THE P/C/I MODEL: SOME PRACTICAL CONCEPTS FOR ASSESSING ORGANIZATIONAL VIABILITY

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PREFACE

Under sponsorship of the Agency for International Development, Practical Concepts Incorporated (PCI) undertook a study to define practical mechanisms for assessing organizational viability. This report summarizes, in extremely condensed form, that study as supplemented by additional PCI-supported work.

The reader interested in greater detail regarding this study is referred to Volumnes II and III of PCI's final report under contract number: AID/CM-otr-C-73-200 WO#2.

PCI's principal investigators for this work were Leon J. Rosenberg, Roger Popper, and Molly Hageboeck.

Individuals whose constructive criticism and advice greatly improved this manuscript include another PCI staff member, John David Garcia, and our colleagues at AID -- especially Messrs. Herbert Turner and Philip Sperling.

Our thanks also to Louie Stancari and Dianne Sachs, who edited and produced this series of reports.

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SECTION I: OBJECTIVES & CONCLUSIONS

A. Study Objective

The objective of this study was to develop practical ways to assess the viability of LDC organizations and institutions created or supported by AID. The key questions PCI attempted to help AID managers answer were:

1. Is the organization viable so that AID can now cease to subsidize it?

2. What must the organization do in order to become self-sufficient?

3. Can the organization be given additional responsibilities?

4. Given several similar organizations, in which should AID invest to maximize benefit?

PCI's job was to develop practical mechanisms by which USAID Mission officers can answer the above questions. In PCI's "Logical Framework" terminology, we were attempting to define purpose-level ways of assessing viability -- verifying that the organization is viable rather than confirming that we had done all things we postulated as necessary to achieve viability. Although we hoped to illuminate broader issues, our emphasis was on developing practical tools to be used by USAID Mission officers.

B. Conclusions

PCI has succeeded in developing a practical method of assessing organizational viability. That method -- and the organizational model from which it derives -- is consistent with earlier efforts to define "institutionality". More important, that method is within the ability of USAID officers to implement.

In addition to developing a refined model of "organizationness", PCI has also developed three ways of using that model to assess viability.

Per PCI's model, we conceive of an organization as comprising three basic resources or assets: P, C, and I -- corresponding approximately to Purchasables, Connotation, and Image. These terms are defined in Section II and have been chosen to minimize semantic confusion.

Using this "P/C/I Model", we have developed three related and individually sufficient ways of assessing viability:

1. The Balance Sheet approach -- developing a statement similar to those used to characterize financial resources.
2. Observation of the individual transactions in which the organization engages.
3. Direct observation of the essential properties of viability -- the organization's effect, rate of change in effect, and feedback.

Viability requires a dynamic equilibrium between the organization and its environment. The above are alternative ways of assessing the equilibrium itself (the balance sheet), the micro-scale basis for that equilibrium (transaction analysis), and macro-level

equilibrium (observation of effect and feedback). Methods of assessment are clarified in Appendix A. We direct your attention at this moment to the trade-off analysis shown in Table 1 -- characterizing the "pros" and "cons" of alternative modes of assessing viability.

As can be noted from Table 1, in terms of simplicity and value of use by Mission staff, the first of the above methods -- the balance sheet approach -- is favored. For this reason, it is the balance sheet approach that PCI has explained in its draft guidelines for Mission staff. We recommend that the balance-sheet approach be demonstrated by using it to assess viability of organizations AID is currently supporting.

TABLE 1: SUBJECTIVE RATING OF ALTERNATIVE METHODS OF ASSESSING VIABILITY

RATING CRITERIA	Method of Assessing Viability		
	BALANCE SHEET	EFFECT/FEEDBACK	TRANSACTIONS
Simplicity of Use	5	2	3
Time to Implementation	5	3	3
"Prescriptive" Value	5	2*	4
Flexibility 1/	3	2	5
Generalizability ** (from health to other organizations)	5	2	5
Further Work Needed to Refine	5	3	3
Potential Value of Large-Scale Data Base	5	5	5
Total Rating	33	19	28

Methods are rated on "one-to-five" scales, where one means essentially "unknown" and five indicates exact fit with AID needs. (PCI judgements, objectively verifiable only through experimentation as recommended.)

1/ Flexibility is defined as usability with small samples, ability to use "unobtrusive" measures, or unobtrusive observations.

* Prescriptive value of the "effect/feedback" model depends heavily on refinement of such concepts as "tracer diseases".

** Although the effect/feedback assessment approach is completely generalizable, the remaining obstacles are of measuring health impact per se -- clearly making this round of experimentation health specific.

SECTION II: BASIC CONCEPTS OF THE P/C/I MODEL

A. "Organizationness"

The first and fundamental recognition made by our study team was that an organization is defined not just by internal parameters but by its relationship to its environment. The organization occupies some "space" in its environment and is defined more by the dynamic interrelationship between its members and its societal context than by its internal assets. (See Figure 1.) From this recognition, that the interrelationship between an organizatoin and its environment is the "most essential" property of an organization, it was a simple step to recognize that those factors characterizing that interrelationship are as much assets of the organization as are such conventional assets as money, plans, procedures, etc.

Thus, the defining properties of an organization are characterized in terms of their internal asset value and their external asset value. The way in which an organization is perceived by its clients, sponsors, competitors, etc., and the place it occupies in their value systems, is perhaps the most important asset of an organization. These "external assets" certainly deserve consideration in addition to the internal assets, which include staff values and perceptions -- similar to the conventional concept of "morale". This is consistent with the emphasis given "doctrine" in such earlier organization models as that of Milton Esman.

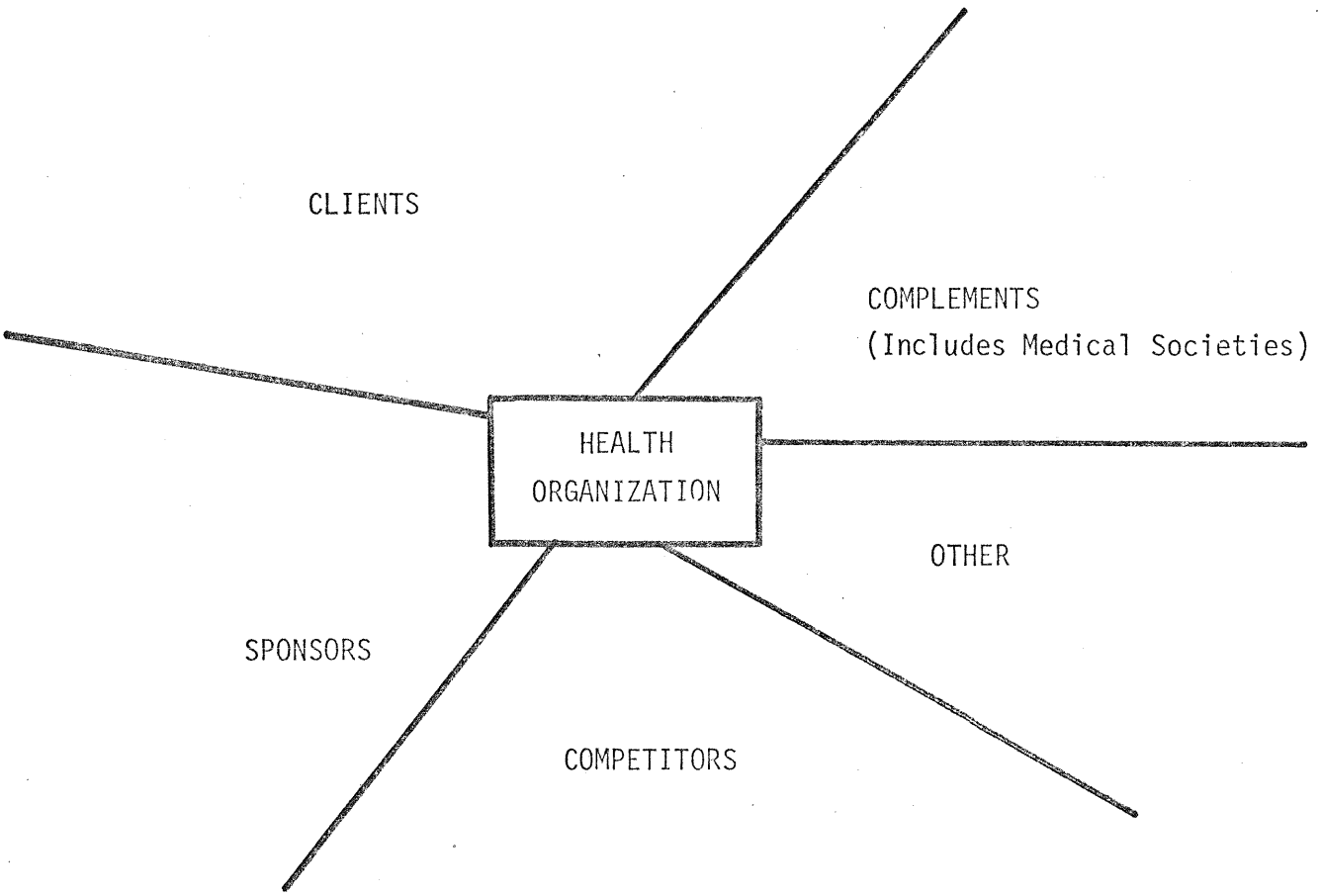


FIGURE I: A Health Organization is viewed in terms of a dynamic interrelationship -- the organization is analogous to a single celled organism adrift in a sea of nutrients. An organism is viable if it interchanges nutrients and wastes with the environment, so that the organism itself is homeostatic, and that the trend is for homeostatis relative to the environment. These are the same factors of interest for organizational viability.

To underscore this point, what we as consumers think of IBM, our local church, or our local hospital is as important an asset of that organization as the training and motivation of the staff, physical plant, etc. It is our expectations that determine the type of transactions for which we will seek the organization's assistance, the amount we will pay for opportunities to interact with the organization, and the reputation we afford the organization. This is consistent with the thesis that advertising provides a valid economic return -- directing the right people to the right products. It is also consistent with the behaviorist's point of view: to the extent that the organization fulfills our expectation, we will project that back to the organization (providing pleasurable social signals to members of the organization who meet our expectations, referring our friends to the organization, etc.).

Recognizing the asset value of the way in which the organization fits its environment suggests that some resources are more important than financial resources. An organization that exists only in concept -- a few people who value the idea of the organization, and an audience that values the things that organization can do -- is in some circumstances more viable than one for which financing is readily available but which people do not value.

The conceptual basis for our viability assessments then rests on two issues:

1. Identifying the fundamental characteristics of an organization -- the properties of "organizationness" as contrasted to the conditions necessary to achieve viability -- in a way that directly addresses the fact that these are mutual properties of the organization and its environment;

2. Defining viability as a homeostatic relationship between an organization and its environment so that these essential properties of the organization are replenished.

B. The Essential Elements of an Organization: P, C, and I

An organization can be conceived of as having three essential properties:

1. Image: The cognitive dimension of what people think about an organization: knowledge, on the part of those internal as well as external to the organization, as to what the organization is and does, and why it exists;

2. Connotation: The affective dimension of attitudes held about an organization: the assessment of those internal and external to the organization as to where they place the organization's image and operations in their structure of personal beliefs and priorities;

3. Purchasables: money and the things that have been and could be bought.

As a simple mnemonic we call the above the "P/C/I Model" for Purchasables, Connotation and Image.

Use of these definitions points up a possible falacy in thinking about institutions, where we may overly concern ourselves with money and the things money can buy. Our proposed model suggests that "purchasables" is only one, possibly the least important, of three key assets.

The essential organizational assets, referred to above, are described more fully in the following:

1. Image

Image is the identification of what the organization is, what it does, and why it does it. It includes two distinct components -- doctrine and program.

Doctrine is the general statement of organizational mission -- its ethos, constraints, etc. -- and is basically unchanging over the life of an organization. The biological analogy to doctrine would be genetic coding -- the information that limits, constrains and defines what an organization can do. Doctrine is easily understandable when we speak of the doctrine of the Catholic Church, or even the doctrine of IBM. It is less obvious but by no means less important to understand the doctrine of a local health center or clinic.

In operational terms, doctrine limits what a family planning clinic will do in order to survive when it has been demonstrated that none of the programs that are currently anticipated will in fact result in viability.

We use the term doctrine similar to the way it is used by Dr. Esman et. al. However, in the P/C/I Model, doctrine is a measurable and discrete quantity rather than simply an abstraction. This is consistent with our view of making prior work more practical and operational.

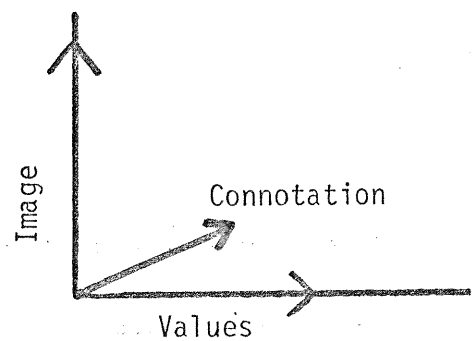
The second component of image is program -- the things that the organization actually does to sustain itself. Program is changable and can be varied within limits fixed by doctrine. The term program is used compatibly with general use, and with the slightly more specific use of the term by M. Esman [1/].

1/ Milton J. Esman, "Institution Building as a Guide to Action," in Institution Building and Technical Assistance: Conference Proceedings. Washington, D.C.; Committee on Institutional Cooperation and Agency for International Development.

The biological analogy to program is the things that an organism actually does to survive. Within its genetic limits, an animal may develop particular functions to an extraordinary degree -- "specializing" to meet the needs of the environment. Thus, one brother becomes a weight lifter and develops huge muscles, the other highly develops his mental skills and remains a sorry physical specimen, etc. Similarly, one health center may offer only maternal and child-care services, while another may be a "full-service" clinic -- where the doctrines may be similar but the need to relate to the environment makes certain types of adaptation more desirable.

2. Connotation

If image is considered a vector showing perceptions or awareness of the organization's program and doctrines, then connotation is a vector showing how the program and doctrine is valued. Internal to the organization, connotation equates quite well with the conventional use of the term morale. However, "connotation" is a more significant concept than morale because (a) of the distinction between the doctrinal and program components of image, and (b) connotation is concerned with views of those external to the organization as well as internal.



The recognition that connotation must separately consider acceptance of both doctrine and program is of particular importance when assessing long-term productivity of staff. High connotation associated with program is a transient phenomenon. Dedication to and acceptance of doctrine is required if the organization is to be capable of long-term planning and adaptation. One can highly value a program without being committed to the organization's overall doctrinal and ethical structure. However, an organization has high adaptability only if the staff are motivated in terms of long-term doctrinal objectives, or the doctrinal component of image.

External to the organization, connotation is closely related to value, how much one's clientele is willing to pay for the service provided by the organization or, in the event that the doctrinal image is clear to its clientele, how much they would pay to perpetuate that doctrine.

"Program connotation" may be reflected in such objective factors as the distances patients travel to obtain a given treatment. "Doctrinal connotation" might be reflected in such factors as how much the community will pay -- in land, money, etc. -- in order to have a hospital in the village. (This latter question is of particular interest in small-town hospitals in the U.S., where choices are frequently made to create non-economic units "because every town should have a hosptial.")

3. Purchasables

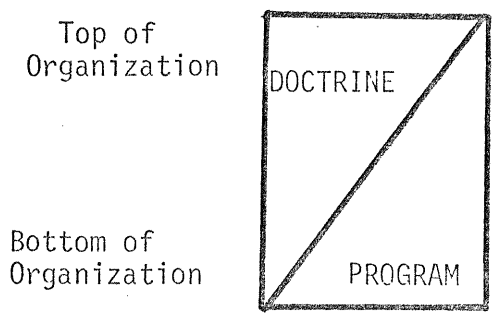
Purchasables equate to financial and monetary concepts, which need little description here. Note however, that people's time can be bought with money and can be valued or costed, along with such other tangibles as physical plant, drug inventories, etc. However, productivity, or the amount of human energy expended to advance the organization's mission and consistent with the organization's image is a function of connotation and purchasables -- with the former being far the more significant factor.

The term "resources" is frequently used in lieu of our term "purchasables". We cannot use the term "resources", however, because it is fundamental to our P/C/I Model that "Image" and "Connotation" are resources in exactly the same way as are monetary resources -- purchasables.

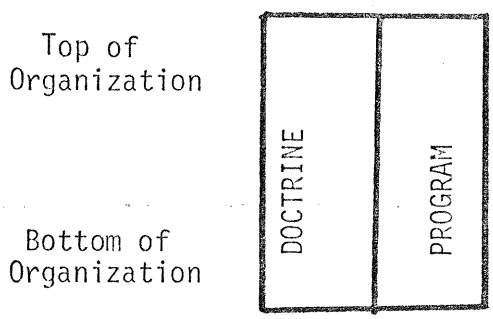
There is clearly a convertibility in the three elemental dimensions of the PCI Model. Purchasables can be used to create or change image, connotation can and must be converted to purchasables, etc. This convertibility does not imply that these elements are non-orthogonal or statistically dependent.

C. Viability Profiles for Image & Program: The Doctrine/Program Gradient

Doctrine comprises the basic organizational tenets from which program can be inferred. For a viable organization we would expect top management to agree about more doctrinal elements than do the bottom elements of the organization. Similarly, inasmuch as the working levels of the organization are more frequently concerned with program, we would not be surprised if they were to agree on more elements of program than of doctrine. Thus, both image consensus and connotation regarding doctrine and program should look something like the following:



The above is an acceptable -- and very possibly the ideal -- situation. An apparently attractive but probably dangerous situation is:



This would be ideal if and only if the organizational climate is completely static. Otherwise, top management is over committed to program and the almost complete agreement suggests that there will be very little in the way of new initiatives coming forth. One could speculate that an organization with such a gradient has been successful for such a long time that it now is into its "old age" and threatening to decline rapidly -- certainly without the resiliency to adapt to major changes in its environment.

The reader interested in the theory behind these models will recognize that this doctrine/program gradient is a functional statement of good leadership. That is, it is the "Purpose" for which conventional leadership is a normal "Output". But, if an organization demonstrates a proper doctrine/program gradient and a high degree of consensus regarding the doctrinal tenets then the organization is well lead even if there is no discernible leader. This appears to be the case for certain corporate giants such as AT&T and IBM. Analogies in health are found in well-managed private hospitals.

Section III: The P/C/I Model, Organization Synergy, Effectiveness, and the "Esman" Model

In this section, PCI relates the P/C/I Model to selected issues felt to be of general interest.

A. Parasitic, Symbiotic, and Synergistic Organizations

We are interested not just in the "survivability" of an organization but in the beneficial contribution the organization is now making and is expected to make in the future. To clarify our perspectives on this important matter, we return again to a biological analogy, and note that there are three types of organizations:

1. Parasitic Organizations that consume more than they produce;

2. Symbiotic Organizations for which production is approximately equal in value to consumption -- a "zero sum" form of equilibrium;

3. Synergistic Organizations for which the sum of the outputs exceeds the sum of the inputs -- these are creative or innovative organizations.

We are of course concerned with the sum of all transactions, not just individual transactions. For synergistic organizations there will be some zero-sum transactions -- or even parasitic transactions. Similarly, for parasitic organizations, there may be some synergistic or at least zero-sum transactions.

A good example of a parasitic organization might be a unit within the Ministry of Health, the de jure doctrine of which is to improve quality of health services but the de facto doctrine of which is to provide opportunities for friends and relatives.

A synergistic organization might be a full-range health center in which the provision of currative services is a zero-sum activity, but the additional increment of preventive medicine and dietary advice creates a total beneficial effect disproportionate to the input consumed.

The P/C/I Model illuminates that possibility of synergy in a way that few other models can. First we recognize that all transactions consume some purchasables -- the time and energies of individuals, drugs, overhead to allow for the physical plant, etc. To the extent that the client (and/or the sponsors, who are indirect clients) exactly compensates the health center costs, we have a zero-sum transaction. If the client/sponsor pays more or less, it is still overall a zero-sum transaction -- someone's gain is another's loss. Where then do we come up with the concept of synergy?

The synergy comes from the long term effect of the beneficial activities of the health institution, which we ordinarily term "impact". But there is another form of synergy -- <u>we can increase both image and connotation at zero cost</u>. That is, if the client has an appropriate set of expectations as to what will happen at the health center, the health center staff interacting with him have comparable expectations, and all value the desired outcome, then a zero-sum transaction in terms of purchasables will reinforce <u>image</u> and increase <u>connotation</u>. The enhancement in image derives from the reinforcement of both individual's perceptions as to what the organization is about. The increase in connotation comes from the practitioner's increased morale for a job well done and the client's increased confidence in the value of the service rendered.

Hence, we not only have the synergy of impact, but <u>the synergy by which we can increase the capital value of image and connotation</u>.

C. Reconciliation of the P/C/I Model with Prior AID-Sponsored Work

The PCI Model builds on, rather than simply replaces, the extensive "institution building" literature that pre-exists PCI's work. To capture the spirit of that correspondence, it is useful to discuss the relationship of the PCI Model to the "Esman Model" -- generally considered to have been the state-of-the-art as of the time that PCI started its work.

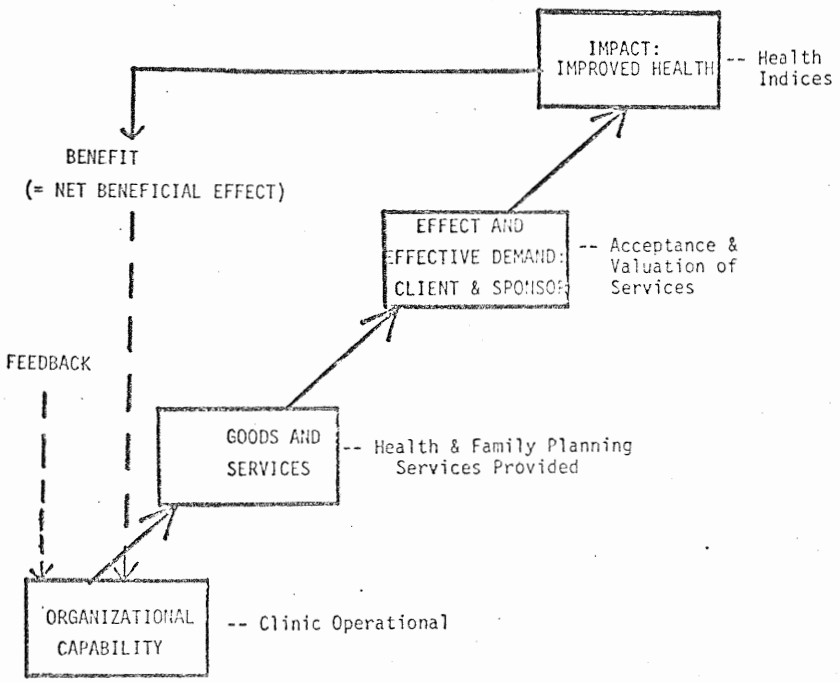
The correspondence between the Esman concepts (leadership, doctrine, programs, internal structure, linkages) and the PCI indicators of organizational viability reflects AID's evaluation doctrine that you cannot infer achievement of Purpose from completion of Outputs.

To find out whether an organization building project has been successful, you do not look at what you have done, but at the results of what you have done. The Esman concepts are a good description of what an organization building project should do (provide leadership, set up linkages, etc.), but they are not purpose-level characteristics of organizations that have been successfully built. There are many organizations that appear to have leadership, for example, but that are not viable. To find out whether leadership is satisfactory, you do not look at what the leader does (as the Esman concepts would suggest), but you look at the organization to see if it is well lead: the functional effect of leadership. (In the PCI Model, one "functional effect" of leadership is that individuals value doctrine versus program in a manner consistent with their organizational role.)

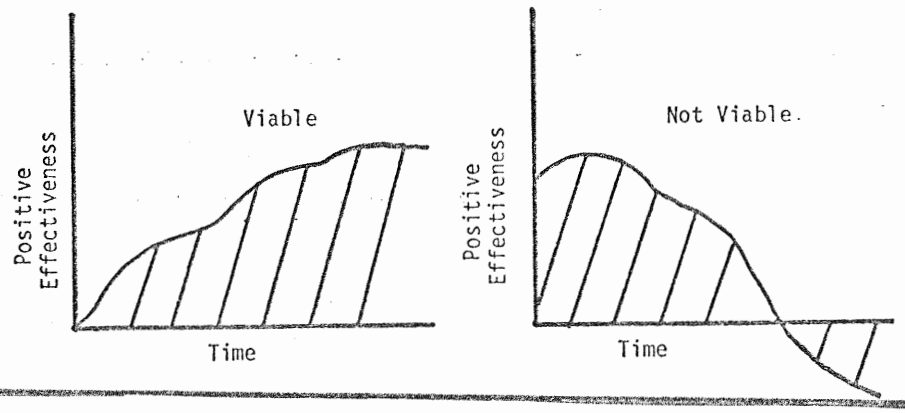
The following table shows, in a general way, how Esman's Output-level concepts are reflected in the PCI Purpose-level indicators. The correspondences are only tentative as they describe relationships that are best discovered empirically.

FIGURE 4: Another approach to using the P/C/I Model for assessing viability is to concentrate on the total benefit or net beneficial effect of the organization to determine whether the organization is increasing the benefits it provides the total environment. If an organization is both increasing in beneficial effect and has available feedback mechanisms to sense its relationship to its total environment, then the organization is viable. (The ability to increase beneficial effect proves its ability to cope and thrive with the environment as it currently is. The ability to perceive the environment assures us that the organization will maintain a balanced, homeostatic relationship to its environment.)

4(a) The Effect/Feedback Approach Addresses "Impact" Directly



4(b) The Effect/Feedback Approach attempts to directly predict the total area under the "effectiveness curve", so we can optimize investment in terms of net benefit. (This issue is addressed indirectly by the balance sheet and transaction analysis approaches.)



Examining the three approaches to assessing viability in terms of synergy:

1. The balance sheet approach examines the net asset value in terms of P, C, and I based on the congruence of Internal C and I relative to External C and I. This approach predicts whether transactions will be synergistic. (The fact that the asset values have reached certain levels is an indication that prior transactions have been at least zero-sum integrated over time. The fact that there is consonance of image and connotation tells us that future transactions will in fact be synergistic relative to these key variables.)

2. The effect/feedback approach observes synergy directly by examining total benefit or impact and comparing it to total cost, within the societal context. Given that value added is greater than total cost we have synergy by definition. Based on the additional factor that the organization has adequate feedback as to the results of its actions, we forecast that the trend will continue.

3. The transaction analysis approach examines the individual interfaces and interactions between the organization and its environment to determine if the sum of those transactions is in fact synergistic -- increasing P, C, and I. This is thus a direct observation of the "micro-level" synergy. It holds the most promise for use of unobtrusive measures and for direct but unobtrusive observation.

B. Viability and Effectiveness

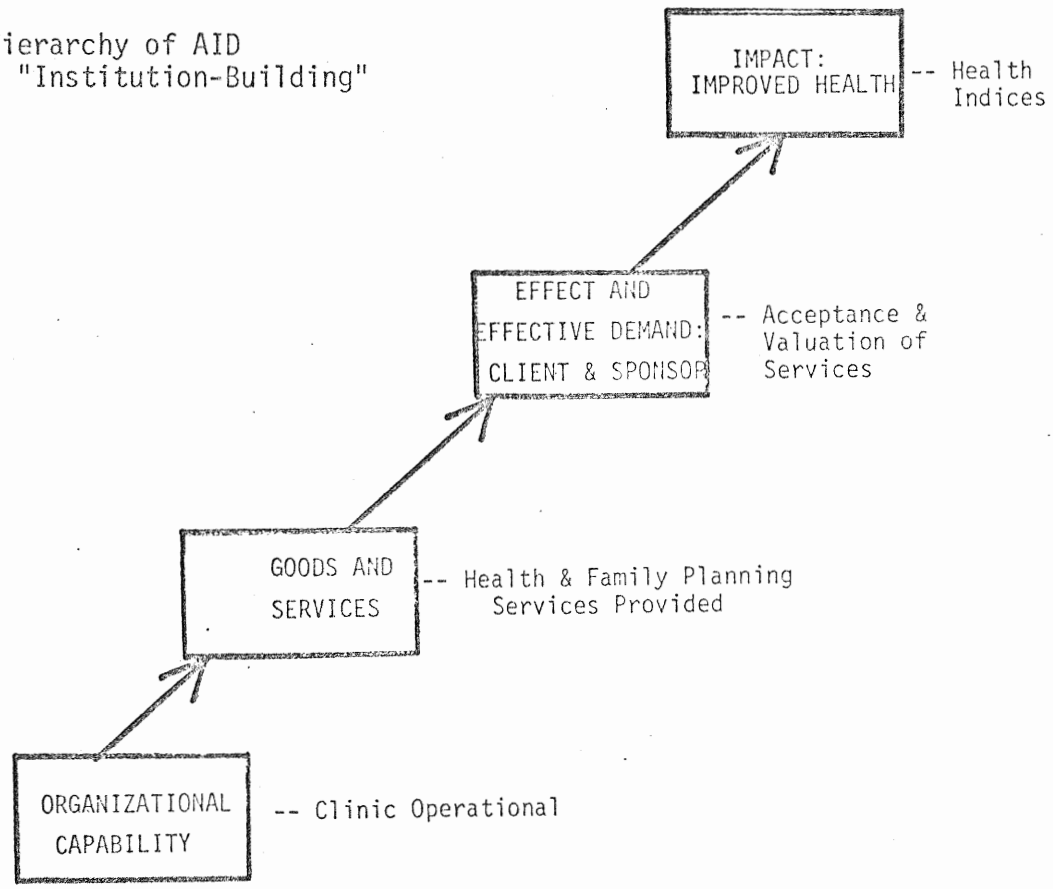
In treating the issue of organizational viability and effect, AID frequently uses a diagram showing a hierarchy of objectives ranging from organizational capability, through provision of goods and services, the effect of those goods and services on client and sponsor communities and finally ultimate impact. This general paradigm is shown in Figure 2.

In this figure we have also supplemented the basic model with the related, slightly more specific, concepts for health institutions:

1. Clinic operational;
2. Health and family planning services provided;
3. Client and sponsor acceptance and valuation of services;
4. Impact on health indices (morbidity, mortality, birth rate, etc.)

FIGURE 2:

The "Basic" Hierarchy of AID Objectives in "Institution-Building"



Previous organizational assessment models (e.g., the Esman Model) have been faulted for dwelling too much on the issue of organization capability -- ignoring the "higher" and more important linkages from goods and services through health impact. All three of PCI's approaches to assessing viability avoid this trap because the P/C/I Model, as mentioned earlier, captures the dynamic equilibrium between the organization (and its capability) and its client/ sponsor communities.

For the balance sheet approach the key to our viability assessment is to recognize that what we are assessing is not the organization's capability, but the image and valuation of that capability within the societal context. We "skip over" qualitative assessment of the goods and services, precluding the need for a peer review of health care quality, and move immediately to the response to those goods and services on the part of the clients and sponsors. Client perceptions are a function of client experience with the organization. Those experiences are affected by, and themselves affect, client expectations and valuation of the goods and services provided. Hence, the model provides insight not only into how the organization sits in the environment, but <u>to the extent that the consumer of the organizational output or product is a competent judge of the real utility of the organizational output, we are also getting an important leading indicator of impact</u>. (See Figure 3.)

In the effect/feedback model, we are concerned with effect at the "highest" level-- the impact on the quality of health on the population served. We are concerned however not just with the effect per se but with the rate of change of effect. The hypothesis behind this model is that an organization that is increasing its effectiveness, and has feedback as to the results of its effectiveness, is viable. By being able to integrate the effectiveness curve, we can optimize the area under that curve. This approach to assessment is shown in Figure 4.

FIGURE 3: The Balance Sheet Assessment focuses on the dynamic tension between "organizational capability" and "effective demand". "Goods and services" are thus assessed in terms of client valuations, not peer judgements.

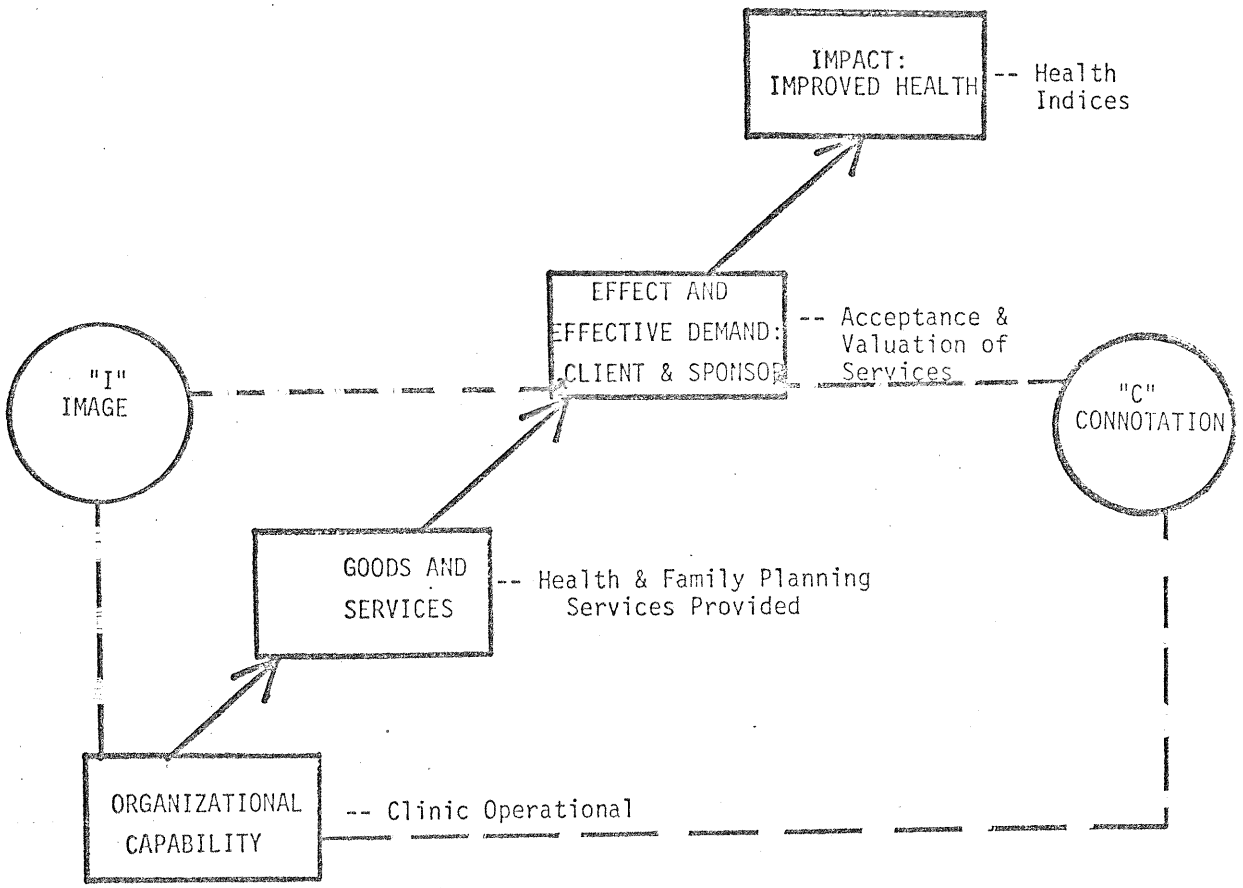


TABLE 1:

It can be seen that the PCI Model addresses "Purpose-level" manifestations of Esman's "Outputs". The PCI Model provides a basis for deducing the good management practice that is reflected in both Esman and Thorsen Models.

ESMAN CONCEPT	P/C/I MODEL: PURPOSE-LEVEL MEASUREMENT
Leadership	• Management of Purchasable resources to adapt to changes and recover from trauma. • Consensus on what the organization is and does. • Provision of demanded services and meaningful work experiences (Internal and External Connotation). • Sensitivity to changes in Internal and External P, C, and I.
Doctrine	• Those aspects of Image on which there is consensus. • Those aspects of Image where consensus is strongest among the organization's leaders • Those aspects of Image from which all other aspects are derivable.
Program	• Specific, concrete member, client and sponsor answers to the Image questions. • Correspondence of specific, concrete answers to the Image questions to the doctrine statements referred to above. An organization whose Programs conflict with its Doctrine is not likely to be viable.
Resources	• Purchasables, which includes everything that can be bought directly*with money: facilities, supplies, people's time, funds. • Correspondence of Purchasables allocation to Doctrinal and Program Image.
Internal Structure	• Internal consensus on Doctrine Image. • Internal variation on Program Image which corresponds to the functions performed by the members of an organization. • Internal Connotation (Morale).
Linkages	• Agreement between Internal and External Image. Agreement between members, clients, sponsors, suppliers, etc. on what the organization is and does. • External connotation (perceived value of organization) among clients, sponsors, suppliers, etc.

* It is possible to buy Image and Connotation indirectly. You can buy supplies and hire people to create Image, etc.

SECTION IV: RECOMMENDATIONS

AID evaluators need a practical and simple method for assessing organizational viability. The P/C/I Model meets that need.

AID program operators need prompt assessments of the viability of their institution-building projects. A field test and demonstration of the P/C/I Model can meet that need.

AID policy makers need an objective basis for deciding which, if any, of the competing methods of organizational assessment -- the P/C/I Model, peer reviews and similar normative processes, or the "Esman" model -- should be incorporated in AID evaluation guidelines.

A P/C/I demonstration, organized to provide objective comparisons, can meet those needs.

Therefore, PCI recommends that AID select two or three projects where there is a felt need for a viability assessment, and demonstrate the P/C/I Model to provide immediate feedback to the cognizant USAIDs as well as refine and prove the value of practical tools for use by USAID officers.

Rigorous field testing can prove the practicality of the P/C/I Model, and its predictive value. The recommended field test will compare the results of alternative models, assessment techniques, and of alternative evaluators (AID, and PCI). The results of that test will include both immediate and direct benefit to the organizations chosen for the demonstration, and should generate conclusive evidence as to the best methods for AID use.

Additional outputs of the recommended test would include:

- simpler and more specific instruments for data collection;
- simplified methods of statistically valid data processing;
- guidelines for selection and orientation of LDC interviewers;
- guidelines for AID/W role in maintaining and processing a centralized data base.

To enhance the value of such tests, PCI's test plan* recommends that the P/C/I Model assessments be compared to the best available alternatives (e.g., subjective judgements and such models as the Esman/Thorsen model) with the criteria for comparison being:

- ability to predict and detect viability;
- ability to recommend practical AID strategies;
- reliability;
- simplicity and utility as perceived by AID officers.

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* Submitted under separate cover.

Based upon the ability of the balance sheet approach to immediately meet the needs of Mission staff, we recommend that the Agency focus the demonstration on that approach, undertaking a program in which AID officers actually use the balance sheet approach in real-life LDC situations.

However, because of the potential importance of the other two methods of assessing organizational viability, and the ability of a sophisticated team to perform all three approaches simultaneously, it is recommended that the demonstration of the balance sheet approach include further experimentation with the effect/feedback and the transaction analysis approaches.

We recommend, then, the following sequence of activities:

1. AID choose two or three demonstration sites and organizations for testing these models;

2. PCI teams, in cooperation with AID/W staff, be deployed to each of those sites to:

   a) Redundantly perform the balance sheet analysis;

   b) Independently perform the transactional analysis and effect/feedback analysis.

   c) Provide advice and guidance to the AID/W and USAID teams.

3. During the period that PCI teams are on-site, AID staff perform the balance sheet analyses of the same organizations, following brief orientation by PCI.

4. Analyze and compare results from all of the above.

Based on the above, AID staff will be able to personally test and use the balance sheet model, and the results of their analyses can be compared to the balance sheet analysis developed by PCI, to the two other forms of analysis, and such other alternatives as AID subjects to test.

APPENDIX A

NOTES ON THE ASSESSMENT TECHNIQUES

APPENDIX A

Notes on the Assessment Techniques

1. Preservation of the Organization's Essential Characteristics

We defined earlier an organization in terms of its elemental and fundamental properties, and viability as the state of being that ensures preservation of those essential properties. An organization that has Purchasables, Connotation and Image (P/C/I) exists. To the extent that we can guarantee continuation of its image, positive connotation, replenishment of its purchasables, we are confident that it will continue to exist, or meet our general definition of viability.

An analogy is to liken the organization to a single-celled animal adrift in a sea of nutrients. Our organization is the single-celled animal. The sea of nutrients is its societal and economic context of the organization. The organism is viable if the nutrients it requires are available from its environment, and it can and does freely exchange used up nutrients for fresh ones -- continuing an indefinite process in which there is a homeostatic relationship between the organism and its environment.

In much the same fashion, an organization must be in a relationship to its environment such that it is continually using its image, its connotation, and purchasables, to create more purchasables, more image and more connotation. To the extent that the sum of the interchanges between the organization and its environment are positive in each of the three dimensions, then it is a strong argument that our organization is viable.

An organization has a great advantage over a biological entity in determination of its viability. An organization can be reduced almost indefinitely in terms of physical facilities and number of individuals involved. It is not essential that it preserve its purchasables or its people in order to be viable -- it is essential only that it preserve

enough image and enough connotation that it can in future replenish its store of purchasables.

The issue then in assessing viability is the extent to which the organization will remain unchanged given the probable future of its environment.

2. Approaches to the Measurement of Organizational Viability

The three basic measurement approaches for using the P/C/I Model to assess viability were:

1. The Balance Sheet approach, inventorying the total Image (I), Connotation (C), and Purchasables (P) of the organization;
2. An "Effect/Feedback model", examining the macro-level relationship between the organization and its environment to "integrate the effectiveness function";
3. Examining the individual transactions engaged in by the organization to determine the cumulative gain or loss of P, C, and I.

As noted in the body of this report, the balance sheet model is recommended for immediate application in terms of its greater practicality and immediate diagnostic value. However, each of these approaches to viability assessments will be briefly described here.

3. The Balance Sheet Approach to Assessing Viability

The balance sheet approach to viability assessment examines the net asset value of the organization in terms of the three dimensions Image (I), Connotation (C), and Purchasables (P). An institution is viable if it meets the following two conditions:

1. P, C, and I are at or above certain norms*;

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* Tentative norms have been set during experimentation; these should be refined and validated through field test.

2. There is an appropriate gradient for both image and connotation -- at the top of an organization the greatest consensus and the greatest valuation is of the doctrinal rather than the programmatic aspect of image.

Meeting Basic Norms for P, C, and I

The balance sheet viability assessment quantitatively treats the basic three measurements of:

1. Image Strength -- the degree of consensus among those internal and external to the organization, as to what the organization is and does and why it does it.

2. Connotation Strength -- the extent to which individuals inside and outside the organization personally value the things that an organization does and is.

3. Purchasables -- the length of time that the organization can continue to operate without additional funding.

These factors are calculated as follows:

$$\text{Image Strength} = \frac{\Sigma(\text{\# of people giving each Image answer})^2}{(\text{\# of people questioned})^2}$$

$$\text{Connotation Strength} = \frac{\text{\# of answers in both "Do" and "Should" lists}}{\text{\# of possible overlaps}}$$

$$\text{Endurance of Purchasables} = \frac{\text{Net Liquid Net Worth}}{\text{Operating Expenses per unit of Time}}$$

Note that connotation strength is a measure of the "do/should" overlap -- the degree to which the organization is doing the things that its members, clients and sponsors think they should be doing, as well as a direct measure of the value attributed by clients (measured by willingness to pay for or travel to obtain services, etc.).

The viability criteria are then as tentatively established subject to further development of norms:

$I_s \geqq 10$

$C_s \geqq 0.5$

$P_b \geqq$ time until next funding cycle

The nature of the desirable doctrine/program gradient was discussed in Section II of the main body of this report.

4. <u>The Effect/Feedback Model</u>

The benefit/feedback model recognizes that our real objective is to integrate the total "effectiveness curve," based on our recognition that we are interested in viable institutions only because we are interested in total cumulative effect.

The issue is made simple for us by recognizing that for a health institution we are interested only in health effects -- we are not interested in the degree or extent to which the organization is survivable because it is effective in finding jobs for relatives.

Hence, the effect/feedback model becomes the simplest model in concept if not in execution.

Criteria for viability P/C/I Model and the effect/feedback approach requires that:

1. The organization be synergistic -- with total benefits exceeding total resource consumption.*
2. The organization have feedback from the environment as to the results of its actions.

The underlying concept is to directly observe that the organization has coped with and is currently coping with its environment and is synergistic. It is then the nature of synergy that our rate of change of effect would normally be increasing, given no major changes in the environment. Given its ability to sense changes in the environment, that trend will continue.

For analyzing the benefit of an organization we use conventional health impact assessments -- tracer diseases, infant mortality figures, basic health statistics, etc. We then value this benefit in consistent terms -- for example, productive man-years.

We then compare the benefit to the total cost -- normalizing total cost again to the comparable benefit (e.g., total man-years). Here we consider total man-years consumed to include the man-years that individuals spend, man-year equivalents of dollars and equipment expended, man-years spent by patients and man-years represented by capitalized image and connotation.

If the man-years spent is much less than the man-years produced, the organization is synergistic.

* Note that when PCI talks of resource consumption we consider image and connotation, as well as purchasables, to be resources.

We need then only look to observe how and whether the organization is sensing changes in the environment in order to continue its course of synergy.

5. Analysis of Individual Transactions

Analysis of individual transactions can be an accurate method of assessing viability and can be performed unobtrusively. However, it requires a sophisticated evaluator and has not been recommended as the first-line AID approach.

The first task in using this model is to define all of the interfaces between the organization and its environment -- representative events and all key events by which P, C, and I are interchanged with the environment.

Note that whereas the wide range of events -- such as clinical service -- can be dealt with on a sampling basis, other events are anomalies that must be treated separately. We cannot expect them to be unearthed by a representative selection. Such events include those surrounding the sponsor/organization interaction. These interactions may be few and infrequent -- perhaps as little as once a year -- but they are obviously crucial to the organization. Hence, to a certain extent we need not just a latitudinal study but a longitudinal study. The art of the evaluator will be called into play to compress the logic of what would otherwise be a longitudinal study by recreating the attitudes and constraints that will subsequently affect such events. If the evaluator's visit is not simultaneous with an annual budget review, he must interrogate sponsors and other key parties in the sponsorship dialogue so that he can predict outcomes.

Thus the transaction analysis approach requires that we draw a fully representative sample -- both longitudinal and latitudinal -- of interactions. Then we can directly observe or reconstruct those interactions in terms of the likelihood that they will be valid transactions.

It was our basic hypothesis, deriving directly from our P/C/I Model, that an organization is viable if the sum of the transactions is positive in terms of P, C, and I. It is our measurement hypothesis that such an analysis can be based on three key types of transactions:

1. Client Transactions;
2. Sponsor Transactions;
3. Internal or Housekeeping Transactions.

The first two types of transactions, involving "outsiders", generate P, C, and I. The organization itself generally consumes or transforms, but does not create resources. Only through interaction with the external environment can new resources be brought into the system. Any closed system is one of increasing entropy, and hence degenerative.

Internal or housekeeping transactions characterize the way in which organizational resources are distributed -- replenishing image and restoring morale (internal connotation) to the "sites of" unsuccessful transactions, etc.

Definition of a Valid Transaction

Every transaction involves at least two individuals. For simplification let us assume that all transactions are between two individuals, and that more complicated transactions can be dealt with as a series of two-party transactions (much as the physicist solves a three-body problem as a series of two-body problems).

A valid transaction is a transaction for which:

1. The individuals involved in the transaction have the same expectations;
2. Those expectations are met;
3. The value of the transaction exceeds the cost.

Demonstrating the Validity of Transactions

In theory, a skilled evaluator should be able to assess the validity of transactions, and check his conclusions as to net gain/loss of P, C, and I, through some combination of:

1. Record review;
2. Direct observation;
3. Pre/Post interviews of very small samples (to validate proxy and unobtrusive indicators);
4. Open-ended, almost "casual" discussions with sponsors;
5. Use of unobtrusive indicators (distances travelled to the clinic, the way in which jobs are described, etc.).

Long-term, then, the "transaction" analysis approach offers great potential.* However:

- Use of this approach currently requires great skill on the part of the evaluator;
- The data base required to simplify and standardize the assessment will be generated by "Balance Sheet" approaches.

Based on the above facts, moving forward with the "balance sheet" approach is still the best short-term, high-payoff, course of action.

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* A hybrid approach, containing elements of several assessment techniques is presented in Appendix B, to further explicate the concepts we propose.

APPENDIX B

SAMPLE UTILIZATION OF THE P/C/I MODEL

APPENDIX B

SAMPLE UTILIZATION OF THE P/C/I MODEL

A. General

To demonstrate application of the P/C/I Model, Figure B-1 simulates the logical framework for a rural hospital. This chart is presented to illustrate use of the P/C/I Model, and is more complicated than that we recommend for immediate AID use. (The simpler framework is explained in Volume III of PCI's report to AID). For simplicity, the logical framework in Figure B-1 does not include targets, means of verification, etc., for items outside the mainstream of our viability discussion.

As may be noted, our purpose is to establish a viable rural hospital emphasizing preventive medicine. We have included two sets of outputs. First, we have used the Esman concepts as the essential outputs of the projects -- those we recognize as necessary and hopefully sufficient for achieving our purpose. However, such outputs are normally considered outside of AID's manageable interest. Thus, we have "below" those outputs the intermediate outputs that AID can in fact warrant to produce. By implication, the responsibility for the "superior" or "Esman" outputs is that of the LDC.

Note that our end-of-project-status indicators deal largely with image and connotation external to the organization -- directly assessing the response of the environment to the organization. The one purpose-level indicator we use internal to the organization is that of staff connotation. Although it is clearly a function of leadership to have an appropriate program/doctrine gradient, it is reasonable to assume that it is outside the manageable interest of that leadership to ensure that the connotation has a similar gradient. We expect it to be within the manageable interest of leadership to ensure that every individual in the organization is aware

of the organization's ethics, constraints, objectives, etc. On the other hand it is a factor of the social environment as well as working conditions within the organization to determine the degree of real commitment to those objectives. (Our indicator of commitment is connotation.)

It should be noted that this is not the easiest approach to using the model for evaluation. It is however the most illustrative. What we have done here is set up an evaluation model whereby interviews of the key sponsors, coupled with interviews of all key staff in the hospital, plus a survey of a representative sample of villagers in the target area, should enable us to perform a definitive viability evaluation.

We repeat: we include this logical framework because it is the most explanatory. A simpler approach to this evaluation assessment is provided in the guidelines recommended for immediate AID use.

To clarify this model we will briefly discuss Figure B-1, with concentration on the output and purpose columns, ignoring all inputs and those portions of the matrix beyond the interest of the viability assessment.

GOALS

There are two levels of goal for this project. The higher level goal is actual improvement in the state of health for poor rural populations. The subordinate goal is that locally appropriate preventive health measures are adopted by the rural poor, with our rural hospital being the mechanism for such change. Note that our purpose-level indicators may give us some insight into goal level achievement. If the client Image includes preventive programs and the do/should overlap is greater than 0.5 for preventive programs, then the clients value the programs and presumably will adopt them.

FIGURE B-1:

PCI 72-6

LOGICAL FRAMEWORK
FOR
SUMMARIZING PROJECT DESIGN

Est. Project Completion Date _____
Date of this Summary _____

Project Title: RURAL HOSPITAL

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program Goal: The broader objective to which this project contributes: Improved state of health for poor rural populations	Measures of Goal Achievement: 1. Infant mortality and morbidity 2. Do/should overlap increases with # of contacts		Concerning long term value of program/project:
GOAL 2: Locally appropriate preventive health measures adopted by rural poor	1. Changes in child feeding 2. Client image includes preventive programs 3. Do/should overlap > 0.5 for preventive programs		
Project Purpose: Viable, Preventive Medicine Oriented, Rural Hospital	Conditions that will indicate purpose has been achieved: End of project status. 1. Client "connotation" 1.1 Doctrinal connotation increasing for increasing client base 1.2 Program connotation increasing for increasing client base 1.3 Connotation increases with number of contacts between organization and client 2. Client "Image" 2.1 Image increases with number of contacts 2.2 Increase in number of clients served is such that capacity will be reached by January 1976. 2.3 Image consensus extends to non-clients 3. Staff Connotation 3.1 Top management do/should overlap greater than 0.7 for doctrine 3.2 Working levels do/should overlap greater than 0.6 for program or 0.7 for doctrine. 4. Purchasables 4.1 Sponsors do/should overlap ≥ 0.6 for doctrine and program. 4.2 Organization perceived as best alternative for highest valued operations -- by sponsors, clients, and staff 4.3 Ministry of Health commitment to next required allocation of funds.	Client Survey indicates that: 1.1 and 1.2 ° Average do/should overlap ≥ 0.5 considering all clients ° Do/should overlap > 0.1 for at least 80% of clients ° Number of clients served increases per 2.2 1.3 Do/should overlap correlates positively with number of contacts. 2.1 Image consensus ≥ 10 and correlates with # of contacts 2.2 Per hospital records, function describing "intake" projects to capacity 2.3 Survey of potential clients target villages shows: image consensus above 10. 3.1 and 3.2 Staff interviews (comprehensive at top levels) 4. Above surveys, supplemented by interviews of all key sponsors.	Affecting purpose-to-goal link: Medical Technology data can be adopted to meet local needs.
Outputs: AID/LDC 1. LEADERSHIP ° Program and doctrine internalized by staff ° Plans on hand, independently generated by local staff, to meet plausible financial urgencies. ° Programs realistically adapted without AID assistance 2. DOCTRINE ° Codified and aimed at preventive health 3. PROGRAM 4. RESOURCES Funds committed less AID contribution more than adequate planned expenditures.	Magnitude of Outputs necessary and sufficient to achieve purpose. 1. Top staff doctrinal image consensus above 15; working level staff program image above 13. ° ° ° 2. De facto doctrine per written records, de jure doctrine as discovered by survey; both acceptable to AID and sponsors. 3. ° All compatible with doctrine ° All provide value in excess of cost ° Basic programs include: innoculations against childhood diseases, diet and other preventive clunseling to all clients; subsidized medicines for treatment of common diseases. 4. (Cash and firm commitments from non-AID sources) ÷ (monthly operating expenses) ≥ N, where N is number of months until scheduled replenishment.		Affecting output-to-purpose link: Concepts of preventive medicine can be made meaningful to villagers.
CONVENTIONAL OUTPUTS 1. Building constructed 2. GOG ensures MD staff on-site 3. Three qualified nurses. 4. Two technicans trained in control and dispensing of prescription drugs 5. Security measures taken to protect hospital equipment and drugs. 6. Drug distribution system (Based on rural earnings being approximately 40% of those of urban areas). 7. Ministry of Health provides on-site supervisory visits at least once per month.	1. Per drawings 2. At least one M.D. on the premises for at least 6 hours per day, or 42 hours per week. 3. Trained in preventive medicine as well as in conventional currative approaches are trained, on-site, and working at least 120 hours per week. 4. Provide service during all hours of hospital operations. 5. Less than 47 loss, all causes. 6. 90% of all drug requests are filled immediately, all requests are filled within 30 days, and price of drugs to clients is not greater than 40% of unsubsidized price to urban dwellers. 7.		LDC administrators committed to these objectives

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PURPOSE LEVEL

The key indicators here are the extensiveness of the organization's image and the degree to which that image is consonant with local needs. The first of these we measure by assessing image consensus among both clients and potential clients. (High image consensus among potential clients is a key indicator of impact on the organization's environment.) The second factor, which we have called "external connotation" is measured by assessing "do/should overlap" -- the degree to which clients and potential clients perceive the hospital as actually doing the things they feel a hospital should be doing. (To avoid reactive bias, "should" respondents are not the same individuals as "do" respondents.)

To ensure the continued success of the organization, our concern is that:

(1) Image and connotation are increasing in magnitude -- more people and/or greater intensity;

(2) Image and connotation are reinforced by transactions with the organization -- as evidenced by positive correlations between number of transactions (or contacts) and strength of image/ connotation.

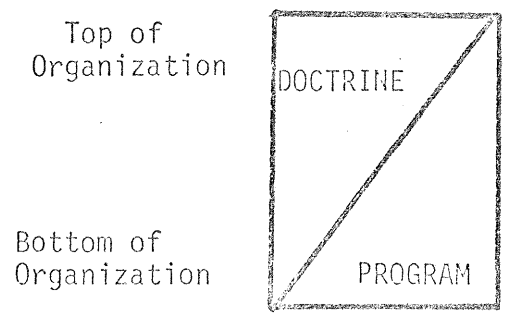
If all of the above factors are operative, then our hospital is in a regenerative feedback mode, with success begetting more success.

"ESMAN" OUTPUTS

The Esman outputs shown here have been targeted per PCI's work to make these outputs more "operational" to AID users. We have not targeted those where no inprovement on AID's "conventional" approaches are recommended. The most illustrative output is leadership. It is assumed to be within "the leaders" manageable interest to keep

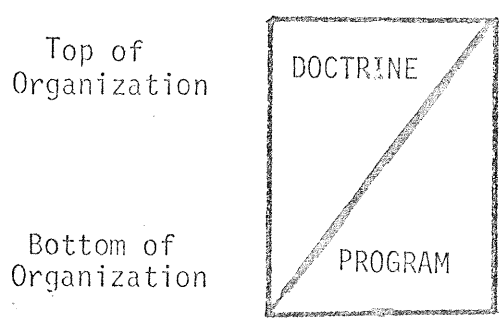
all levels of the organization informed as to what the doctrine and program are, in a manner consistent with the individual functions. Thus, the M.D.s and nurses must be aware of doctrine and alternative programs. Dispensary and outreach staff need to be aware of specific programs (e.g., innoculations, emergency service, etc.). A well-led organization will ensure such awareness. However, few organizations can ensure that staff appropriately value doctrine and program. Thus, internal image consensus is an "output" of good leadership, and we expect the gradient noted earlier:

Internal Image Consensus is at the Output level



The demarcation between output and purpose is well illustrated by the fact that the connotation gradient is a purpose-level indicator:

Internal Connotation is beyond most managers' control; hence the desirable gradient of connotation is a purpose-level indicator



The output "Doctrine" is also illustrative of the bridge between the Esman and the PCI models. Our target is that je jure doctrine is consistent with AID and sponsor objectives. We are faced with the option of including de facto doctrine as either an output or a purpose-level indicator. We have treated it at the output level because we recognize it as a necessary effect of strong leadership.

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