Process and Situation: Beyond Systems and Re-engineering

This workshop is ostensibly about business ethics. It actually is broader than that. It deals with topics in the philosophy of business, focusing on business practices and setting the context for a discussion of business ethics on the last day. Each day will consist of a short presentation to initiate discussion with the core of the discussion's meaning centering on authenticity and its role in institutions, primarily business. The first day starts with a discussion concerning process and situation in business and how a critical realist understanding of these takes us beyond systems theory and its impacts in process re-engineering to the ground of business process. It is this ground that is overlooked in the re-engineering and downsizing that can smash through a workforce like a sledgehammer or that is enhanced in the authentic concern for service, product, productivity and profits. The second day will focus on the formal and informal organizations of business and the role of dialectic in understanding business. The third day we will discuss management. The fourth day we will discuss the authentic organization and ethics. Throughout the four days, the role of technology, especially computers, will be discussed. A practical and strategic model for understanding the role and development of computer systems in business will be discussed.

**What is a business?**

A business produces a product or service for profit. This is the standard definition of a business. A business is defined in terms of its goal. This definition not only determines what it does and why it does it, but also indicates its internal constraints.

A business is not a thing. It is a dynamic organization that is productive. It is productive so it can earn a profit. In this sense it is instrumental and the core of its activities are instrumental activities. They are not done primarily for the sake of themselves, though they can be, but to get something done or to create something. The product or service, though it may be a terminal good for the purchaser, is not the terminal good for the business. The product or service is instrumental to receiving money. It is the need for profit that is the core constraint on business and it is the success in making a profit that determines if it survives.

We commonly identify businesses with their products, and it is right to do so. But business as a process transcends the products. Businesses can reinvent themselves. Companies that made carriages changed to making cars. IBM went from business machines such as typewriters to become a pioneer in computing. Though there is a developmental thread linking the transformation of products, what survives is not the product or service, but the organization. Thus, the business of business is business. Put more concretely, a business is an organization of a set of managed processes and practices. These can be applied to any number of products. Due to the constraint on business to make a profit, these processes are managed for profit, which means they are managed economically. (Note that we have at least three layers of organization here: the products, the processes that generate the products and the organization of the processes

that generate the product. Business concentrates on all three, but it does not explicitly consider the process that generates all three.)

Business is in contrast to the public sector which provides goods and services for the common good, but not for profit. There are processes that the two institutions have in common. For example, they can have similar modes of management or follow common management principles. But the efficiency and effectiveness of their implementation differs since their focuses differ. The public sector does not need to insure its own survival. Thus, there is a lack of motivation that comes with the sense of urgency and risk that can permeate a good growing business.

The constraints on the public sector are funding and politics. It is not the principle of its own development as is business. Being in a business, contributing directly to the success and profit of the business and, consequently, to your own wealth, is a powerful motivator. If that can be tapped into throughout a business, tremendous productivity can ensue. The lack of that kind of motivation in the public sector dooms all attempts to transform bureaucracies by "running them like a business". Also, their dependence on politics and not the marketplace for their survival takes away the natural constraints that necessitate that type of motivation in business. The bureaucracy has no internal principle requiring it to become more effective or pass away. Thus, it remains entrenched and resistant to change.

We also can define business in terms of its context. We typically think of business as being competitive. This is only partly right. The fact that businesses are the principles of their own survival and that there are limited markets sharpens the competitive edge. However, businesses are only in competition with those who make products in their marketing niche. In fact they are in either benign (null) or cooperative relations with other businesses, for example, their suppliers, the phone company and so on. These relations can be established through the simple mechanism of requesting and paying for goods and services. But they also can be solidified through contracts, ongoing business relations, informal social relations and so on. Dependability, trust and cooperation are delivered along with goods and services. Without these the modern economy would breakdown into anarchy. Not only are businesses in cooperative relations with other businesses, they also are in complementary relations with other social institutions. All institutions have an obligation to contribute to the common good. So, ideally, businesses respect the laws, contribute time, money, and skills to the community, and so on.

So far, our definition of business applies to a one person business or larger. However, usually a business of any significance is a complex set of organized operations performed by functional groups within the business. Thus, internally the business is a cooperative enterprise.

We can succinctly define business as a cooperative organization dependent on complementary organizations and institutions which produces goods and services for profit.

**An Organizational Model**

Systems theory is prevalent in understanding business systems and processes. For example, one simple definition of a process is that it is "...a set of linked activities that take an input and transform it to create an output. Ideally, the transformation that occurs in the process should add value to the input and create an output that is more useful and effective to the recipient ....." (p. 57, Johansson) The organization can be understood as a set of core processes that add value, constituting the company's business. Likewise, the value or quality of a process can be measured where the measurements provide feedback that can be used to transform or adjust the process.

Systems theory is very useful because it applies to automated and manual processes. In many cases there is a point where you do not care if a person or a machine performs the process since the process can be automated. If it can be automated then it can be performed in terms of explicit rules. It is the role of the systems analyst to make the business process explicit.

We can go further and understand the business as a dynamic, self-constituting system on the move. But if we understand it as such, we must take care not to lose the human dimension. If that dimension is missed, the business begins to be viewed as a set of rule driven processes. While the systems analyst may be able to specify what those processes are, the specification will not give us a complete understanding of the business. This is because the business consists of sets of skilled individuals in overlapping situations. Acknowledging this gives us a quite different view of business and shows that process reengineering may not have been taking account of the most fundamental processes in the business.

We will discuss four questions: What is a situation? What is the operational situation? What is a skill? What is the existential condition of a skilled person, group, or organization in a situation? Answers to these questions will provide us with the basis for understanding a new organizational model for corporations.

Before we move on, we may want to ask, why is systems theory so popular? It does a good job of making sense of the situation. If everything is a system, then, theoretically, we can control the situation by having a process that accounts for each contingency. However, reality is not that systematic. Sure you can account for every contingency in a well defined domain. But the problem in business is that the domain keeps changing. Its tough to predict six months out, much less a year or five years. The reality is that businesses need systems that keep evolving. Systems development is continuous. If you design a system to be implemented in one year, by the time the year is up the requirements for the system will have changed significantly because the business needs will have changed. Thus, systems development methodologies need to be adapted to hit moving targets. Systems people hate moving targets. So lets move to a more rational, but less systematic, model.

**What is a situation?**

What is a situation? We get a first approximation by noting that it is a particular place and time. By itself this means little. We can add to it by noting that space permits a coincidental manifold of things to exist and that time grounds events, the endurance of things. But it is not space and time that constitute the situation. Rather it is the things and events and iterations. The relationships among the things and events provides one side of the intelligibility of the situation. However, it is the complementary lack of full intelligibility that renders the set of things and events a situation. It is not fully ordered. It is partly coincidental. Thus, when we determine the concrete state of a situation, it rarely, if ever, makes complete sense. Philosophically, we understand that situations are understood through direct and inverse insights, where direct insights yield unities and relations and inverse insights reveal the lack of relations.

There is another question. In understanding the situation, where does it start and where does it end, both spatially and temporally? For example, we can ask how our solar system is situated. Understanding it in terms of the motions of the planets and sun we have multiple reference frames we can consider. We can consider the relations of the motions to one another. We can consider the relations in terms of the solar system's relation to our galaxy. We can add the consideration of the galaxy's motion relative to other galaxies and so on. In general, then, the boundaries of the situation are set by the relations of the things within the situation. In considering a situation, we can select some aspect of the total situation where that "sub-situation" is bounded by our sphere of interest and the situation is defined by the state of the unities and relations pertinent to that sphere of interest. This is the "objective" view of situations. It is the most general explanatory view.

On a higher level, ecology, for example, can provide an explanatory view of the interrelations of animals in a forest. We understand the systematic relations in terms of the operations and acts of animals and how they perform them with respect to one another. We understand the unsystematic in the statistical understanding that yields the state of the forest; the populations of different animals and the correlations of the statistics measuring them.

**The Operational Situation**

However, there is a different way we can understand situations, and that is in terms of the animal's operations. This is the operational situation. It is defined as the complex of factors which can be organized to perform an act and the context for the organism in which this occurs. The context also is constituted in terms of the organism's operations.

To understand the operational situation we need to understand functions, operations and acts.

**Functions, Operations, and Acts**

Operators are organizations that transform themselves or other organizations or some other relata. There are two types of operations, reversible and irreversible. Reversible operations display symmetry in the sense that the initial state of the operator and the situations can be reattained. Irreversible operations are asymmetrical. The initial state is irrevocably transformed. The former are usually operative at a particular level of development, while the latter often lead to development.

Since operators are organizations, they can be hierarchically related. The notions of equipotentiality and equifinality are two general relations between higher and lower level operations.

Mathematical operations, like multiplication, transform their terms creating a product. By motor operations we can change our position or the configuration of our situation. By cognitive operations we can relate memories to one another and to key features in the present, or we can transform a mere proposition or proposal from possibly to actually true through a judgment.

Much of evolution has been the emergence of operations which have a bearing on the acts of organisms. Acts are operations performed by the highest level operator in a complex unity. This gives acts in organisms their comprehensive quality. In ourselves this is the free, conscious operator we identify most readily with attention and decision. Lower level operations are organized in terms of the act. Given the independence of levels of organization from one another, this means that the actor does not have control over the full range of operations conditioning the act. Given the context of this discussion, we will consider acts to only be operations performed freely.

For example, in a therapy session, a patient may be moving his leg up and down in a nervous mannerism. If this is pointed out to him he will be surprised. As far as he was concerned, it was not an act he chose to perform. On the other hand, this same operation can be an act if it is chosen.

Acts, then, are distinct from another class of operations, expressions. Like the nervous mannerism, expressions can be chosen. Most often, though, they are not chosen for themselves, but are subsidiary to some end. When we speak, the flow of words emerges as a whole as the expression of what we mean. When the normal person expresses pain, pleasure or surprise, it is the unusual instance where that expression is chosen. There is a range of cross-cultural facial expressions and postures which evoke cross-cultural complementary behavior in people. The joyful smile, angry faces, threatening scowls are meaningful to all. However, in our daily life, like actors, we can elevate expression from mere operations to acts. We may choose our words carefully, or reinforce our message with a particular look. We can be aware of our body language and change it to match that of those with which we are interacting.

The role that operations play within higher levels of organization is their function. While operations are organized transformations, there are another set of biological functions which are more "passive". Examples are the function of the color of an organism as camouflage, the function of a single biochemical within a larger organization, or the function of the developed shape of the femur in standing or running. Thus, all operations are functions, but not all functions are operations. Likewise, all acts are operations, but not all operations are acts.

This notion of function is normative only in the sense that the function is part of a biological organization's operation. Either "X functions" within the operation or it does not. The question of teleology would be resolved in a discussion of the emergence of functions in evolution and the organization of goal directed operations.

The unsystematic is also evident within complex systems. There are operational organizations which are not related to one another. They may be open to future integration. In some combinations they also could become dysfunctional, hampering the organism's abilities to act. This is sometimes the case with computer programs when conditions are set by one part of the program that another part cannot accommodate, causing the program to fail. The situation can be recurrent among programs within computer systems, causing the system to fail. Another example would be a person's habits.

**Skills**

Operations form groups. This is clearest with reversible operations. Screwing and unscrewing the lid of a jar is a set of reversible operations within the group of operations we use to handle jars. Addition and subtraction and multiplication and division are two sets of reversible operations in the group of arithmetic operations.

The development of a skill is the development of a group of operations. In understanding the phenomenology of a skill we come to an understanding of the distinction between conscious operations and acts. Using Polanyi's language, consciousness has a from-to structure. We attend from ourselves to the object. This is especially true in extroverted knowing, which is typical of sports, for example. A more mundane example is Polanyi's. In using a probe to explore a cavity we begin to interpret the pressure on our hand from the probe in terms of the shape of the cavity. Polanyi calls this process indwelling. Through our body we indwell the object, or attend to it from ourselves. In Piaget's terms we either assimilate the object to our operations or accommodate our operations to the object. The latter is a transformation of operations. However, the key point is that in skills we rely on processes to which we do not attend. In using the probe, our attention is not on our hand but on the cavity. Likewise, a skilled typist does not attend to the position of the fingers on the keys. If they do shift their attention their performance suffers.

Now, in learning a skill, the process can be the reverse. To learn to type, we need to pay attention to the position of our hands on the keys. But as we become proficient we do

this less and less. Our attention shifts to what we are typing. In a skillful act, then, we freely act by relying on operations that have become habitual. We do not need to choose to do each one individually. They all function subsidiarily to our chosen action. They become "automatic". Thus, learning is largely a process of developing skills by performing actions which, through practice, become mere operations. As operations, they become integrated into more complex behaviors until we have a flexible set of schemes of recurrence adaptable to the situation.

**Corporate Organization**

Analogously we can understand the corporation as skillful. This requires understanding the role of teams. A corporation is not a team. But any significant work typically is done by cooperative groups, from formal teams and departments to expeditious temporary cooperative efforts and habitual working relationships.

A team is a group of individuals with complementary skills that achieves as a group what cannot be done by individuals alone. A team also is a cooperative organization with shared responsibility to meet common goals. Teams develop their skills just as individuals do. Unlike a sports team, a member of a business team can be on multiple teams playing different roles on each.

So we can understand the business organization as sets of potentially integrable skill sets utilized to meet the corporate values. Thus, the organization is not fully organized. Nor should it be. It is in a constant flux of multiple streams or currents of organizing: strategic, tactical, and operational. However, achievement occurs at the operational level.

The role of automation is to perform operations to condition the actualization of the skills. Historically it has taken acts performed by people which are subject to error due to the involvement of human freedom and automated them, transforming them into mere operations. These operations became a more reliable part of the skill set of the corporation and freed it to integrate these operations into more complex skills. We can think of such banking functions as sorting checks and balancing accounts. Today, the shift is towards providing functions and information. The word processor provides a set of functions that different users can combine in innovative ways to meet their own goals. Likewise, networks of databases provide access to information useful for learning, decision making, or providing services to customers. Instead of systems being tightly integrated with fixed inputs and outputs, they are open to being integrated with other systems, provide tools for use in higher level operations, and are themselves configurable to meet our individual needs without having to be reprogrammed. With systems assuming this more open role and with teams being formed for specific projects, then disbanded, we can more "objectively" define the corporation as sets of potentially integrable groups of operations that are utilized to meet the corporate values. However, the emphasis is on skills rather than mere operations since the key operator actualization of the operations is personal freedom. So the fundamental operators in business are not the business processes, but the originators and executors of the processes, and

fundamental analysis of business is not provided by systems theory, but by an account of human activity in situations where the systematic plays an important, but limited, role. The business itself is in an operational situation. It is a dynamic systematic entity, but its dynamism is that of the skillful actualization of intelligence, reasonableness and responsibility.

**Levels of organization - the broadening of operational contexts**

Abstractly the business itself is an operational situation. Actually it is a matrix of operational situations. Corresponding to the corporate hierarchy is an expansion of operational horizons. As one ascends the levels of organization, the operational context broadens. In Lonergan's model of knowing the experiential level is the smallest context. When we start to ask questions we are introduced to the universe of being, the broadest context. But our achievement lags our potential. Achieving understanding introduces intelligibility and adds a set of operations to the experiential. Likewise, judgment sublates understanding, and decision and action sublate all our operations. Inter-subjectivity sublates action. Organized institutions sublate intersubjectivity. Within the business or institution there is a hierarchy of organization. It moves from the context of a worker in the area to the higher contexts of the supervisor, department manager, division manager, senior management, the CEO, and the board of directors. Each level consists of a viewpoint, which, ideally, takes into account the operations of the lower levels.

Lonergan defines one's horizon as consisting in what is known and the known unknown. Thus, as one ascends the business hierarchy, ideally, her horizon should expand to take into account all the areas and their operations for which she is accountable. Also, she needs to know about the other areas she does not manage but with which she needs to interact. This includes her peers on the level she is on and upper management. Thus, the broadening of an operational context can also be the broadening of our horizons.