Dr Michael D. O'Shea

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Personal profile

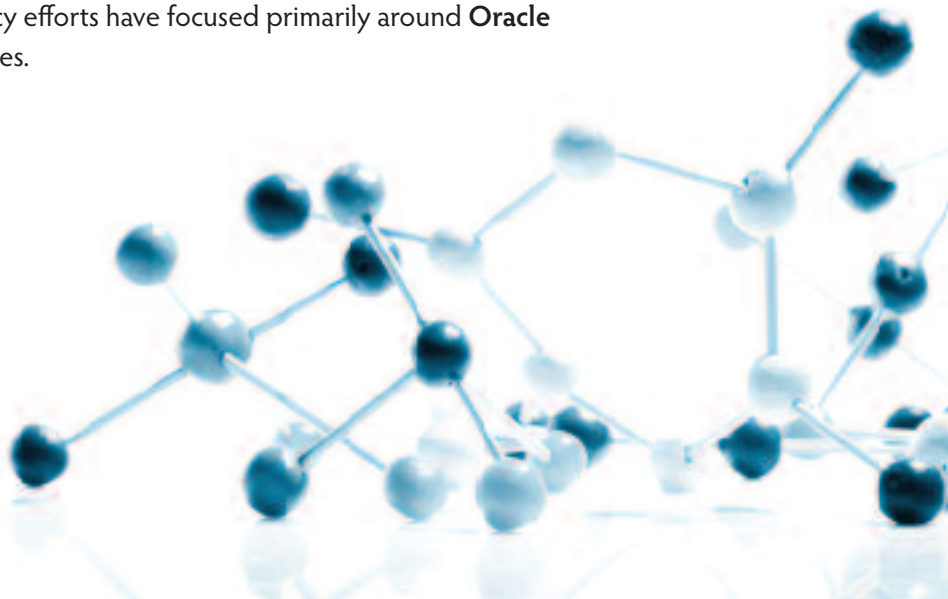
I am a Software Engineer/Developer with over 15 years of first hand experience using current and mainstream IT technologies and methodologies. Within this timeframe, I have worked on the code base maintenance and development of various complicated scientific applications, their architecture, and their interoperability with third party black box systems. I have a further 7 years development, design, and requirements analysis experience using less mainstream technologies.

My IT roles have involved working on projects of all sizes, from being the sole developer on a one-man development project, to being a member of a small development team (6-10 people), to being Technical Lead, Software Architect, and Domain Expert on 3-4 man team IT development projects. My roles have encompassed both green- and brown-field development and support, with roles ranging from existing system re-architecture, feature enhancement, debugging/troubleshooting, and application- and database- performance tuning.

My current primary focus is software development but I have also been in other SDLC roles where I have made significant and pivotal input as the primary author to Requirements Analysis, User Requirements, Software Requirements, and Architectural Design documentation, System Test Scripts, and supported clients during project Handover, User Acceptance, Training, and application Warranty phases.

I have 3-5 years concurrent Business Analysis skills that include workflow identification and streamlining in domains that include DNA typing, pharmaceutical chemo- and bio- informatics, and laboratory automation.

My recent development and consultancy efforts have focused primarily around **Oracle RDBMS** and **Microsoft .Net** technologies.



Education

1987-90 B.Sc., Otago University
1990-92 M.Sc. (Hons), Synthetic Organic Chemistry, Otago University
1992-95 Ph.D., Synthetic Organic Chemistry, Otago University
1996-98 Postdoctoral Research Fellowship, Oxford University

Ongoing professional development/training through external training courses that include:

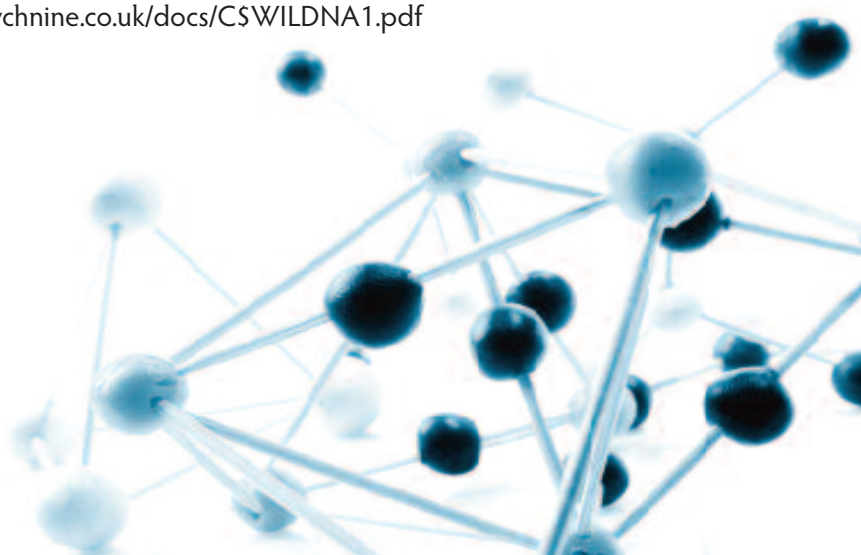
2002 M876 Relational Database Systems, Open University
2003 M877 Advanced Database Technology, Open University
2010 M865 Project Management, Open University
2013 S187 Elements of Forensic Science, Open University

Publications

1993 Larsen, D. S.; O'Shea, M. D. Tetrahedron Lett. 1993, (34), 1373.
1993 Larsen, D. S.; O'Shea, M. D. Tetrahedron Lett. 1993, (34), 3679.
1995 Larsen, D. S.; O'Shea, M. D. J. Chem. Soc., Perkin Trans. 1. 1995, 1019.
1996 Larsen, D. S.; O'Shea, M. D. Chem Commun. 1996, 203.
1996 Larsen, D. S.; O'Shea, M. D. J. Org. Chem. 1996, (61), 5681.
1998 Bull, S. D.; Davies, S. G.; O'Shea, M. D. J. Chem. Soc., Perkin Trans. 1. 1998, (22), 3657.
2001 Bull, S. D.; Davies, S. G.; Garner, A. C.; O'Shea, M. D. J. Chem. Soc., Perkin Trans. 1. 2001, (24), 3281.
2002 Bull, S. D.; Davies, S. G.; Garner, A. C.; O'Shea, M. D.; Savory, E. D.; Snow, E. J. J. Chem. Soc., Perkin Trans. 1. 2002, (22), 2442.
2010 Acknowledgement for IT design and development work in Vaidya, J. S. et al, The Lancet 2010, doi:10.1016/S0140-6736(10)60837-9
2013 Acknowledgement for IT design and development work in Vaidya, J. S. et al, The Lancet 2013, doi:10.1016/S0140-6736(13)61950-9

Other

- Warwickshire Police UK, **NPPV3 and SC level security clearance**
- Conferred (2012) as an **Honorary Research Associate**, Division of Surgery and Interventional Science, **UCL**
- Member of the Royal Society of Chemistry (MRSC)
- Author of C$WILDNA1, see http://www.strychnine.co.uk/docs/C$WILDNA1.pdf



Technical skills

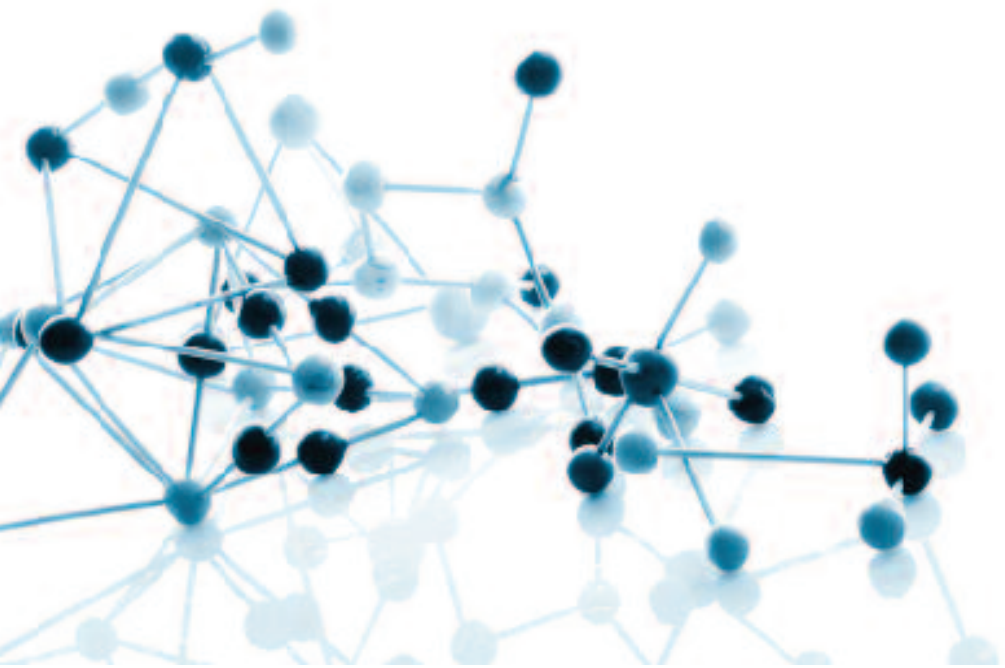
- **Oracle** 8i, 9i, 10g, 11g Window/Linux/Unix; skill set includes Oracle data cartridge development, SQL/DML/DDL, PL/SQL, user defined aggregate functions, XMLDB, Java stored procedures, Row Level Security (RLS)/Virtual Private Database (VPD), data partitioning, Oracle RAC; SQL performance tuning through examination of PLAN tables, Oracle 10046 & 10053 traces, and tkprof.
- **Microsoft C#.Net** winforms & ASP.Net full stack development skills, LINQ, WCF, *etc* unit testing and PostSharp AOP, greenfield project architecture, ...
- **Supplementary Development Skills**
  VB/VBA, XML/XSLT, SQL Server, C, C++, Java, LabVIEW, Perl

UK employment history

Aug 96 – July 98	Postdoctoral Research Fellow (Synthetic Organic Chemistry), University of Oxford
Aug 98 – July 01	Synthetic Organic Chemist & later Software Developer, Evotec OAI
Aug 01 – July 11	Software Engineer/Architect/Business Analyst; Tessella plc
Aug 11 – current	Software Developer & Founder of Woodward Informatics Ltd

Selected IT experience/Woodward Informatics Ltd

Whilst in the employment of Woodward Informatics I have used C#, Oracle, and VBA in agile IT development projects for two blue chip US based pharmaceutical organisations, an international Solar Cell R&D/manufacturing organization, an organization responsible for General Medical Council (GMC) medical professional training, and a major UK forensic services provider. Although constrained by recent nondisclosure agreements, some of the project experience and technical details are outlined below.



Project Summary 1: Pfizer

I was Technical Lead, Head Developer, System Architect, and Domain Expert in a green-field winforms project for Pfizer. I had been the key man in the project since 2006 when the project first started and was regularly based out of the Pfizer Sandwich UK site for extended periods during the applications design and enhancement. More recently, whilst working for Woodward Informatics Ltd, and on an as-needed basis, I have worked out of the Pfizer Groton CT USA site.

The application developed for Pfizer is a extensive chemoinformatics system used for sample submission, tracking, automation, and post acquisition processing of large LC/MS datasets. The system is integrated into and makes use of existing COTS scientific applications such as Waters Empower, Agilent ChemStation, and MassLynx.

From a technical perspective, the system focussed on Oracle 10g and .Net and was distributed across a number of servers where processes communicate through DCOM, Windows and Database Pipes, and state managed within the database. It is extensively multithreaded and exhibits significant interoperability with technology from third party vendors though the use of sockets/ports, XML, XSLT, DDE, and a number of black box API's. The application also exhibits a high degree of on-the-fly customizability meaning new workflow functionality or features can be added without long-winded release cycles, system impact testing, unnecessary red tape *etc*.

My secondary responsibilities on this project included aiding the stakeholders to establish a full set of User Requirements, translation of User Requirements into Software Requirements, production of Architectural Design Documentation, the primarily Application Developer and Technical Lead on all scientific and IT issues including technical liaison with third party vendor technology, production of product build packages, System Test Scripts, System and Integration Testing, transfer of product through User Acceptance Testing at various Pfizer sites, and technical contact and domain expert through product Warranty Phase in a V-shaped Software Development Lifecycle model in a GxP working environment.

Project Summary 2: Orchid Cellmark

I was an Oracle and Java stored procedure developer on a 9 month project for Orchid Cellmark initially in 2001 (and a further 3.5 years undertaking other IT development duties).

My responsibilities during this period was focussed on reverse-engineering a binary genetic analyzer file, extracting its content into a usable form, and natively indexing this in Oracle so that OLTP queries were performant and, specifically, avoided full table scans. Over a decade later, this deploy-and-forget component, is still being actively used.

In 2012 I was reengaged by Orchid Cellmark longer term to support and enhance an in-house developed forensic DNA typing and tracking system.

Project Summary 3: US Based Blue-Chip Pharmaceutical Organisation

The focus on this greenfield project was to automate tasks on several hundred other computers and laboratory instrumentation during system downtime.

At its core the technology primarily used from XML, WCF, and C# 5.

The application was designed and developed solely by Woodward Informatics Ltd within the US and UK. The project is covered by a nondisclosure agreement and application enhancement and support is ongoing.

Selected IT Experience/Tessella plc

While in the employment of Tessella, a scientific IT outsourcing consultancy, I have worked in an IT development role face-to-face with client staff and business drivers at **Pfizer**, **GlaxoSmithKline**, **Syngenta**, **Novartis**, **The Forensic Science Service**, **The Clinical Trials Group UCL**, and **Orchid Cellmark** long-term on their sites and in diverse and interesting domains.

My experience portfolio includes tenures in a Business Analyst role, as a Software Engineer (using a number of technologies and languages, from core C# to VBA and Fortran, XML to SQL, LabVIEW to ChemAxon IJC) working with a number of different SDLC methodologies, as technical author, and in the mentoring and day-to-day technical management of less experienced technical staff.

Project Summary 1: GlaxoSmithKline

I was an Oracle and Java developer and solutions architect for a data migration and new technology implementation at GlaxoSmithKline.

I undertook lead IT development and high risk exploratory automation approaches to migrate GlaxoSmithKline away from MDL technologies to the technologies of an alternate vendor. My responsibilities included reviewing all existing migration manual processes, identification of the significant bottlenecks, and ultimately developing automation applications to efficiently and reproducibly promote chemical structure and PK/PD information within the replacement product. The net result of automating the process reduced development time for each MDL hview and ISIS/Base project down from several days/weeks to around a day.

Project Summary 2: BP

I was a core C# team developer in an Agile project for BP with primary responsibilities in a group of 4-5 developers to:

- translate legacy Fortran and Excel/VBA code into C#.
- undertake general application framework development.
- 'be available for how-to' support for less experienced developers.