FUTURE INSIGHTS FITNESS INDUSTRY

LITERATURE REVIEW

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EXECUTIVE SUMMARY

Les Mills International (LMI) has commissioned The Nielsen Company to undertake exploratory research examining 5-10 year international trends, and to discuss the implications for the fitness industry. The research has two broad components: a series of qualitative in-depth interviews with leading thinkers across a range of sectors and perspectives, and in parallel a literature review of future trends.

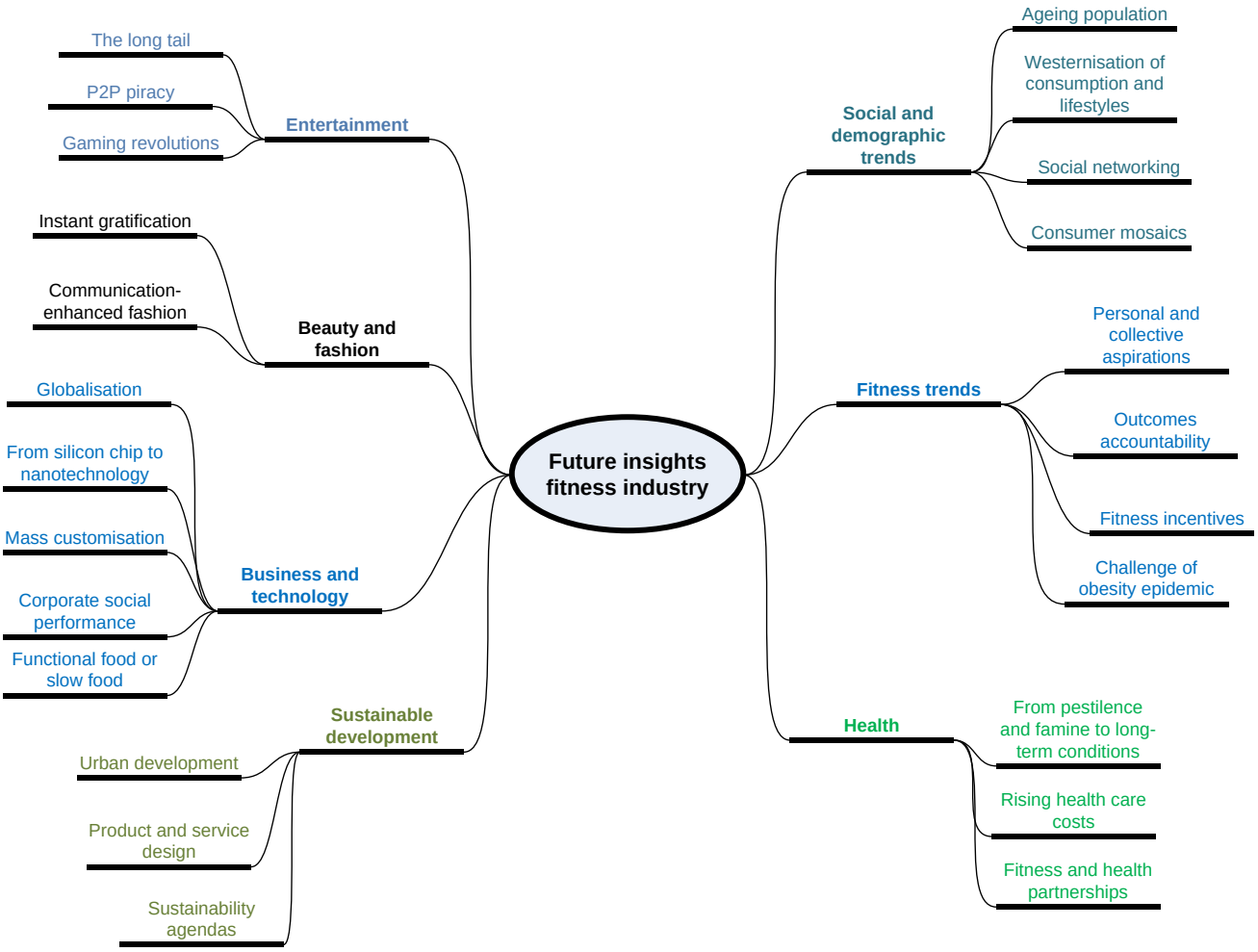
This report focuses on the findings of the literature review, which was undertaken by Adrian Field of Synergia, on behalf of Nielsen. Its development was intended primarily as a starting point for the further exploration of future trends through the key informant interviews.

The review brought together academic and grey (non-peer reviewed) literature, as well as media reports and internet blogs, to identify emergent trends across a range of areas.

The analysis focuses on seven streams of development, all of which impact on the fitness industry:

- Social and demographic trends: Challenges of population ageing, new and emerging markets for fitness consumption and changing consumer preferences
- Fitness trends: Industry expectations, venues for fitness delivery and the obesity challenge
- Health: The role of the fitness industry in responding to rising health care costs and the growing burden of chronic illness
- Sustainable development: Identifying the role of the fitness industry within global sustainability agendas
- Business and technology: The implications of business and technological change
- Beauty: Developments in the beauty industry and potential implications
- Entertainment: The entertainment opportunities offered by the Internet and gaming technologies

The mind map on the following page outlines the overarching trends and issues that underpin the discussion throughout the review.



The analysis reveals a complex future world of multiple and co-existing consumer preferences, situated within global challenges of sustainability and accountability. Key challenges and opportunities for the fitness industry include the following:

- **Ageing well**: Fitness industry as a leading player in supporting ageing populations to make healthy transitions into older age.
- **Shifting consumer power bases**: Reaching out to Asian, South American, and Middle Eastern markets in ways that resonate with local cultures and simultaneously offer the attraction of Western-style products and services.
- **Co-existing with diversity**: Responding to the needs of consumers who seek a place in the global marketplace that reflects their own personal world view. Niche markets will co-exist with mass

customisation, both of which will meet the demands of diversity at different scales of investment and consumer budgets.

- **Moving from personal drive to embracing collective effort**: Building from platforms of individual performance to explore how to further develop group-oriented fitness experiences.
- **Fitness industry as partner in health**: Being part of the solution of stemming the growing costs of health care, and preventing and managing chronic illness.
- **Challenges and opportunities of regulation**: Identifying and responding to physical activity-oriented regulation, which may arise in response to the obesity epidemic and spiralling health care costs.
- **Lifecycle design**: Placing the fitness industry as a partner in global sustainability through building a platform of energy efficiency, recyclability and in its products and services.
- **Fitness for smart growth**: How fitness fits within new models of urban development that are challenging car-based urban design and planning.
- **Individual sense amidst global appeal**: Bringing individuality into products and services intended for mass consumption.
- **Human enhancement**: Technology offers a continually evolving array of ways in which human form and functioning can be modelled, moulded and improved.
- **Quick fixes**: How the fitness industry can offer a key value add to the 'quick fix' cultures within the beauty industry.
- **Fitness in virtual spaces**: Developing products that can support fitness activity across virtual worlds.

1. INTRODUCTION

1.1 BACKGROUND

Les Mills International (LMI) has commissioned The Nielsen Company to undertake exploratory research examining 5-10 year international trends, and to discuss the implications for the fitness industry. The research has two broad components: a series of qualitative in-depth interviews with leading thinkers across a range of sectors and perspectives, and in parallel a literature review of future trends.

This report focuses on the findings of the literature review, which was undertaken by Adrian Field of Synergia, on behalf of Nielsen. Its development was intended primarily as a starting point for the further exploration of future trends through the key informant interviews.

The two research components are intended as complementary; although there will be overlapping areas of investigation and insight, there are differences in some of the areas and depth of analysis.

The two strands of research will be woven together into a White Paper identifying challenges and potential responses for the fitness industry internationally.

1.2 METHOD

The scope of the subject matter that this review examines is a challenging task. The breadth of material, encompassing such issues as entertainment, health, demography and business, requires focused judgement to filter out that which is simply interesting from that which is useful for developing strategic directions for the fitness industry.

Accordingly, this review balanced database searches with qualitative exploration and analysis of themes. Initial source materials were sought using academic-oriented search engines (Science Direct and Google Scholar) for peer-reviewed literature on future insights.

To complement the academic papers, more informal internet searches were also conducted of the grey literature (non-peer reviewed) and media reports to pick up some of the emergent ideas and debate. These searches often revealed new lines of inquiry, which added further depth to the different views emerging of the future.

Mind-mapping techniques were used to raise emerging issues with LMI and Nielsen researchers, and to identify new areas for investigation. Mind maps are used in this review to outline the broad themes discussed in each section.

These trends are analysed and presented, not as a single integrated view of the future, but as a set of insights and perspectives, many of which are likely to co-exist. The picture that emerges is one of a diverse and complex world of outlooks, ideas and opportunities.

1.3 STRUCTURE OF THIS REVIEW

This review is structured around the eight themes that were the focus of exploration:

- Social and demographic trends
- Fitness trends
- Health
- Sustainable development
- Business and technology
- Beauty
- Entertainment

The potential implications for the fitness industry are woven through each section. A concluding chapter looks at the overall implications and opportunities for fitness in the future.

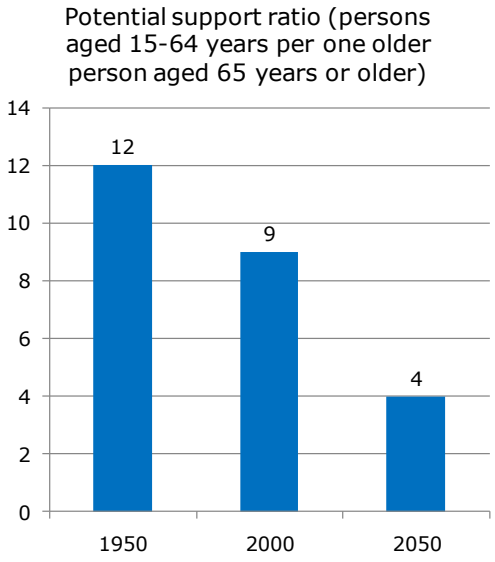
2. Social and Demographic Trends

2.1 Ageing Population

The ageing population is an international phenomenon that is progressively changing the structure of nations and economies. The United Nations reports that population ageing is "without parallel in human history", and that the twenty-first century will witness even more rapid ageing than the century just completed:

> *"By 2050, the number of older persons in the world will exceed the number of young for the first time in history. Moreover, by 1998 this historic reversal in relative proportions of young and old had already taken place in the more developed regions."* (United Nations 2002)

The graph below shows the global population support ratio, from 1950 to 2050. The ratio shows the number of people aged 15 to 64 years relative to the number of people aged 65 years and over. The United Nations expects the ratio to decline from 12 in 1950 to 4 by 2050 (United Nations 2002). In many developed nations, the ratio will be even lower; in New Zealand for example the ratio was 5.4 in 2006, and is expected to fall to 2.3 by 2051 (Statistics New Zealand 2008).



Accompanying an ageing population are changes in fertility rates. Although parts of northern Europe and the United States are maintaining a relatively steady fertility rate, parts of southern and eastern Europe are witnessing a rapid decline in fertility rates, to the degree that some areas have fallen below the critical 'replacement rate' (Shorto 2008). To maintain population rates, and by implication revenues for public services and support, requires either a rapid turnaround in population births, or replenishment through migration.

The pace of population ageing is more marked in many developing nations, and they are likely to have even less time to adjust as developed nations.

Ageing has different dimensions, and the functionality and level of support needed is markedly different between a 'young old' (65-74 years) to 'old old' (85 years and over). The number of people aged 85 years and over is expected to grow substantially, with declining numbers of people aged 50-64 to support them.

The significance of these changes are fundamental to the direction of national and international economies:

> *"Pension and medical reform. Later retirement. Higher productivity. More liberal immigration. Around the world, governments and businesses are searching for creative policies in each of these areas as they come to grips with one of the most profound social transformations in history. It all adds up to a big agenda -- one that will determine whether the global economy that achieved such astounding progress in the youthful 20th century will continue to prosper as it matures in the 21st."* (Engardio & Matlack 2005)

The ageing population will pose significant challenges for the ability of state programmes to be able to support them, particularly in terms of pensions and health care. Yet the evidence is that people who maintain their activity levels also maintain their health, capacity to live independently and enjoy a high quality of life. The fitness industry is potentially a key player in supporting a healthy transition into old age, maintaining a healthy and productive pre-retirement population, and a functional economy. There are also potential opportunities around fitness centres and programmes in retirement communities. Yet as subsequent sections reveal, the older person of the future will not be a single market segment in itself, but will have a wide range of expectations and lifestyles. Meeting these different demands will require increasing customisation of products and services.

2.2 WESTERNISATION OF CONSUMPTION AND LIFESTYLES

A further dramatic change with international ramifications is the growth the Indian and Chinese economies. The two countries together comprise more than one-third (37%) of the world's population. The major growth that has occurred

in their economies, supported by increasing education levels and literacy, has led to an unprecedented growth in the middle classes in each nation.

> *"The most direct and significant result of economic growth in India and China is the amazing improvement in quality of life (or at least spending power) for an increasing share of the population. The populations of both the countries have experienced a transition from 'poverty' to 'adequate food and clothing'; today growing parts of the population are getting closer to 'well to do lifestyles'. These segments of the society are not satisfied any more with enough food and clothes, but are also eager to obtain a quality life of high nutrient food, comfortable living, health care and other quality services."* (Hubacek et al 2007)

Although the incomes of these middle classes, in absolute terms, are only a fraction of those in the middle classes of developed nations, their relative purchasing power within their countries is substantial. In India, the middle class is expected to grow fivefold between 2005 and 2025, and incomes to grow by as much as 11 times their present day level (Farrell & Beinhocker 2007). Reflecting the growing wealth within these nations, the 12 global sponsors of the 2008 Olympics were estimated to spend US$6 billion in advertising in China alone.

The growing Westernisation of consumer behaviour is reflected in recent Nielsen brand research, which found that the countries with the highest proportion of people who aspire to designer brands are not the first world nations of the United States and Western Europe, but instead include Greece, Hong Kong, India, Hungary and the United Arab Emirates.

Although this shift towards seeking a more Western-style consumption is writ large in India and China, it is also reflected in many other developing nations where there are substantial changes afoot, driven by economic, technological and cultural changes, and given further momentum by growing urbanisation.

Dubai, for example, has established itself as one of the foremost places for luxury tourism and designer brands in the world. The breathtaking pace of Dubai's expansion since 1990 (pictured on the following page) has been substantially driven by the need to build the foundations of a diversified economy to endure beyond the demise of oil production.

This shift potentially offers opportunities for the ongoing growth of the fitness industry internationally, as new consumers enter the market and seek fitness services and products. A challenge will be offering fitness products that still meet the often very conservative social outlooks of these nations.

Dubai in 1990

Dubai in 2007

2.3 SOCIAL NETWORKING

The ways in which people link with other people changed significantly in the latter half of the 20th century. In the 1990s, Robert Putnam launched a debate on what he saw as the decline of 'social capital', a resource that emerges from people's social networks to create action or change. Putnam defined social capital as the "features of social organisation such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (Putnam 1993).

Putnam argued that social capital in the US was declining markedly, manifested by reductions from the 1960s in patterns of civic behaviour such as voter turnout, attendance at public meetings, church attendance, parent-teacher association membership, union membership, and membership of clubs such as Rotary and Lions (Putnam 1995).

Yet what Putnam saw as a declining social capital others saw as a changing nature of community engagement. The decline of traditional forms of association, some argue have been replaced by different forms of community, including professional and trade associations, regional and national advocacy organisations, youth soccer clubs, personal support groups, and neighbourhood watch groups (Lemann 1996; Riessman & Banks 1996).

While debate about whether or not what is defined as social capital has declined continues, it is clear that changes in communications and transport have over the past decade altered the form and frequency of people's connections:

> *"Developments in transport and communication technologies not merely service or connect people but reconfigure social networks by disconnecting and reconnecting them in complex ways. Thus as easy availability of cars, trains, planes and communication technologies spread social networks beyond cities, regions and nations, so they reconnect them by helping to afford intermittent visits, meetings and communication at-a-distance.*
>
> *People can travel, relocate and migrate and yet still be connected with friends and family members 'back home' and elsewhere. So increasingly, people that are near emotionally may be geographically very far away; yet they are only a journey, email or a phone call away."* (Larsen et al 2006)

The growth of the Internet, and supporting hardware (such as broadband and computers), software, and web portals (including LinkedIn and Facebook) mean that individuals and families are plugged into a growing array of communication technologies that are connecting people across continents.

Since 2004, one of the central points of dialogue around the web is the concept of Web 2.0. This refers to a perceived or proposed second generation of Web-based services – such as social networking sites and communication tools – which emphasize online collaboration and sharing among users (O'Reilly 2005).

Web 2.0 is not simply about people using chat rooms to talk about themselves or their interest, but to actively participate in their practice, transfer knowledge, and share information to advance common agendas.

Alongside the growth in connections through the web, travel has shifted from a leisure activity to increasingly being a central component of the lives and social networks of families, friendship groups, professions and organisations. With new communications people can adjust their meeting schedules while on the move, and there is often an informal and fluid process of 'meeting up' where venue, time, group and agenda can all change (Larsen et al 2006).

2.4 CONSUMER MOSAICS

The 21st century, even more so than its predecessor, is being marked by a diverse range of worldviews. If the 1980s were characterised by the mass consumerism of the baby boomer generation, the 1990s by the questioning and rejection of these attitudes of Generation X-ers, then the new century is being characterised by a mosaic of different consumer attitudes.

UK-based futurist Anne-Lise Kjaer has identified 14 consumer trends to 2015 and beyond (Kjaer 2008). These are filtered through four dimensions of thinking that shape consumer attitudes: scientific, social, emotional and spiritual. These are discussed further in the table below.

There is not the space in this review to explore in depth these and other aspects of consumer behaviour; this is simply to signal the range of consumer responses that are emerging to the challenges of the new century.

The range of consumer attitudes that have emerged signals that people have very different motivations for purchasing fitness as a consumer product compared to previous generations; and that developing products that meets these diverse emerging outlooks will be an ongoing challenge.

Scientific	Social	Emotional	Spiritual
Techno-wonderland Revolutionary insights and lifestyles from new technologies	**Caring companies** Accountability and transparency to consumers Growing power of informed consumers	**Body capital** Personal wellbeing and pampering Eat right, smart exercise, quick fixes	**Time travel** Finding inner peace in a time-starved society; openness to alternative ways of finding personal direction
Health concerns Health concerns changing Western cultures – mantra of healthy mind and body	**Patchwork communities** Decline of nuclear families and increasing 'tribe' identity –values, aspirations and common bonds	**Personalised everything** Combination of meeting practical needs and appealing to values, emotions and senses	**The Universe** Anxiety society with many worries; desire to make a difference; convergence between scientific and spiritual worlds
Politically correct Regulations shaping the future and radical thinking pushing single issue movements	**Time management** Redefining personal boundaries and pursuing new interests	**Self-actualisation** Balanced diversity through intelligent reduction of options and focus on essentials	
New economies Creativity the new future of Western countries, and manufacturing in Asia. New brand awareness challenging old structures. **Retirement time-bombs?**	**Communication nation** Social software and virtual networks Individual empowerment from digital age	**Universal values** Consumer practicing sustainability by doing; applying sustainability from management to products and services	

Source: Kjaer 2008

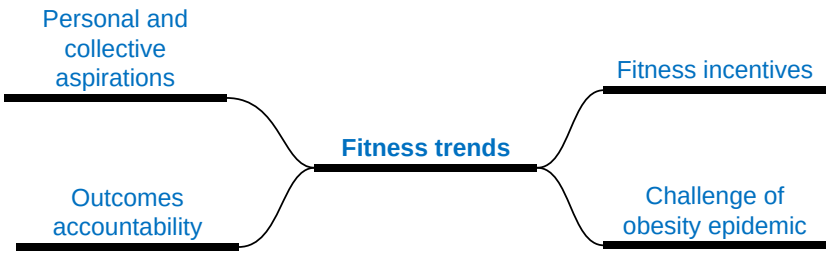
The social trends discussed in this section portray an increasingly diversified market, signalling both challenges and opportunities. The fitness industry will be faced with meeting the needs of current fitness industry clients as they progress into older age groups and ensuring their products and services remain relevant to their needs, and at the same time developing programmes that will attract new clients from older age groups. There is an important opportunity however in making the fitness industry a key player in supporting healthy transitions to older ages and promoting a strong quality of life.

The growing market for Western lifestyles and products in developing nations, as middle classes emerge and grow, suggests that there will be many

opportunities for the fitness industry to grow its base in these countries. At the same time, there will be challenges and opportunities to offer services that reflect and even embrace local cultures in a way that supports building local demand.

As people become more geographically mobile, the ability to reach geographically diverse fitness centres offering the same range of products offers a significant competitive advantage. The next challenge could be to explore how these products can be offered through new and emerging technologies in homes and offices. The shift to open source non-proprietorial software and web platforms, where users become co-owners of the information, could be seen as either a potential threat, or could become an underpinning feature of a future industry-led web fitness environment.

3. FITNESS TRENDS



3.1 PERSONAL AND COLLECTIVE FITNESS ASPIRATIONS

A 2007 international survey of health and fitness professionals identified a range of trends that were expected to feature prominently in 2008. Prominent trends that were identified included:

- Childhood and adolescent obesity
- Programmes targeted at older adults
- Specialised training programmes around aspects of fitness, such as strength, core, and balance training, sport-specific training and swiss balls
- Educated and experienced fitness professionals, including accreditation and personal training
- Wellness-oriented programmes such as Pilates and yoga
- Functional fitness, to improve one's ability to do daily living
- Outcome measurement, to determine the benefits of health and fitness programmes in changing lifestyles and supporting disease management

- Workplace-based fitness programmes
- Worker incentive programmes, as part of employer-based health promotion programming and health insurance benefits (Thompson 2007).

People's motivations for fitness vary significantly, and fitness professions have been challenged to develop products and services that fit the growing diversity of the consumer mosaic. The growth of yoga, pilates and similar types of programmes, for example, reflect a drive by many to integrate a more holistic or spiritual dimension into exercise. Variations of yoga, Pilates and Tai Chi are likely to continue to flourish, bringing together the need for improved muscular strength, flexibility and balance with a more focused and meditative mindspace (Kjaer 2008).

Fitness interventions have tended to focus on individual motivations for changing and sustaining fitness levels. However, given the new types of networks and social connections that are emerging, an important challenge for the future could be how to tap into group or collective fitness aspirations, and as subsequent sections discuss, how to do so in online environments.

3.2 WORKPLACE BASED PROGRAMMES AND FITNESS INCENTIVES

A growing number of workplaces are now offering either fitness/leisure facilities onsite or subsidised access to fitness facilities. Employers who have embraced these approaches have done so to optimise health and productivity while lowering total healthcare costs. Estimates from the United States have suggested a return on investment from such programmes of almost $6 for every $1 invested, in terms of reductions in sick leave absences, workers compensation and disability management claims cost.

Worksite-based interventions can occur at both individual levels through education, assessment and fitness programmes, through to organisation-level initiatives that seek to change the culture of institutions, either through policies that place health as a corporate goal, health and safety interventions, wellness programmes that cover exercise, nutrition and stress relief and on-site facilities (Kjaer 2008; Mitchell et al 2008). There is also a growing drive for the fitness industry to be part of workplace health promotions, ranging from leading fitness programmes within workplaces, to providing online services, health assessments and advice.

An emerging trend, particularly in the US, is health insurance incentives for adopting healthy lifestyles, either through discounts on insurance premiums, or through discounts on fitness centre membership. These can include:

- Discounted fitness club and gym memberships, health and nutritional supplement purchases, yoga programmes
- Discounted access to smoking, alcohol and weight management programs
- Health and lifestyle coaching for families from a registered nurse
- Worksite programs to promote better health such as health screenings, health education seminars, flu vaccinations and stress management
- Supplemental insurance programmes for employees, whereby employees receive deductible reimbursement credits for meeting lifestyle benchmarks related to body mass, blood pressure, LDL cholesterol and no nicotine or tobacco use.

3.3 GENERATION XL

In western societies there has been an alarming growth in rates of obesity. One in every four American children are seriously overweight or at risk of becoming overweight, and 30% of boys and 40% of girls are at risk of developing type 2 diabetes. Childhood obesity in the US has tripled over the last three decades. Other Western nations are not immune; similarly concerning trends are emerging in Australia, New Zealand, the UK and Europe (Mercola & Lerner 2007).

Generation XL, the new generation of children emerging in western nations, is one of the key international challenges. The drivers of obesity among children include sedentary behaviour; energy-rich and nutrient poor snack foods; increasing portion sizes at fast food chains; a spike in soft-drink consumption; and targeting of children in television junk food advertising (Mercola & Lerner 2007).

How the world responds to the obesity epidemic will determine literally the shape of humanity in decades to come. Such is its impact already, that even if obesity growth were to stabilise for the next 20 years (in itself unlikely), the number of people in the world with diabetes will double simply as a result of ageing and increasing urbanisation (Wild et al 2004). Failure to effectively confront behaviours and environments fuelling obesity will consign a significant portion of the next generation to years of ill-health.

In parts of the US, regulatory responses to the obesity epidemic have included improvements to food labelling and bans on use of 'trans fats' in restaurants. These have to date focused on the food component of the obesity equation, but the question is how long before the physical activity dimension of obesity is also regulated so as to promote more active living. Under such circumstances, the fitness industry could emerge as a key player, although there will be challenges

in developing products and services that effectively reach to the many who have so not engaged with the industry.

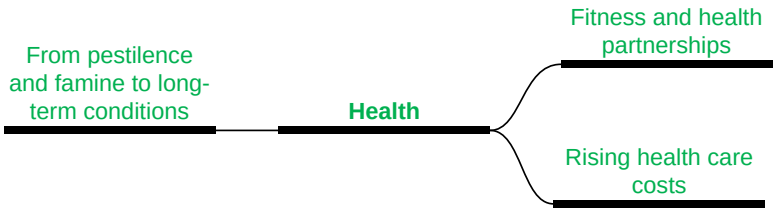
3.4 OUTCOMES AND ACCOUNTABILITY

Internationally, there is a growing shift in government towards outcome-based accountability. Government agencies are not simply required to justify how they their funds have been spent, but what return they are providing. This drive to outcomes-based accountability, is forcing government departments to explicitly consider the programme logic by which the interventions they fund or deliver are designed, and from this, the results they are achieving (State Services Commission 2003).

This drive has to date been limited to central government. However, given the roles that many public sector organisations have with regard to funding or commissioning services from the private and non-government sectors, it is likely to be only a matter of time before outcomes accountability is a requirement beyond the state sectors. Allied to growing consumer demand for accountability and transparency, companies will be increasingly pressured to show the fruits of the services they offer (Kjaer 2008).

The drive for outcomes-based accountability is as likely to apply to the fitness industry as it is to other industries. Given the pace of technological change and the increasing ability for data-matching across diverse database, there is likely to be growing capability of fitness and health professionals (and taking into account client or patient privacy and consent requirements) to be able to track health behaviours over time, monitor chronic disease management, and produce aggregated data to report impact across different client groups.

4. HEALTH



4.1 HEALTH TRANSITIONS

The past two centuries have witnessed unparalleled advances in population health. This was initiated by, at least in Western societies, concerted action to

improve and sustain the public health infrastructure including water quality, sanitation, housing, and waste disposal. This was followed by efforts to improve the social infrastructure in societies through welfare safety nets to ensure a basic standard of living for all. Combined with the advent of modern medicines, vaccines and medical technology, many of the diseases which had ravaged communities for centuries declined significantly, and some, such as smallpox, disappeared altogether.

Over recent decades, social and economic changes, public health initiatives and, advances in medical care, have all supported population health improvements. Over the course of the 20th century, average life expectancy doubled and in many poor countries, infant and child mortality fell sharply, as did birth rates (Martens 2002).

Martens describes this shift as one from 'an age of pestilence and famine' which has characterised most of human history (marked by wars, epidemics and famines), to an 'age of receding pandemics'. The mid-19th century began the age of receding pandemics as public health and medical advances brought better health to more and more parts of the globe. This phase, however, has also been marked by growing population and ecological pressures; and if the carrying power of ecosystems is exceeded, economic development may stagnate and the health gains may be lost (Martens 2002). Despite hopes in the 1960s and 1970s that communicable diseases had been conquered, many diseases such as tuberculosis and sexually transmitted diseases continue to exert a toll, along with the emergence of new diseases such as AIDS (MacLehose et al 2002).

The third stage, which most developed nations have now entered, is one of 'the age of chronic diseases', whereby the declining risk of communicable disease is replaced by a growing incidence and impact of long-term illnesses. In 2002, the leading chronic diseases (cardiovascular disease, cancer, chronic respiratory disease, and diabetes) caused 29 million deaths worldwide (Yach et al 2004).

> *"While improved healthcare means that these are less lethal than infectious diseases, they nonetheless cause relatively high levels of morbidity. Increasingly, health patterns depend on social and cultural behaviour, such as patterns of food consumption and drinking behaviour. Due to low levels of mortality and fertility, there is little population growth. When the health transition is at an advanced stage, life expectancy may exceed 80 years. However, the prevalence of one or more diseases means that such a long life also includes, on average, a relatively long period of morbidity."* (Martens 2002)

The impact of morbidity, or living with the effects of long term illness, should not be underestimated; they incur significant personal, social and economic cost, often over decades, and it is expected that it will be many years before the growth of chronic illnesses will have peaked.

Given the rising levels of obesity (a key risk factor for many chronic diseases) and the long gestation for many chronic diseases to occur, ongoing growth in

such disease is expected. The total number of people with diabetes alone is projected to rise from 171 million in 2000 to 366 million in 2030 (Wild et al 2004). The table below details these worldwide changes, together with other changes in the structure of populations.

Estimated numbers of people with diabetes by region for 2000 and 2030 and summary of population changes

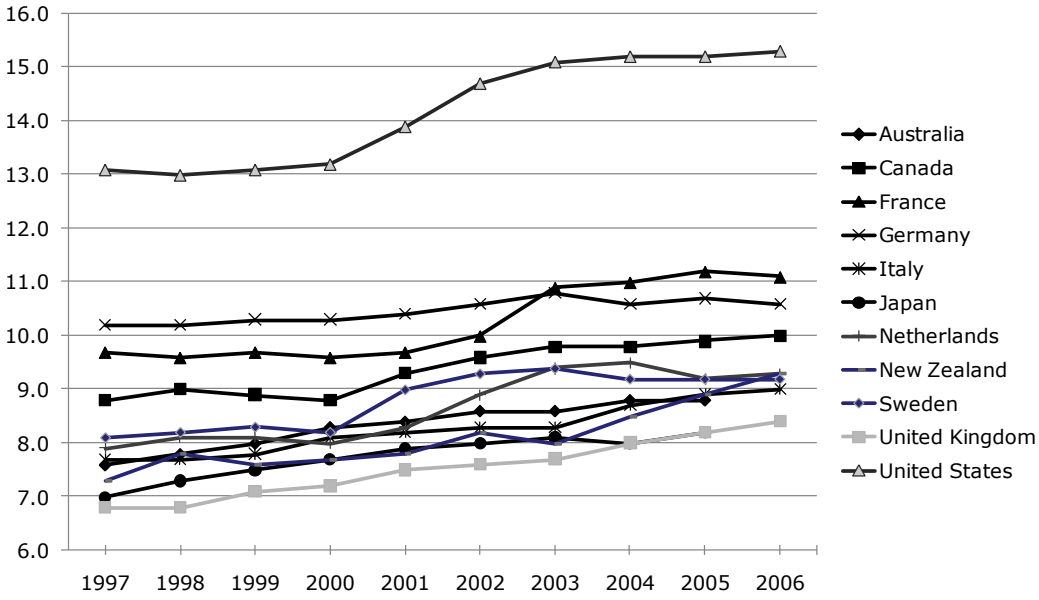
	2000 Number of people with diabetes	2030 Number of people with diabetes	% change in diabetes	% change total population	% change in population aged over 65 years	% change in urban population
Established market economies	44,268	68,156	54	9	80	N/A
Former socialist economies	11,665	13,960	20	–14	42	N/A
India	31,705	79,441	151	40	168	101
China	20,757	42,321	104	16	168	115
Other Asia and Islands	22,328	58,109	148	42	198	91
Sub-Saharan Africa	7,146	18,645	161	97	147	192
Latin America and the Caribbean	13,307	32,959	148	40	194	56
Middle Eastern Crescent	20,051	52,794	163	67	194	94
World	171,228	366,212	114	37	134	61

Source: Wild et al 2004

4.2 RISING HEALTH CARE COSTS

Globally, the costs of health care have risen significantly, particularly in the United States. The graph below shows the upward trajectory of health care

costs as a percentage of GDP across 11 OECD nations over the decade 1997-2006.



One of the key drivers of these costs is technological innovation: the market power of physicians, hospitals, and pharmaceutical companies has enabled high prices for their services and products, combined with the rapid diffusion of high-cost innovative technologies (Bodenheimer & Fernandez 2005).

To date, the ageing population is only a small contributor to the escalation of costs, although the obesity epidemic is seen as "a cloud on the cost horizon" (Bodenheimer 2005).

The drive for technological solutions has often been to the detriment of lifestyle change. As one US media report observed:

> *"The one area of medicine where innovation has been rare and costs are still low is prevention. "Right now, we spend a lot on the last 30 days of a patient's life," says Dr. Daniel Jones, chief of minimally invasive medicine at Beth Israel. "We could think of improving the quality of a patient's life rather than the length, by spending more money on preventive care." Getting patients to lose weight, quit smoking, and exercise more would go a long way toward reducing medical costs, he said. In medicine, the low-tech solution can be the most productive."* (Arnst 2008)

4.3 FITNESS INDUSTRY AND HEALTH SERVICE PARTNERSHIPS

A range of mechanisms have emerged over the past decade through which health services and the fitness industry have collaborated or worked in partnership to improve health outcomes. Ongoing development of these initiatives is likely to raise the recognition and credibility of fitness professionals with health care professionals.

These include:

- Green Prescription programmes, whereby GPs give qualifying patients referrals to fitness providers for a fixed period of fitness training (the New Zealand version of this programme has been evaluated and found to be as cost-effective as many prescription drugs funded by Pharmac) (Ministry of Health 2004).
- More formal linkages between health services and the fitness industry; local-level examples from the UK include advice and management of overweight and obesity; regular sessions providing physical activity, dietary advice and psychological support; and tailored programmes for morbidly obese people (Wanless 2004). Evaluation of such services have found demonstrated sustained physical activity and weight loss, together with a reported increase in self-esteem and confidence.
- Co-location of fitness and health services in the UK, bringing together such diverse services as health centres, family planning and midwifery clinics with a gyms, swimming pools and sports studio.
- Establishment of medical fitness centers in the United States, bringing together health and fitness professionals and targeting services to ageing populations and people with chronic diseases. In 2007, a certification programme was launched for benchmarking services and programmes (www.medicalfitness.org)

4.4 HEALTH FUTURES AND THE ROLE OF THE FITNESS INDUSTRY

Three possible futures have been identified emerging from the current 'age of chronic diseases':

- The age of emerging infectious diseases, as new infectious disease emerge such as SARS and avian flu, and drug-resistant new strains of existing disease develop

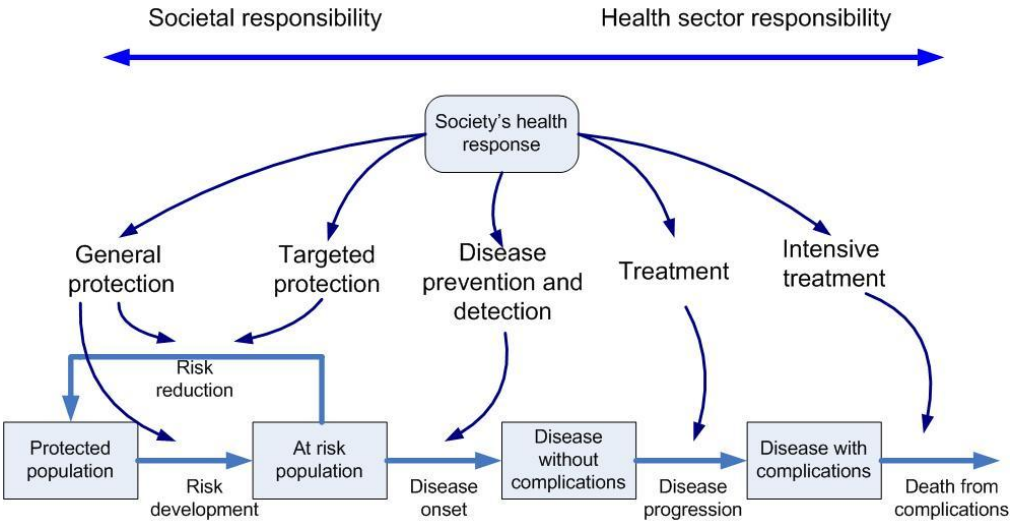
- The age of medical technology, where increased health risks from environmental and social changes are offset by developments in technology; to some degree we are in this stage already, but it is questionable how far the funding of health systems can expand to meet the costs demanded by technological advancement
- The age of sustained health, whereby health policies are designed to improve the health status of a population in such a way that the health of future generations is not compromised, health systems are well adjusted to an older population, and disparities in health between rich and poor countries are steadily diminished (Martens 2002).

These alternative futures are not mutually exclusive, and examples of each can be found within many health systems currently. If the age of sustained health is to be a reality, and chronic diseases are to be effectively countered, then approaches will need to be forged that can draw on the collective efforts of society, with the fitness industry as an active player.

The diagram below outlines a 'systems' approach in strategies to combat chronic disease, developed originally by the US Centers for Disease Control (Homer & Hirsch 2006). The model explicitly reflects the stages of chronic disease progression and the responses of different parts of the health sector and the wider society in combating chronic disease. The 'protected population' end of the continuum draws on the significant upstream social and environmental influences of chronic disease; this is where the different players outside the core health sector, including the fitness industry, have many significant contributions to make.

The 'at-risk population' and 'disease without complications' areas focus on the contribution of health promotion and primary health care. The 'disease with complications' area draws in the more downstream specialist expertise, and tends to be where most health expenditure on chronic illness has traditionally been invested. Rather than focus on piecemeal elements of diabetes prevention and management, chronic disease strategies need to work across all facets of the continuum.

The fitness industry has the potential to be a significant partner in working with healthy and at-risk population in promoting and sustaining healthier living, including through helping tackle obesity and support the management of chronic illnesses, workplace-based interventions and partnerships with health services.



Adapted from model developed by CDC

5. SUSTAINABLE DEVELOPMENT

5.1 SUSTAINABILTY AGENDAS

Sustainable development is a theme that has grown in importance and prominence since the 1980s. Central to the concept is ensuring that development meets the needs of future generations without compromising the ability of future generations to meet their own needs.

Climate change is a significant concern, at the heart of sustainability agendas. The global debate on climate change is moving increasingly towards a consensus that it is both a reality and requires action by states, industries, communities and individuals. The Inter-Governmental Panel on Climate Change has warned that "warming of the climate system is unequivocal, as it is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level" (Intergovernmental Panel on Climate Change 2007).

Some of the scenarios forecast by the IPCC include:

- By 2020, in some African countries, yields from rain-fed agriculture could be reduced by up to 50%. Agricultural production, including access to food, in many African countries is projected to be severely compromised. This would further adversely affect food security and exacerbate malnutrition.
- In Asia, climate change is projected to compound the pressures on natural resources and the environment associated with rapid urbanisation, industrialisation and economic development.
- By 2050, ongoing coastal development and population growth in some areas of Australia and New Zealand are projected to exacerbate risks from sea level rise and increases in the severity and frequency of storms and coastal flooding.
- In Europe, mountainous areas will face glacier retreat, reduced snow cover and winter tourism, and extensive species losses (in some areas up to 60% under high emissions scenarios by 2080). In southern Europe, climate change is projected to worsen conditions (high temperatures and drought) in a region already vulnerable to climate variability, and to reduce water availability, hydropower potential, summer tourism and, in general, crop productivity.
- In Latin America, Productivity of some important crops is projected to decrease and livestock productivity to decline, with adverse consequences for food security.
- In North America, cities that currently experience heat waves are expected to be further challenged by an increased number, intensity and duration of heat waves during the course of the century, with potential for adverse health impacts. Coastal communities and habitats will be increasingly stressed by climate change impacts interacting with development and pollution (Intergovernmental Panel on Climate Change 2007).

Common elements in sustainability agendas are improved energy efficiency, using smarter technologies in product design; greater emphasis on renewable energy sources and technologies; greater use of recycling; reductions in carbon emissions (including more fuel-efficient cars and 'cleaner' fuels); and reductions in personal consumption, particularly of non-renewable resources.

5.2 URBAN DEVELOPMENT

An important feature of the drive towards sustainability is the response of urban design and planning. The way in which our urban environments are designed have been highlighted as an important driver of modern car-based lifestyles, to

the detriment of basic forms of physical activity. As some American commentators noted:

> *"For 60 years, we have built homes ever farther from workplaces, created schools that are inaccessible except by motor vehicle, and isolated other destinations—such as shopping—from work and home. From World War II until very recently, nearly all new development has been planned and built on the assumption that people will use cars virtually every time they travel. As a larger and larger share of our built environment has become automobile dependent, car trips and distances have increased, and walking and public transit use have declined."* (Ewing et al 2007)

Against this trend, the Smart Growth movement in urban design and planning emerged in the 1990s. Smart Growth's core approaches include intensified residential densities; clustering jobs and facilities closer together in mixed use centres; and connection between and within areas by transport systems that prioritise cycling, walking and public transport use (Badcock 2002; Barton & Tsourou 2000).

This approach to planning is featuring more prominently in the design of cities internationally. It means greater connection to smaller urban centres supporting many different services and a mixture of uses, and seeks to maximise walking and cycling as part of daily life. The emphasis is in some ways a return to old forms of urban planning, when relatively few people had motor vehicle access, and active and/or public transport were the norms.

Although gaining significant momentum, Smart Growth models are likely to co-exist with the established models of large-scale suburban developments which emerged in the 1960s and 1970s and were predicated on private motor vehicle access. This is partly because urban form tends to become well-embedded in a landscape, and partly because there is still demand for this form of living.

Two illustrations of these approaches are pictured on the following page. The first is an aerial view of a modern suburban development, where housing is separated from other services and amenities through single use zoning model. The second picture shows a ground level example of Smart Growth thinking where different modes of transport and different functions of urban form are brought together.

Another form of urban development that has become noticeable since the 1990s are 'gated communities', which are often exclusive developments that are closed to outsiders. These communities often promise a luxurious lifestyle within the confines of the communities walls, including recreation and fitness facilities.

An example of single-use zoning, separating residential from other functions (New Zealand)

An example of mixed-use development, using Smart Growth concepts (United States)

For the fitness industry, these different urban futures are likely to require different construction of fitness spaces. Whilst this could still include maintaining current models, it also suggests establishing new centres of activity. This may mean a greater number of smaller fitness centres in small urban localities, shifting away or complementing the larger fitness centres which have a built-in assumption of car-based travel. This new generation of fitness centre will be within easy walking distance or well-connected to public transport. The technological and communication explosion may also challenge the growth of purpose-built fitness spaces and instead bring into play the potential of linked home and work environments as fitness venues.

5.3 PRODUCT AND SERVICE DESIGN

Alongside the development and/or adaptation of environments to becoming more sustainable, so too is product or service design. Some of the more visible forms of this is the shift towards more fuel-efficient vehicles and alternative fuels and the drive to deliver services that are 'carbon neutral', as discussed above. But sustainability in product and service design is extending far beyond these areas and is likely to have significant implications for the fitness industry.

As some researchers have observed, sustainability in many products central to the fitness industry are far from sustainably produced:

> *"...many sports products require high levels of energy to manufacture, they exploit low-paid labour in the developing world, and they are conceived typically with little consideration of recyclability and reusability, or sustainability in general."* (Hanna & Subic 2008)

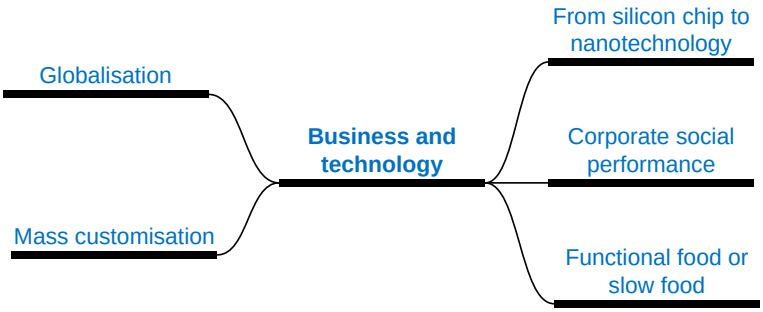
There is already a groundswell occurring towards sports product development that is sourced from suppliers where people are paid a wage able to support a good standard of living, decent working hours and elimination of child labour. But further orientation towards sustainability can be expected, and central to this shift is the concept of lifecycle design:

> *"It has been estimated that around 80% of the environmental burden of a product is determined during its design stage. Hence, in modern product design, environmental issues are given high priority, which has resulted in the development and application of new design tools and practices encompassed by the lifecycle design approach. Lifecycle design is about developing more environmentally benign products and processes based on a detailed understanding of their environmental hazards, risks and impacts over the entire lifecycle including production, usage and disposal stages"* (Hanna & Subic 2008).

At this stage, governments, particularly in Europe, are establishing legislation to govern sustainable practices in industry, so as to reduce use of finite resources in product development, and to find alternatives to landfills or incineration as

products reach the end of their useful life. Just as currently many electronic goods (such as fridges and washing machines) carry energy ratings, it can be expected that in time, products, including sports products, will be required to have energy audits or ratings, or will be measured against a sustainability index (Hanna & Subic 2008).

6. BUSINESS AND TECHNOLOGY



6.1 GLOBALISATION

Globalisation is in itself not a new process; it occurs whenever an organisation or government seeks to expand its influence, reach or power beyond its own borders. What is different about the current processes of globalisation is the size and scale of the expansion and interconnection taking place between cultures and economic centres of the world, driven by deregulated trade, electronic communication, and capital and human mobility (Martens 2002; McDermott et al 2006).

Today, products and services are designed, assembled and/or delivered in many different places simultaneously. For the fitness industry, this applies as much to sports shoes as it does to fitness programmes.

Some of the widely-raised future scenarios for globalisation include:

- Cities as driving forces behind the world economy, with competition between cities to attract companies, investment and workers to fuel growth
- Growth of China and India as economic powers
- Oil dependence continuing to be both a foundation and disruptor of economic development
- Harmonisation of the rules of trade and finance across boundaries, further eroding individual states' sovereignty

- Ongoing consumerism, but within more diversified consumer markets, requiring greater levels of tailoring to individual preferences/circumstances
- Changes to patterns of production and consumption as a result of climate change (McDermott et al 2006).

6.2 TECHNOLOGICAL ADVANCES: FROM SILICON CHIP TO NANOTECHNOLOGY

Technology has been a key driver of the new globalised economies. The emergence of broadband internet connectivity worldwide, cheaper and more powerful personal computers, and an explosion of software tools such as e-mail and search engines supported a fundamental shift in manufacturing and product development from the mid-1990s (Hanna & Subic 2008).

The technological developments that have accelerated knowledge-based economies look set to continue:

> *"Sometime early in [this century] the intelligence of machines will exceed that of humans. Within a quarter of a century, machines will exhibit the full range of human intellect, emotions and skills... By around 2020 a $1000 computer will at least match the processing power of the human brain. By 2029 the software for intelligence will have been largely mastered, and the average personal computer will be equivalent to 1,000 brains"* (Kurzweil 1999).

Some have suggested that the growth of nanotechnology will allow people to communicate through tiny devices located on or in our bodies, simultaneously allowing monitoring of vital signs and other health indicators (Sartwell 2008).

The growing capability of technology to provide fitness solutions at mainstream and elite levels is likely to create many opportunities for the industry into the future. Hanna and Subic suggest that these opportunities could include:

- Modelling of 'virtual athletes', providing high quality simulation of the human body to support development of new sports surfaces, equipment or injury scenarios
- Growth of nanotechnology and bio-informatics to support less obtrusive in-body monitoring of athletes
- Use of 'smart' materials for training and competition, and development of organic materials and structures leading to new design directions and product types.

The increasing capacity of technology to link people across vast distances also raises opportunities for delivering fitness products and services in multiple locations simultaneously.

6.3 PRODUCT CUSTOMISATION

An important trend identified in the fitness industry of the future is a greater degree of product customisation. The twentieth century was marked by Fordist capitalism, through the mass production of such items as cars, suburban housing and appliances, with an emphasis on standardisation, durability and utility. In contrast, the twenty-first century is often referred to as the post-Fordist period, marked by an emphasis on the experiential, customisation, portability, flexibility and diversity.

Product customisation is an articulation of the post-Fordist age, and it is occurring in the fitness industry through two clear avenues. The first avenue is through what is referred to as 'mass customisation', which is being adopted by many leading fitness companies.

> "Mass customization refers to a customer co-design process of products and services which meet the needs of each individual customer with regard to certain product features. All operations are performed within a fixed solution space, characterized by stable but still flexible and responsive processes. As a result, the costs associated with customization allow for a price level that does not imply a switch in an upper market segment" (Piller 2008).

Brands such as Nike and Adidas offer customers the opportunity to be co-designers of the products they purchase. This can include matching a customer's feet to an existing library of insoles and soles, and choosing colours and other personalisations (Berger & Piller 2003; Piller 2008). Customised sports products are likely to become increasingly available via rapid manufacture of personalised sports apparel and sports equipment, such as helmets, racquets, gloves and bicycles (Hanna & Subic 2008).

Other variations on this theme include the use of online database engines to customise fitness training programmes based on individual profiles (see for example http://www.hyperstrike.com/about.aspx).

The second avenue is through small to medium size companies offering specialist products and services, which have a high degree of research and development investment. These companies rely on continuous innovation to maintain their market position. While the large multinationals will continue to dominate, these firms are likely to operate in sub-sectors of the market where multi-nationals are not investing high-tech solutions (Hanna & Subic 2008). Such organisations already exist across a range of areas, including cardio equipment, functional fitness equipment, and corporate health and wellness assessment tools.[*] Future fitness products that have been forecast include a LCD 'mirror' that inputs drinking, eating and exercise habits and the computer to

[*] See for example www.fitnessmanagement.com/articles/article_n7.aspx?articleid=2179&zoneid=31

make an image of how you will look in 5-10-15 years on current lifestyles; and a garment that delivers or feeds vitamins to all parts of the body (Kjaer 2008).

6.4 CORPORATE SOCIAL PERFORMANCE

An emerging strand in modern business practice is the contribution that companies are making to current and future generations. Concerns among many consumers over human rights, standards of living, and environmental performance have led to a growing movement to foster corporate social performance. Just as the future is likely to bring sustainability audits, so too are companies likely to be held more to account for their social or ethical audits.

This is to some degree already a reality, with the growing emergence of ethical investment programmes, fuelled in some cases by investor activism. Recent developments in the UK now require pension investment funds to publish a Statement of Investment Principles, which includes the extent to which social, environmental or ethical principles are taken into account by trustees in the selection, retention and realization of their investments; and the policy (if any) directing the rights attached to investments (Collier & Wanderly 2005).

There is also a growing demand for 'cause' brands, which stand for something other than the brand itself; the Body Shop is one example, but so too are Trade Aid and Oxfam stores, and fair trade products (Kjaer 2008).

The importance of these developments for the fitness industry is the challenge that it lays for being a 'responsible global citizen.' Sectors that are able to demonstrate a value add from this perspective could potentially strengthen their market position among consumer segments.

6.5 FOOD

In the area of food production, two largely diverging approaches are occurring. The first is around functional foods, where additives are included which were previously not used or available, and the second is the slow food movement, which seeks a shift away from convenience foods and towards more seasonal-based consumption.

From the 1990s, nutritional developments occurred which allowed for development of food and beverages with a claimed health benefit. For example, it is now possible to buy highly processed white bread that can be marketed with a high fibre content. To date, development of functional foods has been to some degree opportunistic, based on general discoveries in nutritional science, and less on a deliberate research strategy to develop functional foods. Future

development is likely to be focused around insights into consumer needs and demands (market pull) and a structured scientific research process (science push) (Westrate et al 2002).

The future of functional foods indicates development in three areas:

- products making claims backed by extensive scientific research for which endorsement is key, especially for its health benefits
- products targeting enhancement of physical and mental performance, such as sports and energy drinks
- general 'good for you' products that will make more 'general' claims but with less extensive research.

Researchers suggest that fundamental to these developments will be taste (consumers generally being unwilling to swap taste for health), convenience (such as ready to eat) and trust (backed by a clear evidence regime) (Westrate et al 2002).

The slow food movement sits in contrast to functional food developments. The slow food approach is one of a return to more seasonal and locally-produced forms of consumption, particularly around connecting producers directly with consumers:

> *"Slow Food is **good**, **clean** and **fair** food. We believe that the food we eat should taste good; that it should be produced in a clean way that does not harm the environment, animal welfare or our health; and that food producers should receive fair compensation for their work"* (www.slowfood.com, emphasis in original).

The driver of the slow food movement is not its utility, but its ethical or social underpinnings:

> "We can envision food secure communities and regions, where we do not rely on complex transportation networks to provide all of our food. We can support those who are brave enough to research and write about food in our futures. We can participate in envisioning communities where healthy, local food is made available to all, grown by farmers who are happy, healthy and honoured, and where no person goes hungry." (Hurley 2008)

These contrasting food markets signal two very different types of consumer. Those that are seeking 'smart' foods to maximise the return on their food and fitness investments, and those that seek 'wholesome' living on all levels: food, exercise and simplicity (Kjaer 2008).

For the fitness industry, these two contrasting views give insights into different consumer perspectives; those who seek the fitness experience as a means to a personal end using the best technology available to enhance performance, and those who seek their fitness experience as one reflection of their place in the world.

7. BEAUTY

The beauty industry is described by industry researchers as complex, dynamic and fast-paced. Its growth has been driven by technological innovations, new product developments, and healthy household consumption expenditure on cosmetics, perfumes, soap products, other toiletries, medicines, medical aids and therapeutic appliances. Baby boomers are particularly relevant for the industry as they represent a sizeable and fast growing consumer segment, with high levels of disposable income and a high demand for cosmetics and anti-ageing products (Australian Centre for Retail Studies 2005).

The beauty industry is in many respects at the forefront of many consumer and societal changes. The desire of consumers for sustainable products and services that appeal to their personal ethics, emotions, as well as practical needs has infiltrated many aspects of beauty industry products and services (Kjaer 2008). The most obvious examples are natural, herbal and organic ingredients in beauty products, typified by the Body Shop, where ethnics and environmental concerns underpin both the product range and the corporate culture.

In an age where gratification is often needed instantaneously and where time is at a premium, there is much demand for services that can maintain or improve surgery, from botox to liposuction and plastic surgery. The innovations that are anticipated in the future include:

- Skincare products that will match the effects of Botox but make invasive procedures redundant. As one news media article described: *"Leading the pack are Icy Beauty's Icy Quick Lift skin creams. Developed in collaboration with the European Space Agency, the single-dose containers use water evaporation under vacuum to cool the product to -20° at the click of a button so that it instantly lifts the skin when applied, showing, in clinical studies, 32 per cent fewer wrinkles within one hour."* (Hancock 2008)
- Breast enhancement using injections of fat from a patients abdomen or bottom, minimising risk of rejection, infection and scarring
- Creams that can protect stem cells from damage and deterioration, and so maintain healthy, youthful skin
- Development of products containing human growth factors (a type of protein necessary for stimulating the production and maintenance of cells and which decrease with age) for use on localised skin areas to

aid the wound-healing process in skin and push the body to repair UV damage

- Identification of chemical pathways to arrest long-term movement in bones of the face, and therefore to slow down the appearance of ageing (Hancock 2008).

The examples of the future of beauty products highlight potential challenges to the fitness industry. If technological change can offer instantaneous body improvements, the hard graft of the fitness centre may seem significantly less appealing. The fitness industry would therefore need to be able to offer a clear added value that quick fixes in beauty cannot deliver on. These could include the attraction of supportive environments for maintaining body improvements, tapping into a person's inner source of potential, and natural or holistic approaches to building and sustaining beauty.

Technology similarly offers new opportunities for fashion. The emerging field of smart fabrics and intelligent textiles are working towards marketing 'communication-enhanced clothing':

> *"One day not too long from now, we'll be pulling self-heating raincoats over suits that monitor our respiration and breathing. We'll go clubbing in chameleonlike color-changing jeans and T-shirts that give off a different odor depending on whether we're chatting up somebody we like or being hit on by some leisure-suited reptile. We won't go to cybercafes to seek out the Internet, we'll bring it with us like a second skin. And when we finally put our heads down for the night, our jammies will wake us up if we start to snore too loudly."* (Tucker 2007)

The use of technology in clothing also has fitness applications; for example, it could be feasible for shirts to be developed that could feed back heart rate, body temperature and blood pressure.

Body image and maintaining youth and beauty are intrinsic motivations for many consumers of fitness industry products and services. For consumers where time is essential, the fitness industry will need to provide services where exercise can be targeted towards achieving clearly identified personal goals. For those who are down-shifting their lifestyle to allow more personal time, the fitness experience is more likely to holistic and located within a wellbeing frame. Both of these examples highlight opportunities and challenges for customising products and services to the demands and circumstances of different consumer groups.

8. ENTERTAINMENT

8.1 THE LONG TAIL

Diversity is an underlying theme throughout this review, and this is no exception for entertainment. To date, bestsellers in the entertainment market, whether they are films, music, radio or books, have been limited by physical capacity, whether it is the number of shelves in the local book, video or music store, the number of screens in a cinema or the amount of storage space for CDs in a radio station. The effect is that hits or bestsellers are often the result of savvy marketing that appeals to the lowest common denominator, for the reason that an audience that is thinly spread effectively becomes no audience at all (Anderson 2004).

One of the most striking aspects of the Internet revolution is that through online retailers, such as e-Bay, Amazon and i-Tunes, entertainment products that were previously considered 'obscure' can have substantial international purchasing power. Furthermore, the audiences are often linked through the retailers to each other, and the power of online product recommendation (a key feature, for example of Amazon sales) adds momentum to and sustains ongoing sales. This phenomenon is known as the 'long tail'.

> *"What's really amazing about the Long Tail is the sheer size of it. Combine enough non-hits on the Long Tail and you've got a market bigger than the hits. Take books: The average Barnes & Noble carries 130,000 titles. Yet more than half of Amazon's book sales come from outside its top 130,000 titles. Consider the implication: If the Amazon statistics are any guide, the market for books that are not even sold in the average bookstore is larger than the market for those that are."* (Anderson 2004)

For the fitness industry, the long tail suggests that some highly specialised fitness products could still tap into substantial consumer bases via the Internet (including podcasts, online fitness programmes and texting products.

8.2 P2P PIRACY

Although the Internet offers substantial opportunities, it also poses considerable risks to the viability of intellectual property. The rise of Peer to Peer (P2P) networks since the turn of the 21st century have meant that almost any commercial entertainment product that is digitally recorded can be copied and made available for free download, without compensation to the artists who created the product or the companies who took on packaging, promotion, and distribution.

Where companies have invested significant resources in building IP products (ad for the fitness industry the obvious example is franchised workout training programmes), the exposure of their IP to P2P networks threatens the viability of the investment.

This threat is likely to remain, despite a raft of attempts to control P2P networks, including lawsuits, encryption, infiltration of P2P sites. Confronting the problem in the future will be a key challenge, requiring both technological solutions and new models for distribution so that creativity can be appropriately rewarded (Rupp & Smith 2004).

8.3 GAMING

Gaming machines, such as Playstation, Wii and Xbox have tended to be regarded as the preserve of teenagers who really ought to get outside more. This reflected a product development cycle focused on individual-oriented gaming and which fostered isolation from other gamers. Yet gamers themselves resisted this product bias and the reality was they were often enjoyed in group settings, and multi-player operability quickly developed. In recent years, gaming has shifted substantially to encompass more group-based gaming, either face-to-face or connected across significant distances. Significantly, these multi-player modes have now shifted from competitive play against each other, to cooperative play against real or programmed foes (Koster 2008).

In 2008, industry-led research suggests that gaming has become mainstream entertainment and is no longer the preserve of introverts:

- 65 percent of American households play computer and video games
- 38 percent of American homes have a video game console
- The average game player is 35 years old
- One out of four gamers is over age 50

- Women age 18 or older represent a significantly greater portion of the game-playing population (33 percent) than boys age 17 or younger (18 percent)
- 41 percent of Americans expect to purchase one or more games this year (Entertainment Software Association 2008)

A major development in recent years has been the arrival of the Wii gaming system. Using a 'gestural interface', Wii allows its users to interact with games in a far more active way than is permitted by traditional hand-held consoles. Central to the success of Wii was its attraction to people who used to play video games in their youth but had since given up; in bringing these people aboard as consumers, Wii's makers, Nintendo succeeded in dramatically lifting the number of people gaming:

> "*Nintendo's global president Satoru Iwata is humble enough to admit that even he had been surprised by the epidemic-like success of the Wii console. "It was so fast. We knew the Wii was the right direction for the company. But the question was always how many years it would take to find success."*
>
> *The answer was two years. In that brief time Nintendo has dramatically altered its fortunes in the home console business, while at the same time maintaining, and even improving, its dominance in the handheld gaming space with the DS."* (Waters 2008).

The WiiFit product already offers gamers the change to use the system as a fitness product, although the current version remains relatively limited. Wii and its future variants offer people the opportunity to further integrate exercise into the home, in the same way that television fitness programmes have to date. The interface offered by Wii is clearly another step in the evolution of gaming. It is likely that the currently limited graphical interface of Wii will improve in the years to come. New interfaces in the future will include motion sensors which will feed back performance and potentially provide guidance in correct technique, from yoga and dance, through to swinging a baseball bat.

The ongoing technological capability development offers a substantial new array of opportunities where the fitness industry can link with gaming. Exergames and exertainment machines have become available that offer 'virtual' physical challenges, including climbing, running or boxing. To date, the appeal has been to children and young people, but it is likely to be a matter of time before games are developed that offer activities targeted at adults.

The next phase of gaming is likely to be the embedded interconnection of game play. For the fitness industry, this could include application gaming technologies to gym equipment, allowing for example cycling races against real or virtual competitors.

9. CONCLUSIONS

This wide-ranging review of current states and future possibilities has revealed a range of challenges and opportunities for the fitness industry to either confront or cultivate.

What is clear is that the diversity of preferences and consumer demands is likely to continue in the years to come. This will mean that many opposing outlooks and lifestyles will co-exist (albeit perhaps not comfortably), and they will require the fitness industry to be able to offer a range of solutions to meet the plethora of consumer demands. These challenges are situated within a changing global situation that seeks to develop a more environmentally sustainable future and which seeks greater accountability for outcomes across a wide range of sectors.

Some of the key developments that will emerge are detailed below. These are also overlaid on the concepts that this review has explored, in the mind map that follows.

- **Ageing well**: The ageing populations will need to be able to make healthy transitions into older age, so that a strong quality of life can be maintained and social expenditures can be managed; the fitness industry has a potentially important role in assisting with ageing well, of both its current clientele and a more broad-based future clientele.
- **Shifting consumer power bases**: The Westernisation of consumption and lifestyles in Asian, South American and Middle Eastern markets reflects growing wealth in these areas and demands for Western-style products. These developments are not without their social, economic and environmental pressures, and the fitness industry is likely to need to navigate a careful path through these different pressures.
- **Co-existing with diversity**: The notion of homogenous markets for products is likely to become increasing untenable as people seek to find a place in the global marketplace that reflects their own personal world view. These are to some degree fuelled by online consumer environments that give support to individual preferences and which connect the shared interests of people globally. Niche markets will co-exist with mass customisation, both of which will meet the demands of diversity at different scales of investment and consumer budgets.
- **Moving from personal drive to embracing collective effort**: The gaming revolution has tapped into a desire by many to recreate collaboratively, whilst still lifting personal performance. The fitness industry may seek to adapt its focus on individual performance to explore how it can further tap into collective consciousness in its product and service development. The ongoing development of communication technologies further promote the spread of fitness products and services globally, and linking participants across venues.

- **Fitness industry as partner in health**: There is a potentially a key role that the fitness industry can play in being part of the solution of stemming the growing costs of health care, and preventing and managing chronic illness.
- **Challenges and opportunities of regulation**: The international concern regarding the obesity epidemic and spiralling health costs is leading governments at state and national levels to look at how regulatory tools can be used to turn back the obesity tide. Although focused largely on food, the physical activity part of the obesity equation may not be far away from regulatory consideration; it already features in some health insurance programmes in recognition of the contribution it can make to reducing health care costs over time.
- **Lifecycle design**: If the fitness industry wishes to be seen as a proactive player in sustainability agendas, then it will need to consider how its products and services can fit within an approach of recyclability, reusability and sustainability.
- **Fitness for smart growth**: A central component of modern urban development approaches is the incorporation of physical activity as part of daily life, to support reduced use of private motorised transportation. This is driving smaller urban centres supporting a variety of uses. The fitness industry will have to consider how it fits within this approach, and if for example, large scale destination gyms are the best or only options for the future.
- **Individual sense amidst global appeal**: Mass customisation means bringing individuality into products that are intended for mass consumption. This is already being seen in the products of many sports apparel companies, and extending this approach into other areas of fitness may be a fertile area for exploration.
- **Human enhancement**: Technology offers a continually evolving array of ways in which human form and functioning can be modelled, moulded and improved, and will continue to provide opportunities for different arms of the fitness industry.
- **Quick fixes**: As the beauty industry offers a growing range of products that offer preservation and enhancement, the fitness industry will be increasingly challenged to offer a value add that quick fixes alone cannot deliver.
- **Fitness in virtual spaces**: The growth of collaborative gaming and gestural interfaces in gaming open a new array of opportunities for the fitness industry to develop products that can support fitness activity across virtual worlds, promoting both interpersonal connection and personal improvement of fitness and functionality.


Future insights fitness industry
Entertainment
Fitness in virtual spaces
The long tail
P2P piracy
Gaming revolutions
Beauty and fashion
Quick fixes
Instant gratification
Human enhancement
Communication-enhanced fashion
Business and technology
Individual sense amidst global appeal
Globalisation
From silicon chip to nanotechnology
Mass customisation
Corporate social performance
Functional food or slow food
Sustainable development
Lifecycle design
Fitness for smart growth
Urban development
Product and service design
Sustainability agendas
Social and demographic trends
Ageing well
Ageing population
Westernisation of consumption and lifestyles
Shifting consumer power bases
Social networking
Co-existing with diversity
Consumer mosaics
Fitness trends
From personal drive to collective effort
Personal and collective aspirations
Outcomes accountability
Fitness incentives
Challenges and opportunities of regulation
Challenge of obesity epidemic
Health
Fitness industry as partner in health
From pestilence and famine to long-term conditions
Rising health care costs
Fitness and health partnerships

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