

Cell Science Ltd Business Proposal

Investment proposal for the Cell Science medical directory & journal

Director: Rhodri James Walters PhD **Office:** +44 0121 2869430

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Summary of Proposal

I. Project location: Kettering, Northamptonshire, United Kingdom. *Company will relocate to academic centre post-investment.*

II. Total investment sum: £400,000 GBP

III. Investment sum required: An investment sum of £200,000 GBP is sought in return for a 40% equity stake in Cell Science Ltd.

IV. Overview of services

Cell Science has combined the utility of an A-Z medical directory with the development of a scientific Journal. By concentrating upon major health topics such as diabetes & obesity, HIV/AIDS, cancer, and cystic fibrosis, Cell Science seeks to court interest from a global market of over 500 million health care providers and concerned health care consumers. Such focus creates suitable niche markets for advertisers of health care products and services.



Cell Science is presently organised into two divisions, principally Cell Science Ltd and Cell Science Publishing Ltd. Cell Science Ltd is directed towards the provision of online medical information services and Internet advertising, while Cell Science Publishing Ltd currently produces a successful online reviews journal and will expand its range to include original research, specialist editions, academic books, and the proceedings of symposia.

There are few comparable health care portals on the Internet, and those that do feature health-related listings, such as Yahoo, Healing Well, or dmoz.org, tend towards diffuse listings of services. Such directories are not aimed at specific regional health care markets, and instead tend to be poorly organised and do not provide a geographical and alphabetical breakdown of listings by service. Through the innovation of the *Hyperlist*, Cell Science affords the consumer rapid access to graded listings by health topic, resource type (e.g. *information, health care, research*), and location.

Cell Science presently enjoys the status of being one of the highest ranked specialist medical directories on the Internet, and is presently entering its fifth year of operation. To this platform Cell Science has added an **events calendar**, a prestigious **reviews journal**, and a **health news** feed. The next phase of development will see Cell Science commence the publication of original scientific findings, expand its medical directory to include additional health topics (e.g. *Alzheimer's, osteoporosis, drug addiction*), create an **employment interface** for medical scientists and health care workers, develop an on-line **breaking health news** service, construct a user-defined **medical search engine**, and organise academic symposia and conferences under the auspices of the newly created '*Society for Cell Science*'. Thus it is intended that Cell Science should evolve to become a fully integrated multi-level portal.

V. Phased Expansion of Services

2007-8

- Introduction of journal micropayments
- Commencement of breaking health news service

2008-9

- Formation of *Society for Cell Science* with online social networking facility
- Introduction of employment service
- Expansion of medical directory to include new topics

2009-10

- *Society for Cell Science* conferences begin with exhibitions of cellular imaging & technology
- Expansion of publications to include symposia, electronic books & abstracts
- Launch of user-defined medical search engine
- Commencement of original research publications

VI. Market Position & Strategy

Market overview

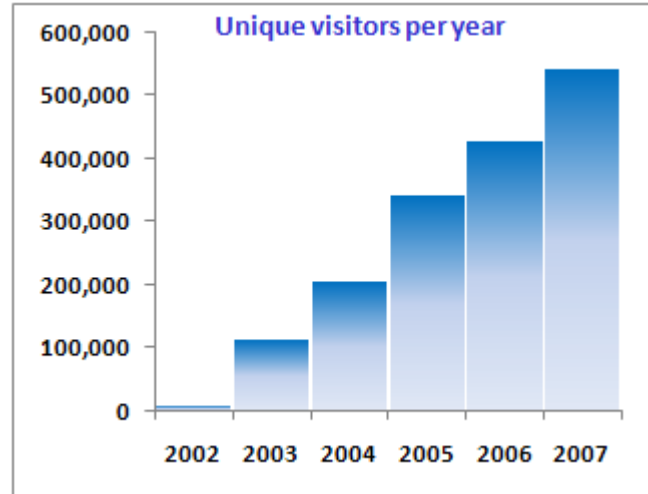
While many Internet-based media sectors have experienced a recent decline in revenues, online portals have continued to show strong growth, with Yahoo, Google and MSN all announcing an interest in developing [medical search engines](#) to increase their share of the lucrative online medical health care sector.

In 2006 news and information portal Yahoo reported annual revenues of \$6.4 billion, suggesting that the market for web portals remains in good health. Reed Elsevier, publisher of many of the less prestigious medical journals, reported that its 2006 profits were up 6% to £1,210m, with more than a quarter of all its revenues deriving from electronic publication. American medical publishing giant Wiley saw revenues from its STM (Scientific, Technical & Medical) publishing sector increase by 8% in 2006 to \$206 million, a year in which it purchased the Oxford-based medical publisher Blackwell. Market analysis strongly suggests that the online medical publishing sector is capturing an ever increasing share of the \$11 billion STM publishing market (2004, [Simba](#)).

It is difficult to estimate the combined advertising budget of the pharmaceutical companies (e.g. GSK \$32 million; Pfizer Consumer Healthcare \$20 million), health care charities (e.g. Cancer Research UK \$6 million), health care service providers (clinics & hospitals), and insurers (e.g. HSA \$7 million), although the combined international health care advertising market certainly exceeds \$100 billion. The pharmaceutical industry alone commits over \$90 billion a year to advertising, \$7.2 billion (8%) of which is spent online.

Directory and online services

Since its inception as a medical directory in 2002, Cell Science has experienced rapid growth in its traffic and search engine rankings in the absence of any formal advertising expenditure. Incumbent at the apex of the search engines ([please click here for rankings](#)), Cell Science currently serves over a half a million unique visitors a year (*please see chart inset*).



In addition to offering an A-Z medical **directory** of health care services, charities, research and basic medical information, Cell Science maintains an events **calendar** and a health **news** feed. These serve to attract advertising revenues and to increase the market share to establish a platform for the addition of more profitable services. As a specialist medical content provider Cell Science targets both health care professionals and consumers. It has been demonstrated by many successful portals, including Yahoo and MSN, that it is economically viable to provide free content as a means of attracting visitors towards additional, more lucrative services. Such traffic streams in turn encourage advertising.

Prospects for a user-defined medical search engine

There is considerable scope for the provision of additional services to augment and consolidate the position of Cell Science as a leading medical portal. For instance, the useful signal relative to background noise for most searches performed on Google or MSN remains poor, due largely to the eclectic nature of their databases and the widespread abuse of search engine parameters and links by many Internet sites. Such practices ensure that many, if not most, search results returned from current engines are either irrelevant or unwanted. There is however a powerful solution to this dilemma, one which employs the use of the innate human ability to selectively grade and filter information. Using the existing database of 10,000 links as a starting platform, additional entries will be invited by means of a submission form that categorises each site according to its orientation (e.g. *health care, research, information*), service type (i.e. *commercial, charity, community, academic, etc*), and location (*global, city, national etc*). Such 'tagged' links would then be queued for accession to the database once submitted to the Cell Science search engine (*subject to approval by the webmaster*). All approved submissions from commercial sites and profit-making health care services would entail a £20 administration fee, and such sites would be displayed as commercial links within the search returns.

User-driven searches of the database would be further refined using the pre-defined search tags for site location, orientation and service type. In addition, users will be given the opportunity to grade web sites according to their functionality, appearance and ease of navigation, ensuring that the highest ranked web sites appear at the top of the search engine results. It is intended that such a service will augur an end to combing through misleading or irrelevant search engine results.

The construction of a medical search engine incorporating a bibliographic database would encourage authors to submit links to their publications. Thus Cell Science would also serve as an open access gateway to the rapidly expanding medical literature of the Internet. Search engine returns would feature both regular listings of journal publications plus parallel, highlighted listings of relevant publications from the Cell Science Journal itself. Such a provision would ensure that publications from Cell Science

authors will be afforded maximum exposure within search engine returns, irrespective of registration with PubMed or any other bibliographic databases. The most commonly used search engine parameters will be analysed to identify key topics that have been overlooked by Cell Science.

Employment service

One of the primary objectives of a portal is to provide selectively focused information resources. A testament to their continuing importance is the observation that MSN and Yahoo continue to dominate the Internet traffic rankings ahead of fashionable social networking sites such as MySpace and Facebook. One key service which is ideally suited to a health care portal is an employment interface. While many existing online services such as Craig's List, Gumtree, and Monster offer extensive job listings, they tend to be somewhat diffuse in nature, include anonymous postings, and may charge £19.95 or more per job listing. Although there are specialist employment portals, including naturejobs.com and jobs.ac.uk, they are somewhat narrow in their geographical focus and are exclusively orientated towards academic positions. It is intended that the Cell Science employment forum will provide a global platform for the advertisement of positions for scientists, physicians, nurses and other health-related specialties. The Cell Science employment service will commence life as a user-friendly forum featuring an internal search engine. However, all job advertisements will ultimately require a £10 administration fee to monetise the service and to prevent spam postings.

Medical science publishing

Although only a relatively recent entrant into the \$11bn global STM publishing market, Cell Science seeks to encourage evolution in the way in which scientific journals are funded, principally by enfranchising authors and by reducing the cost burden upon readers and subscribing institutions. As part of the emerging wave of 'open access' Internet Journals which seek to make medical research more accessible and affordable, Cell Science marked its 2nd anniversary with the introduction of a low cost payment system. Cell Science is the first scientific Journal to promise the payment of royalties to scientific authors.

If information is power, then the ability to rapidly access the latest research findings is essential for all scientists, physicians and industrialists, especially if costly research is not to be duplicated. However, the prohibitive cost of subscribing to a full complement of scientific publications prevents all but the very wealthiest of institutions from being able to afford access to all current ideas and research. Given that there are currently an estimated 2,000 international publishers, who between them release more than a million articles a year in over 16,000 journals, and that an annual subscription to a single specialist publication such as Brain Research can cost over \$23,622 (2006), then it is perhaps unsurprising that most libraries are severely limited in their selection of journals.

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ClickBank \$8.95

In theory, through avoiding the costs of printing and postage, electronic versions of academic journals should be cheaper to publish and distribute. Ironically, electronic Journals are in effect more expensive than their companion print versions, simply because institutions are usually obligated to pay for both. Major publishers such as Reed Elsevier & Wiley have concentrated journal ownership and bundled electronic subscriptions into fixed journal portfolios, further driving up subscription costs as part of a 'captive' marketing strategy. For example, in order to access electronic versions of the 200 print journals to which it subscribes, one UK institution reported having to subscribe to a bundle of an additional 1,300 electronic titles at substantially greater cost. By maintaining an independent electronic identity Cell Science will minimise its costs and download charges, and any future print versions will be priced independently. Although the lucrative 'coffee table' market for leading scientific periodicals is an attractive target, serious consideration will have to be given to the economies of scale before launching any print versions.

On average, the price of subscriptions to individual journals increased by 215% between 1986 and 2001. It is therefore unsurprising that leading members of the scientific hierarchy are actively backing the present trend towards 'open access' journals such as the Public Library of Science (PLOS) and BioMedCentral. Open access journals seek to provide free and unrestricted access across the entire Internet. The term open access has thus come to represent the movement towards the freedom of scientific information. However, the fallacy of this Utopian movement is revealed when it is understood that contributing authors are obliged to pay up to £2,000 to provide content for peer-reviewed open access journals such as BioMedCentral and the PLOS. Clearly even Internet-based publications have to find substantial revenues to offset the costs of high bandwidth hosting, graphic designers, and web programmers, notwithstanding the value of the services provided by editors, reviewers and authors, all of whom might reasonably expect to receive payment for their intellectual work. It may come as a surprise to learn that at present academic authors are seldom paid for their scientific writing. By instituting the popular ideal of paying scientific authors and reviewers, a momentum may be achieved that will ultimately threaten the viability of the pay-to-publish open access model.

By charging institutions only a modest annual subscription (currently priced at \$100, although this will increase to over \$300 with the introduction of a monthly edition), Cell Science is more than competitively priced, and, with its provision of content from leading authorities, the absence of any publication charges to authors, and the promise of royalty payments, Cell Science is strongly positioned to become highly competitive within the STM publishing sector. A simple calculation reveals that 10,000 subscriptions at \$100 are necessary to achieve an annual turnover of \$1 million USD. By offering individual subscribers a YourMembership.com society networking interface complete with forums, blogs, messaging, events and journal subscription for \$50, Cell Science will create the most advanced and competitive online society.

However, despite the recent increase in the number of open access publications, established journal prices have not entered into free-fall, simply because each individual journal owns an effective copyright monopoly on the information it publishes. If an individual wishes to access a crucial new technical development or theoretical advance, there is effectively only one vendor holding the key to that specific knowledge. Restrictive practices thus continue to influence STM publishing at several levels. For instance, Medline (which is provided as a free service by the US Government's National Library of Medicine) currently holds an effective monopoly on database driven searches for academic publications. However, the recent introduction of bibliographic services such as Google Scholar, MSN's Academic Live Search, the Web of Science, Scirus, and the Index Copernicus suggests that a more open and competitive market for medical database searches (and indexing) will soon emerge. Despite the prevailing domination of the STM sector by the established publishing houses and academic societies, the reach of the Internet has nonetheless supported a rapid growth within the open access publishing sector. Already there are over 2,000 peer-reviewed open access titles, and many have

optimistically predicted that open access publishing will exceed subscription-based publishing in both the number of citations and downloads within ten years. This sea change has led many of the established publishers to experiment with open access publishing, including OUP, Blackwell (now Wiley), Springer, and Cell Press. The problem presented by open access publishing is exactly how to remove the burden of hefty library subscription payments without merely offloading the financial costs of publishing onto the shoulders of the scientific authors themselves. This is hardly a fair or an ideal alternative, and the 'pay-to-publish' model especially disadvantages those researchers from the developing nations of Africa, Eastern Europe, and Central & South America.

Thus, through the introduction of micropayments and royalties, Cell Science offers a balanced solution to the conflict of interest arising between investors and publishers on the one hand, and researchers and subscribing institutions on the other. The library is asked to pay only a modest subscription fee, and authors are in principle paid rather than charged for contributing profitable content to the journal. Further, those lay individuals who do not currently enjoy access to academic libraries are not excluded from access to medical information by prohibitive costs. Cell Science aims to demonstrate that medical publishing can be both affordable and profitable, and has already won many plaudits for its stance within the STM publishing sector.

Within its short four year history Cell Science has already gained a reputation for publishing reviews of the highest quality from many of the world's leading authorities, including Nobel Laureates. Some reviews have already been downloaded over 10,000 times, drawing attention to new ideas and visions, and in doing so raising the profile of Cell Science authors within the scientific community. In combination with the parallel development of a medical search engine that will include literature-based searches, Cell Science will empower authors of all online publications within the competitive open access era, especially given the introduction of its own breaking news service.

Through the introduction of peer-reviewed research bulletins, progress reports, meeting abstracts and the proceedings of symposia, Cell Science aims to institute a comprehensive publishing project. This strategy will help draw attention to the work of Cell Science authors within an age of competitive grant funding, and will effectively allow them 'patent' their ideas under the auspices of a recognised scientific publisher, affording their research and ideas at least some intellectual security. Such a comprehensive publishing project would especially empower scientists from developing nations and emerging fields who have yet to gain broad acceptance within the scientific community.

Conferences & symposia

Some of the best kept secrets are the lucrative practices of the academic society. Such societies traditionally derive their revenues from three major sources. The first of these is the society membership (a subscription usually costs between \$100 and \$300 *per annum*). Society memberships typically offer such fringe benefits as 'discounted' journal subscription rates, reduced registration fees, listings within the members' directory, and password access to the society web site. Few scientific societies however offer complementary journal access to their members. In contrast, Cell Science will confer full journal access and use of an advanced social networking interface upon members of the '*Society for Cell Science*'. Such a stacking of



services is anticipated to drive up subscription rates. Members of the ‘*Society for Cell Science*’ will also be sent pdf copies of a quarterly newsletter promoting events, conferences, and breaking news headlines, the cost of which will be offset through sponsored advertisements.

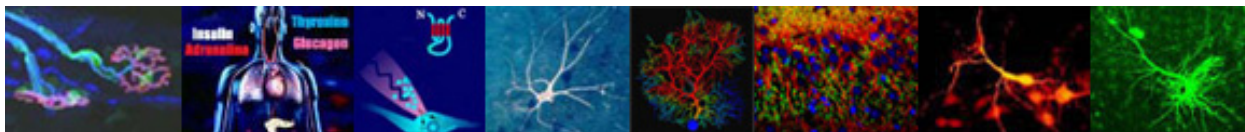
Second, most scientific societies publish their own scholarly journals which, by virtue of the elitist nature of the societies themselves, are considered prestigious. These generate substantial revenues as they are usually expensive, and also because there is peer pressure from the institution itself for members to subscribe to and to publish within the official society journal. Cell Science naturally already has its own publication, which will soon open its doors to publish original scientific findings in addition to the present range of scientific reviews from leading authorities. Such an active and thriving journal provides a strong platform for the formal creation of a ‘*Society for Cell Science*’.



The third, and by far the most lucrative product of scientific societies, is the academic conference. Most are annual, although some are seasonal, but all serve to provide scientific fellowship, networking opportunities, access to as yet unpublished findings, and a traditional paid ‘working’ vacation to reward society researchers for their hard work. The annual conference of the model Society for Neuroscience (SfN) attracts over 30,000 scientists (excluding exhibitors) to a rotation of conference centres including Miami, Los Angeles, Washington DC, San Diego, Orlando, and New Orleans. Given that registration fees of \$265 for members and \$450 for non-members are presently charged (*excluding*

consideration of submission fees for abstracts, or of revenues from exhibitors and advertisers), the turnover from the 2006 annual SfN meeting exceeded \$9.7 million USD. This represents 42.9% of the SfN’s combined annual revenues of \$22,737,465 ([click here for report](#)). Even the Biophysical Society, renowned for its understated image and for holding its conferences in February within less enticing locations such as Salt Lake City or Baltimore, declares an annual operating profit in excess of \$400,000.

It is intended that the ‘*Society for Cell Science*’ will hold an annual four day conference within the window afforded by the global spring vacation. Such timing would allow institutions to secure gainful activity from their employees during what is already a traditional rest period. As a ‘broad church’, Cell Science would attract delegates from a spectrum of scientific disciplines under the unifying theme of the cellular sciences, replacing traditional poster board corridors with ‘high-tech’ booths for PowerPoint presentations, as well as featuring traditional conference platform talks by senior scientists and invited seminars from Nobel Laureates and other scientific ‘celebrities’. Cell Science will seek to target emerging opportunities for interdisciplinary sciences which are essentially ‘orphan’ fields in need of sponsorship. In this manner, Cell Science would employ meeting sponsorship as a seed by which to encourage the development of journal activities within emerging fields of the biomedical sciences, thereby enfranchising fresh scientific leadership and garnering new publishing loyalties.



To attract interest from the lay public, *Society for Cell Science* conferences will feature an exhibition gallery of cellular imaging (*inset graphic*) which is anticipated to be sponsored by leading imaging companies such as Nikon and Zeiss. In addition, it is intended that there will be a parallel *technology*

exhibition that will feature demonstrations of the latest scientific techniques that will be run by scientists with the support and sponsorship of the manufacturers.

VII. Anticipated Revenue Sources

Micropayments

The growing trend towards micropayments will allow small sums to be quickly and conveniently debited from a virtual account without the betrayal of personal information or fear of credit card fraud. Google have recently moved towards the introduction of a micropayment system which is expected to further popularise this medium. By becoming the first Journal to pay royalties from income raised through micropayments and subscriptions, Cell Science is poised to further increase its traffic. If each edition is downloaded by a modest 10,000 individuals per annum at \$8.95 per issue, this potentially equates to revenues of \$89,500 per annum from micropayments alone. Although Click Bank are presently the payment provider of choice, other micropayment providers offering a lower unit tariff and a more seamless payment mechanism will be considered as and when they appear.

Subscriptions

Cell Science subscriptions presently represent exceptional value at \$100 per annum. However, this rate will likely increase as Cell Science develops into a monthly journal and is indexed by additional bibliographic databases. Sales of subscriptions to individuals will also be driven by complementary membership to the '*Society for Cell Science*' and its online social network, initially offered at \$50 per annum. This adds value to both the subscription and to Cell Science's platform of information services.

Conferences

Society for Cell Science conferences are expected to draw attendances of 1,000 in 2009 at £200 a head, rising to 10,000 delegates by 2012. Scientific conferences are anticipated to be the primary source of revenues for Cell Science Ltd. Additional revenues will be drawn from exhibitors paying \$1,000 per day to exhibit within the conference halls of larger hotels, although those exhibitors who sponsor or participate in the *cellular art exhibition* will not be charged. Many of those who participate in the *technology exhibition* will be paying exhibitors. Further revenues will be derived from suppliers of refreshments, and from administration fees traditionally charged for the submission of abstracts to the meeting program (\$30). Selected hotels, restaurants and entertainment venues will be added to the conference program in return for advertising revenues estimated at \$200-\$500 per ad. Welcome buffets and banquets will be billed separately at cost price, as provided by the hotel. As hotels generally do not charge for the use of their conference facilities if a minimum room allocation is booked in advance, this allows revenues to be generated both from the resale of hotel rooms as well as from conference registration fees, further increasing margins.

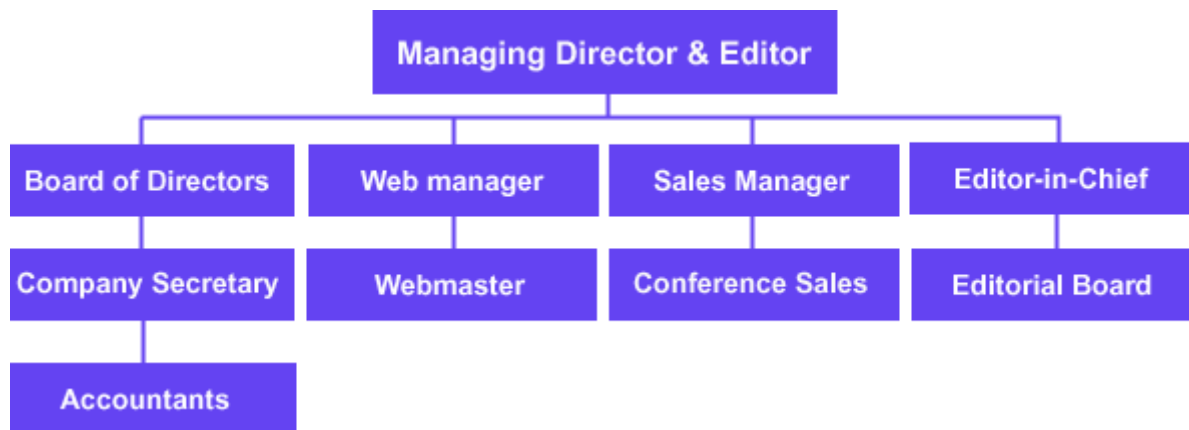
Online advertising

By virtue of its position at the top of the search engines, Cell Science is anticipated to attract increased advertising revenues over the next five years as its content provision expands to include breaking news, a job forum, expanded directory topics, and a specialist medical search engine. Although annual revenues from Google are currently a modest \$1,000, Cell Science is already passively attracting revenues of \$700 per banner advertisement from companies such as Lippincott. These advertising revenues will be supplemented by search engine submissions (at £20 per commercial submission) and postings of job advertisements (at £10 per listing).

VIII. Five Year Financial Forecast Summary

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Sales	179,996	786,000	1,452,000	3,244,000	3,990,000
Less Cost of Sales	220,922	387,476	454,358	537,172	507,972
Gross Profit	- 40,926	398,524	997,642	2,706,828	3,482,028
Less Tax	-	119,557	299,293	812,048	1,044,608
Net Profit After Tax	40,926	278,967	698,349	1,894,780	2,437,420
				Total (£)	£ 5,268,589

IX. Management Structure



The Managing Director & Editor will oversee the Board of Directors (6 members), a web programming team (2), a sales team (2), and the editorial board (16). (For details on specific roles please refer to section XI, Roles & Responsibilities).

X. Marketing Strategy

To date, in the absence of any formal sales or marketing staff, Cell Science has passively relied upon its reputation, some 10,000 links, and a high search engine ranking for its growing market share of some 50,000 unique visitors a month. Upon successful funding, two specialist sales & marketing staff will be employed, one to drive sales of journal subscriptions & advertising, and the other specifically to promote conference attendance.

Given that Cell Science occupies a highly specialised niche market, direct advertising strategies will target academic and research institutions, conferences, and scientific ‘coffee table’ magazines including the Nature Journals, the Scientific American and Elsevier’s ‘Trends in’ series.

Direct marketing will also focus upon the distribution of promotional lab coats and T-shirts, fridge magnets and pens at scientific conferences and conventions. Conveniently, published directories of subscribers to related academic societies are available for direct promotional campaigns relating to online services, subscriptions, and conferences.

XI. Billing Strategies

Some 63% of publishers now charge for providing online content, with paid content presently amounting to 19% of all revenues according to the Association of Online Publishers (AOP, 2006). There has however been an apparent decline in micropayment revenues within the mainstream media, with most publishers presently preferring subscription-based models. This marks a watershed in the evolution of the Internet, and augurs an end to the broad public perception of the web as being a substantially 'free' information service provider. Currently the largest source of Internet income for AOP publishers is display advertising, contributing 47% of all Internet-derived income, part of a global online advertising market that is worth some \$24.9 billion.

The viability of Internet and mobile services simply boils down to finding ways of making content pay. Presently Cell Science has a partnership with Click Bank, a specialist online payment service provider for online publishers and other Internet content providers. Click Bank charges a modest tariff of \$1 + 7.5% of the total purchase price, and affords payment flexibility through recurring billing and the acceptance of credit and debit cards, PayPal, and electronic cheques. There are however other more convenient methods of paying for online content. For instance, SMS-mobile billing is becoming an increasingly popular alternative to credit card billing, with mobile phone companies increasingly serving as billing agencies in providing access to paid content. SMS-mobile billing offers certain advantages in that it is fast, secure, anonymous, and relatively confidential. Conversely, it is often unsuitable for smaller tariffs, offers a smaller margin due to substantial commissions, is network dependent, and is geographically variable in its provision. Other billing solutions may also be considered, including the creation of a micropayment system for sums below £2, and direct mail billing services offered by providers such as 123Bill.

The prevailing dilemma surrounding the introduction of micropayments is that the cost-effective minimum for a viable transaction through a third party payment provider such as UK-based Ymogen, or US-based Click Bank is presently around £1.50. This reflects the costs inherent in recording payments, in providing a secure payment interface, and in mediating transactions. Naturally, few consumers who are used to paying 60 pence for a handy and portable print version of a newspaper are prepared to pay £2 to £3 for an electronic edition or a single article. There is however a potentially viable solution that is based upon the library photocopy card system which is over 25 years old. By introducing a virtual, rechargeable micropayment card (MPC) that stores micropayment units (MPUs), for instance with a suggested exchange rate of 10 cents per micropayment, customers may use a simple user name and PIN-driven interface to mediate transactions for as little as 1 MPU (10 cents). This would render the downloading of all web content instantly convenient, cost-effective, secure and affordable. All the consumer would need to do is to recharge his or her card periodically with a secure maximum of 500 MPU's

(\$50). Such micropayment cards would have limited value and would be made secure by means of a PIN and a simple log-in identity. Naturally, such a simple financial system would require a large company or a bank to institute it. To promote the widespread acceptance of such a unique and simple system, the service could be offered at a 20% commission to other web content providers, allowing them to monetise content which could not previously have been viably priced.

XII. Roles & Responsibilities

Presently the Company Icqurimage is actively maintained by a single specialist director, Rhodri J. Walters PhD. After investment, the Board of Directors will be expanded to include a (non-executive) company IP lawyer, a financial director, a scientific director, and two representative directors as appointed by the Investor(s). The existing Managing Director will serve as the sole Executive Director in the first instance. Whilst the incumbent Managing Director has an extensive source of contacts from which to appoint specialist directors, such appointments will not occur until after a letter of commitment has been received. Upon successful funding, Dr. Rhodri James Walters will be appointed as Managing Director of the boards of Cell Science Ltd. and Cell Science Publishing Ltd.

Directorial roles and responsibilities

Managing Editor & Director

Implementation of plans for the expansion of Cell Science Ltd. and Cell Science Publishing Ltd. Oversight of board of directors, Editor-in-Chief, Web Manager and Sales Manager. Responsible for the sustained growth and profitability of Cell Science Ltd. and Cell Science Publishing Ltd.

Scientific Director

Individual with 12-15 years of experience within scientific research and management. Responsible for oversight of publishing quality and Editorial board.

Financial Director

ICA approved and qualified accountant with at least 10 years experience. Will oversee accounts, ensure financial regulations are adhered to, and will oversee production of accounts and preparation of quarterly financial reports.

Company Lawyer

Likely to be appointed from Taylor-Wessing, London. Responsible for ensuring that IP laws are adhered to, oversight of preparation of conference and advertising contracts, image and content IP protection.

Editorial Board

The current editorial board has been drawn from leading academic authorities within the key fields of AIDS, neuroscience, diabetes, cancer and endocrinology. Between them the editorial board have published almost a thousand academic papers, more than fifty of which have been published within the elite journals Cell, Science, Neuron and Nature. Although the editors currently do not receive any direct payment or salary, their obligatory interest is maintained by means of a 44.9% equity stake in Cell Science Publishing Ltd. Their global distribution (*see inset map*) reinforces the international flavour of the journal and its 'broad church' of inclusivity. The Editorial Board is divided along classical lines into an Editor-in-Chief, Section Editors for each respective field of expertise, Commissioning Editors, and Distributing Editors who handle the distribution, reception and editing of submissions.



Web Programming

The **programming** team comprises two individuals:

Web manager with broad experience (6-10 years) in '**back-end**' server programming (£30k) who is responsible for:

- Systems maintenance and host server migrations
- Database creation and maintenance (SQL)
- Web programming (ASP, ASP.net, Java)
- Forms (PHP, ASP)
- Web architecture
- Integration of payment systems
- IP based membership log-in
- Forum development and maintenance
- Search engine design and development

A specialist 'front-end' programmer, or **webmaster**, with at least 5 years of experience (£23k) responsible for:

- Web design, SEO
- Web browser programming (JavaScript, HTML, XML, Flash, and CSS)
- Graphics, Image preparation
- Policing forum usage
- Publication and maintenance of online content
- Encoding promotional Emails

Sales & Marketing

The **sales & marketing** team of two individuals will be divided into three accounts, namely online advertising, subscription sales, and conference sales. The respective areas of focus will be:

Marketing manager (£19k + 10% sales commission)

Online advertising
Journal subscription sales

Conferences sales manager (£19k + 10% sales commission)

Conference Sales

Principal profile: Rhodri James Walters PhD, **Director**

Fifteen years of biomedical research and management at various universities led to a diversification into Internet programming and business, focusing upon the creation and marketing of biomedical Internet services. Primary areas of theoretical and experimental expertise are neuroscience, diabetes, cancer, and cystic fibrosis. Recent activities include biomedical consultancy and Internet commerce. Currently Managing Director and Commissioning Editor for Cell Science Ltd and Cell Science Publishing Ltd.

Qualifications:

PhD. Biophysics, University of Cambridge.
BSc. Jt. Hons., Physiology & Biochemistry, University of Wales at Cardiff

Key Skills and Experience:

Publishing

- **Commissioning Editor:** Cell Science Journal, Icqurimage magazine.
- **Author:** Over thirty original scientific papers and reviews, The HiPaCC diet

Academic

- **Research:** Molecular biology, electrophysiology, and cell biology of GABA receptors, Ca²⁺ channels, hormone secretion, epithelial transport, synaptic transmission and psychopharmacology, elected member of the New York Academy of Sciences 1998.

- **Teaching:** Lecturer in Molecular Pharmacology, post-graduate course advisor.
- **Reviewer:** Hormone & Metabolic Research, Cell Science, American Journal of Physiology, British Journal of Pharmacology.

Management (Technical & Marketing)

- **Research group leader:** supervision of six research students to International publication level. Wrote reports, grants, proposals & papers, supervised six students, ran logistics, and edited and reviewed papers & grants.
- **Vice-President:** then President, St. Edmund's College (events, dinners, meetings).
- **Conference organiser:** Mind Aid, New York City, 2000.
- **E-commerce:** Cellscience.com, HiPaCC.org.
- **Web design:** CSS, HTML, JS, ASP. Award winning web designer.
- **Internet Marketing:** Search Engine Optimisation, Direct Marketing. Established Cell Science directory & journal at apex of search engines within 1 year. Took HiPaCC diet to market within two months.

Professional Societies:

Biophysical Society (1995-)

Society for Neuroscience (1996-)

Elected Member of the [New York Academy of Sciences](#) (April 1998 -)

Employment History:

HiPaCC Ltd, UK	Director	2005-present
Cell Science Ltd, UK	Managing Director	2002-present
Harten Group, Cambridge, UK	Consultant	2002-present
Dept. Endocrinology, University of Düsseldorf, Germany.	Group Leader	2001-2002
Dept. Pharmacology, Mount Sinai School of Medicine, USA.	Research Fellow	2000-2001
Dept. of Pharmacology, University of South Florida, USA.	Research Fellow	1999-2000
Dept. of Pharmacology, UCL, Brussels.	Research Associate	1997-1998
University of Durham, Laboratory of Pharmacology, UK.	Electrophysiologist	1997
Dept. of Visual Sciences, AECOM, USA.	Research Associate	1994-1996
Development and Signalling, Babraham, Cambridge, UK.	Research Assistant	1993-1994

Selected Publications:

- Walters, R.J.**, Sepulveda, F.V. A basolateral K⁺ conductance modulated by carbachol dominates the membrane potential of small intestinal crypts. *Pflugers Arch.* 1991 Nov; **419**(5):537-9.
- O'Brien, J.A., **Walters, R.J.**, Sepulveda, F.V. Regulatory volume decrease in small intestinal crypts is inhibited by K⁺ and Cl⁻ channel blockers. *Biochim Biophys Acta.* 1991 Dec 9; **1070**(2):501-4.
- Walters, R.J.**, O'Brien, J.A., Valverde, M.A., Sepulveda, F.V. Membrane conductance and cell volume changes evoked by vasoactive intestinal polypeptide and carbachol in small intestinal crypts. *Pflugers Arch.* 1992 Sep; **421**(6):598-605.
- Walters, R.J.**, Hawkins, P., Cooke, F.T., Eguinoa, A., Stephens, L.R. Insulin and ATP stimulate actin polymerization in U937 cells by a wortmannin-sensitive mechanism. *FEBS Lett.* 1996 Aug.19; **392**(1):66-70.
- Walters, R.J.**, Kramer, R.H., Nawy, S. Regulation of cGMP-dependent current in On bipolar cells by calcium/calmodulin-dependent kinase. *Visual Neurosci.* 1998 Mar-Apr; **15**(2):257-61.
- Walters, R.J.**, Hadley, S.H., Morris, K.D., Amin, J. Benzodiazepines act on GABAA receptors via two distinct and separable mechanisms. *Nature Neurosci.* 2000 December **3** (12):1274-81.
- Walters, R.J.**, Rosenbaum, C., Willenberg H.S., Scherbaum, W.A., Bornstein S.R. Insulin, Nerve Growth Factor and PACAP modulate the expression of GABAA subunits in PC12 Cells. *Neuroscience* (www.neuroscience.com) 2002-1
- Walters, R.J.** A fourth strategy to contain the threat of HIV and AIDS? *New York Times Science Article February 1996.*
- Walters, R.J.** Seeing a change against the light: how neural circuits are adapted in the retina. *New York Times Science Article, June 1996.*
- Walters, R.J.** Excitation and Adrenaline: GABA - the bipolar neurotransmitter. *Cell Science Reviews, Vol.1 No.1 pp4-11 2004*
- Walters, R.J.** Cystic Fibrosis: search for the NorthWest Passage. *Cell Science Reviews Vol.1 No.2 pp13-23 2004*
- Barber, M., Collier, J., **Walters, R.J.** The HiPaCC Diet. HiPaCC Press 2006.

Principal profile: C. David Pauza, PhD, **Director**

Professor, Institute of Human Virology, UMBI; Adjunct Professor, Department of Microbiology and Immunology, University of Maryland, Baltimore; Adjunct Professor, Italian National Institute for Infectious Disease, Lorenzo Spallanzani, Rome, Italy

Education:

PhD - Virus Laboratory at the University of California, Berkeley, 1981.

Postdoctoral Fellow - Laboratory of Molecular Biology at the Medical Research Council, Cambridge, England, 1981-1985

Selected Publications:

Tikhonov, I., Ruckwardt, T. J., Hatfield, G. S., and **Pauza, C. D.** (2003). Tat-neutralizing antibodies in vaccinated macaques. *J Virol* 77: 3157-66.

Enders, P. J., Yin, C., Martini, F., Evans, P. S., Propp, N., Poccia, F., and **Pauza, C. D.** (2003). HIV-Mediated gamma delta T Cell Depletion Is Specific for Vgamma2(+) Cells Expressing the Jgamma1.2 Segment. *AIDS Res Hum Retroviruses* 19: 21-9.

Waterman, P. M., Kitabwalla, M. M., Tikhonov, I., and **Pauza, C. D.** (2003). Simian/Human Immunodeficiency Virus 89.6 Expressing the Chemokine Genes MIP-1a, RANTES, or Lymphotactin. *Viral Immunology* 16: 35-44.

Waterman, P., Kitabwalla, M., Hatfield, G., Bryant, J., Lu, Y., Evans, P., Tikhonov, I., and **Pauza, C.D.** (2003). Recombinant SHIV expressing Type 1 chemokines increase survival after pathogenic virus challenge in macaques. In Press.

Horejsh, D., Ruckwardt, T., and **Pauza, C. D.** (2002). CXCR4-dependent HIV-1 infection of differentiated epithelial cells. *Virus Research* 90, 275-86.

Poccia, F., Gougeon, M. L., Agrati, C., Montesano, C., Martini, F., **Pauza, C. D.**, Fisch, P., Wallace, M., and Malkovsky, M. (2002). Innate T-cell immunity in HIV infection: the role of Vgamma9Vdelta2 T lymphocytes. *Curr Mol Med* 2(8), 769-81.

Evans, P. S., Enders, P. J., Yin, C., Ruckwardt, T., Malkovsky, M., and **Pauza, C. D.** (2001). In vitro stimulation with a non-peptidic alkylphosphate antigen expands cells expressing the Vg2-Jg1.2/Vd2 T cell receptors. *Immunology* 104, 19-27.

Kuloglu, E. S., McCaslin, D. R., Kitabwalla, M., **Pauza, C. D.**, Markley, J. L., and Volkman, B. F. (2001). Monomeric solution structure of the prototypical 'C' chemokine Lymphotactin. *Biochemistry* 40, 12486-96.

Pauza, C. D., Trivedi, P., Wallace, M., Ruckwardt, T. J., LeBuanec, H., Lu, W., Bizzini, B., Burny, A., Zagury, A., and Gallo, R. C. (2000). Vaccination with Tat toxoid attenuates disease in simian/human immunodeficiency virus-challenged macaques. *Proc. Natl. Acad. Sci. (USA)* 97, 3515-19.

Principal profile: Giles A. Palmer, **Company Secretary**

Clinical embryologist and Director of the Assisted Reproduction Unit at Mitera Hospital, Athens.

Education:

BSc Genetics, Leeds University, UK (1989)

Employment History:

Research officer at London's Hammersmith Hospital's IVF unit under Professor Sir Robert Winston (1989-1992).

IVF Consultant at Iceland's first IVF Unit, University Hospital, Reykjavik (1992)

Mitera Hospital, Athens (1992).

Manager, Embryogenesis (1993-2003)

Director of the Assisted Reproduction Unit at Mitera hospital in Athens (2003 - present)

Member of ESHRE (European Society of Human Reproduction and Embryology) and is a participating member on the PGD working group, ALPHA (Reproductive biology Scientists) and PEKE (Greek Society of Clinical Embryologists). Collaborator with St. Sophia's Children's Hospital, Athens University.

Selected Publications:

Vrettou C., **Palmer G.**, Kanavakis E., et al. (1999) A widely applicable strategy for single cell genotyping of Beta-thalassaemia using DGGE analysis: application to pre-implantation genetic diagnosis. *Prenat. Diagn.* 19, 1209-1216.

Palmer G., Davies S., Kanavakis E., et al. (2002) Pregnancies following pre-implantation genetic diagnosis after blastocyst stage transfer. *Hum. Repro.* 17(1), 25-31.

J. Traeger-Synodinos, C. Vrettou, **G. Palmer** et al. An evaluation of PGD in clinical genetic services through 3 years application for prevention of {beta}-thalassaemia major and sickle cell thalassaemia. *Mol. Hum. Reprod.*, May 1, 2003; 9(5): 301 - 307.

XIII. Financial Forecasts

Five year profit/loss summary

Sales	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
Subscriptions	50000	100000	200000	350000	400000
Downloads	5000	20000	25000	20000	10000
Advertising	9996	20000	40000	45000	50000
Conferences	50000	300000	800000	2400000	3000000
Hotel room sales	50000	238000	272000	279000	400000
Food & beverages	15000	63000	60000	70000	80000
Exhibitors	0	45000	55000	80000	50000
Total Sales (£)	179,996	786,000	1,452,000	3,244,000	3,990,000
Costs					
Office overheads	10595	14004	15000	16000	18000
ISP	918.96	996	992	992	912
Software/Hardware	5000	500	6000	2000	7000
Office Equipment	3700	0	3000	0	0
Hosting (Verio)	399.96	400	400	400	400
Marketing Manager	18996	21000	21000	22000	22000
Conference Sales	18996	21000	21000	22000	22000
Web Manager	30192	30996	32000	33000	34500
Webmaster	22992	24000	24000	26000	26000
Advertising	9000	23000	25000	6500	25000
Travel costs	9000	7900	12000	12000	12000
Postage/stationery	1584	1200	1600	1600	1100
Telephone (Skype)	1440	1640	1680	1680	1560
Managing Editor	20004	30000	30000	30000	30000
Royalties to authors	11000	24000	45000	74000	20500
Food & beverages	22000	38405	38325	60000	50000
Hotel rooms*	35105	148435	177360	229000	237000
Total Annual Costs (£)	220,922	387,476	454,358	537,172	507,972
Gross profit (£)	-40,926	398,524	997,642	2,706,828	3,482,028

* Includes conference facility staffing, deposit, and full hire of rooms and halls.

XIV. List of current shareholders

Cell Science Ltd.

Total Company Equity:

100,000 shares approved at £1 per share

Aggregate nominal value of issued shares: £1,000

Current shareholders:

Rhodri J. Walters PhD: 885 (88.5%)

Giles A. Palmer: 50 (5%)

Helena M. Walters: 10 shares (1%)

Cell Science Publishing Ltd.

Total Company Equity:

1,000 shares incorporated at £1 per share

Current shareholders:

Rhodri J. Walters PhD: 501 (50.1%)

Giles A. Palmer: 50 (5%)

Editorial Board: 449 (44.9%)

XV. Contact Information

Principal: Rhodri James Walters PhD

Address: Cartref, Grafton Underwood, Kettering, Northants., NN14 3AA, UK

Mobile: +44 07980 748526 **Office:** +44 0121 286 9430

Skype Name: r.j.walters

Website: www.cellscience.com

Email: rjwalters@cellscience.com

XVI. Investment History

No previous equity investment has been sought or received for Cell Science Ltd. or Cell Science Publishing Ltd.

XVII. Internal Investment

To date some £10,000 has been directly invested by Dr. Rhodri J. Walters PhD in addition to over 4,500 hours of labour & overheads, equivalent to a total investment in excess of £200,000.

XVIII. Glossary

AOP	Association of Online Publishers
ASP (Active Server Pages)	A Microsoft technology allowing the insertion of server executable scripts in web pages.
'Back-end' programming	Jargon referring to software and programming languages which operate at the level of the web server. These include ASP, SQL and Java programming languages.
Banner Ad	A (most often graphic) advertisement placed on a web page, which acts as a hyperlink to an advertiser's web site.
Bandwidth	A measure for the speed (amount of data) you can send through an Internet connection. The more bandwidth, the faster the connection.
BBS (Bulletin Board System)	A web based public system for sharing discussions, files, and announcements.
BPS (Bits Per Second)	Term to describe the transmission speed for data over the web.
Citations	Peer-driven system of academic assessment which ranks the impact and popularity of a scholarly publication by means of the number of times it is referred to, or cited, within the scientific literature.
Client/Server	In web terms: The communication and separation of workload between a web client and a web server.
Click through Rate	The number of times visitors click on a hyperlink (or advertisement) on a page, as a percentage of the number of times the page has been displayed.
Communication Protocol	A standard (language and a set of rules) to allow computers to interact in a standard way. Examples are IP, FTP, and HTTP.
CSS (Cascading Style Sheets)	A W3C recommended language for defining style (such as font, size, colour, spacing, etc.) for web documents.
Database	Data stored in a computer in such a way that a computer program can easily retrieve and manipulate the data.
Database System	A computer program (like MS Access, Oracle, and MySQL) for manipulating data in a database.

DBA (Data Base Administrator)	The person (or the software) who administers a database. Typical task are: backup, maintenance and implementation.
DHTML (Dynamic HTML)	A term commonly to describe HTML content that can change dynamically.
DNS (Domain Name Service)	A computer program running on a web server, translating domain names into IP addresses.
DNS Server	A web server running DNS.
Download	To transfer a file from a remote computer to a local computer. In web terms: to transfer a file from a web server to a web client. (see also Upload).
E-mail Server	A web server dedicated to the task of serving e-mail.
Flash	A vector-based multimedia format developed by Macromedia for use on the web.
Forum	In web terms: The same as Newsgroup.
Frame	In web terms: A part of the browser screen displaying a particular content. Frames are often used to display content from different web pages.
'Front-end' programming	Jargon referring to software and programming languages which operate at the level of the user computer. These include Explorer, Firefox and Safari browsers, and Javascript, HTML/XML, and CSS programming languages.
HTML (Hypertext Markup Language)	HTML is the language of the web. HTML is a set of tags that are used to define the content, layout and the formatting of the web document. Web browsers use the HTML tags to define how to display the text.
Hyperlink	A pointer to another document. Most often a pointer to another web page. A hyperlink is a synonym for a hotlink or a link, and sometimes called a hypertext connection to another document or web page.
Hypermedia	An extension to hypertext to include graphics and audio.
Hypertext	Hypertext is text that is cross-linked to other documents in such a way that the reader can read related documents by clicking on a highlighted word or symbol. (see also hyperlink)
IIS (Internet Information Server)	A web server for Windows operating systems. Developed by Microsoft.
ISP (Internet Service Provider)	Someone that provides access to the Internet and web hosting.

Java	A programming language developed by SUN. Mostly for programming web servers and web applets.
JavaScript	The most popular scripting language on the internet, developed by Netscape.
Keyword	In web terms: A word used by a search engine to search for relevant web information. In database terms: A word (or index) used to identify a database record.
MP3 (MPEG-1 Audio Layer-3)	An audio compression format specially designed for easy download over the Internet.
Multi-media	In web terms: A presentation combining text with pictures, video, or sound.
OUP	Oxford University Press
PDA	Personal Digital Assistant (e.g. Blackberry, xda)
MySQL	Free open source database software often used on the web.
Shockwave	A format (technology) developed by Macromedia for embedding multimedia content in web pages.
SQL (Structured Query Language)	An ANSI standard computer language for accessing and manipulating databases.
SQL Server	A database system from Microsoft. Mostly used on high traffic web sites running on the Windows platform.
STM	Scientific, Technical & Medical
Streaming	A method of sending audio and video files over the Internet in such a way that the user can view the file while it is being transferred.
VBScript	A scripting language from Microsoft. VBScript is the default scripting language in ASP. Can also be used to program Internet Explorer.
Web Client	A software program used to access web pages. Sometimes the same as a Web Browser, but often used as a broader term.
Web Browser	A software program used to display web pages.
Web Host	A web server that "hosts" web services like providing web site space to companies or individuals.
Web Server	A server is a computer that delivers services or information to other computers. In web terms: A server that delivers web content to web browsers.
WML (Wireless Markup	A standard for information services on wireless terminals

Language)

like digital mobile phones, inherited from HTML, but based on XML, and much stricter than HTML.

XForms

A future version of HTML Forms, based on XML and XHTML. Differs from HTML forms by separating data definition and data display. Providing richer and more device independent user input.

XML (Extensible Markup Language)

A simplified version of SGML especially designed for web documents, developed by the W3C.