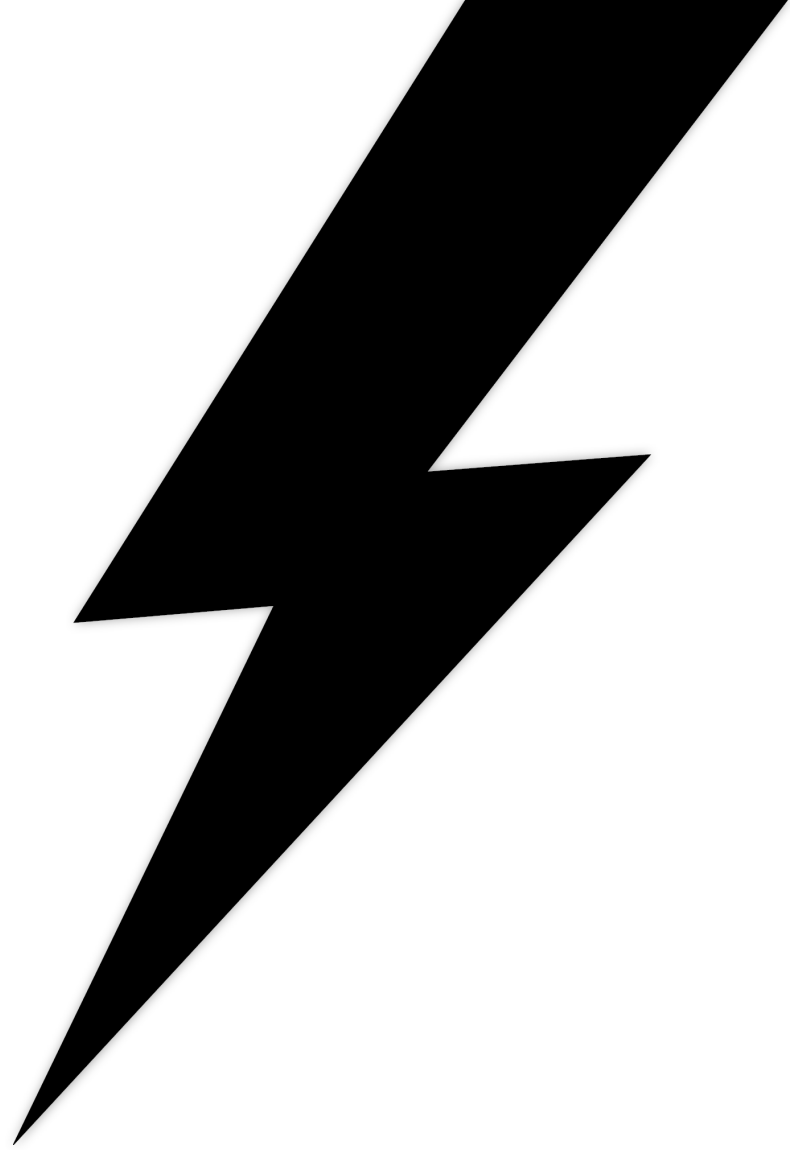


Feasibility Study

SWA

Business Owner:
Richard Johnson



SPARK REVOLUTIONS

Feasibility Study

SWA Phase 1

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Final Candidate

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Note

All ideas presented in this document are subject to change and may not represent the final product produced. Although a final candidate this document is a live document also subject to continual modification.

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Highlights..

Below lists some of the highlights from this document:

Needs vs Innovation

We take a look at the current state of the fitness market, most notably at the factors cited most commonly by the majority of people who do not attend a gym. We present research into where we believe the SWA will be most effectively launched, as well as to the type of user we aim to engage. We also analyse existing in-gym systems, looking at various aspects including information input/output, security and the physical environment needed.

Functional Objectives

In this section, we analyse the anticipated functions of the system, considering such areas as interaction time, learning curve, incentives and the presented instructions. We also consider the possible constraints to launching the SWA, as well as our assumptions for how we anticipate it to work.

Proposed System

Based on everything we've learnt so far from our research, here we present the core aspects of the SWA, listing the details of the proposed system as well as their advantages. We go further in explaining each detail, such as the current state of the technologies proposed and how they will be utilised for the SWA.

Future Scope

Here we detail some of the features that we have discussed that would be part of future releases of the SWA. Some are conceptual ideas and relationships that could benefit the user, and others are aspects that would be more feasible later down the line due to increased usage of the SWA.

An Introduction

Not just a faster horse

If I had asked people what they wanted, they would have said a faster horse - Henry Ford

After conducting extensive research it is now necessary to convert the findings into a key feature set. However, the DNA of this project is to create a system which can be offered as an accessible, economic method of improving peoples gym going experience. Delivering meaningful instruction and routine to an otherwise vague undertaking. Therefore any results from our research should just be used to validate and guide our development, opposed to dictating exact features and requirements.

Without hiring a personal trainer, technological solutions have become the defacto method of learning how to use the often complex machinery within a fitness suit. Many solutions exist in attempting to optimise the gym going experience, but they are often targeted at enhancing the experience of those who are serious about the gym, and are already motivated to ignore the intimidation of uncertainty.

This document is designed to determine the feasibility of features, drawing on the conclusions from our market research. In line with our methodology these features will then be concluded with a system proposal which will detail our key features, time and resource cost, rationale and future scope.

Needs vs Innovation

Research Summary

The research currently undertaken has highlighted both the industry demographic and given us an idea of the industry in general. The fitness industry is in a unique position, where it is inaccessible to lower income families, and has saturated its market with current solutions. Key areas of innovation within the in-gym systems requires proprietary equipment to leverage, resulting in an implementation cost which scales with gym size, as each machine must be purchased from the gym system vendor. This pushes an implementation cost of £0000's; forcing a leasing model onto gyms who want to harness these developing technologies.

From this we have determined that an in-gym system based on current consumer technologies would offer the most pervasive method of implementing an exercise machine agnostic system. The feature set from this research is focused in the following areas:

Social

Any implementation must have a social platform, be this through the gamification of the gym experience or through some other social networking integration.

Motivation

Those motivated to go to the gym, go. Current solutions do not work for 84% of the market, therefore any solution must alter the current features offered. When asked the Healthy in Mind quoted time and motivation as major de-motivators. By integrating the gym into their routine, and harnessing technologies to automate much of the effort required to track their routine and progress users can observe tangible progress and success to their efforts.

Stakeholders

Current stakeholders include:

Health Clubs:

The fitness industry is currently predominantly populated by smaller health clubs, with budget gyms amassing the largest growth within the industry. We would be looking to implement our solution in line with the needs and requirements of health clubs. Health clubs in the UK are looking to secure short term security as this industry suffers from smaller consumer wallets.

Personal Trainers:

The demand for personal trainers is currently growing modestly and disproportionately to gym memberships. This suggests an unawareness of the value personal trainers can offer. Any solution provided must be able to bridge the gap between bespoke personal training and general gym attendance.

The Fit

We need to refine the current in-gym experience to add value to those who either go regularly, or have been to the gym. However, it is less important to target this already engaged demographic, as they are motivated to go to the gym and already gain some value from this experience.

Healthy in Mind

This demographic consists of those who understand the advantages to going to the gym, but are not invested in its value enough to be members (and thus classified at 'The Fit').

This market is imperative for us to motivate, as they are already half way to being engaged in the fitness industry. The current solutions are clearly not suitable to convert this demographic into gym members; this offers the primary value proposition for the SWA.

Inactive

This market is the most difficult to engage, as they cannot perceive value from the in-gym experience. Although potentially engaged in at-home exercising this demographic needs to be both persuaded in the value of membership, and motivated to introduce the gym into their routine.

Input/Output

Name	Input	Output
Bally Total Fitness (Soft-Kinetic) by Helios	<ul style="list-style-type: none"> • Gesture based control - pioneered by SoftKinetic 	<ul style="list-style-type: none"> • Body morphing • Video based output
Life Fitness Virtual Trainer by Life Fitness	<ul style="list-style-type: none"> • Touch based user stats entering 	<ul style="list-style-type: none"> • The exercise machine sets settings • Shows picture of suggested weights and exercises • Analytics
Gym Technik by Trainerize	<ul style="list-style-type: none"> • Web based statistics entering with mobile interface 	<ul style="list-style-type: none"> • Graphs produced from data entered • Lists possible exercises via text
ActivIO by Activio AB	<ul style="list-style-type: none"> • Heart rate monitor 	<ul style="list-style-type: none"> • Large monitor with gauge for group heart rate
TechnoGym Wellness System by TechnoGym	<ul style="list-style-type: none"> • Manually enter workouts 	<ul style="list-style-type: none"> • View workouts in text based • Displays suggested routine for power assisted machines

System Interaction

Gym Technology

Name	System Integration	Supported Platform
Bally Total Fitness (SoftKinetic) by Helios	<ul style="list-style-type: none"> • Proprietary system, no further integration 	<ul style="list-style-type: none"> • Proprietary system
Life Fitness Virtual Trainer by Life Fitness	<ul style="list-style-type: none"> • Online • Twitter • Facebook 	<ul style="list-style-type: none"> • Browser supports all major desktop platforms
Gym Technik by Trainerize	<ul style="list-style-type: none"> • Online 	<ul style="list-style-type: none"> • iOS • Android • Desktop browsers
ActivIO by Activio AB	<ul style="list-style-type: none"> • Self hosted community of practice 	<ul style="list-style-type: none"> • All desktop browsers
TechnoGym Wellness System by TechnoGym	<ul style="list-style-type: none"> • Proprietary system, no further integration 	<ul style="list-style-type: none"> • All desktop browsers

Mobile Fitness Applications

Name	System Integration	Supported Platform
iMuscle (NOVA series) - by 3D4Medical.com	<ul style="list-style-type: none"> • None existent 	<ul style="list-style-type: none"> • iOS
Fitness HD by Viaden	<ul style="list-style-type: none"> • Communicate with personal trainers 	<ul style="list-style-type: none"> • iPad
Nike Training Club by Nike Inc.	<ul style="list-style-type: none"> • Share your workout and reward status on Facebook and Twitter 	<ul style="list-style-type: none"> • iOS
FitnessOne by BAY 12.COM	<ul style="list-style-type: none"> • None existent 	<ul style="list-style-type: none"> • iOS
Men's Health by Men's Health Magazine	<ul style="list-style-type: none"> • Email stats 	<ul style="list-style-type: none"> • iOS • Android
JeFit by JeFit, Inc.	<ul style="list-style-type: none"> • Community hosted by JeFit 	<ul style="list-style-type: none"> • Web browser supports all platforms • Android • iOS
Daily Burn by Gyminee/ Daily Burn, Inc.	<ul style="list-style-type: none"> • Community hosted by Gyminee 	<ul style="list-style-type: none"> • iOS • Android • Web browser • DVD

Name	System Integration	Supported Platform
PumpOne - Fitness Class by PumpOne, LLC	<ul style="list-style-type: none"> • None existent 	<ul style="list-style-type: none"> • iOS • Web
PumpOne - Fitness Builder by PumpOne, LLC	<ul style="list-style-type: none"> • Facebook • Twitter • Email 	<ul style="list-style-type: none"> • iOS • Web

Fitness Video Games

Name	System Integration	Supported Platform
Wii Fit & Wii Fit Plus by Nintendo	<ul style="list-style-type: none"> • Web • Facebook • Twitter 	<ul style="list-style-type: none"> • Nintendo Wii
EA Active by Electronic Arts	<ul style="list-style-type: none"> • Web 	<ul style="list-style-type: none"> • Nintendo Wii
Kinect Sports by Microsoft	<ul style="list-style-type: none"> • None existent 	<ul style="list-style-type: none"> • Microsoft Kinect
YourShape by Ubisoft	<ul style="list-style-type: none"> • Web • Twitter • Facebook • YouTube 	<ul style="list-style-type: none"> • Microsoft Kinect

Functional Objectives

Performance

After analysing the results of our competitor research we have concocted several performance objectives which we believe are critical to the success of this project.

Short Interaction Time

Talk about how people queue for ages to use the TechnoGym kiosks because they are slow and too expensive to have more than a few. short interaction times with kiosks will mean more exposure.

Clear Incentives

Points system - perhaps turn those points into possessions in the future.

Scalable Instructions

Talk about being able to allow people to watch a animation or read text - its liquid (their choice). Most apps out there only do one of the two any good.

Zero Learning Curve

Reduces staff who have to give lengthy inductions on how to use system or teach them how to use weights. Encourages users to promote the system to their friends because its so easy.

Identify major performance objectives, considering such areas as reduced staff and equipment costs, increased processing speed, increased productivity, improved management information services, improved controls over automated decision-making system(s), and compliance with regulations.

Constraints

Acceptance

As the current cost of Gym Technology ranges in the 0000's, we may encounter a tough time in convincing these health clubs to replacing their existing systems.

Distribution Platform

Many of the current mobile solutions are released to a public accessible 'App Store'. Whilst this creates a very easy method of distribution, it also creates a very diluted market which is exactly what has happened with Health and Fitness category. Our idea is to compete directly with *Gym Technology*, thus selling directly to them. This creates a challenge in us having to create our own distribution and logistic methods.

Assumptions

Use of QR Codes

Based on the existence of technologies like QR codes, we have assumed that the public would be more receptive to using a QR (Quick Response Code) to *enter* the system as opposed to the USB Keys or Proprietary technology that are required with systems such as TechnoGym and Life Fitness.

Dictated Instruction

Most of the systems that provide any kind of assistance on performing exercises use a mix of text, still graphics and video to dictate the instruction the user. We are making an assumption that despite the current methods, our observations in health clubs lead to people trying to perform the exercise from the two dimensional angle it was taken. A three dimensional view will mean that users are able to see how that exercise is performed from all angles, ensuring there is no obscurity in performing the right motion.

Methodology

In evaluating the viable systems, we'll be using the User Experience (UX) as the primary driver in all our decisions. After considering the UX, we will filter out the recommended choice by measuring the required development time against the cost.

Describe the method or strategy employed (e.g., survey, weighting, modeling, benchmarking, and simulation) to evaluate the proposed system to arrive at a feasible alternative.

Recommendation

We believe that our recommendation is very specific to the current market conditions. The technologies involved in developing this are very much in their *disruptive* stage where they could become mainstream within the few couple of months/years. Failure to act now would result in our current solution not being relevant to the state of the market at a later date.

Proposed System

After conducting extensive research it has become apparent that out of the two key markets (at-home, or in-gym); it is the in gym market that represents the most suitable segment, both in size, and ability to achieve our goals. We therefore propose an in-gym system, which can introduce technology into this environment in an economic, practical and accessible manner.

Key Features

Virtual Training, Progress Tracking and Motivation - all wrapped into one!

We believe that the solutions that exist within the Gym Technology market all lean towards one of the three aforementioned categories too heavily - we plan to change this. Our idea is to create a perfect blend of all three, making it accessible to the 86% who aren't affected by existing solutions.

Our vision is for the system, running on a iPad to be secured at free weights stations and kiosks located around the exercise area. When a user then steps up to the console, a quick swipe of their QR Code will log them in. Immediately, they will be presented with their current point levels and shown their workout schedule for the day. Once the user finds the station to exercise at, they can log in again and they will be shown an animation on how to complete that exercise along with the amount of points they will gain for completing it.

The following list represents key features which will be included in the first iteration of this system:

Feature	Detail	Advantage
Touch Screen Kiosk	<ul style="list-style-type: none">• Due to its price, wide spread support, feature set and dominance in the touch screen market we will be using the iPad 2 as the basis of our hardware.	<ul style="list-style-type: none">• The iPad 2 runs iOS5, which is well documented and has extensive support• Front facing camera for QR code• Touch screen• Supported ergonomics
Web Interface	<ul style="list-style-type: none">• Users will have the option of fine tuning their experience through a web interface at home.	<ul style="list-style-type: none">• This further optimises their experience in the gym, improving time spent at kiosk

Feature	Detail	Advantage
Animation instruction	<ul style="list-style-type: none"> One key downfall of current solutions is that only offer either video, text or picture based instruction, we propose that this system uses 3d animation to deliver instruction. 	<ul style="list-style-type: none"> With a 3d animation, the level of detail can be extended; and users can choose on specific areas of misunderstanding
QR Code Login	<ul style="list-style-type: none"> Users will be able to scan a QR code to log into the system. 	<ul style="list-style-type: none"> Quick login to ensure efficient use of kiosks.
Secure Wall mount	<ul style="list-style-type: none"> Due to its ubiquity, a wide selection of ergonomic, secure solutions exist for mounting the iPad 2 to a wall. 	<ul style="list-style-type: none"> This means that we can easily and securely mount the kiosk anywhere we like.
User Managed Exercise Routines	<ul style="list-style-type: none"> Users will be able to input key personal statistics and goals which will then translate into an exercise routine 	<ul style="list-style-type: none"> Users feel more confident to use all equipment correctly Membership numbers will increase as users feel more motivated to attend
Intelligent Points System	<ul style="list-style-type: none"> This system will allocate users points based on their conformance to requirements. These points can then be compared in league tables 	<ul style="list-style-type: none"> This not only offers a social, gamified solution but can also be leveraged to allow the gym to manage capacity better
Gym Analysis	<ul style="list-style-type: none"> Gyms will be able to analyse members habits, goals and machine usage to better utilise floor space 	<ul style="list-style-type: none"> One of the major costs in the fitness industry is overheads, this will allow them to make the best use of their space

Quick Access

Based on the assumption we made on our research, we think that carrying a physical device such as a USB drive that stores your progress is quite antiquated and risky (as you could lose it at any time!).

By using QR Codes (Quick Response Codes) in their place, all of the user data can simply be retrieved from the internet, making the QR Code simply act like a ID Card.

Tangible Progress through Points

With motivation being a prime factor in those choosing not to go the gym, having some tangible method of tracking your fitness is of paramount importance. Our points system will give the user a clear indicator of how well they have done so far. The user's points are based on the goals they set at the start so regardless of what the goal is, the points are always equally weighted.

Motion Captured Exercise Animation

Rather than having a two-dimensional set of instructions (text, still frames or video), we believe that not only seeing how the exercise is performed correctly from all angles is important - but knowing what it affects is too. This is why we plan to use three-dimensional animations, created through motion capture techniques to demonstrate the exercise. This means the user has full 360 degree control of their perspective, meaning they can see the exercise from any position. By using a 3D model, the system can then highlight what muscles in the body are being worked by the exercise.

Resource Data Capture

With so much data collected from the use of this system, we plan to make it available to health clubs and gyms. From machine usage to most popular goals, health club owners will get a instant demographic of their business - meaning they can see instantly where the demand is, and isn't.

Time and Resource Costs

Time Requirements

Due to the agile nature of this project we will be looking to conform to milestones detailed in the original proposal. However these are subject to change with changing requirements. Even excluding scope creep it would be naive at this point to detail a more specific outline of time required for project completion.

Cost of Resource

In order to develop this system, we require specific equipment and resources; also once complete in order to implement this system any gym would also need to factor in the cost of equipment as well as system licensing. As this system is to be developed on the iPad 2, every gym will be required not only to purchase an iPad 2, but also the necessary ergonomic equipment used to securely fit the device onto the wall. The initial retail cost of the iPad 2 is £399, and the wall fitting averages £100 per unit.

Also in order to develop both the 3D animation and render engine we will be required to purchase a motion capture solutions, the most economic of which is the Xbox Kinect Infra Red imaging camera. The SDK for which can be licensed from either Microsoft for free, or SoftKinetic also for free. We will need to compare the features of both before deciding on a solution, however initial research suggests that the better documented Kinect SDK has a larger community.

Finally we may require licensed software for the 3D rendering engine, which is yet to be decided, once the suitability of OpenGL rendering engines has been determined.

Impacts

Better capacity Utilisation

By leveraging user data analytics, gyms will be able to better allocate space to machines most used; this will allow them to better utilise their space, and increase the overall value per sq/ft. This economic method of managing space will ultimately improve not only the user experience (as there is more availability of machines used) but also improve the gyms profitability.

Optimised Gym Experience

By creating the most effective routine based on user requirements members can achieve their goals sooner, thus optimising their time spent in the gym, further enhancing capacity utilisation. This system can also intelligently direct users to free equipment, as it knows what exercises people are doing.

Greater Gym Membership

Ultimately this system, through the above mentioned impacts will drive gym memberships, and due to the more economic capacity utilisation and floor space allocation they are able to increase overall membership per gym without impacting physical space requirements.

Rationale

There are two main market segments, that can be further separated into proprietary and publicly available systems. Although heavily populated with solutions, mobile application marketplaces have become a popular location for developers to submit fitness based Apps. We believe that to make an impact and create ubiquitous solution many primary goals needed to be achieved.

Affordable

Many of the current in gym systems are expensive, and sold on a per machine bases. This is therefore inaccessible to the majority of the market, as this industry is dominated by smaller concerns. Any solution we supply needs to be affordable, therefore we decided to use consumer technologies, which are well supported and come with a smaller price tag.

Scalable

By not integrating systems with machines (in an effort to minimise cost and flexibility) any solution provided must be scalable; therefore the front end must be able to integrate with a scalable data solution, allowing for maximum flexibility; if a gym want one kiosk in total, or one per station they are able to implement this with relative ease. By developing an iOS application which can be easily installed on each client and connected to the central, cloud hosted database we can create a responsive, robust scalable solution.

Future Scope

Any solution provided must be a platform for future development. By creating a solid foundation with an iOS application, we can use this platform as a springboard to launch future features. However, the emphasis in the first iteration would be on a robust, accurate feature set; opposed to a broad feature set.

Powerful

Outside of creating our own hardware it is imperative to select a hardware provider that would meet our goals. As this project is driven by user experience, an easy to use, touch based experience is preferred over alternatives. Combined with our drive to make a flexible, robust scalable solution each client must be able to cope with the complex logic, whilst also remaining responsive. The iPad 2 offers a powerful client hardware specification, with a closely integrated SDK, greatly improving its performance.

Future Scope

Possibilities

QR Codes, Next Level

Opposed to merely directing users to different exercise machines, QR codes can be placed on each exercise machine to be scanned when the user approaches the machine.

This can then detail the exercise that member should be performing on that machine to achieve their goals. This would then alleviate the requirements on kiosks, allowing users to own much of the experience themselves.

Points + People + Sponsorship

Allocating points to members for their attendance is only the first step to the gamification of our in gym system. This platform can be extended to include sponsorship deals with respect to the purpose of given points. They could easily pertain to money off gym related products or services, for example they could relate to weight watchers points. Another key area for future scope with regards to points is in group or team based point scoring, where leagues of teams can compete with regards to gym attendance. However to ensure optimum capacity utilisation, points could be allocated with a maximum per week, or allow people to work towards 'days off'.

Companion App

As this solution is primarily focused as an in-gym system we would be looking to create a platform to launch a companion application from. This application would extend some of the control and functionality of the in-gym application into the pockets of users. Users would then be able to scan in on QR codes on machines further minimising the hardware requirements of the in-gym solution.

This companion application would offer an entirely new platform for launching a plethora of new features, focused on users customising their experience.

Social Integration

Social Networking has become a defacto feature of any new technology, so much so that it has become almost meaningless. We are keen to implement a social aspect to this solution, however to begin with this will be in the form of a closed community of practice, accessible only by members. However, it would be within the future scope of development to integrate this system with social networking tools to help users organise events and classes, as well as integrate with their every day lives.

Further Augmented Reality & 3D

2011 was very much the year of 3D, 3D movies, 3D TVs and even 3D phones. However its implementation is yet to prove as a practical and tangible advantage to 2D. We would therefore look study the feasibility of 3D technologies into this experience.

Augmented reality is an interesting development with the rise of thick clients and smart-phones. By allowing users to hold up their phone, and see themselves performing exercises on machines via the camera on their smartphone could offer a tangible and revolutionary method of delivering gym instruction.