

Business Triage Concept



This white paper is a description and definition of the *Business Triage* concept.

Using the *Medical Triage* model, this paper presents a methodology for applying these techniques to any enterprise.

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Introduction

This white paper is a description and definition of the *Business Triage* concept. This concept uses the *medical triage* as the model for applying triage processes to business issues. The purpose of this paper is to define the methodologies that are the basis of the *business triage*. The *triage* applies to any type of enterprise and to any industry.

The medical triage (*triage is French meaning “to sort”*), since its first introduction by Dominique Jean Larrey during the Napoleonic Wars, continues to make improvements. These procedures first formalized in World War I by French doctors; who were treating the battlefield wounded at the aid stations behind the front. Modern medical and technological advances continue to improve this important concept. Most people are familiar with the MASH 4077 television show, where triage is the activity from the time the helicopters deliver the wounded, thru the sorting process prior to surgery. For disasters such as 9/11, *triage* is a critical process when critical events are competing for resources in a deteriorating situation that calls for swift and critical thinking.

The concept of the *business triage* is the result of 30+ years of study, experimentation, and validation. A variety of disciplines in a wide range of industries validates the use of this technique. Successful outcomes are consistent when using *business triage* at the initial stages of major engagements. In each case, the solutions quickly identified, gave the organization a fast track in getting results.

The main objective of this paper is to describe this *business triage* concept. It gives you insight into a structured approach to the complexities of the emerging and disruptive socio-economic environment.

Global Crisis

Turmoil and disruptive situation can occur at any time and in different circumstances. The current global socio-economic crisis is a structural change. The pundits speak of a *new normal*. Largely this is a valid identification of the era all *enterprises*, especially business and conventional institutions such as banks, manufacturing, and small and large businesses are facing. We are in a period of uncertainty. Emerging ideas, technologies, and the means for achieving successful outcomes is changing. The rapid pace of change requires agile responses. In a swift moving socio-economic sphere, time is a critical aspect in defining how to achieve success. *Business triage* offers you a way of overcoming the confusion of conflicting events and ideas to restore order out of chaos.

Some of the changes creating contemporary confusion and instability consist of the following situations.

- Modern economic theories are subject to revaluation.
- The manufacturing sector is going thru a reversal of the growth that began with the Industrial Revolution.
- Global financial practices are in the process of redefining their core principles and issue.
- The world is in the process of re-thinking business models and questioning conventional paradigms.

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- Technology is presenting you with new means of doing things. New processes and different channels are available, where you can create new opportunities.

Eventually all of these universal changes become the norm, when individual enterprises and people find a way to solve their particular situations. Think global and act local is more than a phrase. Margaret Mead says, “*A small group of thoughtful people could change the world. Indeed, it's the only thing that ever has.*” Human history shows that progress comes from building the structure one brick at a time. Developing a concept that works for individuals is the ultimate way in defining the *new normal*. The following subjects begin a development of the framework that can help you regain balance in your ventures. Building on the success and contributions to the *business triage* can develop a new paradigm for responding to threats and providing a means for periodic health checks.

What is triage

Triage is French meaning “to sort”. In a medical emergency, triage looks at the medical needs and urgency of each individual patient. The process is not to discover the fine details of a patient’s condition and needs. It is a means for discovering on a gross basis the critical situation and stabilizing the patient. Depending on the injuries, a sorting of the patients is necessary to define a priority for treatment. Resource availability must also be a consideration in disasters in order to maximize successful outcomes. Once you identify, prioritize and deal with the critical issues you have the ability to focus on issues of growth and viability.

Medical Triage

The unique characteristics of a *medical triage* consist of the following conditions.

- The triage deals with *urgent* and *critical* circumstances. Time is of the essence.
- It requires a *rapid assessment* of the situation. Urgency and criticality do not afford the luxury of extensive analysis.
- The medical practitioner works with *imperfect information*. The patient may not be conscious or able to tell what is wrong.
- You have to rely on *objective evaluation*. The margin of error is slim; decisions cannot be emotional or subjective.
- The medical practitioner requires a wide range of *skills* and *knowledge*.
- The situation is urgent with critical consequences and outcomes and can be terminal if you make wrong decisions.
- You have to set *priorities*, sort out, and classify the treatment necessary to stabilize the situation.
- The triage is the first step in actions necessary to restore health.

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The characteristics of *triage* consist of these key factors.

- It is a *Rapid Assessment Techniques* – extensive analysis is not an option.
- It *defines* the *criticality* of a situation – in essence, what are the threats to *viability*.
- It specifies *control segments* – what part of the patient or enterprise requires attention.
- You have to *establish priorities* by determine which segments are the most important so that you can address these issues quickly.
- The triage also must consider *resource* and *time* availability – do you have enough resources and how fast do you have to act.

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- It defines the *actions* necessary for *successful outcomes*.

Business Triage

Applying the characteristics of the *Medical Triage* to a *Business* situation will give you a way of leveraging the medical model towards your enterprise.

- Rapid assessment is the primary operational discipline necessary to define pertinent issues – what is wrong. You need to do this quickly *before* the situation deteriorates any further.
- Categorization of issues is necessary to analyze their relevance to the crises – divide and conquer. Starting with the total system (the enterprise), you *categorize* the *segments* of the total system. Use the control points within the total system to define your priorities.
- Obtain *objective information* about the issues within the context of the total system – you need the skills to see the total system. Take the *pulse* via the financial statements. These are the *vital signs* for any enterprise.
- *Separate symptoms* to avoid masking the source of *core problem* areas – this is the ability to see the core problems. Looking at each segment within the context of the total system will ensure that you can separate symptoms from core issues.
- Define the *criticality* of each issue in order to prioritize necessary outcomes – which action must you do first. You address the most life-threatening situation first. *Viability* is the first order of business. If you bleed to death, nothing else will matter.
- Establish actions that initially *bring order to the chaos* – you have to restore order to the situation – *stabilization*. Once you stabilize the critical threats, you have the luxury of dealing with other major issues.
- Implement appropriate action plans to effectively correct the situation – take the necessary actions.
- Re-triage if necessary and continue to monitor until you have success.

Levels of Triage

Triage is a dynamic process and occurs more than once. For example, in a medical situation you would go thru at least three stages.

- The *primary triage* is on site. It is the initial review to get the situation under control. You sort out the urgent needs and give them priority. At this stage, there is a minimum of resources available and imperfect knowledge of the entire condition. You just have to act, but act with the assurance that you will have a good outcome.
- The *secondary triage* occurs when you get the patient to the hospital. Here you have more resources – staff and equipment, to obtain more information. Stabilizing the situation during the *primary triage* stage affords you the ability to get more information and utilize other resources in restoring health. In the initial stage, you are just stabilizing the situation, but making sure that you have the basis for the next stage of treatment. You are able to *see* the impact on the total systems of your initial actions.
- A *tertiary triage* occurs when you have information about the way in which the patient is responding to the treatment and the current condition of the patient. This is the same with the *business triage*. After taking the actions and seeing the results you will normally find additional issues and problems. Fixing the first critical step will point out other issues either resulting from the first treatment or the priority after stabilization on the way to the achieving a healthy outcome.

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In both the medical and business triage, you focus on the critical and life-threatening issues first. As the condition of the patient or the situation improves, you begin to look at the next set of issues. You continue the same triage process. You segment the issues, sort out the priorities, and take appropriate action. You continue this until you have a successful outcome. Just like the human patient, the corporation is a viable and living thing. What this means is that over time things will change. You need to repeat the triage on a regular basis as a physical check-up to ensure that new situations are not threatening the viability of the organism. Repeated and periodic use of the *business triage concept* can avert using this becoming an emergency.

Triage Comparison

Figure 1 contains the comparison of characteristics between the medical and business triage.

Figure 1 - Triage Comparisons

Ref	Characteristic	Medical	Business
1	Rapid Assessment	Vital Signs	Financial Analysis
2	Segmentation	Observation	Categorization
3	Severity	Life Threatening	Critical Segments
4	Prioritization	Treatment Order	Segment Sequence
5	Action Items	Treatment	Action Plans
6	Resources	Availability/Time	Existing Assets
7	Stabilization	Viability	Chaos/Order
8	Outcomes	Health	Effectivity

1. *Rapid assessment* – checking the vital signs of the patient, in business, you have to analyze the financial statement. The ledger is your pulse and vital signs.
2. *Segmentation* – you need to look at the injuries and symptoms of the patient – physical observations, whereas in business you need to categorize the segments of the business within the context of the financial statement. In essence what segment or part of the patient do I need to address first. What part of the ledger is causing the most serious problems?
3. *Severity* – what are the life-threatening situation for the patient(s) versus the critical segments of the business causing problems, like margin deterioration.
4. *Prioritization* – medically you have to decide whom do you treat first and how – business you have to determine what is the critical segment causing the most serious problem and start there to fix the problem.
5. *Action items* – you have to decide how to treat the patient, what do you have to do – business you have to define the action plans necessary to fix the problem.
6. *Resources* – what is available to help the patient – in business you have to use existing assets/resources – like in the medical triage you cannot wait for the hospital to come to you – you have to work with what is available to fix the situation from being terminal.
7. *Stabilization* – is the first order of your actions – you need to ensure the viability of the patient – in business you have to change the chaos to order, and ensure the liquidity of the enterprise.
8. *Outcomes* – you need to determine how to restore the patient to a healthy state of life, for the enterprise you have to achieve effective results.

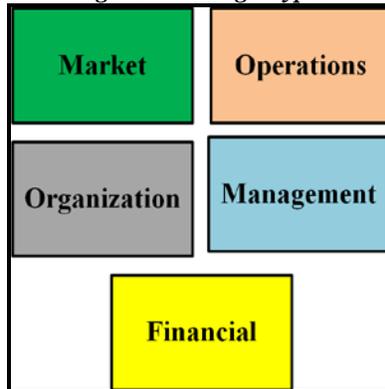
Triage Models

The medical triage is a focus on a human patient. In the MASH 4077 scenario, you are dealing with an object (human) where the critical situation is contained within a person. In a business,

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this is significantly different. When dealing with an enterprise you have to contend with many different aspects. Figure 2 illustrates the major segments of the business triage.

Figure 2 - Triage Types



- While you must begin with the *financial triage* – to get the pulse and vital signs of the organization, you may also need to perform additional triages depending on the results of the financial triage.
 - Perform a *Market triage* – what is happening in the market is analogous to oxygen to the enterprise – the sales and revenue are like the blood supply.
 - *Operations Triage* – explores where there is a fulfillment problem. Not the symptoms that everyone discusses, but the core issues
 - *Organizational Triage* evaluates the structures within the organization necessary to support the delivery systems.
 - *Management Triage* assesses whether policies or procedures are constraints
- The techniques you apply to the triages regardless of business segment rely on data segmentation and Critical Pareto analysis.

Financial Triage

You must always begin with the financial triage – this is the pulse of the enterprise and you must define the issues and criticality of each via the financial statement. It is essential that the accounting procedures are an accurate reflection of your business. Aggressive and liberal accounting interpretations are the pending disaster. While reporting may be *legal*, if it does not reflect the *true* situation of your financial position, you are placing your enterprise at risk. A *business triage* of your financial ledger is an appropriate discovery technique.

Figure 3 - Financial Triage Model

	A	B	C
1	Description	\$(000)	Statistics
2	Sales/Revenue	123,339	
3	Cost of Goods/Service	107,305	
4	Gross Margin	51,802	42.0%
5	Other Variable Cost	7,400	\$ 0.0600
6	Net Margin	44,402	36.0%
7	Operating Cost	27,751	\$ 0.2250
8	Operating Earnings	16,651	13.5%
9	Other Income(Expense)	5,229	\$ 0.0424
10	EBT	11,422	9.3%
11	Taxes	4,340	38.0%
12	Profit(Loss)	7,081	23.3%
13	RATIOS		
14	Receivables	5,334	23.1
15	Inventory	16,696	6.4
16	Fixed Assets	30,364	4.1

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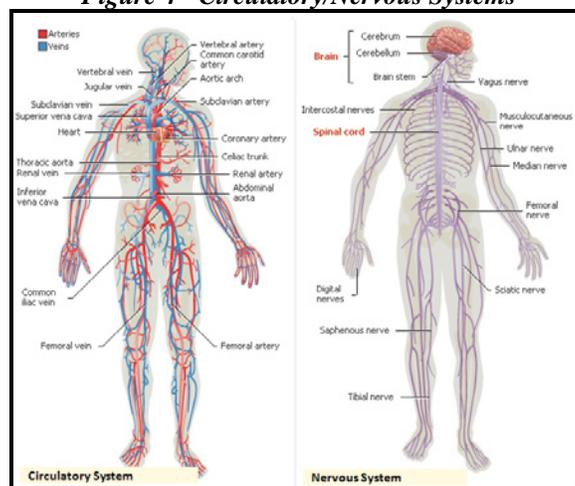
- The business triage relies on the financial statement of the enterprise. The financials are the pulse of the organization and provide you with the vital signs necessary to understand the condition of the business.
- This has to be your first step. The financials are objective statements about the condition of the operation.
- You segment the financial statements into the categories shown in figure 3. This categorization is your first step in segmentation and allows you to determine the priority for addressing the issues.
- Sales/Revenue less Cost of Goods or Service is the first lifeblood indicator. The gross margin is your starting point. If you do not have enough blood and oxygen pulsing thru the system, then other considerations will not matter. This is also the most overlooked opportunity.
- Other Variable cost is that cost that you cannot directly allocate to a product or service. It is the reason for separating this category of cost. Whether you are a direct cost or standard cost operation, make sure that you remove product service costs that are the result of allocations rather than attributable to actual production cost.
- Net Margin now is the next step in determine the flow of money into the organization.
- Operating Cost is your overhead, the departmental cost and infrastructure cost of running the business.

Whether profit or non-profit you can simulate these same segments to understand the health of your organization. Instead of sales, it may be fund availability for the period. Any service, even in a non-profit has a direct cost associated with providing this service. Other costs are variable depending on volume, but cannot be attributable to a specific service. The Balance Sheet metrics are a drain on your cash flow, and the reason for taking this pulse.

Total System Triage

In a triage you have to view the issues within the context of the total system – the interdependence of components is a critical triage consideration. Figure 4 illustrates the circulatory and nervous systems. Any wound can have serious consequences, so you have to understand how a specific situation or incident can impact the total system. Get to the core problem.

Figure 4 - Circulatory/Nervous Systems



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- View the accounting systems as being analogous to the human circulatory systems.
- The information systems are analogous to the human nervous system.

Taking issues out of context can incorrectly view symptoms as the critical issues and thereby mask core problems. Using a systems approach and point of view is an integral part of an effective triage engagement.

Systems Characteristics

The medical triage centers on the human being as a system. The business triage has to do the same thing – see the total system.

Therefore, the systems characteristics you must keep in perspective consist of the following.

- You always define the problem in relation to the system, which it belongs.
- You also view the systems' objective in relation to the larger system.
- You always look at the extent that the current design diverges from the optimum system design.
- You should segment or classify the data relating to the issue into groups, so that it is easy to view within the context of the total system.

Use number or surrogates where necessary to objectify at much as possible the results. In essence, use numbers to model the behavior. Use comparisons so that you can see whether you are gaining or losing on the goal

Systems Behavior

Once you understand the priority of the segments you need to review, you keep in mind the following considerations.

- Processes within the organization are a science and not an art.
- This means that as a science their behavior is subject to analysis – observations, experimentation, etc.
- Studying the behavior will identify the rules that govern its behavior.
- Synthesizing this behavior within the context of the total system will identify the impact on the total system.
- This leads to an understanding of its behavior and you can define the parameters that govern this behavior.
- When you define the parameters you can measure them – you can apply objective numbers
- And when you can measure
 - ✓ You can control
 - ✓ And when you control
 - ✓ You succeed

Knowledge → Control

In a medical or business triage, you are attempting to get the knowledge necessary to understand what you need to do.

- You gain *knowledge* thru analysis – developing the necessary background and awareness of the behavior.
- You gain *understanding* thru synthesis – you look at the knowledge segments within the context of the total system.
- When you understand you can *control*, but you must control the entire system.

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Triage Techniques

The following techniques are some, not all, of the methods useful in a *business triage*. You may think of these as some of your triage tools, which provide you with the capabilities necessary for successful triages.

- Use a triage approach to gain the necessary insight into the problems and issues that you need to address.
- A triage is just like the medical assessment for defining problems and establishing treatment priorities.
- Financial, operational, managerial, and market triages determination comes from the financials triage. In essence, the numbers tell you where you need to go and what you have to do.
- Thus, you use the ledger to identify the areas that need focus.
- Rely on proven tools to perform the triage and then address the priority indicated.
- Perform the analysis of the segments and then synthesis within the context of the total system. Essentially, do a triage of the triage within the context of its impact on the overall system.
- Pareto analysis isolates the *vital few* from the *trivial many*.
- The *theory of constraints* is an effective and systematic approach for solving problems.
- Apply aggressive action plans to attack each problem.

The following sections give you ways of using these techniques for an effective Business Triage.

SWOT Analysis

Once you identify the segment you need to triage further – one technique for doing this is the SWOT analysis where you consider your situation using the grid in figure 5.

Figure 5 SWOT Grid

	Helpful	Harmful
Inside	Strengths	Weaknesses
Outside	Opportunities	Threats

- You first analyze your internal Strengths and Weaknesses.
 - *Strengths* – this represents those attributes that help you to achieve your objectives or the objective of the system.
 - *Weaknesses* – this identifies those attributes that harm or constraint you from meeting your objectives.
- However, you must also consider your external Opportunities and Threats.
 - *Opportunities* are those external conditions that help you to achieve your objectives.
 - *Threats* are the external conditions, which do damage or impede your business performance.

The Hidden Enterprise

In any enterprise, there exists the hidden enterprise – those underlying support operations and departments that are not direct fulfillment activities.

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- The hidden enterprise refers to the non-value added activities that are supporting processes like accounting, order entry, etc.
- Trace task cycle times to identify delays within the enterprise processing cycle times.
- You will find constraints in the velocity of cycle thru-put – bottlenecks.
- Bureaucracies are one of the hidden issues that restrain the smooth flow of the thru-put.
- Organizational structures that work against the seamless process objectives.
- Information systems/technology is now an essential component for process transactions – the medium for getting work done.

Frequently removing hidden constraints will allow rapid improvement. Surface these first, they may be the least expensive and fastest resolution to your issues. Surfacing these hidden constraints will normally surface other priorities to evaluate – but you get there sooner without significant cost and loss of time.

Theory of Constraints

- In Goldratt's Theory of Constraints, (TOC) he identifies these major constraints
- *Physical Constraints* consist of these categories.
 - *Market constraints* which are essentially demand problems – demand is either too high or is disappearing.
 - *Material constraints* are those that are primarily lead times in getting material thru the supply chain or not supplying the demand chain in market lead-time.
 - *Capacity constraints* are the physical bottlenecks – in essence, you do not have the physical capabilities to get things done.
- *Managerial and Behavioral Constraints* consist of the following conditions.
 - These are *thinking* bottlenecks – paradigms that impact your ability to see things differently.
 - *Management styles* – you may be blocking the situation by either micro managing, your attitude, or not communication a direction
 - You must give people the freedom in making mistakes. In essence, you have to create a *learning environment*. We learn thru trial and error.
- *Logistic constraints* are activities and behavior that create bottlenecks.
 - *Processes* – the coordination of thru-put – are the processes ineffective or inefficient.
 - *Structures* – how is your organization setup, are departments and deep vertical hierarchies impeding the velocity of the organization.
 - *Operating procedures* – the policies, procedures, and rules for getting things done – are they constraints.

Information Systems

A major shift has occurred in information technology and you must be aware of its impact on your organization.

- Today computers are a mission critical element in business.
- Effective computer systems must be a seamless part of the operation.
- Information Systems need to be part of the business strategy.
- Computers equipment is now a commodity. This means it is no longer a competitive edge.
- Differentiation, which is the basis of competitive advantage, is achievable via information systems. What are you doing differently that distinguishes you from the competition?

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- Computer literacy is everywhere – a part of daily life, you cannot operate without this technology in the contemporary enterprise. Therefore, it must be an effective and efficient tool.
- Information systems cannot be a constraint and if not properly structured it becomes a significant *hidden enterprise*. Your computer applications can be a major constraint in running the business. Information overload or data integrity is a fatal flaw in your ability to be successful.

Part of a successful *business triage* will consider the potential of your existing software. You should identify its *effectivity*. Inventory existing software and validate its relevance. Technology, especially information technology is a critical component in the contemporary enterprise. You need to define an information technology roadmap that supports your business requirements.

A minimum requirement is that your software must provide you with the essential information allowing you to perform 80/20 type analysis. The software must also monitor the pulse of the organization – measurements to ensure that you are on target to your goals and objectives. Extensive and accurate databases are an essential ingredient to the rapid and successful *triage*.

Neither the age nor sophistication of your applications software is the key to success. It is the efficiency and utilization of your existing software that is the first priority.

Pareto Analysis

Pareto Analysis¹ is an essential tool in the triage process. It is a critical element in getting thru the mountains of information. This single technique allows you to target the critical areas. The characteristics of the Pareto Analysis are.

- It is known as the 80/20 principle.
- It means that 80% of the value comes from 20% of the activity.
- It may be 80/20 – 90/10 – 85/15 or 95/5.
- You will find the vital few versus the trivial many.
- It allows you to avoid information overload.
- You will be able to pinpoint the core issue – thus achieving successful triage outcomes.

In the *Triage Example*, you will see how to apply this important technique.

TOC Approach

TOC is the premise that there is at least one constraint within any process. That these constraints limit the rate you can that will achieve your goal. This is another important part of the triage. Once you have identified the segment or area of priority – address it using the theory of constraints focus. It is like the primary, secondary, and tertiary triage process. By increasing thru-put (flow) at the bottleneck process, can you increase overall thru-put? You use the following steps to improve the process.

1. *Identify the constraint* – This is the resource or policy; that prevents the organization from obtaining more of the goal. Make sure that you look at the *hidden enterprise* as well as the obvious areas.

¹ Pareto Analysis is a technique for separating the vital few from the trivial many. A definition and illustration of this technique is in a subsequent section in this paper.

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2. Decide how to *exploit the constraint* – make sure the constraint is not wasting time doing things that it should not do.
3. *Subordinate all other processes* to the above decision – align the whole system/organization to support the decision made above.
4. *Elevate the constraint* – if required/possible, permanently increase capacity of the constraint
5. If, because of these steps, the constraint has moved, return to step 1.

Do not let inertia become your constraint. In order to be successful you will have to alter the paradigms. Thinking is the frame of reference of your people. Inability for the leadership of the organization to be open to new view is especially crippling. The only way you can do this is to develop a learning organization. Effective *business triage* requires an open mind and the ability to cross-functional lines and hierarchical bridges using a multi-discipline approach. You may not find this in a single person. Therefore, you need to develop a learning organization. The *business triage* is an excellent way to develop this approach. You should perform the triage before you have to use it in an emergency. It is a good idea to use the *business triage* as the way to develop the learning organization.

Learning Organization

*At the heart of learning is the idea of discontinuous thinking identifying and abandoning the outdated rules and fundamental assumptions that underlie current business operations."*²

In order to change paradigms you must instill in your organization a learning environment. The pace of change is too rapid not to have the ability to respond to events. There are no formulas, simply train your people to respond in flight. You need to give them the tools and foundation to think on their feet. *You must change the paradigm of your enterprise. You can only do this thru people.*

The Adult Learning Process

Conventional training techniques rely on passive learning methods, using teachers who present material to a listening audience. Although this may be the preferred method for teaching children, it does not work well for adults. The basis of adult learning theory is the idea that experience and discovery are the best teachers. Connecting the learning process directly with an individual's work activity makes more sense. Of course, some classroom presentation may be necessary to introduce concepts and terms, but after this orientation, self-supervised training procedures should be the predominant methodology. It is the reasons why improvement programs, must be a part of the daily work activity.

Adult Learning Methods

Simply asking people to learn does not provide the stimulus required to effect changes within the firm. You must put learning into some context that has a direct consequence to that person.

When implementing any type of adult-learning program, consider the following:

- Learning for adults must be *self-directed*. Adults must feel that they are in charge of their education.
- Learning for adults must be *goal oriented*. It must achieve some practical purpose. Adults must see why they have to learn and change, what stake they have in leaving their comfort zone.

² In *Business Process Reengineering*, Michael Hammer

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- Learning for adults requires that they *change* their *mental models* of their world. This paradigm shift requires a shake-up of conventional thinking, possibly leading to a competency crisis. The patterns of behavior and thinking that historically allow individuals to make it through the day become uncertain, creating a threat to their security and, thus, resistance to change. You must counter this threat with a sense of trust, that mistakes will not have dire consequences. Success depends on the person leaving their *comfort zone*. Give them the security to dare moving into new zones.
- Adult learning relies heavily on an individual's experience to be successful. Comparisons against previous successes and failures are a critical ingredient to successful adult learning.

Learning Techniques

You need to incorporate the following techniques into any adult learning approach:

- You must direct learning toward a specific and tangible business problem or improvement.
- Measurements must link individual improvements to their impact on the enterprise. Otherwise, the tendency is to make localized improvements that have no real impact on the value of the enterprise (that is, bottom-line improvement).
- Cross-functional empowerment and ownership must be part of the learning process. If the individuals do not feel they have the authority to make changes, these changes will not occur.
- Research shows that the most effective method of initiating learning and change is to use the project approach, such as assigning a team to solve a specific business problem. However, the team must be in the operational area of the improvements. The people doing the work must be part of the improvement or it will not work.

Figure 6 is an overview of the methods and techniques necessary for effective adult learning. This is the basis of developing a *learning organization*. You begin with key people, leaders, and expand the process throughout the company. It is like throwing a rock into the pond. The ripples begin at the point of entry and spread throughout the pond.

Figure 6 - Adult Learning Overview

METHODS	TECHNIQUES
Self Directed	Specific Business Improvement
Goal Orientated	Measurements
Change Mental Model	Ownership Empowerment
Based In Experience	Use a Project Approach

Multiple Disciplines

The requirement for a *Business Triage* needs multiple disciplines – since you begin with unknowns’ situation and progress towards tangible actions. At each stage of the process, you gain more knowledge, which give you the framework for determining the next step. The following disciplines give you an idea of what is necessary for successful *business triage* outcomes.

- You must have a working knowledge of accounting and finance to get the pulse of the organization. You must be able to go beyond reading a financial statement. You have to understand the transactions driving the various account entries.
- In today’s world, you must have an in-depth knowledge of information systems – since this is the primary source of information. Using segments of the ledger, you will require detail analysis of the transactions within that account. This means exploring the database for the transaction history driving the account balances. Data mining is an important factor.

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- You need to understand logistics and operations – to know the operational aspects of the business. The ledger gets you to a segment of the business. However, you need a working understanding of the operations and logistics that are causing the unfavorable results. The individuals within the operational arena will know the symptoms, but not necessarily understand the core issues causing these symptoms.
- Production and inventory is a critical factor for checking on the support necessary for getting results. Production flow and the velocity of this flow enable you to see things in a different way. After all, if the problems were simple the people in these areas would have solved them.
- Cycle time and a feel for the thru-put and flow of transactions are necessary.
- An effective knowledge of customer service is a fundamental or primacy of service requirement.
- Computer systems are a critical component of success in the contemporary organization. We live in a digital world. Unless you understand how the processes work, you will not be able to identify the constraints. Most business processes rely on computer processes as part of the thru-put. Therefore, you need to have a working knowledge of computer systems to distinguish between what is possible versus what is available.
- You must understand database concepts and how to manipulate information both storage and retrieval. Transaction analysis requires data mining. You need the ability to dig thru the transaction detail to discover the vital few.
- You need a working knowledge of applications software such as Microsoft office and other business applications. Frequently, we create database applications via spreadsheet, because we do not know how to use Microsoft Access, even though it is on our desktop.
- You must have the ability to effectively data mine the information to understand the behavior of the organization. Studying the transactions is the way to learn the behavior of the processes. You need to present transaction history in a way that reveals the behavior of the activity and the processes.
- Management capabilities are frequently the result of a promotion without the attendant development. Academic and reading is necessary but falls short of the pragmatic understanding, that experience provides you.

Triage Example

In order to understand how to use such techniques like the Pareto Analysis, figure 7 is an example of applying these methods. While this example is for manufacturing issues it is applicable to any type of thru-put or process activity. In this case, we need to reduce the lead-time for making a gear. When you see the way in which you approach this problem, you will see several additional opportunities. Rather than doing a study of the actual activity you use the computer database as the model for simulating the process itself. Using the Bills of Material for the gear, you have the ability to get a comprehensive view of the process and the thru-put constraints.

This is a practical way of using computer database information to understand a process. It is objective and simply states the requirements. Therefore, you can quickly grasp the constraints in trying to improve lead-time for making this gear. The following information is available to perform this analysis.

- Fig7.A – this is the level within the bills of material. The list is from top down for all the components.

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- Fig7.B – is the item number.
- Fig7.C – is the item description
- Fig7.E – is the order lead-time in weeks.

Figure 7 - CPM Analysis

1	A	Name Box	C	E	F	G	H	I	L
1	Lev	Item	Item Description	Ord	Totl	R1	R2	R3	Cost
2	0	3678	FINISHED GEAR CASE	0.2	46.3	10.2	16.0	26.1	318,812
3	1	4852	MAIN PINION GEAR CASE	0.2	46.1	10.0	15.8	25.9	305,616
4	0.2	5389	RETAINER	4.6	15.6	4.6	15.6	15.6	3,933
5	0.3	4326	RETAINER RGH	11.0	11.0	-	11.0	11.0	1,271
6	0.2	7210	RETAINER	4.6	15.6	4.6	15.6	15.6	3,736
7	0.3	5163	RETAINER,ROUGH	11.0	11.0	-	11.0	11.0	1,320
8	0.2	7337	PINION SHAFT	9.8	25.7	9.8	9.8	25.7	115,016
9	0.3	5660	FORGING,ROUGH	16.0	16.0	-	-	16.0	34,884
10	0.2	4107	RETAINER,PL,1.00x17.	9.0	8.9	8.9	8.9	8.9	1,911
11	0.3	5828	PL,1.25x96x240	5.0	5.0	5.0	5.0	5.0	285
12	0.2	6479	SPECIAL,CAPSCREW	4.0	4.0	4.0	4.0	4.0	159
13	0.2	6961	NUT,PL,1.75x20.50DIA	7.0	14.0	7.0	14.0	14.0	7,951
14	0.3	4770	PL,2.5x96x240	7.0	7.0	7.0	7.0	7.0	1,429
15	0.2	7092	SHIM,LAM,STEEL,.033x	6.0	6.0	6.0	6.0	6.0	415
16	0.2	5899	SHIM,STEEL,28GAx28x2	5.0	5.0	5.0	5.0	5.0	279
17	0.2	4471	SHIM,LAM,STL,.015x27	6.0	6.0	6.0	6.0	6.0	286
18	0.2	4028	SHIM,LAM,.12x10.75x1	6.0	14.0	14.0	22.0	14.0	244
19	0.3	5941	SHIM STK,LAM,.125 .0	8.0	8.0	8.0	8.0	8.0	857
20	0.2	4055	BEARING	46.0	46.0	-	-	-	13,180
21	0.2	7168	CYLINDER BEARING	36.0	35.9	-	-	-	20,744
22	0.2	3936	FTG,LUBE,HYD,.125,ST	2.0	2.0	2.0	2.0	2.0	1
23	0.2	7653	BUSHING	4.0	4.0	4.0	4.0	4.0	9
24	0.2	6467	SEAL,SPLIT,OIL,15 DI	4.0	4.0	4.0	4.0	4.0	322
25	0.2	5440	SCR,HEX,.75x2,UNC,GR	3.0	3.0	3.0	3.0	3.0	24
26	0.2	6725	SCR,HEX,.625x2.5,UNC	2.0	2.0	2.0	2.0	2.0	3
27	0.2	5700	NUT,HEX,FULL,.625,UN	2.0	2.0	2.0	2.0	2.0	1
28	0.2	5030	WASHER,LOCK,.75	3.0	3.0	3.0	3.0	3.0	3
29	0.2	4138	WASHER,LOCK,.625,HVY	4.0	4.0	4.0	4.0	4.0	1
30	0.2	5703	WASHER,FLAT,1,HARDEN	2.0	2.0	2.0	2.0	2.0	9
31	0.2	7165	WIRE,LOCK,#14	5.0	5.0	5.0	5.0	5.0	0
32	0.2	8738	BEARING HOUSING #1	6.6	31.6	6.6	6.6	6.6	65,897
33	0.3	4163	PL,8.5x72x120	25.0	25.0	-	-	-	38,021
34	0.2	4708	BEARING HOUSING #2	7.0	32.0	7.0	7.0	7.0	62,990
35	0.3	4778	PL,8.5x72x120	25.0	25.0	-	-	-	38,021
36	0.2	6371	PLUG,PIPE,HEX HD,.5	4.0	4.0	4.0	4.0	4.0	6
37	0.2	4308	RETAINER,SPLIT,.25x9	9.0	8.9	8.9	8.9	8.9	294
38	0.2	6723	SCR,HEX,.312x.625,UN	4.0	4.0	4.0	4.0	4.0	2
39	0.2	5755	WASHER,LOCK,.312	2.0	2.0	2.0	2.0	2.0	1
40	1	4649	BOLT,T-HEAD,1.50x13,	4.0	4.0	4.0	4.0	4.0	1,645
41	1	7970	PIN	7.0	2.0	7.0	2.0	2.0	10,626
42	0.2	7403	ROUND,7.00x15.5	5.0	5.0	5.0	5.0	5.0	3,729
43	1	6292	BAR,1.00x3x3	8.0	6.0	8.0	6.0	6.0	605
44	0.2	5509	FL,1x3x240	2.0	2.0	2.0	2.0	2.0	36
45	1	6968	NUT,HEX,FULL,1.5,UNC	4.0	4.0	4.0	4.0	4.0	60

- Fig7.F – is the total lead-time in weeks. The total lead-time is the purchase lead-time plus the order lead-time.
- Fig7.G – represents the first case response. Each in of these cases an inventory decision is necessary to adjust the lead-time at that specific level.

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- Fig7.H – is the second case response.
- Fig7.I – is the third case response.
- Fig7.L – is the extended standard cost for this level within the bill structure.

The *critical Pareto Method* or *Critical path/part Method* (CPM) is an excellent way to visualize the use of the *business triage*. You can use this approach for any type of analysis. For example, if you were analyzing your margin effectivity, you would use sales history. The period of sales history should correlate to your median replacement lead-time. You must also include an appropriate period of sales history that will include the volume and mix of your products or services. You must be careful, not to exclude anything you *perceive* to be irrelevant. Let the history point out the behavior in order to reveal objective results.

In the case of margin behavior, you would have to summarize quantities, revenue, and cost by item number as the best case. If this were not possible, you would summarize by product lines or groups. Even when you have the data at an item number level, you will need to categorize these items into segments or groups with similar characteristics. For example gearing versus bearings, purchase versus manufactured.

Nevertheless, the use of CPM analysis is an invaluable technique in performing triage at all levels of the enterprise. You use CPM at every level of the triage, primary, secondary, and tertiary. It allows you to continue your focus on the critical components that will maximum results with a minimum of effort.

Figure 7 does not include the type of item (manufacture or purchase), unit of measure, or quantity in order to make the information fit this figure. These are part of the ultimate decision. Your objective is to look for the critical path. In this case, the total lead-time is 46.3 weeks or 10.8 months. In order to satisfy customer demand will require guessing a long time into the future. The probability of guessing correctly is slim. You either will have too much inventory or will not be able to satisfy a customer order within the market lead-time. The number of guesses by you and the customer will make this a serious customer services issue. When you compound these guesses, you create *false* demands on your system. The solution to this situation is to shorten the lead-time. That is you put the lead-time within a market window of fulfillment.

Scenarios

Figure 8 shows the results of running three scenarios. The objective is to stock components in inventory to shorten the lead-time of the product.

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Figure 8 - Improvement Scenarios

	P	Q	R	S
1	Scenario	Case1	Case2	Case3
2	Inventory Investment			
3	Production Cost	318,812	318,812	318,812
4	Investment	147,440	144,849	109,965
5	Investment %	46.2%	45.4%	34.5%
6	Steel Plate Cost	76,041	76,041	76,041
7	Net Investment	71,398	68,808	33,923
8	Net %	22.4%	21.6%	10.6%
9	Lead Time Improvement			
10	Old Lead Time	46.3	46.3	46.3
11	New Lead Time	10.2	16.0	26.1
12	L/T Improvement	36.1	30.3	20.2
13	% Improvement	78%	65%	44%

- Fig8.3 is the manufacturing cost for making this product.
- Fig8.4 is the inventory investment necessary to reduce the lead-time.
- Fig8.5 is the percentage of the total cost you will have to invest to make the lead-time reduction.
- Fig8.6 is the cost of steel plate, which is the safest inventory you can keep in stock. Steel plate is available for multiple products and is a good stocking decision.
- Fig8.7 is the net investment without the steel plate. In essence, this is the risk stock that you need to keep in inventory to reduce the lead-time for this component.
- Fig8.10 is the old lead-time. The 46.3 weeks is about 11 months. This is a year to deliver this component making forecasting difficult.
- Fig8.11 is the new lead-time. Depending on the investment, you see the possibilities.
- Fig8.12 is the improvement in lead-time.
- Fig8.13 is the percentage improvement in lead-time.

Recommendation

This analysis after adjusting for steel plate shows a small investment in all three cases. However, case1 has a dramatic improvement in the lead-time reduction. The 0.8% investment in case2 does not have an adequate improvement. Therefore, it is easy to see that case1 is the best approach. However, running the other two cases lets you evaluate other possibilities.

These examples combine the use of Pareto principles with the CPM approach. This is the benefits of using these *Business Triage* methods for analyzing the business.

Summary

In summary in order to achieve a successful business triage, you should.

- Perform a business or enterprise triage to identify and set priorities for achieving a healthy business.
- Apply the Pareto principle to isolate critical areas.
- Pareto separates the vital few from the trivial many – provides an effective span of control.
- Utilize the theory of constraints to fix the problem.
- Initiate a learning organization, changing the paradigms that may be the cause of you getting into this situation.

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- Deploy action teams to work on the issues. These action teams must be part of the in-line operations.
- Establish measurements to monitor the progress of the improvements.
- Continue this process until you achieve the target results.
- Then make sure you have in place a continuous improvement program to measure and make sure you stay on top of the situation.

Find the individual within your organization that has the systems thinking skills. Assemble the relevant disciplines to achieve a critical thinking frame of reference. Where possible bring in someone from the outside for an objective review of the situation. Develop a learning organization by applying the *business triage* in a non-critical time.