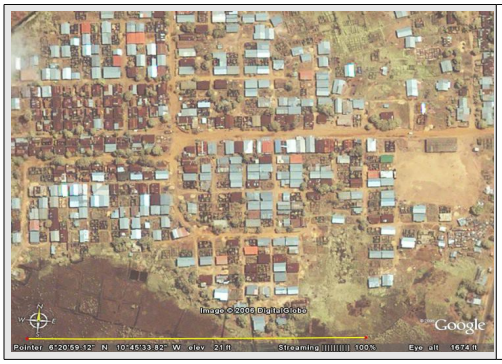

This image shows individual houses in a section of Monrovia, Liberia. Images of this sort enable plans to be made for surveillance and for interventions.

The image is a start ... how it is used to plan and deploy interventions depends on the local situation and the staff on the ground.

Specialized PDAs

Specialized PDAs (personal digital assistants) have been used for a number of years (since around 1995) to reduce the burden of paper based data in mobile situations. Organizations like Federal Express and UPS were early adopters of this specialized technology, and it has been adopted for many applications where accuracy and speed are important (for example inventory control). The use of a PDA is cost effective when labor costs are high and the use of data has a high value. PDAs are rarely low enough in cost to be of advantage in low wage settings ... but they have been deployed by AID agencies using grant funding even though the sustainability of their use is near zero.

Mobile phones

Mobile phone technology has produced a paradigm shift in communication. The deployment of cellphone technology has been very rapid, and a very good example of a low cost technology producing a very high value ... and marketed in ways that have made the service affordable to customers in a broad range of economic circumstances. Mobile phones have both data and analog capabilities, and this enables both text or data transmission and image capture and transmission. It is unclear how much of these technologies can be deployed immediately, but it is clear that rapid change is happening.

Social network web architecture

Social network web architecture is changing how people interact, and how knowledge is used. In general most of the data moving around social networks are of little management value, but this can change. The same data architecture that links people with people may also be used to link problem to solution and the resources needed for everything to come together.

Village bus data transfer

While most systems that have been developed have been for markets that are rich and where profits can be made, there are emerging systems that are designed to bring value to communities in the very least cost manner. Community focus data can move in and out of a community using methods other than Internet broadband ... as for example the village bus data transfer system, where data are moved from a community based system to a traveling intermediary system and on to a central datastore.

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Time Series

Year to year comparison

By measuring what is easy and useful, it is possible to keep costs down and get some material value.

> **Is there progress?**
> Take any issue and ask the question "Is there progress in the last year?" ... and maybe also over the last ten years! If the answers are yes, then there is progress.

Comparative balance sheet

CA draws on the experience of financial reporting. CA reporting aims to be clear and relevant, and does this by reporting in a modular manner around issues that are material for the community. The first level of CA reporting is the comparative balance sheet. How do key matters of the community change from period to period, that is year to year, or month to month, or at even more frequent intervals. Most good, stable communities change rather slowly, and there is little that is material to report. Poor communities, on the other hand may have a lot that is material because, for example, small changes in crop production can easily magnify malnutrition in children and mortality.

Time Series Information

In addition to mapping that shows the simple spatial dimension of the data, there also needs to be an ability to understand the changes that occur over time about a specific place and a specific characteristic of the data.

Time series information is also critical in the measurement of progress. The goal is to have progress, and to do this as fast as possible, and in ways that are cost effective and with a minimum of undesirable side effects. All of this is best done in a data environment where there is good time series information.

Measure what is most useful ... but may be more difficult to do

If there is progress on many issues ... but not on some important issue ... get data about why this issue has not progressed. This may be easy ... or very difficult ... but its value is significant, because an issue not progressing is a constraint, and maybe a chronic matter for the community

> **Why is this issue not progressing?**
> Take any issue and ask the question "Is there progress in the last year?" ... and maybe also over the last ten years! If the answers are yes, then there is progress.

A comparative balance sheet is a simple example of time series ... two datapoints. Having datapoints associated with time makes it possible to do time series. Tine series show how things are progressing or regressing over time. The time interval should be a balance between very frequency and cost and the value of the associated results. Sometimes data needs to be daily, or even more frequent ... sometimes once a year is enough!

Changes over time are very informative. One bit of data is better than none ... but the same data over time starts to tell a story. Are the data telling us that the situation is getting better or worse? Are the data telling us that there is a seasonal characteristics? How do these data sets compare with data from other places? Do changes shown by these datasets show a causal relationship with actions or events that can be identified? These

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time series are immensely powerful ... and become even more powerful when they are used both in as simple a form as possible and also in ways that facilitate complex searches for correlation.

So much is driven by time series

So much is driven by time series ... whole theories of capital market behavior have been developed around this ... scientific analysis ... economic analysis ... etc. But hardly anything has been done at the community level to understand poverty and progress. CA is setting out to change this.

Time series trends are great indicators of progress ... or not. Time series are simple, clear and powerful. While it is possible to do advanced statistical manipulation ... simple and clear time series tables and charts work very powerfully as well.

There are many different time periods that may be used. The choice depends on the natural characteristic of what is being measured.

- By hour ... to show what happens at different times during a 24 hour period
- By day ... to show what happens from day to day
- By month ... to show changes month by month including seasonality
- Year on year ... to show how things progress over the longer period

A plot of a single parameter shows how this parameter has changed over time ... but in isolation does not show what might have been the cause of any changes. Plotting multiple variable may show something about cause and effect. While this may be done by simple visualization for a couple of variables, a more rigorous mathematical approach is needed for large scale multivariate analysis.

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The Bloomberg System

The Bloomberg organization made data about the capital markets easily accessible to uses of the Bloomberg system. For almost every possible metric about the capital market, the Bloomberg system contains a time series.

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Time series example	**Experience from Kwa-Zulu Natal.**
	In this example the measure was low, then increased rapidly, and then decreased again. In this example the measure is the number of malaria cases in the area, which rapidly increased when the use of DDT was stopped, and then decreased again when DDT was reintroduced. There is no reference to cost. It is possible that DDT is not only very effective in reducing malaria, but might also be very cost effective as well.

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Transparency

Transparency and accountability are important. However, much of the dialog is theoretical ... rather little is being done to make transparency and accountability a norm for all the economic actors. As time goes by, there is more and more sophisticated talk ... but still nothing that is practical. Transparency and accountability are all but impossible to have without an appropriate structure for data acquisition, analysis, reporting and public access.

Responsibility Accounting

Corporate analytical accountancy is very powerful, but its value is realized when the information is used to hold people accountable and to get decisions made and operational improvements implemented. Analytical reports have an additional level of gravity when the name of a responsible manager is associated with the results and the report. It may be clumsy ... but it works!

Making transparency actionable

CA has a structure that allows it to acquire data even when major socio-economic actors are unwilling to participate. While the non-participation of major economic actors makes data acquisition more difficult ... it is not impossible ... and the role of CA becomes t is even more important.

Simply put ... it may be possible for an economic actor to hide how it operates internally, but with CA it is impossible for any substantial economic actor to hide from the impact of its activities. Inappropriate activities with anti-social outcomes are only sustainable when there is no visibility for these activities and outcomes!

The concept of double entry described later creates a very powerful tool for financial control and accountability. Either there is the money that can be counted or there is the product or service that has been bought. The money value representation of the one equals the other. When money buys less than it should ... this can be identified. In a good system of accounting, the double entry characteristic can be used to ensure that nothing is stolen without more than one person knowing about it!

In the context of the CA initiative, a dialog about privacy and what must be reported to the public by an economic actor has no relevance. Rather the public simply puts on the record what the impact of the economic actor is on the community ... and the actor may choose to be responsive or not.

What goes on when nobody is looking!

All sorts of bad things go on when nobody is looking. CA has a structure so that someone is always going to be looking ... and putting the observations on the record. Observing what is good is, however, just as important as reporting what is bad!

Transparency and Accountability

Transparency and accountability are important ... but impossible to have without an appropriate structure for data acquisition and analysis. CA provides such a structure. CA has ambitious aims ... to make it possible for the public to hold decision makers accountable.

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CA has a structure that allows it to work even when major socio-economic actors are not participating in any way. While the non-participation of these actors makes data acquisition more difficult ... it is not impossible ... and it is even more important.

Simply put ... it may be possible for an economic actor to hide how it operates internally, but it is impossible for any substantial economic actor to hide from the impact of its activities. Inappropriate activities with anti-social outcomes are only sustainable when there is no visibility for these activities and outcomes!

The concept of double entry described later creates a very powerful tool for financial control. Either there is the money that can be counted or there is the product or service that has been bought. The money value representation of the one equals the other. When money buys less than it should ... this can be identified. In a good system of accounting, the double entry characteristic can be used to ensure that nothing is stolen without more than one person knowing about it!

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COMMUNITY ANALYTICS
ALPHABETIC SECTION UUU

	Ubiquitous Data	

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Ubiquitous Data

Ubiquitous

Data are everywhere. The more we learn about life ... about almost anything ... we learn that there is a data component that makes life work. The brain is all about data ...

When the post industrial age was named the information age some decades ago ... perhaps around 1970 ... there was little appreciation of what role information ... data ... played in the functioning of everything.

Compared to what is possible modern institutional management uses data systems that can best be described as stone age, or at best, medieval. The purpose of data is to make it possible to manage well ... for operations to be efficient and effective, and for knowledge to be accumulated. For this data are needed about what is going on ... timely ... accurate ... relevant.

Data are the raw material for management information and the development of knowledge. Data have no purpose unless they are used in some productive way, unless they are part of an integrated system.

While data are everywhere ... very little of the data are used usefully. There is a vast incentive to use data to “prove a point” rather than for the data to be used to further understanding. Data are used in this manner in large part because there are incentives that encourage use of data in such a manner.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION VVV

	Valuation	
	Value	
	Value Adding	
	Value Chain Analysis	
	Value Change	
	Value Change ... Organizations	
	Value Change ... Places	
	Value Change ... Program	
	Value Change ... A Metric of Progress	
	Value Change ... Times	
	Value Destruction	
	Value Dynamic in a Community	
	Value Dynamic in a Country	
	Value Dynamic in an Organization	
	Variance Analysis	
	Video Information	
	View ... Perspective	

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Value elements of cost

Value chain

Standard values

Time series

Beyond economic indicators

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Value - Concept of Value

Community Analytics (CA) has value as its central value. Value is as central in CA as profit is in for profit corporate reporting systems. The value of a community ... or society ... is the key measure in CA and a core determinant of how society delivers on the goal of happiness and quality of life.

What is value?

Value is subjective ... and very difficult to quantify ... but that does not mean that value should be ignored by a socio-economic system of "scorekeeping". Value is, after all, more than anything else, what determines quality of life.

Putting a number on value!

Putting a number on value is difficult ... but it does have some utility. As a matter of convenience, the number is also a number for money. Because there are no capital markets that trade in "value" there is no way for value to be monetized.

Value is not the same in all cultures and locations!

Culture plays a big role in how value is perceived. Modern materialism has tended to equate more and more or bigger and bigger with more value ... but that is not the only way value may be perceived. Different cultures in different places may put different values on the same things ... and this should be respected and value optimized based on what is most appreciated in the community.

The concept of standard value!

The CA system uses the concept of "standard value" to provide a basis for doing the accounting for value. The standard value serves as a fixed benchmark and changes to these benchmarks becomes a way for changes and differences in various societies to be a part of the record.

Value creation!

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 CA, value creation is the resultant value less the value consumed.

Value adding and value destruction!

Value adding happens when the resulting value is greater than the value consumed. Value destruction is when the resulting value is less than the value consumed. CA takes into consideration ALL the issues that impact value to society and the community ... in contrast to the corporate profit measure that only brings into account the money revenues and money costs to compute profit.

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 CA value construct applies everywhere in both private and public sector organizations that are working for the public good, but without effective performance metrics.

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Value

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 CA 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.

Value

Price is not value. They are different concepts. Value is often expressed in terms similar to a price ... but they have a different origin. Value has to do with perception ... what someone is willing to pay for something in order to be gratified. Because the money numbers associated with value are rarely articulated, and not the subject of conversation and news reports, there is a weak set of value information. It is critical that this is changed. Associating a money number to values is regarded as a difficult ... even impossible ... task. However, this is very important if society is to have metrics that reflect what is the most important in society.

Relationship to price

If value is lower than price, there is no incentive to buy the item.

Something may have a low price, but have enormous value to the person using the product. An aspirin may have a low price ... but getting rid of a headache has big value.

Society is in a good place when goods and services have low prices and these goods and services have high value for the community.

Value adding ... social value adding

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 CA 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

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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. CA embraces both the financial and the social value and puts both in the metrics of the community.

Value

For all practical purposes there is no organized data about value. Value is subjective ... and therefore difficult to quantify using a single number. The

Value is arguably far more important than money cost and money price. The challenge with value accounting is how to have numerical values that are an integral part of the system. The CA solution to this is to have elements of value, just as there are elements of cost, and to have standard values that reflect the perception of value that people have. From this it becomes possible to have standard value profiles for a community ... and from this to create reports that reflect the consumption and creation of these values. The difficulty with using value in metrics is that value is subjective and therefore not easy to quantify ... but value is much more at the core of socio-economic performance and quality of life than anything else. Value is what the recipient thinks it is worth. These relationships are key: (1) When value is greater than cost there is value adding; and (2) When cost is greater than value there is value destruction.

Value

Value is subjective ... and more difficult to quantify. Value is arguably far more important than money cost and money price. The challenge with value accounting is how to have numerical values that are an integral part of the system. The CA solution to this is to have elements of value, just as there are elements of cost, and to have standard values that reflect the perception of value that people have. From this it becomes possible to have standard value profiles for a community ... and from this to create reports that reflect the consumption and creation of these values. The difficulty with using value in metrics is that value is subjective and therefore not easy to quantify ... but value is much more at the core of socio-economic performance and quality of life than anything else.

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.

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Value Adding

Cost, price, value and productivity, profit and impact.

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.

Value adding

Value adding is a derivative of value and cost. Value adding may approximate profit when the price reflects value and there are no social costs in addition to the money costs. Value adding is a much better measure of progress and performance than money profit. Value ... that is value to society ... is almost totally excluded from modern financial and economic metrics. The reasons are many including (1) it has a subjective dimension that makes valuation difficult; and, (2) it has a devastating impact on the norms of financial valuation of corporate activity. CA has value more than profit as the key element in performance.

Value adding

An economic dynamic that creates value will sustain not only at a present level, but at an increasing level of value creation ... a virtuous outcome. In a simple world it would be easy to plan progress and achieve progress, but in the world of reality there is little that is simple. Besides value creation and a virtuous compounding, there is also value destruction.

Value adding takes place whenever something that adds to quality of life occurs ... frequently in small increments

> During the 2009 Clinton Global Initiative (CGI) I was asked what I thought of it. My instant response was that it was largely PR, and the value of it was rather modest. I was then bombarded with statistics about how much the CGI had “raised” for global good causes and was made to feel very bad. The previous year “over $1.8 billion had been raised at the CGI”, I was told.
>
> But essentially, I was right. The statistic of how much CGI raises is a very poor metric of the CGIs value ... because much of the money described as being raised by the CGI is money that is already going to flow into philanthropic initiatives anyway.
>
> The value of CGI is not how much money the participants talks about, and then gets published as a money raised amount. ... but the fact of the meeting and the cachet of having talked about the project in this forum ... which in turn facilitates fund raising.

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Value Chain Analysis

Value chain analysis is used to identify the winners and losers in various parts of the economic structure, and makes it possible to understand the systemic flaws in the way the economy operates. Value chain analysis is used to show cost and profit distribution across multiple areas and organizations as in the petroleum industry, or across time as in the case of education and the student's subsequent career.

CA makes use of the idea of value chain analysis. What appears as a success, may have negative impact on other parts of a value chain.

Value chain analysis is used to identify the winners and losers in various parts of the economic structure, and makes it possible to understand the systemic flaws in the way the economy operates. Value chain analysis is used to show cost and profit distribution across multiple areas and organizations as in the petroleum industry, or across time as in the case of education and the student's subsequent career. Value chain from raw material to consumer is important. It shows why some companies are very profitable and others are not. The value chain show how costs accumulate and profits are extracted from the value chain.

Petroleum

The CA petroleum value chain explains the costs and profits between the origin of oil in a poor part of the world to gas being used in rich places. It explains how excellent crude oil in the Niger Delta makes some Nigerians super rich, with the country remaining terribly poor. It explains the links between high gas prices at the pump and production costs ... and how markets work!

Coffee

The CA coffee value chain does the same for coffee. How is it that coffee consumed in a retail coffee shop is many times more to buy now than years ago ... but the price paid to farmers for their coffee has increased so very little. Where is the money going? Value chain shows that some of the organizations that were created to make the economic playing field fairer for the farmer have ended up being merely a way of extracting profit from the value chain without doing anything in return.

Value chain over time is also important. The value chain technique may also be applied over time. In this case an activity that has costs today creates profit and value tomorrow.

Education

The education of a child is a big expense ... but it is an investment that will pay back many times over the life of the person. Value chain analysis shows something of how a cost in early years creates opportunity for benefit in later years ... and could be the basis for economic analysis to justify investment not only by parents, but also by society in education and building human capital for the future.

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Health

Treating disease is also a big expense ... and again with an economic dynamic that changes over time. A strategy that invests so that there is no need to treat disease because the disease is controlled or eradicated is probably better than one that merely waits and treats the disease and incurs the associated costs. Value chain helps to determine whether prevention rather than cure is the optimum strategy.

Infrastructure

The building of the US Interstate Highway System is another example. The system cost the US Government more than $100 billion ... but the immediate incremental property values around the country were way more than this ... and the productivity improvement of the national economy way bigger, and long lasting. Value chain analysis of this shows how amazing big good investments can be for society.

Value chain analysis is a technique that relates cost, price and and profit ... and value consumption and value creation in a complete transaction matrix. The value chain analysis explains the aggregate of value consumption or destruction and the aggregate of value creation and value adding and reconciles the aggregate with the winners and losers at different stages of the value chain. The value chain analysis may be applied either over time, over geographic space, or between organizational entities. Value chain analysis shows how critical local community based economic activities are to the community and how damaging many profitable global value chains are to society.

Consolidation accounting is a part of this paper because hardly anything is as simple as it seems, and consolidation accounting has the essential critical logic that helps to sort this complexity into its component parts. Community is impacted by many different economic entities and activities, and the way in which these interact and are recorded has been defined comprehensively in the accounting principles associated with consolidations.

Very few transactions are simple an 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.

Modern corporate accountancy is complex. Most of the rules apply to the way an organizations reports to the financial stakeholders and, to a much lesser degree, to the public. These reports are the result of complex consolidation that takes into consideration the way the internal and external value chains impact costs, revenues and profits.

Managing these value chains makes it possible for a corporate organization to minimize its exposure to taxes, duties and other regulations that impact its financial performance ... and understanding and having data about value chains makes it possible for the public to hold organizations accountable for their performance in the community and towards society as a whole.

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Value Change ... Progress

CA 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. CA includes transactions that reflect value as well as the normal money transactions.

CA 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 CA derives from how CA can do accounting for community progress. In the following graphic ... the value of the community at the 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.

Ordinary activities produce no change

Data about the daily activities is not needed in the CA 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.

GOOD ... progress	OOPS ... problem

The three key datapoints in CA 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 CA value, and in the case of CA it has been combined also with standards also drawn from traditional corporate accounting. CA refers to the unit of value as the CVU ... Common Value Unit. More than anything else, however, CA is designed to be very practical, very simple, very low cost and very valuable.

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Value Chain From Raw Material to Final Consumer

The value chain from raw material to consumer helps to show why some companies are very profitable and others are not. The value chains show how costs accumulate and what profits are extracted from the value chain.

1. The petroleum value chain helps to explain the various connects and disconnects between the origin of oil in a poor part of the world to gas being used in rich places. How is it that excellent crude oil in the Niger Delta makes some Nigerians super rich, with the country remaining terribly poor. How is it that there is seemingly little rational link between high gas prices at the pump and the costs of producing this gas? How do markets work ... and who do they work for?
2. The coffee value chain does the same for coffee. How is it that coffee consumed in a retail coffee shop is many times more to buy now than years ago ... but the price paid to farmers for their coffee has increased so very little. Where is the money going? Value chain shows that some of the organizations that were created to make the economic playing field fairer for the farmer have ended up being merely a way of extracting profit from the value chain without doing anything in return.

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Value Chain Over Time

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Value Destruction

Value destruction

Value adding is good, but being profitable does not mean that the economic activities are value adding. Profits may be earned while the activity is value neutral, or the profit may be arising while the activity is destroying value. Value destruction is often associated with environmental costs that impact society, but do not have to be incorporated in the financial accounts of the corporate enterprise. In recent times, more and more environmental regulations have made environmental degradation a cost to the enterprise and a drag on profit ... but the cost to society is still not part of the corporate accountancy and reporting system. CA, on the other hand, takes the cost to society and makes the cost explicit and associates this cost directly with the enterprise that is causing the value destruction.

Value destruction

Value destruction compounds to form a vicious cycle of increasingly difficult outcomes. Value destruction may start slowly, but if not corrected the compounding eventually takes hold, and it is very difficult to control.

In the complex reality of the economy, both value creation and value destruction are going on at the same time ... one offsets the other ... but there is always the potential for one of the other to get the upper hand. When it is value destruction that becomes dominant, the socio-economic outcome is catastrophic ... and this is what is happening in most poor settings.

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Value Dynamic in an Organization

Types of Organization

The profit maximizing enterprise

The profit maximizing enterprise ... the engine of the modern economy has a dynamic that seeks the maximum of profit and the maximum of stockholder value. Though a good organization would work to have great stockholder value that is sustained over time ... the way capital markets work, it behooves the management and decision makers to focus on short term value even if this consumes long term value.

While the score-keeping was rigorous and relatively simple fifty years ago ... modern corporate score-keeping is now the subject of all sort of rigging ... no relative of rigorous. The law and rules have allowed all sorts of practices that have helped make it possible to have reportable profits on top of enterprise activities that have been catastrophic.

Bluntly put ... a lot of this has been fraud, even though it has been “legal”.

The not for profit charity or NGO

The not for profit or NGO has a very different dynamic. Job one is the survival of the organization, and for this a constant flow of funding to support the activities is crucial. There are a lot of activities that are done to support this priority ... including the production of monitoring and evaluation reports that satisfy the funding organizations, the donors.

The organization must do some of what the donor expects them to do ... enough to be able to show the donors that the activities being funded are taking place. Nobody is, however, looking at cost efficiency and assessing whether or not the spending is resulting in a high or low level of activity. Nor is anybody looking at the results and assessing cost effectiveness in a rigorous manner.

While the mission of the private charity or NGO may well be laudable ... this does not automatically translate into a well run organization that is both cost efficient and cost effective. These metrics are usually missing.

The social business

The social business has a different dynamic. The operations of the business may be highly profitable ... but the resulting fund flows are used to expand the operations to serve more of the market rather than to reward stockholders and maximize stockholder value.

The business model helps to make best use of technology and resources to get the maximum of productivity. The social dimension aims to provide the most of value to the community by scaling up the operations as effectively as possible and as fast as possible. The sustainable business means that the enterprise is sustained not by donors, but by the market.

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Value Quantification

Value quantification is needed if the use of value as a metric is going to succeed. CA uses the accounting concepts of standards to provide a framework for value quantification.

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COMMUNITY ANALYTICS
ALPHABETIC SECTION WWW

	Want	
	Wealth	
	Welfare	
	What?	
	What Do I See?	
	When?	
	Where?	
	Who?	
	Why?	
	Winners	
	Working Capital	
	Worth	

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Wealth

When there is social value adding, there is wealth creation. There may be the appearance of wealth when there is a lot of profit ... but this wealth is inconsequential unless there is social value adding that supports the profit.

Some people thing wealth accumulation is the ultimate goal of an individual and family ... and while it is a useful driver of an enterprise economy, it is unsustainable if the production of profit is at the expense of the production of social value.

The economic crisis of 2008 had its roots in financial profits that were made by a community of deal makers that made money on deals while wrecking the underlying society. Financial wealth was created and concentrated among the deal makers while social value was destroyed throughout communities.

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