

Foresight Project Report

A discussion of the potential impact of
technology on the UK optical sector to 2030



Executive Summary

Commissioned by The Optical Confederation
& The College of Optometrists

Principally funded by The Central Optical Fund

Report by 2020health
March 2016

 2020health
MAKING HEALTH PERSONAL

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Authors' disclaimer

Throughout the Foresight Project Report we have necessarily cited technologies, manufacturers, providers and institutions to convey either general or specific activity within optics and speculate on future developments. These references are not intended as promotion or endorsement, or to suggest the greater value of such over unnamed competition.

This research was supported by the Optical Confederation and the College of Optometrists. The authors had final editorial control of the report, and views expressed within do not necessarily reflect those of the report commissioners. All facts have been crosschecked for accuracy in so far as possible.

Full Report

The full Foresight Project Report is available for download at:
www.opticalconfederation.org.uk and www.college-optometrists.org

Chairman's Foreword



Alan Tinger FCA, CCMi
Chairman, Foresight Project
March 2016

It has been said that the only way to predict the future is to have power to shape it. Likewise it is often said that knowledge is power. Putting the two together, does it mean that we can predict the future if we have the knowledge? That may well be so in theory but it is a pipedream in reality, in a fast moving world where the science fiction of one generation is the daily life of the next.

The purpose of the Foresight Project is to ensure that the optical sector is better equipped to understand as much as it can where technology, ocular medical developments and demographics are leading to in the years ahead. With that knowledge it should inform debate as to how the sector can help shape and adapt to the challenges and opportunities.

When I proposed the project to colleagues on the Optical Confederation Leaders Group back in 2012 they agreed that if funding could be obtained for a sizeable share of the budget, the members of the Optical Confederation and the College of Optometrists would together fund the balance.

I cannot praise highly enough the support of the Directors of the Central Optical Fund (www.centrafund.org.uk) who agreed to the Fund providing 60% of the budget, which allowed the project to go forward. It was a significant grant for the Fund and the time and trouble their Trustees took to understand the benefit of the project for the sector is typical of the terrific work they do to finance worthwhile projects for the sector that simply would not get off the ground without their support. I encourage all readers of the Foresight Project report to consider donating to the Fund.

The members of the Optical Confederation (OC):

Association of British Dispensing Opticians (ABDO)

Association of Contact Lens Manufacturers (ACLM)

Association of Optometrists (AOP)

Federation of Manufacturing Opticians (FMO)

Federation of (Ophthalmic & Dispensing) Opticians (FODO)

OC members along with the College of Optometrists (COptom) have worked together as never before in the best interests of the whole sector. Underlying the thinking is the desire to ensure that we are not going to be training students for roles that will no longer exist in the same way in the future or continuing with business models that have worked well in the past but cannot continue forever in a global economy driven by technological innovation and demographic change.

As well as the funding, key to the project was how we would undertake the research. Having listened by chance to Julia Manning speaking about eye health during a television debate I quickly found out that she had trained and practised as an optometrist in her early career prior to setting up the 2020Health think tank. When colleagues and I agreed to commission 2020Health to undertake the research we had no idea what an inspired choice it would be. I can only describe their work as outstanding both in terms of inputs and, more importantly, outputs and outcomes. 2020Health's principal researcher on the project, Jon Paxman, together with Julia Manning (CEO) and Alex Blacknell (Research Manager) have been a pleasure to work with.

Neither could the research have been undertaken without the agreement of so many people from within and outside the sector to contribute, be interviewed and to speak frankly on their subject. I thank you all for your contributions to making the Foresight Project possible.

To support the research the project had to be managed and directed to ensure that it was completed on time, within budget and correctly focused. As well as the time I spent with 2020Health, this was achieved through a Steering Group and also an Oversight Group that both met quarterly, comprising:

Alan Tinger (Chairman)*
Henrietta Alderman (CEO, AOP)*
Simon Rodwell (CEO, ACLM)*
Sir Anthony Garrett (CEO, ABDO)
David Hewlett (CEO, FODO)
Ian Humphreys (CEO, COptom)
Chris Hunt (Chairman, OC)
Bryony Pawinska (CEO, FMO)

*Members of the Steering Group.

I thank all colleagues for their participation in all our many debates on the project and for their wisdom, understanding and guidance. I also thank Don Grocott (former Chairman of the OC) and Kevin Gutsell (former CEO of FMO) who were both involved in the early stages of the project. Indeed it was Don who came up with the title, Foresight Project.

The Foresight Project report is only the start. It can only move from being a document of interest to be of serious benefit if it is widely read and debated by all parts of the sector including educators, regulators and beyond with a view to the future. What it will lead to is for readers and debaters to work on but I go back to where I started this Foreword – knowledge is power. Here are both.

About the Foresight Project Report



Julia Manning
Chief Executive, 2020health
March 2016

2020health is delighted to have been commissioned to undertake this research into the trends, influence and considerations of technology on practice, behaviours, education and regulation within the optical sector.

No profession will be untouched by new technologies; many have seen the workplace transformed already through the automation of process and procedures. The health professions need to consider the impact that technology is having on public access to information, diagnostics, understanding and behaviour. It presents an unprecedented opportunity to upskill and signpost the public, for people to actively participate in their health and wellbeing and enable professionals to deal with health needs that truly require their specialist skills. New technologies mean that with the guidance of eye health professionals, prevention, promotion and treatment can be embedded in the local community. But this needs to be prepared for, planned and managed in order to harness the potential and create long-term affordable and sustainable services.

We sincerely hope the Foresight Project Report will form the foundation of planning for the sector for the next 10–15 years so it can adapt and thrive. As a former optometrist, producing this research has given me immense personal satisfaction and pride in the public health role of the optical sector.

During the course of this work we benefited from interviews, discussions and envisioning sessions with many of those in the sector, in practice, in related research, in supporting roles and education. We are hugely grateful to them for their time.

We are indebted to the Optical Confederation and the College of Optometrists who enabled this research to be undertaken, and to all our sponsors. As well as driving our on-going work of 'Making Health Personal', sponsorship enables us to involve frontline professionals and the public in policy ideas and development, and to communicate with and involve officials and policymakers in the work that we do. Involvement in the work of 2020health is never conditional on being a sponsor.

Executive summary

Exponential growth of digital technology and fast-evolving demographics are altering the expectations and habits of consumers, businesses and NHS service providers. The pace of change is almost overwhelming, with automation of professional testing and measurement, DIY-health opportunities for the public, vast online resources and services, and the emancipation of research information. And yet, many of the practices and models of the optical professions have remained largely unchanged for decades. In the words of John F. Kennedy, "Change is the law of life. And those who look only to the past or present are certain to miss the future."

Future landscape

To inform the 15-year view for optics it is important to recognise what an ageing population means for society and services. In the UK, the proportion of persons aged 65 and over increased from 15% in 1985 to 17% in 2010 (ONS, 2012); by 2030 it is projected that those aged 65+ will account for 22% of the total population. In terms of individuals, 2010–30 projections suggest a 50% rise in people aged 65+ and 100% more aged 85+ (ONS 2010, 2015). The average cost of providing hospital and community health services for a person aged 85+ is around three times greater than for a person aged 65 to 74 years (Cracknell, 2010).

Population changes will have a profound impact on the demand for optical services and products. An ageing population brings with it multiple forms of eye disease and related health concerns, while rising obesity levels will lead to more diabetes-related eye problems. Increasing myopia levels in children also need to be addressed.

NHS expenditure on eye health services has nearly doubled within the last ten years (to £2.3bn) and hospital attendances for ophthalmology represent the second highest number of outpatient attendance for any specialty. Much of the costs of eye care are found in the treatment of disease.

Progress has been made with slowing progression of glaucoma, 'wet' age-related macular degeneration (AMD) and diabetic retinopathy. However within the timeframe under review it is unlikely that biomedical technologies will advance to the point where the prevalence of eye disease is reduced, particularly in the absence of a transformational treatment for the leading cause of sight-loss in the UK, dry AMD. Even with new abilities to treat disease, greater demand and costs can result. On balance, the 15-year view is one of spiraling NHS spend and significantly more demand on Hospital Eye Services (HES).

"...the 15-year view is one of spiraling NHS spend and significantly more demand on Hospital Eye Services."

The future of NHS commissioning is difficult to predict, with new delivery models currently being trialed by NHS 'vanguard' sites; but due to already stretched HES, and in the drive to deliver more care in the community, the NHS is likely to be commissioning more community eye care services from optometrists in the 2020s. Much of this requires the optometrist to work at the very top of their skillset and undergo regular re-accreditation

(or 'revalidation'). Some services will call on the upskilled optometrist, while other services might see wider collaboration as optometrists and dispensing opticians (DOs) become active participants in multidisciplinary teams. Upskilling and new shared care opportunities may enable optometrists to become better recognised as ocular health experts in the community. At the same time, salaried NHS opportunities will increase for the optometrist both in the acute setting and community-based services, working alongside ophthalmologists and delivering cost-effective wrap-around care.

Evolving professional roles and the impact of population ageing will combine with technological disruption, itself subject to emerging behavioural trends alongside social and commercial expediency.

Business

Technological advances in communication provide huge opportunities for business to reach out to and educate patients and customers. Patients will be encouraged to become more active in their care – 'participations' – through educational resources, content marketing, real time online booking and patient portals. The increased level of information available to patients about their own health (e.g. Electronic Health Records) and about eye health generally (from the Internet and commercial marketing) will see the 'uberisation'¹ of eye health and new expectations of service provision. The routine use in eye exams of certain diagnostic tests and equipment currently seen as specialist (e.g. optical coherence tomography, OCT) will be expected and demanded by increasingly empowered and knowledgeable patients.

A collaborative professional-patient relationship will also be encouraged by technologies such as app-based disease monitoring, smartphone solutions for low vision, and 'smart' clinical contact-lenses (e.g. glaucoma pressure (IOP) monitoring and glucose

monitoring). Some of these technologies shift the responsibility of care further into the domain of the patient, though with the essential support of the professional, who interprets data, educates, signposts and reassures.

The retail side of optics, the provider's most essential source of income, will continue to feel the effects of the ever growing online marketplace, with direct to consumer contact lenses, frames and glazing, virtual try-on (with real-time social media connectivity), bespoke 3D printing, eye-health screening and both online and app-based refraction. 'Generation rent' and cash-strapped first-time buyers, in particular, will be attracted by cheap and immediate solutions provided in the digital marketplace. This in turn will provoke new marketing and business strategies from high street providers, with a stronger focus on eye health, loyalty schemes and their own, augmented online services. Opportunities will exist for practices to develop new trade in the recreation, fashion, workplace and gaming markets, particularly with the development of smart and augmented reality glasses.

Developments in treatment and correction will provide both new and niche opportunities for community practitioners, extending from smart accommodating contact lenses for presbyopes to early intervention technologies on a range of conditions, perhaps including daily-wear contact lenses to stem myopia progression and gaming technology for amblyopia correction. The negative effect of technology on eye health (e.g. excessive screen-time, reduced time spent outside) may lead to further demands placed upon the eye care professional. Improved diagnostic technology will likely enable rapid objective tests to detect early stage eye disease, including glaucoma and AMD. The optometrist of the future may also undertake 'pre-diabetes' testing, and even provide NHS support with OCT in the early detection of neurological conditions.

¹ The use of technology to circumvent bureaucracy and legislation, leading to 'disruption' in the interests of productivity and efficiency.

Against a backdrop of further acquisitions and mergers, the independent practice will need to consider niche offerings to survive against the purchasing power of the multiples. They will attempt to capture a powerful share of the 'grey pound', the (50+) generations with the greatest disposable income and leisure time. Some struggling independents will join the independent joint venture model. The specialised multiples, like many independents, will increase their emphasis on eye health to help distinguish their offering from online providers and supermarkets, whose growth in areas of both eyewear and eye care is expected to be aggressive. For domiciliary practices, demographic changes together with advances in portable equipment will provide opportunities to expand services, and also collaborate with others to develop alternative delivery models.

"The very methods of manufacturing are set to be revolutionised by 3D printing, in turn bringing about the normalisation of made-to-measure frames, the consumer as co-creator, and the increase of direct-to-consumer marketing."

Technological advances will also alter business conditions for manufacturers, who will see a yet more competitive industry, with venture capitalists and crowd funding initiatives launching start-up and university-researched technologies. We are seeing the birth of an era in low-cost testing and diagnostic technologies (many smartphone based) aimed at non-traditional providers, even patients themselves, as well as novel assistive technologies for a growing low-vision market. And in eyewear itself, the very methods of manufacturing are set to be revolutionised by 3D printing (additive manufacturing), in turn bringing about the normalisation of made-to-measure frames, the consumer as co-creator, and the increase of direct-to-consumer marketing.

Education & Regulation

Just as businesses need to evolve their offering, so educators need to respond to disruption, in all its forms. Universities, currently supporting further clinical opportunities through post-graduate qualifications for optometrists, will need to re-evaluate their undergraduate optometry programmes. Together with clinicians and regulators they will reconsider the necessary scope of traditional background subjects (e.g. ophthalmic lens theory, history of optics, mathematics), as well as spectacle dispensing competencies; at the same time they will consider expanding patient contact time (real or virtual), introducing students to multi-disciplinary team working, and teaching on therapeutic prescribing. Growth opportunities in contact lenses will see more market pressure on universities to raise contact lens education levels of students. And before the 2020s, educators will need to recognise a new generation of phoropterless refracting technologies, both in and beyond the high street.

Dispensing opticians (DOs), much more exposed to the occupational threats of automation, should see a curriculum with wider emphasis on cutting-edge technologies, paediatrics, low vision and contact lenses. Teaching will need to embrace digital dispensing, and may even in time extend into areas of orthoptics. Educators will need to instill, in younger DOs especially, stronger communication and soft skills and a deep-rooted desire for Continuing Professional Development (CPD) well beyond Continuing Education and Training (CET) minimum requirements.

"Educators will need to instill in young DOs stronger communication skills and a deep-rooted desire for CPD well beyond CET minimum requirements."

As the population ages, clinical services increase, and extended chair time reduces practice profits, DOs may push ever harder for refracting rights. These conditions may synchronise with new refracting technologies, notably improved autorefraction, automated subjective refraction and even patient-led refraction, to favour an option of fully delegated refraction.

The full delegation of refracting responsibility would require changes to regulation. Regulators and policy makers have an ever harder task to keep track of technological developments: discerning what is, and what is not, in the public interest; what represents risk, and what represents consumer right. The regulators need to be concerned about online businesses that prioritise trade opportunity above health considerations. They need to warn the public of the risk of choosing self-refraction over a full eye health exam. They can 'kite-mark' online companies operating according to UK regulation, but they cannot regulate sales and services delivered from abroad. Limitations and loopholes are not reasons to deregulate, however. Policy makers will not easily relinquish what is considered best practice in public protection and disease prevention.

The great challenge for the setters of regulation and standards is to keep abreast of technology so that (potentially) outdated operating frameworks and criteria do not restrict safe affordable care, public access, and the business viability of providers that the NHS depends upon.

All change by 2030?

Patient-led eye-testing and screening, followed by practitioner interpretation and validation, will become a reality during the 2020s: the question is, from where or in what will this be delivered? Smartphone-based, patient-operated refraction with voice-prompt is set to be available in the UK from 2016. Patient-operated, handheld OCT and acuity testing is in development in the UK and could be market ready by 2020. User-friendly, smartphone-based fundus imaging and testing modules have already created solutions one fiftieth

the price of some standard office-based equipment. The quality and reliability of new technology takes time to assess, of course, but the evolution of cheaper micro-technology holds significance not just for mobile eye services and personal use, but also for new delivery models entirely. It points to a future where automated, telehealth-enabled sight testing could be available via health kiosks in large general practices, pharmacy stores and elsewhere, for 'low-risk' adults at least. The place of sight tests does not have to remain within traditional optical practice. And we may by this time be printing our own frames, even simple lenses, with home technology. If so, online suppliers may begin to doubt even *their* future.

Conclusion

There are no guarantees of who will be delivering what, and where, by 2030. But unless professionals and businesses adapt with the times, they risk becoming unviable. Arguably the optical sector, with its deep dependency on retail, will be the health sector to feel it first. Call it the second-machine age or our modern Gutenberg moment: many medical monopolies that have enjoyed supremacy for (quite literally) hundreds of years have now to work out how to evolve their offering, or be dismantled from the outside in.

"The optical practice will need to give the public stronger reasons to enter its premises in the future."

The optical practice, in whatever form, will need to give the public stronger reasons to enter its premises in the future. The impending fundamental and irreversible changes within the optical sector are many, but so are the opportunities to embrace them and move forward. Those who become agile, value relationships, learn how to harness the public's interest and share expertise, will be the ones who flourish.

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Appendix A

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Appendix B

Foresight Project Profiles

Project Chairman

Alan Tinger

Alan Tinger is a Chartered Accountant and a Companion of the Chartered Management Institute. He is Chairman of the Local Optical Committee Support Unit (LOCSU), a Director of, and Consultant to, the Federation of (Ophthalmic & Dispensing) Opticians (FODO), and a member of the Optical Confederation Leaders' Group. Alan was formerly a Financial Consultant to the General Optical Council, Managing Director and Part-Owner of Galaxy Optical Services (to whom Tesco PLC outsource the main supply and support functions of Tesco Opticians), and Finance Director of Miller & Santhouse PLC. He is also a Trustee, Treasurer and Chair of the Audit Committee and of the Investment Committee of the Royal National Institute of Blind People (RNIB Group), a Trustee of Action for Blind People and Chairman of a Registered Housing Association.

Report authors

Julia Manning

Julia Manning is a social entrepreneur, writer and campaigner. She is the founder and Chief Executive of 2020health, an independent, social enterprise Think Tank whose aim is to "Make Health Personal". This means giving people the information, understanding and confidence to take a meaningful role in their health and wellbeing, and creating the conditions for a healthy society. Campaigns that have emanated from 2020health's research include for a Head of Wellbeing for schools; the right to have a Personal Health Budget and control over our Personal Health Records; for a cross-departmental government task force to tackle obesity, and the 'Health Tech and You Awards', a digital health promotion partnership with Axa PPP and the Design Museum. Julia originally studied visual science at City University, created a digitally enabled home-visiting optometry practice in 2004 and formed 2020health in 2006. She is a Research Associate at UCL in Medical Anthropology, and a Fellow of the RSA.

Jon Paxman

Jon is a senior researcher with 2020health. He has contributed to several Health IT reports, including 'Making Connections', supporting a digital learning exchange between the US Veterans Health Administration and UK NHS in 2013. As lead researcher he has explored ways of improving access and outcomes within specific areas of primary care, with publications including 'Personal Health Budgets: A Revolution in Personalisation'; 'Protecting the Nation: Every Child Matters' (examining childhood immunisation); and 'Whole in One: Achieving equality of status, access and resources for people with depression'.

Alex Blacknell

Alex is a qualified solicitor with experience in private practice. For the last seven years she has worked as an adjudicator for a statutory complaints handling body, analysing documentary evidence and drafting written adjudication decisions on issues including fitness to practice, disability and racial discrimination. She has also had articles published in a number of professional periodicals. Alex began work with 2020health in 2014, conducting workshops in schools as part of the research for the Fit for Schools report. She now oversees the report writing process.

Matt James

Matt has a wide ranging portfolio of expertise spanning public policy, academia and third sector. He has convened numerous public symposia that have brought together key stakeholders to discuss the ethical, social and legal implications of new technologies. Matt has written widely on these issues and participated in several EU funded projects exploring public responses to new technologies. Matt has a degree in political history and sociology, and a Master's degree in bioethics and medical law. He was recently elected a Fellow of the Royal Society of Arts and Commerce (FRSA).

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