Necessity is the mother of invention

TREADMILLS

“ Necessity is the mother of invention” (Plato, 427-347BC) and so raised the need of a treadmill.

“ The treadmill is an exercise device that is designed for walking or running in place. (They are the) most popular piece of exercise equipment these days and (are) very commonly used in both fitness centers and homes. It is a convenient and efficient way to get cardiovascular exercise and is often used to help lose weight” (Prontes , 2009).

The first treadmill was built in 1875 and was not used for humans to exercise on but to get harness the energy of animals to get power. These were called “ level power treadmills” and were built in all sizes. By 1920’s devices like treadmill were used in factories like Ford Motors for passing auto parts across the factory through conveyer belts. This step turned to be very useful and successful as it cut labor costs to a great extent (A History of Treadmills, 2009). The next major development took place in 1952 with the “ first medical treadmill”. It was made to identify and evaluate heart and lung diseases and was initially used on patients as stress a reliever. This was invented by Robert Bruce (father of exercise cardiology) along with Wayne Quinton (Marples, 2008). After this there was no turning back and the process of innovation started. People started to think of ways to use it as an exercise machine without it being so stressful and improve the health of the user. By 1960’s the treadmills became essential equipment in gyms and households. People no longer had to leave their houses for a walk and could work out at their own convenience (A History of Treadmills, 2009).

The primary treadmill had many drawbacks, seeing this company's like " Tunturi, Aerobics Inc., Woodway, Track Master, and Star Track" saw an opportunity and started building more " user-friendly and better treadmills"(The History Of Treadmills Unearthed, 2009).

Extent of relationship to previous product / service / process

The treadmills have come a long way ahead; they have innovated firstly from huge bulky machines to sleeker ones. They initially started off with manual treadmills which were a great work out but were very difficult to operate as they have no motors in them, therefore taking a lot of energy and strain to start it. While on the other hand, people now prefer using motorized treadmill as they are easily operated and compact. You can easily adjust the speed and incline level in them without much effort. They also provide various workout sessions which are very useful. Though motorized treadmills are expensive as compared to manual treadmills, they are better and are worth spending on (Bumgardner, 2009). " Now you can even get a wide width treadmill that allows you to walk your dog right alongside you while you exercise!" (Urban, 2006).

Treadmills found themselves useful in more ways than one, for example NASA had installed treadmills at their work place to keep their astronauts healthy in zero gravity conditions (A History of Treadmills, 2009).

Existing competition when first innovated

Initially when the treadmills were first innovated there were two major companies producing it in the 1960's, which were the Tunturi and Aerobics, Inc. Tunturi is a Finland based company and now has the reputation of " being one of the leading and best-known manufacturers of high class fitness

equipment". While Aerobics, Inc. started maximizing their production in 1968 and have " grown from making a simple mechanically-controlled treadmill to their award-winning Pro Series, featuring computerized electronics and automated controls". After seeing a high demand for treadmills and it being profitable, many companies started producing them. Some of these companies were Woodway in 1983, NASA with the Skylab, Trackmaster in 1978, Star Trac who were the first to " combined computer technology with their treadmills" and many other companies followed on (Marples, 2008). Evidently the treadmill industry has been very active throughout with companies continuing to innovate (The History of Treadmills Unearthed, 2009).

Subsequent (following) competition

Treadmills haven't faced any cut throat competition until recently when elliptical trainers were introduced. Elliptical trainers give you a full body workout, are impact free and are the best in cardiovascular workout. This feature attracts people with knee problems as it requires less effort. While a treadmill is best suited for a runners or joggers as they are more strenuous and focuses more on the lower body. However, both the machines are great for an " aerobic workout indoors" and it is up to the consumer to choose what sort of work out he/she wants (Hudson, 2009).

Resistance (struggle) to innovation

Woodway:

Woodway's history began in 1974, when Willi Schoenberger, a technical director in charge of planning a fitness center, noticed that the treadmill wasn't very sound mechanically, and didn't really meet human needs. He

wanted to create a comfortable surface that didn't interfere with the natural biomechanics of running or walking. His machine was well-named – from the German term " wald weg" or " way of the woods" – the feel of running on a soft pine needle-covered path in the forest. Licenses to manufacture Woodways were granted to Japan in 1983, and the U. S. in 1988. Woodway USA is now the primary manufacturer of Woodway Treadmills worldwide. (Marples, 2008)

Treadmills face a number of problems, the most common being that it " inclines up to high". This usually leads the treadmill to " short out" and is followed on with a faulty message saying " out of service". Another problem is of the treadmill shaking " back and forth violently" because of the conveyor belt being broken down or pulley being loose on the inside. Both the problems can only be solved by the repairman who can prove to be quite costly on a monthly basis (Rail, 2009).

The biggest disadvantage of treadmills is that people generally tend to lose interest with time and it's even more expensive as compared to the outdoors. Another disadvantage being that they occupy more space and also make's the jogger inhale dust while jogging in a park would be like " paradise for our lungs" (Wanjiru, 2009).

Risk calculation

Cost of production incurred, what impact on market, cost followed after

Future development / possibilities

Treadmills have certainly come a long way ahead and clearly have a bright future. They are very popular among all ages, be it children, adults or elderly

people. Some of the futuristic treadmills include underwater treadmills and endless pool.

Underwater treadmills will be “ treadmills submerged in water”. Being underwater the pressure would be more on the person walking or running on the conveyor belt underwater, making it hard to run. These treadmills are very advantageous as they strengthen your muscles and hips and cure abdominal and back problems. It will mostly be useful for people who have undergone hip replacement surgeries and help them heal faster. Underwater treadmills are safe and hardly require any maintenance.

Endless Pool will be enclosed to an area or measure 8” X 15” and will be used for swimming. The pool contains of currents which are flexible and can be adjusted to the users comfort. It strengthens all the movements made, making the workout more beneficial (The Future of Treadmills, 2009).

“ The future (of treadmills) holds a promising growth and development with various popular brands doing their rounds in the market” (The History of Treadmills Unearthed, 2009).

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