

VALUE FROM THE PHYSICALLY DISABLED PERSPECTIVE...GETTING BACK IN THE GAME OF LIFE

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Mary Davis received her Associate of Science degree from Georgia State University, in Atlanta, Georgia. She went on to become a Registered Nurse and served on the staff at Northside Hospital in Atlanta. In addition to being a very effective homemaker, she also served as a leader and coach in many community athletic and family programs, and her church. She was an avid rock climber, white water canoeist, and enjoyed family camping. Her nursing career and many of her interests were abbreviated due to complications from diabetes. Despite being physically disabled through multiple amputations, blindness, open heart surgery, a kidney transplant, and other medical problems, she always found a way to stay in the game of life. Her knowledge of Value Analysis/Value Engineering was developed through her association with many Value friends and from participating in SAVE International Conferences. Her inspiration for writing this paper came from her own experiences. She was in the process of writing this paper when she died of a massive heart attack on December 24th, 1996. A deep debt of gratitude is expressed to Mike and Ginger Adams for finishing her paper, and to SAVE International - The Value Society, for allowing her paper to be published posthumously

ABSTRACT

This paper discusses the need for the value practitioner to understand value from the perspective of a physically handicapped and disabled person. The author discusses product and service value, and the challenges faced by the Value Analysis/Value Engineering (VA/VE) world. The objective is to find ways to enhance functionality, reduce the cost of production and ownership, and make these products and services more available, especially to third world and emerging nations.

INTRODUCTION

For those who saw Bill Demby playing street basketball in that now famous 1987 DuPont commercial, or saw Tony Volpentest run an 11.4 second 100 meter dash at the 1996 Paralympic Games in Atlanta, there are few words that accurately describe their triumphs. Demby, a Maryland bilateral amputee from the Vietnam War, had excelled at the 1984 World Games using the "Seattle Foot" and two artificial legs before appearing in those inspiring, highly motivational commercials. Volpentest, from Washington, was born without both arms below the elbow and without both feet, yet his Paralympic record in the 100 meter dash was only 2 seconds off the 1996 Olympic record of 9.4 seconds set by Donovan Bailey.

Seeing a mother with artificial arms feed her baby...seeing someone with artificial legs hunt, play golf, or tennis...or watching a mother with artificial legs walk unassisted down the aisle at her daughter's wedding... these are as equally inspiring events as Demby and Volpentest accomplishments. There is not so much a triumph of technology, but a triumph of the human spirit through technology.

Many such marvelous new products and services for the physically handicapped and disabled are featured in movies, TV specials, sporting events and magazines with the assumption these products and services function as portrayed, solve customer value problems, are easy to use, are available to mass markets, and are affordable. Quite often, these products and services are prototypes. Their production and universal ownership await years of testing and approvals, costs are prohibitive, and use is not widespread. More importantly, these well intended products and services may not meet the unique needs of their customers. These needs are often based simply on biomechanical devices that allow disabled individuals to realize a desire to become productive again...improve themselves to not only improve the quality of their lives, but to also simply get back into the game of life.

The Americans With Disabilities Act (ADA), a U.S. civil rights law passed in 1990, has made the voice of the disabled heard, and brought an awareness that nearly 50 million US citizens have some disability. In 1996, the impact of keeping that number of disabled people out of the workforce costs the U.S. economy over \$200 billion. Modern medicine and longer lives will probably increase that number significantly, and create a demand that more and more people be given more than just access and accommodation.

For many third world countries lacking the funding, the biomechanical infrastructure and the technology to provide extensive care and biomechanical devices to their disabled, the problems are even greater. In addition to the disabilities created through disease and accidents, there are those generated through the instruments of war, primarily landmines. One estimate states that Cambodia has one amputee per 200 residents due to landmines.

Regardless of the cause of the disability, the disabled individual has a need to become productive again...to get back in the game of life. To them, this means being able to do "normal" things like:

- Farm to feed the family.
- Hold and feed the baby.
- Play sports with the children.
- Wear pretty shoes to church.
- See people, signs and elevators in a hotel lobby.
- Not being shout at because you're blind.
- Being comfortable hearing voices and sounds.
- Move easily between department store displays.
- Feel at ease in a social situation.
- Walk down the aisle at a wedding.
- Not have to think about entering a building.
- Not being exhausted from climbing steps.

While these may appear as second nature activities to the non-disabled, they become "life-stoppers" to the disabled and their families.

"DISABLED" DEFINED

Being "disabled" simply means some part of the body doesn't work or function as it was designed. It means the normal, specific contribution of a body part or function, such as hearing, seeing, feeling, touching, grasping, walking, etc., is no longer there.

In the not too distant past, the term "handicapped" was applied to describe the individual as having a disadvantage in the game of life...a disadvantage that made achievement unusually difficult, and that hindered the chances of not just winning, but even participating in many activities.

Because one part isn't there or doesn't work anymore does not imply the rest of the person doesn't work either! Being blind and in a wheel chair doesn't imply the person is also deaf, mentally incapable, has no feelings and does not have the potential to be productive and to succeed!!

In reality, the word handicapped does go with the word disabled, in that a person is "handicapped" or put at a disadvantage because a part of their body has been disabled. Other body parts and functions and dimensions become enhanced to compensate for the loss to the whole. Quite often, it is the spirit and attitude that comes forth most strongly, causing that person to look even harder for products and services to help them overcome the physical disability.

VALUE DEFINED

Value to the disabled person is essentially the same as for the non-disabled. Simply put, value to the disabled is, "What's important to me." This becomes the basis for all decisions regarding purchasing, acquiring and using a particular product or service,...**"will it help me overcome the disadvantages?"** If it doesn't or won't work or function as needed, especially for the disabled, the product or service has only "in-the-closet" value.

The traditional classifications used by value practitioners to define value for products and services have been as follows:

- Moral value.
- Religious and spiritual value.
- Ethical value.
- Aesthetic value.
- Political value.
- Judicial and legal value.
- Economic value, refined as:
 - - Market value.
 - - Esteem value.
 - - Exchange value.
 - - Use value.

Unfortunately, the most frequently used value classifications have been economic, with value solely described in terms of "worth" and usually at the expense of the others. Human beings, however, tend to define value more holistically and not from a single dimension. The disabled individual would add another set of value classifications, such as:

- Access and accommodation of need value.
- Enabling value.
- Safety and comfort value.
- Elimination of false perception value.

These additions do not radically alter the basic value categories listed. They do, however, add new requirements to the tasks of creating, designing and delivering high customer-value products and services. Product functions must provide the basic or assumed functions as well as the required performance functions as a given. The real disabled customer value comes from being able to use the product to overcome a disadvantage

VALUE-BASED DECISIONS

For the physically handicapped and disabled person, making a decision to buy, acquire and use something like an artificial leg is based on this value

definition-will the product help me overcome the handicapped I have been given through a disabled part of my body?

A very high-level value equation used by many value practitioners to define value is shown below:

$$\text{VALUE} = \frac{\text{FUNCTION(S) PROVIDED}}{\text{COST OF OWNERSHIP}}$$

Using this equation as a basis for comparison, Figure 1 presents information used by the author to make a value-based decision on purchasing a 2d artificial leg. Functions were essentially identical for each leg and independent providers were used.

Figure 1. ARTIFICIAL LEG VALUE COMPARISON

| | <u>ARTIFICIAL LEG #1</u> | <u>ARTIFICIAL LEG #2</u> |
|------------------|---|--|
| MATERIAL | ♦ HARD MOLDED PLASTIC AND STEEL | ♦ SOFT, MOLDED PLASTIC & TITANIUM |
| WEIGHT | ♦ SIX (6) POUNDS | ♦ FOUR (4) POUNDS |
| FEATURES | ♦ STANDARD SOCKET ♦ PRESSURE ACTIVATED KNEE ♦ RIGID, NON-ARCHING FOOT ♦ WAIST / HIP STRAP ATTACHMENT ♦ STUMP LIFTS AND BODY PUSHES | ♦ BONE & MUSCLE CONTOURED SOCKET ♦ GRAVITY ACTIVATED KNEE ♦ FLEXIBLE, ARCHING FOOT ♦ STUMP / SOCKET SUCTION ATTACHED ♦ STUMP IS EXTENDED BY THE LEG |
| PRICE | ♦ \$ 5,000 (U.S.) | ♦ \$ 15,000 (U.S.) |
| INSURANCE | ♦ \$ 4,000 | ♦ \$ 11,000 |
| USER COST | ♦ \$ 1,000 | ♦ \$ 4,000 |
| DEFECTS | ♦ TOO MUCH ENERGY REQUIRED TO USE ♦ STUMP BLISTERS AND SORENESS ♦ UNNATURAL GAIT | ♦ SOME STUMP/ SOCKET SUCTION LOSS |
| VALUE | LOW ("IN-THE-CLOSET") | HIGH (ACTIVELY USED) |

In the above example, both artificial legs provided essentially the same functions. While the owner cost of artificial leg #2 was considerably greater, the fact

that it could be used to enable the whole body to perform other functions gracefully (such as unassisted walking), gave it much greater value.

In purchasing artificial leg #2, the provider also offered a full program of therapy and conditioning not usually required for such a purchase. While this company's commitment to providing these biomechanical products to a wide audience, they were having difficulty containing product costs.

Figure 2 illustrates artificial leg #2 and it's use during fitting and adjustments

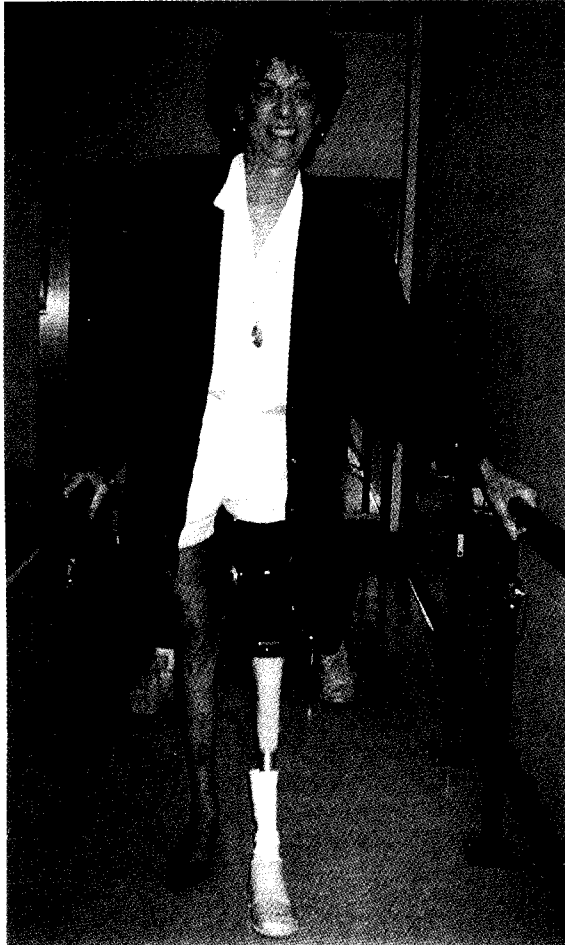


Figure 2

The Value of Being Able to Try

Figure 3 illustrates the joy inherent in being able to actually use the product in a holistic sense, to participate more fully in a phase in the game of life,... a daughter's wedding. To reach this moment required an incredible amount of time be spent in the

provider's laboratory, as fittings, adjustments, outer covering skin tone matches created, etc.



Figure 3

The Value of Winning

It should be noted that neither supplier had knowledge of Value Analysis/Value Engineering, nor had they heard of SAVE International - The Value Society. An opportunity to be the catalyst for change was never greater.

THE CHALLENGES

The challenges listed below are for both the able and disabled, the government/business worlds, and the Value world, in that all will be required to find

- Challenge #1: See, feel, hear and listen to the individual "Voice of each Disabled Customer", without viewing them as a small tragic minority of victims making unrealistic demands.
- Challenge #2: Learn the spirit and intent behind the ADA and other legal guidelines to educate and better serve clients.
- Challenge #3: Allow and enable the handicapped and disabled to participate in the "normal" world using as many existing products and services as possible.
- Challenge #4: Expedite the development of new products and services, while enhancing their function, and making their cost more affordable.
- Challenge #5: Introduce Value Analysis to the researchers, developers, and providers of products and services for the handicapped and disabled, and vice-versa.
- Challenge #6: Reduce the cost of research and development, production and ownership of biomedical products and services.
- Challenge #7: Make more high-user value biomechanical products and services available to third world and developing nations.
- The value of eliminating the perception that the physically handicapped and disabled are also emotionally and mentally disabled.
- The value of making life easier for those who care for the handicapped and disabled, and reducing the cost to society.
- The value of increased sales of "normal" products and services to the disabled, i.e. making everything useable by everyone.
- The value of reducing the subsequential costs associated with other services (transportation, therapy, etc.) caused by the handicap or disabling condition.
- The value of decreasing the financial and organizational costs of non-compliance with the law.
- The value of a good corporate name.

These benefits will accrue first to those who develop an "I want to" versus an "I have to" attitude toward the challenges and see them as opportunities. This is the attitude the Value Analysis/Value Engineering world should be portraying!

CONCLUSIONS

The following conclusions are based on a limited, but growing perspective: that of the physically handicapped and disabled. The area of mental disability and the obviously similar needs are not addressed. This is a separate and equally important challenge that needs to be championed by Value Analysis/Value Engineering.

1. Value to many physically handicapped and disabled people is essentially the same as value for the non-disabled.

2. More often, value to the handicapped and disabled is simply being able to use existing products and services to participate more fully in the world of the hearing, the sighted, and the fully mobile. This participation often overcomes other perceived disabilities.

3. Function value is being exponentially redefined with each biomedical engineering breakthrough, while high costs continue to limit access to many potential users.

The most important thing the Value world should think about these challenges is...after reaching this most extraordinary point in time in mankind's technological history...why not? Why shouldn't Value Analysis/Value Engineering lead the way?

THE BENEFITS

The benefits to the physically handicapped and disabled individual, their families, to the providers of product and services are more than financial and increased opportunity. The real and lasting benefits will come from experiencing the potential of the human spirit that emerges from working together in a sense of community. Some of these benefits are:

- The value of the satisfaction and excitement of knowing you are helping many people enjoy the greatest world mankind has ever known.
- Increasing the opportunity for the handicapped and disabled to make richer contributions to society.

