



MULTI DIMENSION IMPACT ACCOUNTING (MDIA)

FOR DISCUSSION

COMMUNITY ACCOUNTANCY

COST ACCOUNTING

Peter Burgess (2008)

Background Note

The following was prepared in 2008. This paper was written while a book length analysis of development assistance was being prepared, and the focus is largely on the systemic failure of this segment of the global socio-economic system.

Subsequently it has become clear that there are also major systemic issues in other segments of the global society and economy.



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Community Accountancy

**PUTTING ACCOUNTANCY TO
WORK FOR ALL OF SOCIETY**

COST ACCOUNTING

FOR DISCUSSION ONLY

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Historic cost accounting

A standard criticism of accounting is that it is all about history ... and so also this applies to cost accountancy. But if you do not know something of history, it is impossible to manage for today and the future.

Why history is important

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

Clearly knowing everything about the past is counterproductive ... but knowing about the behavior of costs, prices and values ... and about productivity, profits and value adding would seem to be a good foundation.

In the corporate world, there is a good foundation of knowledge about cost, prices and profits. In the relief and development industry there is but the skimpiest of knowledge and understanding costs and the links between costs, activities and the impact on society.

If the development experts were using cost accounting that showed what worked and what did not ... there would be a much clearer basis for decision making. At the moment the game seems to have all of the characteristics of “blind man's bluff”.

The key is to get data about history that can be used to build understanding that is useful ... practical ... and not merely academically rigorous.

About cost accounting

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

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

Cost accounting is a powerful tool ... but it needs to be in the hands of an expert.

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

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

And cost accounting can be expensive ... with it being much less costly simply to have management and supervision that have some appreciation of cost control and their role in optimizing costs.

Cost Accounting at the World Bank

At some time in its history ... around 1990 ... the World Bank installed an expensive cost accounting system. A World Bank official described how effective the new system had proved to be ... apparently the system had made it possible to identify the high costs of security service to a department where an electronic access system had been installed years before and requiring no human security oversight. The department was able to reduce the cost of security to this department ... which is good ... but is this a measure of how good the accounting system is, or, how bad the supervisory oversight was.

Badly managed organizations continuously spend money doing things that are just not needed in organizations that are well managed.

Materials, Labor and Equipment

Organizations like the IMF and the World Bank refer to “economic classifications”. In the corporate environment the phrase “elements of cost” were also used. What they are called matters less than understanding what they are and how they behave.

Working with other languages

The idea that the semantics of word meaning is important gets minimized when the work is being done in a foreign language. I have worked a lot in English ... my native tongue, and in French, which I have studied over many years. The differences in the meaning of the language, and the understanding of the underlying concepts gets interesting ... but much more interesting when the language is quite different from my native language. Try explaining the concepts in Lao, or Russian, or Arabic! At the limit it is only the big concepts that move from language to language and culture to culture.

Materials, labor and equipment are the elements that go into most production activities ... and determine costs. These items also determine the behavior of costs and how costs can be improved. The interaction of these three elements can be optimized with respect to cost, and there is a large body of literature that helps decision makers optimize cost.

Optimizing cost may have a secondary impact on quality and value. This is one reason to talk of optimizing cost rather than minimizing cost.

Materials .. the foundation for most economic activity and sometimes a catalyst for improved performance.

Labor ... potentially both a contributor to production and a beneficiary of production.

Equipment ... often the catalyst for improved productivity.

Estimating costs

Figuring out how much somethings costs starts out as a theoretical exercise ... but it can be done very accurately when people know what they are doing.

People who work in any area ought to know what things cost ... if they don't, then there is something wrong. Good people will also know something about the behavior of cost ... that is how costs vary depending on the prevailing conditions. Unit cost tends to go down as volume increases ... but then will increase if the production requires overtime pay or weekend pay ... or if there are shortages of raw materials that require higher cost procurement. Good people know this stuff ... and a good cost system lets these details into the analysis so that good decisions can be made.

Estimating Costs

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

Estimating Costs

One of the most effective measures of organizational competence is the ability to estimate costs and get it right. The World Bank is reported to have had 300% cost overruns on the rebuilding of its headquarters building in Washington ... and the IMF had a similar experience. What does this tell you about two key organizations in the international relief and development sector

SIMPLE ANALYTICAL ACCOUNTING

Analytical accounting

Departmental accounting

Cost centers, profit centers, investment centers, departments, etc are all rather similar. The key is to understand what they are doing and what they are costing. If what they are doing does not seem to have any value ... then some further questions need to be asked and decisions made. Almost all companies will have department accounting so that the costs of a department can be understood and controlled. A department may have multiple cost centers. Department accounting is widespread because it informs about the costs of a department. Sometimes the costs are linked to revenues or activity levels. In Community Accounting applications, analysis of costs between activities in the community provides useful additional understanding. Departmental accounting and cost center accounting are similar, with cost centers often more detailed than the department.

Cost center

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

Profit center

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

Investment center

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

Project accounting

In the relief and development industry, most funds flow within a project structure. The project structure has some of the attributes of cost and profit centers. In the case of some World Bank projects, the structures are so complex that strong accountability for performance is absolutely impossible.

Responsibility accounting

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

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

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

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

Responsibility Accounting at ATI

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

In these reports, the company used not only accounting costs ... budget and actual ... but also a fairly large set of key item controls that measured activity levels that were important for company performance.

SUSTAINABILITY

Sustainability ... many perspectives

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?

Another view relates to whether or not the activity will be financially sustainable. This often relates to whether or not a need can be met at a cost that allows for an affordable price that is modestly profitable.

Financial sustainability

In recent years, sustainability has become associated with environment more than economics, which is unfortunate. Financial sustainability is an absolute requirement for any organization to be able to survive and contribute to socio-economic well-being. When the money runs out, whatever it was funding stops. Simple. Financial sustainability is different from operational profit and positive cash flows ... an entity may get funding from other sources that makes it financially sustainable.

For many not-for-profit initiatives, their donors make the operation financially sustainable even though the operating revenues would be insufficient ... and of course, in turn the financial survival of the entity relies on the continuing support of their donors ... which in turn results in quite serious distortions about the work done and how it is presented.

Environmental sustainability

There is more hysteria about sustainability as it relates to the environment ... and the issue should not be ignored, but it must be put in perspective, and the use of resources carefully understood.

People are a root cause of environmental degradation, and poor people do damage as well as the economically rich ... but have no other choice. Economic wealth can be used to do things that will have environmental benefit.

Environmental sustainability should not be ignored, and is going to have a critical impact on the future of mankind. What can be done to have impact now?

Community Accountancy helps to get the issue of environmental sustainability on the agenda at the community level where people live. People and the way more than 6 billion people behave is the single most important cause of environmental degradation.

Socio-economic sustainability

The welfare model of support for socio-economic development is rarely sustainable ... it takes value creation to ensure sustainability as well as a cost – price – value relationship that is affordable for the market.

Most profit maximizing business is sustainable but only operates in wealthy markets ... leaving the multi-billion BOP underserved. Social business that is low cost, low price, valuable and affordable is key to sustainable progress.

Modern enterprise in science, technology and in the corporate world has shown that there are amazing possibilities, but the potential benefits have not reached the BOP.

The Bottom of the Pyramid (BOP) can be better served, but systemic issues have to be addressed so that there is much more socio-economic sustainability for the BOP individuals and SMEs that are working hard but making little progress.

How to build a sustainable society

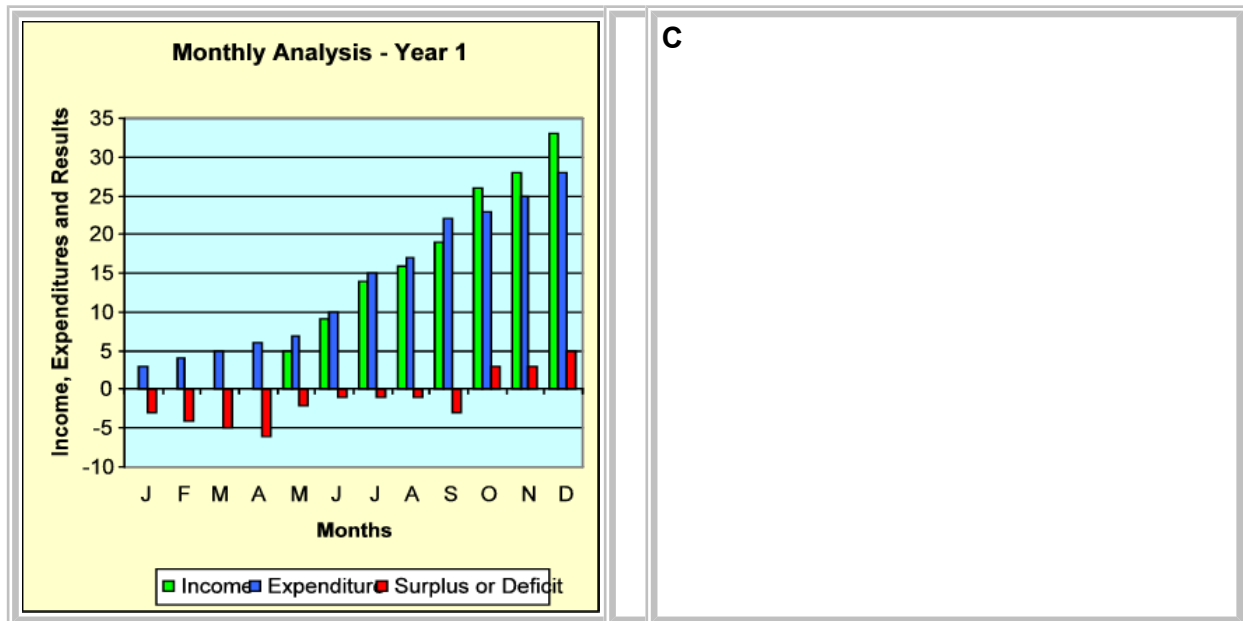
Building a sustainable society is relatively easy when it is done using a multi-sector approach and building on available strengths. This is exactly the opposite of what has been the relief and development norm for the past several decades and not yet showing signs of changing.

The productivity of many production processes are many times improved over what was the norm in the past ... this ought to translate into improved quality of life for almost everyone. But it has not ... and the reasons are fairly clear. Rather than putting focus on productivity and social impact as the most critical of measures, there has been a preoccupation with price, profit and stockholder value.

Using price, profit and stockholder value as the metrics of progress, there has been one of the longest periods of boom in history ... but when community costs are factored in, the picture becomes less favorable. But worse ... the gap between what is possible based on science and technology and what we actually do has become incredibly wide.

Yet this should be the basis for sustainable progress. What needs to happen is planning that recognizes the role of economic profits and the role of community socio-economic value adding ... and uses them both to get the best possible results.

We are not doing this in large part because of the absence of cost accounting and financial analysis within the sector focused institutions ... WHO (health) ... FAO (agriculture) GFATM (funding health) ... World Bank (funding government). Bilateral funding could have filled a multi-sector role, but it has n to, instead adopting a sector by sector approach that does not lend itself to optimizing a multi-sector dynamic.



C

Fixed and Variable Costs

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

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 a breakeven point is useful, albeit simplistic since the assumptions about linearity are rarely realistic in a real situation.

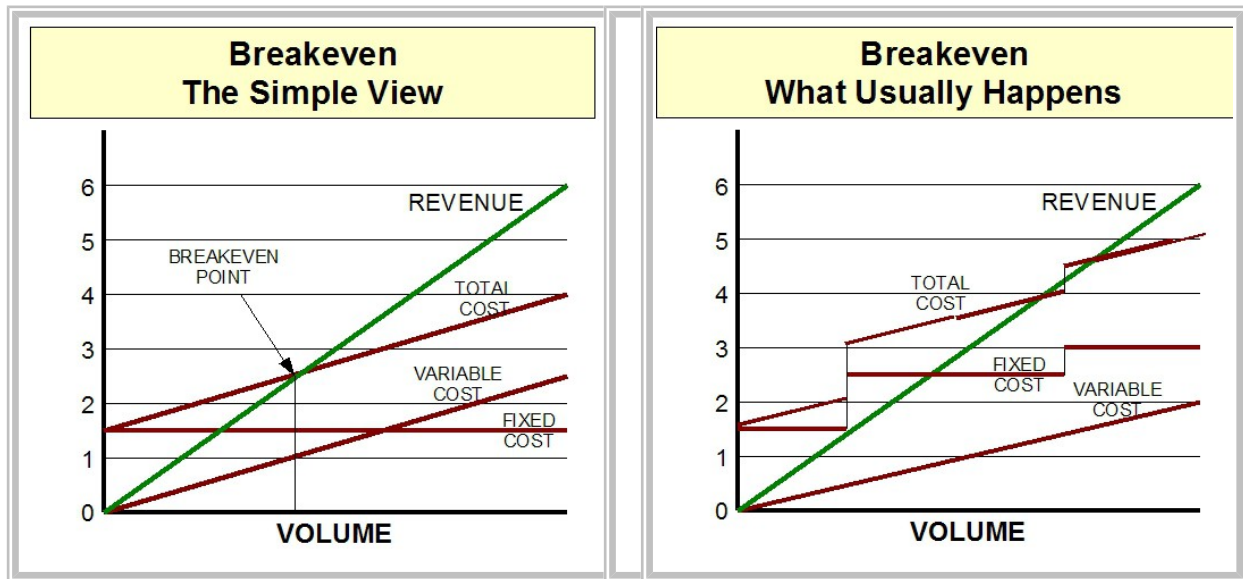
Students are taught the basics of a breakeven analysis ... with the simple breakdown of costs between fixed and variable costs ... and a revenue that increases linearly with volume.

There is nothing wrong with the concept ... but the simplified assumptions do not take into account much what happens in the real world.

There are much more complex changes going on that must be taken into consideration.

In a real situation the fixed costs tend to grow ... not in the same pattern as variable costs ... but they do grow. They tend to increase in steps ... but they do increase with scale.

In a well managed organization the fixed costs can be reduced ... can be made variable to some extent by good decision making and thoughtfulness.



STANDARDS

Standard cost accounting

Standard costs ...

Standard cost accounting is a tool that has helped cost accountants measure cost performance without getting deeply buried in detail.

Standard costs are the theoretical cost that an item or service should have ... and when the actual costs are different, then it is time to find out why.

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

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

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

Standard value accounting

Standard values ...

The same approach is used for value as for cost.

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

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

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

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

Standard, actual and variance

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

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

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

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

Standards AND activity information

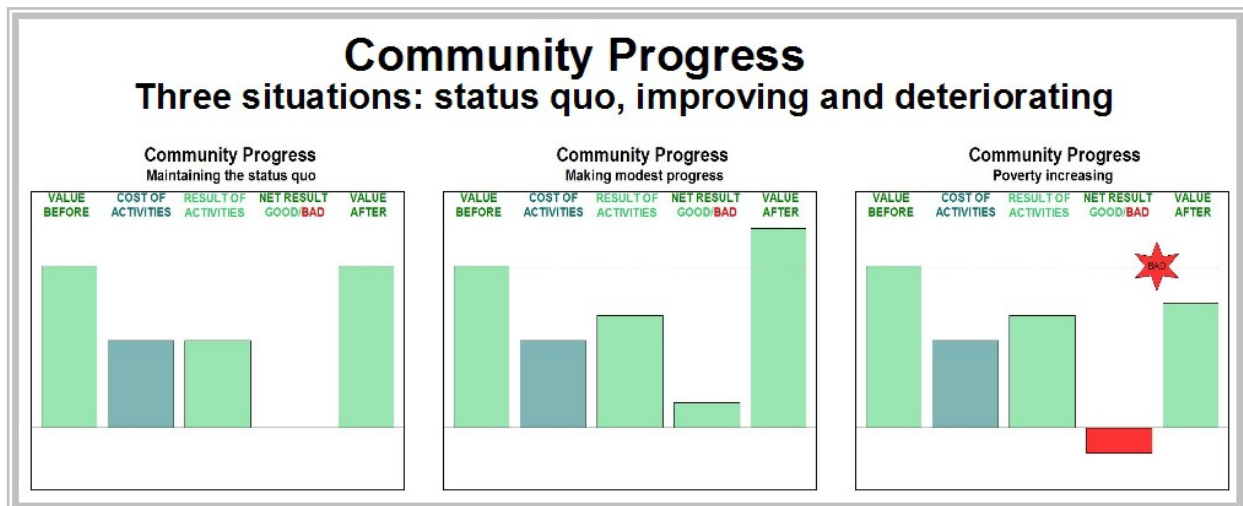
When we use standards ... then it is possible to put activity information into perspective.

Activities – Standard Cost			Activities – Actual Cost		
Community Centric Sustainable Development			Community Centric Sustainable Development		
STATE 1	ACTIVITIES / IMPACT	STATE 2	STATE 1	ACTIVITIES / IMPACT	STATE 2
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> Cost of activities Amount of activities this cost should have produced </div>			<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> Cost of activities ... the same Amount of activities this actually produced </div>		

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

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

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



VALUE CHAIN

Winners and losers

Value chain analysis shows who are the winners and losers.

Cost and price determine profit.

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

Where are the big profits? Where are the losses?

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

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

When cost is based on the consumption of Community Accountancy value rather than the consumption of GAAP cost and value adding and value destruction instead of profit, there are different results.

Transfer prices

Prices are critical in economic analysis and the determination of profit and value to any entity.

But we know rather little about prices ... often prices are hidden and prices are kept secret.

And even where there is publicity about prices, it is not always clear what the information really means ... price disinformation is as common as price information.

In value chain analysis, the transfer price determines how the value adding is shared between the entities in the chain it is very important.

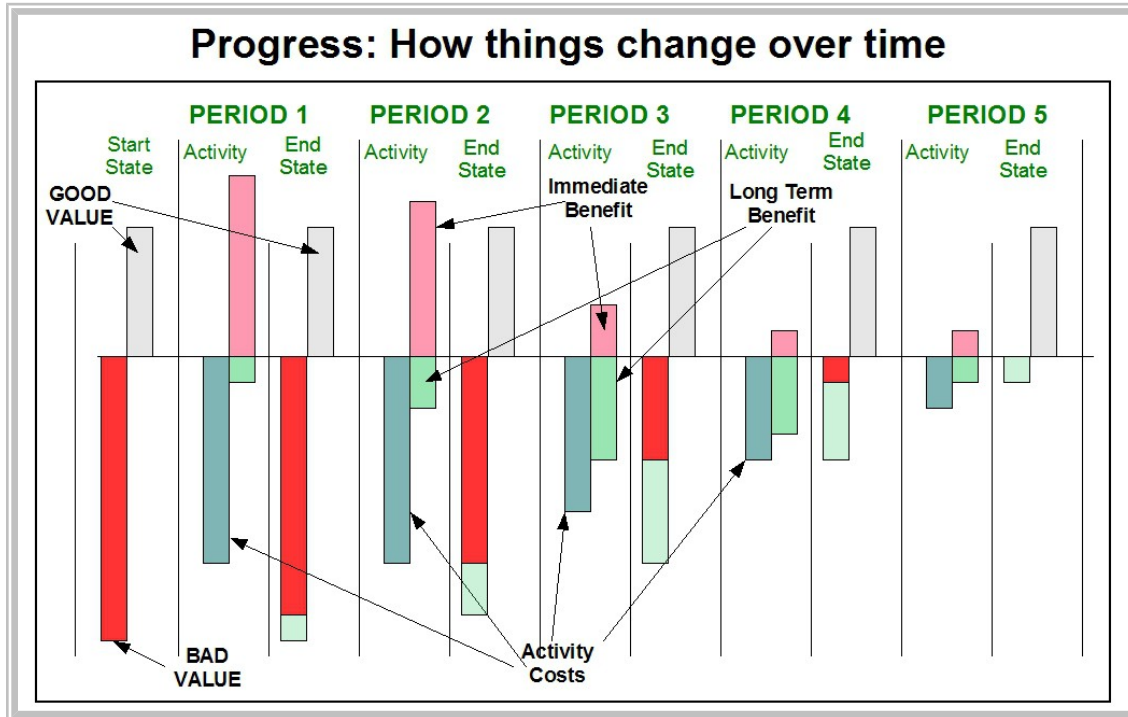
Because of its importance very little information is available about transfer prices. The idea that the "market" determines the price assumes a high degree of information and this is rarely the case. Transfer pricing serves those that have the control.

GETTING THINGS SIMPLE

COMMUNITY DEVELOPMENT DYNAMICS

This graphic depicts progress over a number of periods ... and it depicts the activities that were used in each period to change the community status.

Though very much simplified it is not very clear and particularly easy to understand. More information would likely make it less clear rather than more clear.



The graphic shows the change in community over time using a balance sheet construct. The community progress is represented by “good things” that increase, and bad things that decrease. Development success is measured by progress in improving the net of these. At the same time the graphic shows the way in which activity costs are allocated to immediate needs and future needs ... a useful concept for planning purposes, but perhaps confusing to people who are wanting simplicity.

Average is not very useful

A huge amount of data may be simplified by talking about the average ... it is one easy number instead of many ... but it does not add much to understanding. There needs to be simplification that adds to understanding.

Accountancy helps to take a lot of data ... transaction data and put it into a form that has utility ... pull together equivalent data and see what these bits add up to. Compare similar bits with prior periods and start seeing trends. Compare similar bits with other places and learn from that.

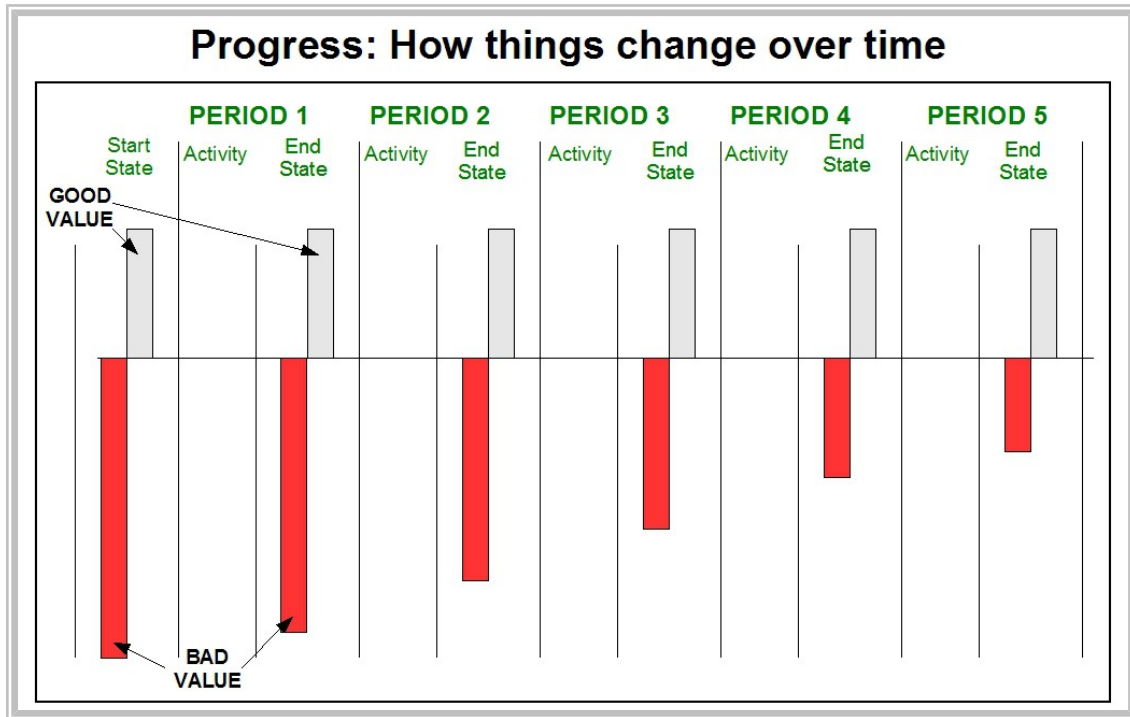
Look at plots ... variability might show something. Outliers may be bad data or may be alerting to something unusual.

What might be explained by what one expects ... might also be explained by some other factor. Keep a very open mind until the conclusions are supported by several sets of data and analysis.

Measuring Progress

The following graphic is much simplified ...it graphic shows progress very clearly. The focus has been on getting a reduction in the bad value ... with the good value staying the same. This is typical of a lot of development interventions that focus on a single issue ... and the single issue gets improved ... which is good but not usually enough to establish a sustainable future.

But this is clear.



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WHY UNDERSTAND BEHAVIOR

Understand the behavior of all the key metrics

If there is understanding of the behavior of all the key metrics ... then it is possible to manage the process and move towards an optimization of performance. Understanding has both a technical dimension and a human dimension ... they are both important.

The technical metrics are cost, prices and values ... and the derivatives of these which are productivity, profits and value adding.

The human dimension is an integral part of some of the behavior of these items, but there are other factors where human behavior is particularly important. What are the incentives that help to drive decisions ... and what can be done to bring an ethical dimension to the decisions being made that affect society.

Costs

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

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

Productivity

Productivity is a derivative of cost ...

For many years low unemployment was seen as a way to improve economic performance and reduce poverty ... but it rarely achieved much of either. The jobs that were created were unproductive jobs that did nothing to create incremental value, rather the work diverted people from more useful activities to absolutely useless activity.

Cutting Grass

When I was in Ethiopia (in the 1980s) I observed women being employed by the government to cut grass in the public areas of Addis Ababa using hand scissors. Very many women were paid tiny wages to do this work and did it laboriously and with great inefficiency. One person and a lawn mower could have done the work of 1,000 of the women. The value of the work would have been the same.

In one case one person was the labor cost. In the other case, 1000 people was the labor cost. In a case like this there is the potential to improve the grass cutting productivity by 1000 times ... but the productivity gain does not become a priority.

What are the reasons?

Perhaps it is because the leadership is using employment as a measure of success ... and by doing this ensuring that the economy remains unproductive.

Prices

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

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

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

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

Profit

Values

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

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

But the value is different when they are not needed. What is right? ... the answer is both!

Value is a critical metric for community performance. Value is very subjective and varies depending on many factors: the location, the socio-economic situation, the state or need, etc.

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

Value chain

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

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

Example

The relocation of manufacturing from the United States to China has been very profitable ... but what are the costs to society that do not figure in the corporate accountancy. Nobody has been doing Community Accountancy and nobody knows. We do know corporate profits increased as more and more manufacturing was outsourced to low cost areas. We do know something of the job creation in these low cost areas and we do know something of the job losses in the places where manufacturing plants were closed ... but what we know is far less than what we need to know. We do not really know very much at all about the impact on the communities --- this is not part of a system of metrics, and only part of what we need to know is on the record.

Example

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

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

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

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

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

Value Chain

Al Gore on July 17th, 2008

"We're borrowing money from China to buy oil from the Persian Gulf to burn it in ways that destroy the planet," he said. "Every bit of that has to change."

Profit is the relationship between cost and price, and has an impact on the stakeholders of the organization.

Impact on society is a function of value and cost, but also price which determines the share of value that accrues to society.

Three critical indicators:

- Productivity ... productivity improves when less cost produces more goods or services
- Profit ... profitability improves when price is increased and cost is decreased
- Impact on Society ... impact improves when the value increases and the cost decreases.

USING TIME SERIES

Time series analysis ...

Time series analysis has all sorts of uses ... it may not be easy to know exactly about something ... but it is easier to tell whether the direction is right or not.

Time series analysis helps to explain what is happening, especially if the time series can be related to something that is tangible and recognizable.

Time series analysis answers the all important question of how things are changing over time.

While it may not be possible to have absolute numbers about many important things ... time series analysis helps to show whether progress is being made or not, and something about how fast it is happening.

The purpose ...

The purpose of time series analysis and the use of simple graphics is to help UNDERSTAND the way in which the various elements interact and how key economic metrics behave.

What we do know is that nothing is linear ... and everything compounds. In most cases there is compounding on top of compounding and things can get out of control very quickly. It is possible for compounding to work for good ... but for that to happen the incentives have to be right, and in most cases they are the opposite of what they need to be.

Key Items

Time series are powerful ... they help put key information in perspective, and make it possible to see issues about performance rather clearly.

Prices

Price time series have historic value in putting current prices in perspective ... but prices are also a key indicator of what might be going to happen in the immediate future, or over a longer time span.

Costs

Cost time series are very interesting ... but much less accessible than price time series.

Value

Causation

Accountants think in rather simple terms ... not because things are simple, but because it is the most useful way for accountants to think. The question is how best to use the available resources ... and for this there needs to be some clarity about what causes what and how best for resources to be deployed.

Prices

Price time series have historic value in putting current prices in perspective ... but prices are also a key indicator of what might be going to happen in the immediate future, or over a longer time span.

A big part of the theory of economics concerns itself with prices and behavior in the market. It is very interesting, however, to try to understand what is happening to prices based on real world facts about costs, demands and structure.

Time series of prices are very powerful. Every major market has time series about prices, whether the market is for financial instruments, commodities or engineered items.

Price information is also used in small markets ... and is just as powerful. More of the small market data re needed to be collected and put into easily accessible form. The outcome will be interesting.

Shrimp Prices ... Industry Economics

I became the CFO of Continental Seafoods Inc. in June 1974. In the previous twelve months crude oil prices had increased from \$3.00 to \$13.50 and costs and prices for everything was in turmoil.

I was able to learn very quickly what impact fuel price was going to have on our trawler operations. We knew how much fuel we consumed and how much this was now costing compared with what it had before.

But what was going to happen to shrimp prices. I plotted shrimp prices month by month from 1946 to June 1974 ... nothing fancy ... just a long piece of graph paper with nearly 30 years of data plotted. From this it was fairly clear that there had been three distinct phases prior to the oil shock of 1973: (1) an expansion of shrimp demand that was easily satisfied by increased fishing effort (2) an expansion of shrimp demand that was less easily easily satisfied by more fishing effort ... prices generally moving up more rapidly than costs (3) increased demand but no more opportunity to increase fishing effort ... prices increasing by 100% per year.

With the oil shock shrimp prices crashed ... and shrimp production costs almost tripled. In mid 1974 the shrimp industry was in a global melt-down. We had some of the most cost efficient operations ... but world prices did not cover our operating costs. What to do?

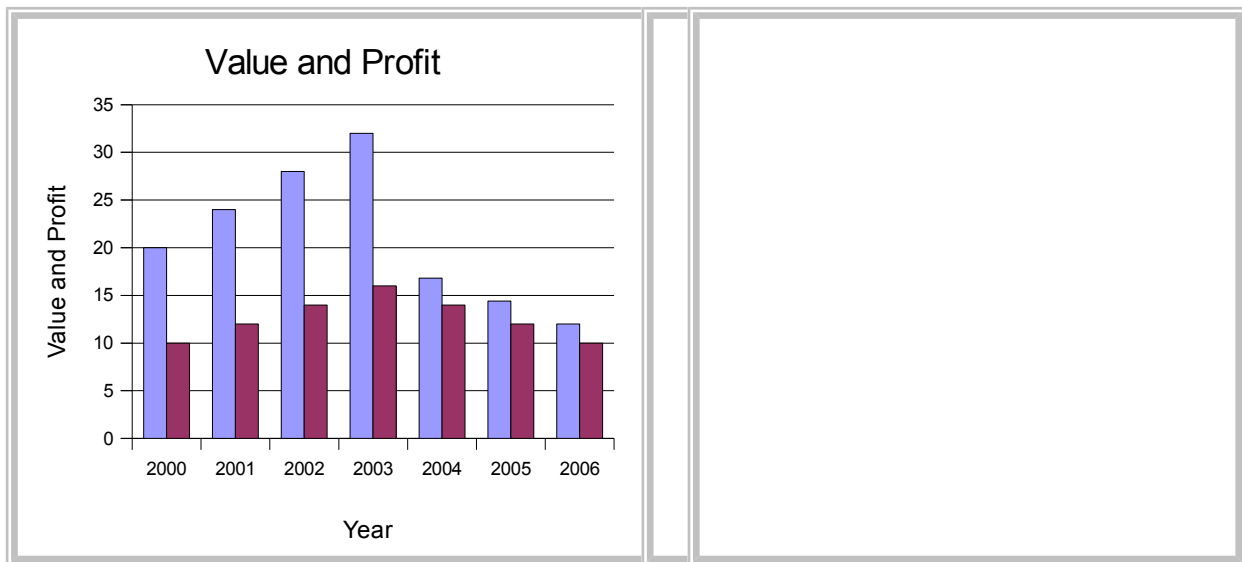
We were able to persuade our long time bankers that our inventory backed loans were not worth much if we folded ... but that if we used their financing to keep operating we would most likely be profitable the following year. The key logic was that market prices in the capture fishing industry cannot remain below production cost for very long and prices do not stay low when there is a shortage of supply. The bankers helped. Our analysis of price and cost was right ... Continental Seafoods was on its way to record profits.

Commodity Price Projects and the World Bank

For several years I did financial analysis assignments for the World Bank in connection ... and was frequently faced with questions about the future cost of commodities. The deep study of commodity prices was not my specialty ... but I had some fairly broad knowledge of markets and the behavior of prices, especially in turbulent times.

As a consultant to the World Bank ... ones expertise does not have the same weight as the staff expert. Over and over again the World Bank embraced price projections that the consultants considered completely wrong ... they helped to get flawed projects to have numbers that satisfied World Bank criteria for approval ... and ensured from the start that the World Bank would have a failed project.

Nobody at the World Bank has seen fit to allow me to compare the long term price projections made by the World Bank in the period from 1978 to 1982 with the prices actually realized ... but my work during that time suggests that the World Bank was embarrassingly wrong.



Costs

Cost time series are very interesting ... but much less accessible than price time series.

Cost is a result of productivity ... which in turn is a result of science, technology, organization, training and investment.

Modern economic society has been blessed with amazing progress in science and technology that has translated into low costs for valuable things. But also high profit and low value for society as a whole.

Time series of costs may be very different from a time series of prices. Costs reflects productivity and it is costs that have the most impact on the socio-economic status of the planet.

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.

Economic Value Adding ...

Economic Value Adding (EVA) became a powerful tool to manage wealth perception. but it is only used in the process of personal wealth creation and ignores the impact that personal wealth creation activities are having on society as a whole.

Community Accountancy uses a similar accounting methodology to EVA but including all the impacts that economic activities of all sorts are having on the society.

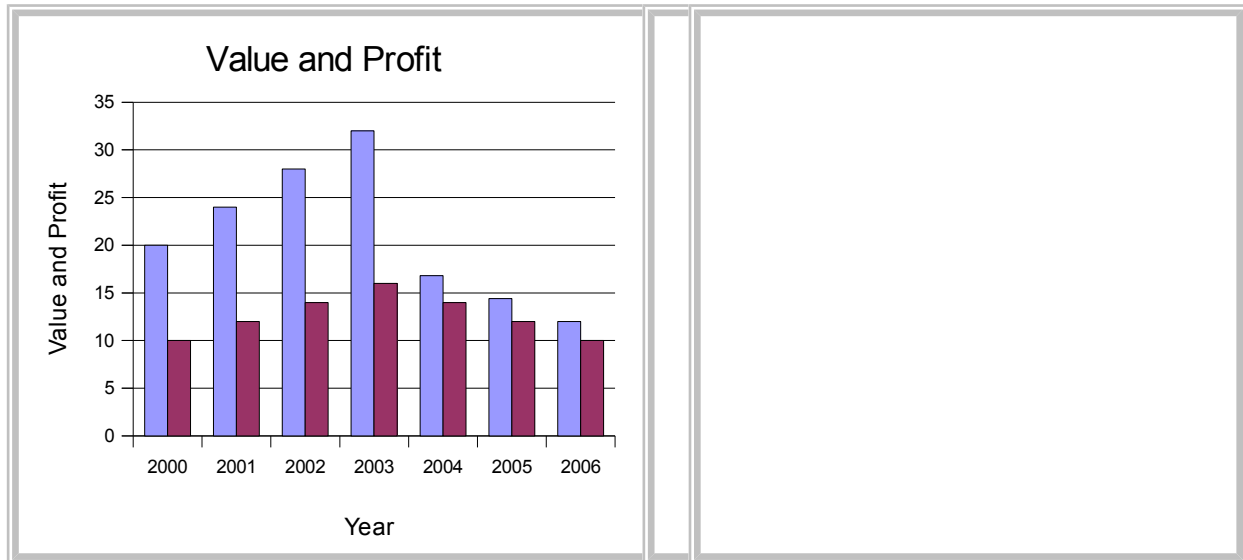
Economic Value Adding is used in the standard GAAP accounting world to optimize stockholder value. Impact on society is not taken into consideration.

Economic Value Adding in the Community Accountancy framework is concerned with the impact on society and answers the question whether or not economic activities are contributing to the quality of life of the community at large.

Example

This graphic illustrates the way value in the capital market gets magnified when performance is improving and diminished when performance is declining. The concept is reasonable ... but in practice it has has been abused and there is a degree of hype that creates instability in the market or worse.

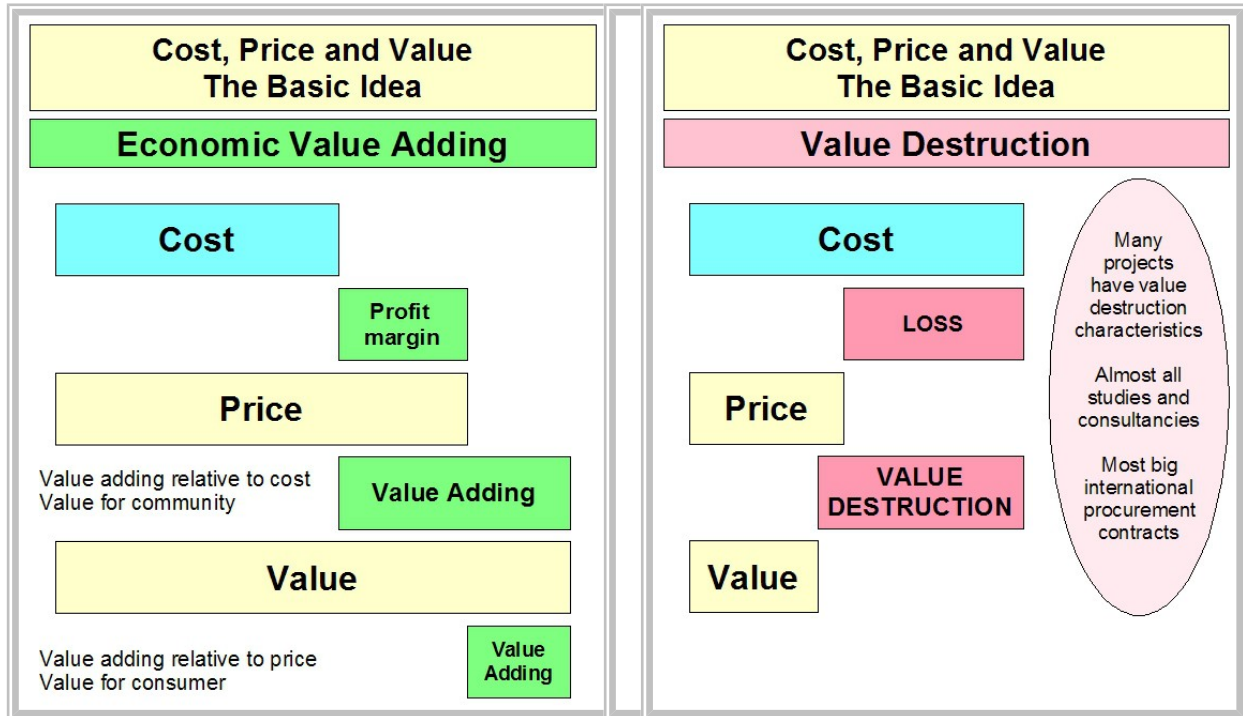
At the time when year over year profit changes from increase to decrease, the value of the stock drops substantially. These stock values are based on perception and in one case perception is probably overvaluing the stock, and in the later case is probably undervaluing the stock ... but both are unreal.



UNDERSTANDING COST AND VALUE BEHAVIOR

COST, PRICE AND VALUE AND VALUE CHAIN

Price has an important role in the matter of economic incentive ... and the question of sustainability. The value chain works and is efficient when the transfer pricing through the value chain provides a reasonable rate of return on capital employed within each piece of the value chain. If any of the links in the chain become unprofitable, the value chain becomes dysfunctional.



COST, PRODUCTIVITY AND IMPACT ON SOCIETY

Cost is the most important parameter of economic performance. Cost is a derivative of productivity. If cost is low ... it is a proxy indicator that productivity may be high.

Productivity is the single most important reason that modern society has potential ... modern society can do things today that were impossible only a few years ago.

In numerical terms, I suppose this means that productivity went from one over infinity (infinitesimal) to something measurable.

Cost is only a proxy for cost because there are several elements to cost, most important of which are the following:

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

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

Cost is the derivative when the amounts consumed are multiplied by their respective unit costs.

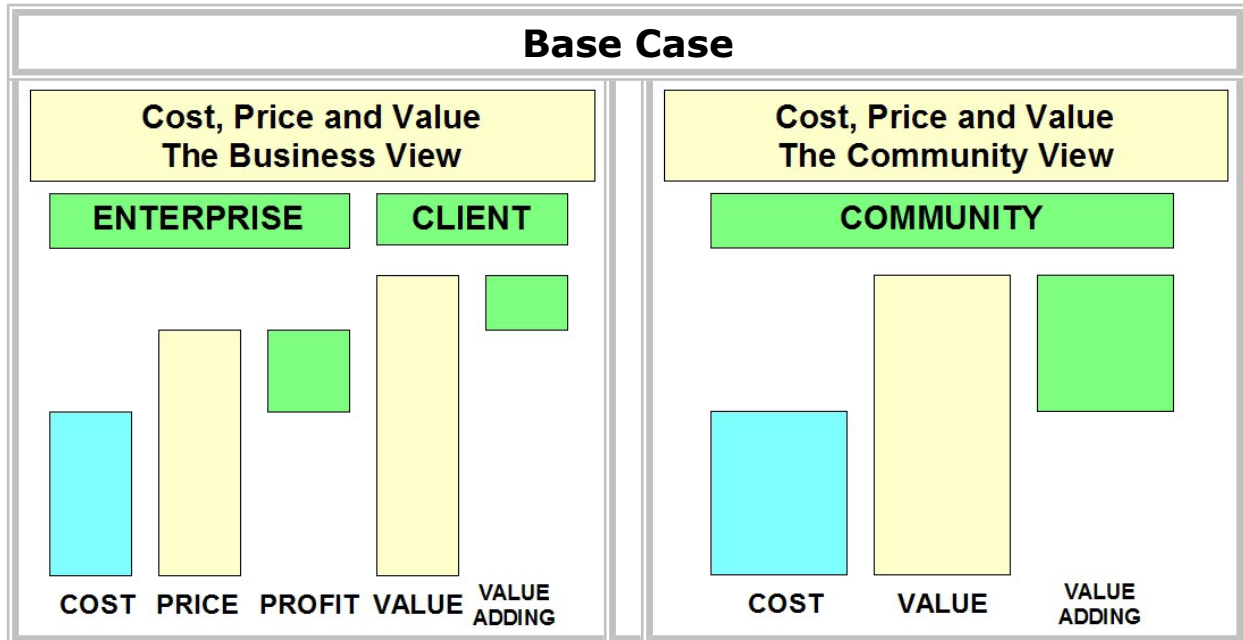
Low productivity low wage areas may have lower costs than high productivity high wage areas. Corporate profits ... which are determined in large part by costs ... are maximized by focus on production in the lowest cost areas. Social value may or may not be optimized by corporate profit maximization.

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

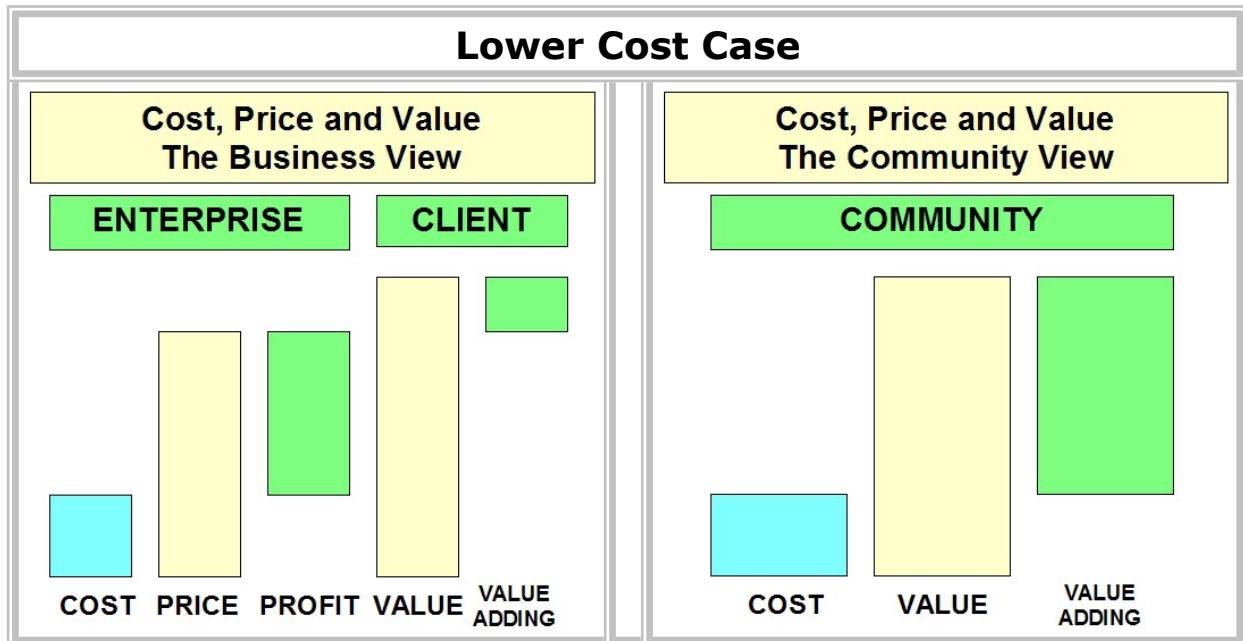
HOW PRICE IMPACTS COMMUNITY

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

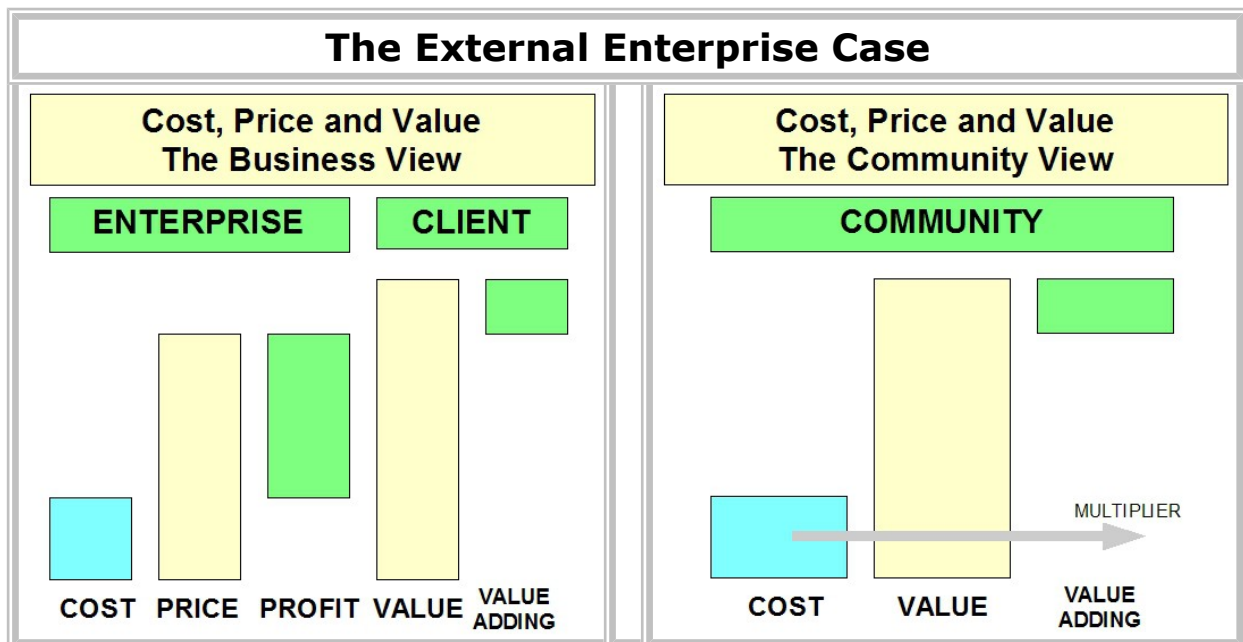
For society as a whole the value adding is the difference between the value and the cost. For the client the value adding is what is left of value adding after the enterprise has taken out its profit. In the profit maximizing enterprise the goal is to have profit as much as possible, and the amount left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



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



If the client and the enterprise are in the same community it does not matter so much whether the client or the enterprise has what share of the value added ... but where the enterprise is from outside the community it matters a lot. In the case where the enterprise is external ... the case of Foreign Direct Investment (FDI) for example ... the value adding for the community is small because the profit leaves the community. If the costs are incurred in the community there is some multiplier effect ... but typically local disbursements are small and most of the costs, as for example in mining are equipment, fuel, expatriate payroll with rather little value for the community.



If the client and the enterprise are in the same co
 Cost is the derivative when the amounts consumed are multiplied by their respective unit costs.

Tea – The Case of Malawi

The Tea Auction in Malawi was a good example of market theory (from the World Bank) creating a disaster for local agriculture in Malawi. For most of recent history there has been global production surplus of most agricultural products, and tea is no exception. Other things being equal, an auction will produce an equilibrium price that is low when there is a surplus situation. Not surprisingly the tea auction resulted in very low export prices ... insufficient to pay for the costs of production.

Some of the tea estates were owned by Malawi interests ... including President Banda ... and some were owned by a major international tea marketer. For the local interests the low prices were catastrophic ... for the international company they were both a seller and a buyer and it made no difference to them. Rather it was a big benefit because it removed all the problems of explaining profit and being assessed profit tax and handling repatriation of local profits. For the local interests low auction prices had to be translated into low costs ... and this was done by paying extremely low wages to agricultural workers. While this was good for the plantation owners, it was terrible for the workers and the community.

The auction was the vehicle that allowed profit to be moved from the producer end of the value chain for tea to the marketing end ... for value to be moved from the south to the north. Bottom line ... this is one of the root causes of present day poverty in Malawi.

Oil in Nigeria

The oil in Nigeria is mainly in the Niger delta, and offshore from this area. For hundreds of years, local people were able to prosper from fishing. But over the past fifty years that has changed. Fishing grounds have been polluted, and local people have become very poor.

But there are huge fund flows associated with the oil that comes from this area. Multi-billion dollar investments have been made in exploration and oil drilling ... huge royalty payments are made to the Nigerian government ... and local people are obscenely poor. There is blatant inequity in the value chain ... and no way for the inequity to be resolved.

MARKETS

There are several reasons that markets exist ... some of them with good consequences, but not all:

- Markets help balance supply and demand
- Markets help adjust prices to an equilibrium between supply and demand
- Markets help monetize value
- Markets facilitate transfer of wealth between social segments

Markets help balance supply and demand

Markets probably do this better than politicians ... but this is very inefficient in the modern global economy for a multitude of reasons.

Markets help adjust prices to an equilibrium between supply and demand

Markets help monetize value

Markets

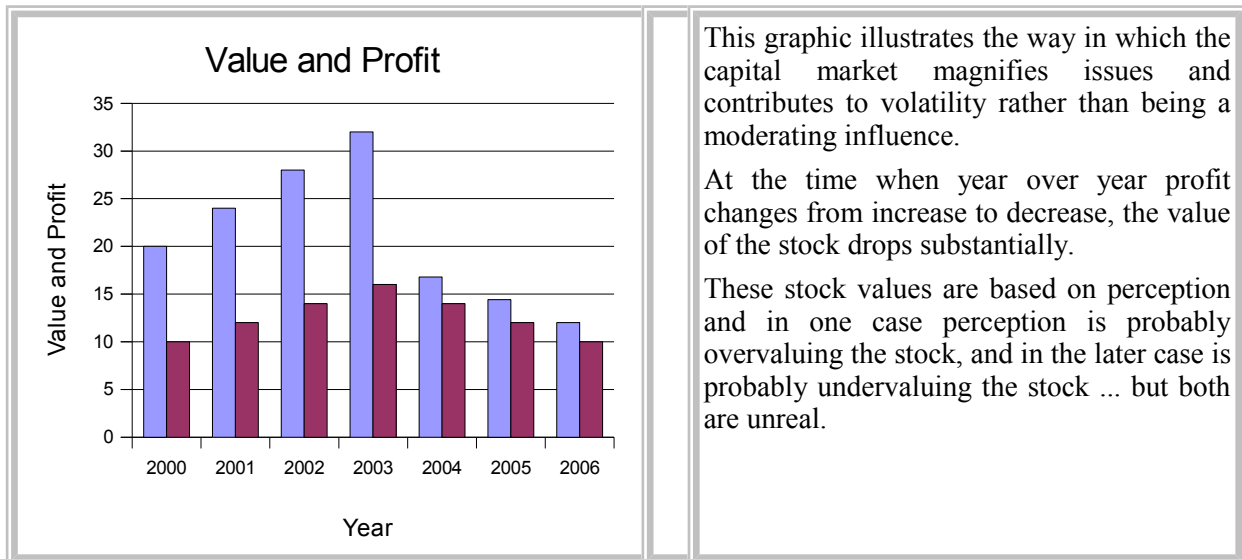
Markets facilitate transfer of wealth between social segments

The large scale transfer of wealth

The

Economic Value Adding ...

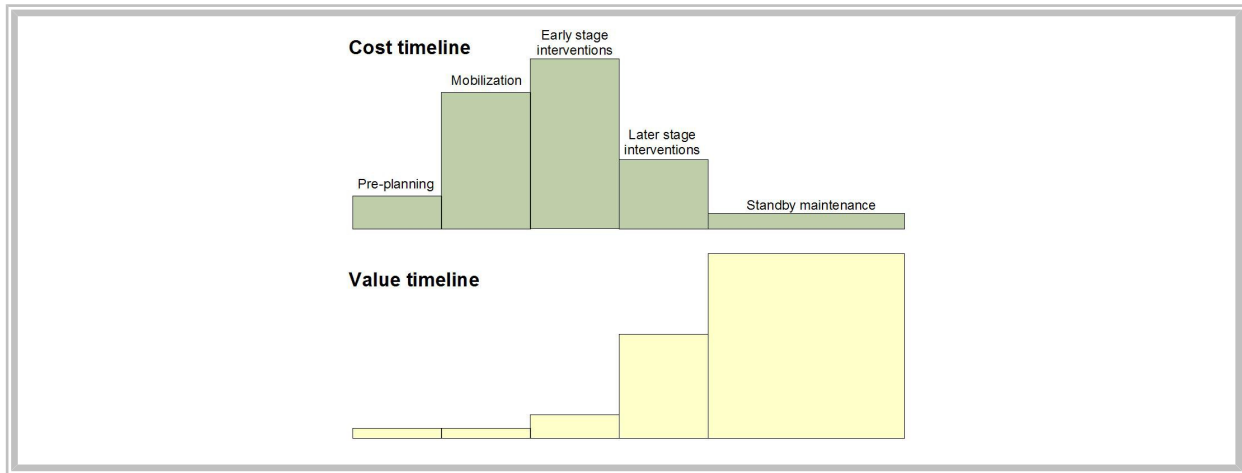
Economic Value Adding (EVA) became a powerful tool to manage wealth perception. but it is only used in the process of personal wealth creation and ignores the impact that personal wealth creation activities are having on society as a whole. Community Accountancy uses a similar accounting methodology to EVA but including all the impacts that economic activities of all sorts are having on the society. Economic Value Adding is used in the standard GAAP accounting world to optimize stockholder value. Impact on society is not taken into consideration. Economic Value Adding in the Community Accountancy framework is concerned with the impact on society and answers the question whether or not economic activities are contributing to the quality of life of the community at large.



Timeline of costs and values

The following graphic shows the very different timeline for incurring costs and realizing values. This is a critical problem in development and not central to much of the development planning process that is practiced.

As a practical matter most of the cost have been incurred before it can be shown that there are any benefits ... and this provides a dangerous opportunity for costs to be misused long before the lack of benefit raises questions about performance.



The project form of organization accentuates problem with

The F line subway station at Lexington Avenue and 63rd Street in Manhattan is a interesting example. It is a new subway station opened around 1990 serving a deep subway with multiple sets of escalators. Almost every week some of the escalators are broken down and awaiting maintenance. ... these are Otis Escalators, a reputable product, but in this situation they are always breaking down. Though almost impossible to prove, it is likely that the contractors who installed the original equipment did not do the work right ... and that the inspectors and contract oversight engineers did not do their work right either. It is pretty clear that something went wrong, and in the best of all worlds, we should know what is was and be able to hold the people responsible to account. Almost certainly something like over-billing and under-performing was involved ... payments for favorable inspections ... and so on. It is pretty obvious this is what happened ... but there is no practical way to find the facts and hold people to account.

Many cities have a problem with street congestion ... and several cities around the world have tried to address the problem with some form of “pricing” that charges users for road use. But before the discussion of congestion pricing, it would be useful to have a discussion of congestion costing. How much does it cost society to have such a dysfunctional system of city transport so that productivity is far below what it should be. This is where data about behavior of cost is useful.

Operating a truck has three major cost elements, the labor cost, the cost of fuel and the cost of the equipment (truck). These costs vary based on time (labor), the power being used (fuel) and mainly time (for the truck). A truck stuck in traffic has high costs ... and is doing nothing useful ... just waiting to get moving and go somewhere. There might be another big cost ... the cost of not delivering on time.

Buses carrying passengers have another cost to society which is the opportunity cost of the time being wasted by all the passengers on board. If 30 people on a bus are delayed one hour by congestion ... what cost does this have. If the costing is done at \$50 an hour, the hourly cost is \$1,500 ... and at a low wage rate of \$10 an hour it is still \$300 an hour.

How many people in a city like New York lose an hour a day because of getting stuck in traffic. Maybe its 500,000 people ... maybe a lot more. At a wage rate of \$10 an hour, not that much above minimum wage, the daily cost is \$5 million. For a year this amounts to \$1.25 billion.

There needs to be dialog about congestion costs ... when society knows what congestion is costing ... then perhaps leadership will give this an appropriate priority.

Profile of the population

The profile of the population tells a whole lot about the community ...

- There are the questions of how many:
- There are questions of health:
- There are questions of education
- There are questions of jobs, work
- There are questions of wealth
- There are questions of housing

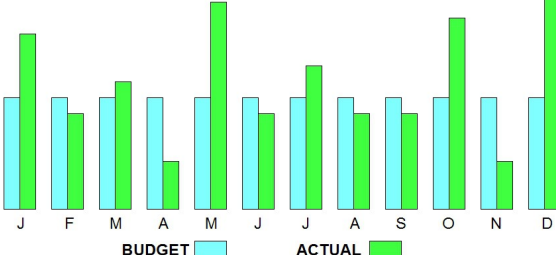
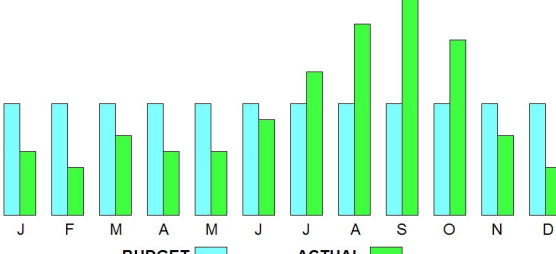
How to present this so that it is clear, simple but nor simplistic.



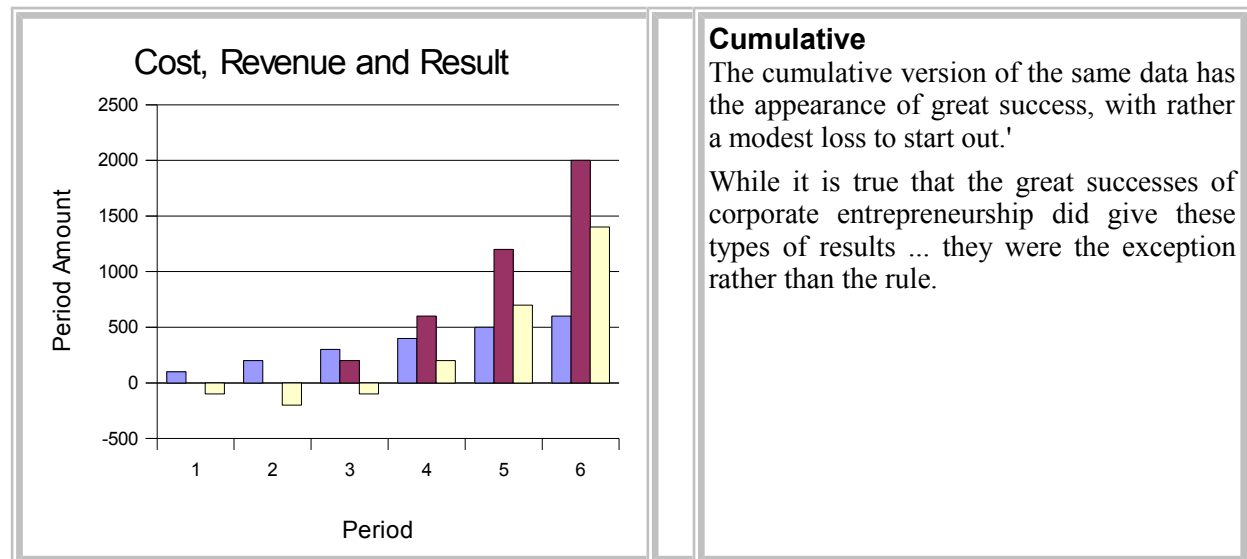
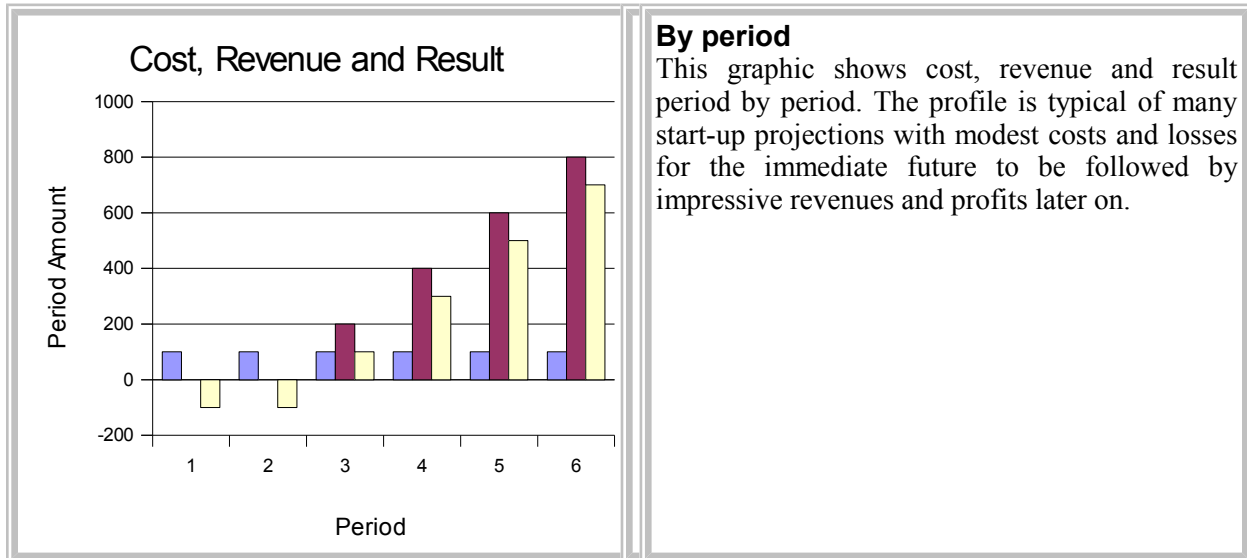
Interpreting time series

Budget and actual

Budget and actual by month is a commonly used plot. Sometimes it does not tell very much, sometimes it does.

Budget/Actual By Month	
 <p>This chart shows budget and actual values by month. The budget is constant at 10. The actual values are: J:15, F:8, M:12, A:5, M:18, J:8, J:12, A:8, S:8, O:15, N:5, D:18.</p>	<p>This plot of budget and actual by month does not show very much ... some months are above budget, some below.</p>
 <p>This chart shows budget and actual values by month. The budget values are: J:10, F:10, M:10, A:10, M:10, J:10, J:12, A:15, S:18, O:15, N:10, D:10. The actual values are: J:5, F:5, M:8, A:8, M:8, J:10, J:15, A:18, S:20, O:15, N:8, D:5.</p>	<p>But this plot shows what seems to be some interesting seasonality. The budget looks as if it was a year number divided by 12 ... the actual has a distinct form.</p>

Cost, revenues and results



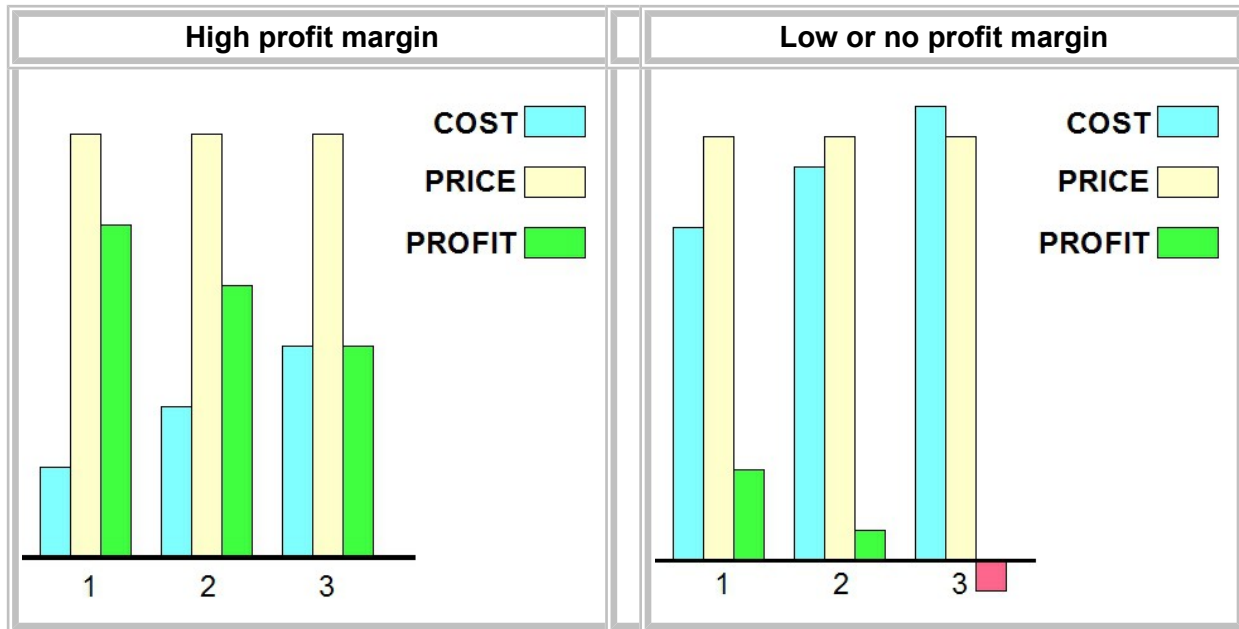
The lesson to take from this is that enterprise has the potential to have good results ... but that the period by period costs in the early stages are for sure, and the revenues and positive results further out are less and less for sure.

As enterprise moves into social business activities where the market has little buying power ... and the society has a great need ... there is a need to have data that show result in terms of social impact as well as simply in terms of money results.

When costs are very low relative to price, an increase in cost does not automatically result in a profit decline. The business has options. But when the costs are close to the price, then the business options are limited, and the likely outcome is that prices will increase.

When costs are near prices, there is cost push inflation ... and very little that monetary policy can do to constrain its virulence.

The first graphic shows high profit margin with cost increases moving from a low level. The second graphic shows cost increases that move from little profit to even less profit and then to a loss.



When costs are small relative to the price, then the company has options. By reducing price it may be possible to increase sales and increase profits. Even though the costs have gone up, the price goes down and the profits go up ... the cost inflation statistics fail to pick up the cost increase because it is the price that drives that metric.

Watching price movements over the past five years, it has been apparent that low priced goods were under cost and margin pressure ... and because of this costs were pushing prices up in order to maintain modest profits. This was not at all apparent in higher priced items ... the luxury sector ... where prices and margins were good. As customer resistance increased it was possible to entice buyers with lower prices which translated into more sales and in fact increased profits.

For cost of living type statistics with a broad basket of items, the lower prices in luxury items probably masked underlying cost increases while the essentials with increasing costs and increasing prices were small in the total basket, though vital to the cost of living of real people in the poorer segments of society.

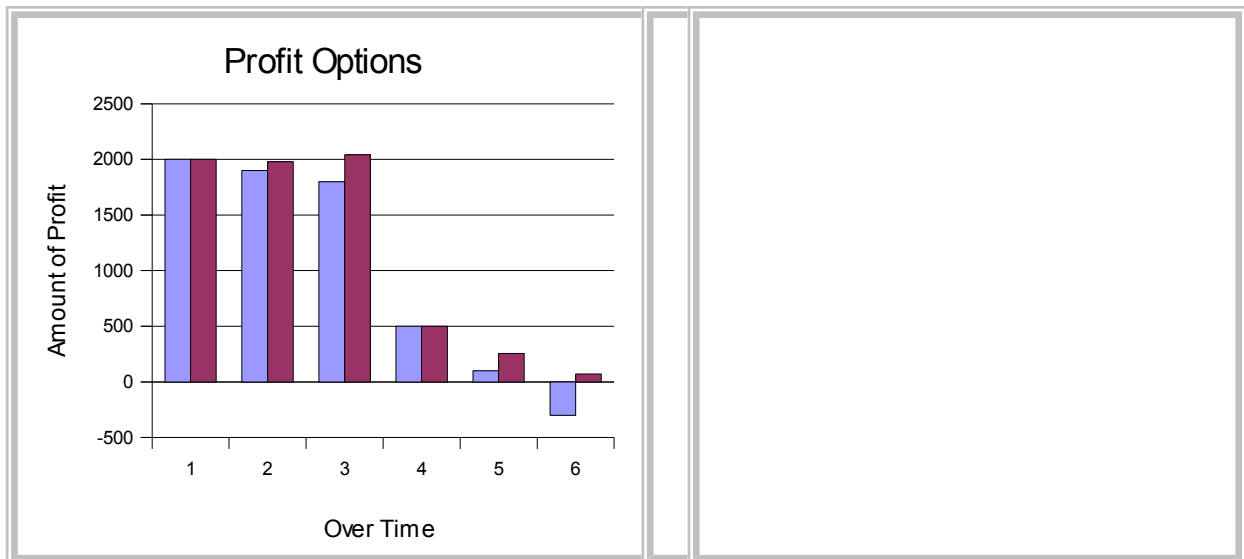
So even though costs have gone up, price goes down in period 3 ... but with high underlying costs and only one option prices go up in 5 and 6.



Assuming a constant quantity of sales shipments ... the profit has the same form as the unit profit of the unit cost, price and profit graphic.

But with a low cost and a high unit profit it is possible to decrease the price and increase volume and increase profits.

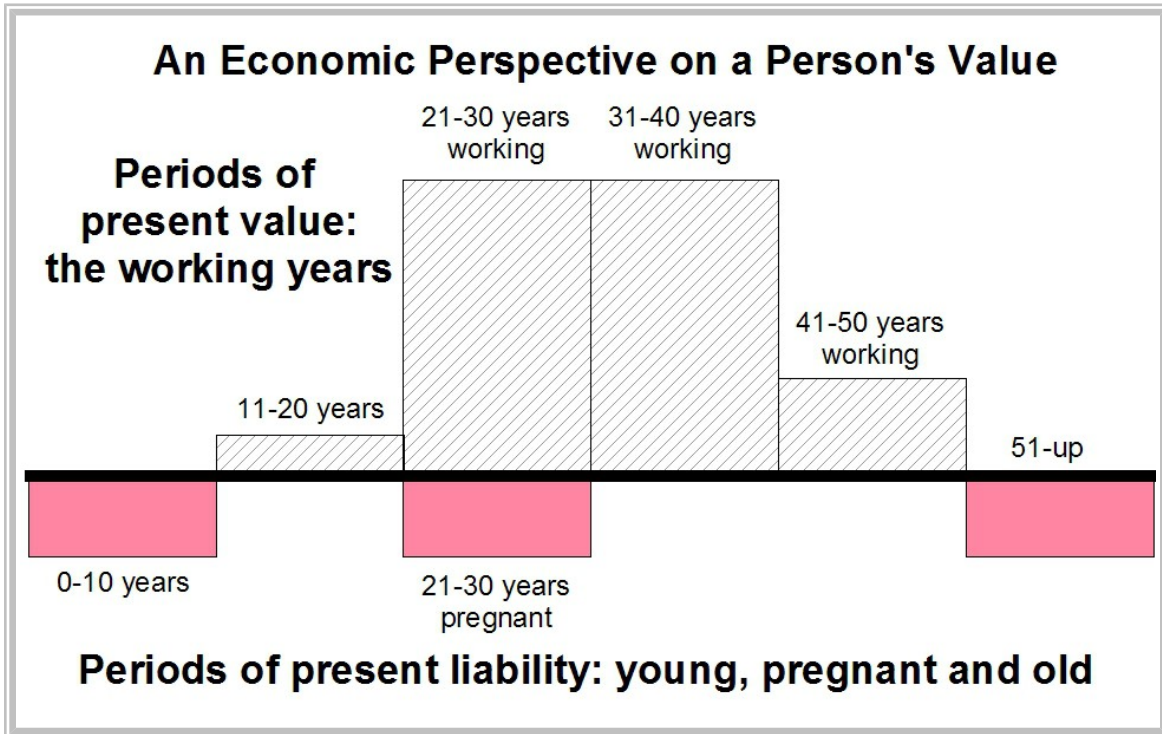
This option no longer exists with the higher cost situation. The business has only one option, and that is to raise prices to cover costs.

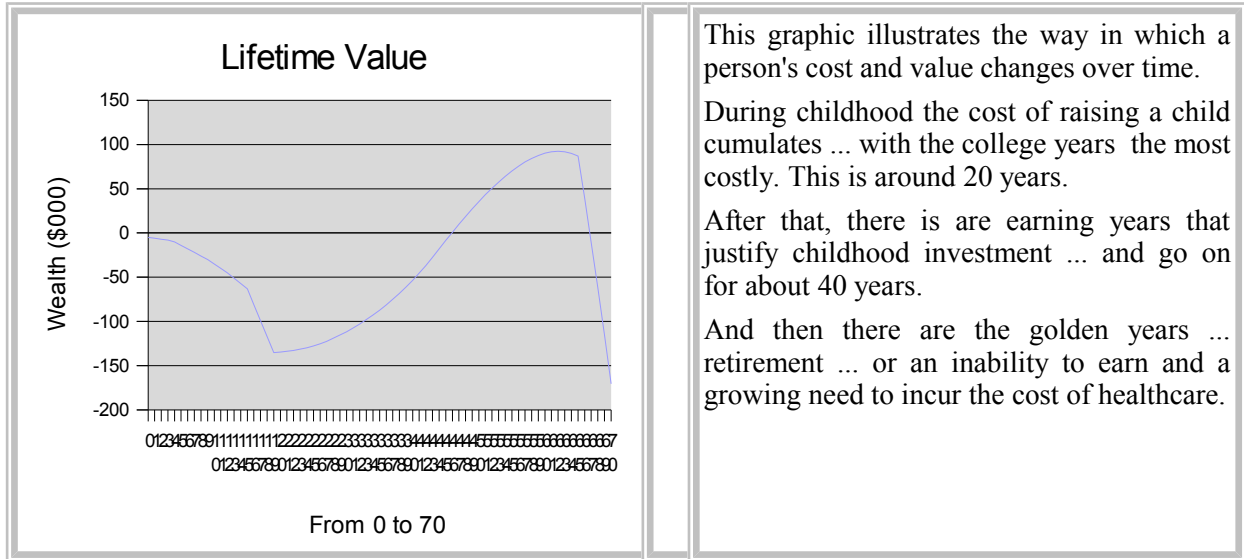


Understanding Value

The value of a human being

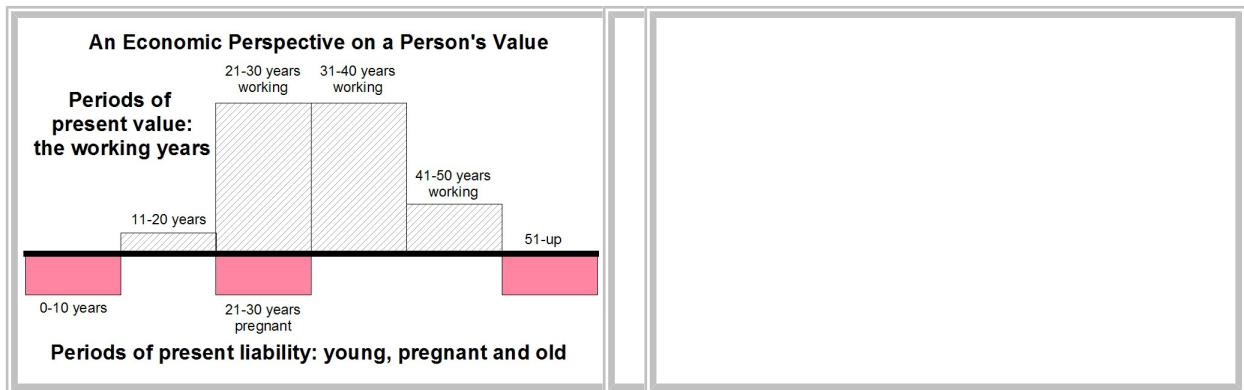
This is a stylized graphic that shows value from a developing country perspective. Young children represent an immediate liability as they must be fed ... as they get a bit older they have a net value positive because they can do essential chores like carrying water. The working adult has the most value, but offset when a women is pregnant and cannot work. Old people unable to work are again an economic liability.





It is helpful to understand the costs or investment associated with growing up, and the earning power and value of a working adult, and the increasing cost and liability associated with old age and sickness.

There are two graphics below which depict this ... the first shows lifetime value, and is nothing more than the cumulative cost of raising a child, and subsequently offset by cumulative earnings less annual lifestyle costs ... and then impacted by the cumulating costs of old age.



////////////////////////////////////

WHAT IS ANALYSIS FOR?

Moving data from neutral

The purpose of analysis is to get a better understanding. Data should be neutral, and merely reflect some underlying reality. Analysis takes data and puts it in a form that augments understanding. It really does not matter what analysis is done as long as the result is better understanding and improved decision making.

It does matter that the analysis is done on top of neutral data. It does matter that data are reliable and reflect an underlying reality.

In the 1970s, when fisheries population dynamics was a rapidly developing science, I had a conversation with Dr. Gulland at FAO about the problem of using more and more mathematics to compensate for less and less data.

Over the years more and more mathematics has been done on less and less data. Accountancy uses rather little mathematics on top of good data that are well organized.

The problem is serious. It is time to get back to having neutral data and doing unprejudiced analysis. That is why Community Accountancy is needed as the foundation for compiling and organizing neutral data.

A step toward creating value

Value is not created when analysis is done ... value is created when the understanding helps get better decisions made and there are better outcomes. Value only gets created when something is built ... when jobs are created ... when constraints are removed ... etc. There is no value increment from added understanding that stay in purely academic circles and is never used.

Making measurements

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

Later, as an accountant trying to get business to make critical decisions, we measured everything that seemed to have potential importance. The big lesson from this was that we got more impact when what we measured had real relevance to the people doing the work. For the shipping department, measuring how many miles a truck drove per tire was important ... and the supervisor of that department knew and cared a lot about it. And when the purchasing department also understood the matter ... the company progressed.

The lesson for Community Accountancy is that we need to measure what is important for the community ... and then get the understanding translated into action that translates into progress.

