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**Persuasive Technology to motivate individuals to be active**

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## ABSTRACT

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Persuasive technology can be a powerful tool for individuals who are engaged in sporting activities and want to improve their physical fitness. Currently there is little research about the effects of using persuasive technologies to motivate individuals to participate in physical fitness.

Captology describes the area where technology and persuasion overlap; this area will be focused on for this study.

The main objective of the thesis is to prove a correlation between physical fitness and persuasive technologies with the use of technology products. The study consists of analyzing different available technologies.

The theoretical part of the thesis consists of the study of persuasive technology. The topic of persuasive technologies will be studied in great detail to accurately explore all possible benefits.

Understanding what motivates individuals to be physically fit and engage in sports can be a valuable tool for companies who design and produce sporting products. There are many aspects of producing products that motivate and encourage individuals to be active. A single device does not create or allow for the modern day athletes to express themselves fully. Today's active individuals desire a full range of complementing technologies to interact and provide motivation and feedback on a personal and social level.

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Keywords: Smart phones, Social media, Internet, Heart rate monitors

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## 1 INTRODUCTION

The purpose of this thesis is to prove a correlation between persuasive technologies and the effects on being physically active. Persuasive technology can be a powerful tool for individuals who are engaged in sporting activities and want to improve their physical fitness. *People will have greater motivation to perform a target behavior if they are given information, via computing technology, about how their performance compares with the performance of others, especially others who are similar to themselves* (Fogg, 2003, 198). Currently there is little research about the effects of using a combination of persuasive technologies in a modern world of increasing social media's and web offerings to modify user's behaviors towards fitness. The level of computer-assisted training continues to increase by consumers and will continue to increase as technology becomes more interactive.

Web sites, social media offerings will also be studied to examine the effects on user's behaviors towards fitness. All aspects of persuasion will be analyzed from product to persuasive web sites, Facebook, YouTube, Twitter, television, and radio advertisements.

Understanding what motivates individuals to be physically fit and engage in sports can be a valuable tool for companies who design and produce sporting products. There are many aspects of producing products that motivate and encourage individuals to be active. A single device does not create or allow for the modern day athlete to express himself or herself fully. Today's active individuals desire a full range of complementing technologies to interact and provide motivation and feedback on a personal and social level.

## 2 DEVELOPMENT METHODOLOGY

When analyzing the effects or persuasive technologies there are many different areas to examine. In today's world there is an ever-increasing amount of social factors in addition to hardware-based motivators that can effect user's motivations. Smart phone usage is increasing dramatically every year and throughout the world. As prices for high-speed Internet access becomes lower the availability for access becomes easier, these trends will only increase.

Social media applications and their usage are also increasing at ever increasing rates. Four main areas will be examined to establish a correlation between technologies and being active. Smart phones, Social media, Internet, and heart rate monitors will be studied.

### 2.1 Smart Phone

Worldwide smart phone sales reached a milestone for the first time during the year 2013, shipping one billion units (Idc.com 2014, Date of retrieval 15.05.2014). The definition of a smart phone is a cellphone and handheld computer that created the greatest tech revolution since the Internet. A smartphone can do everything a personal computer can do, and because of its GPS much more. A smartphone combines cellular telephone, Internet access for e-mail and Web, music and movie player, camera and camcorder, GPS navigation system and a voice search for asking a question. In addition it is also mobile and can be with you at all times. (Encyclopedia, 2014)

Key Global Telecom Indicators for the World Telecommunication Service Sector in 2014 (all figures are estimates)									
	Global	Developed nations	Developing nations	Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas
<b>Mobile cellular subscriptions (millions)</b>	6,915m	1,515m	5,400m	629m	410m	3,604m	397m	780m	1,059m
<b>Per 100 people</b>	95.5%	120.8%	90.2%	69.3%	109.9%	89.2%	140.6%	124.7%	108.5%
<b>Fixed telephone lines (millions)</b>	1,147m	511m	636m	12m	33m	512m	70m	245m	256m
<b>Per 100 people</b>	15.8%	40.8%	10.6%	1.3%	8.7%	12.7%	24.9%	39.2%	26.3%
<b>Active mobile broadband subscriptions (millions)</b>	2,315m	1,050m	1,265m	172m	92m	920m	138m	399m	577m
<b>Per 100 people</b>	32.0%	83.7%	21.1%	19.0%	24.6%	22.8%	48.9%	63.8%	59.1%
<b>Mobile broadband growth 2013-14</b>	N/A	11.5%	26%	43%	19%	21%	15%	12%	16%
<b>Fixed broadband subscriptions (millions)</b>	711m	345m	366m	3m	12m	313m	40m	173m	163m
<b>per 100 people</b>	9.8%	27.5%	6.1%	0.4%	3.1%	7.7%	14.3%	27.7%	16.7%
<b>Source:</b> © International Telecommunication Union (May 2014)						<b>via:</b> © mobiThinking			

FIGURE 1. Global Indicators (DotMobi, 2014)

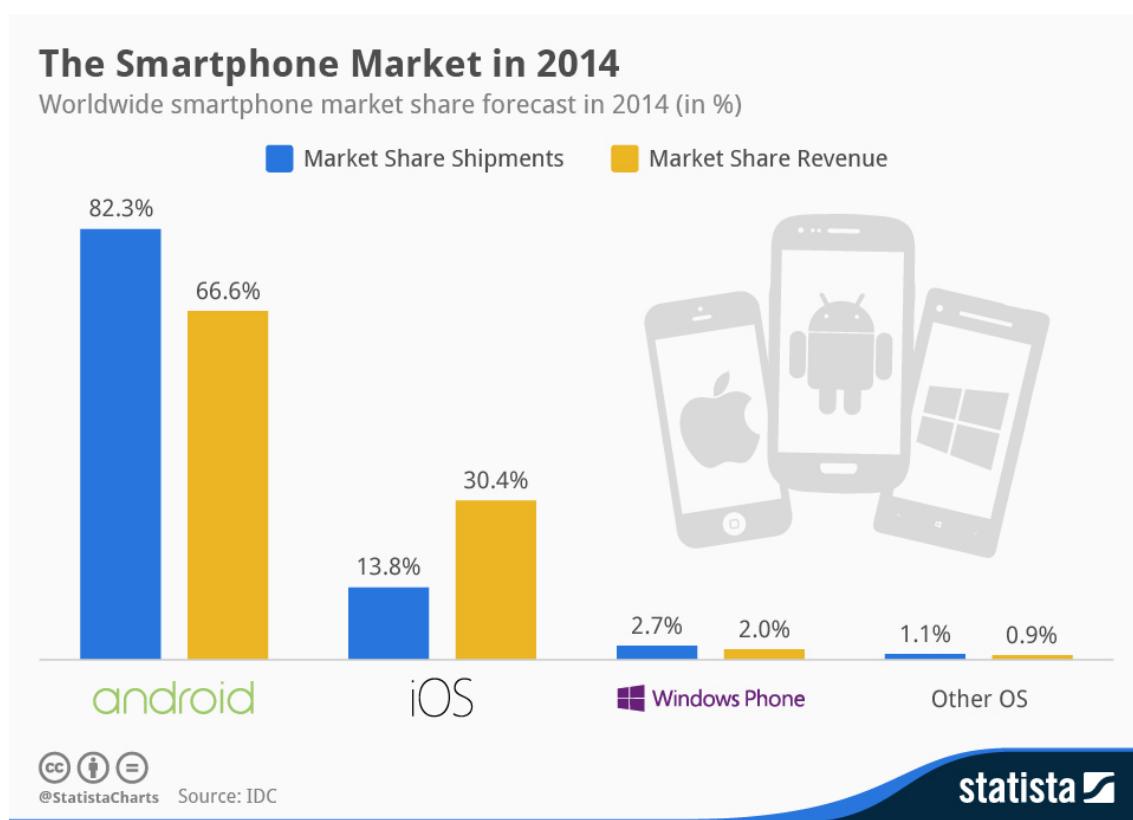


FIGURE 2. Market Share (McCarthy, 2014)

Smart phones are increasing every year in popularity throughout the world. Based on image 1 in developed nations there are a use rate of 83.7% percent per 100 people for active broadband subscriptions and a mobile broadband growth of 11.5% during the years 2013-2014. The statistics in image 1 show a very large usage of broadband enabled phone throughout the world. In addition there is still a huge potential for growth throughout the developing nations with Africa showing a growth of 43% during the years 2013-2014. One of the main advantages of smart phones is the fact that they have the ability to run various applications; this ability to run application creates a limitless possibility for effectiveness of a smart phone. The android store for example contains hundreds of thousands different applications alone. The challenge with so many different applications being available is that there needs to be an adequate and effective method for searching and other relevant criteria.

According to image 2 there is a large amount of android users versus IOS users in the world. This rate of increase is even greater when referencing Windows phone. The amount users throughout the ecosystem of apps and operating systems should be considered when designing apps for consumers and which to avoid at the present time.

A recent study shows that asymmetric inter-personal influence can make a big impact in understanding the user adoption traits and patterns and also the ability to make recommendations to users and increase the level of satisfaction. This type of information for understanding what type of applications can be successful is critical when companies or individuals are designing apps for consumers.

## 2.2 App Development

App development can be broken down into twelve steps:

1. Define your goal:

Defining your goal is the starting point of any great idea and defines what the app will do, what is the appeal, and also what is it going to solve or bring benefit to consumers.

2. Start sketching:

Sketching is an important but often overlooked area. Sketching lays the foundation of the how your app will look and the interface it will have. The process of sketching also help to give your team a better understanding of what the app should look like.

### 3 Research:

Research has four main purposes.

- a. Find out if there are other apps that are doing the same thing as yours. This should include legal restrictions such as copyright infringement.
- b. Look for ways, and ideas to improve the design of your app. If you have connections in the app industry, get an expert opinion on your planned idea from the beginning.
- c. Research the technical requirements of your app; IOS and Android have different requirements.
- d. Look into ways to make money from your app. There are different ways to do this and each method has benefits and detriments. There can be a fee for downloading the app, which is one method, and also the second method can be to run ads on the app.

### 4 Create a wireframe and storyboard:

This process brings a better understanding of your app and what it will look like. This also includes features and functionality of the app. There are many good prototyping resources online such as: Balsamiq, Moqups, and HotGloo, these allow you to drag and drop graphics and buttons onto your project. Storyboarding is a method of creating a roadmap of how each screen interacts with each other.

### 5 Define the back end of your mobile app:

Defining the back end of your app includes the servers, API's, and data diagrams. In addition the wireframes and storyboard are included in this process. This process is very helpful for the developer; also as new people join the app project the diagram will help the developers to quickly understand the app.

### 6 Test your prototype:

Testing your prototype is a big step in determining how much further work is needed. Using your friends, colleagues, and experts to test run your app. It is very important that the people who are chosen to test the prototype provide honest feedback on the flaws and dead end links. If possible it is best to have them run the test in front of you, this method enables the developer to monitor how the app is used.

### 7 Build the backend of your app:

The backend of your app is where the developer will set up the servers, databases, API's, and storage solutions. One of the other crucial steps in the process is to obtain approval for account approval in the app marketplace. See figure 3



FIGURE 3. App Development (Haselmayr, 2013)

## 8 Design the app skins:

The skins are referencing the individual screens that are needed for your app. This is the part of the process that a designer will be needed that can make high-resolution versions of the wire frames. The feedback given from the prototype tester is critical in this step to ensure that any feedback is taken into consideration when implementing the user interface.

## 9 Test again:

Test again; this is where the final product can be tested in its final look and feel. The app should be at this point very close to what the final release version will be. There are two great testing apps that can be used, such as solidify and framer, these allow the app to be imported and the links to be tested from screen to screen.

## 10 Revise and continue to build:

Revise and continue to build is part of continual improvement; there should be more feedback from the future users to consider. In addition any changes to the backend or the layout can be implemented. This is ongoing process and will continue throughout the life of the app.

#### 11 Refine each detail:

This is the final step in the development process, the app should be installed on a device and the functionality should be examined in a live environment. Android makes this process fairly easy to install on devices, however IOS is different and requires a separate platform such as testflight to test your app.

#### 12 Release time:

Each app marketplace has different policies and requirements when publishing apps. Android has no waiting period and apps can be added instantly to Google play, at some point they will be checked. IOS reserves the right to review and approve your app for many different types of criteria; there is no time limit for this process, but it typically takes at least one week for approval. Preapps is a platform where apps can be submitted and will reach lead users who enjoy being the first to try out new app, this provides a great opportunity to trial the app before the big release. (Haselmayr, 2013)

### 2.3 Social media

According to the figure consumers rate 4 Social Networking as the highest level of participation. This is a good example of the available impact that can be achieved using social media to achieve persuasion. When analyzing the potential of social media, the underlying benefit is in the fact that the user is receiving feedback from those individuals who play a role in one's life. (Romero Daniel, 2011)

According to (Romero Daniel, 2011) one of the main problems with social media however is the high level of passivity. A large study of information propagation within Twitter has revealed that a large portion of the active members that use their system do not forward the content. This level of passivity directly influences the level and effectiveness of influence among users. This level of passivity and lack of influence is an area that needs to be researched further to facilitate the effectiveness of social influencers.

Based upon a diabetes study to analyze a mobile application with social networking support there is a direct correlation between self monitoring and the effects of added persuasion via social media. The study also confirmed one the key pillars of persuasion, which is simplicity and minimalist design. During the trial participants measured their blood glucose levels an average of three times per day, the average is one time per day in normal circumstances. The actual use of social media interactions was very low, users in some instances shared recipes for healthy and home-made bread and cooking fish. The study was based on two emerging technologies; smart phones and social media. (Grain & Schaper, 2013)

<b>US consumers' favorite mobile activities and preferences for accessing the activity via app or browser</b>			
<b>Category</b>	<b>Participated</b>	<b>Prefer apps</b>	<b>Prefer browser</b>
<b>Media and Entertainment:</b>			
Social networking	76%	54%	46%
Local info	73%	46%	54%
News	68%	37%	63%
Music	63%	55%	45%
Games	61%	61%	39%
Video	56%	42%	58%
Sports	42%	33%	67%
Blogs/blogging	41%	25%	75%
Product reviews	34%	22%	78%
<b>Travel and mapping:</b>			
Maps/directions	81%	52%	48%
Research travel	47%	25%	75%
Check travel reviews	43%	23%	77%
Check travel itinerary	39%	32%	68%
<b>Banking and finance:</b>			
Check bank account	67%	42%	58%
Conduct bank transactions	51%	39%	61%
Budgeting	43%	44%	56%
<b>Shopping:</b>			
For every shopping activity, including researching products and prices, reviews, promotions and purchasing products, most respondents (61-81%) preferred browser to native app.			
<b>Source:</b> Keynote/Adobe (October 2010)	<b>via:</b> mobiThinking		

FIGURE 4. Mobile Activities (DotMobi, 2014)

### **2.3.1 10 skills of persuasion**

When thinking about designing an effective social media platform it is important to understand how to effectively persuade people. A successful social media that is designed to persuade individuals will have three things in mind Thoughts → Emotions → Actions. Controlling these three areas is the key to effectively controlling behavior. There are 10 skills that can be used to gain a physiological edge.

#### **1. Mental programming of top persuaders:**

Writing down the goals and having a strong desire to achieve is one of the ingredients, there must be an absolute belief in the goal. If the belief is strong enough the brain can be mentally programmed to achieve excellence.

#### **2. Understanding how your audience thinks:**

Being a great persuader typically involves having the instinct to understand what your audience is feeling and thinking. Great persuaders are able to find patterns in human nature and then are able to design accordingly to maximum benefit.

#### **3. Instant rapport and social synchronization:**

If you create a positive perception, you have an 85 percent chance of persuasion; with a negative perception the chance lowers down to 15 percent. A great skill to master is the ability to connect with people; the great persuaders can establish a connection with someone in 30 seconds or less. The audience will typically have emotions that prevent rapport such as indifference, skepticism, suspicion, and inquisitiveness. A good persuader can overcome these challenges by being supportive, empathetic, and understanding.

#### **4. Establishing automatic trust:**

Trust is a critical aspect in establishing persuasion, however in today's world this is becoming more difficult to achieve. One of the important aspect of trust is to first trust yourself the message will not be believable or convincing unless it is truly convincing to the persuader.

#### **5. Command attention with power and authority:**

Establishing power is a very useful, if you are able to give access or help individuals achieve something that they desire, power can be gained. When power is obtained, individuals will be more likely to trust your expertise and not hold doubt.

6. The ability to influence other people:

Influence is the biggest method of persuasion. When there is influence, people will take action because they have been inspired, this is who you are as an individual. There are seven essential characteristics when influencing others. Charisma, passion, empathy, vision, optimism, attitude, and self-esteem.

7. How to motivate yourself and others every time:

Motivation has two different main areas; the first aspect of motivation is making sure to keep yourself motivated. The second is to turn the motivation into a method of inspiring others to be motivated. Two of the main inhibitors of consistent motivation are the mindset and also the people we associate with in life.

8. Advanced presentation and communication skills:

People's attention spans are getting less and less with every passing year. The important part of being persuasive is the ability to understand when the audience is losing their interest. If the audience is not interested then it is impossible to be persuasive. Being a great persuader requires the ability to be a great communicator.

9. Preplanned anticipation:

Preparation is also one of the biggest indicators of a successful persuader. Having information and performing research on the audience is an important and necessary step. Being prepared is also important for improving the level of confidence of the persuader. In the opposite of this, going in to a situation unprepared can leave the persuader with a lack of confidence. Having a lack of confidence is detrimental to the success of being persuasive.

10. Self-mastery and personal development:

Personal development is an important step for any persuader; any successful persuader will have a very stringent personal goal. Great persuader will spend a lot of time learning from various sources of self-improvement avenues. Experience is the best form of training for any persuader and gives real world examples to learn from. (Mortensen, 2008)

## 3 INTERNET

The Internet first came into prevalence in the 1990's; during these early days of the Internet most users were simply getting into gaming. The gaming on computers and with the Internet was very time consuming and required a high level of skill. The average person did not see this as something beneficial for daily life. Coming into the end of the 1990's however the statistics for Internet adoption was growing. Also during the late 1990's computer and Internet use was moving into the home life, marketing for computer and ISP's was shifting to target the home user. There was big push from the computer hardware, telecommunications, and software industries to push the Internet into home. Social media are internet sites where people can interact freely by sharing and discussing information about their life's, this is accomplished with a mix of words, videos, audio, and pictures. This social media phenomena was beginning to take form during the late 1990's and early 2000's (Bakardjieva, 2005)

### 3.1 The History of the Internet

The history of the Internet is an interesting look into the nurture of humans and technology. There have been different periods throughout the history of the Internet.

### 3.2 Before the Dawn:

- 1969 was the first year that the United States saw an Internet provider known as CompuServe. CompuServe was using a technology called dial up and this technology would dominate until the mid 1990's.
- 1971 is the year the first Email was delivered.
- 1978 saw the invention of the (BBS) bulletin board system. The BBS was invented by two brothers from Chicago and was used to communicate for meeting and to make announcements.
- 1979 Usenet was adopted and used by two universities, Duke and North Carolina.
- 1984 brought about a company called Prodigy, they would grow to be the second largest online service provider behind CompuServe. It was later sold to AT&T
- 1985 America Online opened (AOL).

- 1989 A British engineer began work at CERN (European Organization for Nuclear Research, in Switzerland) this was the beginning of the World Wide Web.
- 1992 The first online university opened
- 1993 CERN donated the WWW technology to the world, also the first graphical browser was born and more than 200 web servers were online

### 3.3 The Dawning:

- 1994 A company called Beverly Hills Internet started a phenomenon called Geo-cities, Velocities allowed user to create websites that could be designed to look like cities. By 1997 there were one million members who had their own websites and over 38 million different web pages. 1994 also saw the amount of web servers that were online reach 1,500.
- 1995 Newsweek magazine published an article titled " The Internet? Bah! Hype alert: Why cyberspace isn't, and will never be, nirvana".
- 1997 saw a big leap into the current realm of the Internet. Blogging had begun, AOL instant messenger allows users to chat with each other, and Blackboard was created and allowed for online course management for learners and educators.
- 1998 Google opens and begins offering searches and begins indexing the Internet.
- 1999 Friends Reunited is born and is referred to as the first social media site to gain prominence. It was founded to reunite past school friends in Great Britain.
- 2000 Seventy million computers were connected online to the Internet. The dot.com bubble burst.
- 2001 The first online encyclopedia started, known as Wikipedia.
- 2002 Friendster was opened to the public and grew to 3 million users in three months. Demonstrating the power of the Internet.
- 2003 There were more than 3 billion web pages. In addition MySpace came online designed to be a Friendster clone. Second Life was introduced to the Internet and LinkedIn was started to target business professionals.
- 2004 Facebook was introduced for college students. Podcasting began on the Internet.

### 3.4 After the Dawn

- 2005 Facebook launches a version than is designed for high schoolers. YouTube begins, and now there are over 8 billion web pages.
- 2006 Twitter was launched and enabled users to send and receive messages up to 140 characters called tweets. Facebook expanded their age limit to anyone over the age of 13. Google had indexed more than 25 billion web pages, 400 million queries per day are being done, and 1.3 billion images.
- 2007 Facebook launches its advertising system, known as Beacon. Apple releases the iPhone a multimedia and Internet smartphone.
- 2008 Facebook surpasses MySpace in the number of unique visitors.
- 2009 Facebook has more than 200 million users. Twitter breaks a big news story. Google now has one trillion unique URL's. The Internet now has at least 27 Billion web pages and could be as high as 58 billion.
- 2010 Facebook now has over 400 million users. Apple releases the I pad. The estimated population of Internet users is 1.97 billion, almost 30 percent of the world's population. In addition the Internet is now the primary method for Americans to get the news.
- 2011 Saw a big leap in social media integration into daily lives. There are more than 550 million people on Facebook, 65 million tweets, and 2 billion video views every day. The professional networking site LinkedIn now has 90 million users. Social media commerce is increasing with the rise in smartphones and tablets.
- 2012 More than half of adults ages 25-34 use social media at the office. Advertisers are using the social "like" to spread and improve their brand awareness. YouTube now has more than 800 million users each month, and more than 1 trillion views per year.
- 2013 YouTube tops the 1 billion mark with over 4 billion views in one day. Facebook has increased to 1.11 billion users. Twitter now has 500 million users. Apple has reached a milestone with users downloading over 50 billion apps. Social media advertising is at US\$6.2 billion.
- 2014 85 percent of the world's population now has access to the Internet. About 25 percent of the worlds population is using social media. (Curtis, 2013)

## 4 HEART RATE MONITORS AND RELATED PRODUCTS

### 4.1 Fitness Trackers

Fitness trackers are designed to measure many different activities such as walking, running, number of steps you climb, weight training, and any other activities or sports. Some of the fitness trackers can be worn on the user's wrists or can require the user to wear a chest strap to better monitor heart rate. The devices that are worn on the wrists work by shining a light on the user's blood vessels in the wrist, the devices are then able to detect the changes in volume of blood that occurs each time the heart beats and pushes blood through the body. The device is able to detect the amount of blood volume by the amount of reflected light; less of a reflection indicates a higher blood volume. (Rettner, 2014)

### 4.2 Types of Heart Rate Monitors

There are different types of heart rate monitors. The heart rate monitors basically come in two different types. The first type is the chest strap model, these use a wireless sensor that is located on the chest strap and detects the users pulse electronically and then sends the users data to a watch or other device such as a smartphone. These chest strap devices can handle many different types of measurements such as time of workout, low and high heart rate, and also average heart rate. In addition some of the units for monitoring user's activities can also be coupled with a foot pod that can measure items such as distance, speed, and cadence. Some of the more advanced heart rate monitors are also equipped with GPS technology that can provide additional information such as distance, elevation, and track the speed.

Strapless models are less accurate than the chest strap models, however they can be more convenient because they are built into the wrist unit. Benefits of the strapless models include comfort and they also avoid the interference that can sometimes occur with the chest strap models. There are a lot of benefits to those individuals who choose to exercise with the use of a heart rate monitor. In addition there are many different types of users that can benefit from using a heart rate monitor. Some of the activities are: Hikers and climbers, heart rate monitors allow the users to train more effectively for ascents. Joggers and walkers can benefit by utilizing the information to target fat burning and the aerobic zones according to their target zones. Runners can benefit by getting an accurate feedback of their training intensity and modifying their level of activity based on aerobic goals or more intense training. Weight loss participants can effectively track the

amount of calories that have been burned and can accurately track the amount of activity needed to lose weight. In addition users who are recovering from an injury such as a cardiac injury, these users can accurately and safely conduct physical fitness training and not worry that they are exerting too much.

	<b>Heart Rate Target Zone 50-85%</b>	<b>Avg. Maximum Heart Rate 100%</b>
<b>Age</b>	<b>Beats/minute</b>	<b>Beats/minute</b>
20	100-170	200
25	98-166	195
30	95-162	190
35	93-157	185
40	90-153	180
45	88-149	175
50	85-145	170
55	83-140	165
60	80-136	160
65	78-132	155
70	75-128	150

A maximum heart rate at different aerobic zones provides specific results:

FIGURE 5. Heart Rate (REI Staff, 2014)

According to image 4 there are different zones of activity based on the user's heart rate intensity. The zones are broken down into the benefits of maintaining the user's heart rate a particular level. The lowest zone is known as the endurance level and requires the user to maintain a heart rate average that is in the 60%-70% of the maximum heart rate based on the age of the user. The

endurance zone is the level that is ideal for weight loss and improving endurance, this endurance level also develops cardiovascular and muscular efficiency.

Aerobic zone is 70%-80% of the user's maximum heart rate. The aerobic zone is the most beneficial for burning body fat and carbohydrates.

Anaerobic zone is 80%-90% is used for workouts with consistent speed or for interval workouts.

The users breathing will be heavy and the also the muscles will be tired and heavy. The anaerobic also improves lung capacity and increases the tolerance for lactate.

VO2 Max zone is 90%-100% maximum heart rate. This level should only be utilized for short periods of time; muscles will quickly go into oxygen debt. Athletes to enhance speed use the VO2 Max. (REI Staff, 2014)

## 5 CONCLUSION AND DISCUSSIONS

A study analyzing persuasive vs. non-persuasive encouragement has shown that those individuals that receive some form of persuasion are more likely to be active.

		NPI	PI	$\chi^2$	p (one-sided)
<i>H1: Main effect</i>					
	Interest	15.6%	23.4%	2.700	0.050
	Intention	3.0%	8.5%	3.887	0.024
	Behavior	1.5%	3.5%	1.189	0.138
<i>H2: Interaction</i>					
Low persuadables	Interest	17.2%	16.7%	0.007	0.468
	Intention	3.1%	6.9%	1.012	0.157
	Behavior	.	1.4%	0.895	0.172
High persuadables	Interest	14.1%	30.4%	5.426	0.010
	Intention	2.8%	10.1%	3.124	0.039
	Behavior	2.8%	5.8%	0.758	0.174

**Table 1.** Results study 1a: Percentage of respondents responding favorably.

### FIGURE 6. Results (Maurits Kaptein)

According to figure 6. The NPI (non persuasive group) performed physical activity at a lower rate than those who received PI (persuasive group). Every person level of persuadability is different; a study was conducted to establish the level of persuadability for individuals. A series of questions was developed on a seven-point scale and depending on the answer given, this would rate the individuals on the level of persuasion and the effectiveness. In each category the individuals who are highly persuadable and those who score a low persuadability both show an increase in being physically active. (Maurits Kaptein)

For today's athlete or even the weekend warrior there are many different levels and tools that can be utilized and should be considered when designing an exercise-training tool. Starting with the invention of the smart phone. The invention of the smartphone has greatly changed the way user's workout from the available apps, which are endless in their potential to the social media potential. Users now have complete control over the desired outcome of their training.

Social media has also greatly changed the way users interact with each other; users are able to publicly announce their achievements. This social aspect of physical fitness has opened up many different opportunities. Nike fuel is one great example where users upload their achievements to a community based website where users can challenge their friends or other throughout the world. Users in Nike fuel can accept challenges for achieving a certain distance

over periods of time such as a month or even as long as a year. The social challenge can be very motivational to users to achieve their goals. The social media aspect has proven to have real world benefits for motivating individuals to be more active. The key to effective social media motivation is to make it easy and fun.

The Internet of course is the key to making all of these new technologies possible. Without the Internet social media would be impossible and most other technologies discussed in this paper rely in some form or other on the Internet. The Internet has allowed thousands of motivational websites to blossom and be heavily utilized by those users looking for help and motivation to loose weight.

Today's world has many challenges for losing weight and being active, lack of time to exercise and lack of money to eat healthy are some of the most common reason. However the technologies of today are bridging the gap for those users. Finding information is easier because of the Internet and training like a professional is also possible with the use of heart rate monitors and other relevant technologies.

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