



Leaders in Technology Due Diligence

We conduct technical, operational and intellectual property (IP) analyses of technology companies. Our team of acclaimed experts based in Europe the US and Asia, comprise senior engineers, leading scientists and patent lawyers. We have managed technology businesses and projects from the research lab, through scale-up and into mass production. Our exceptionally broad range of skills means that we can provide comprehensive due diligence across all technology-related aspects of a company. We specialize in evaluating direct investments in technical companies, technology-based mergers and acquisitions (M&A's) and in-licensing of intellectual property.

Our project mandates have covered a very wide array of technologies including: robotics, photovoltaics, biomedical implants, laser processing, wind and power turbines, cyber-security software, nuclear material detectors, smart windows, rare earth mineral production, genetically modified cyanobacteria and artificial cell membranes. We work primarily for the buy-side, but also work for the sell-side, e.g. doing independent opinions for IPOs. We work for governmental organizations: for example, we provide technology commercialization advice for the European Commission's €3.5 billion programme in "Nanosciences, Nanotechnologies, Materials and New Production Technologies".

All our consultants are on long-term contracts. They are senior professionals with excellent technical backgrounds and outstanding track records in one or more of the following areas: leading technical innovation, management of technology companies, intellectual property management and international patent law. Importantly, there are strong and longstanding personal and professional relationships between our consultants ensuring highly effective internal collaboration. All VorteQ projects are directly, and personally, managed by one of our Principal Consultants.



Dr. Adrian Burden

UK

Adrian has worked in both academia and industry and is an accomplished technology entrepreneur. He co-founded and was CEO of Singular ID, a successful technology start-up. He managed the company from its start through to its eventual acquisition by the world's largest pharmaceutical packaging company. He won the "Entrepreneur of the Year" award at the British Business Awards 2005 in Singapore and the "JEMI UK Prize for Entrepreneurship" award in 2010. Before starting Singular ID, he led an industrial research group within the Institute of Materials Research and Engineering (Singapore) focused on developing Organic Light Emitting Displays (OLEDs). Prior to that he was the R&D Manager (Materials) of a field electron emission flat panel display company. His primary expertise is in materials science and electron microscopy, specializing in carbonaceous and electronic device materials.



Prof. Peter Dobson

UK

Pete was a Professor at University of Oxford from 1996 until 2013 and was the Academic Director of Oxford's Begbroke Science Park for over ten years. He is one of very few people who has a deep and specialized knowledge in both physics (the discipline for his Ph.D.) and chemistry (he is a Fellow of the Royal Chemical Society). His research includes clean energy, nanostructures, optoelectronics and biosensors. He spun-off Oxonica (specializing in nanoparticle fuel additive catalysts and bio-labels) and Oxford Biosensors Ltd (who develop and manufacture hand-held enzyme-functionalized microelectrode arrays). He consults widely and advises several corporate and national organizations, and he is the Strategic Advisor on Nanotechnology to the Research Councils in the United Kingdom. In 2013 he received an OBE for his contributions to science and engineering.



Prof. Gustavo Gioia

Japan

Gustavo recently left his tenured position at the University of Illinois at Urbana-Champaign to become a faculty member at the Okinawa Institute of Science and Technology Graduate University in Japan. He is an expert in solid and fluid mechanics and has published his work in leading journals such as *Nature*. He uses theory, experiments and computations to investigate a wide range of phenomena, including: dense granular flows; shock-like effects in thin liquid films; turbulent friction and scouring of granular beds; delamination and folding of thin solid films; configurational phase transitions in cellular materials and granular aggregates; the scaling of mechanical failure across disparate length scales; and localized deformation in thermoviscoplastic solids. He has consulted for companies such as Ford, MaxFlight Corporation and the Techint Group.



Mike Goh

Singapore

Mike has more than 15 years' experience in the design and manufacturing of medical devices and consumer products. He has held senior engineering roles at companies such as Becton Dickinson Medical Products, AIM Biomedical, Medisys Asia Pacific and Pemstar Singapore.

He has wide-ranging experience in developing manufacturing equipment, in process integration, validation and qualification. He has also worked extensively with prototyping and preproduction including 3D printing, machining and soft tooling. His most recent role in this area has been as a Director of PMC Designs and Engineering Service, in Singapore.



Prof. Ian Horrocks

UK

Ian is a Professor of Computer Science at the University of Oxford. His research focuses on areas including knowledge representation, ontologies and ontology languages, modal and description logics, automated reasoning, implementation and optimization of reasoning systems, and applications in areas such as e-Science, the Semantic Web and artificial intelligence.

He is a highly influential computer scientist with over 34,000 citations to his publications. His work has formed the basis of most description logic reasoning systems in use today and he has played a central role in the development of various important ontology languages. These languages and associated tools have been used by the National Cancer Institute in America, the United Nations Food and Agriculture Organization, the World Wide Web Consortium and a range of major corporations and other government agencies. In 2011 he was elected a Fellow of the Royal Society.



Prof. Daniel Kröning

UK

Daniel is a Professor of Computer Science at the University of Oxford. His specialty is quality assurance in software engineering with applications to information and embedded systems. His research is in program analysis, including cyber-security malware analysis, model checking, and hardware/software co-verification. He co-authored the standard textbook on Decision Procedures that deals with computational methods for solving decision problems.

He has consulted for leading companies such as Intel, IBM and Fujitsu in areas including program analysis. Prior to joining Oxford, Daniel was an assistant professor at ETH Zurich, Switzerland.



Dr. Jennifer Moran

USA

Jennifer is the Director of the Stanley Center for Psychiatric Research at the Broad Institute of Harvard University and MIT. In July 2014, the Stanley Center received a donation of \$650 million – the largest ever in psychiatric research and among the largest for scientific research in general. It is widely recognized as one of the world's best research institutes in biochemistry, genetics and molecular biology.

For over 20 years, Jennifer has been conducting research into genetics related to human development and disease. Her work is published in leading journals (such as *Nature*) and is widely cited. From 2003 to 2007, Jennifer was a faculty member at the Harvard Medical School. Before that she worked at the US National Institutes of Health (NIH).



Dr. Peter Moran

Switzerland

Peter was co-founder and CTO of Singular ID, which develops magneto-optic anti-counterfeiting systems. He scaled-up the products from lab to mass-production for customers such as Sanden International (manufacturer of 25% of the world's automotive air-conditioning compressors). Awards for the technology he developed include Frost & Sullivan's "Technology Innovation of the Year Award" (Asia Pacific Emerging Security Tech.) and ChemTech's "Outstanding Innovation of the Year". Singular ID was acquired by the world's largest pharmaceutical packaging company. Upon the acquisition, he was retained as Chief Scientific Officer to lead the company's innovation and patent strategy. Prior to starting Singular ID, Peter was head of a micro- and nano-systems research group in Singapore comprising more than 50 scientists from 17 countries engaged in R&D projects for companies such as Sony. He is a regularly invited speaker on technology and commercialization, including as a Special Guest Speaker at The Hague, invited by the Netherlands Ministry of Economic Affairs.



Dr. Steve Myint

Finland/Singapore

Steve is currently a non-executive director and advisor to various healthcare companies. He is an advisor to the chairman of Singapore's Agency for Science, Technology and Research, among other governmental organizations. Until recently he was chairman of Green Signal Bio, one of India's largest independent vaccine manufacturers. Prior to that he was global Medical Director of GSK (GlaxoSmithKline). When GSK was formed through the merger of SmithKline Beecham and Glaxo-Wellcome, Steve was responsible for merging a division of the companies. Steve has served as Professor and Dean of Medicine and Health at the University of Surrey and Professor of Microbiology and Immunology at the University of Leicester. He is actively involved in innovative biotech companies and co-founded Finland's largest accelerator fund. He holds an M.D. and a Ph.D. and is a Fellow or Member of several societies, including the Institute of Knowledge Transfer, the Royal College of Physicians and the Royal Society of Medicine.



Dr. Snezhana Oliferenko

UK

Snezhana is a Reader at King's College London. She recently received a Wellcome Trust Senior Investigator award. Prior to taking the position at King's College, she was a Senior Principal Investigator at the Temasek Life Sciences Laboratory (TLL) in Singapore and held an adjunct position in the Department of Biological Sciences, National University of Singapore.

Her main research interests are cytoskeleton dynamics, mitosis and cell polarity and her work is published in leading journals such as *Nature Cell Biology*, *Current Biology*, *PLoS Biology* and the *Journal of Cell Biology*.



Prof. Raúl Radovitzky

USA

Raúl is a Professor in the Department of Aeronautics and Astronautics at the Massachusetts Institute of Technology (MIT). He is also the Associate Director of the MIT Institute for Soldier Nanotechnologies. His speciality is in computational modelling of solids and fluids. His research activities have encompassed a wide variety of areas in algorithm development and applied mechanics.

In addition to his academic achievements, Raúl has twenty years of experience in developing commercial-grade software tools for modelling and simulation. He was a founding member of two companies that commercialize such products, including: software tools for three-dimensional mesh generation, healing and optimization; interfaces between CAD software and mesh generation software; and large-scale simulation software.



Dr. Edward Routledge

UK

Ed has considerable experience in both industry and academia. Before joining VorteQ, he was head of the Mammalian Cell Culture R&D group at Angel Biotechnology, a UK-based contract research and manufacturing company. There he was responsible for pre-GMP management of client projects and for the design and running of in-house research projects.

Prior to that, he spent over fifteen years conducting academic research at prestigious institutions including: Cambridge University (UK), the University of Wurzburg (Germany) and Newcastle University (UK). His research focused on monoclonal antibody technologies, therapeutic immunology, genetically engineered antibodies and molecular virology.



Dr. Wolfram Schiweck

Singapore/Germany

Wolfram has been practising Intellectual Property law for more than 15 years. He is experienced in drafting and world-wide prosecution of patent applications including opposition and invalidation proceedings and the examination of intellectual property rights and portfolios of companies (due diligence). His drafting and litigation experience spans the fields of chemistry, biochemistry, biofuels, pharmaceuticals, mechanics, optics and electronic devices.

He did his Ph.D. at the Max Plank Institute of Biophysics in Frankfurt, Germany. He is qualified as a European Patent Attorney, European Trademark Attorney and German Patent Attorney (Patentanwalt). He is a member of the Examination Board for the Singapore Patent Agents Qualifying Examination.



Prof. Alan Sellinger

USA

Alan holds a joint appointment as a Senior Scientist at the National Renewable Energy Laboratory (NREL) and as a Professor with the Colorado School of Mines, both in Golden, Colorado. Previously, Alan was the Executive Director of the Center for Advanced Molecular Photovoltaics (CAMP) at Stanford University. Before that he worked at Institute for Materials Research and Engineering (IMRE) in Singapore, Canon Research Center Americas, Opsys US Corporation and Sandia National Laboratories, all in the USA. His research speciality is in the synthesis of new materials for application in organic electronics, such as light emitting diodes (OLED), photovoltaics (OPV), and thin film transistors (OTFT). His consulting includes work for influential companies such as BASF.



Dr. David Selviah

UK

David leads the Optical Devices and Systems Research Laboratory (which is a UK Technology Centre of Excellence and part of the Photonics Research Group) at University College London (UCL). His research is in the fields of optics, pattern recognition, adaptive signal processing, image processing and acoustics. He serves as technical expert at the British Standards Institute (BSi) setting standards for optical fibres, optical connectors and optical circuit boards. He also represents the UK as technical expert on the International Electrotechnical Commission (IEC) standards committees on optical fibres, optical connectors and optical circuit boards.

Prior to joining UCL, David worked at the University of Oxford and in industry, notably at Plessey where he designed, fabricated and characterised novel RF surface acoustic wave, SAW, correlators and frequency filters for pattern recognition and signal processing in pulse compression radar and secure communication systems.

Dr. Satya Sharma

USA



Satya is the Executive Director of the Center of Excellence for Wireless and Information Technology at the University of New York, Stony Brook. Before that he was Senior Vice President at Symbol Technologies (acquired by Motorola in 2007 for US\$ 3.9 billion), overseeing their world-wide Operations, Mobile Computing & Wireless Engineering, and Quality & Process Improvements. Prior to Symbol, he was Director of AT&T Power Systems. He also led Lucent Technologies to win the Deming Prize in 1994, the only American manufacturing company to have this honour.

Satya is a recognized expert in wireless and mobile computing and quality management, and has produced than 70 technical publications. In addition he has significant hand's-on experience on both the buy- and sell-side of technology acquisitions having led Symbol's acquisitions of leading technology companies as well as being a key executive during Motorola's acquisition of Symbol.



Winston Tan

Singapore

Winston is an electronics engineer with 30 years' experience in operations, automation, system design, manufacturing and quality assurance. During his career he has managed design groups and manufacturing facilities in Singapore, the USA, Indonesia, Malaysia, India and China, producing cellular phones, electronics, hard-disk drives, automation equipment, pharmaceutical packaging and magneto-optic devices.

He was Regional Director of Seagate for eight years overseeing all Electronic Operations Quality in Asia (covering four manufacturing sites producing approximately 80 million hard-drives a year). He was VP of Operations at Norelco Centreline for three years where he was in charge of the entire automation equipment design and manufacturing. He has also held senior executive positions managing manufacturing operations and quality assurance at Ericsson Inc, Bilcare Technologies, Jurong Hi-Tech, Micropolis and Olivetti.



Dr. Antonin Vacheret

UK

Antonin specializes in experimental neutrino physics. In 2011, he started his current appointment as a Research Fellow at the University of Oxford where he initiated and leads the development of innovative radiation detectors. He works closely with companies that are at the cutting edge in radiation protection, particularly with medical applications, and that are involved in the development of security safeguard systems for the nuclear industry.

He has expert knowledge, understanding and experience in a wide range of technologies including solid-state and vacuum-based photon detectors, scintillating and fluorescent materials, fast signal processing electronics, Monte Carlo methods, pattern recognition algorithms, and various statistical procedures such as template matching, deconvolution and multivariate analyses.



Prof. Albert Yee

USA

Albert is a professor (and ex-Chair) of Chemical Engineering and Materials Science at the University of California, Irvine. Previously he was the Director of the California Institute for Telecommunication and Information Technology (Calit2), at UC Irvine; and prior to that he was the Director of the Institute of Materials Research & Engineering (IMRE) in Singapore.

Albert is a highly influential materials scientist, with over 10,000 citations to his research publications. His current research focuses on biomedical devices, including the development of an artificial cornea and bactericidal surfaces. His fields of expertise also include: polymers and soft materials, including fracture, failure and toughening of polymers; composites, and nanocomposites; nanopatterning and polymeric nanofabrication; and MEMS. He has consulted extensively for companies including Du Pont, Eastman Chemical, ExxonMobile Chemical and Dow Chemical.

VorteQ

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