

eHealth And Consumer Electronics

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Wireless Healthcare undertakes consultancy, research and analysis for vendors, investors and healthcare providers.

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At A Glance

The consumer electronics companies have started taking a keen interest in the growing market for therapeutic and well-being products. The three areas currently being addressed by vendors are diet management, fitness monitoring and mental exercise. With incumbent healthcare providers and government health departments promoting preventative healthcare programmes, these vendors could find themselves drawn into the mainstream healthcare sector.

Fitness monitoring is a mature market, with cardio monitoring and activity measurement devices fitted to equipment in gyms and fitness centres across the world. Advances in wireless technology coupled with the falling price of exercise equipment have seen fitness monitoring expand out of the gym and into the home. An increasing number of middle aged and late middle aged people are determined to maintain an active lifestyle as long as possible and incorporate a weekly cycle ride or run into their exercise regime. These people are purchasing GPS based pedometers to measure and monitor their performance and, in some cases, upload performance data to a fitness monitoring web site.

An increased awareness of the impact of stress on health has encouraged employers to adopt stress reduction and monitoring programmes. The equipment used in some of these programmes is based on a simple electrocardiogram (ECG) monitoring device and software that trains the user to breathe correctly. If the medical theory linking breathing, heart rate and state of mind becomes more widely accepted, sales for such devices and the supporting stress management programmes will grow. This in turn will take ECG monitoring into the consumer electronics market.

Online services that help people manage their diets have attracted the interest of mobile phone companies who are well aware of the publicity that these services generate. Established weight management providers are also adding mobile phone based services to their product portfolios. Built on SMS text or video messaging platforms, personalised diet management services are relatively easy to deploy and manage.

Today an increasing number of people regularly use some form of cardio or activity monitoring device, and a growing amount of ECG data is being uploaded onto web sites for analysis. In the long term this could impact on the healthcare market, with a network of health and fitness equipment providers creating their own preventative healthcare platform. This report examines the technology and services that are being deployed and how vendors and healthcare providers are positioning themselves within the consumer ehealth sector.

The promotion of preventative healthcare programmes is creating a potential market for consumer electronics based ehealth products.

An increasing number of middle aged and late middle aged people are determined to maintain an active lifestyle as long as possible and are purchasing devices and services that manage and monitor fitness and well-being.

An increased awareness of the impact of stress on health has encouraged employers to adopt stress reduction and monitoring programmes. A simple electrocardiogram (ECG) based device can be used as part of such a programme.

ECG based products will impact on the healthcare market as a web of health and fitness management providers create a platform for a preventative healthcare

In this report: how companies such as Nintendo, HeartMath, Garmin, MyFoodPhone, Polar Electro, InterCure and Fitbug are exploiting opportunities in the consumer ehealth sector.

1 Introduction – The Accidental eHealth Provider

A previous Wireless Healthcare report, 'Wireless Based Remote Monitoring And Diagnostics', examined a new model for the delivery of healthcare, based on the use of wireless devices to push care to the edge of the healthcare provider's network (see Appendix A). At present, next generation healthcare providers find it difficult to use this model to disrupt the businesses of incumbent healthcare providers. NextGen providers, whose services need access to patient record data and whose devices require to be approved by medical standards bodies, often discover that they must compromise their business model to such an extent that it is no longer disruptive.

There are, however, some companies and healthcare NextGen service providers who are taking an alternative route into the ehealth market. Rather than looking inwards to the centre of the new ehealth model, and the core of the incumbent healthcare providers network, they are aiming their products and services outwards beyond what is currently regarded as the edge of a conventional healthcare network. While these products and services are based on established medical theories, they focus on preventative care and are therefore neglected by incumbent healthcare providers who, due to capacity limitations, are forced to direct most of their resources on the care of the chronically ill.

The new generation of preventative healthcare services are marketed as if they were consumer products, and in some cases are actually based on consumer electronic devices. There is evidence that as the services being wrapped around these devices become more sophisticated they will provide a platform for next generation healthcare services and will evolve to the point where they disrupt the businesses of incumbent healthcare providers.

2 The Supporting Science

The underlying medical principle supporting the majority of consumer ehealth devices and services under examination in this report is relatively simple. Two of the nerves responsible for controlling the heart rate run close to the diaphragm. Consequently the way a person breathes will influence the rate at which their heart beats and pumps blood around the body. When they breathe deeply using all their respiratory muscles – including the diaphragm – the nerves that reduce their heart rate are stimulated. The deeper they breathe the slower the heart will beat. This makes sense as it can be assumed that the deeper they breathe the greater the amount of oxygen in the blood and the slower that blood needs to travel through the body to deliver oxygen to vital organs such as the brain.

NextGen healthcare providers find it difficult to disrupt the business of the incumbent healthcare providers.

However, some healthcare related service providers are taking an alternative route into the ehealth market.

A new generation of preventative healthcare services are marketed as if they were consumer products, and in some cases are actually based on consumer electronic devices.

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Conversely, when the person takes shallow breaths, the diaphragm remains tense and stimulates the nerve that increases their heart rate.

This is a simple model of the relationship between breathing and heart rate that is relevant in a broad range of healthcare and therapeutic related applications. For example, deep breathing is used to relax a subject at the beginning of a hypnotherapy session, is important in certain praying rituals and chanting and is triggered by physical exercise.

The relationship between breathing and heart rate is relevant in a broad range of healthcare and therapeutic related applications.

The heart provides a link between breathing and blood pressure, and by breathing deeply in a controlled manner it is possible for a person to lower their blood pressure. High blood pressure is a key contributor to a range of illnesses and indicates an increased predisposition to disorders such as strokes and cardiac and kidney failure. It is interesting that German-speaking people, who have a guttural language and are therefore forced to breathe deeply, suffer from low rather than high blood pressure.

Devices based on low cost ECG technology are being marketed as aids to reducing tension and blood pressure. None of these devices monitors blood pressure directly, but they use software to detect patterns in the user's cardiac system biorhythms. These biorhythms have two components. The first is respiratory sinus arrhythmia, where the heart rate increases during inspiration. The second is Meyer waves, which are oscillations in the blood pressure with a typically ten-second period. Although blood pressure is not measured directly, software is used to deduce whether the user's blood pressure is likely to be too high.

Devices based on low cost ECG technology are being marketed as aids to reducing tension and blood pressure.

Research has been carried out by Paul Johnson of Oxford University to validate the impact of breathing control devices on patients and has demonstrated that they stabilise the respiratory sinus arrhythmia and lower blood pressure.

A range of contributing factors makes the above model more complex. For example, if a person is under stress, their brain will attempt to increase the heart rate in an effort to pump more oxygen to vital organs. Also if a person is overweight or spends a significant amount of time in a sitting position, their diaphragm will not expand sufficiently to stimulate the nerve that slows the heart rate.

A person's diet, their level of physical activity and mental well-being are interlinked and there is debate amongst preventative healthcare experts over where it is most appropriate to break into a cycle of overeating and poor diet, increased weight, stress and low self-esteem (which itself encourages comfort eating).

There is debate amongst healthcare experts over where it is most appropriate to break into a cycle of overeating and poor diet, increased weight, stress and low self-esteem.

To this end, this report also examines a range of devices and services that are not directly concerned with heart rate or breathing and are not based on ECG technology.

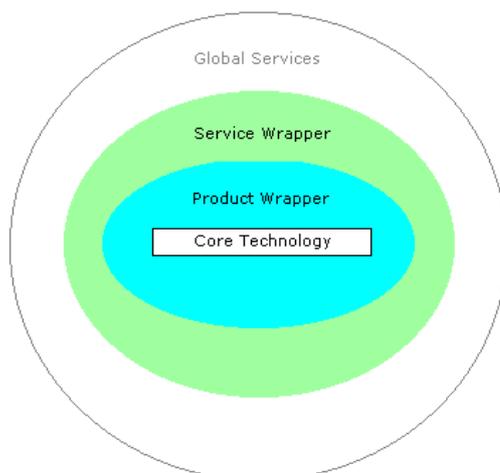
Such products are designed to help the consumer control their weight, improve their mental agility and manage their exercise programmes. As heart rate is influenced by body weight, activity and anxiety, there is scope for convergence and delivery of a range of products and services within a single ehealth framework.

3 The Basic Model

The consumer ehealth model consists of the following key components:

- A basic core technology, which may or may not be healthcare related.
- A product wrapper to encapsulate the technology.
- A service wrapper to enable the vendor to deliver the ehealth service to the consumer.
- A global service wrapper, consisting of a suite of services provided by third parties.

A vendor, whether they offer exercise, diet or stress management, will enter the market with a product or service consisting of one or more of these components.



A vendor will enter the market with a product that includes one or more of the four basic components that make up a consumer ehealth service.

This diagram illustrates the layers of services and products that surround the basic ehealth technology.

3.1 Exercise

Exercise is a key part of any preventative healthcare programme. It helps a person control their weight and, as it encourages deeper breathing and increased movement of the diaphragm, can help lower their heart rate and aid relaxation. A structured exercise or activity programme that includes targets and incentives can also provide the motivation a person needs to modify their diet.

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3.1.1 Polar Electro

Polar Electro produces a range of simple heart rate monitors that were initially designed to help athletes train for running events.

The wrist worn device can wirelessly transmit ECG data to a PC, allowing trainers to monitor athletes in real time. After researchers working on ehealth projects started to use Polar's products as low cost ECG devices, the company began actively addressing the medical market and today is one of the leading members of the Continua ehealth alliance.

Polar Electro is one of the leading members of the Continua Alliance.

www.continua-alliance.org

The company is active in the market at the product level using a range of devices to sell simple ECG technology to end users and manufacturers of exercise equipment such as rowing machines, cross trainers and tread mills.

Polar Electro does not provide a service to support the device, and to date it has been left to other vendors to develop such services. Developments within the Continua alliance could see the emergence of a number of service wrappers and global service wrappers built around Polar's devices.

3.1.2 Fitbug

This is primarily a service wrapped around a product that employs simple activity-monitoring technology. Fitbug markets access to an online service packaged with an Omron manufactured pedometer. The company has a team of exercise and nutritional professionals who provide advice on both workouts and diets – a service Fitbug calls health and well-being coaching.

Fitbug is marketing access to an online service packaged with an Omron manufactured pedometer.

3.1.3 Garmin

Garmin is primarily a GPS technology company that uses a range of different product wrappers to deliver GPS to consumers in the automotive, marine, aviation and sports market. It has recently incorporated ECG technology into its top end athletics monitor, the ForeRunner 305. This device both logs, with the aid of satellite navigation, the distance the wearer has travelled and records data collected from a chest strap that incorporates an ECG probe.

The company supplies a software package to manage the collected and design exercise routines. It also hosts an online service called MotionBased.com which allows users to analyse their training sessions. MotionBased.com contains a facility that combines ECG traces with other data, such as speed and altitude, which is captured during a running or cycling session.

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A second online service, TrainingPeaks.com, is hosted by a third party vendor. This service also allows users and their fitness coaches to analyse data captured from the Garmin ForeRunner. TrainingPeaks.com is aimed at the professional athlete rather than the keep fit enthusiast but it does illustrate how a global service wrapper can be used to market a consumer fitness-monitoring device.

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3.2 Diet

Diet and nutritional information is provided by the Fitbug service. However, some other consumer electronics based products and services also serve this market. Dieting is often the first aspect of the fitness and well-being cycle targeted by people, especially females, who are attempting to improve their health.

Dieting is often the first aspect of the fitness and well-being cycle targeted by a significant number of people who are attempting to improve their health.

3.2.1 MyFoodPhone

MyFoodPhone is a service wrapper for a range of conventional and non-proprietary mobile phone technology. The service lets the user share personalised food journals with their peers and receive advice and motivating feedback in both text and video format. They can also use the service to share ideas about cooking, vegetarian eating and managing diabetes and to find friends for one-on-one support.

The MyFoodPhone service lets the user share personalised food journals with their peers and receive advice and motivating feedback in both text and video format.

MyFoodPhone also has some of the characteristics of a global service wrapper with its 'MFP Community' feature which is a mobile phone based version of peer pressure based services such as Weight Watchers. The MyFoodPhone service has received substantial support from the telecoms provider Sprint, which itself is keen to promote applications that use advanced mobile and wireless services such as video and data.

Deployment of the service has been made easier by the use of a mobile infrastructure service called QConnect from Qualcomm, which has enabled MyFoodPhone to concentrate on the development of a service wrapper without having to be concerned with technologies and the consumer electronics device itself.

3.3 Mental Agility

Mental well-being has a key bearing on physical health, and remaining mentally agile encourages people to stay physically active. The Nintendo DS Brain Age is one of a range of products that help people exercise their minds.

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3.3.1 Nintendo

The company has produced a small handheld games console, the Nintendo DS, that, compared to mainstream games machines, is relatively simple to use. The console is Nintendo's product wrapper, which it is using to market its games technology. The Brain Age software is the service wrapper consisting of a set of structured exercises that include quickly solving simple mathematical problems, counting people going in and out of a house simultaneously, drawing pictures on the console's touch screen, reading classic literature out loud, and playing sudoku.

Brain Age is just one of a number of simple games supplied with the DS console, and healthcare is not Nintendo's main business focus.

3.4 Breathing

There are vendors who directly address breathing and heart rate control and market technology that teaches the user how to breathe correctly and, as a consequence, modify their cardiac biorhythms and lower their blood pressure. The devices they use are based on low cost ECG technology. The theory that underpins this form of therapeutic treatment has been researched and trialled at the The Chaim Sheba Medical Center in Israel by one of the founding directors of InterCure – manufacturers of the Resperate device.

There are vendors who directly address breathing and heart rate control and market technology that teaches the user how to breathe correctly.

3.4.1 InterCure

Resperate is a product wrapper for InterCure's low cost ECG technology. It consists of a portable CD player that plays a melody that varies according to a person's ECG reading and how close they are to achieving an optimum breathing cycle. The user's heart rate is analysed and a personalised melody composed of two distinct inhale and exhale guiding tones is created. As the user listens to the melody through the headphones, their body's natural tendency is to synchronise its breathing to the two tones. By gradually prolonging the exhalation tone, Resperate aims to reduce the user's breathing rate to a regular ten breaths per minute. Normalising the user's cardiac biorhythms should lead to a corresponding drop in their blood pressure.

Resperate is a portable CD player that plays a melody that varies according to a person's ECG reading and how close they are to achieving an optimum breathing cycle.

InterCure provides advice on lowering blood pressure as a service wrapper for Resperate. However, most of the value of the product is in the device itself, and there is at present little scope for extending the service wrapper or creating a global services wrapper.

3.4.2 HeartMath

Freeze-Framer is based on the same principle as InterCure's Resperate. However, HeartMath has enhanced the service wrapper it used to market the product and is encouraging the development of a global service wrapper. Through its associated company, Quantum Intech, HeartMath is supplying a sophisticated set of software tools that can be used to monitor the user's ECG readings and, using a suite of games and performance monitors, motivates the user to improve their breathing.

HeartMath supplies a set of software tools that can be used to monitor the user's ECG readings.

Key personnel associated with and working for HeartMath have produced books and articles that extend the scope of Freeze-Framer beyond the simple reduction of the user's blood pressure and into the realm of mental well-being.

As a person's state of mind will influence their heart rate and cardiac biorhythms, the Freeze-Framer product has been enhanced with a service wrapper that includes thought and relaxation techniques that can be carried out while using the device. Some of these techniques are similar to those employed by hypnotherapists to relax patients. While it is unclear whether the cause-and-effect relationship between stress and cardiac biorhythms is exactly as described by HeartMath, the Freeze-Framer does appear to have the desired effect in that it relaxes the user and encourages the adoption of correct breathing patterns.

While it is unclear whether the cause-and-effect relationship between stress and cardiac biorhythms is exactly as described by the HeartMath Freeze-Framer, it does appear to have the desired effect.

HeartMath, and resellers such as Hunter Kane in Europe, have added a global services wrapper to the product and are adding further value by marketing Freeze-Framer as a component within a stress management programme they market to corporate users. With companies keen to reduce the impact of stress on employee efficiency – and to avoid legal action from employees who suffer excessive stress – HeartMath have been able to use such programmes to build a service wrapper for the Freeze-Framer product.

4 Routes To Market

Consumer electronic based ehealth devices reside on the farthest edge of the healthcare network and beyond the horizon of the incumbent healthcare provider. While some healthcare providers and payers will issue patients with simple devices, such as sound generators to help tinnitus sufferers relax, these are regarded as therapeutic aids rather than part of a treatment programme. There are a number of issues that need to be addressed before incumbent healthcare providers include consumer electronic devices in their preventative healthcare programmes. It may well be the case that the current range of devices and services are better suited to the over-the-counter consumer electronics market than to the preventative and public healthcare programmes of incumbent healthcare providers.

There are a number of issues that need to be addressed before incumbent healthcare providers start to include consumer electronic devices in their preventative healthcare programmes.

4.1 Device Certification And Approval

Consumer electronics based ehealth can be seen as the soft underbelly of the medical device market. Most vendors clearly state their devices should not be used as part of a treatment plan and, in the case of exercise monitoring equipment, should only be used after seeking medical advice. For small vendors, certification of devices would be prohibitively expensive and for the larger vendor it would be a distraction. Consumer electronic manufacturers strive to minimise the time to market for a new product and tend to work on short product life cycles. In the time it takes to obtain certification for a device, that device would have been superseded by a model based on more advanced technology and incorporating additional features which may themselves require certification.

Even certification and approval would not guarantee that a healthcare provider would supply the device to the patient or that a payer would fund its use. The benefits of preventative healthcare are difficult to assess with accuracy and are influenced by a wide variety of factors. Many of the benefits derived from a preventative healthcare programme only become apparent after a decade, whereas many healthcare providers are under pressure to produce results within a four-year cycle.

The benefits of preventative healthcare are difficult to assess with accuracy and are influenced by a wide variety of factors.

4.2 Compliance And Effectiveness

Even if patients were issued with devices, the healthcare provider would need to ensure that the device was used. Therapeutic aids are often only used a few times. If it does not appear to be having the desired effect, the patient does not persist with the course of treatment. Only in a few cases are procedures in place to monitor compliance and recall equipment that is not being used. Therapeutic devices are often regarded as consumables rather than capital equipment.

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5 Assessing The Market

5.1 Consumer Motivation

There are a wide variety of reasons why a person may start a fitness or well-being programme, and the actual activity they choose will depend on a number of factors such as gender, socio-economic grouping and demographic profile. These factors were highlighted in a survey carried out by Sport England (see Appendix B).

There are a wide variety of reasons why a person may take up a health and well-being related activity, and the actual activity they choose will depend on a number of factors.

5.1.1 Youth And Exercise

Young males aged between 16 and 24 are most likely to exercise regularly and use a device to monitor their performance. For this group, monitoring their health is incidental, as the main aim is reaching peak fitness and competing with their peers. By analysing their heart rate at a particular point on a run or a cycle ride they may be able to optimise the effort they put into an exercise session and in so doing improve their overall performance. This is one of the features of Garmin's BodyMotion online service – into which data collected by the company's GPS enabled pedometer can be uploaded. Members of the 16 to 24 age group are those most likely to compete with each other and compare performances using an online activity-monitoring service.

Members of the 16 to 24 age group are those most likely to compete with each other and compare performances using an online activity-monitoring service.

Even though the user does not regard an online athletic training web site as an ehealth monitoring service, it can still be an effective preventative healthcare tool. A young person who notices their performance deteriorating may make changes to their lifestyle and then, if this fails to have an effect, seek medical attention.

5.1.2 Older Consumers

As people become older they are less likely to exercise. In part this is due to physical competitiveness diminishing with age. Also as people become immersed in their careers and attend to the needs of children, there is less time to set aside for exercise. While 33% of people aged 16 to 24 exercise regularly, this figure falls to 16% for people aged 55 to 64. An older person who takes up running or cycling will be less interested in competing with their peers than maintaining a level of performance they achieved either when they were younger or when they took up exercising again and regained peak fitness. In essence these people are managing a gradual decline in fitness and attempting to remain active as long as possible.

An older person who takes up running or cycling will be less interested in competing with their peers and more concerned with maintaining a level of performance they achieved either when they were younger or when they took up exercising again.

5.1.3 Mental Well-Being

While people are busy with their careers, they are more likely to address the issue of well-being using simple techniques which are less time consuming than physical exercise. One example is setting aside a short time each day to practise breathing correctly and focusing their mind with techniques such as t'ai chi. As they approach late middle age, people may become concerned that their memory is failing and their mental ability is becoming impaired. Games such as sudoku can be used to exercise the mind – as can electronic devices that set tasks and monitor mental performance. Once again the issue for this group of consumers is monitoring and managing decline. Mental exercise is a form of preventative healthcare, and a device that can store daily scores will highlight any problem the patient might be experiencing but would otherwise not be aware of.

As they approach late middle age, people become concerned that their memory is failing and their mental ability is becoming impaired.

5.1.4 Gender And Socio-Economic Grouping

Gender influences the approach a person takes to well-being, with females less likely to exercise and more inclined to diet. Females are typically less physically competitive than males and are less inclined to take part in games or to exercise in a gym where the atmosphere is particularly competitive. (This factor is important in the growth of the market for small cross trainers and treadmills that can be used in the home.)

Gender influences the approach a person takes to well-being, with females less likely to exercise and more inclined to diet.

A person's background and environment also impacts on the amount they exercise, and while 25% of those in the highest socio-economic groups exercise regularly this figure falls to 16% for the lowest grouping.

5.2 Vendor Motivation

Typically vendors who are active in the consumer electronics based health and well-being market fall into two groups. The first have developed technology that they market with a product wrapper, and the second provide a service wrapper for products based on third party technology.

Typically vendors, who are active in the consumer electronics based health and well-being market fall into two groups.

Both groups are actively seeking to expand the service element of their offerings. One of the options is to add an online service that will reinforce brand loyalty and has the potential to generate a reoccurring revenue stream.

5.2.1 Device Vendors

The market for a particular consumer device is both short lived and competitive, and, however well a vendor protects their core technology, other manufacturers will either find ways around patents or develop technology that renders older devices obsolete. The solution is to wrap around the device a service that encourages brand loyalty and adds value to core technology. As well as tying a consumer to their brand, it also provides a platform on which vendors can build and test new services. The device vendor can also use such services as a vehicle to deliver their devices to new markets – for example the online healthcare market.

The device vendor can use subscription services as a vehicle to deliver their devices to new markets.

5.2.2 Service Vendors

Vendors who only provide a service wrapper for existing non-proprietary technologies – for example the Internet, mobile networks or SMS messaging – risk losing market share to competitors who have developed more advanced or lower cost services. They are under constant pressure to introduce enhanced services and diversify into new markets once their existing market has become saturated. Here the healthcare market offers significant scope for expansion of a fitness and well-being orientated service.

The healthcare market offers significant scope for expansion of a fitness and well-being orientated service.

5.3 Market Size, Growth And Timing

The potential market for fitness and well-being devices is over \$2 billion per annum (see Appendix B). It should be noted, however, that competition and shifting demographics will both impact on revenue from sales of pedometers and fitness cardio devices. At the same time, also due to demographic trends, the market for mind exercise orientated devices and software will expand. Also likely to grow is the market for breathing exercise devices and software.

The potential market for fitness and well-being devices is over \$2 billion per annum.

The potential market for subscription services is estimated at just under \$2 billion. It is within this market that ehealth related services will play a significant role. The growth of the subscription services market is highly dependent on the support of preventative healthcare programmes by public and private healthcare payers. In addition, incumbent healthcare providers must be willing to integrate vendor's services with their own healthcare service offerings.

The growth of the subscription services market is dependent on the preventative healthcare programmes being put in place.

While companies such as HeartMath and Nintendo do not, and are unlikely to, develop subscription services that will appeal to healthcare providers, they have built consumer orientated services around their core technology – for example software, publications and training programmes – that produce an ongoing revenue stream.

6 Marketing Strategies

The idea of developing a subscription service, with repeat revenues, is a compelling one, and most of the pedometer and training aid vendors are experimenting with this concept. Fees throughout the industry are typically \$10 per month and are charged for premium services within an otherwise free web based facility that is tied to the vendor's device. The user can upload data from the device and carry out advanced analysis of exercise sessions that goes beyond what is possible with the PC based software provided with the device.

Fees for subscription services are typically \$10 per month and are charged for premium services within an otherwise free web based facility tied to the vendor's device.

While successful commercial deployment of an online fitness and well-being service would bring significant rewards, there are a number of factors that have to be considered.

6.1 Lessons From The Online Dieting Market

eDiets, one of the leading online dieting services, has experienced steady annual growth in membership and revenues of approximately 20% since the company was formed in 1997. Membership currently stands at approximately 2 million, and 25% of this number are paying subscribers. Paying subscribers receive premium services such as online guidance and support with their dieting programmes.

In its early years, eDiets was able to capitalise on its uniqueness as an online dieting service, and media interest in the Internet. However, other companies have set up competing services – including large incumbent players such as Weight Watchers.

The company has entered partnerships with other web based services, such as Tesco.com, the online shopping service of a UK based supermarket. However, despite this, eDiets is finding it difficult to maintain membership growth and is now concentrated on earning additional revenue from existing subscribers – for example, by supplying tangible goods such as healthy eating, readymade meals.

In its early years, eDiets was able to capitalise on its uniqueness as an online dieting service, and media interest in the Internet. However, other companies have set up competing services – including large incumbent players such as Weight Watchers. As competition intensifies, there is pressure to increase the proportion of free content and services on the web site in an effort to increase the number of users. However, this reduces the incentive for visitors to subscribe to premium rate services at a time when the cost of acquiring new members is increasing.

MyFoodPhone has recently entered the online dieting market with a service that is based on mobile phone technology. It too has benefited from media interest in a new technology and has a strong partner, the wireless communications company Sprint, which is heavily promoting the service. However, MyFoodPhone has already had to restructure its charging model and lower its subscription fee.

MyFoodPhone has benefited from media interest in a new technology and has a strong partner, the wireless communications company Sprint, which is heavily promoting the service.

Both eDiets and MyFoodPhone have services based on non-proprietary technology. In such cases it is necessary to achieve a dominant market share before competing systems are created by other online content companies or by incumbent players. In the book-retailing sector, Amazon has managed to do this using a variety of innovative business processes and before competitors could gain a foothold in the market. However, as the online dieting market is already relatively mature, it is unlikely that any one player will achieve a dominant market position without a supporting 'real world' position in the dieting market.

As the online dieting market reaches maturity it is unlikely that any player will achieve a dominant market position without a supporting 'real world' position in the dieting market.

Any vendor entering the fitness and well-being market that does not already have access to the market through the sale of devices will need to move quickly and achieve scale. One way to do this would be to provide compelling services that are compatible with a range of fitness device platforms. This would enable a company to recruit subscribers from a wide range of demographic groups and from the customer base of the major device manufacturers. It may also be possible for a company with a feature rich service wrapper to recruit partners from both the fitness and well-being device manufacturing sector.

6.2 Choosing A Healthcare Partner

A fitness and well-being service based on an existing consumer electronics device could also be promoted in conjunction with a partner from the healthcare sector. Healthcare payers take a keen interest in preventative healthcare related products and services. PruHealth, a private healthcare company, has entered into an agreement with Fitbug whereby the 50,000 members of PruHealth are offered the fitness monitoring service based on an Omron manufactured pedometer. PruHealth members who sign up for and use the service receive 'Vitality Points' which reduce the cost of their insurance policies. Presently Fitbug has 6,500 paying subscribers.

PruHealth members who sign up for and use the service receive 'Vitality Points' which reduce the cost of their insurance policies.

While healthcare providers often appear to be keen advocates of preventative healthcare and some GPs advise patients use fitness management services and devices, most are attempting to meet short-term targets that are unlikely to be met by improving the health of the general population. In the UK, the same government health department that is actively promoting preventative healthcare also sets targets that prevent healthcare providers releasing the medical resources needed to deliver those programmes. This has created something of a vacuum that private companies are attempting to fill. Unfortunately, until government healthcare departments ensure that all healthcare providers are engaged in preventative healthcare, only a select few people from a narrow band of socio-economic groups will have access to fitness and well-being services – even those based on popular consumer electronic devices.

Until government healthcare departments ensure that all healthcare providers are engaged in preventative healthcare, only a select few people from a narrow band of socio-economic groups will have access to fitness and well-being services

6.3 Vertical And Niche Markets

6.3.1 Healthcare Is Just A (Computer) Game

Nintendo is targeting a narrow but fast growing demographic group with its Brain Age product. The company recognises that people in late middle age start to worry about loss of mental agility. (These concerns are heightened by the media attention devoted to conditions such as dementia and Alzheimer's disease.) Nintendo have positioned Brain Age in such a way that it appeals almost exclusively to people aged over 50. For the computer games company this is sensible strategy as the Brain Age service wrapper extends the market for the DS handheld games terminal.

Nintendo is targeting one narrow but fast growing demographic group with its Brain Age product. The company recognises that people in late middle age start to worry about loss of mental agility.

The DS is a much simpler product than consoles produced by other games machine vendors. Nintendo hope that the fact that it is relatively easy to use will open up the games market to people who find the Nintendo Wii and Sony PlayStation too complex and expensive. With this in mind, it makes sense to have at least one service wrapper that appeals to aging baby boomers.

It is unlikely that Brain Age will draw Nintendo into the ehealth market, as it is a software package purchased for the device rather than a service that the user subscribes to. However, if there is a high take-up of the software and older people find it useful in combating lethargy and increasing mental agility then, as frequently happens in other sectors of the computer industry, third parties will develop a global service wrapper for Nintendo's DS product. This global service wrapper could potentially evolve into a specialised, subscription based, ehealth service independent of Nintendo itself.

If there is a high take-up of the product and older people find the software useful in combating lethargy and increasing mental agility then third parties will develop a global service wrapper for Nintendo's DS product.

6.3.2 The Young And Fit

Garmin also targets a specific demographic group with its ForeRunner range of products. The service wrapper it has developed for the GPS based pedometers, a subscription based online fitness and performance monitor, is aimed at young people. Some of the people who buy the ForeRunner products are in older demographic groups and are using the device to help them remain active as long as possible and, perhaps, to manage their physical decline. However, to base a service wrapper for the ForeRunner range on the needs of elderly users would diminish the brand in the eyes of younger, more competitive users.

Many of the people who buy the ForeRunner products are in older demographic groups and are using the device to help them remain active as long as possible and, perhaps, to manage their physical decline.

Here, there is also scope for a third party to develop a global service wrapper that addressed the specific needs of older users of Garmin and Polar Electro fitness and training devices.

6.4 Extending The Preventative Healthcare Model

The Freeze-Framer from HeartMath and Resperate from InterCure have been built around a new, but not especially radical, approach to preventative healthcare. While both are based on the same theory – that deep and regular breathing lowers blood pressure and improves health – the way they are marketed to the end user differs markedly.

While both Freeze-Framer and Resperate are based on the same theory, the way they are marketed to the end user differs markedly.

InterCure take a straightforward approach and position their device as an aid to reducing blood pressure. The long-term damage that is caused by high blood pressure is explained to the Resperate user, who is 'trained' to breathe in a manner that will reduce their blood pressure. There is no subscription or other service wrapper that might add value to the product, and the company earns its revenue from the sale of the device.

However, HeartMath has developed a substantial set of service wrapper offerings, and while they are not subscription based they do add value to the Freeze-Framer product and provide repeat revenues for HeartMath and its distributors. The company have built their service wrapper based on a new concept in physical and mental well-being. HeartMath market a range of self-help publications describing how the Freeze-Framer product can be used to relieve stress and achieve mental and physical balance.

HeartMath also market a range of self-help publications describing how the Freeze-Framer product can be used to relieve stress and achieve mental and physical balance.

As the Freeze-Framer service wrapper is not aimed specifically at one narrow demographic group, it can be marketed to institutions and companies who use it for a range of applications including helping children with attention deficit disorder to focus; motivating sales staff; and helping employees manage stress. These applications are promoted in parallel to the Freeze-Framer's use as a preventative healthcare solution.

6.5 Barriers To Market Growth

If the subscription element of the consumer electronics based fitness and well-being market is to grow to the level indicated in Appendix B, vendors will need to overcome a number of barriers to adoption.

6.5.1 Lack Of User Commitment

Many users will be unwilling to pay \$10 per month to use a premium online service, as after two years they will have spent as much on a subscription as they have on purchasing the device itself. The user might be quite happy using the stand-alone software provided on the CD supplied with the product – especially if the subscription based service has not been designed to meet the needs of their particular demographic group.

Many users will be unwilling to pay \$10 per month to use a premium online service, as after two years they will have spent as much on a subscription as they have on purchasing the device itself.

The user may feel that they will receive little benefit from a subscription based service once they have reached a certain level of fitness, and therefore be unwilling to make a long-term commitment to a paid service.

If a health insurance company is hosting the service, the user may suspect that, if any adverse signs are detected, the company will increase its policy premiums.

The user may not persist with a fitness programme if the online service does not provide sufficient motivation. Here healthcare payers, who are using exercise and activity monitoring services to encourage people to stay fit, could expand the incentives they offer for compliance.

Healthcare payers, who are using exercise and activity monitoring services to encourage people to stay fit, could expand the incentives they offer for compliance.

6.5.2 Lack Of Healthcare Provider Commitment

Healthcare providers are in agreement with healthcare payers and public health organisations on the need for preventative healthcare and well-being programmes. All parties foresee that, in the long term, the healthcare provider will experience capacity problems due to an increase in illnesses resulting from poor diet and lack of exercise. However, providers, who have the tools needed to build subscription-based services, have neither the funds nor motivation to put in place such services.

6.5.3 Lack Of Communication Technology

At present most fitness enthusiasts and dieters transfer data into a PC then upload it into an online service. Some users may not wish to dedicate the time and effort to doing this. If devices were wireless broadband enabled, transfer of data would be relatively transparent. However, to make a service compelling enough to encourage widespread use, the activity-monitoring device or ECG should be capable of automatically transferring data to the server hosting the subscription based service. This could be achieved using simple GSM technology or, in urban areas, wireless hotspots.

The use of basic GSM technology or, in urban areas, wireless hotspots could make services simpler to use and more compelling for subscribers.

7 Incumbent Healthcare Providers

While services that promote fitness and well-being are well known to most healthcare providers, they occupy a part of the market that lies beyond the edge of what the healthcare provider regards as their healthcare network.

Even if they had the financial resources to manage such services, it is not clear whether healthcare providers would co-opt consumer electronics based preventative healthcare services into their own healthcare network. Providers, fearing that such services would disrupt their business model, may be reluctant to incorporate new techniques, such as Freeze-Framer, or activity programmes into their own healthcare network.

Even if they had the financial resources to manage such services, it is not clear whether healthcare providers would co-opt consumer electronics based preventative healthcare services into their own healthcare network.

There are also a number of practical issues such as the long lead time required to approve new processes, and a lack of integrated and mobile electronic patient record systems.

This absence of action on the part of the healthcare provider is encouraging vendors to build their own service wrappers to support the devices they are marketing. In the case of Fitbug, the service created is aimed at the healthcare payer rather than the provider. If this becomes the norm then preventative healthcare services will become increasingly less compatible with the healthcare provider's business model.

This absence of action on the part of the healthcare provider is encouraging vendors to build their own service wrappers to support the devices they are marketing.

7.1 Global ECG Monitoring Services

The quality of the data produced by devices such as HeartMath's Freeze-Framer and Garmin's ForeRunner 305 falls short of what an incumbent healthcare provider would expect from ECG equipment. However, when combined with vital signs and activity data, the ECG could be used to provide an accurate assessment of a person's state of health. Such services could be hosted offshore and, if provided directly to the consumer, would not necessarily be regulated by medical bodies or approved as a medical service.

When combined with vital signs and activity data, the ECG could be used to provide an accurate assessment of a person's state of health.

Consumer electronics companies could incorporate ECG analysis and fitness monitoring supplied by third parties into their own subscription services. Alternatively they could offer third party monitoring as an additional premium service the user purchased each time they wanted a remote medical check-up.

A third party provider might attempt to market their service direct to the users of a range of devices that produce ECG and activity data – using fitness and well-being as a platform for a more sophisticated and comprehensive remote monitoring and diagnostic service. Such a service would present a challenge to incumbent healthcare providers by introducing a new and potentially disruptive ehealth model into the healthcare market (see Appendix A). It would also disrupt the business models of vendors such as Fitbug and HeartMath who provide high value services wrapped around relatively simple devices.

A third party provider might attempt to market their service direct to the users of a range of devices that produce ECG and activity data – creating a potential platform for a remote monitoring and diagnostic service.

8 Conclusions

Consumer electronics devices that support fitness and diet programmes provide a relatively simple route into the healthcare market. There is no requirement for devices or the services they support to be approved by compliance-monitoring organisations, such as the FDA, or delays while incumbent healthcare providers integrate preventative healthcare services into their existing infrastructure.

The fitness and well-being device and services market could be worth over \$2 billion per year by 2010. The potential market for subscription services and software based on physical activity and mental agility training could also grow to \$2 billion per year by 2010, helping to offset falling margins as the device market becomes more competitive and some vertical markets become oversupplied. The growth of subscription services is highly dependent on the development of compelling and easy-to-use software.

Growth in the market for subscription based fitness and well-being services is dependent on the extent to which healthcare providers and public healthcare organisations work together to deliver services based on simple preventative healthcare techniques. Healthcare providers should ensure that data gathered from patients who use fitness and well-being services is used effectively within their own patient care programmes.

With ECG, activity and weight data being transmitted over the Internet and mobile networks, an ehealth-monitoring platform may emerge by default. If it does, there will be key issues that have to be addressed, as the role of next generation health monitoring providers will become increasingly disruptive and impact on the operation of incumbent healthcare providers.

Stress management systems are based on the relationship between breathing, heart rate and blood pressure. If incumbent healthcare providers focus on techniques that manage this relationship, the market for preventative healthcare systems will grow.

Vendors are building complex stress management programmes around relatively simple devices. Books, training programmes and software are used to add value to a simple ECG monitor. This trend will continue as these vendors exploit the potential of online services.

Vendors who derive all their revenue from the sale of relatively simple stand-alone proprietary devices are vulnerable to losing their market if competitors develop similar applications based on standard wireless PDAs.

Consumer electronics devices that support fitness and diet programmes provide a relatively simple route into the healthcare market.

The fitness and well-being device and services market could be worth over \$2 billion per year by 2010. The growth of subscription services is highly dependent on the development of compelling and easy-to-use software.

Healthcare providers should ensure that data gathered from patients who use fitness and well-being services is used effectively within their own patient care programmes.

The transmission of ECG, activity and weight data over the Internet will impact on incumbent healthcare providers.

Official recognition, of new techniques will be a key driver within the stress management device market.

Vendors are building complex stress management programmes around relatively simple devices.

Vendors whose products are based on simple devices are vulnerable unless they add value to the product.

Older people wish to remain fit and active for as long as possible and are willing to spend money on devices and services that will help them do so. Some vendors of sports and activity monitors position their products to appeal to the 16 to 24 demographic grouping and ignore older users when branding devices.

Both weight management organisations and mobile phone companies are using online diet monitoring services to retain the loyalty of their subscribers and also to showcase advanced technology. Online dieting service vendors will need to achieve scale, or find partners, before mobile operators stop using ehealth to promote their advanced data services.

Some vendors are ignoring older users when branding devices.

Online dieting service vendors will need to achieve scale, or find partners, before mobile operators stop using ehealth to promote their advanced data services.

9 Vendor Profiles

9.1 Fitbug

Users who sign up to the Fitbug service receive an Omron manufactured pedometer that uploads data, via a PC, to the Fitbug web site. The data is used to build a profile of the user and to construct a nutritional programme.

Fitbug costs \$60 for the device and \$10 per month for a subscription to the service. The company claims it has 6,500 paying subscribers in the UK and the US.

As well as recruiting individual users, the company also markets the service to corporates and is currently supplying the UK Department of Health, the phone company O2 and The Ford Motor Company, who all use Fitbug as part of their employee well-being programmes.

In 2006 the company announced a deal with PruHealth, a UK based health insurance provider. PruHealth rewards members with lower healthcare insurance premiums for taking care of their health. PruHealth currently has in excess of 50,000 members, who are offered Fitbug at a reduced rate. Participating users are awarded points if they walk a certain distance each day (five points for over 10,000 steps and ten for over 12,500). Users can also earn extra points for combined Fitbug and gym membership up to a maximum of 1,500 points per annum.

Analysis

Fitbug is a relatively simple service wrapper for a third party consumer electronics device manufactured by Omron. It must therefore move quickly to achieve scale before competitors move into the market and Fitbug is forced to lower subscription prices or start offering part of its service free of charge. Fitbug has had some success in selling its service to corporates and large organisations. The company has been helped by public health initiatives such as the 10,000 steps campaign, which encouraged people to undertake a minimum amount of exercise each day.

Many healthcare specialists regard the target of 10,000 steps as being too low to have any significant impact on people's health. If the campaign is superseded with one with more ambitious targets, Fitbug may find it necessary to upgrade its service and perhaps support alternative devices. In theory this should not be too difficult to do, and if successful the Fitbug platform could form the basis of a low cost and easy-to-use consumer ehealth service.



Fitbug At A Glance

Fitbug Limited is part of ADDLeisure PLC which is listed in the UK on AIM. The company provides a subscription based fitness and well-being service based on an Omron pedometer

www.fitbug.co.uk



9.2 Nintendo

Formed as a playing card manufacturer in 1889, the company became Yamauchi Nintendo & Co in 1933. In 1975, with Mitsubishi Electric, the company developed a video game system using an electronic video recording (EVR) player, then introduced a microprocessor into the video game system the following year. As its competitors race to build ever more complex games machines, Nintendo feels it has identified a niche market for simple devices that are easy to use and appeal to demographic groups, typically older consumers, who would not usually purchase games machines. To this end, in 2004 the company launched the Nintendo DS – a device that supports touch screen controls, wireless multiplayer, and is backwards compatible with earlier games machines. Over 20 million DS machines have been sold to date, and one of the popular games titles sold for the machine is Brain Age which is marketed as a an exercise aid for the mind and is targeted at older people who wish to remain mentally active. The DS also has a built-in motion sensor that supports interactive games such as virtual tennis and golf.



Nintendo At A Glance

Based in Japan, the company manufactures both desktop and handheld video games. Sales for the year to March 2006 were \$4.24 billion and earnings for the same period were \$1.34 billion.

www.nintendo.com

Analysis

It is unlikely that Nintendo will become heavily involved in ehealth. At present the company is quite content to use vertical applications such as Brain Age to lead it into markets that have, to date, largely been ignored by games console manufacturers.

In Japan the DS/Brain Age package is selling well and is attracting interest from an older and growing demographic group – those aged 50 to 70. This group is growing while the demographic group that contains the traditional games consumer (16 to 24) is shrinking. It is quite likely that other computer games manufacturers will follow where Nintendo is leading.

Nintendo has some experience of building subscription services as a means of maintaining brand loyalty and earning repeat revenues. The company's software itself can be regarded as a form of service wrapper. However, Nintendo is primarily a device manufacturer and developer.

There is no reason why a third party supplier should not use the DS games machine as a platform for a simple well-being or mental agility application or even a remote ehealth service. The third party vendor would benefit from the economies of scale of the games market reducing the cost of the device. The third party vendor may have difficulty in gaining widespread acceptance amongst the medical community for a service built around a video games machine. However, researchers in academic institutions, especially those involved in neurology, have always taken a keen interest in video games and their impact on consumers and it may not take too long to build up the research data needed to provide credibility for a therapeutic service based on a device such as the DS.



9.3 Garmin



Garmin is a GPS technology specialist that sells a range of positioning devices within the marine, aviation and health and fitness markets. However, the key part of the company's business, measured by both revenue and growth, is the automotive GPS market. Automotive products account for over one-half of Garmin's revenues, whereas health and fitness account for one-fifth.

The company's latest product is the Forerunner 305 which consists of a wrist worn GPS tracking and location device which also accepts heart rate data from a wireless based monitoring device embedded in a chest strap. The Forerunner 305 is supported by MotionBased training and TrainingPeaks, two web based applications into which data gathered by the device can be uploaded. These applications act as virtual personal trainers for users who are taking part in fitness regimes or are training for specific athletic events.

Garmin At A Glance

Formed in 1989, the company is a GPS technology specialist based in North America and Nasdaq listed. Its year to date revenues to 30 September 2006 are \$1.16 billion, with net income of \$325 million.

www.garmin.com

Analysis

Although fitness and training equipment is a relatively small part of Garmin's business, it is not as fiercely competitive as the automotive sector. In-car navigation is a fast moving market, and rival products such as TomTom have captured a significant part of that market by incorporating features, such as a speed camera detection, which are based on technology that lay outside Garmin's specialist field.

Garmin have been careful to focus on the narrow demographic group that both exercise regularly and are physically competitive. While older people, who run or cycle on a regular basis, purchase the ForeRunner, the online service that supports the device emphasises competition and the achievement of peak fitness rather than the monitoring and management of decline. The addition of a cardio monitoring feature to the ForeRunner opens the possibility of the device being used to monitor health as well as activity. It could also help Garmin address a demographically more diverse market and support ehealth services.

As the device market becomes more competitive, online services will increasingly be used to maintain brand loyalty and to generate revenue. However, Gamin would be wise to create alternative online services to support different groups of users. Such a move would be necessary if it wishes to expand BodyMotion – the online service the company is developing to attract subscription-paying users. At present many of the features provided as part of BodyMotion are provided free, and the paid-for services only appeal to a small number of enthusiastic users.



9.4 Polar Electro



Polar Electro At A Glance

Polar Electro, founded in 1977, specialises in the development and manufacture of consumer cardio monitoring technology. The company has 1,600 employees and in 2004 had net sales of \$160 million.

www.polar.fi



Analysis

Polar Electro's main business remains athletic training and fitness monitoring equipment. While there is a steadily growing demand from the healthcare sector, most of the individuals purchasing the company's products are sports or keep-fit enthusiasts. While Polar have an online service, this is offered to users free of charge, and the company's products currently offer little scope for generating recurring revenue. Polar's marketing strategy is based on users purchasing low cost, entry level, products and then upgrading to more advanced models when they require more features.

Polar may take the same kind of approach to the ehealth market as it has to the sports market and concentrate on developing and marketing devices rather than building a service wrapper that generates repeat revenue. However, as Polar's user base grows, a third party provider may be tempted to market an online monitoring and analysis service to cardio wristwatch users. Polar could partner with the ehealth provider as a way of increasing unit sales of cardio monitors. On the other hand, as competition in the sports and fitness market puts pressure on margins, Polar might be tempted to add the third party's monitoring service as a service wrapper for its advanced cardio monitoring wristwatches.

9.5 InterCure

Resperate is a self-contained therapeutic device that is FDA-cleared for over-the-counter sale. It encourages the user to breathe correctly and, as a result, lowers their blood pressure. The theory on which the device is based has been researched and trialled by one of InterCure's founding directors.

Using a single probe ECG, the device analyses the user's breathing pattern and creates a personalised melody composed of two distinct inhale and exhale guiding tones. The user listens to the melody through the headphones, and their body's natural tendency is to follow external rhythms that enable them to synchronise their breathing to the tones. By gradually prolonging the exhalation tone to slow their breathing, the Resperate device guides them to what InterCure refer to as a therapeutic zone of less than ten breaths per minute. The company claim that within a few minutes the muscles surrounding the small blood vessels in the user's body relax, their blood flows more freely and their blood pressure is significantly reduced. InterCure also claim that the user will see a long-term lowering of their blood pressure within four to six weeks.

Analysis

InterCure has produced a simple compact product for the personal therapy market aimed at people who are concerned that their high blood pressure, if unchecked, will lead to complications such as a heart attack, stroke or kidney and heart failure. The device is not sold with any service wrapper that could earn repeat or subscription revenue and there is no facility to analyse the data Resperate captures. While this approach makes the device easy for the consumer to understand and use, it could leave Resperate vulnerable if the science on which it is based becomes widely acknowledged and employed as a technique for reducing blood pressure.

There is no technical reason why similar technology to that employed in the Resperate device could not be added to a wireless PDA. This would open up a market where ECG data could be either processed locally to construct a melody that alters the user's cardio rhythms or uploaded to an online service where it was analysed as part of remote medical examination. Another possible innovation in this area, which could also disrupt the InterCure business model, would be blood pressure monitors that communicate with wireless PDAs. This would enable the user to receive instant feedback on the effectiveness of any device they were using to lower their blood pressure.

InterCure

InterCure At A Glance

The company was formed in 1994 and claims that its Resperate product is the only non-drug medical device indicated for the adjunctive treatment of hypertension.

www.intercure.com



9.6 HeartMath



HeartMath LLC was founded as a non-profit research organisation by Doc Childre in 1991 and initially focused on supplying organisations with services, products and technology to boost performance, productivity, health and well-being while reducing stress levels amongst employees.

The company claims that more than 100,000 executives, managers, staff, physicians, educators, health professionals, athletes and individuals have used HeartMath programmes. HeartMath's key product is the Freeze-Framer, a simple ECG device that can be connected to a PC. The software provided with the device motivates the user to improve their breathing and to induce what the company terms 'coherence' – the harmonising and balancing of emotions, heart function and cognitive performance.

The company claims its users include Shell, Hewlett-Packard, Liz Claiborne, Cisco Systems, BP, Boeing, Sony, Unilever, hospitals and a number of federal and state agencies. The Freeze-Framer product is also marketed to individuals and to resellers – some of whom build their own management motivation and stress reduction programme around the product.

HeartMath also derives revenue from publications that support the Freeze-Frame and coherence concept.

HeartMath At A Glance

HeartMath was founded in 1991 as a charitable foundation. Its main product is the Freeze-Framer – ECG technology designed to promote what the company refers to as coherence.

www.heartmath.com



Analysis

HeartMath have developed a very powerful service wrapper for a simple piece of vital sign monitoring technology – the single probe ECG. Freeze-Framer takes the basic concept of using breathing exercises to reduce blood pressure further than other well-being product vendors. The product is marketed as an aid to mental as well as physical well-being and there are strong similarities between the way Freeze-Framer encourages the user to relax and the techniques hypnotherapists use to relax their patients.

While the basic theory underpinning the company's coherence concept is well known and documented in the medical field, it is not widely accepted or deployed as a preventative healthcare technique. This may change in the near to medium term, and HeartMath are already in the early stages of positioning themselves as an ehealth provider. The company may be forced to move more rapidly along this path if competitors introduce low-cost products and services based around ECG technology. They may also be forced to respond if third parties develop online monitoring and diagnostic services that accept data generated by HeartMath's product and then start to monitor these services to Freeze-Framer users.

9.7 MyFoodPhone

MyFoodPhone provides the mobile phone user with personalised diet coaching and nutritional information via a web page that can be accessed via a mobile handset. In principle, the service is not tied to a proprietary device or network. However, the company has a close relationship with the mobile data services company Sprint Nextel, and MyFoodPhone is one of a package of mobile fitness and well-being services that Sprint offers its users – one of the others is a GPS based exercise monitoring service. MyFoodPhone costs \$10 per month, and users can send pictures of their meals to dieticians who assess the meal and provide any guidance required. The user can also make their weight and other health related data accessible to MyFoodPhone.

The company has enhanced its service with the addition of the 'MyFoodPhone Community' which allows subscribers to share their food journals and get helpful tips and motivating feedback. They can also share ideas about cooking, vegetarian eating, managing diabetes and find friends for one-on-one support.



MyFoodPhone At A Glance

MyFoodPhone is based in Canada. It launched in early 2005 and is a diet management service that provides the user with access to nutritional information and personalised diet programmes via a mobile phone.

www.myfoodphone.com

Analysis

MyFoodPhone is a small player in a highly competitive online diet market. eDiet, one of the major players in this sector, is finding it difficult to recruit members as established 'real world' dieting services, such as Weight Watchers, develop their own online services. MyFoodPhone has the advantage of a new and innovative communication platform – mobile video phones – which provides one-to-one personalised contact between the user and the nutritionist even when the user is on the move. The company is receiving a great deal of marketing support from Sprint which is keen to promote advanced services running on mobile networks.

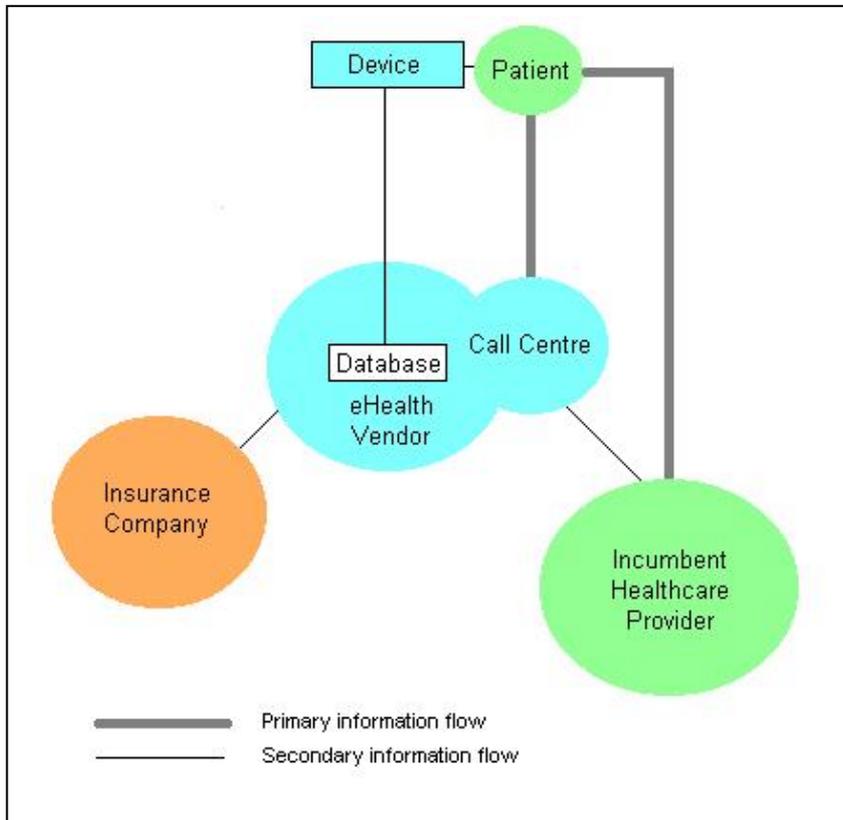
MyFoodPhone has also capitalised on the current interest in social networking by building its own online community. This aspect of the service may help the company in three ways. First it may attract the interest of public health organisations seeking ways to encourage young people, who are coincidentally the key demographic grouping of mobile phone users, to opt for healthy diets. Second, the community should generate its own content, enabling the service to grow rapidly – it is unlikely MyFoodPhone will scale economically if it relies solely on the support of a team of nutritionists to generate user content. Thirdly, if the community does grow, MyFoodPhone may become an attractive target for one of the established online dieting services.

The challenge for the company is to achieve scale before interest in the underlying technology wanes and both the media and technology vendors lose interest. Also, as it has built its service using off-the-shelf technologies it must establish and enhance the unique parts of its service before competitors replicate the model and force MyFoodPhone into the cycle of offering ever more sections of their service free to attract more users.



Score your food here (portions).					
	<input type="text" value="2"/>	ounces		<input type="text" value="2"/>	cups
	<input type="text" value="1"/>	ounces		<input type="text" value="0.5"/>	cups
	<input type="text" value="0"/>	teaspoons		<input type="text" value="0"/>	cups

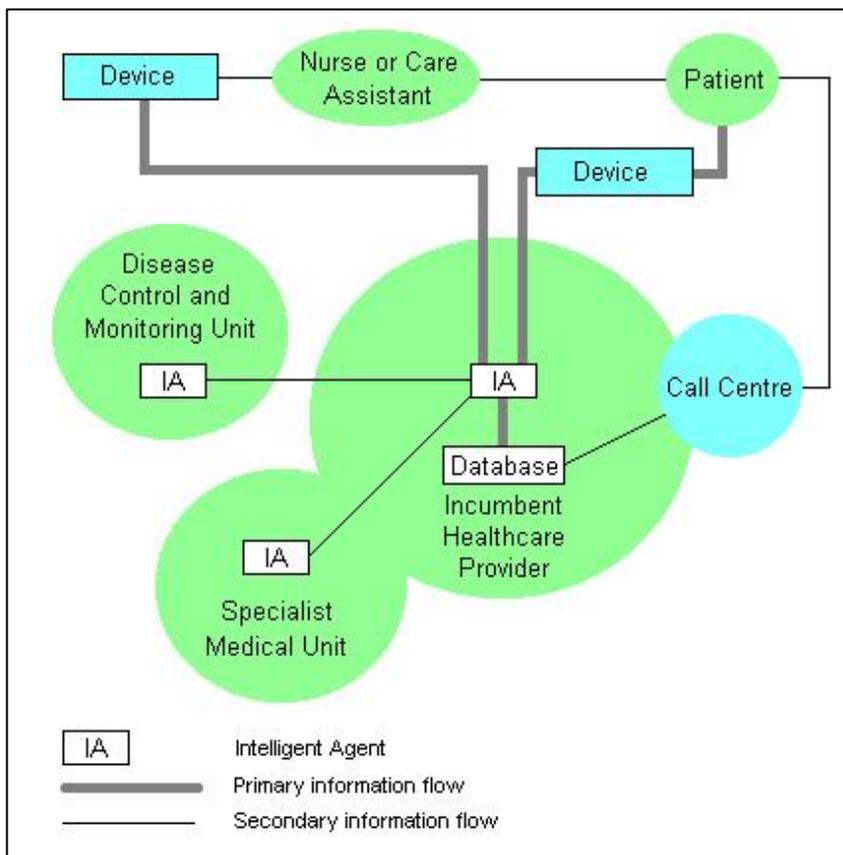
Appendix A – The New eHealth Model



The Existing eHealth Model

The incumbent healthcare provider usually lies at the periphery of the current ehealth model, which is sometimes supported by a private healthcare insurer.

The service is call centre based, with its own patient record system and the minimum of automation.



The Ideal eHealth Model

The ideal ehealth model is based on technologies that identify healthcare trends and can detect patients who are at risk of becoming ill in the short or medium term.

If deployed in the short term, this model would be supported by the incumbent healthcare provider. However, with the trend towards privatised healthcare, and a growing number of under-served consumers, any significant delay in implementation would favour new entrants to the healthcare market.

The existing and ideal ehealth models are examined in greater detail in the 'Wireless Based Remote Monitoring And Diagnostics' report.

Appendix B – Market Growth Estimates

Sport England has carried out research into the amount and type of exercise undertaken by the general public in England. The figures in the table below are based on projections of this data across Europe and the US markets. Obviously there will be significant regional differences in the types of activities people are engaged in within any particular region.

www.sportengland.org

Activity	Participants (million)	Penetration %	Units (million)	Vendors	Unit Price + Subscription (\$US)	Sales + Subscriptions (\$million per annum)
Walking	88	4	3.5	Polar, Fitbug	60 + 10/month	210 + 420
Running/cycling	55	12	6.6	Garmin, Polar	200 + 10/month	1,320 + 790
Gym	52	8	4.2	Polar, SciFit	100 + 10/month	420 + 500
Brain exercise	18	8	1.4	Nintendo	100 + 20	140 + 170
Stress management	18	4	0.7	HeartMath	200 +10	140 + 80
					Total	2,230 + 1,960

Assuming an annual growth of 20%

Speculative figures for subscription services

£195 + VAT

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